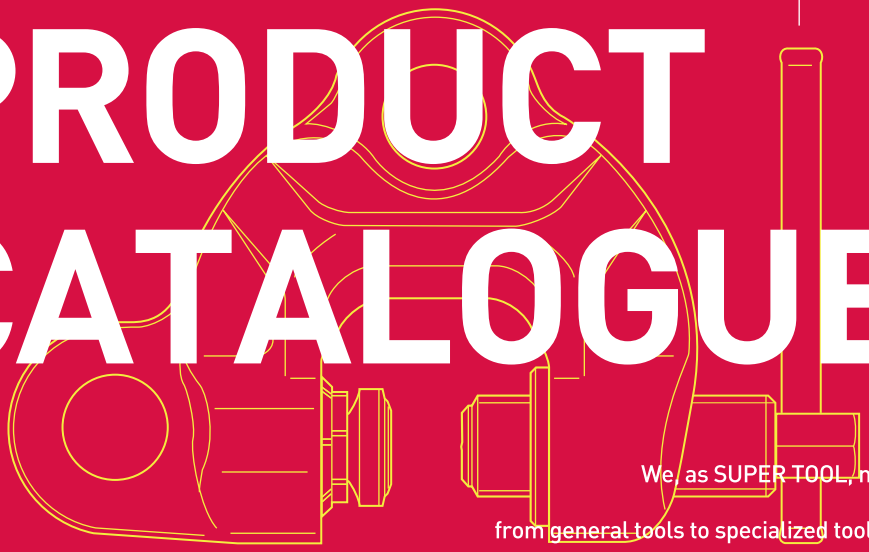
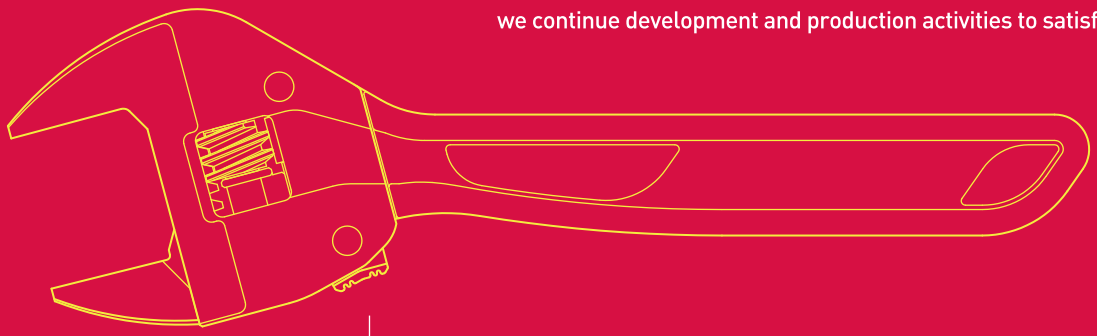
SUPER

SCREW CAM CLAMP

PRODUCT CATALOGUE

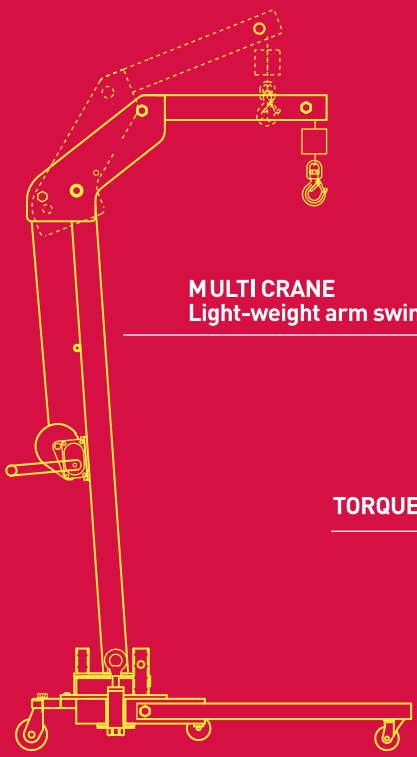


We, as SUPER TOOL, manufacture a wide range of products from general tools to specialized tools that are used in a variety of scenes. Based on our unwavering belief, considering the usage versatility, the product efficiency, and the pursue of safety, we continue development and production activities to satisfy different needs of the customers.

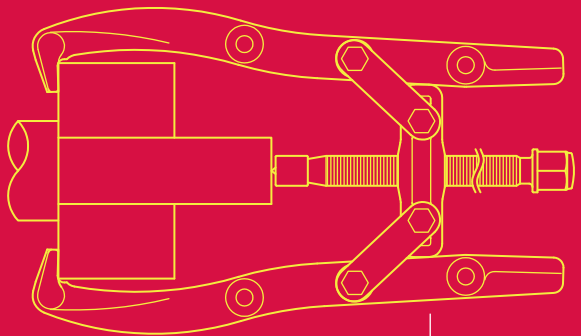


WIDE ADJUSTABLE
ANGLE WRENCH (Ratchet Type)

vol.6



MULTI CRANE
Light-weight arm swing type



TORQUE WRENCH

GEAR PULLER







SUPER



SUPER TOOL

1918

Adjustable Angle Wrench released.



1960



Gear Puller released.



Ratchet Wrench released.



Super Tong (Chain Pipe Wrench) released.

1970



Puller series released.



Lifting Clamp for Steel series released.



Electric Coil Lifter released.

1980



Super Setter released.



Lifting Clamp for Housing series released.



SUPPORTING PROFESSIONALS WORK FOR 100 YEARS. BRINGING SPIRIT OF SAFETY, SECURETY AND INNOVATION FOSTERED BY OUR TRADITION TO FUTURE

Since the foundation in 1918, as a “development-oriented company ” SUPER TOOL has been working on the product development with the originality and the techniques cultivated in more than a century of history with the tradition based on the corporate philosophy that “product development is the way to contribute to the society and to continue the business as a manufacturer” .

Always thinking “Safety, Comfort and Efficiency” from the user's perspective, and understanding “quality demanded in the field”, we continue to commit our best effort to improve quality and credibility of “SUPERTOOL” brand products in manufacturing with the uncompromised internal system of product development and production control.

In these years where the environment that surrounds us keeps on transforming significantly due to rapid digitalization in every industry, we believe that we do need to be even more engaged by rediscovering our philosophy to connect the tradition of safety, security and innovation to the next 100 years with our corporate brand logo, SUPER that has been familiar to all “SUPERTOOL” users since long.

1990



Cut Knurling Holder released.



Special Crane Clean Room released.



Forklift Type Overhead Crane released.



Micro Air Grinder released.

2000



Tube Cutter with Bearings released.



Gear Wrench released.



Precision Vise released.

2010



Wide Adjustable Angle Wrench (Ratchet Type) released.



Add of Twist Cam Type to the Screw Cam Clamp.



Toggle Clamp series released.

2020



Super Lock Hook (Open / Close Lock Type) released.



Aluminum Free Crane released.



Digital Torque Wrench Mechanical Torque Wrench series released.

and future



Vertical & Lateral Lifting Clamp released.



Super Wide Adjustable Angle Wrench (Quick Adjusting Type) released.



Multi Crane (Low Floor Type) U Shaped Leg Type released.

SUPERTOOL BRAND IS WIDELY ACTIVE TRHOUGHOUT VARIOUS INDUSTRIAL FIELDS



Bridge construction

SUPERTOOL brand is expanding the product domains to a wide range of industrial fields under the theme of “Producing the innovative tools prevailing over the times”.
Our products are ranging from general tools to specialized tools which are used in various industrial fields such as factories, construction sites, air-conditioning work and such kind of maintenance services.
We are also active in various sectors such as gas, water, food and pharmaceuticals.
SUPERTOOL’s products, in pursuit of safety and user-friendliness, are recognized as excellent tools and equipment and used for many purposes in various industrial fields worldwide.

Plant construction



Construction site



Maintenance

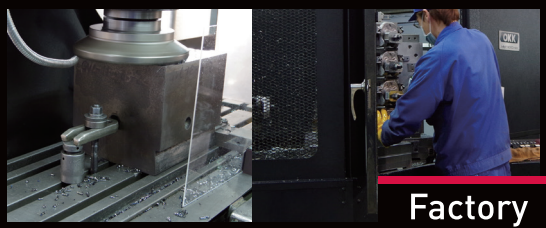


Ship building



Welding





Factory



Head Office





East Japan Logistic Center

COMPANY PROFILE

Company Name	Super Tool Co., Ltd.
Head Office & Factory	158, Minoyama, Naka-Ku, Sakai-City, Osaka Pref., Japan
Founded	1918
Stock Listing	Listed in the JASDAQ market (Standard)
Capital	¥1,902,597,000

BUSINESS CONTENTS

We have been producing hand tools since the foundation of our company. For over a century, we have kept on developing new products under our business motto, “in pursuit of more safety and efficiency.” Our wide range of versatile products have been highly valued and welcomed in the domestic market as well as in many countries in the world.

General Hand Tools	·····	All kinds of general hand tools, piping tools, other specialized tools.
Industrial Machinery Tools	·····	Machinery maintenance equipment, processing fixtures and tools.
Lifting Clamps	·····	For steel, for concrete materials.

Under our corporate philosophy that “product development is the way to contribute to the society, and to continue the business as a manufacturer”, since 1993 we have developed and released new products in new industrial fields and we have kept expanding our product range.

Housing Equipment and Tools	·····	All kinds of general and specialized lifting clamps, tools, fixtures, etc.
Handling Labor Saving Equipment	·····	Multi cranes, portable gate type cranes, all kinds of general and specialized lifting clamps, lifting hooks, etc.
Magnetic Separation Equipment	·····	Magnetic Equipment.
Measuring Tools	·····	Digital torque wrenches, mechanical torque wrenches.

We manufacture the above-mentioned products and distribute them through major and specialty trading companies to the domestic and overseas markets.

WELDING PLIERS (Multi Type)

WMP175G / WMP200S

For details, go to page P.76

Easy spatter removal !
Indispensable tool for efficient welding work !!

- Ideal for removing spatter during welding work !
- Sharp wire cutting realizes stable ark welding start-up !
- Outstanding durability with appropriate heat-treatment on special steel for tool !
- Suitable for attaching and detaching tip, nozzle, insolation tube.



WMP175G Split base nose

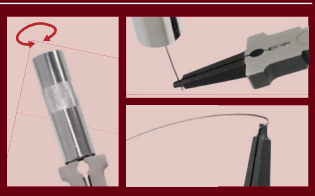
With the split base nose, you can remove spatters from nozzle tip both inside and outside the nozzle at the same time.





WMP200S Tapered tip nose

With the tapered tip nose, you can work the wire bending to small diameter optimal to insert the wire through the guide module of a welding robot system.





Trendy!! NEW



VERTICAL & LATERAL LIFTING CLAMP

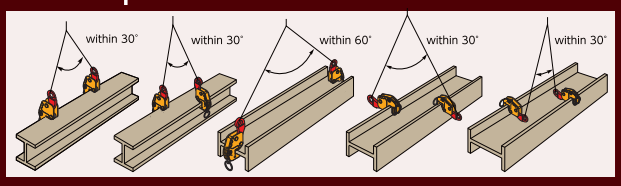
GVC0.5R / GVC1R

For details, go to page P.117

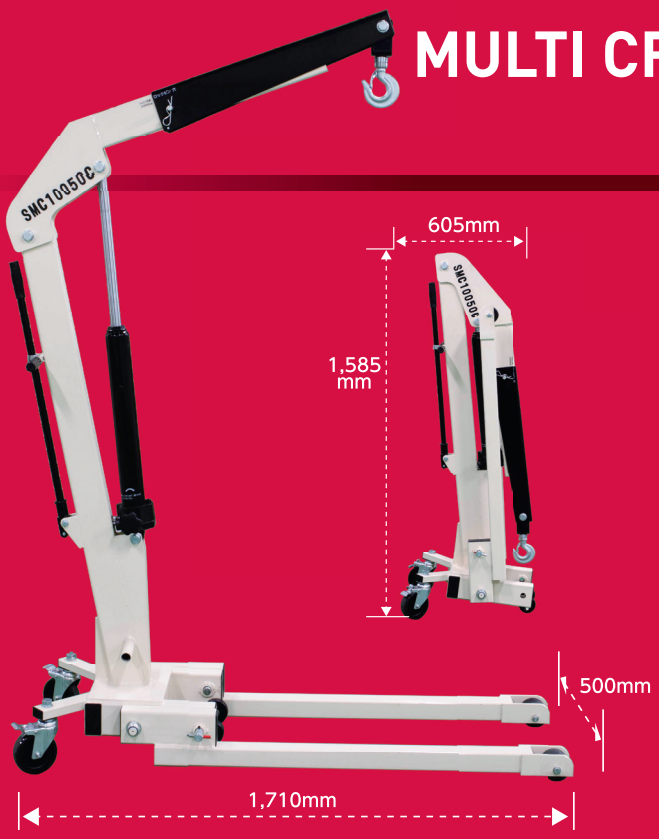
Can be used for both vertical and lateral lifting. The line-type cam brings a sure grip.

- Can be used also for steel beam with 100mm wide flanges (GVC0.5R).
- Not only suitable for H shaped and I shaped steel beams, but enables also stable lifting operation for steel plates.
- Clamping force increases in proportion to the load weight.
- Compact, light-weight and outstandingly easy to handle.
- As the main body is specially die-forged, the clamp can be easily set and removed.
- As the spring brings always an initial clamping force, even when the wire loosens, the clamp will not come off.
- High frequency quenching of special alloy steel gives outstanding durability.

▶ Example of use



MULTI CRANE (Low Floor Type) U Shaped Leg Type



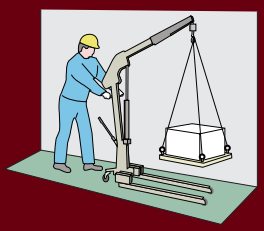
SMC10050C

For details, go to page P.108

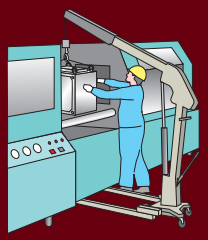
U shaped legs enable easy moving operation.

- The crane can be moved with a load lifted.
- The arm length is adjustable at 3 steps (rated capacity is different at each step).
- The arm vertical move is hydraulic type.

▶ Example of use



Pushing and rolling by hand through narrow corridor.



Machine work loading / unloading.

PRODUCTS

SCREW SUPPORT FOR LARGE MACHINES, LONG STROKE TYPE



▲ 3 parts connected / max. 900mm

FS500LS

For details, go to page P.228

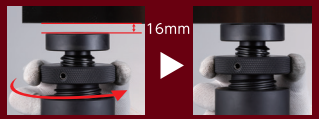
Ideal for workpieces used in large machines or clamp support.

- Ideal also for preventing chattering during cutting operation.
- The lock screw (with lock piece) that locks the forcing screw helps avoiding screw loosening.



● QUICK ADJUSTING

As the screw includes double thread and reverse screws, with one turn of the middle male screw the support can be quickly raised (lowered) by 16mm.



● LIGHT-WEIGHT

The use of aluminum for the main body allows 25% net weight reduction (compared to our conventional models) and makes it carriable by hand.



● EXTENDABLE

By connecting a joint support FSJ200 (sold separately), the height can be raised by 200mm each. Up to 2 joint supports can be added !



FSJ200

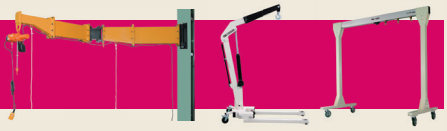
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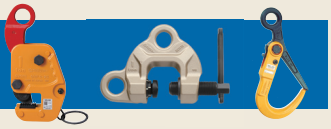
PRODUCTS TOOL CATALOG

GENERAL HAND TOOLS & CLAMPS 

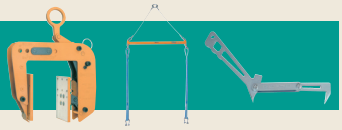
TORQUE WRENCHES 

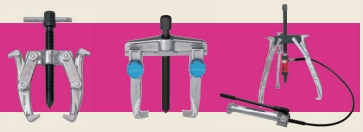
PLUMBING TOOL 

CRANES 

LIFTING CLAMPS FOR STEEL 

LIFTING CLAMPS FOR CONCRETE MATERIAL 

LIFTING CLAMPS FOR HOUSING 

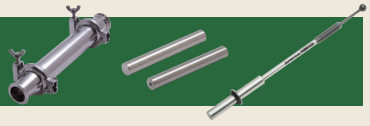
GEAR PULLERS 

HYDRAULIC TOOLS 

MICRO AIR GRINDERS & CARBIDE BURS 

JIG AND CLAMPING TOOLS 

KNURLING HOLDERS & BITE HOLDERS 

MAGNETIC SEPARATION 

APPENDIX

CATALOGUE USE

PRODUCT SEARCH

This catalogue is categorized by application. You can search for your required product at each category. You can also use the index by category displayed at the next page.

LISTED PRODUCTS

The products listed in this catalogue are constantly getting improved or upgraded. The products size or specifications can be changed or the products can get discontinued without any prior notice.

INSTRUCTIONS OF USE

- Never use a tool for anything other than its intended purpose. Be sure to use the proper tool appropriate for the purpose.
- Be sure to use bolts and nuts with shape and size that fit together.
- Be sure to tighten securely the bolts and nuts.
- Never use if abnormalities like crack, defect, wear, deformation, etc. are found.
- Never make any modification on the product. Heating or processing can significantly reduce the product quality (strength).
- Never proceed fixing operation with improper posture. Be sure to always stand firmly on your feet and maintain equilibrium.
- When using hydraulic or pneumatic tools, select the tool according to the conditions of use like the output, the stroke, the fixing, etc. During operation, be careful to never touch with your hand, your fingers or your feet.
- Magnet bars are extremely dangerous because of their high magnetism. Be sure to pay attention to the instructions for use. Especially always keep away from electronic devices. Otherwise it may cause malfunction.

Tool sets/cases Socket wrenches Ratchet wrenches Offset wrenches Grips Gear wrenches Open-end spanners
Spanners Safety ropes Combination hammer Sockets Hex key wrenches Adjustable angle wrenches Pliers
Hook spanners Pin spanners Toggle clamps C clamps L clamps Super setters Welding tools Iron man

General hand tools & clamps P. 19➲78

Digital torque wrenches Mechanical torque wrenches

Torque wrenches P. 79➲82

Tube cutters Other cutters Pipe scrapers Super torque wrenches Flaring tools Flanging tools for flexible tube
Benders Chain pipe wrenches Pipe wrenches Belt wrenches Motor wrenches Other wrenches Water pump pliers
Super pilers Threaded rod cutters Plumbing tool set

Piping tools P. 83➲104

Multi cranes Portable gate type cranes

Cranes P. 105➲112

Vertical lifting clamps Vertical & lateral lifting clamps Lateral lifting clamps Horizontal lateral lifting clamps
Steel beam lifting clamps Screw cam clamps Beam clamps Safety belt clamps Super foot locks Lifting hooks
Super lock hooks Drum lift clamps Lifting hooks for forklift Rail clamps Reinforcing rod vertical lifting clamps

Lifting clamps for steel P. 113➲138

Lifting clamps for concrete material (cam type, pad type) Lifting clamps for concrete material (manual, machine type)
Lifting clamps for concrete material (adjustable clamp range type) Balance
Internal expanding lifting clamps for U-shaped gutter Batch lifting clamps for bank block

Lifting clamps for concrete material P. 139➲148

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Shock speed pullers Bearing pullers Bearing puller sets Bearing insertion tool sets Hydraulic pullers Accessories

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Micro air grinders Super carbide burs

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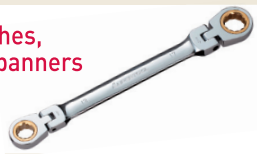
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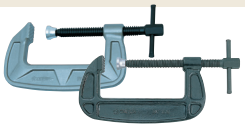

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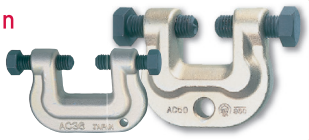

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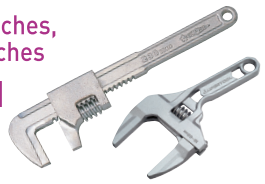
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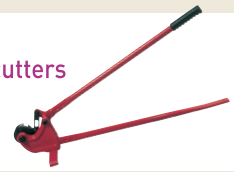
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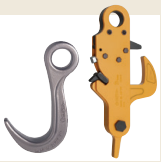
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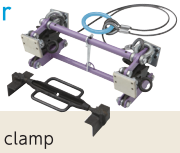
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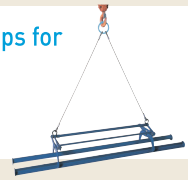
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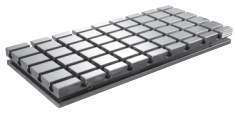
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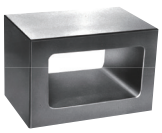
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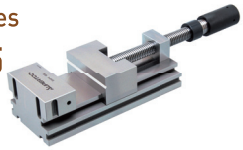
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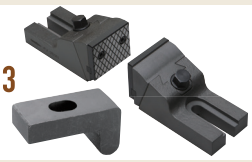
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SAFE AND CORRECT USE FOR ALL TOOLS

Supertool is constantly working on the improvement of its products quality and safety, to increase the customer satisfaction. Before using Supertool products, never fail to read the following cautions as well as the cautions in the pages by category, for a longer and safer use.

⚠ CAUTIONS (COMMON POINTS) GENERAL HAND TOOLS / PIPING TOOLS / GEAR PULLERS / JIGS AND CLAMPING TOOLS

◎ Never use a tool for anything other than its intended purpose.
◎ Never use a tool as substitute for hammer.
◎ Never hit a tool with a hammer.
◎ Never connect any pipe to a tool.
◎ Never proceed operation with improper posture. Be sure to always stand firmly on your feet and maintain equilibrium.
◎ Never use if abnormalities like crack, defect, wear, deformation, etc. are found.
◎ Never make any modification on the product. Heating or processing can significantly reduce the product quality (strength).
◎ As the plastic or vinyl covered handle is not for insulation purpose, never use a tool when any object is electrified.
◎ Always take adequate measure to prevent tool fall when working at height.
◎ Never use a driver as substitute for chisel.
◎ Cutter blades are sharp and dangerous. Keep your hands and fingers away.
◎ Before use, always read the operation manual supplied with the product and use the tool in the proper manner.

⚠ CAUTIONS FOR GENERAL HAND TOOLS

◎ Be sure to use bolts and nuts with shape and size that fit with the tool.
◎ Insert the tool completely into the bolt or the nut.
◎ Never use together with any power tool such as impact wrench.
◎ When changing the turning direction clockwise or counter clockwise, make sure to switch completely the lever to avoid idling.
◎ When sand or dust gets stick inside the ratchet wrench, it can deteriorate the engagement. Inspect periodically.
◎ Never use iron man, C clamp, L clamp or super setter for lifting or pulling operation.
◎ Insert the square drive of a socket wrench completely until the base.
◎ Always turn an adjustable angle wrench in the direction of the lower jaw. If turned in the opposite position, the overload will cause damage to the lower jaw.
◎ When using side cutting pliers, super cutter or threaded rod cutter, always wear safety goggles and be careful for scattered chips or chipped blade.
◎ When using a wrench, always apply force in the bolt rotation direction. Forced fastening or prying in up or down direction will cause damage to the bolt.
◎ Hex key wrench of thin size may break with arm strength. Be careful not to apply excessive force.
◎ For ball-point hex key wrench, be careful not to apply excessive force when the neck of the ball point part is getting thinner.
◎ The “holding capacity” displayed on the toggle clamp is the maximum capacity for using safely the clamp permanently and it shows the force including external force. When applying external force, for instance for machining use, be careful that the full force including the external force applied to the clamp doesn’t exceed the “holding capacity”.
◎ For safe use of the toggle clamp, when the external force has been estimated, it is recommended to tighten at a force of approx. 1/2 of the “holding capacity”.

⚠ CAUTIONS FOR PIPING TOOLS

⚠ CAUTIONS for tube cutters, pipe cutters

◎ Use appropriate cutter according to the material type and size.
◎ Lubricate occasionally cutter wheel and rollers supporting pins.
◎ The surface of a cut pipe is sharp. Be careful not to touch directly with your fingers.
◎ PVC pipe cutter (VK34N, 42N, 63N) has a one-action release mechanism. Be careful when opening the blade.

⚠ CAUTIONS for flaring tools

◎ Use appropriate flaring tool according to the material type and size.
◎ When using manual / electric flaring tool with a power tool, be careful for the rotation of the feed handle.
◎ Securely position and set the copper pipe.

⚠ CAUTIONS for pipe wrenches

◎ Use appropriate pipe wrench within the applicable pipe external diameter.
◎ Bite securely the pipe at the center of the wrench jaws with a right angle.
◎ Never apply lateral force.
◎ Never use if abnormalities like chipped tooth, abrasion or tooth clogging are found.

⚠ CAUTIONS for tube benders

◎ Use appropriate tube bender according to the applicable tube external diameter.
◎ Never use for tube material type or hardness other than designated.
◎ For hydraulic type pipe bender, fix securely the attachment bendshoes.

⚠ CAUTIONS for chain pipe wrenches

◎ For ST3, 3L and 4 only, it is possible to add pipes, but always use the dedicated pipe (STH3, 4).
◎ For additional chain, always use the dedicated chain (STC0~4).
◎ When adding extra chain, the total length must not exceed twice the length of the standard chain.
◎ Make sure to apply anti-rust oil to the chain for maintenance.

CRANES SAFE AND CORRECT USE FOR CRANES

Before using Supertool cranes, pay attention to the followings.
The lifting height of Supertool cranes indicates the distance from the beam without hoist to the floor.
Before using the crane, never fail to read the operation manual and use it safely in the proper manner. Furthermore, the followings items of warning are common to all crane models. Make sure to respect them as well.

WARNINGS "SAFETY ITEMS FOR CRANE HANDLING"

◎ Always use within the allowable rated capacity. The rated capacity includes the weights of hoist (or chain block), clamp, etc.
◎ Never enter the area where there is a risk that the hanged load drops.
◎ Never give an impact to the hanged load or the crane.
◎ Check for abnormalities with the operation of each part of the crane according to the inspection standards of the operation manual.
◎ Never make any modification on the crane. Heating or processing can significantly reduce the crane quality (strength).

LIFTING CLAMPS SAFE AND CORRECT USE FOR LIFTING CLAMPS

Lifting clamps are very convenient tools for slinging operations, but incorrect use can lead to major accident involving serious to fatal injuries. Before use, never fail to read the operation manual and use the lifting clamp safely in the proper manner. Furthermore, the followings items of warning are common to all lifting clamp models. Make sure to respect them as well.

WARNINGS (COMMON FOR ALL MODELS) "SAFETY ITEMS FOR LIFTING CLAMP HANDLING"

◎ Always be sure that slinging operations are carried out only by qualified persons.
◎ Use the appropriate model for the application.
◎ Always use within the allowable rated capacity.
◎ Always make sure that the plate thickness is within the clamping range of the lifting clamp.
◎ Always insert the load completely.
◎ Never proceed lifting of several plates or stacked plates, or lifting by the sides of a plate.
◎ When there is oil, painting, rust or scale on the load, make sure to always remove it before lifting.
◎ Never enter the area where there is a risk that the lifted load drops or topples down.
◎ Never give an impact to the lifted load or the lifting clamp.
◎ Never move or stop the load briskly.
◎ As a safety rule, use 2 or more lifting clamps to avoid unbalanced load.
◎ Before use, always inspect the cam and pad teeth to check if they are clogged or worn and confirm that each part of the clamp has no abnormality.
◎ Never use a lifting clamp having any deformation, cracks, abrasion or malfunction.
◎ Never make any modification on the lifting clamp. Heating or processing can significantly reduce the lifting clamp quality (strength).
◎ When landing the load, never land it on an unstable place.
◎ Never use a lifting clamp with a hydraulic shovel.
◎ Never use in crane operation that drags the load.
◎ Never use in dangerous conditions such as strong wind.
◎ When lifting at 2 points, always lift the load vertically with a balance.
◎ Never lift with 2 lifting clamps and 1 wire rope (except for lifting hooks) .
◎ Never lift a load out of the center of gravity. And always check the clamping condition before lifting.
◎ Lubricate periodically the moving parts and check that there is no oil on the surface of the cam and pad teeth.
◎ Operate daily and periodical inspections to check for abnormalities with the operation of each part of the lifting clamp according to the inspection standards of the operation manual.
◎ Never use other parts than Supertool original parts.
◎ Make sure to read carefully the "Selection standards for 2-point lifting" (P.284) and the "Lifting angle and rated load of wire rope" (P.285).

WARNINGS FOR LIFTING CLAMPS FOR STEEL

◎ Never use for material other than steel.
◎ Never use for lifting load with high hardness (30HRC or higher).
◎ Never lift vertically material with tapered edge on the lifting direction.
◎ Never lift vertically by clamping the sides of the load.
◎ Never lift vertically 2 or more stacked plates.
◎ When there is rust, oil, painting, rust or any other foreign matter on the load, make sure to always remove it before lifting.

WARNINGS FOR LIFTING CLAMPS FOR HOUSING

◎ These clamps are dedicated for lifting panels and wooden beams for housing use. Never lift concrete materials, tile plates, glass plates, stone plates, metal plates or other.
◎ Never lift panel with no structure that are breakable.
◎ Never lift fixed panel.
◎ In principle, the lifting must be vertical lifting. Never operate lateral pulling.
◎ Never lift stacked panels.

WARNINGS FOR LIFTING CLAMPS FOR CONCRETE MATERIAL

◎ Never use for material other than concrete.
◎ Never use for lifting or pulling out U shaped gutter or other concrete material that are buried in the ground.
◎ In principle, the lifting must be vertical lifting. Never operate lateral pulling.
◎ Never lift uncured concrete material (that is not completely hardened).
◎ When there is water, oil, sand, or any other matter on the cam, the pad or the concrete material (the load), the clamp may slip. Always make sure to remove the matter before lifting.
◎ Never lift more that one concrete material at the same time.

⚠ CAUTIONS FOR GEAR PULLERS

◎ Never hit or give an impact to the puller. (For the shock speed puller, it is possible to hit, but only the head part of the forcing screw).
◎ Do not use with unbalanced weight. Make sure to have a well balanced puller setting.
◎ Always make sure to use the appropriate model for the required pulling force and the application.
◎ Never use hydraulic puller near high temperature.
◎ For parts replacement, always use Supertool original parts. If you don't use original parts, the strength balance may be lost and it may lead to very dangerous accident.

⚠ CAUTIONS FOR MICRO AIR GRINDERS

◎ Before use, never fail to read the operation manual and keep it within reach of the workers.
◎ Never operate near flammable substance or fire.
◎ During operation, always wear personal protection equipment (safety goggles, helmet, mask, gloves, ear plugs, safety shoes, etc.)
◎ Never fail to work with appropriate clothes that will not get caught into the rotating part.
◎ Never use for other operation than grinding or polishing.
◎ Always use with air supply pressure within range of 0.4~0.65MPa. Use under high pressure is dangerous.
◎ For air supply, always make sure to fix a set of 3 devices (air filter, regulator and oiler) and to apply spindle oil (VG10~32), 1 drop per minute.
◎ Never use a tip tool with different chucking diameter. Tighten the tip tool securely.
◎ Before fixing the tip tool, always make sure to stop the air supply.
◎ Never touch the tip tool during rotation. Never leave it unattended in rotating state.
◎ When starting air supplying, check again that the hose is correctly connected.
◎ Never drop, hit, give an impact or apply excessive pressure.
◎ Never make any modification on the product.
◎ Start rotation by checking first at low rotation speed and increase the speed gradually.
◎ If any abnormal vibration or sound occurs during operation, stop immediately and proceed to repair or replacement.
◎ Fix the workpiece securely with a vise.

⚠ CAUTIONS FOR SUPER CARBIDE BURS (TIP TOOLS)

◎ Refer to the related page of this catalog to choose the tip tool appropriate for the required specifications. The sleeve length between the tip end and the collet must be smaller than 13mm. If the sleeve length is over 13mm, use with lower rotation speed.
◎ Never use any damaged or off-center tip tool.
◎ If the tip tool is damaged or if abnormal vibration occurs during operation, stop using immediately.
◎ Install the tip tool precisely into the collet chuck of the grinder and tighten it securely with the included wrench.
◎ Always make sure to use the appropriate tip tool according to the size of the micro air grinder. Never force the tip tool into the collet and never use loosely tightened tip tool.
◎ Make sure to use a tip tool with appropriate rotation speed according to the grinder maximum rotation speed.
◎ Operate the grinder with a rotation speed appropriate for the cutting conditions (check the recommended R.P.M. for reference).
◎ For carbide burr, never apply excessive pressure.

⚠ CAUTIONS FOR JIGS AND CLAMPING TOOLS

◎ Never use a tool for anything other than its intended purpose. Use appropriate tool for the required application.
◎ Make sure to use bolts and nuts with shape and size that fit together.
◎ Make sure to tighten securely the bolts and nuts.
◎ Never use if abnormalities like crack, defect, wear, deformation, etc. are found.
◎ Never proceed fixing operation with improper posture. Make sure to always stand firmly on your feet and maintain equilibrium.
◎ When using hydraulic or pneumatic tools, select the tool according to the conditions of use like the output, the stroke, the fixing, etc. During operation, be careful to never touch with your hand, your fingers or your feet.
◎ Never make any modification on the product. Heating or processing can significantly reduce the product quality (strength).

⚠ CAUTIONS FOR MAGNETIC SEPARATION TOOLS

◎ Heating a magnet will reduce its magnetic properties. Always use within the environment temperature limit.
◎ Never make any modification or processing on the product. Especially it can reduce significantly its magnetic properties.
◎ Never give strong impact to the product. It may cause malfunction.
◎ If the magnetic device or tool gets close to any magnetic recording medium like floppy disk, magnetic card, mobile phone, etc., it may cause damage of the recorded data. And if it gets close to any precision equipment like mobile phone, PC or electronic watch, it may cause malfunction. Make sure to pay attention.

⚠ WARNINGS FOR MAGNETIC SEPARATION TOOLS

◎ The strong catching impact of the magnet device or tool may cause damage to the product and harm to your fingers. Make sure to pay attention. Make also sure to be careful that your fingers or any part of your body don't get caught into the device.
◎ If the magnetic device or tool gets close to person wearing a pacemaker or any other medical electronic device, it is very dangerous. Make sure to pay attention.

⚠ CAUTIONS FOR KNURLING HOLDERS

◎ Always switch off the electricity of machine when operating the holder for maintenance, fixing and removal.
◎ Always put on safety goggles or apply a safety cover when in use.
◎ Before use, always begin with a trial and check for vibrations or abnormal sounds.
◎ During rotation, check for eccentric rotation or vibration of the processed work.
◎ Securely fix the wheels and the parts with included tools.
◎ Never use other than Supertool original wheels and parts.
◎ Make sur to use cutting lubricant when processing cut knurling.
◎ Never use if abnormalities like crack, chip, abrasion or deformation, etc. are found.
◎ Never give any impact to the holder and never hit with a hammer.
◎ Never make any modification on the product. Heating or processing can significantly reduce the product quality (strength).



GENERAL HAND TOOLS & CLAMPS



Tool sets/cases
P.20 ▶



Socket wrenches
P.25 ▶



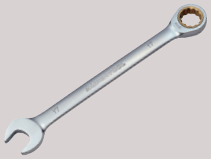
Ratchet wrenches
P.28 ▶



Offset wrenches
P.35 ▶



Grips
P.36 ▶



Gear wrenches
P.37 ▶



Open-end spanners
P.38 ▶



Spanners
P.39 ▶



Safety ropes
P.40 ▶



Combination hammer
P.41 ▶



Sockets
P.42 ▶



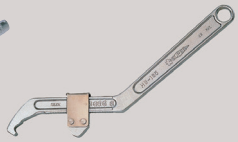
Hex key wrenches
P.44 ▶



Adjustable angle wrenches
P.47 ▶



Pliers
P.49 ▶



Hook spanners
P.51 ▶



Pin spanners
P.51 ▶



Toggle clamps
P.52 ▶



C clamps
P.71 ▶



L clamps
P.72 ▶



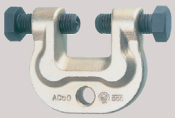
Super setters
P.74 ▶



Grip pliers
P.75 ▶



Welding tools
P.77 ▶



Iron man
P.78 ▶



S8000DX

TOOL SET (Deluxe Set) for Professional Use

▶ Features

- Deluxe tool set suitable for maintenance of machinery, automobiles and farming machines.
- All individual pieces are set in trays.

Square drive 9.5 mm 3/8"

Item No.	Total Q'ty (pcs)	Set N.W. (kg)
S8000DX	70	18.7

Set details — Total Q'ty: 70pcs

Item name	Item No.	Size (mm)	Q'ty
Socket (9.5sq.) 6pt.	**NHS3 (18pcs)**	6·7·8·9·10·11·12	18
Socket (9.5sq.) 12pt.		13·14·15·16·17·18·19·20·21·22·24	
Ratchet handle (push type)	**NRH3P**	9.5sq. (L=181)	1
Extension bar	**NEB3075**	9.5sq. (L=75)	1
	NEB3150	9.5sq. (L=150)	1
	NEB3250	9.5sq. (L=250)	1
Nut spinner handle	**NSH3**	9.5sq. (L=253)	1
T-Slide handle	**NTH3**	9.5sq. (L=165)	1
Universal joint	**NUJ3**	9.5sq. (L=53)	1
Gear wrench (standard type)	**GRW (10sizes)**	8·10·12·13·14·17·19·21·22·24	10
Double offset box end wrench	**S4506N**	8×10·11×13·12×14·17×19·19×22·24×27	6
Double open end spanner	**SX60J**	6×7·8×10·11×13·12×14·17×19·22×24	6
Screwdriver	**SD06S**	⊖75·⊖100·⊖150 ⊕No.1·⊕No.2·⊕No.3	6
Wide adjustable wrench	**MWM36**	36	1
Combination pliers	**CPZ200**	200	1
Water pump pliers	**GWZ250H**	250	1
Side cutting pliers	**SZ175S**	175	1
Long nose pliers	**SL150S**	150	1
Diagonal cutting pliers	**SN150SS**	150	1
Long ball-point hex key wrench	**HKLB9S**	1.5·2·2.5·3·4·5·6·8·10	9
Combination hammer	**HM7410**	1pound	1
Tool case (chest type)	**S505R**	505×233×300	1



S7000DX

TOOL SET (Deluxe Set) for Professional Use

▶ Features

- Deluxe tool set suitable for maintenance of machinery, automobiles and farming machines.
- All individual pieces are set in trays.

Square drive 12.7 mm 1/2"

Item No.	Total Q'ty (pcs)	Set N.W. (kg)
S7000DX	62	19.7

Set details — Total Q'ty: 62pcs

Item name	Item No.	Size (mm)	Q'ty
Socket (12.7sq.) 12Pt.	**NHS4 (13pcs)**	10·12·13·14·17·19·21·22·24·26·27·30·32	13
Ratchet handle (push type)	**NRH4P**	12.7sq. (L=257)	1
Extension bar	**NEB4150**	12.7sq. (L=150)	1
Nut spinner handle	**NSH4**	12.7sq. (L=306)	1
T-Slide handle	**NTH4**	12.7sq. (L=250)	1
Gear wrench (standard type)	**GRW (10sizes)**	8·10·12·13·14·17·19·21·22·24	10
Double offset box end wrench	**S4506N**	8×10·11×13·12×14·17×19·19×22·24×27	6
Double open end spanner	**SX60J**	6×7·8×10·11×13·12×14·17×19·22×24	6
Screwdriver	**SD06S**	⊖75·⊖100·⊖150 ⊕No.1·⊕No.2·⊕No.3	6
Wide adjustable wrench	**MWM36**	36	1
Combination pliers	**CPZ200**	200	1
Water pump pliers	**GWZ250H**	250	1
Side cutting pliers	**SZ175S**	175	1
Long nose pliers	**SL150S**	150	1
Diagonal cutting pliers	**SN150SS**	150	1
Long ball-point hex key wrench	**HKLB9S**	1.5·2·2.5·3·4·5·6·8·10	9
Combination hammer	**HM7410**	1pound	1
Tool case (chest type)	**S505B**	505×233×300	1

●For all the appendix of the general hand tools & clamps, please refer to P.278～280



Square drive 12.7 mm 1/2"

Total Q'ty:52pcs



S7000DS

TOOL SET (Deluxe Set) for Professional Use

▶ Features

- Tool set suitable for maintenance of machinery, automobiles and farming machines.
- All individual pieces are set in trays.

Item No.	Total Q'ty(pcs)	Set N.W.(kg)
S7000DS	52	15.3

■Set details

Item name	Item No.	Size(mm)	Q'ty
Socket(12.7sq.)12pt.	**NHS4 (14pcs)**	8·10·12·13·14·17·19·21·22·24·26·27·30·32	14
Ratchet handle (push type)	**NRH4P**	12.7sq.(L=257)	1
Nut spinner handle	**NSH4**	12.7sq.(L=306)	1
Extension bar	**NEB4150**	12.7sq.(L=150)	1
Double offset box end wrench	**S4506N**	8×10·11×13·12×14·17×19·19×22·24×27	6
Double open end spanner	**SX60J**	6×7·8×10·11×13·12×14·17×19·22×24	6
Screwdriver	**SD06S**	⊖75·⊖100·⊖150 ⊕No.1·⊕No.2·⊕No.3	6

Item name	Item No.	Size(mm)	Q'ty
Adjustable angle wrench (heavy duty type)	**MAN300**	300	1
Combination pliers	**CPZ200**	200	1
Water pump pliers	**GWP250**	250	1
Side cutting pliers	**SZ175S**	175	1
Long nose pliers	**SL150S**	150	1
Diagonal cutting pliers	**SN150SS**	150	1
Long ball-point hex key wrench	**HKLB9S**	1.5·2·2.5·3·4·5·6·8·10	9
Combination hammer	**HM7410**	1pound	1
Tool case	**S496B**	496×222×240	1



Square drive 12.7 mm 1/2"

Total Q'ty:48pcs

S6500N

TOOL SET (Standard set) for Professional Use

▶ Features

- Standard tool set suitable for maintenance of machinery, automobiles and farming machines.
- The tool case material is resin.

Item No.	Total Q'ty(pcs)	Set N.W.(kg)
S6500N	48	8.4

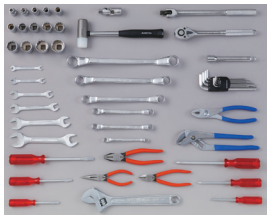
■Set details

Item name	Item No.	Size(mm)	Q'ty
Socket(12.7sq.)12pt.	**NHS4 (11pcs)**	10·12·13·14·17·19·21·22·24·26·27	11
Combination spanner	**CBW1100**	7·8·10·12·13·14·17·19·21·22·24(cloth bag)	11
Screwdriver	**SD06S**	⊖75·⊖100·⊖150 ⊕No.1·⊕No.2·⊕No.3	6
Long ball-point hex key wrench	**HKLB9S**	1.5·2·2.5·3·4·5·6·8·10	9
Ratchet handle (push type)	**NRH4P**	12.7sq.(L=257)	1
Extension bar	**NEB4150**	12.7sq.(L=150)	1

Item name	Item No.	Size(mm)	Q'ty
Wide adjustable wrench	**MWM36**	36	1
Combination pliers	**CPZ200**	200	1
Water pump pliers	**GWP250**	250	1
Side cutting pliers	**SZ175S**	175	1
Long nose pliers	**SL150S**	150	1
Diagonal cutting pliers	**SN150SS**	150	1
Combination hammer	**HM7410**	1pound	1
Cotton work gloves	—	1pair	1
Tool case	**SR450S**	455×240×206	1

●For all the appendix of the general hand tools & clamps, please refer to P.278～280





Square drive 12.7 mm 1/2"

S5000DS

DOUBLE LID TOOL SET (3-Layer Type) for Professional Use (Deluxe Type)

▶ Features

- Tool set suitable for maintenance of machinery, automobiles and farming machines.
- All individual pieces are set in sponge cushions.
- The tool case opens widely, making it easy to take and replace tools.

Item No.	Total Q'ty (pcs)	Set N.W. (kg)
S5000DS	53	14.6

■Set details　Total Q'ty:53pcs

Item name	Item No.	Size (mm)	Q'ty
Socket (12.7sq.) 12pt.	**NHS4 (14pcs)**	8·10·12·13·14·17·19·21·22·24·26·27·30·32	14
Ratchet handle (push type)	**NRH4P**	12.7sq. (L=257)	1
Nut spinner handle	**NSH4**	12.7sq. (L=306)	1
Extension bar	**NEB4150**	12.7sq. (L=150)	1
Universal joint	**NUJ4**	12.7sq. (L=73)	1
Double offset box end wrench	**S4506N**	8×10·11×13·12×14·17×19·19×22·24×27	6
Double open end spanner	**SX60J**	6×7·8×10·11×13·12×14·17×19·22×24	6
Screwdriver	**SD06S**	⊖75·⊖100·⊖150 ⊕No.1·⊕No.2·⊕No.3	6
Adjustable angle wrench (heavy duty type)	**MAN300**	300	1
Combination pliers	**CPZ200**	200	1
Water pump pliers	**GWP250**	250	1
Side cutting pliers	**SZ175S**	175	1
Long nose pliers	**SL150S**	150	1
Diagonal cutting pliers	**SN150SS**	150	1
Long ball-point hex key wrench	**HKLB9S**	1.5·2·2.5·3·4·5·6·8·10	9
Combination hammer	**HM7410**	1pound	1
Tool case	**S470B3**	470×220×345	1







Square drive 12.7 mm 1/2"

S5000DX

DOUBLE LID TOOL SET (3-Layer Type) for Professional Use (Deluxe Type)

▶ Features

- Tool set suitable for maintenance of machinery, automobiles and farming machines.
- Except the gear wrenches set inside a cloth bag, all individual pieces are set in sponge cushions.
- The tool case opens widely, making it easy to take and replace tools.

Item No.	Total Q'ty (pcs)	Set N.W. (kg)
S5000DX	63	16.7

■Set details　Total Q'ty:63pcs

Item name	Item No.	Size (mm)	Q'ty
Socket (12.7sq.) 12pt.	**NHS4 (14pcs)**	8·10·12·13·14·17·19·21·22·24·26·27·30·32	14
Ratchet handle (push type)	**NRH4P**	12.7sq. (L=257)	1
Nut spinner handle	**NSH4**	12.7sq. (L=306)	1
Extension bar	**NEB4150**	12.7sq. (L=150)	1
Universal joint	**NUJ4**	12.7sq. (L=73)	1
Gear wrench (standard type)	**GRW (10Sizes)**	8·10·12·13·14·17·19·21·22·24	10
Double offset box end wrench	**S4506N**	8×10·11×13·12×14·17×19·19×22·24×27	6
Double open end spanner	**SX60J**	6×7·8×10·11×13·12×14·17×19·22×24	6
Screwdriver	**SD06S**	⊖75·⊖100·⊖150 ⊕No.1·⊕No.2·⊕No.3	6
Adjustable angle wrench (heavy duty type)	**MAN300**	300	1
Combination pliers	**CPZ200**	200	1
Water pump pliers	**GWP250**	250	1
Side cutting pliers	**SZ175S**	175	1
Long nose pliers	**SL150S**	150	1
Diagonal cutting pliers	**SN150SS**	150	1
Long ball-point hex key wrench	**HKLB9S**	1.5·2·2.5·3·4·5·6·8·10	9
Combination hammer	**HM7410**	1pound	1
Tool case	**S470B3**	470×220×345	1

●For all the appendix of the general hand tools & clamps, please refer to P.278～280



Square drive 12.7 mm 1/2"

Total Q'ty: 47pcs



S5000S

DOUBLE LID TOOL SET (2-Layer Type) for Professional Use (Standard Type)

▶ Feature

- Standard tool set suitable for maintenance of machinery, automobiles and farming machines.

Item No.	Total Q'ty (pcs)	Set N.W. (kg)
S5000S	47	11.6

Set details

Item name	Item No.	Size (mm)	Q'ty
Socket (12.7sq.) 12pt.	**NHS4 (11pcs)**	10·12·13·14·17·19·21·22·24·26·27	11
Ratchet handle (push type)	**NRH4P**	12.7sq. (L=257)	1
Extension bar	**NEB4150**	12.7sq. (L=150)	1
Double offset box end wrench	**S4506N**	8×10·11×13·12×14·17×19·19×22·24×27	6
Double open end spanner	**SX60J**	6×7·8×10·11×13·12×14·17×19·22×24	6
Screwdriver	**SD06S**	⊖75·⊖100·⊖150 ⊕No.1·⊕No.2·⊕No.3	6

Item name	Item No.	Size (mm)	Q'ty
Adjustable angle wrench (heavy duty type)	**MAN300**	300	1
Combination pliers	**CPZ200**	200	1
Water pump pliers	**GWP250**	250	1
Side cutting pliers	**SZ175S**	175	1
Diagonal cutting pliers	**SN150SS**	150	1
Long ball-point hex key wrench	**HKLB9S**	1.5·2·2.5·3·4·5·6·8·10	9
Combination hammer	**HM7410**	1pound	1
Tool case	**S470B2**	470×220×300	1





S470B3

DOUBLE LID METAL TOOL CASE (3-Layer Type)

▶ Features

- 3 layers, double opening lid type.
- Wide opening making it easy to take and replace tools.

▶ Accessories

- Dividers : 14 sheets

＊No sponge cushions to set tools are included.

Item No.	Color	Size (mm)	N.W. (kg)
S470B3	Matte black	470×220×230	6.1

Height including the handle : 345mm

S470B2

DOUBLE LID METAL TOOL CASE (2-Layer Type)

▶ Feature

- 2 layers, double opening lid type.

▶ Accessories

- Dividers : 14 sheets

＊No sponge cushions to set tools are included.

Item No.	Color	Size (mm)	N.W. (kg)
S470B2	Matte black	470×220×185	4.8

Height including the handle : 300mm

●For all the appendix of the general hand tools & clamps, please refer to P.278～280



S505B



S505R

S505B • S505R

METAL TOOL CASE (Chest Type) (3-Drawer Type)

▶ Features

- Drawers are equipped with ball bearing sliders.
- Keep your valuable tools safely with the key lock feature.
- Outstanding durability due to high quality coat.

＊No trays to set tools are included.



Ball bearing sliders

Drawers are equipped with ball bearing sliders allowing smooth opening and closing.



Side handles

When the tool case gets heavy, you can conveniently carry it by the side handles.



Lock mechanism

Closing the top lid locks the drawers automatically, preventing accidental pop out of the tools.



Key lock, emblem

Keep your valuable tools safely with the key lock feature. With "SUPERTOOL" mark emblem.

Item No.	Color	Size(mm)	Upper tray / drawer size (mm)		N.W. (kg)
			Upper tray	Drawer	
S505B	Gloss black	505×233×300	490×220×60	435×200×50	9.4
S505R	Gloss red				



S496B

METAL TOOL CASE (Chest Type) (2-Drawer Type)

▶ Features

- Drawers are equipped with ball bearing sliders.
- Keep your valuable tools safely with the key lock feature.
- Outstanding durability due to high quality coat.

＊No trays to set tools are included.

Item No.	Color	Size(mm)	Upper tray / drawer size (mm)		N.W. (kg)
			Upper tray	Drawer	
S496B	Gloss black	496×222×240	477×210×60	466×191×50	7.6



SR450S

TOOL CASE (Super High Impact Resistant Copolymer Resin Made)

▶ Features

- The case is divided in 2, upper and lower, trays.
- For the upper tray, EVA resin to set tools is included.
- For the lower tray, small items, like screws, can be stored.

Item No.	Color	Size(mm)	N.W.(kg)
SR450S	Black	455×240×206	1.9

●For all the appendix of the general hand tools & clamps, please refer to P.278～280



Square drive 9.5 mm 3/8"

SOCKET WRENCH SET

N310S

▶ Feature ● Steel case as standard acc.

Set details

Item name	Item No.	Size(mm)
Socket(9.5sq.)6pt.	NHS3 (10pcs)	7.8.10.12
Socket(9.5sq.)12pt.		13.14.17.19.21.22
Ratchet handle (push type)	NRH3P	9.5sq.(L=181)
T-Slide handle	NTH3	9.5sq.(L=165)
Universal joint	NUJ3	9.5sq.(L=53)
Extension bar	NEB3075	9.5sq.(L=75)
	NEB3150	9.5sq.(L=150)

Item No.	Q'ty	Metal tool case size (mm)		Set N.W. (kg)
		L	H	
N310S	15	305	123	2



Square drive 9.5 mm 3/8"

N313S

▶ Feature ● Steel case as standard acc.

Set details

Item name	Item No.	Size(mm)
Socket(9.5sq.)6pt.	NHS3 (13pcs)	6.7.8.9.10.11.12
Socket(9.5sq.)12pt.		13.14.17.19.21.22
Ratchet handle (push type)	NRH3P	9.5sq.(L=181)
Nut spinner handle	NSH3	9.5sq.(L=253)
T-Slide handle	NTH3	9.5sq.(L=165)
Universal joint	NUJ3	9.5sq.(L=53)
Extension bar	NEB3075	9.5sq.(L=75)
	NEB3150	9.5sq.(L=150)

Item No.	Q'ty	Metal tool case size (mm)		Set N.W. (kg)
		L	H	
N313S	19	305	123	2.4



Square drive 9.5 mm 3/8"

N318S

▶ Feature ● Steel case as standard acc.

Set details

Item name	Item No.	Size(mm)
Socket(9.5sq.)6pt.	NHS3 (18pcs)	6.7.8.9.10.11.12
Socket(9.5sq.)12pt.		13.14.15.16.17.18.19. 20.21.22.24
Ratchet handle (push type)	NRH3P	9.5sq.(L=181)
Nut spinner handle	NSH3	9.5sq.(L=253)
T-Slide handle	NTH3	9.5sq.(L=165)
Universal joint	NUJ3	9.5sq.(L=53)
Extension bar	NEB3075	9.5sq.(L=75)
	NEB3150	9.5sq.(L=150)
	NEB3250	9.5sq.(L=250)

Item No.	Q'ty	Metal tool case size (mm)		Set N.W. (kg)
		L	H	
N318S	25	305	123	2.7

●For all the appendix of the general hand tools & clamps, please refer to P.278~280







N-S
SOCKET WRENCH SET

▶ Feature
- Steel case as standard acc.

Square drive 12.7 mm 1/2"

N412S Set details

Item name	Item No.	Size(mm)
Socket(12.7sq.)12pt.	**NHS4 (12pcs)**	8.10.11.12.13.14.17.19. 21.22.24.27
Ratchet handle (push type)	**NRH4P**	12.7sq.(L=257)
T-Slide handle	**NTH4**	12.7sq.(L=250)
Universal joint	**NUJ4**	12.7sq.(L=73)
Extension bar	**NEB4150**	12.7sq.(L=150)

N415S Set details

Item name	Item No.	Size(mm)
Socket(12.7sq.)12pt.	**NHS4 (15pcs)**	8.10.11.12.13.14.17.19. 21.22.24.26.27.30.32
Ratchet handle (push type)	**NRH4P**	12.7sq.(L=257)
Nut spinner handle	**NSH4**	12.7sq.(L=306)
T-Slide handle	**NTH4**	12.7sq.(L=250)
Universal joint	**NUJ4**	12.7sq.(L=73)
Extension bar	**NEB4075**	12.7sq.(L=75)
	NEB4150	12.7sq.(L=150)

N420S Set details

Item name	Item No.	Size(mm)
Socket(12.7sq.)12pt.	**NHS4 (20pcs)**	8.9.10.11.12.13.14.15. 16.17.18.19.21.22.23. 24.26.27.30.32
Ratchet handle (push type)	**NRH4P**	12.7sq.(L=257)
Nut spinner handle	**NSH4**	12.7sq.(L=306)
T-Slide handle	**NTH4**	12.7sq.(L=250)
Universal joint	**NUJ4**	12.7sq.(L=73)
Extension bar	**NEB4075**	12.7sq.(L=75)
	NEB4150	12.7sq.(L=150)

Item No.	Q'ty	Metal tool case size (mm)		Set N.W. (kg)
		L	H	
N412S	16	447	150	3.35
N415S	21			4.55
N420S	26			4.9



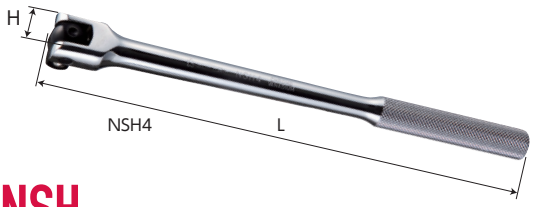
Square drive 9.5 mm 3/8"

Square drive 12.7 mm 1/2"

NRH-P
RATCHET HANDLE (Push Type)

▶ Features
- When the socket is put on, unintended socket detachment can be avoided.
- One-touch setting by pressing the push button.
- Suitable for work in confined spaces with a number of gear of 72 and feed angle of 5˚.

Item No.	Square drive (mm)	Size(mm)		Head thickness (mm)	N.W. (g)
		L	D		
NRH3P	9.5	181	32	18	330
NRH4P	12.7	257	40	21	640



Square drive 9.5 mm 3/8"

Square drive 12.7 mm 1/2"

NSH
NUT SPINNER HANDLE

▶ Feature
- The head turns 90˚ to left & right to be used in 180˚ range.

Item No.	Square drive (mm)	Size(mm)		Head thickness (mm)	N.W. (g)
		L	H		
NSH3	9.5	253	22	16	320
NSH4	12.7	306	28	20	580

●For all the appendix of the general hand tools & clamps, please refer to P.278~280

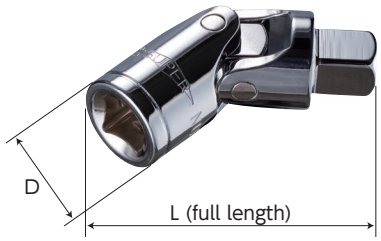


NEB3250

NEB
EXTENSION BAR

Square drive 9.5 mm 3/8" | Square drive 12.7 mm 1/2"

Item No.	Square drive (mm)	Size (mm)		N.W. (g)
		L	D	
NEB3075	9.5	75	12	70
NEB3150	9.5	150	12	140
NEB3250	9.5	250	12	230
NEB4075	12.7	75	23	120
NEB4150	12.7	150	23	230

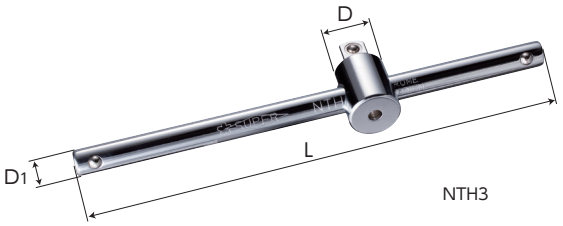


NUJ4

NUJ
UNIVERSAL JOINT

Square drive 9.5 mm 3/8" | Square drive 12.7 mm 1/2"

Item No.	Square drive (mm)	Size (mm)		N.W. (g)
		L	D	
NUJ3	9.5	56	18	60
NUJ4	12.7	73	25	150

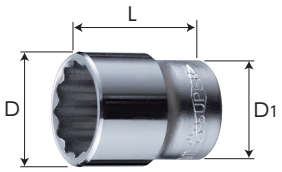


NTH3

NTH
T-SHAPED SLIDING HANDLE

Square drive 9.5 mm 3/8" | Square drive 12.7 mm 1/2"

Item No.	Square drive (mm)	Size (mm)			N.W. (g)
		L	D	D1	
NTH3	9.5	164	18.5	9.2	120
NTH4	12.7	250	23.7	12.8	330





NHS310

NHS
SOCKET for Socket Wrench

Square drive 9.5 mm 3/8" | Square drive 12.7 mm 1/2"

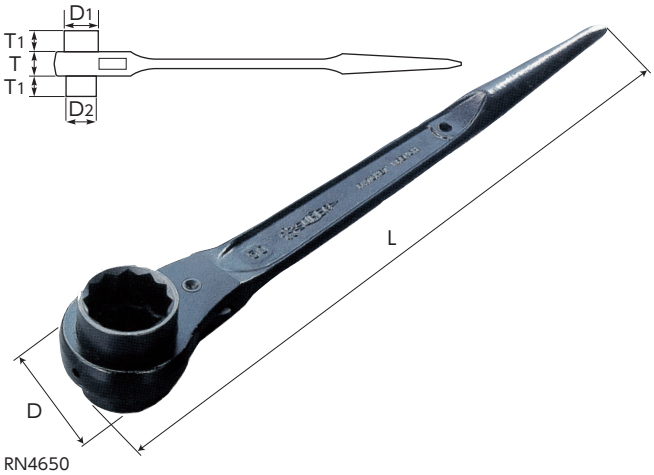
▌NHS306~324 Square drive 9.5mm (3/8")

Item No.	Width across flats (mm)	Size (mm)			Socket shape	N.W. (g)
		L	D	D1		
NHS306	6	28	10	17	6pt.	20
NHS307	7	28	11	17	6pt.	20
NHS308	8	28	12	17	6pt.	20
NHS309	9	28	13.5	17	6pt.	25
NHS310	10	28	14.5	17	6pt.	25
NHS311	11	28	16	17	6pt.	25
NHS312	12	28	17	17	6pt.	25
NHS313	13	28	18	18	12pt.	30
NHS314	14	28	20	18	12pt.	30
NHS315	15	28	22	19	12pt.	35
NHS316	16	28	22	19	12pt.	35
NHS317	17	30	24	21	12pt.	50
NHS318	18	30	26	22	12pt.	55
NHS319	19	30	26	22	12pt.	55
NHS320	20	32	28	26	12pt.	75
NHS321	21	32	28	26	12pt.	75
NHS322	22	32	30	26	12pt.	80
NHS324	24	32	32	28	12pt.	85

▌NHS408~432 Square drive 12.7mm (1/2")

Item No.	Width across flats (mm)	Size (mm)			Socket shape	N.W. (g)
		L	D	D1		
NHS408	8	38	14	22	12pt.	45
NHS409	9	38	14.5	22	12pt.	45
NHS410	10	38	15.5	22	12pt.	45
NHS411	11	38	16.5	22	12pt.	45
NHS412	12	38	18	22	12pt.	50
NHS413	13	38	19	22	12pt.	50
NHS414	14	38	20.5	22	12pt.	50
NHS415	15	38	22	20.5	12pt.	50
NHS416	16	38	22	20.5	12pt.	50
NHS417	17	38	24	22	12pt.	60
NHS418	18	38	26	23	12pt.	80
NHS419	19	38	26	23	12pt.	65
NHS421	21	38	28	24.5	12pt.	70
NHS422	22	38	29.5	26	12pt.	90
NHS423	23	38	32	26	12pt.	105
NHS424	24	38	32	26	12pt.	100
NHS426	26	41	35.5	28	12pt.	135
NHS427	27	43	35.5	30	12pt.	135
NHS430	30	44	40	32	12pt.	185
NHS432	32	44	42	34	12pt.	195

●For all the appendix of the general hand tools & clamps, please refer to P.278~280



RN4650

RN
RATCHET WRENCH, Double Size

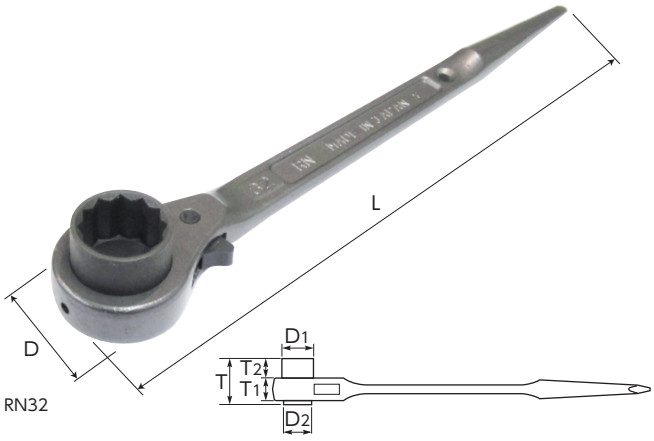
Cation paint (Excellent rust proofing)

▶ Features

- The opening of the socket for change over of the reversible type enables easy cleaning of sand and dirt, etc.
- Safety rope holes are provided on all sizes. (17x19･17x21 and 19x21 have 2 holes)

Item No.	Size name (mm)	Size (mm)						N.W. (g)
		L	D	D1	D2	T	T1	
RN1012	10×12	225	28	18	15	14	11	160
RN1013	10×13	225	28	18	15	14	11	160
RN1014	10×14	225	28	19	15	14	11	160
RN1113	11×13	225	28	18	16	14	11	160
RN1214	12×14	225	28	19	18	14	11	160
RN1317	13×17	265	34	23	18	16	14.5	240
RN1319	13×19	310	41	26	18	18	16	400
RN1415	14×15	265	34	20	19	16	14.5	240
RN1417	14×17	265	34	23	19	16	14.5	240
RN1719	17×19	310	41	27	24	18	16	400
RN1721	17×21	310	41	29	24	18	16	400
RN1722	17×22	310	42	30	23	18	16	430
RN1921	19×21	310	41	29	27	18	16	400
RN1922	19×22	310	42	30	26	18	16	430
RN1924	19×24	355	49	33	26	20	18	680
RN2124	21×24	355	49	33	28	20	18	680
RN2126	21×26	355	49	36	28	20	18	680

Item No.	Size name (mm)	Size (mm)						N.W. (g)
		L	D	D1	D2	T	T1	
RN2127	21×27	355	49	37	28	20	18	680
RN2224	22×24	355	49	33	30	20	18	680
RN2227	22×27	355	49	37	30	20	18	680
RN2326	23×26	355	49	36	31	20	18	680
RN2426	24×26	355	49	36	33	20	18	680
RN2427	24×27	355	49	37	33	20	18	680
RN2430	24×30	400	62	42	34	22	20.5	1,080
RN2632	26×32	400	62	44	36	22	20.5	1,080
RN2730	27×30	400	62	42	38	22	20.5	1,080
RN2732	27×32	400	62	44	38	22	20.5	1,080
RN3032	30×32	400	62	44	42	22	20.5	1,080
RN3235	32×35	445	67	47	43	24	21.5	1,400
RN3236	32×36	445	67	49	43	24	21.5	1,400
RN3541	35×41	490	76	55	47	26	24	2,050
RN3641	36×41	490	76	55	49	26	24	2,050
RN4146	41×46	500	83	61	55	29	23.5	2,500
RN4650	46×50	545	89	66	61	29	25.5	3,080

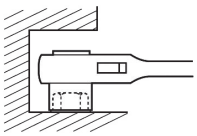


RN32

RN
RATCHET WRENCH, Single Size

▶ Features

- Reversible claw for use in clockwise or counter clockwise directions.
- This wrench is optimal for tightening in narrow spaces as the socket extends from only one side.
- Metallic grey baked-on finish.
- For sizes 19mm and above, a hole for attaching a safety rope is provided.



Item No.	Size name (mm)	Size (mm)							N.W. (g)
		L	D	D1	D2	T	T1	T2	
RN10	10	225	28	15	18	26	14	10	170
RN12	12	225	28	18	18	26	14	10	180
RN13	13	225	28	18	18	26	14	10	180
RN14	14	225	28	19	18	26	14	10	180
RN17	17	270	34	23	19	32	16	14.5	300
RN19	19	310	41	26	26	36	18	16	380
RN21	21	310	41	28	26	36	18	16	460
RN22	22	310	42	30	26	36	18	16	480
RN24	24	355	49	33	35	40	20	18	650

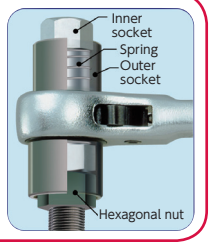
Item No.	Size name (mm)	Size (mm)							N.W. (g)
		L	D	D1	D2	T	T1	T2	
RN26	26	355	49	35	35	40	20	18	680
RN27	27	355	51	36	32	40	20	18	710
RN30	30	400	62	41	41	44	22	20.5	1,100
RN32	32	400	62	43	41	44	22	20.5	1,150
RN35	35	445	67	47	43	47	24	21.5	1,250
RN36	36	445	67	49	43	47	24	21.5	1,250
RN41	41	490	76	55	49	52	26	24	1,850
RN46	46	500	83	61	55	54	29	24	2,250

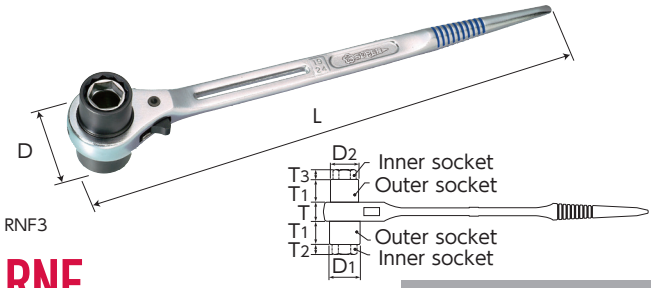
●For all the appendix of the general hand tools & clamps, please refer to P.278～280

4-SIZE RATCHET WRENCH
5-SIZE RATCHET WRENCH

4 sizes at 1 end !

- When the outer socket is used, the inner socket is pushed up easily, and after the use, the inner socket returns to the original position by spring.
- Suitable for plumbing work, duct work, electric facility work, building construction and work on any kind of facilities.





RNF

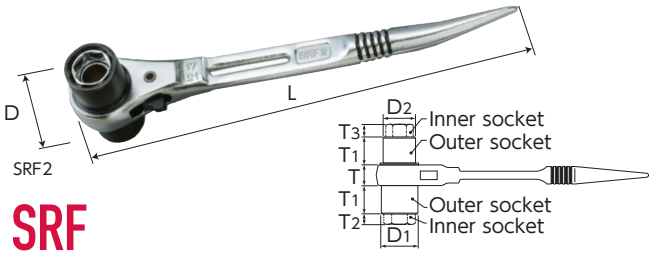
4-SIZE RATCHET WRENCH PAT.

MOVIE

▶ Features

- Convenient slide hole (60, 80mm) for our safety rope to be attached.
- Anti-slipping colored grooves are designed at the grip.
- Nickel chrome plate finish.

Item No.	Size name (mm)		Size (mm)								N.W. (g)
	Inner socket	Outer socket	L	D	D1	D2	T	T1	T2	T3	
RNF2	14 17	19 21	310	41	29	27	18	22	8.5	9.5	440
RNF3	17 19	21 24	310	41	32	28	18	25	9.5	11.5	450
RNF4	19 22	24 27	356	51	37	33	20	27	11.5	12.5	780



SRF

4-SIZE RATCHET WRENCH (Short Type) PAT.

MOVIE

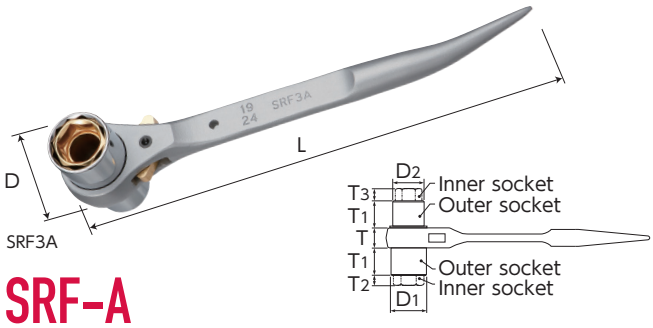
▶ Features

- Light-weighted and compact.
- Convenient slide hole for our safety rope to be attached.

∗ For SFR1, a small round hole is designed for our safety rope to be attached and the spear is straight, not bent.

- Nickel chrome plate finish.

Item No.	Size name (mm)		Size (mm)								N.W. (g)
	Inner socket	Outer socket	L	D	D1	D2	T	T1	T2	T3	
SRF1	10 13	14 17	198	36	23	19	16	22	6.5	7.5	290
SRF2	14 17	19 21	240	41	29	27	18	22	8.5	9.5	460
SRF3	17 19	21 24	240	41	32	28	18	25	9.5	11.5	470



SRF-A

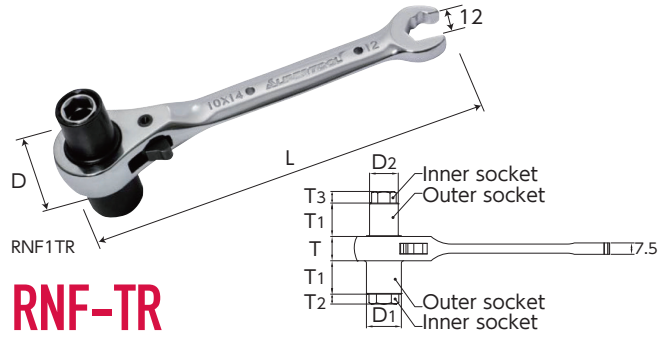
4-SIZE ALUMINUM RATCHET WRENCH (Short Type) PAT.

▶ Features

- Body : Aluminum ; Inner Socket : Titanium plate.
- Ultra light-weighted and compact.
- Small round hole for our safety rope to be attached.

∗ For SRF1A the spear is straight, not bent.

Item No.	Size name (mm)		Size (mm)								N.W. (g)
	Inner socket	Outer socket	L	D	D1	D2	T	T1	T2	T3	
SRF1A	10 13	14 17	198	36	23	19	16	22	6.5	7.5	196
SRF3A	17 19	21 24	240	41	32	28	18	25	9.5	11.5	310



RNF-TR

5-SIZE RATCHET WRENCH PAT.

▶ Features

- The spanner end also comes with a ratchet mechanism.
- 2 small round holes for our safety rope to be attached (2-Φ4).
- Suitable for plumbing work, duct work, electric facility work, building construction and work on any kind of facilities.
- Nickel chrome plate finish.

Item No.	Size name (mm)		Size (mm)								N.W. (g)
	Inner socket	Outer socket	L	D	D1	D2	T	T1	T2	T3	
RNF0TR	8 10	13 14	166	35	18.9	18.2	16	19.5	6	7	250
RNF1TR	10 13	14 17	166	35	23	18.9	16	22	6.5	7.5	270

●For all the appendix of the general hand tools & clamps, please refer to P.278～280

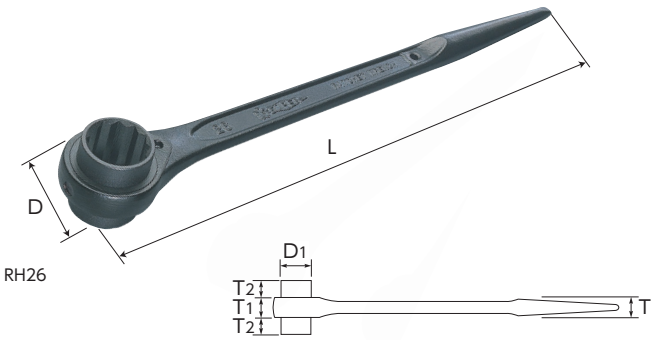
RH

RATCHET WRENCH, Single Size (Heavy Duty Type)

Cation paint (Excellent rust proofing)

▶ Features

- Can be turned over for use in clockwise or counter clockwise directions.
- For sizes 17mm and above, a hole for attaching a safety rope is provided.



Item No.	Size name (mm)	Size (mm) L	D	D1	T	T1	T2	N.W. (g)
RH10	10	225	28	15	11	12	8	130
RH12	12	225	28	18	11	12	8	130
RH13	13	225	28	18	11	12	9	140
RH14	14	225	28	19	11	12	9	140
RH17	17	290	37	23	14	15	11	270
RH19	19	290	37	26	14	15	11	280
RH21	21	335	46	28	17	16	12	410
RH22	22	335	46	30	17	16	12	420
RH24	24	335	46	32	17	16	12	430

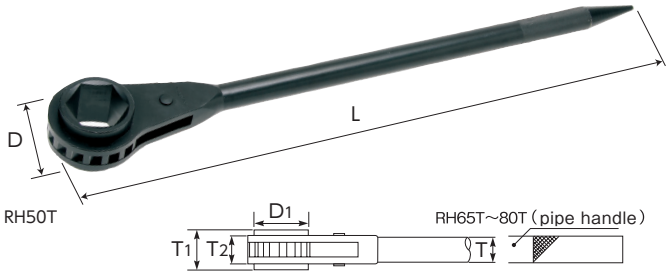
Item No.	Size name (mm)	Size (mm) L	D	D1	T	T1	T2	N.W. (g)
RH26	26	355	51	35	19	16	13	520
RH27	27	355	51	36	19	16	13	520
RH30	30	400	59	41	23	18	18	750
RH32	32	400	59	43	23	18	18	920
RH35	35	445	66	47	25	19	22	1,220
RH36	36	445	66	49	25	19	22	1,350
RH41	41	490	75	55	30	21	26	1,750
RH46	46	500	84	61	30	22	24	2,100

RH-T

RATCHET WRENCH, Single Size (Heavy Duty Type)

▶ Features

- Can be turned over for use in clockwise or counter clockwise directions.
- Black baked-on finish.
- The socket shape is hexagonal type.



Item No.	Size name (mm)	Size (mm) L	D	D1	T	T1	T2	N.W. (kg)
RH50T	50	644	87	69	28	65	33	4
RH55T	55	759	97	76	30		35	5.5
RH60T	60	806	102	82	32	70	38	6.5
RH65T	65	907	113	92	34×4.5	75	46	7

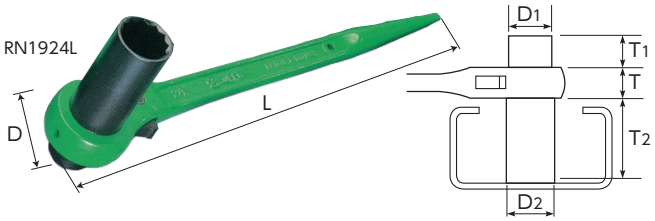
Item No.	Size name (mm)	Size (mm) L	D	D1	T	T1	T2	N.W. (kg)
RH70T	70	911	122	98	38.1×5	80	46	8.3
RH75T	75	965	130	102				9
RH80T	80	1,162	143	113	48.6×5		52	13

RN-L

RATCHET WRENCH, Double Size (Single Long Socket Type)

▶ Features

- Optimal for tightening in the deep grooves of C or H shaped channels and angles.
- Convenient for use on long bolts (U nuts of car-bodies and ducts).
- Safety rope holes are provided on all sizes. (17x19・17x21 and 19x21 have 2 holes)
- Green baked-on finish.



▶ Example of use

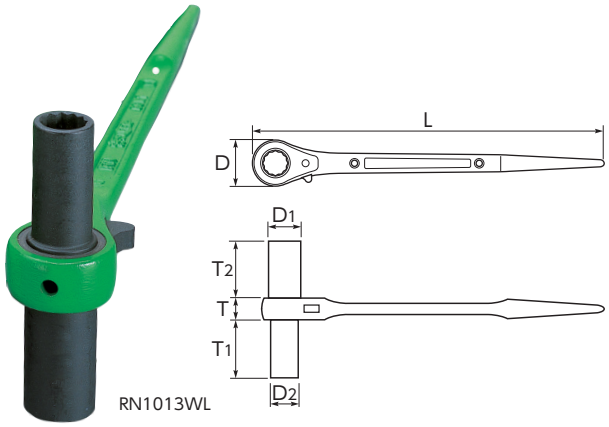




Item No.	Size name (mm)	Size (mm) L	D	D1	D2	T	T1	T2	N.W. (g)
RN1012L	10×12L	225	28	15	18	14	10	28	160
RN1013L	10×13L	225	28	15	18	14	10	28	180
RN1214L	12×14L	225	28	18	19	14	11	29	160
RN1317L	13×17L	265	34	18	23	16	14	52	290
RN1417L	14×17L	265	34	19	23	16	14	52	300
RN1719L	17×19L	310	41	23	26	18	16	52	450
RN1721L	17×21L	310	41	23	28	18	16	52	480
RN1921L	19×21L	310	41	26	28	18	16	52	460

Item No.	Size name (mm)	Size (mm) L	D	D1	D2	T	T1	T2	N.W. (g)
RN1924L	19×24L	355	49	26	32	20	18	64	780
RN3024L	30×24L	400	62	41	32	22	20	65	1,170
RN2126L	21×26L	355	49	28	35	20	18	69	800
RN2127L	21×27L	355	51	28	36	20	18	72	850
RN2427L	24×27L	355	51	32	36	20	18	72	860
RN2430L	24×30L	400	62	32	41	22	20	76	1,270
RN2732L	27×32L	400	62	36	43	22	20	82	1,350
RN3236L	32×36L	445	67	43	49	24	21	91	1,800

●For all the appendix of the general hand tools & clamps, please refer to P.278~280



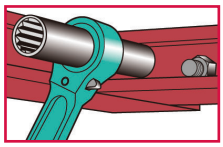
RN-WL

RATCHET WRENCH, Double Size (Double Long Socket Type)

▶ Features

- Optimal for tightening in deep grooves.
- Safety rope holes are provided on all sizes. (17x19･17x21 and 19x21 have 2 holes)
- Green baked-on finish.

▶ Example of use

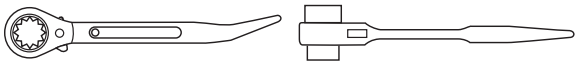


Item No.	Size name (mm)	Size (mm)							N.W. (g)
		L	D	D1	D2	T	T1	T2	
RN1012WL	10L×12L	225	28	18	15	14	32	32	230
RN1013WL	10L×13L	225	28	18	15	14	32	32	230
RN1014WL	10L×14L	225	28	19	15	14	32	32	230
RN1113WL	11L×13L	225	28	18	16	14	32	32	230
RN1214WL	12L×14L	225	28	19	18	14	32	32	230
RN1314WL	13L×14L	265	28	19	18	14	32	32	230

Item No.	Size name (mm)	Size (mm)							N.W. (g)
		L	D	D1	D2	T	T1	T2	
RN1317WL	13L×17L	265	34	23	18	16	33	33	340
RN1415WL	14L×15L	265	34	20	19	16	33	33	340
RN1417WL	14L×17L	265	34	23	19	16	33	33	340
RN1719WL	17L×19L	310	41	26	23	18	34	34	500
RN1721WL	17L×21L	310	41	28	23	18	34	34	500
RN1921WL	19L×21L	310	41	28	26	18	34	34	500

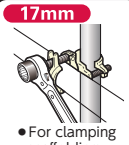
SRB Series

RATCHET WRENCH, Double Size with Bent Spear (Short Type)



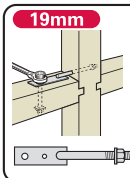
- Very useful short-type wrench for temporary stands at work and housing work.
- Easy to use with light and compact body. ● Safety rope holes are provided on all sizes.

17mm



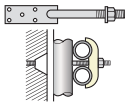
- For clamping scaffolding components

19mm



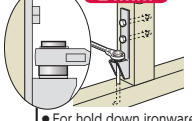
- For battledore ironware pulled in two directions
- For Z-marked ironware (for battledore bolts)
- For base metal fittings for construction

21mm

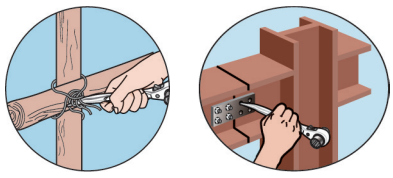


- For battledore bolts and W1/2" connecting ironware
- For turning form tie-nut

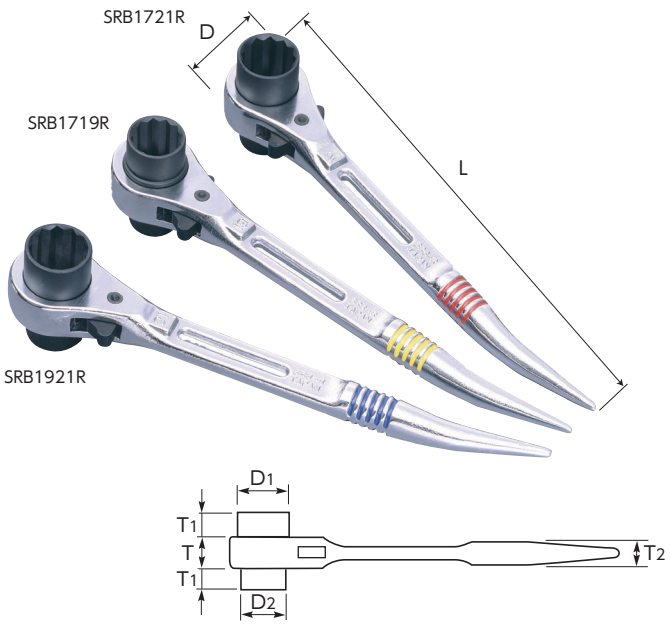
24mm



- For hold down ironware
- For base metal fittings for construction



For tightening wire and aligning bolt holes



SRB-R

RATCHET WRENCH, Double Size with Bent Spear (Short Type with Slide Hole)

▶ Features

- Slide hole for safety rope (43mm).
- You can get your tool in and out of the holder at work smoothly.
- Anti-slippage color lined grooves.
- Nickel chrome plate finish.
- Check sizes by color : Yellow (17x19), Red (17x21), Blue (19x21).

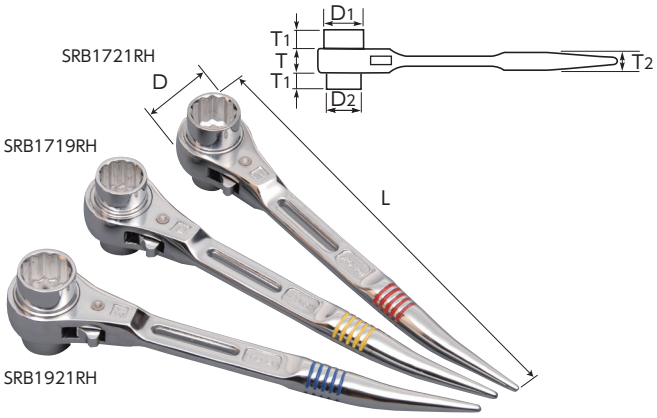
▶ Example of use



Item No.	Size name (mm)	Size (mm)							N.W. (g)
		L	D	D1	D2	T	T1	T2	
SRB1719R	17×19	240	41	27	24	18	16	16	380
SRB1721R	17×21	240	41	29	24	18	16	16	380
SRB1921R	19×21	240	41	29	27	18	16	16	380

●For all the appendix of the general hand tools & clamps, please refer to P.278～280

Tool sets / cases
Socket wrenches
Ratchet wrenches
Offset wrenches, grips
Gear wrenches, open-end spanners
Spanners
Safety ropes
Combination hammer
Sockets
Hex key wrenches
Adjustable angle wrenches
Pliers
Hook spanners, pin spanners
Toggle clamps
C clamps
L clamps
Super setters
Grip pliers
Welding tools
Iron man



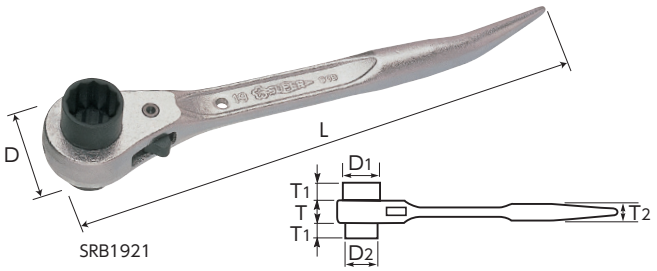
SRB-RH

RATCHET WRENCH, Double Size, All Polish Type with Bent Spear (Short Type with Slide Hole)

▶ Features

- Slide hole for safety rope (43mm).
- You can get your tool in and out of the holder at work smoothly.
- Anti-slippage color lined grooves.
- All polish.
- Nickel chrome plate finish.
- Check sizes by color : Yellow (17x19), Red (17x21), Blue (19x21).

Item No.	Size name (mm)	Size(mm)							N.W. (g)
		L	D	D1	D2	T	T1	T2	
SRB1719RH	17×19	240	41	27	24	18	16	16	380
SRB1721RH	17×21	240	41	29	24	18	16	16	380
SRB1921RH	19×21	240	41	29	27	18	16	16	380



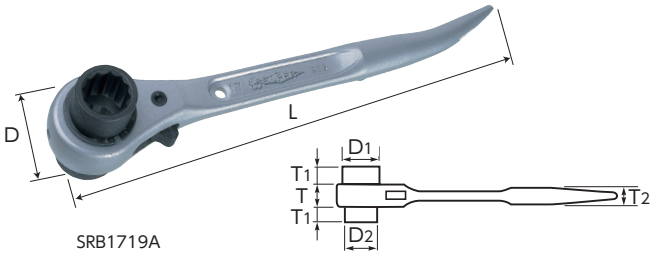
SRB

RATCHET WRENCH, Double Size with Bent Spear (Short Type Standard)

▶ Feature

- Nickel chrome plate finish.

Item No.	Size name (mm)	Size(mm)							N.W. (g)
		L	D	D1	D2	T	T1	T2	
SRB1719	17×19	240	41	27	24	18	16	16	390
SRB1721	17×21	240	41	29	24	18	16	16	390
SRB1921	19×21	240	41	29	27	18	16	16	390



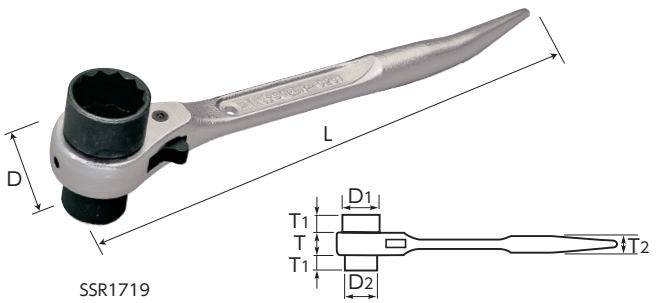
SRB-A

RATCHET WRENCH, Double Size, Aluminum Alloy Body (Short Type)

▶ Feature

- 40% weight reduction with use of aluminum body.

Item No.	Size name (mm)	Size(mm)							N.W. (g)
		L	D	D1	D2	T	T1	T2	
SRB1719A	17×19	240	41	27	24	18	16	16	230
SRB1721A	17×21	240	41	29	24	18	16	16	230
SRB1921A	19×21	240	41	29	27	18	16	16	230



SSR

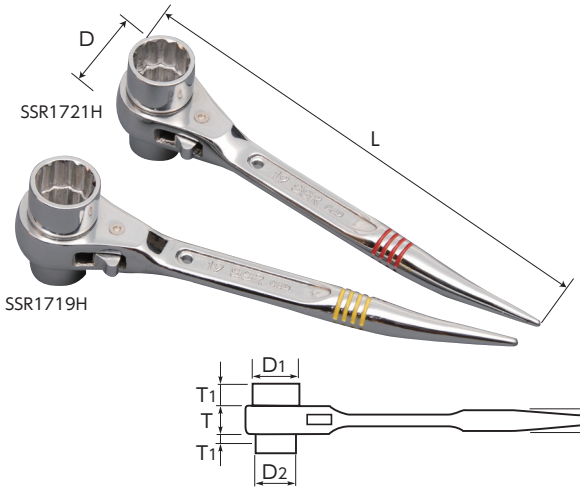
RATCHET WRENCH, Double Size with Bent Spear (Mini Short Type)

▶ Features

- Smaller, lighter and easier to use.
- Head (D) and length (L) much smaller, bringing 30% weight reduction.
- Nickel chrome plate finish.

Item No.	Size name (mm)	Size(mm)							N.W. (g)
		L	D	D1	D2	T	T1	T2	
SSR1719	17×19	205	36	27	23	16	17	14	270
SSR1721	17×21	205	36	29	23	16	17	14	270

●For all the appendix of the general hand tools & clamps, please refer to P.278～280



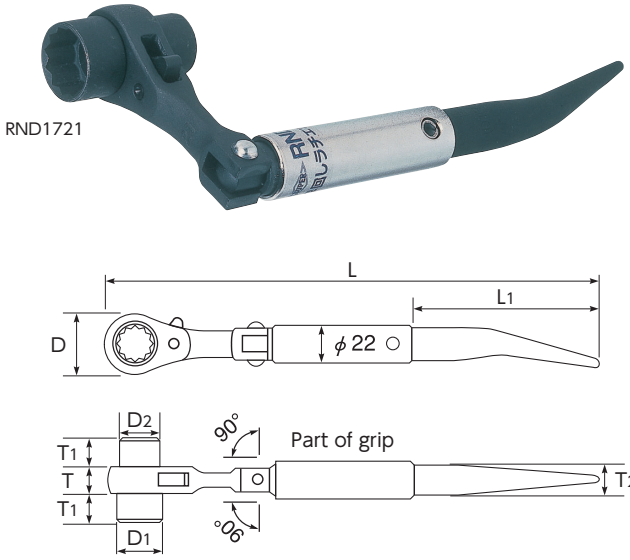
SSR-H

RATCHET WRENCH, Double Size, All Polish Type with Bent Spear (Mini Short Type)

▶ Features

- Smaller, lighter and easier to use.
- Anti-slippage color lined grooves.
- All polish.
- Nickel chrome plate finish.
- Check sizes by color : Yellow (17x19), Red (17x21).

Item No.	Size name (mm)	Size (mm)							N.W. (g)
		L	D	D1	D2	T	T1	T2	
SSR1719H	17×19	195	36	27	23	16	17	14	250
SSR1721H	17×21	195	36	29	23	16	17	14	250



RND

QUICK TURN RATCHET WRENCH, Double Size (with Bent Spear)

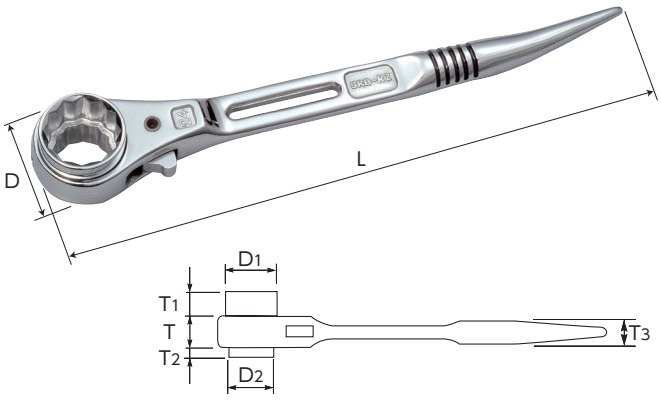
▶ Features

- Easy to bend the wrench in one touch and turn the bolt or nut.
- Suitable for assembling and disassembling scaffold clamp.

▶ Example of use



Item No.	Size name (mm)	Size (mm)								N.W. (g)
		L	L1	D	D1	D2	T	T1	T2	
RND1719	17×19	287	110	36	26	23	16	17	14.5	530
RND1721	17×21	287	110	36	28	23	16	17	14.5	530



SRB1924RZ

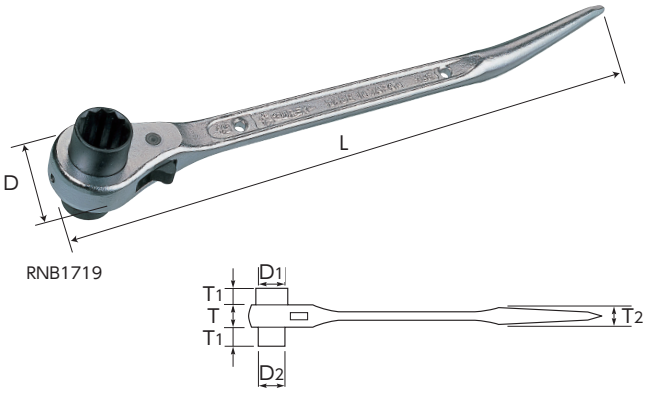
RATCHET WRENCH, Double Size, All Polish Type (Flat Type with Slide Hole)

▶ Features

- Slide hole for safety rope (43mm).
- You can get your tool in and out of the holder at work smoothly.
- Anti-slippage color lined grooves.
- All polish.
- Nickel chrome plate finish.

Item No.	Size name (mm)	Size (mm)								N.W. (g)
		L	D	D1	D2	T	T1	T2	T3	
SRB1924RZ	19×24	240	41	32	28	18	8	5	16	370

●For all the appendix of the general hand tools & clamps, please refer to P.278~280



RNB1719

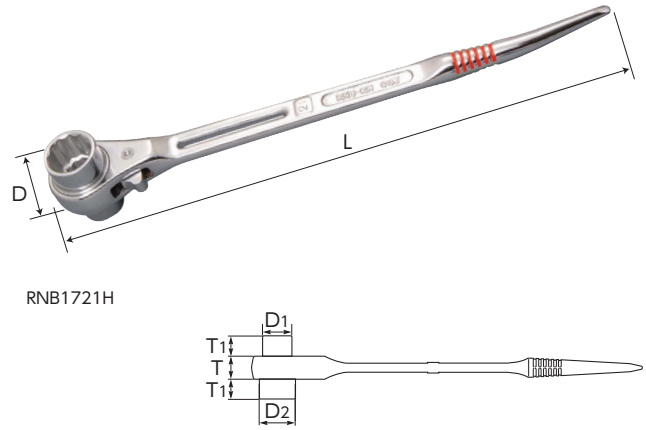
RNB

RATCHET WRENCH, Double Size with Bent Spear

▶ Features

- Ratchet wrench with bent spear suitable for wire tightening.
- Nickel chrome plate finish.
- 2 holes for attaching a safety rope are provided.

Item No.	Size name (mm)	Size(mm)							N.W. (g)
		L	D	D1	D2	T	T1	T2	
RNB1719	17×19	310	41	27	24	18	16	15	400
RNB1721	17×21	310	41	29	24	18	16	15	400
RNB1921	19×21	310	41	29	27	18	16	15	400



RNB1721H

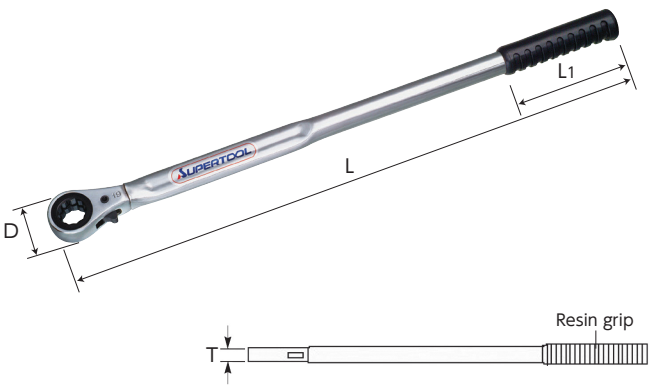
RNB-RH

RATCHET WRENCH, Double Size (All Polish Type with Bent Spear)

▶ Features

- Slide hole for safety rope (60mm).
- You can get your tool in and out of the holder at work smoothly.
- Anti-slippage color lined grooves.
- All polish.
- Nickel chrome plate finish.
- Check sizes by color : Yellow (17x19), Red (17x21)

Item No.	Size name (mm)	Size(mm)						N.W. (g)
		L	D	D1	D2	T	T1	
RNB1719RH	17×19	310	41	24	27	18	16	400
RNB1721RH	17×21	310	41	24	29	18	16	400

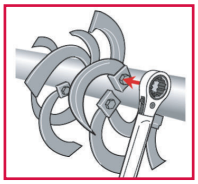


RNTL1719L

RATCHET WRENCH, Double Size (Flat Type for Farm Machine Blade Replacement)

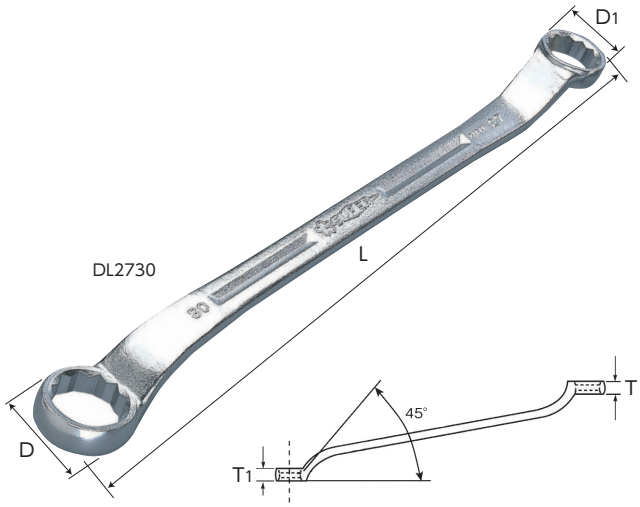
▶ Feature

- Optimal as tool to replace claws of cultivators or tractors.



Item No.	Size name (mm)	Size(mm)				N.W. (g)
		L	L1	D	T	
RNTL1719L	17×19	485	105	41	19	650

●For all the appendix of the general hand tools & clamps, please refer to P.278～280

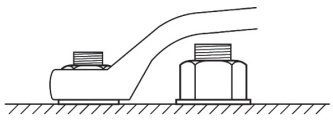


DL

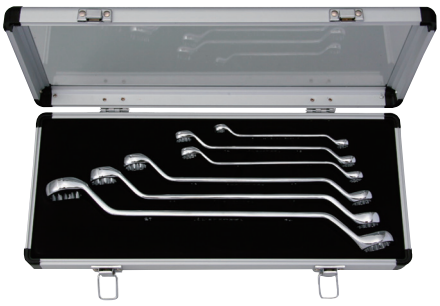
DOUBLE OFFSET WRENCH 45° Type

▶ Features

- The offset angle of 45° prevents collision with surrounding materials.
- Lightweight design and strength for loads surpassing the JIS standard.
- 12 points for all sizes.



Item No.	Size name (mm)	Size (mm)					N.W. (g)
		L	D	D1	T	T1	
DL89	8×9	173	14.5	13	6	5.5	50
DL810	8×10	173	16.5	13	6.5	5.5	55
DL1012	10×12	198	19.5	16.5	7.5	6.5	75
DL1013	10×13	198	21	16.5	8	6.5	90
DL1113	11×13	200	21	18	8	7	95
DL1214	12×14	221	22.5	19.5	8.5	7.5	110
DL1317	13×17	250	27	21	9.5	8	150
DL1417	14×17	250	27	22.5	9.5	8	155
DL1719	17×19	283	30	27	10	9.5	230
DL1721	17×21	300	31.5	26	11	10	270
DL1921	19×21	301	32	29	11	10	285
DL1922	19×22	302	33	29	11	10	285
DL1924	19×24	314	37	29	12.5	10.5	335
DL2126	21×26	346	37.5	32	13	11.5	430
DL2224	22×24	316	36	33	12	11	335
DL2427	24×27	348	39	36	13.5	13	460
DL2430	24×30	388	46.5	37.5	14	12.5	605
DL2632	26×32	395	49.5	40	15	13.5	690
DL2730	27×30	388	46.5	40	14	13.5	620
DL2732	27×32	395	49.5	40	15	13.5	690
DL2932	29×32	397	49.5	46.5	15	14	700
DL3032	30×32	397	49.5	46.5	15	14	700
DL3036	30×36	431	55	46.5	16	14	880
DL3235	32×35	431	55	49.5	16	15	850
DL3236	32×36	431	55	49.5	16	15	850
DL3641	36×41	458	63	55	18.5	16	1,250
DL4146	41×46	492	70.5	63	20.5	18.5	1,440



S4506N

DOUBLE OFFSET WRENCH 45° Type 6PCS-SET

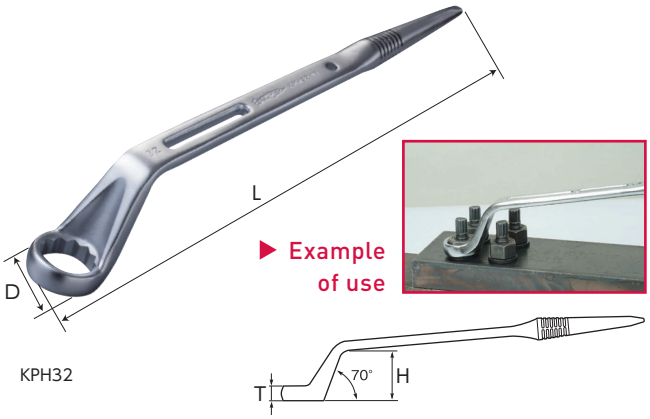
▶ Features

- Frequently used 11 sizes.
- Aluminum case as standard acc.
- Mirror design.
- Nickel chrome plate finish.

Item No.	Set details	Set Q'ty(pcs)	Set N.W.(g)
S4506N	8×10·11×13·12×14·17×19·19×22·24×27	6	1,750

●For all the appendix of the general hand tools & clamps, please refer to P.278~280

Tool sets / cases
Socket wrenches
Ratchet wrenches
Offset wrenches, grips
Gear wrenches, open-end spanners
Spanners
Safety ropes
Combination hammer
Sockets
Hex key wrenches
Adjustable angle wrenches
Pliers
Hook spanners, pin spanners
Toggle clamps
C clamps
L clamps
Super setters
Grip pliers
Welding tools
Iron man



▶ Example of use

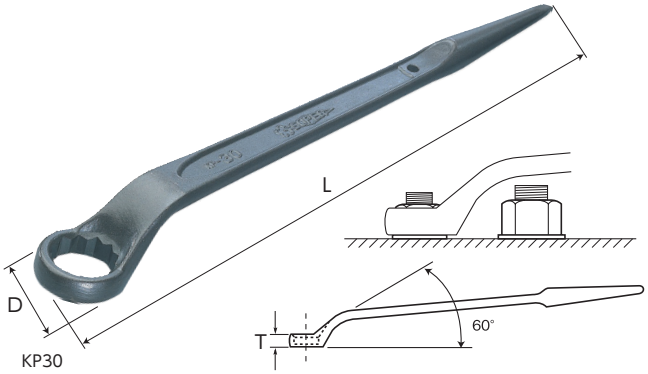
KPH

OFFSET WRENCH 70° Type (Shear Bolt Use)

▶ Features

- Design focused on the offset height (H) and angle.
- Designed for a shear bolt use with 70° angle with sufficient height (H).
- Slide hole for safety rope and anti-slippage grooves at the spear grip.
- Name plate useful in case of loss.
- Nickel chrome plate finish.

Item No.	Size name (mm)	Size (mm)				N.W. (g)
		L	H	D	T	
KPH27	27	357	55	41	14	480
KPH32	32	394	68	50	15	660
KPH36	36	454	70	56	16	1,250



KP

OFFSET WRENCH 60° Type

Cation paint (Excellent rust proofing)

▶ Features

- The cone shaped spear part is optimal for aligning bolt holes.
- The 60° slanted and length of the neck part prevents collision with adjacent bolts or angle ribs.
- Safety rope holes are provided on all sizes.

Item No.	Size name (mm)	Size (mm)			N.W. (g)
		L	D	T	
KP17	17	313	26	10	190
KP19	19	335	30	11	260
KP21	21	351	33	12	360
KP22	22	352	34	12	320
KP24	24	374	37	13	420
KP26	26	390	40	14	440
KP27	27	391	42	14	580
KP30	30	413	46	15	720

Item No.	Size name (mm)	Size (mm)			N.W. (g)
		L	D	T	
KP32	32	430	50	16	750
KP35	35	468	54	17	950
KP36	36	468	56	17	1,110
KP41	41	506	64	20	1,380
KP46	46	545	72	22	1,910
KP50	50	583	77	23	2,170
KP55	55	601	83	24	2,340



▶ Example of use



RG

GRIP

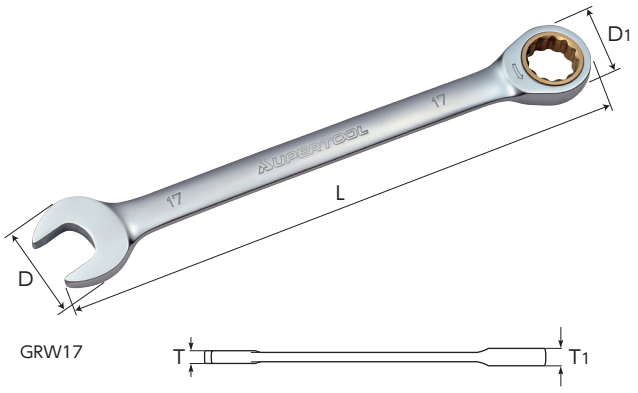
▶ Features

- For use on the spear part of ratchet wrenches and 60° slanted single offset wrenches.
- Ergonomically designed anti-slippage grooved grip for long time safe use.

Item No.	Size (mm)		Applicable item No. and wrench sizes for grip use (mm)				N.W. (g)
	L	D	RN(double size)	RN(single size)	RH(single size)	KP(offset single size)	
RG3	86	25	13×17・14×15・14×17	17	17・19		30
RG4	102	28	13×19・17×19・17×21・17×22・19×21・19×22	19・21・22	21・22・24	17・19	50
RG5	113	32	19×24～24×27(9Size)	24・26・27	26・27	21・22・24	70
RG6	125	36	24×30～30×32(5Size)・32×35・32×36	30・32・35・36	30・32・35・36	24・26・27・30・32・35・36	90
RG8	153	40	35×41・36×41・41×46	41・46	41・46	41・46	140

＊For the underlined size, processing of the tail is required.

●For all the appendix of the general hand tools & clamps, please refer to P.278～280



GRW17

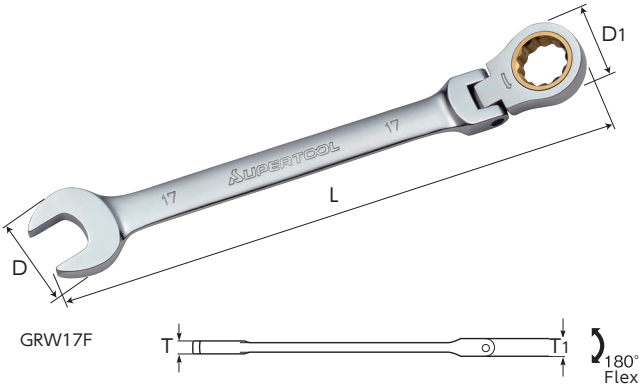
GRW
GEAR WRENCH, Straight Type

▶ Features
- 72 teeth ratchet with 5° of sweep, best for confined areas.
- Designed for final tightening.

Applications
●Electric wire, piping and air conditioner ●Machinery equipment
●Automobile repair ●Suitable for any work in confined spaces

Item No.	Size name (mm)	Size (mm)					N.W. (g)
		L	D	D1	T	T1	
GRW8	8	140	16.7	18.6	4.4	6.4	38
GRW10	10	160	20.9	20.2	4.9	7	55
GRW12	12	170	25.1	23.4	5.4	7.6	84
GRW13	13	178	27.2	24.8	5.9	8.1	96
GRW14	14	190	29.3	27.2	6.2	8.5	108
GRW15	15	200	31.3	28.3	6.4	9	130

Item No.	Size name (mm)	Size (mm)					N.W. (g)
		L	D	D1	T	T1	
GRW17	17	224	35.5	31.2	6.9	10	183
GRW19	19	248	39.7	33.9	7.4	11	237
GRW21	21	288	45.2	40.4	8.4	13	320
GRW22	22	288	45.2	40.4	8.4	13	320
GRW24	24	320	51.5	46.2	9.4	14.5	460



GRW17F

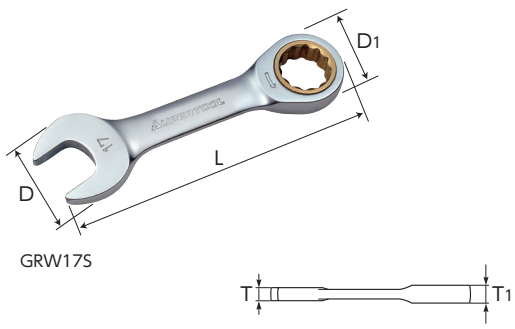
GRW-F
GEAR WRENCH, Flex Type

▶ Features
- 72 teeth ratchet with 5° of sweep, best for confined areas.
- Convenient flexible socket head.
- Designed for final tightening.

Applications
●Electric wire, piping and air conditioner ●Machinery equipment
●Automobile repair ●Suitable for any work in confined spaces

Item No.	Size name (mm)	Size (mm)					N.W. (g)
		L	D	D1	T	T1	
GRW8F	8	140	16.7	18.6	4.4	6.4	38
GRW10F	10	160	20.9	21.4	4.9	7	62
GRW12F	12	170	25.1	25.4	5.4	7.6	87
GRW13F	13	178	27.2	25.4	5.9	8.1	104
GRW14F	14	190	29.3	26.4	6.2	8.5	121
GRW15F	15	200	31.3	26.4	6.4	9	137

Item No.	Size name (mm)	Size (mm)					N.W. (g)
		L	D	D1	T	T1	
GRW17F	17	224	35.5	31	6.9	10	196
GRW19F	19	248	39.7	33	7.4	11	248
GRW21F	21	288	45.2	39	8.4	13	363
GRW22F	22	288	45.2	39	8.4	13	363
GRW24F	24	320	51.5	45.4	9.4	14.5	545



GRW17S

GRW-S
GEAR WRENCH, Straight Short Type

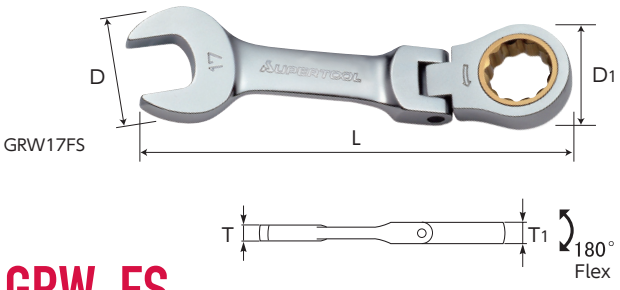
▶ Features
- 72 teeth ratchet with 5° of sweep, best for confined areas.
- Designed for final tightening.

Applications
●Electric wire, piping and air conditioner ●Machinery equipment
●Automobile repair ●Suitable for any work in confined spaces

Item No.	Size name (mm)	Size (mm)					N.W. (g)
		L	D	D1	T	T1	
GRW8S	8	89	19.2	18.6	5.6	6.4	30
GRW10S	10	94	20.7	19.6	5.6	7	34
GRW12S	12	107	27	25	5.6	7.6	59
GRW13S	13	107	27	25	5.6	8.1	59

Item No.	Size name (mm)	Size (mm)					N.W. (g)
		L	D	D1	T	T1	
GRW14S	14	115	29.2	26.6	6	8.5	73
GRW17S	17	127	35.4	31.6	7	10	115
GRW19S	19	139	39.8	33.6	8.1	11	147

●For all the appendix of the general hand tools & clamps, please refer to P.278~280



GRW-FS

GEAR WRENCH, Flex Short Type

▶ Features

- 72 teeth ratchet with 5° of sweep, best for confined areas.
- Convenient flexible socket head.
- Designed for final tightening.

Applications

●Electric wire, piping and air conditioner ●Machinery equipment
●Automobile repair ●Suitable for any work in confined spaces

Item No.	Size name (mm)	Size (mm)					N.W. (g)
		L	D	D1	T	T1	
GRW8FS	8	93	19.2	18.6	5.6	6.4	38
GRW10FS	10	98	23.4	21.4	6	7	57
GRW12FS	12	111	29.3	25.4	6.8	7.6	83
GRW13FS	13	111	29.3	25.4	7	8.1	83
GRW14FS	14	119	30.4	26.4	7.6	8.5	103
GRW17FS	17	128	36.2	31	8.2	10	141
GRW19FS	19	138	40.4	33	8.6	11	172



GRW700 • GRW700F

GEAR WRENCH 7PCS-SET

▶ Features

- Selected 7 sizes of most frequent use.
- Aluminum case.
- 72 teeth ratchet with 5° of sweep, best for confined areas.
- Designed for final tightening.

Applications

●Electric wire, piping and air conditioner ●Machinery equipment
●Automobile repair ●Suitable for any work in confined spaces

Item No.	Set details	Set Q'ty(pcs)	Set N.W.(g)
GRW700	GRW8·10·12·13·14·17·19	7	1,200
GRW700F	GRW8F·10F·12F·13F·14F·17F·19F	7	1,315



SX60J

OPEN-END SPANNERS 6PCS-SET

▶ Feature

- Spanner pointed ends allow easy handling in confined spaces.

Item No.	Set details	Set N.W.(g)
SX60J	6×7·8×10·11×13·12×14·17×19·22×24	600

GRW-DF

GEAR WRENCH, Double Flex Type

▶ Features

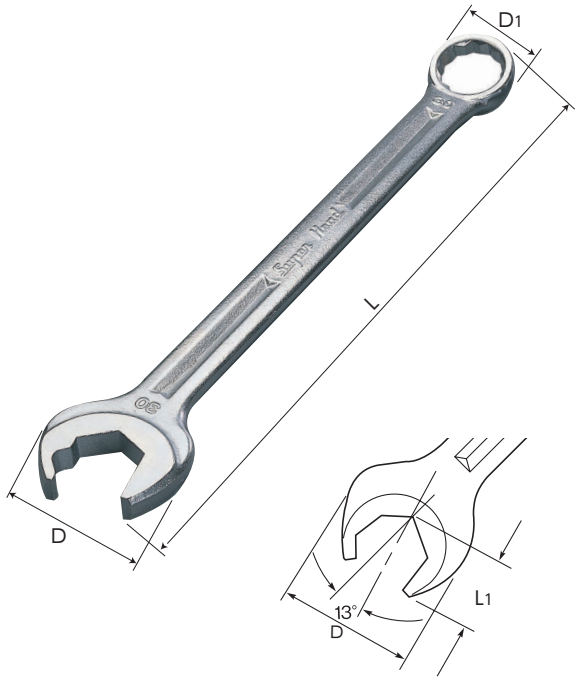
- 72 teeth ratchet with 5° of sweep, best for confined areas.
- Both sides are 180° flexible.
- Designed for final tightening.

Applications

●Electric wire, piping and air conditioner ●Machinery equipment
●Automobile repair ●Suitable for any work in confined spaces

Item No.	Hexagon width across flats D3×D2	Size (mm)					N.W. (g)
		L	D	D1	T	T1	
GRW810DF	8×10	177	22.5	20.5	7.7	8.2	85
GRW1012DF	10×12	194	28	22.5	8.2	9.4	135
GRW1214DF	12×14	212	31	28	9.4	9.7	205
GRW1317DF	13×17	239	34	28	9.4	10.8	235
GRW1719DF	17×19	259	37	34	10.8	11.3	315

●For all the appendix of the general hand tools & clamps, please refer to P.278~280

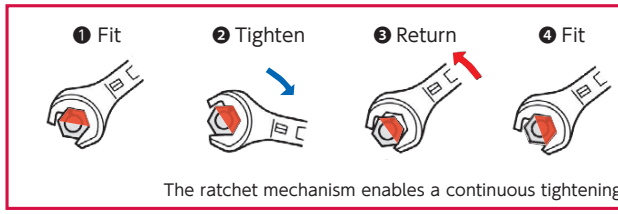


SH

SUPER HEAD SPANNER (with Ratchet Mechanism)

▶ Features

- Spanner with ratchet mechanism.
- Optimal for tightening and removing bolts and nuts in confined spaces, assembling and disassembling precision machinery, tightening union nuts of brake-pipes.
- The offset wrench side ensures safe removal of rusted bolts and nuts.
- Offset angle of 15˚.



The ratchet mechanism enables a continuous tightening.

Item No.	Size name (mm)	Size (mm)					N.W. (g)
		L	L1	D	D1	Head thickness	
SH8	8	135	9.5	17.5	13	5.5	30
SH10	10	163	12	22	16	6.5	50
SH12	12	173	14	26	18.5	7.5	70
SH13	13	180	15	28.5	20	8	90
SH14	14	186	16.5	30.5	21.5	8.5	90
SH17	17	195	20	37	26	9.5	140
SH19	19	203	22.5	41.5	29	10	190
SH21	21	217	25	46	32	11	240
SH22	22	225	26	48	33	11.5	280
SH24	24	245	28.5	52.5	36	12.5	360



SH600



SH800

SH

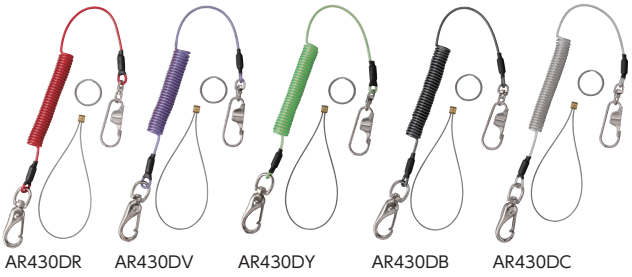
SUPER HEAD SPANNER 6PCS-SET・8PCS-SET

▶ Features

- SH600 : Cloth bag
- SH800 : Vinyl bag

Item No.	Set details	Set Q'ty (pcs)	Set N.W. (g)
SH600	SH8・10・12・13・14・17	6	570
SH800	SH8・10・12・13・14・17・19・21	8	1,000

●For all the appendix of the general hand tools & clamps, please refer to P.278～280



AR430DR AR430DV AR430DY AR430DB AR430DC

AR430(DR • DV • DY • DB • DC)

SAFETY ROPE (Stainless Wire Core with Direct Catch Hook) (capacity : 1kg)

▶ Features

- Direct catch slim hook can be attached to the tool directly.
- Polyurethane cord with stainless wire core allows high durability.
- Outstanding flexibility and shape restoration.

▶ Accessories

- Wire, ring

▶ Example of use



Item No.	Color	Size (mm)				N.W. (g)
		Cord dia.	Core dia.	Normal length	Max. stretched length	
AR430DR	Red	3	0.8	470	1,700	65
AR430DV	Violet					
AR430DY	Yellow green					
AR430DB	Clear black					
AR430DC	Clear					



ARN10P ARN10Y ARN10G

ARN10P • ARN10Y • ARN10G

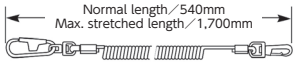
SAFETY ROPE (Nylon Rope Core) (capacity : 1kg)

▶ Features

- Polyurethane cord with nylon rope core.
- Super flexibility for smooth operation.

▶ Accessories

- Wire, ring



Item No.	Color	Size (mm)				N.W. (g)
		Cord dia.	Core dia.	Normal length	Max. stretched length	
ARN10P	Pink	4.5	3	540	1,700	85
ARN10Y	Yellow					
ARN10G	Green					



ARK10R ARK10G ARK10K

ARK10R • ARK10G • ARK10K

SAFETY ROPE (Kevlar Core) (capacity : 1kg)

▶ Features

- Light weight, flexible and extremely thin design for burden-less operation.
- Polyurethane cord with Kevlar core by DuPont Inc., USA. (special ultra thin fiber (2 μm) used in bulletproof vest).

▶ Accessories

- Wire, ring

Item No.	Color	Size (mm)				N.W. (g)
		Cord dia.	Core dia.	Normal length	Max. stretched length	
ARK10R	Red	2.5	1.2	490	1,820	60
ARK10G	Green					
ARK10K	Fluorescent purple					



ARS05R ARS05C ARS05B

ARS05R • ARS05C • ARS05B

SAFETY ROPE (Stainless Wire Core) (capacity : 500g)

▶ Features

- Polyurethane cord with stainless wire core allows high durability.
- The cord is ultra light-weighted and extra thin, allowing outstanding flexibility and shape restoration.

▶ Accessories

- Ring

Item No.	Color	Size (mm)				N.W. (g)
		Cord dia.	Core dia.	Normal length	Max. stretched length	
ARS05R	Red	2	0.8	310	1,100	25
ARS05C	Clear					
ARS05B	Black					

●For all the appendix of the general hand tools & clamps, please refer to P.278～280



ARS10R ARS10Y ARS10P

ARS10R • ARS10Y • ARS10P

SAFETY ROPE (Stainless Wire Core) (capacity : 1kg)

▶ Features

- Polyurethane cord with stainless wire core allows high durability.
- Excellent flexibility and fast shape restoration.

▶ Accessories

- Wire, ring

Item No.	Color	Size (mm)				N.W. (g)
		Cord dia.	Core dia.	Normal length	Max. stretched length	
ARS10R	Fluorescent red	3	1	480	2,300	70
ARS10Y	Yellow					
ARS10P	Fluorescent purple					



ARS30R ARS30W ARS30B

ARS30R • ARS30W • ARS30B

SAFETY ROPE (Stainless Wire Core) (capacity : 3kg) PAT.

▶ Features

- Three-layer structure polyurethane cord with stainless wire core allows high durability.
- Excellent flexibility and fast shape restoration.



▶ Example of use

Item No.	Color	Size (mm)				N.W. (g)
		Cord dia.	Core dia.	Normal length	Max. stretched length	
ARS30R	Red	5	1.6	420	1,400	108
ARS30W	White					
ARS30B	Black					



ARS20R ARS20W ARS20B

ARS20R • ARS20W • ARS20B

SAFETY ROPE (Stainless Wire Core) (capacity : 2kg)

▶ Features

- Polyurethane cord with stainless wire core allows high durability.
- Excellent flexibility and fast shape restoration.
- Outstanding flexibility and durability with a three-layer structure.



▶ Example of use

Item No.	Color	Size (mm)				N.W. (g)
		Cord dia.	Core dia.	Normal length	Max. stretched length	
ARS20R	Red	4	1.2	410	1,600	70
ARS20W	White					
ARS20B	Black					



HM7410 • HM7410H

COMBINATION HAMMER

▶ Features

- With plastic head on one side and steel head on the other side, 2 usages in 1 tool.
- Head : Steel, polyamide (Nylon 6:PA6)
- Shaft : Pipe steel
- Grip : Resin

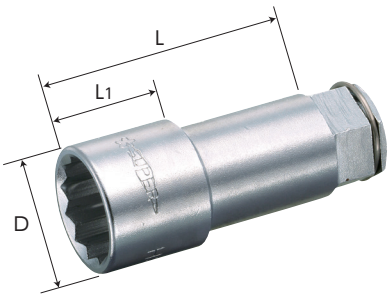
Item No.	Size name	Size (mm)			N.W. (g)
		L	H	D	
HM7410	1pound	267	90	32	495

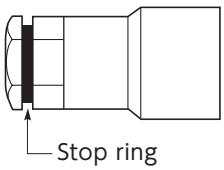
Spare head

- Resin suitable for a wide range of use environments.
- Polyamide (Nylon 6:PA6)

Item No.	Size (mm)		N.W. (g)
	L1	D	
HM7410H	30	32	24

●For all the appendix of the general hand tools & clamps, please refer to P.278~280





HSN

HS SOCKET

Square drive 9.5 mm 3/8" | Square drive 12.7 mm 1/2"

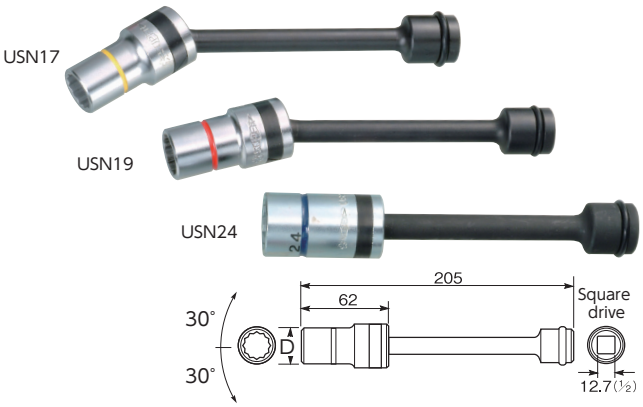
▶ Features

- Insert the HSN socket to a ratchet wrench or a 60° slanted offset wrench to tighten bolts and nuts in confined or deep spaces.
- Nickel chrome plate finish.

▶ Example of use



Item No.	Size name (mm)	Drive size(mm)		Size(mm)			N.W. (g)
		⏢ (Hexagon)	⏢ (Square)	L	L1	D	
HSN17	17	17	9.52(3/8)	53	22	24	80
HSN19	19	19	9.52(3/8)	53	23	26.5	100
HSN21	21	21	12.7(1/2)	58	24	29	130
HSN24	24	24	12.7(1/2)	58	27	33	150



USN

UNI-SOCKET (for Impact Wrench)

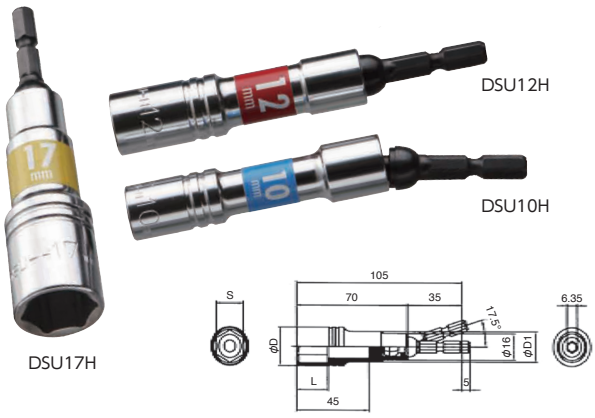
▶ Feature

- Optimal for use in confined or deep spaces when assembling steel structural housing.

▶ Example of use



Item No.	Size name (mm)	Size(mm)	Applicable bolts and nuts		N.W. (g)
		D	Standard	Small	
USN17	17	25	M10	M12	380
USN19	19	27	M12	M14	390
USN24	24	34	M16	M18	510



DSU-H

SOCKET BIT FOR ELECTRIC SCREWDRIVER (Universal Type)

Suits with 18V electric impact driver

▶ Features

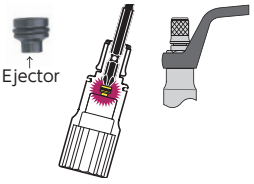
- 6pt. socket for heavy duty.
- Standard length type.
- Usable for both fix and angle type for bit part.
- Socket angle : 17.5°.
- Size can be identified with color.

Item No.	Seal color	Width across flats (S) (mm)	Size(mm)			N.W. (g)
			L	φD	φD1	
DSU7H	Light green	7	15	10.5	9.5	50
DSU8H	Black	8	15	12.7	10.5	60
DSU10H	Sky blue	10	15	15.0	12.0	70
DSU12H	Orange	12	20	17.5	14.0	80
DSU13H	Purple	13	20	17.9	14.0	80

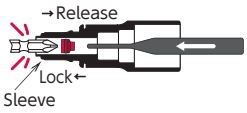
Item No.	Seal color	Width across flats (S) (mm)	Size(mm)			N.W. (g)
			L	φD	φD1	
DSU14H	Green	14	20	19.7	16.0	90
DSU17H	Yellow	17	20	23.5	18.5	110
DSU19H	Red	19	20	26.0	20.5	120
DSU21H	Blue	21	20	28.5	22.5	150
DSU24H	Gold	24	20	33.0	25.0	180

●For all the appendix of the general hand tools & clamps, please refer to P.278～280

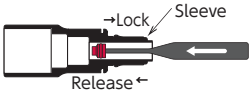




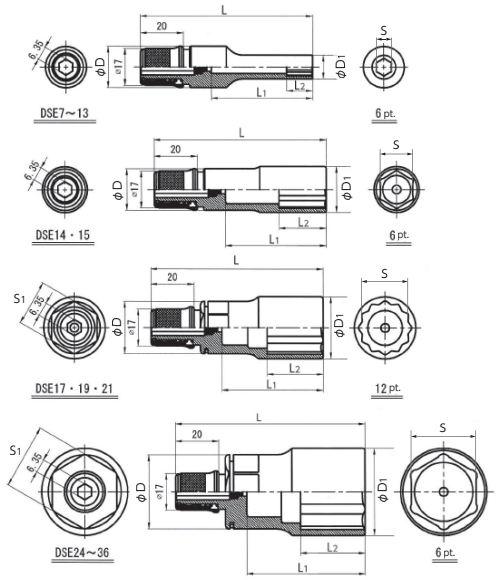
Convenient 6pt. size for tightening operation with an offset wrench or a ratchet wrench (DSE17~36).



▮Easy removal of stuck bit !
While keeping released the lock of sleeve, hit lightly the center with a punch to take out the bit.



▮The setting of the ejector is easy too !
Check the correct direction of the injector and insert it while keep releasing the sleeve. Complete the setting by hitting lightly the ejector with a punch.



DSE

SOCKET BIT FOR ELECTRIC SCREWDRIVER (Replaceable Type) "Pro-spec"

Suits with 18V electric impact driver

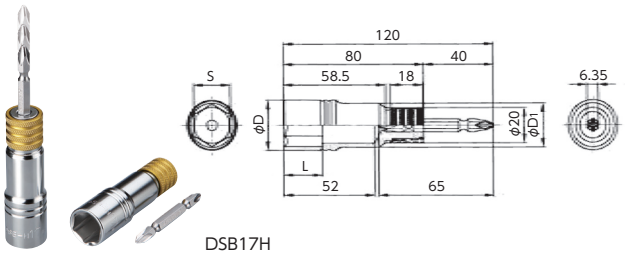
▶ Features

- "Ejector (PAT.)" mechanism to avoid bit tip getting stuck.
- The socket being detachable, the product can be used all the life time of the socket.
- Socket sizes are 12pt. for 17, 19, 21, and 6 pt. for other sizes.
- Can be used with driver bits available on the market.

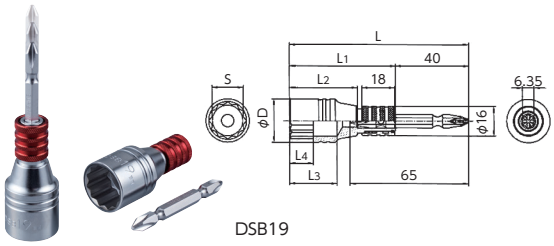
▶ Accessories

- Driver bit (DB2S65) 1pc.

Item No.	Width across flats (S) (mm)	Size (mm)						N.W. (g)
		L	L1	L2	ϕD	ϕD1	S1	
DSE7	7	80	47	12	19.0	11.0	–	100
DSE8	8	80	47	12	19.0	12.0	–	103
DSE10	10	80	47	16	19.0	14.5	–	108
DSE12	12	80	47	18	19.0	17.0	–	114
DSE13	13	80	47	20	19.0	18.5	–	120
DSE14	14	80	47	22	19.0	20.0	–	120
DSE15	15	80	47	22	19.0	21.0	–	123
DSE17	17	80	47	24	21.0	23.5	19	130
DSE19	19	80	47	24	22.0	25.5	19	136
DSE21	21	80	47	26	24.0	28.5	21	154
DSE24	24	83	50	28	27.0	32.5	24	200
DSE27	27	88	55	30	30.5	36.0	27	255
DSE30	30	88	55	30	34.0	40.0	30	301
DSE32	32	93	60	30	36.0	43.0	32	380
DSE36	36	98	65	30	41.0	48.0	36	492



DSB17H



DSB19

DSB

SOCKET BIT FOR ELECTRIC SCREWDRIVER (Replaceable Type) Short Type

Suits with 18V electric impact driver

▶ Features

- 12pt. flower socket allowing smooth insertion into nuts.
- Can be used with driver bits available on the market.
- Size can be identified with color.

▶ Accessories

- Driver bit (DB2S65) 1pc.

Item No.	Sleeve color	Width across flats (S) (mm)	Size (mm)						N.W. (g)
			L	L1	L2	L3	L4	ϕD	
DSB8	Black	8	90	50	29	22.5	7	12.7	70
DSB10	Sky blue	10	90	50	29	22.5	8.5	14.5	70
DSB12	Orange	12	94	54	33	24	11	17.5	80
DSB13	Purple	13	94	54	33	24	11	17.9	80
DSB14	Green	14	94	54	33	24	13	19.7	80
DSB17	Yellow	17	98	58	37	26	13	23.5	100
DSB19	Red	19	98	58	37	26	14	26	110
DSB21	Blue	21	98	58	37	26	15.5	29.5	120
DSB24	Gold	24	98	58	37	26	17.5	33	140

DSB-H

SOCKET BIT FOR ELECTRIC SCREWDRIVER (Replaceable Type) 6pt. Socket Type

Suits with 18V electric impact driver

▶ Features

- 6pt. socket for heavy duty.
- Standard length type.
- Can be used with driver bits available on the market.
- Size can be identified with color.

▶ Accessories

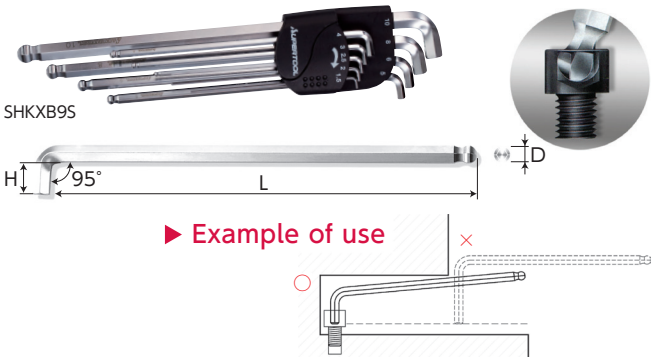
- Driver bit (DB2S65) 1pc.

Item No.	Sleeve color	Width across flats (S) (mm)	Size (mm)			N.W. (g)
			L	ϕD	ϕD1	
DSB17H	Yellow	17	20	23.5	21	110
DSB19H	Red	19		26	23	120
DSB21H	Blue	21	22	28.5	25	150
DSB24H	Gold	24		33	28.5	180

▮DRIVE BIT sold individually (common for DSE, DSB, DSB-H)

Item No.	Full length (mm)
DSB2S65	65

●For all the appendix of the general hand tools & clamps, please refer to P.278~280



SHKX • SHKXB • SHKXB-S

STUBBY EXTRA LONG ARM BALL-POINT HEX KEY WRENCH

Features

- Length (H) is designed at less than 1/2 of suitable standard, for use in confined spaces.
- Bent angle of 95° is slightly larger than the standard, so that the fingertips do not touch the surface of the workpiece.
- Up to 25° angle off-axis to screw is allowed.
- Material : SNCM•V ● Finish : Chrome plated matte finish
- Hardness : 55~60HRC

Set details (each individual wrench)

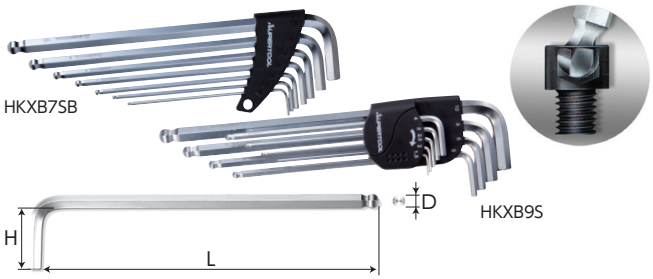
Item No.	Hex width across flats (D) (mm)	Size (mm) L	Size (mm) H	N.W. (g)
SHKX1.5	1.5	90	6	1.5
SHKX2	2	100	7	3
SHKXB2.5	2.5	112	8	5.1
SHKXB3	3	126	9	8.3
SHKXB4	4	140	11	16.6
SHKXB5	5	160	12	29.6
SHKXB6	6	180	14	48
SHKXB8	8	200	16	95.2
SHKXB10	10	224	19	167.7

∗ 1.5 and 2 are not ball-point but standard hex head.

Extra Long 9pcs-set

Item No.	Set details	Set N.W.(g)
SHKXB9S	SHKX1.5・2・SHKXB2.5・3・4・5・6・8・10	436

∗ 1.5 and 2 are not ball-point but standard hex head.



HKX • HKXB • HKXB-S • HKXB7SB

EXTRA LONG ARM BALL-POINT HEX KEY WRENCH

Features

- Up to 25° angle off-axis to screw is allowed.
- Material : SNCM•V ● Finish : Chrome plated matte finish
- Hardness : 55~60HRC

Set details (each individual wrench)

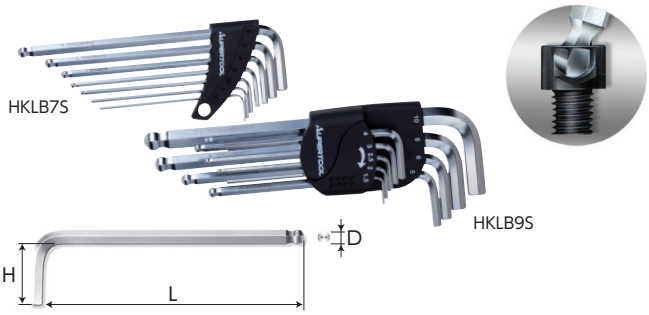
Item No.	Hex width across flats (D) (mm)	Size (mm) L	Size (mm) H	N.W. (g)
HKX1.5	1.5	90	14	1.6
HKX2	2	100	16	3.2
HKXB2.5	2.5	112	18	5.6
HKXB3	3	125	20	9
HKXB4	4	140	24	18
HKXB5	5	158	28	32
HKXB6	6	178	32	52
HKXB8	8	200	36	104.1
HKXB10	10	224	40	182.2

∗ 1.5 and 2 are not ball-point but standard hex head.

Extra Long 7pcs-set・9pcs-set

Item No.	Set details	Set N.W. (g)
HKXB7S	HKX1.5・2・HKXB2.5・3・4・5・6	122
HKXB7SB	HKXB2.5・3・4・5・6・8・10	463
HKXB9S	HKX1.5・2・HKXB2.5・3・4・5・6・8・10	472

∗ 1.5 and 2 are not ball-point but standard hex head.



HKL • HKLB-S

LONG ARM BALL-POINT HEX KEY WRENCH

Features

- Up to 25° angle off-axis to screw is allowed.
- Material : SNCM•V ● Finish : Chrome plated matte finish
- Hardness : 55~60HRC

Set details (each individual wrench)

Item No.	Hex width across flats (D) (mm)	Size (mm) L	Size (mm) H	N.W. (g)
HKL1.5	1.5	77	14	1.4
HKL2	2	83	16	2.7
HKLB2.5	2.5	90	18	4.6
HKLB3	3	98	20	7.3
HKLB4	4	106	24	14.3
HKLB5	5	118	28	25.2
HKLB6	6	137	32	42
HKLB8	8	156	36	84.9
HKLB10	10	170	40	145.4

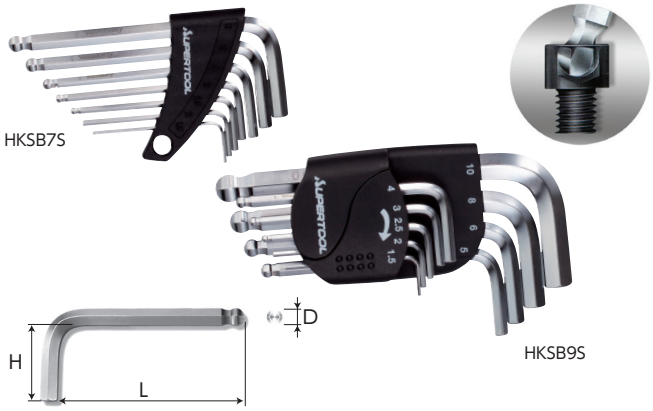
∗ 1.5 and 2 are not ball-point but standard hex head.

Long 7pcs-set・9pcs-set

Item No.	Set details	Set N.W. (g)
HKLB7S	HKL1.5・2・HKLB2.5・3・4・5・6	99
HKLB9S	HKL1.5・2・HKLB2.5・3・4・5・6・8・10	385

∗ 1.5 and 2 are not ball-point but standard hex head.

●For all the appendix of the general hand tools & clamps, please refer to P.278~280



HKS • HKSB • HKSB-S

STANDARD ARM BALL-POINT HEX KEY WRENCH

▶ Features

- Up to 25° angle off-axis to screw is allowed.
- Material : SNCM·V
- Finish : Chrome plated matte finish
- Hardness : 55~60HRC

▮Set details (each individual wrench)

Item No.	Hex width across flats (D) (mm)	Size (mm) L	Size (mm) H	N.W. (g)
HKS1.5	1.5	45	14	0.9
HKS2	2	50	16	1.8
HKSB2.5	2.5	56	18	3.2
HKSB3	3	63	20	5.2
HKSB4	4	70	24	10.4

Item No.	Hex width across flats (D) (mm)	Size (mm) L	Size (mm) H	N.W. (g)
HKSB5	5	79	28	18.5
HKSB6	6	90	32	30.4
HKSB8	8	100	36	60.5
HKSB10	10	112	40	105.9

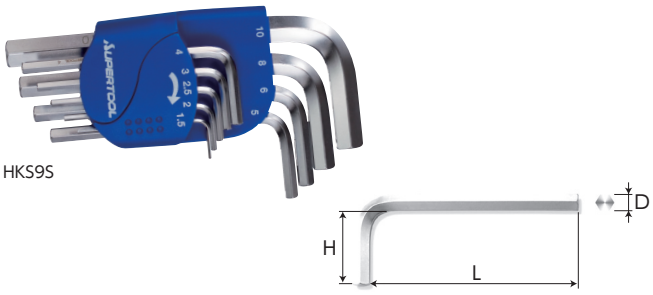
∗ 1.5 and 2 are not ball-point but standard hex head.

▮Standard 7pcs-set·9pcs-set

Item No.	Set details	Set N.W.(g)
HKSB7S	HKS1.5·2·HKSB2.5·3·4·5·6	73
HKSB9S	HKS1.5·2·HKSB2.5·3·4·5·6·8·10	292

∗ 1.5 and 2 are not ball-point but standard hex head.





HKX • HKX9S

EXTRA LONG ARM HEX KEY WRENCH

▶ Features

- Material : SNCM·V
- Finish : Chrome plated matte finish
- Hardness : 55~60HRC

▮Set details (each individual wrench)

Item No.	Hex width across flats (D) (mm)	Size (mm) L	Size (mm) H	N.W. (g)
HKX1.5	1.5	90	14	1.6
HKX2	2	100	16	3.2
HKX2.5	2.5	112	18	5.6
HKX3	3	125	20	9
HKX4	4	140	24	18
HKX5	5	158	28	32
HKX6	6	178	32	52
HKX8	8	200	36	104.1
HKX10	10	224	40	182.2

▮Extra Long 9pcs-set

Item No.	Set details	Set N.W. (g)
HKX9S	HKX1.5·2·2.5·3·4·5·6·8·10	472

HKS • HKS9S

STANDARD ARM HEX KEY WRENCH

▶ Features

- Material : SNCM·V
- Finish : Chrome plated matte finish
- Hardness : 55~60HRC

▮Set details (each individual wrench)

Item No.	Hex width across flats (D) (mm)	Size (mm) L	Size (mm) H	N.W. (g)
HKS1.5	1.5	45	14	0.9
HKS2	2	50	16	1.8
HKS2.5	2.5	56	18	3.2
HKS3	3	63	20	5.2
HKS4	4	70	24	10.4
HKS5	5	79	28	18.5
HKS6	6	90	32	30.4
HKS8	8	100	36	60.5
HKS10	10	112	40	105.9

▮Standard 9pcs-set

Item No.	Set details	Set N.W. (g)
HKS9S	HKS1.5·2·2.5·3·4·5·6·8·10	292

●For all the appendix of the general hand tools & clamps, please refer to P.278~280



HTLH • HTLH9S

LONG ARM HEX LOBE KEY WRENCH (Tamper Resistant) with Hole

▶ Features

- Material : SNCM•V
- Finish : Black finish
- Hardness : 55~60HRC



■Set details (each individual wrench)

Item No.	Size name	Size (mm)		N.W. (g)
		L	H	
HTLH8	T8	80	16	6.7
HTLH10	T10	86	17	7.1
HTLH15	T15	90	18	7.5
HTLH20	T20	95	19	12.4
HTLH25	T25	100	20	18.8

Item No.	Size name	Size (mm)		N.W. (g)
		L	H	
HTLH27	T27	105	22	19.8
HTLH30	T30	114	24	29.3
HTLH40	T40	124	26	41.7
HTLH50	T50	152	32	80.2

∗ There is a security hole at the longer side end.
∗ The screw to be used for the hex lobe with security hole is a non-standard product and the size of its protrusion may be larger for some screws. In such cases, our hex lobe wrench may not fit.

■Long 9pcs-set

Item No.	Set details	Set N.W.(g)
HTLH9S	HTLH8•10•15•20•25•27•30•40•50	241



HTLB • HTLB9S

LONG ARM BALL-POINT HEX LOBE KEY WRENCH

▶ Features

- Ball point applicable to hex lobe screws.
- Up to 25° angle off-axis to screw is allowed.
- Material : SNCM•V
- Finish : Black finish
- Hardness : 55~60HRC



▶ Example of use



■Set details (each individual wrench)

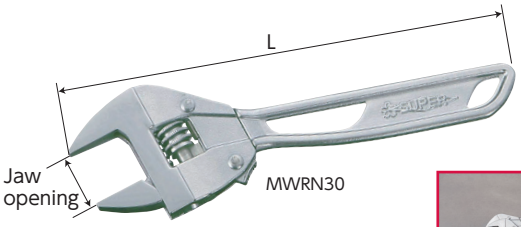
Item No.	Size name	Size (mm)		N.W. (g)
		L	H	
HTLB8	T8	80	16	6.7
HTLB10	T10	86	17	7.1
HTLB15	T15	90	18	7.5
HTLB20	T20	95	19	12.4
HTLB25	T25	100	20	18.8

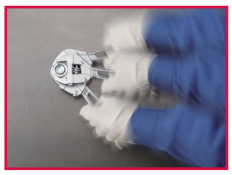
Item No.	Size name	Size (mm)		N.W. (g)
		L	H	
HTLB27	T27	105	22	19.8
HTLB30	T30	114	24	29.3
HTLB40	T40	124	26	41.7
HTLB50	T50	152	32	80.2

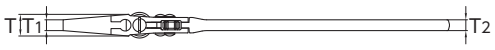
■Long 9pcs-set

Item No.	Set details	Set N.W.(g)
HTLB9S	HTLB8•10•15•20•25•27•30•40•50	241

●For all the appendix of the general hand tools & clamps, please refer to P.278~280







MWRN

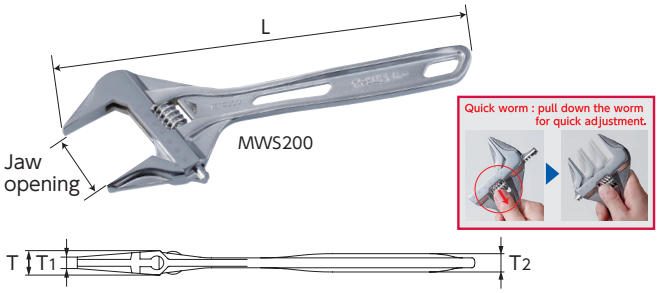
WIDE ADJUSTABLE ANGLE WRENCH (Ratchet Type) PAT.

Ratchet mechanism convenient for continuous operation

▶ Features

- Click worm mechanism to prevent worm looseness.
- Ratchet mechanism on/off switch lever.
- Thin and light-weighted design bringing outstanding operability.
- Light weight with ratchet mechanism and yet JIS class strength.

Item No.	Size name (mm)	Size (mm)					N.W. (g)
		Jaw opening	L	T	T1	T2	
MWRN30	200	0~30	200	13	6	6	260
MWRN36	250	0~36	250	14	7	7	390



MWS

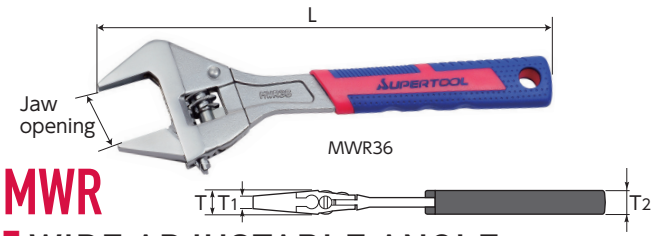
SUPER WIDE ADJUSTABLE ANGLE WRENCH (Quick Adjusting Type)

MOVIE

▶ Features

- Quick worm slide, super wide jaw opening, light-weighted thin type.
- The quick worm sliding mechanism allows very fast size adjustment.
- The push spring worm mechanism avoid looseness.
- The grip part is designed to be firmly grasp easily.

Item No.	Size name (mm)	Size (mm)					N.W. (g)	Guaranteed load (N·m)
		Jaw opening	L	T	T1	T2		
MWS200	200	0~38	210	13.5	6.7	10.5	270	294.2
MWS250	250	0~50	260	16	7.5	12	480	480.5
MWS300	300	0~60	320	18.5	8.3	13	810	882.6



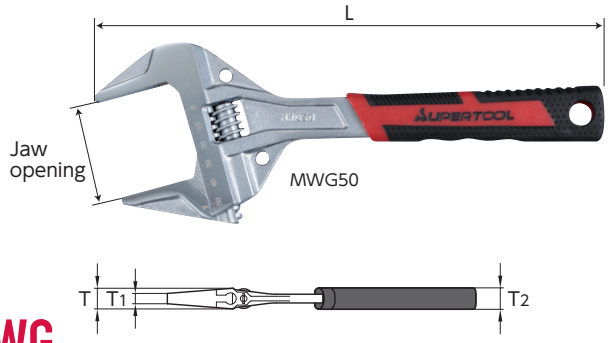
MWR

WIDE ADJUSTABLE ANGLE WRENCH (Ratchet Type)

▶ Features

- Efficient work with a thin and light-weighted body.
- Wider jaw design.
- Light weight with ratchet mechanism and yet JIS class strength.

Item No.	Size name (mm)	Size (mm)					N.W. (g)
		Jaw opening	L	T	T1	T2	
MWR30	200	0~30	205	12.5	6.5	14	280
MWR36	250	0~36	246	13.4	6.8	16	380



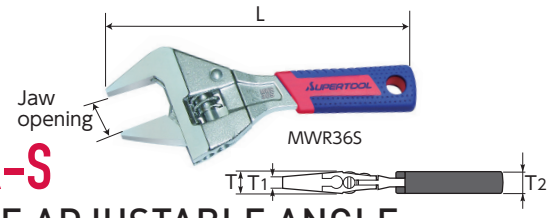
MWG

SUPER WIDE ADJUSTABLE ANGLE WRENCH (Grip Type)

▶ Features

- Super wide jaw opening.
- Thin jaws and light-weighted.
- JIS class strength.
- Grip part comfortable to the hands.

Item No.	Size name (mm)	Size (mm)					N.W. (g)
		Jaw opening	L	T	T1	T2	
MWG38	200	0~38	210	13.5	6.7	14	290
MWG50	250	0~50	260	16	7.5	16	390



MWR-S

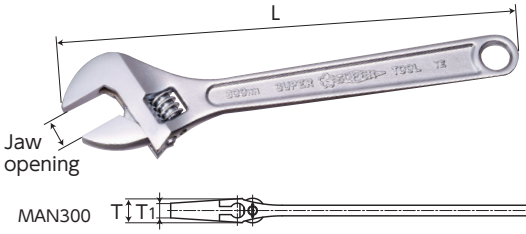
WIDE ADJUSTABLE ANGLE WRENCH (Short Ratchet Type)

▶ Features

- Efficient work with a thin and light-weighted body.
- Wider jaw design.
- Light weight with ratchet mechanism and yet JIS class strength.
- Short, pocket size type.

Item No.	Size (mm)					N.W. (g)
	Jaw opening	L	T	T1	T2	
MWR30S	0~30	152	12.5	6.6	14	190
MWR36S	0~36	181	14	7.3	15	300

●For all the appendix of the general hand tools & clamps, please refer to P.278~280



MAN

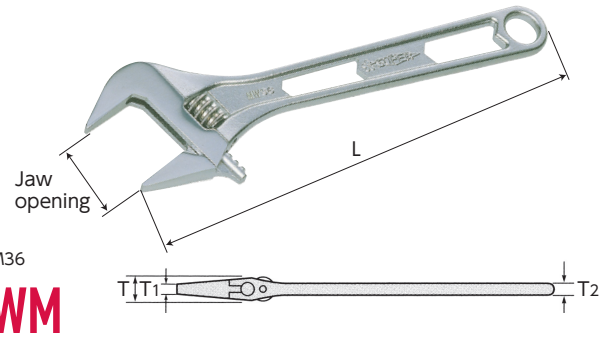
ADJUSTABLE ANGLE WRENCH (Heavy Duty Type) H JIS

▶ Feature
- Loading capacity exceeds by far JIS H class.

Item No.	Size name (mm)	Size (mm)					N.W. (g)
		Jaw opening	L	T	T1	T2	
MAN300	300	0~34	308	18.5	10.4	9.5	635
MAN375	375	0~44	384	20	13.4	10	1,136
MAN450	450	0~55	458	22.4	15.9	12.5	1,736

∗ MAN450 is out of JIS standard.

Item No.	Size name (mm)	Size (mm)					N.W. (g)
		Jaw opening	L	T	T1	T2	
MAN100	100	0~13	108	9	5.8	4.8	50
MAN150	150	0~20	158	11	7	5.6	125
MAN200	200	0~24	208	13.5	7.8	6.6	235
MAN250	250	0~29	258	15.5	8.9	7.5	405

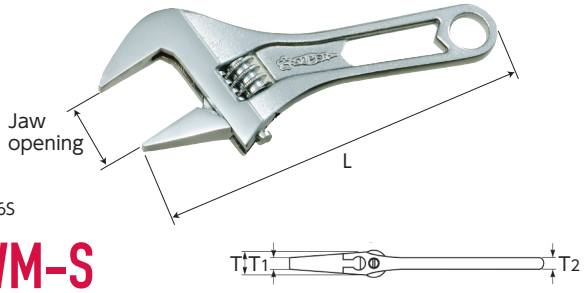


MWM

WIDE ADJUSTABLE ANGLE WRENCH (Light-weight and Thin Type)

▶ Features
- Wider jaw design.
- Efficient work with a thin and light-weighted body.
- Light-weight and yet JIS H class strength.

Item No.	Size name (mm)	Size (mm)					N.W. (g)
		Jaw opening	L	T	T1	T2	
MWM24	150	0~24	150	10.7	6	5	100
MWM30	200	0~30	203	12.5	6.6	5.7	185
MWM36	250	0~36	244	13.5	6.8	6.5	275

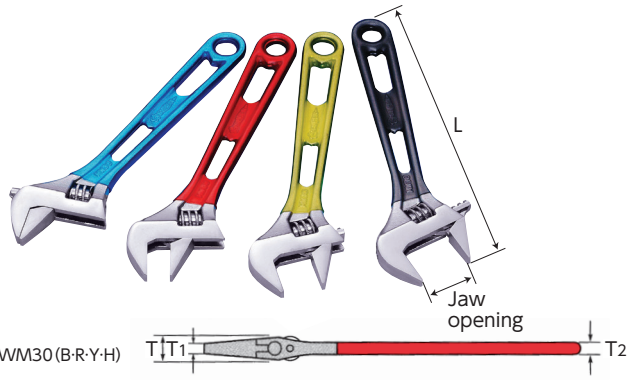


MWM-S

WIDE ADJUSTABLE ANGLE WRENCH (Light-weight and Short Type)

▶ Features
- Wider jaw design.
- Efficient work with a thin and light-weighted body.
- Light-weight and yet JIS H class strength.
- Optimal for use in confined spaces.
- Short, pocket size type.

Item No.	Size (mm)					N.W. (g)
	Jaw opening	L	T	T1	T2	
MWM24S	0~24	118.4	10.7	6	5	90
MWM30S	0~30	140.1	12.5	6.6	5.7	150
MWM36S	0~36	159	13.5	6.8	6.5	220

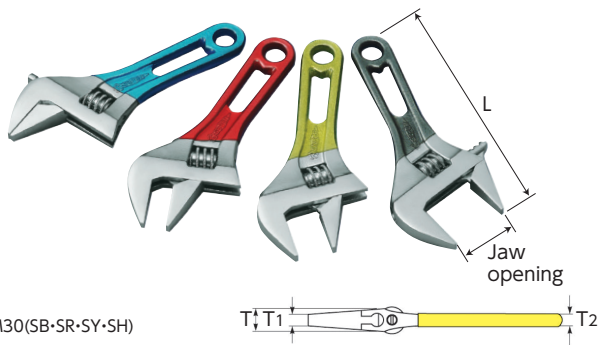


MWM-(B・R・Y・H)

WIDE ADJUSTABLE ANGLE WRENCH (Color Grip Type)

▶ Feature
- 4 different color grips for each MWM size.
  B: Blue R: Red Y: Yellow H: Grey

Item No.	Size name (mm)	Size (mm)					N.W. (g)
		Jaw opening	L	T	T1	T2	
MWM24 (B·R·Y·H)	150	0~24	150.5	10.7	6	6	100
MWM30 (B·R·Y·H)	200	0~30	203.5	12.5	6.6	6.7	185
MWM36 (B·R·Y·H)	250	0~36	244.5	13.5	6.8	7.5	275



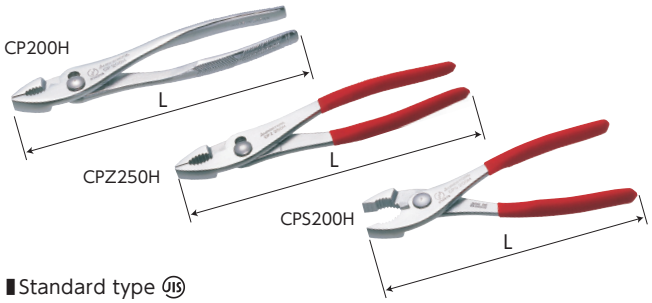
MWM-(SB・SR・SY・SH)

WIDE ADJUSTABLE ANGLE WRENCH (Color Grip and Short Type)

▶ Feature
- 4 different color grips for each MWM-S size.
  B: Blue R: Red Y: Yellow H: Grey

Item No.	Size (mm)					N.W. (g)
	Jaw opening	L	T	T1	T2	
MWM24 (SB·SR·SY·SH)	0~24	118.9	10.7	6	6	90
MWM30 (SB·SR·SY·SH)	0~30	140.6	12.5	6.6	6.7	150
MWM36 (SB·SR·SY·SH)	0~36	159.5	13.5	6.8	7.5	220

●For all the appendix of the general hand tools & clamps, please refer to P.278~280



CP-H • CPZ-H • CPS200H
COMBINATION PLIERS

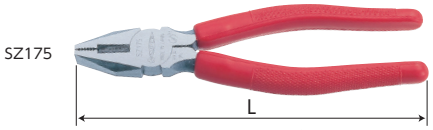
▶ Features
- Jaw opening adjustable in 2 steps according to the size.
- Blades can cut soft material like copper strings, stainless strings, needles.
- Special spring mechanism optimal for continuous operations (CPS200H).

▮Standard type (JIS)

Item No.	Size (mm)			Cutting capacity (mm)	N.W. (g)
	L	Jaw opening	Tip side width		
CP150H	165	0~20	9.3	φ2	165
CP200H	203	0~25	11	φ2.6	270
▮Spring type					
CPS200H	204	0~25	11	φ2.6	275

▮Vinyl grip type (JIS) (except CPZ250H)

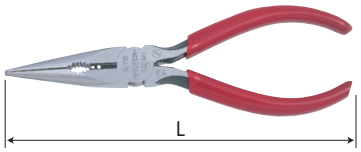
Item No.	Size (mm)			Cutting capacity (mm)	N.W. (g)
	L	Jaw opening	Tip side width		
CPZ150H	166	0~20	9.3	φ2	170
CPZ200H	204	0~25	11	φ2.6	275
CPZ250H	250	0~30	11.5	φ3.2	380



SZ
SIDE CUTTING PLIERS (JIS) (with Molded Cover)

▶ Features
- Great variety of uses like pulling, gripping, bending and cutting steel and copper wires.
- Formed plastic grip cover allows easy ergonomic and non-slip gripping.

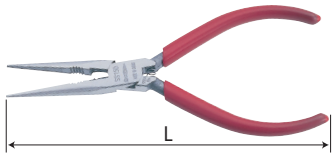
Item No.	Size (mm)	Cutting capacity (mm)		N.W. (g)
	L	Steel wire	Copper wire	
SZ150	160	φ2.0	φ3.0	230
SZ175	185	φ2.6	φ3.5	320
SZ200	210	φ3.2	φ4.0	410



SL150
ADJUSTABLE LONG NOSE PLIERS (JIS)

▶ Features
- Great variety of uses like pulling, gripping, bending and cutting steel and copper wires.
- Optimal for working on small items or in confined spaces.

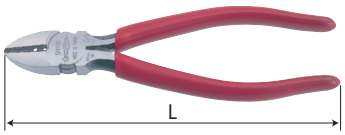
Item No.	Size (mm)	Cutting capacity (mm)		N.W. (g)
	L	Steel wire	Copper wire	
SL150	165	φ1.2	φ2.6	150



SS150
NEEDLE NOSE PLIERS (JIS) (with Spring)

▶ Feature
- Optimal for intricate working on items smaller than SL150 and for use in confined spaces.

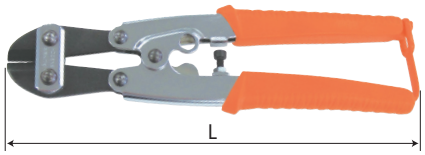
Item No.	Size (mm)	Cutting capacity (mm)		N.W. (g)
	L	Steel wire	Copper wire	
SS150	160	φ1.2	φ2.0	100



SN150
HEAVY DUTY DIAGONAL CUTTING PLIERS (JIS)

▶ Features
- To be used exclusively for cutting steel and copper wires.
- Optimal for intricate working and repairing on electric equipment.

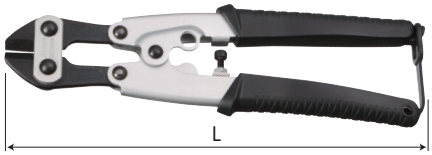
Item No.	Size (mm)	Cutting capacity (mm)			N.W. (g)
	L	Steel wire	Copper wire	Piano wire	
SN150	160	φ1.8	φ2.6	φ1.2	170



SM200H
SUPER CUTTER

▶ Features
- The high grade heat treatment applied to the blades ensures long durability and excellent cutting quality.
- Straight blades very useful for cutting steel wires, piano wires, fences, nails, etc.

Item No.	Size (mm)	Cutting capacity (mm)		N.W. (g)
	L	Steel wire	Piano wire	
SM200H	215	φ4	φ2	290



SM200A
SUPER CUTTER (Aluminum Handle)

▶ Features
- Light type with aluminum handle.
- The high grade heat treatment applied to the blades ensures long durability and excellent cutting quality.
- Straight blades very useful for cutting steel wires, piano wires, fences, nails, etc.

Item No.	Size (mm)	Cutting capacity (mm)		N.W. (g)
	L	Steel wire	Piano wire	
SM200A	215	φ4	φ2	160

●For all the appendix of the general hand tools & clamps, please refer to P.278~280

CS-A • CS-B
SNAP RING PLIERS (for Shaft Use)



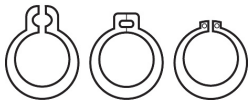
CS0A

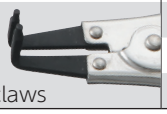

CS0B

▶ Features
- The phosphoric acid manganese film forming treatment of the alloy steel ensures excellent durability.
- The stainless steel grip area is designed to be light and easy to grip.

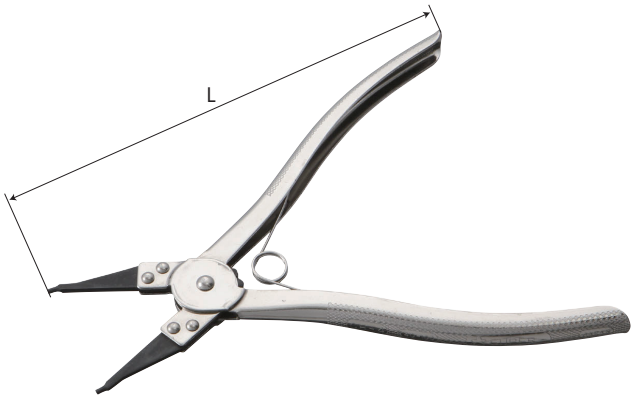
For shaft use

⬅ Open ➡



Claws type	Item No.	Size (mm)			N.W. (g)
		Claw tip dia.	Applicable range (stop ring size)	L	
 Straight claws	**CS0A**	0.9	4~10	140	60
	CS1A	1.7	12~30	180	120
	CS3A	2.5	32~80	200	140
 Bent claws	**CS0B**	0.9	4~10	130	60
	CS1B	1.7	12~30	172	120
	CS3B	2.5	32~80	192	140

CH-A • CH-B
SNAP RING PLIERS (for Hole Use)



CH0A


CH0B

▶ Features
- The phosphoric acid manganese film forming treatment of the alloy steel ensures excellent durability.
- The stainless steel grip area is designed to be light and easy to grip.

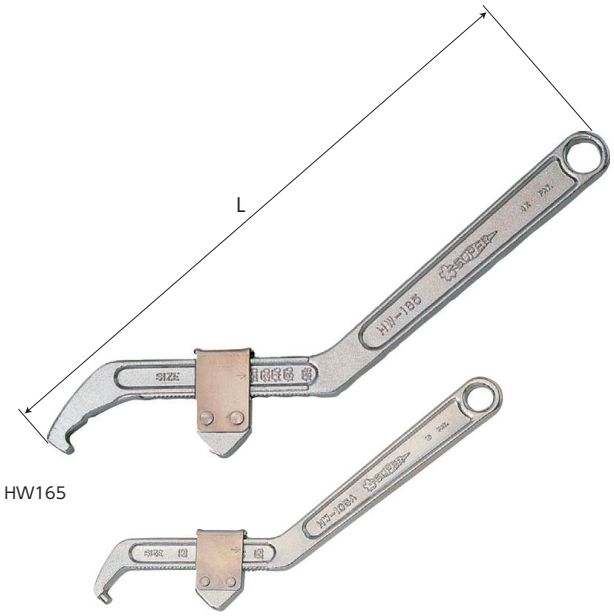
For hole use

➡ Close ⬅



Claws type	Item No.	Size (mm)			N.W. (g)
		Claw tip dia.	Applicable range (stop ring size)	L	
 Straight claws	**CH0A**	0.9	8~25	140	60
	CH1A	1.7	14~60	180	130
	CH4A	2.5	40~100	225	150
 Bent claws	**CH0B**	0.9	8~25	130	60
	CH1B	1.7	14~60	168	130
	CH4B	2.5	40~100	212	150

●For all the appendix of the general hand tools & clamps, please refer to P.278~280



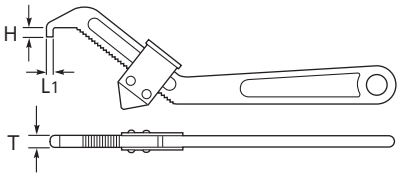
HW165

HW105A

HW • HW105A
HOOK SPANNER

▶ Feature
- Special spanner for tightening and removing round nuts with notches or holes.

▶ Example of use

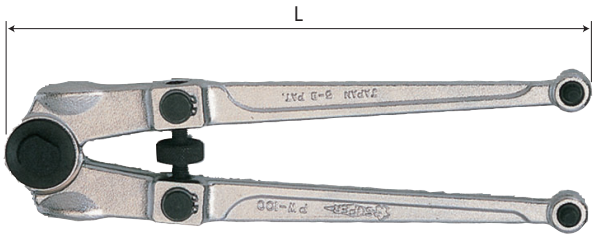



▮Standard type

Item No.	Applicable round nut dia. (mm)	Size (mm)				N.W. (g)
		L	L1	H	T	
HW105	35～105	270	4.0	6.5	8	350
HW165	95～165	365	6.5	8	10	680

▮Round tip type

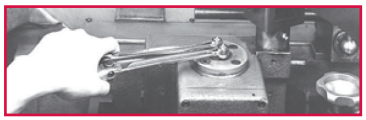
Item No.	Applicable round nut dia. (mm)	Size (mm)				N.W. (g)
		L	L1	H	T	
HW105A	35～105	270	ϕ6	6.5	8	350



PW100 • PWA • PWB
PIN SPANNER

▶ Features
- Special spanner for tightening and removing round nuts with pin holes.
- Designed to be used by hammering the rotating part at the end of the handle.
- The opening range is adjustable between 18～100mm by simply turning the roulette located at the base of the body.

▶ Example of use

▶ Accessories
- PWA･PWB pins (a pair)



Item No.	Size (mm)		N.W. (g)
	Opening (from the pins center)	L	
PW100	18～100	250	600



▶ Features
- The usage range can be expanded by changing the pins.
- Pins have two 10mm-wide sides to allow easy changing with a spanner.

▮Pins (a pair)

Item No.	Size (mm)	
	Thinner part X Larger part (pin dia.)	Pin length
PWA	5×7	5.8×7.5
PWB	6×8	7×8

●For all the appendix of the general hand tools & clamps, please refer to P.278～280

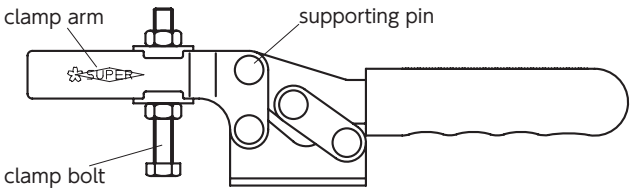
Tool sets / cases
Socket wrenches
Ratchet wrenches
Offset wrenches, grips
Gear wrenches, open-end spanners
Spanners
Safety ropes
Combination hammer
Sockets
Hex key wrenches
Adjustable angle wrenches
Pliers
Hook spanners, pin spanners
Toggle clamps
C clamps
L clamps
Super setters
Grip pliers
Welding tools
Iron man

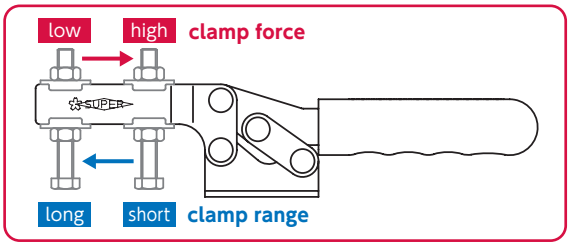
▮Toggle clamp lineup outline:

At Super Tool we assorted a toggle clamp line up featuring hold-down type (horizontal handle vertical handle types), push type, push/pull type and latch type. These items are best suited for inspection jigs, welding jigs, assembly jigs or processing jigs. Stainless steel assembly pins are equipping almost all the models, so they can be used for a long time.

▮Max. holding capacity (clamping force) and max. clamp range:

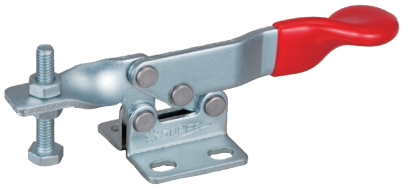
For the hold-down type clamps, the maximum force is measured with the spindle position nearest to the handle. Therefore, the clamp force gets lower as the spindle comes nearer to the tip of the clamp arm.

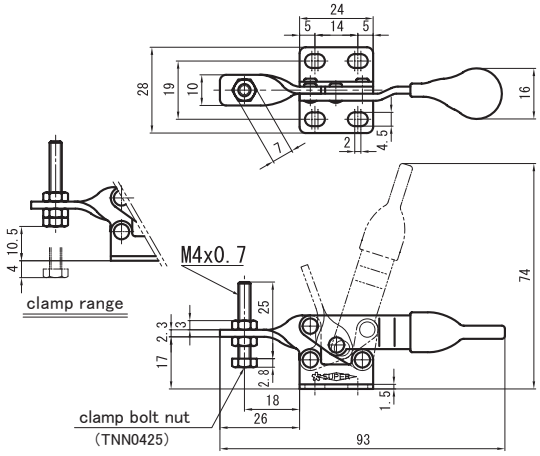




▮TOGGLE CLAMP (Horizontal Handle Type)

TD01F

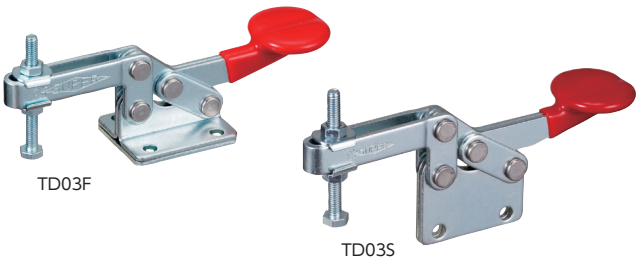


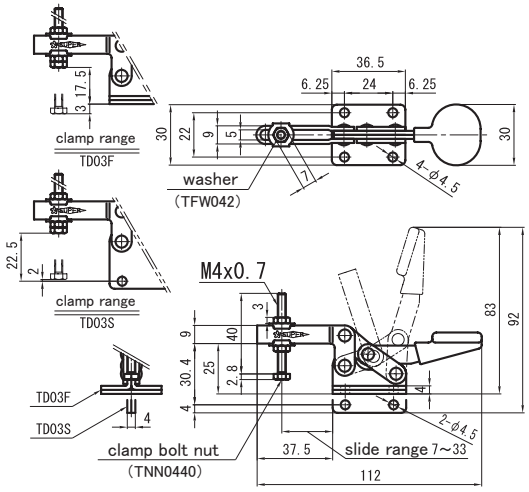


Item No.	Base type	N.W.(g)
TD01F	Flange	38

- Max. holding capacity : 0.2kN
- Handle operation angle : 75˚
- Clamp arm moving angle : 75˚
- Supporting pin : stainless steel

TD03F • TD03S

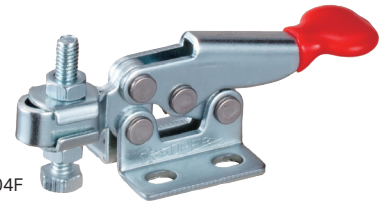


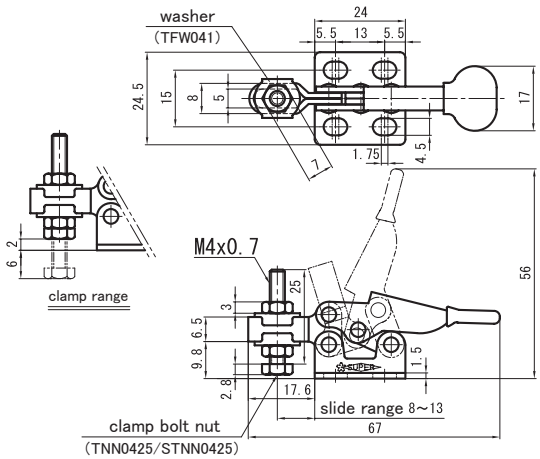


Item No.	Base type	N.W.(g)
TD03F	Flange	105
TD03S	Straight	105

- Max. holding capacity : 0.3kN
- Handle operation angle : 55˚
- Clamp arm moving angle : 65˚
- Supporting pin : stainless steel

TD04F • STD04F



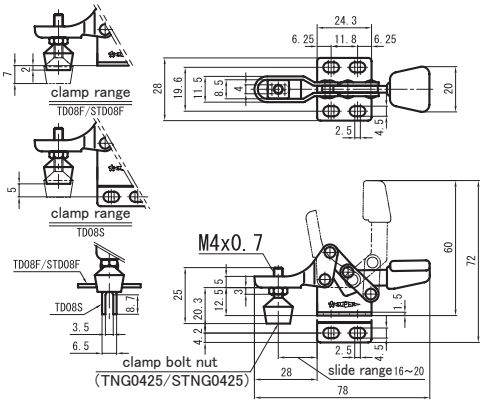


Item No.	Base type	N.W.(g)
TD04F	Flange	33
STD04F	Flange/stainless steel	33

- Max. holding capacity : 0.2kN
- Handle operation angle : 65˚
- Clamp arm moving angle : 55˚
- Supporting pin : stainless steel

TOGGLE CLAMP
(Horizontal Handle Type)

TD08(F • S) • STD08F

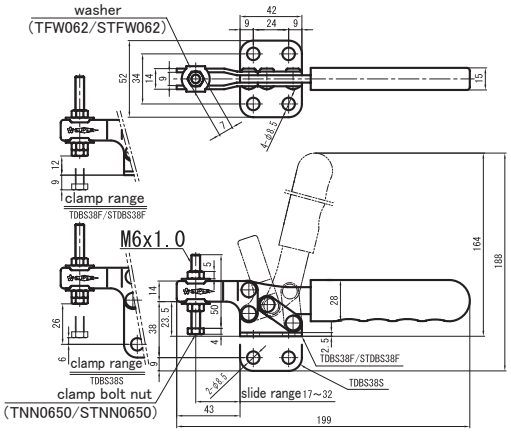


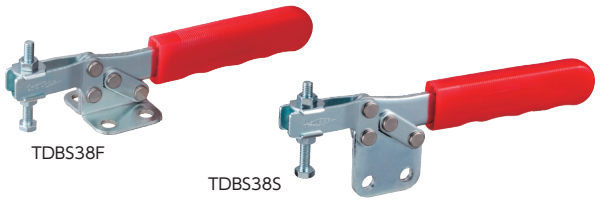


Item No.	Base type	N.W.(g)
TD08F	Flange	42
TD08S	Straight	42
STD08F	Flange/stainless steel	42

- Max. holding capacity : 0.3kN
- Clamp arm moving angle : 80°
- Handle operation angle : 88°
- Supporting pin : stainless steel

TDBS38(F • S) • STDBS38F

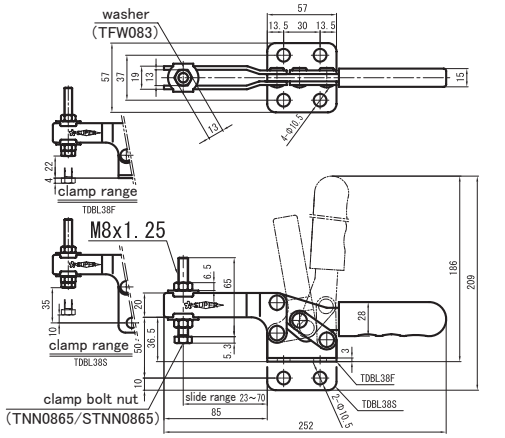


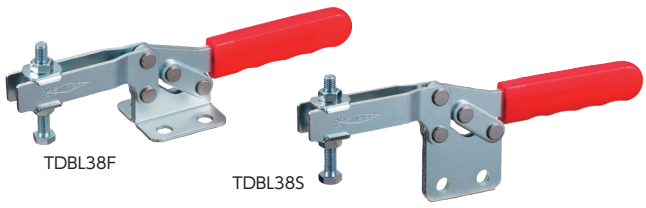


Item No.	Base type	N.W.(g)
TDBS38F	Flange	222
TDBS38S	Straight	222
STDBS38F	Flange/stainless steel	222

- Max. holding capacity : 2.5kN
- Clamp arm moving angle : 75°
- Handle operation angle : 70°
- Supporting pin : stainless steel

TDBL38(F • S) • STDBL38F

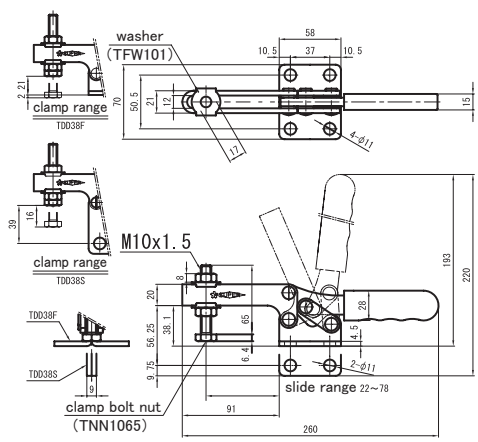


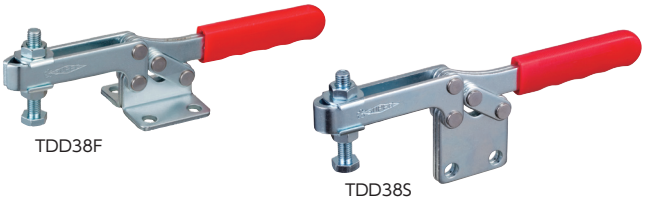


Item No.	Base type	N.W.(g)
TDBL38F	Flange	447
TDBL38S	Straight	447
STDBL38F	Flange/stainless steel	447

- Max. holding capacity : 2.8kN
- Clamp arm moving angle : 80°
- Handle operation angle : 80°
- Supporting pin : stainless steel

TDD38F • TDD38S



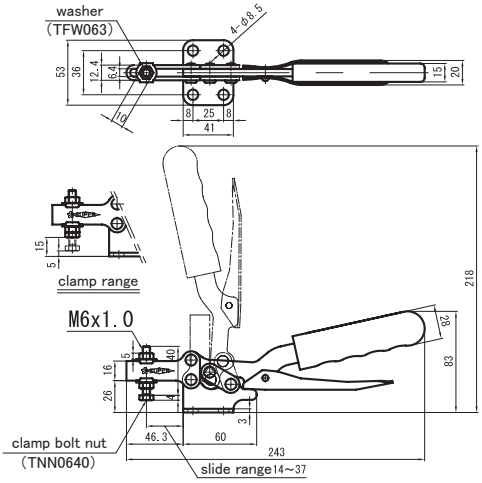


Item No.	Base type	N.W.(g)
TDD38F	Flange	705
TDD38S	Straight	705

- Max. holding capacity : 5.0kN
- Clamp arm moving angle : 65°
- Handle operation angle : 85°
- Supporting pin : stainless steel

Tool sets / cases
Socket wrenches
Ratchet wrenches
Offset wrenches, grips
Gear wrenches, open-end spanners
Spanners
Safety ropes
Combination hammer
Sockets
Hex key wrenches
Adjustable angle wrenches
Pliers
Hook spanners, pin spanners
Toggle clamps
C clamps
L clamps
Super setters
Grip pliers
Welding tools
Iron man

TOGGLE CLAMP (Horizontal Handle Type)

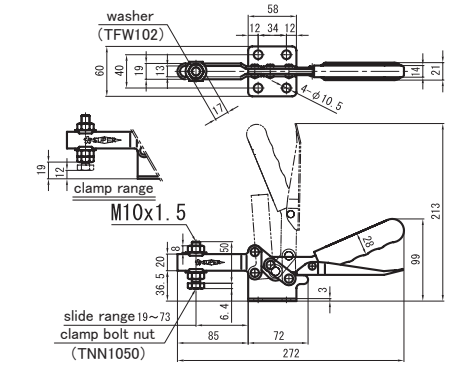


TDKS38F

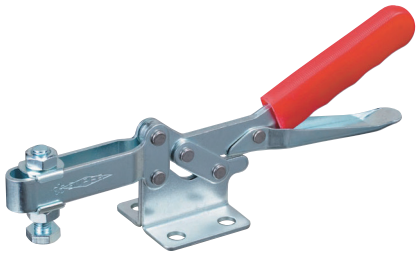


Item No.	Base type	N.W.(g)
TDKS38F	Flange	380

- Max. holding capacity : 2.8kN
- Handle operation angle : 90˚
- Clamp arm moving angle : 90˚
- Supporting pin : stainless steel

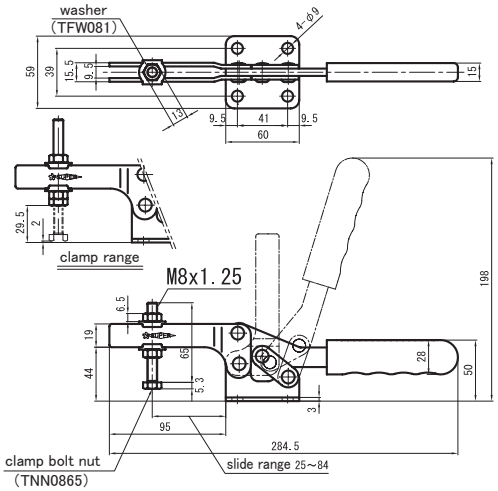


TDKL38F

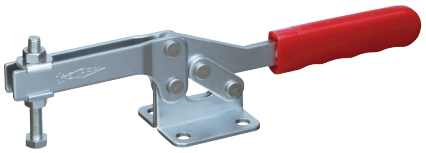


Item No.	Base type	N.W.(g)
TDKL38F	Flange	560

- Max. holding capacity : 3.0kN
- Handle operation angle : 85˚
- Clamp arm moving angle : 80˚
- Supporting pin : stainless steel

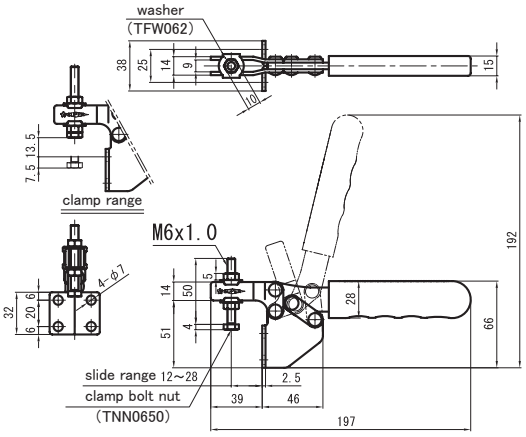


TDA43F

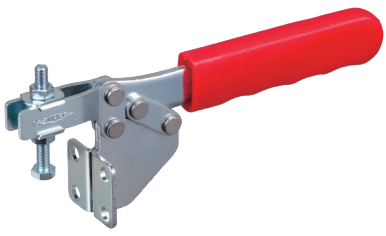


Item No.	Base type	N.W.(g)
TDA43F	Flange	500

- Max. holding capacity : 2.8kN
- Handle operation angle : 72˚
- Clamp arm moving angle : 90˚
- Supporting pin : stainless steel



TDCS38F

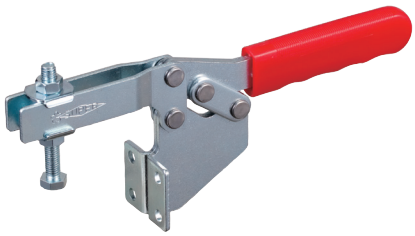


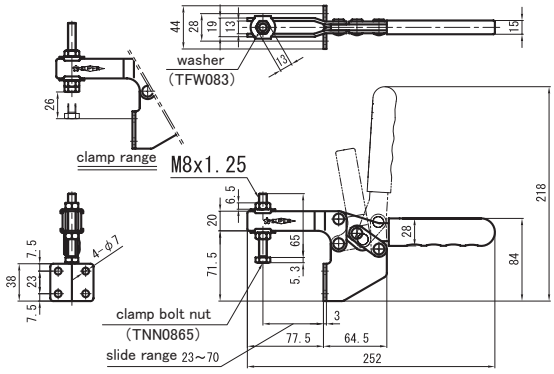
Item No.	Base type	N.W.(g)
TDCS38F	Flange	245

- Max. holding capacity : 2.5kN
- Handle operation angle : 72˚
- Clamp arm moving angle : 72˚
- Supporting pin : stainless steel

TOGGLE CLAMP
(Horizontal Handle Type)

TDCL38F



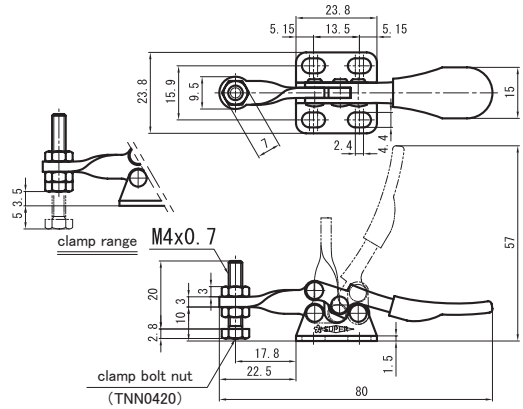


Item No.	Base type	N.W.(g)
TDCL38F	Flange	500

- Max. holding capacity : 2.8kN
- Handle operation angle : 80°
- Clamp arm moving angle : 80°
- Supporting pin : stainless steel

TDH150F



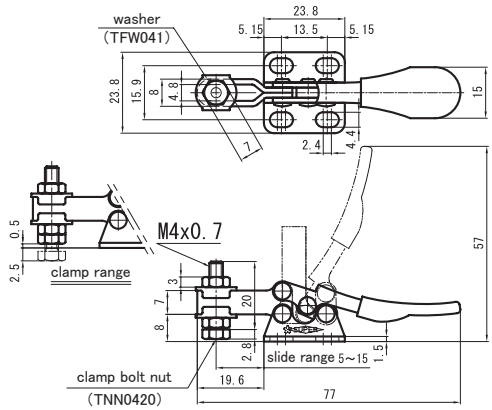


Item No.	Base type	N.W.(g)
TDH150F	Flange	28

- Max. holding capacity : 0.27kN
- Handle operation angle : 80°
- Clamp arm moving angle : 90°
- Supporting pin : stainless steel

TDH250F



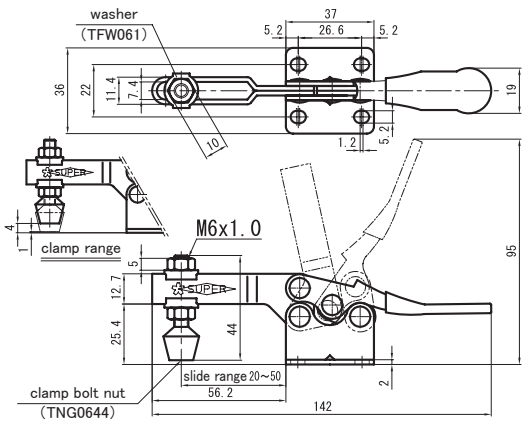


Item No.	Base type	N.W.(g)
TDH250F	Flange	30

- Max. holding capacity : 0.27kN
- Handle operation angle : 80°
- Clamp arm moving angle : 90°
- Supporting pin : stainless steel

TDH350F

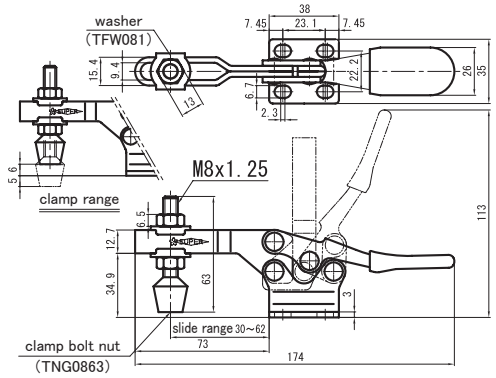




Item No.	Base type	N.W.(g)
TDH350F	Flange	124

- Max. holding capacity : 0.9kN
- Handle operation angle : 60°
- Clamp arm moving angle : 85°
- Supporting pin : stainless steel

Tool sets / cases
Socket wrenches
Ratchet wrenches
Offset wrenches, grips
Gear wrenches, open-end spanners
Spanners
Safety ropes
Combination hammer
Sockets
Hex key wrenches
Adjustable angle wrenches
Pliers
Hook spanners, pin spanners
Toggle clamps
C clamps
L clamps
Super setters
Grip pliers
Welding tools
Iron man



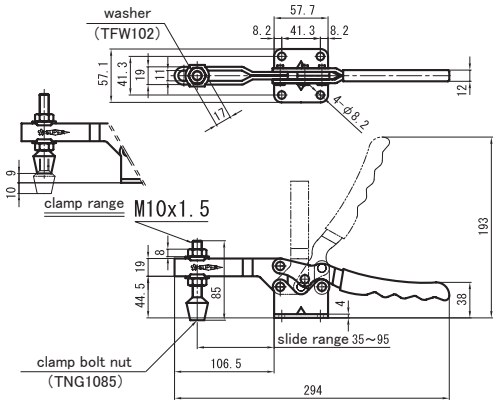
TOGGLE CLAMP (Horizontal Handle Type)

TDH450F

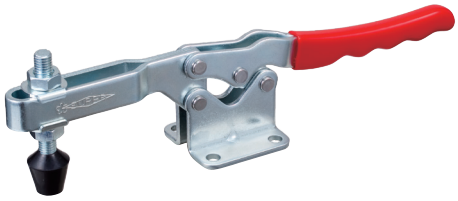


Item No.	Base type	N.W.(g)
TDH450F	Flange	252

- Max. holding capacity : 2.27kN
- Handle operation angle : 65˚
- Clamp arm moving angle : 90˚
- Supporting pin : stainless steel



TDH550F

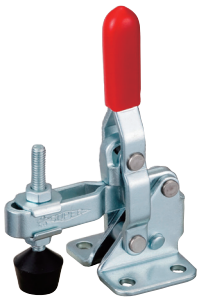


Item No.	Base type	N.W.(g)
TDH550F	Flange	655

- Max. holding capacity : 3.4kN
- Handle operation angle : 50˚
- Clamp arm moving angle : 85˚
- Supporting pin : stainless steel

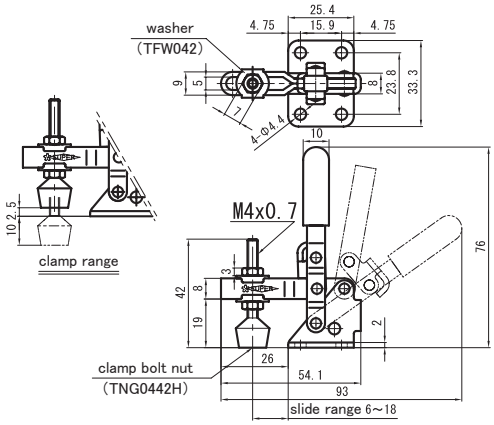
TOGGLE CLAMP (Vertical Handle Type)

TDV150F

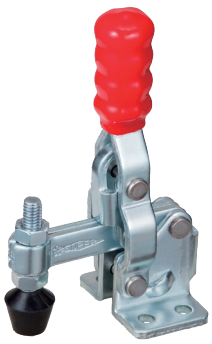


Item No.	Base type	N.W.(g)
TDV150F	Flange	66

- Max. holding capacity : 0.5kN
- Handle operation angle : 56˚
- Clamp arm moving angle : 100˚
- Supporting pin : stainless steel

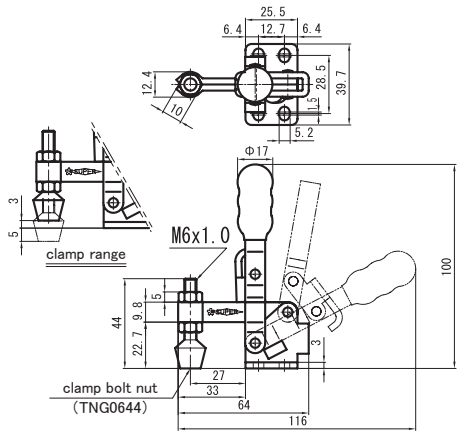


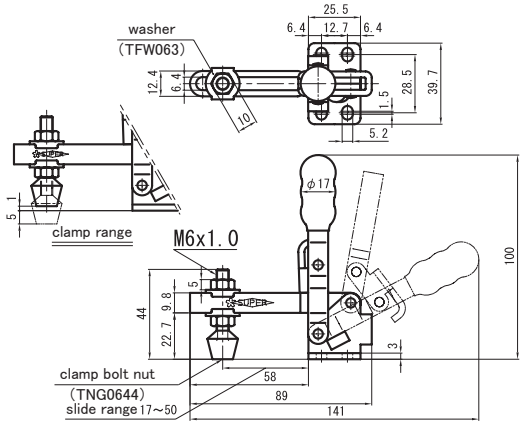
TDV250F



Item No.	Base type	N.W.(g)
TDV250F	Flange	150

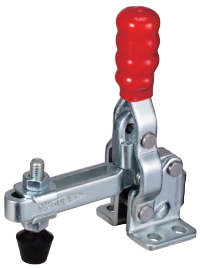
- Max. holding capacity : 0.91kN
- Handle operation angle : 60˚
- Clamp arm moving angle : 100˚
- Supporting pin : stainless steel





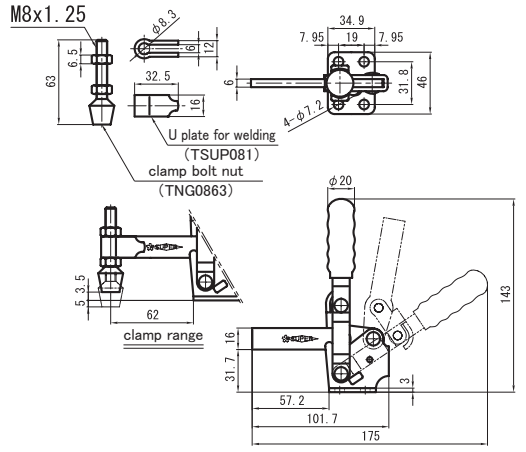
TOGGLE CLAMP
(Vertical Handle Type)

TDV250FL

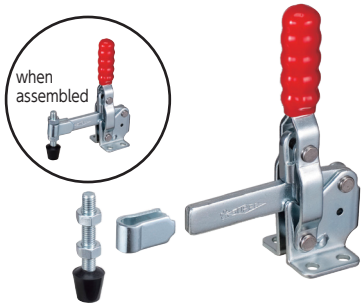


Item No.	Base type	N.W.(g)
TDV250FL	Flange	165

- Max. holding capacity : 0.91kN
- Clamp arm moving angle : 100°
- Handle operation angle : 60°
- Supporting pin : stainless steel

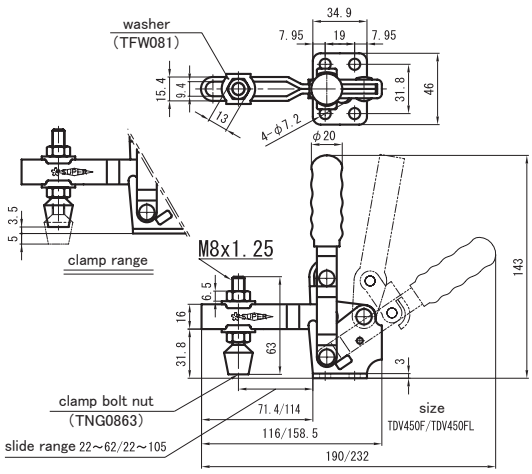


TDV350F

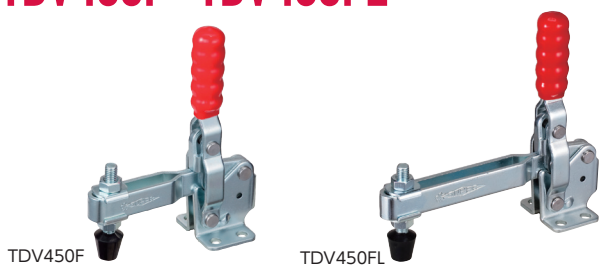


Item No.	Base type	N.W.(g)
TDV350F	Flange	350

- Max. holding capacity : 2.27kN
- Clamp arm moving angle : 100°
- Handle operation angle : 55°
- Supporting pin : stainless steel

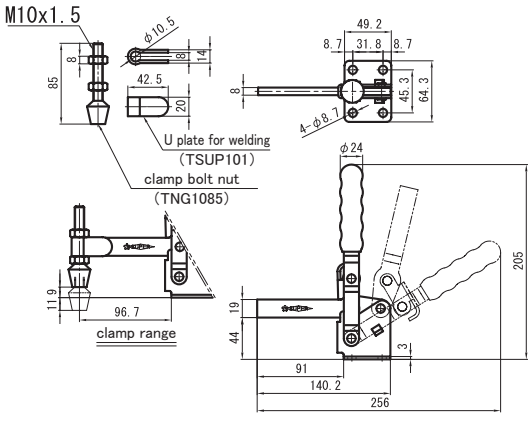


TDV450F • TDV450FL

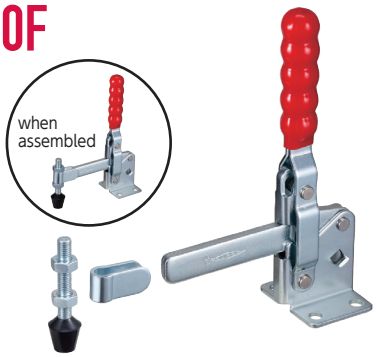


Item No.	Base type	N.W.(g)
TDV450F	Flange	348
TDV450FL	Flange	380

- Max. holding capacity : 2.27kN
- Clamp arm moving angle : 100°
- Handle operation angle : 60°
- Supporting pin : stainless steel



TDV550F



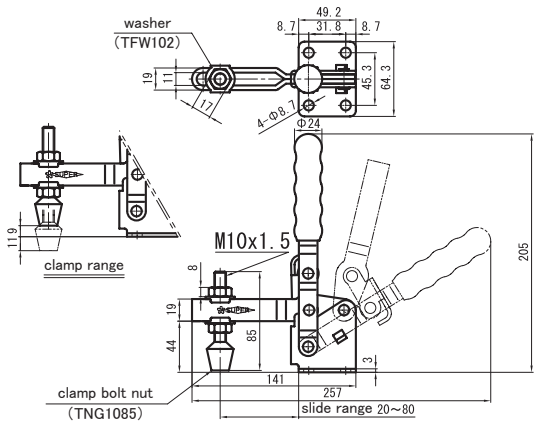
Item No.	Base type	N.W.(g)
TDV550F	Flange	680

- Max. holding capacity : 3.4kN
- Clamp arm moving angle : 105°
- Handle operation angle : 58°
- Supporting pin : stainless steel

TOGGLE CLAMP (Vertical Handle Type)

TDV650F

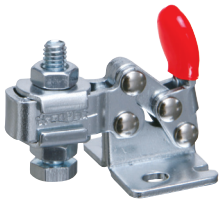


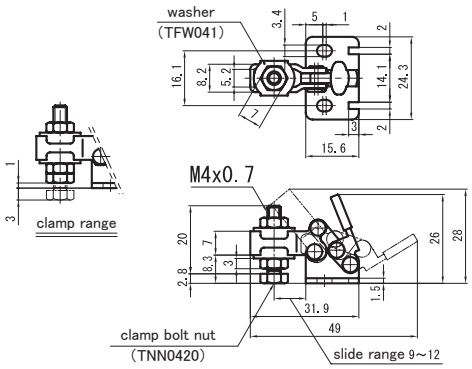


Item No.	Base type	N.W.(g)
TDV650F	Flange	648

- Max. holding capacity : 3.4kN
- Handle operation angle : 58°
- Clamp arm moving angle : 105°
- Supporting pin : stainless steel

TDS10F

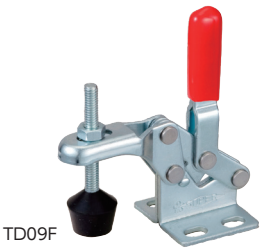




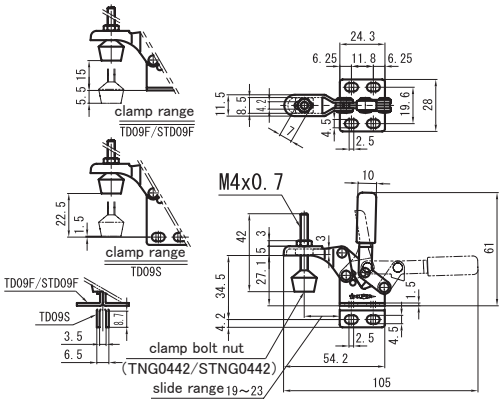
Item No.	Base type	N.W.(g)
TDS10F	Flange	15

- Max. holding capacity : 0.2kN
- Handle operation angle : 80°
- Clamp arm moving angle : 50°
- Supporting pin : stainless steel

TD09(F・S)・STD09F


TD09F

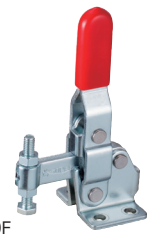

TD09S



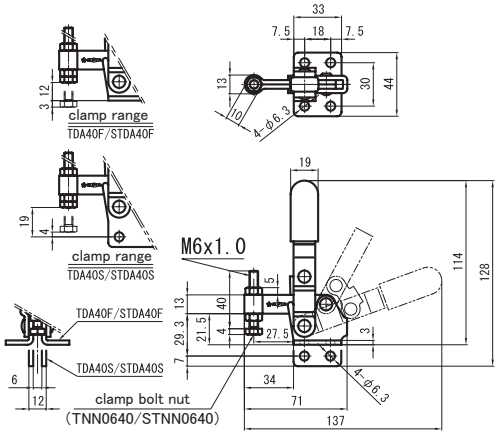
Item No.	Base type	N.W.(g)
TD09F	Flange	42
TD09S	Straight	42
STD09F	Flange/stainless steel	42

- Max. holding capacity : 0.3kN
- Handle operation angle : 88°
- Clamp arm moving angle : 80°
- Supporting pin : stainless steel

TDA40(F・S)・STDA40(F・S)


TDA40F


TDA40S



Item No.	Base type	N.W.(g)
TDA40F	Flange	218
TDA40S	Straight	218
STDA40F	Flange/stainless steel	218
STDA40S	Straight/stainless steel	218

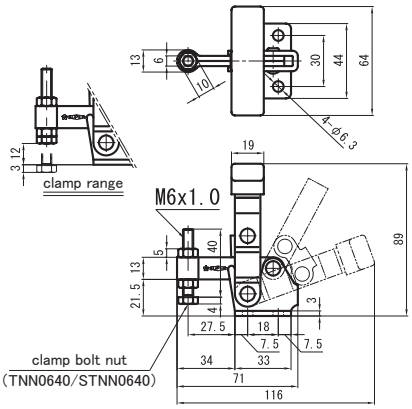
- Max. holding capacity : 1.0kN
- Handle operation angle : 65°
- Clamp arm moving angle : 95°
- Supporting pin : stainless steel

TOGGLE CLAMP
(Vertical Handle Type)

TDP40F • STDP40F



TDP40F



Item No.	Base type	N.W.(g)
TDP40F	Flange	240
STDP40F	Flange/stainless steel	240

- Max. holding capacity : 1.0kN
- Handle operation angle : 65°
- Clamp arm moving angle : 95°
- Supporting pin : stainless steel

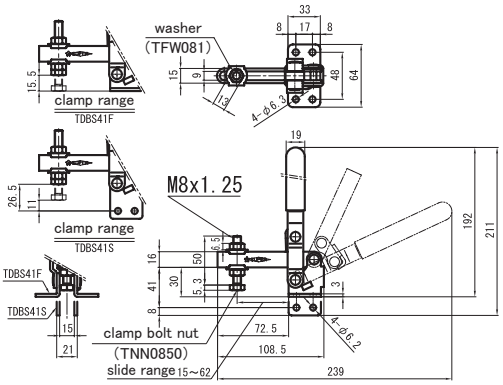
TDBS41F • TDBS41S



TDBS41F



TDBS41S



Item No.	Base type	N.W.(g)
TDBS41F	Flange	390
TDBS41S	Straight	390

- Max. holding capacity : 2.0kN
- Handle operation angle : 64°
- Clamp arm moving angle : 110°
- Supporting pin : stainless steel

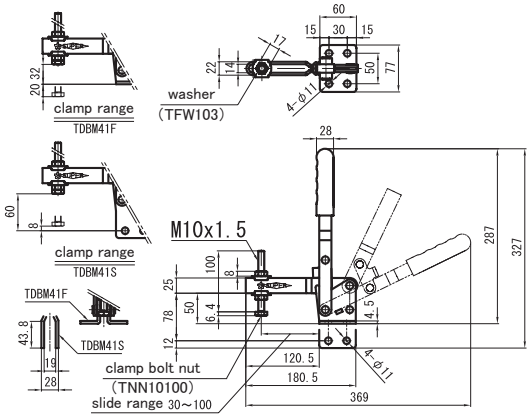
TDBM41F • TDBM41S



TDBM41F



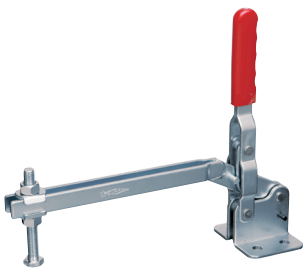
TDBM41S

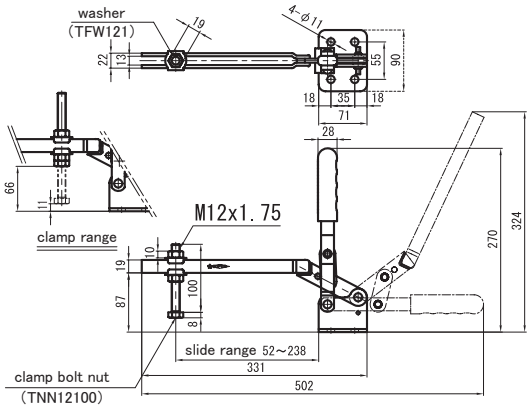


Item No.	Base type	N.W.(g)
TDBM41F	Flange	1300
TDBM41S	Straight	1360

- Max. holding capacity : 3.0kN
- Handle operation angle : 64°
- Clamp arm moving angle : 115°
- Supporting pin : stainless steel

TDJB2F





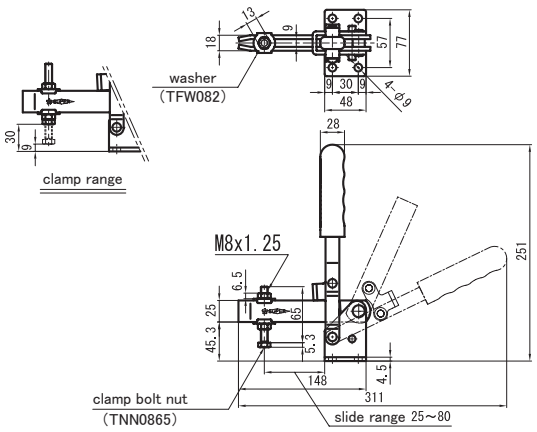
Item No.	Base type	N.W.(g)
TDJB2F	Flange	1480

- Max. holding capacity : 3.7kN
- Handle operation angle : 90°
- Clamp arm moving angle : 114°
- Supporting pin : stainless steel

TOGGLE CLAMP (Vertical Handle Type)

TDX12F

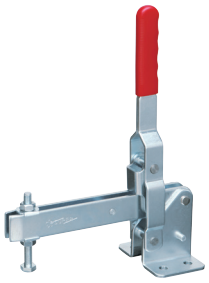


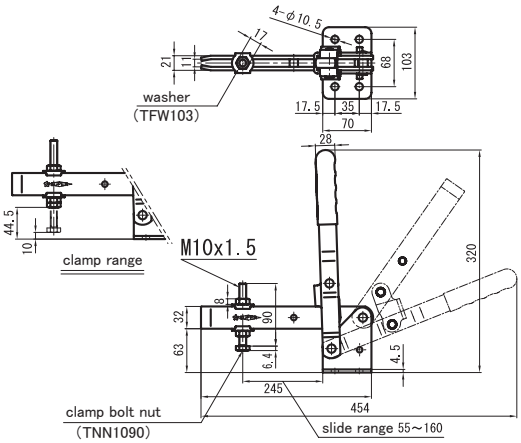


Item No.	Base type	N.W.(g)
TDX12F	Flange	900

- Max. holding capacity : 2.0kN
- Handle operation angle : 62°
- Clamp arm moving angle : 112°
- Supporting pin : stainless steel

TDX14F





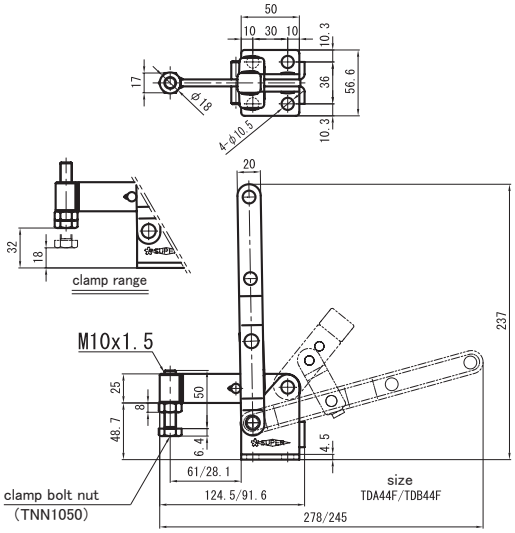
Item No.	Base type	N.W.(g)
TDX14F	Flange	1980

- Max. holding capacity : 3.5kN
- Handle operation angle : 69°
- Clamp arm moving angle : 124°
- Supporting pin : stainless steel

TDA44F • TDB44F


TDA44F


TDB44F



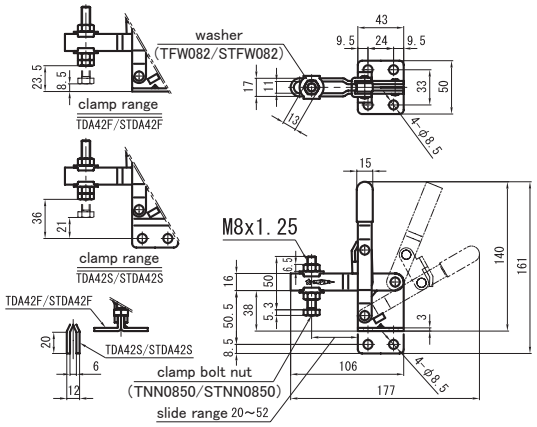
Item No.	Base type	N.W.(g)
TDA44F	Flange	900
TDB44F	Flange	860

- Max. holding capacity : 4.0kN
- Handle operation angle : 75°
- Clamp arm moving angle : 129°
- Supporting pin : stainless steel

TDA42(F • S) • STDA42(F • S)

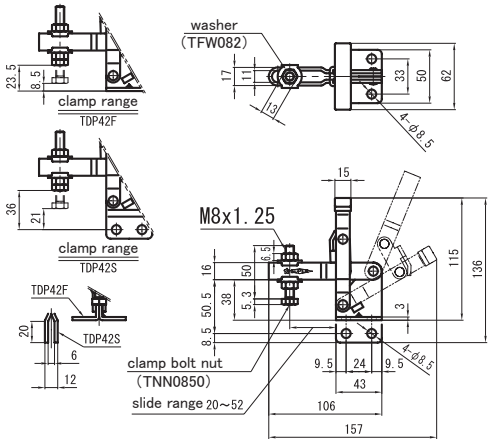

TDA42F


TDA42S



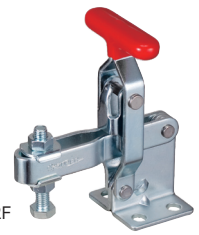
Item No.	Base type	N.W.(g)
TDA42F	Flange	352
TDA42S	Straight	352
STDA42F	Flange/stainless steel	352
STDA42S	Straight/stainless steel	352

- Max. holding capacity : 2.0kN
- Handle operation angle : 45°
- Clamp arm moving angle : 94°
- Supporting pin : stainless steel



TOGGLE CLAMP
(Vertical Handle Type)

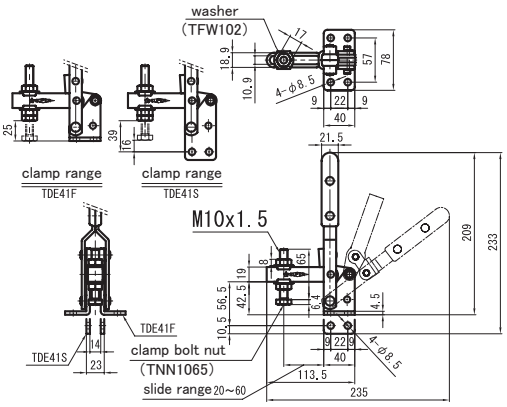
TDP42F • TDP42S


TDP42F

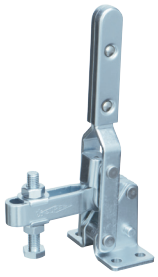

TDP42S

Item No.	Base type	N.W.(g)
TDP42F	Flange	380
TDP42S	Straight	380

- Max. holding capacity : 2.0kN
- Handle operation angle : 45°
- Clamp arm moving angle : 94°
- Supporting pin : stainless steel



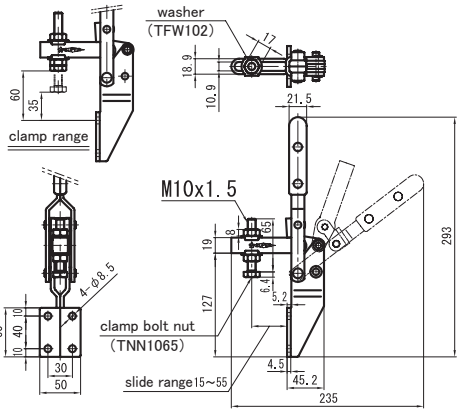
TDE41F • TDE41S


TDE41F

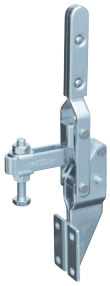

TDE41S

Item No.	Base type	N.W.(g)
TDE41F	Flange	800
TDE41S	Straight	800

- Max. holding capacity : 3.0kN
- Handle operation angle : 52°
- Clamp arm moving angle : 108°

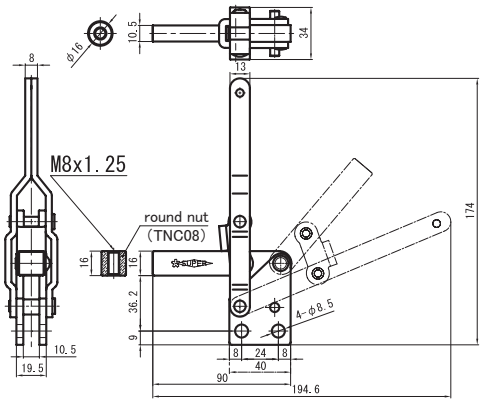


TDF41F

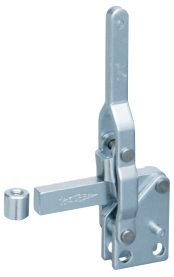


Item No.	Base type	N.W.(g)
TDF41F	Flange	1020

- Max. holding capacity : 3.0kN
- Handle operation angle : 52°
- Clamp arm moving angle : 108°



TD35S



Item No.	Base type	N.W.(g)
TD35S	Straight	450

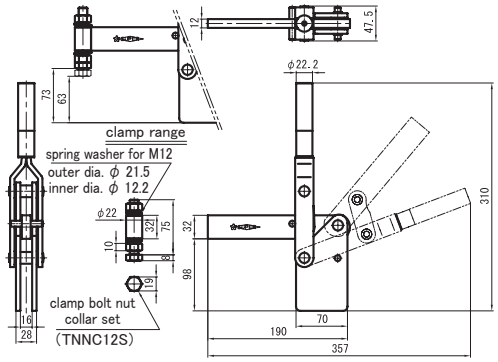
- Max. holding capacity : 1.5kN
- Handle operation angle : 66°
- Clamp arm moving angle : 128°

Tool sets / cases
Socket wrenches
Ratchet wrenches
Offset wrenches, grips
Gear wrenches, open-end spanners
Spanners
Safety ropes
Combination hammer
Sockets
Hex key wrenches
Adjustable angle wrenches
Pliers
Hook spanners, pin spanners
Toggle clamps
C clamps
L clamps
Super setters
Grip pliers
Welding tools
Iron man

TOGGLE CLAMP (Vertical Handle Type)

TD34S



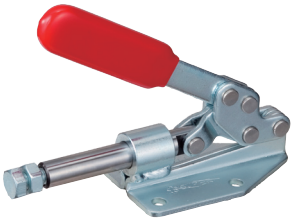


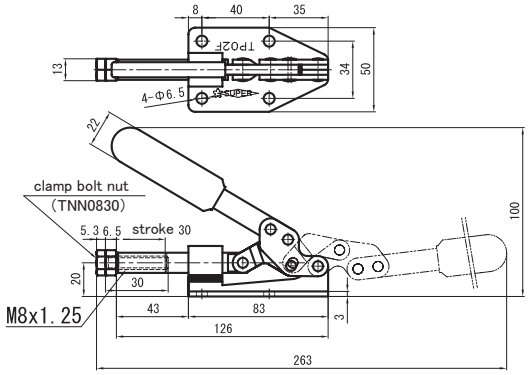
Item No.	Base type	N.W.(g)
TD34S	Straight	2320

- Max. holding capacity : 5.0kN
- Handle operation angle : 68°
- Clamp arm moving angle : 128°
- Supporting pin : stainless steel

TOGGLE CLAMP (Push Type)

TP02F

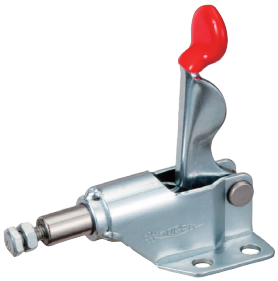


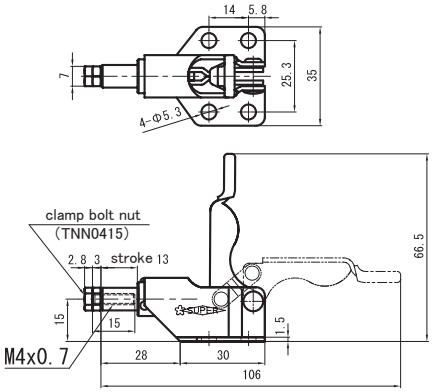


Item No.	Base type	N.W.(g)
TP02F	Flange	368

- Max. holding capacity : 1.8kN
- Handle operation angle : 145°
- Stroke : 30mm
- Supporting pin : stainless steel

TP06F



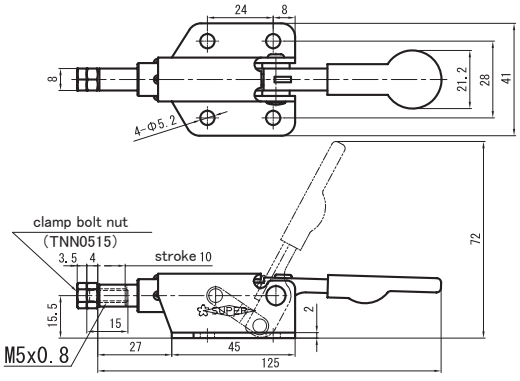


Item No.	Base type	N.W.(g)
TP06F	Flange	60

- Max. holding capacity : 0.5kN
- Handle operation angle : 93°
- Stroke : 13mm
- Supporting pin : stainless steel

TP07F





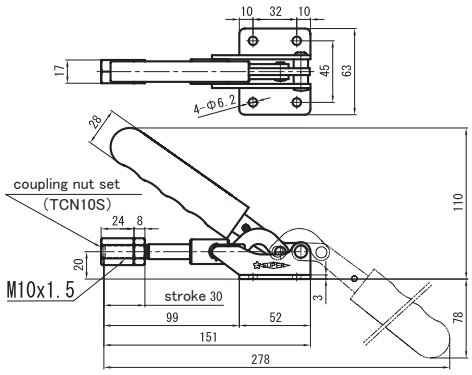
Item No.	Base type	N.W.(g)
TP07F	Flange	100

- Max. holding capacity : 0.5kN
- Handle operation angle : 66°
- Stroke : 10mm
- Supporting pin : stainless steel

TOGGLE CLAMP (Push Type)

TPA50F



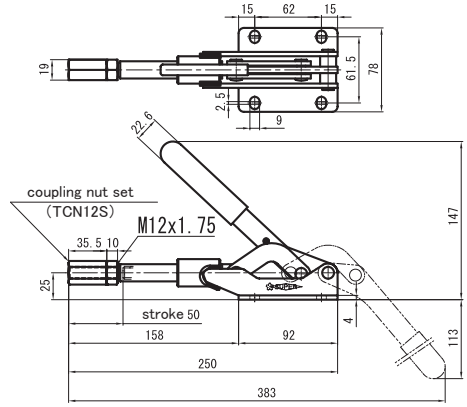


Item No.	Base type	N.W.(g)
TPA50F	Flange	366

- Max. holding capacity : 2.0kN
- Stroke : 30mm
- Handle operation angle : 190°
- Supporting pin : stainless steel

TPB50F



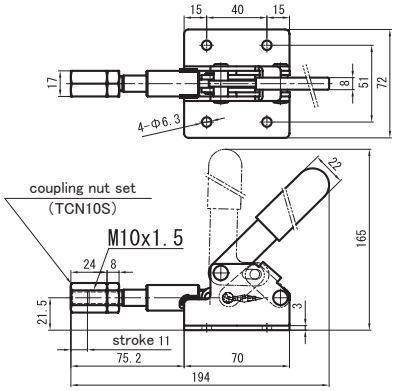


Item No.	Base type	N.W.(g)
TPB50F	Flange	945

- Max. holding capacity : 4.54kN
- Stroke : 50mm
- Handle operation angle : 190°
- Supporting pin : stainless steel

TPBS51F

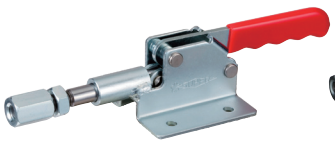




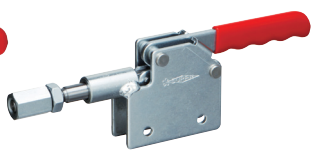
Item No.	Base type	N.W.(g)
TPBS51F	Flange	468

- Max. holding capacity : 1.6kN
- Stroke : 11mm
- Handle operation angle : 45°
- Supporting pin : stainless steel

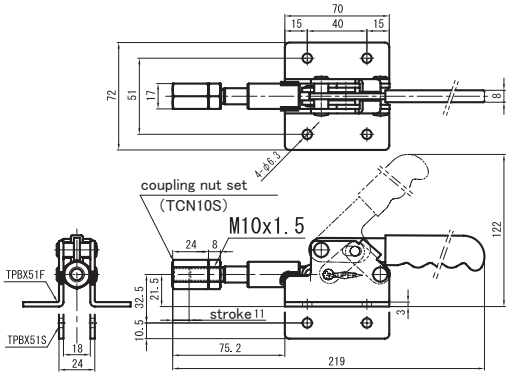
TPBX51F • TPBX51S



TPBX51F



TPBX51S

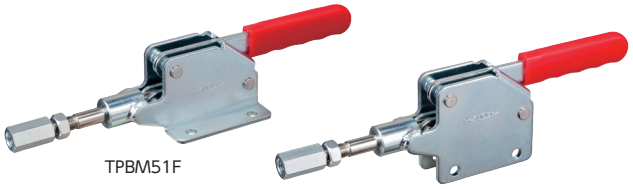


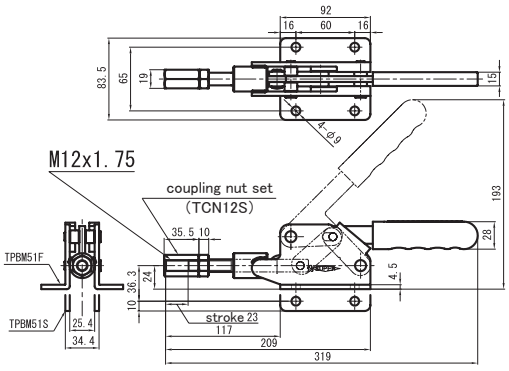
Item No.	Base type	N.W.(g)
TPBX51F	Flange	452
TPBX51S	Straight	452

- Max. holding capacity : 1.6kN
- Stroke : 11mm
- Handle operation angle : 45°
- Supporting pin : stainless steel

TOGGLE CLAMP (Push Type)

TPBM51F • TPBM51S

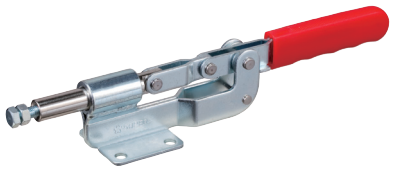


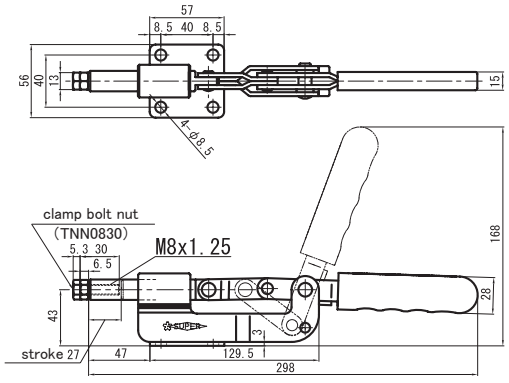


Item No.	Base type	N.W.(g)
TPBM51F	Flange	1270
TPBM51S	Straight	1270

- Max. holding capacity : 2.95kN
- Stroke : 23mm
- Handle operation angle : 45˚
- Supporting pin : stainless steel

TPX6F





Item No.	Base type	N.W.(g)
TPX6F	Flange	640

- Max. holding capacity : 3.0kN
- Stroke : 27mm
- Handle operation angle : 70˚
- Supporting pin : stainless steel

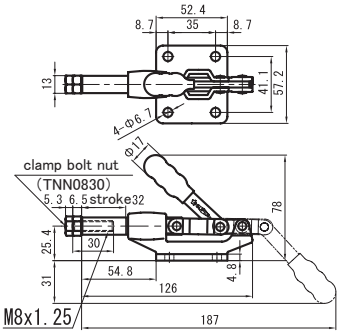
TPL-F

TPL100F•TPL200F

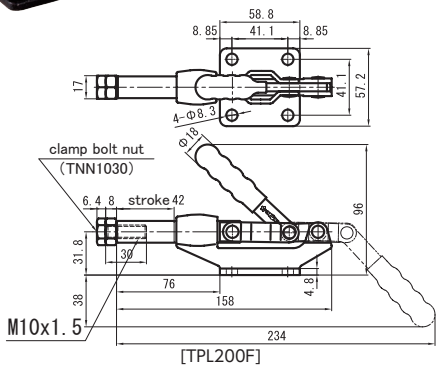


TPL300F

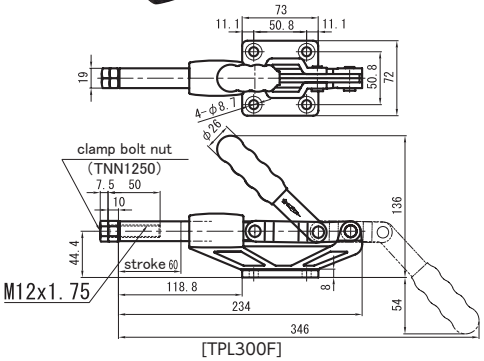




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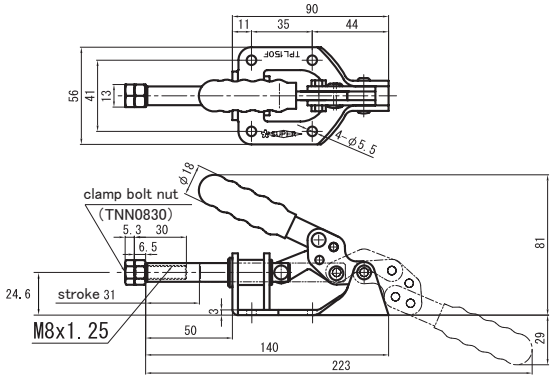


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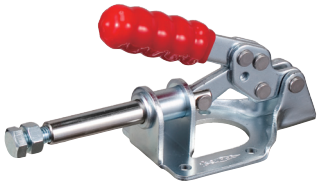


[TPL300F]

Item No.	Base type	Max. holding capacity(kN)	Stroke(mm)	Handle operation angle	N.W.(g)
TPL100F	Flange	2.27	32	190˚	346
TPL200F	Flange	3.86	42	190˚	560
TPL300F	Flange	6.8	60	180˚	1420



TPL150F

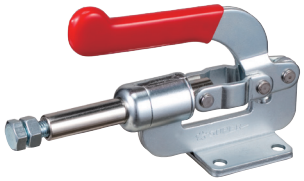


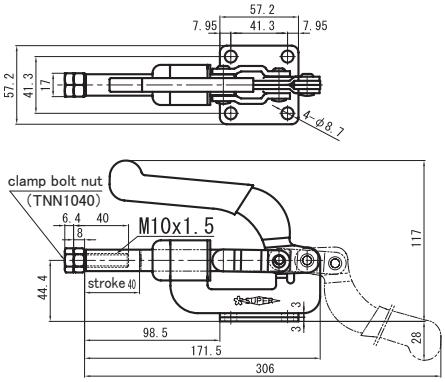
Item No.	Base type	N.W.(g)
TPL150F	Flange	300

- Max. holding capacity : 1.36kN
- Stroke : 31mm
- Handle operation angle : 180˚
- Supporting pin : stainless steel

TOGGLE CLAMP (Push Type)

TPL250F

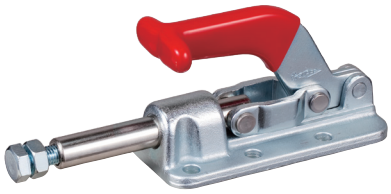


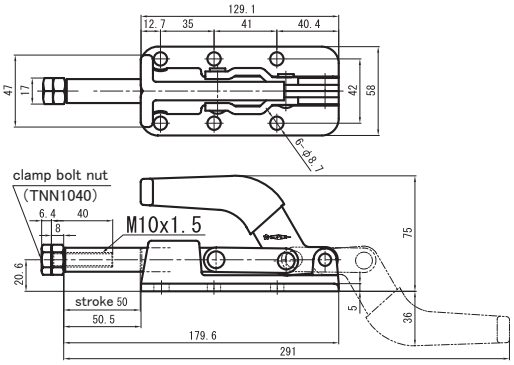


Item No.	Base type	N.W.(g)
TPL250F	Flange	800

- Max. holding capacity : 3.64kN
- Stroke : 40mm
- Handle operation angle : 180°
- Supporting pin : stainless steel

TPL350F



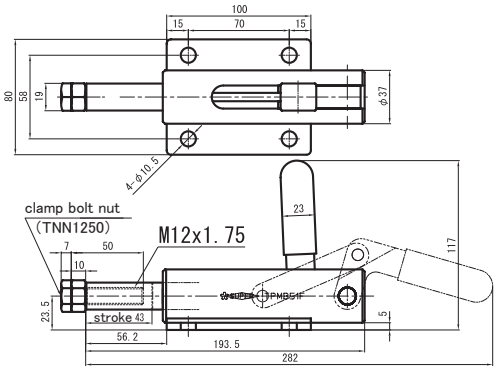


Item No.	Base type	N.W.(g)
TPL350F	Flange	1040

- Max. holding capacity : 11.36kN
- Stroke : 50mm
- Handle operation angle : 180°
- Supporting pin : stainless steel

TPMB51F

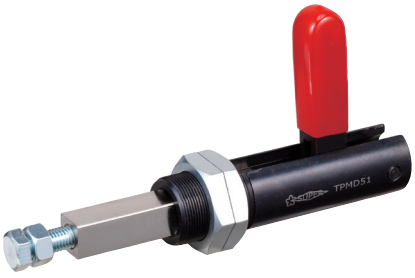


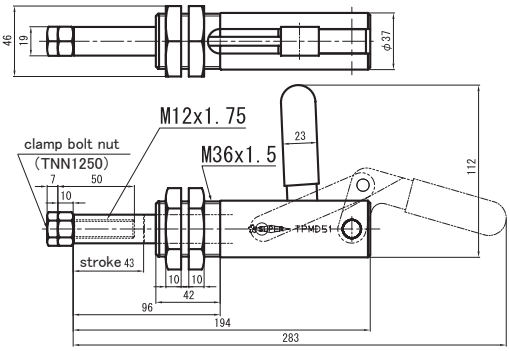


Item No.	Base type	N.W.(g)
TPMB51F	Flange	1650

- Max. holding capacity : 3kN
- Stroke : 43mm
- Handle operation angle : 105°

TPMD51



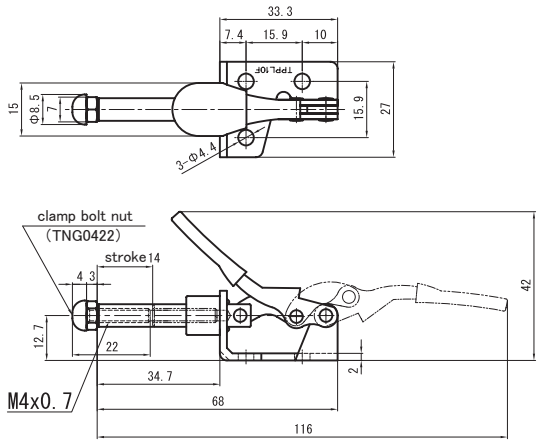


Item No.	Base type	N.W.(g)
TPMD51	Bracket	1320

- Max. holding capacity : 3kN
- Stroke : 43mm
- Handle operation angle : 105°

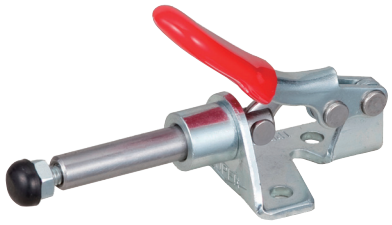
Tool sets / cases
Socket wrenches
Ratchet wrenches
Offset wrenches, grips
Gear wrenches, open-end spanners
Spanners
Safety ropes
Combination hammer
Sockets
Hex key wrenches
Adjustable angle wrenches
Pliers
Hook spanners, pin spanners
Toggle clamps
C clamps
L clamps
Super setters
Grip pliers
Welding tools
Iron man

Tool sets / cases
Socket wrenches
Ratchet wrenches
Offset wrenches, grips
Gear wrenches, open-end spanners
Spanners
Safety ropes
Combination hammer
Sockets
Hex key wrenches
Adjustable angle wrenches
Pliers
Hook spanners, pin spanners
Toggle clamps
C clamps
L clamps
Super setters
Grip pliers
Welding tools
Iron man



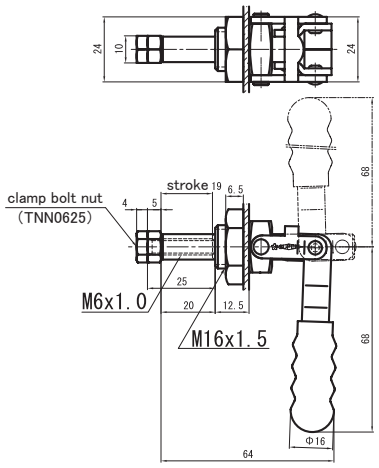
TOGGLE CLAMP (Push Type)

TPPL10F



Item No.	Base type	N.W.(g)
TPPL10F	Flange	42

- Max. holding capacity : 0.45kN
- Stroke : 14mm
- Handle operation angle : 140°
- Supporting pin : stainless steel



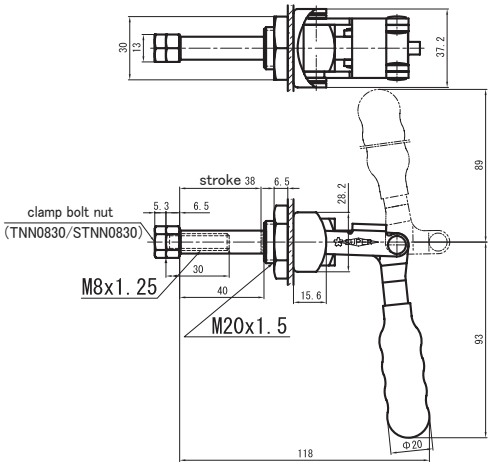
TOGGLE CLAMP (Push / Pull Type)

TPPM50



Item No.	Base type	N.W.(g)
TPPM50	Bracket	123

- Max. holding capacity : 0.91kN
- Stroke : 19mm
- Handle operation angle : 180°
- Supporting pin : stainless steel



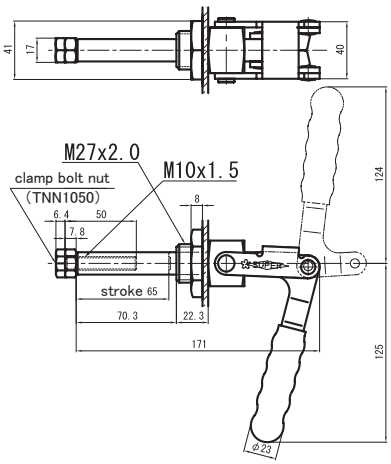
TPPM150・STPPM150



TPPM150

Item No.	Base type	N.W.(g)
TPPM150	Bracket	278
STPPM150	Bracket/stainless steel	278

- Max. holding capacity : 1.36kN
- Stroke : 38mm
- Handle operation angle : 180°
- Supporting pin : stainless steel

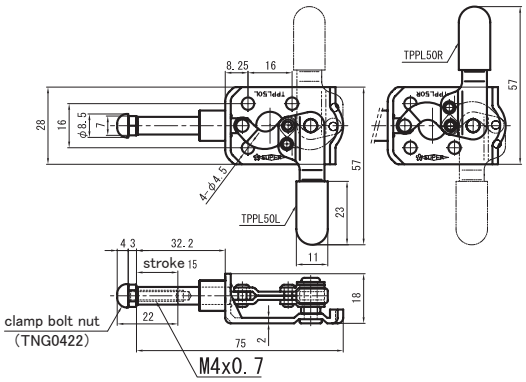


TPPM250



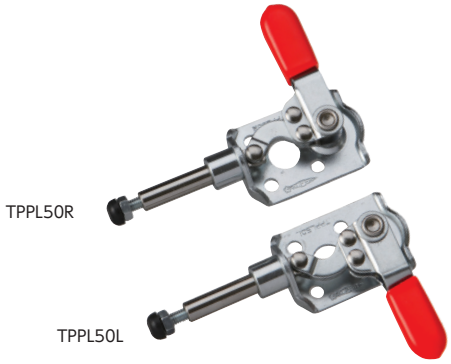
Item No.	Base type	N.W.(g)
TPPM250	Bracket	790

- Max. holding capacity : 3.18kN
- Stroke : 65mm
- Handle operation angle : 180°
- Supporting pin : stainless steel



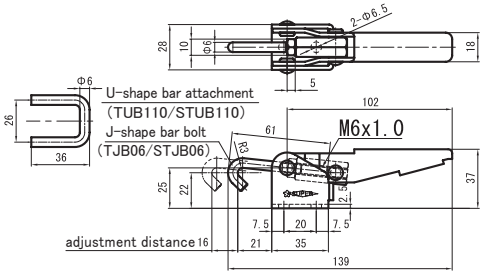
TOGGLE CLAMP (Push / Pull Type)

TPPL50R • TPPL50L

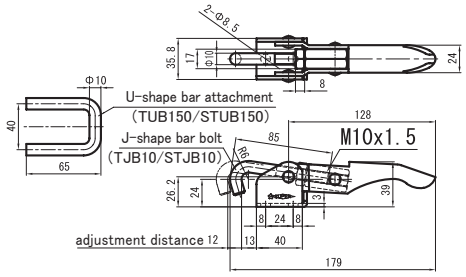


Item No.	Base type	N.W.(g)
TPPL50R	Flange	54
TPPL50L	Flange	54

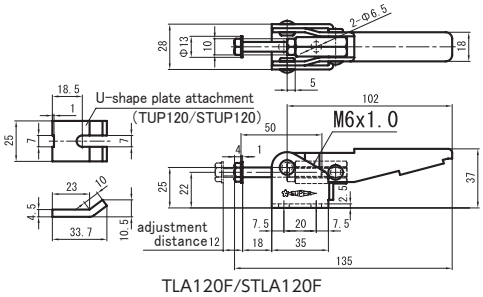
- Max. holding capacity : 0.5kN
- Handle operation angle : 180°
- Stroke : 15mm
- Supporting pin : stainless steel



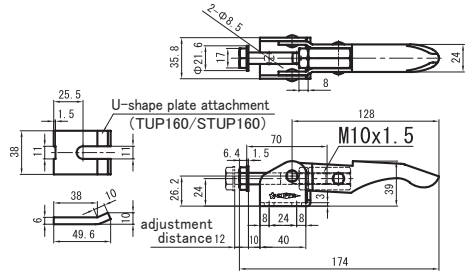
TLA110F/STLA110F



TLA150F/STLA150F



TLA120F/STLA120F



TLA160F/STLA160F

TOGGLE CLAMP (Latch Type)

TLA-F • STLA-F



Item No.	Base type	N.W.(g)
TLA110F	Flange	205
STLA110F	Flange/stainless steel	205
TLA150F	Flange	454
STLA150F	Flange/stainless steel	454

TLA110F•STLA110F
- Max. holding capacity : 1.7kN
- Adjustment distance : 16mm
- Supporting pin : stainless steel

TLA150F•STLA150F
- Max. holding capacity : 3.0kN
- Adjustment distance : 12mm
- Supporting pin : stainless steel

TLA-F • STLA-F

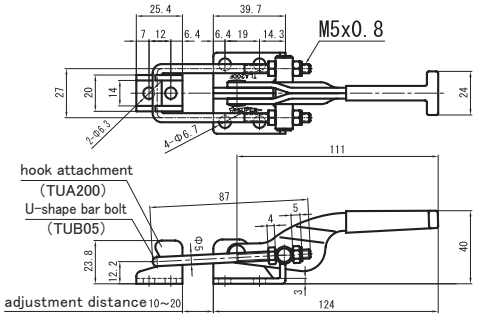


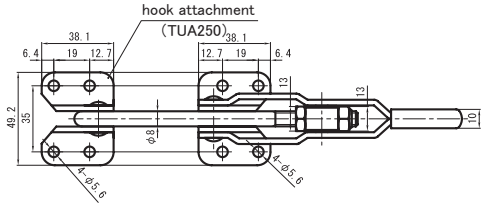
Item No.	Base type	N.W.(g)
TLA120F	Flange	210
STLA120F	Flange/stainless steel	210
TLA160F	Flange	420
STLA160F	Flange/stainless steel	420

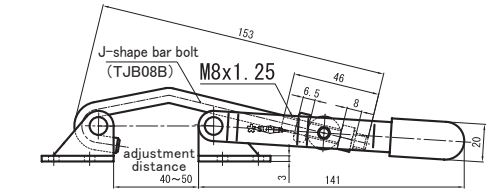
TLA120F•STLA120F
- Max. holding capacity : 1.7kN
- Adjustment distance : 12mm
- Supporting pin : stainless steel

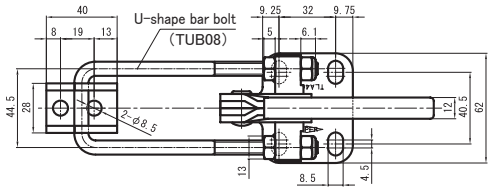
TLA160F•STLA160F
- Max. holding capacity : 3.0kN
- Adjustment distance : 12mm
- Supporting pin : stainless steel

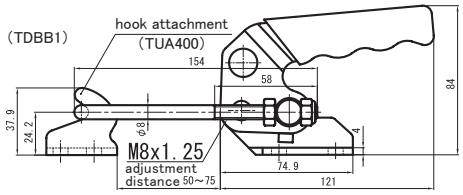
Tool sets / cases
Socket wrenches
Ratchet wrenches
Offset wrenches, grips
Gear wrenches, open-end spanners
Spanners
Safety ropes
Combination hammer
Sockets
Hex key wrenches
Adjustable angle wrenches
Pliers
Hook spanners, pin spanners
Toggle clamps
C clamps
L clamps
Super setters
Grip pliers
Welding tools
Iron man

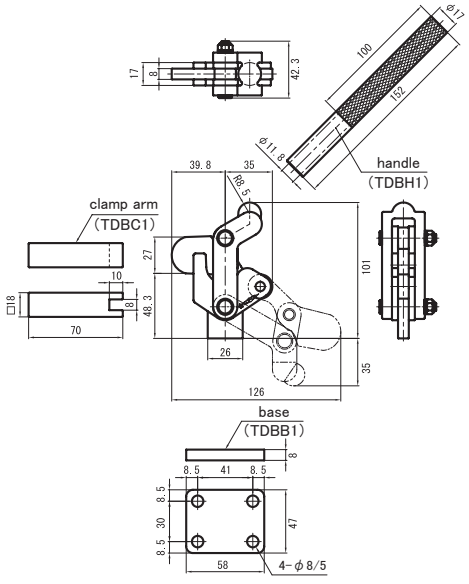






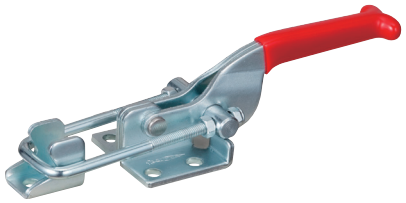






TOGGLE CLAMP (Latch Type)

TLA200F



Item No.	Base type	N.W.(g)
TLA200F	Flange	205

- Max. holding capacity : 3.18kN
- Adjustment distance : 10~20mm
- Supporting pin : stainless steel

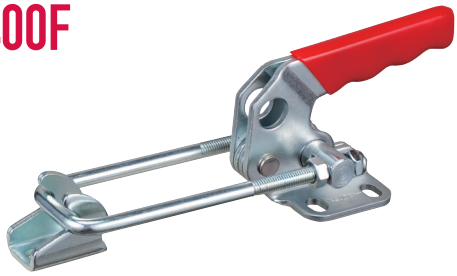
TLA250F



Item No.	Base type	N.W.(g)
TLA250F	Flange	330

- Max. holding capacity : 1.7kN
- Adjustment distance : 40~50mm
- Supporting pin : stainless steel

TLA400F



Item No.	Base type	N.W.(g)
TLA400F	Flange	670

- Max. holding capacity : 7kN
- Adjustment distance : 50~75mm
- Supporting pin : stainless steel

BURR CLAMP

TDB1F

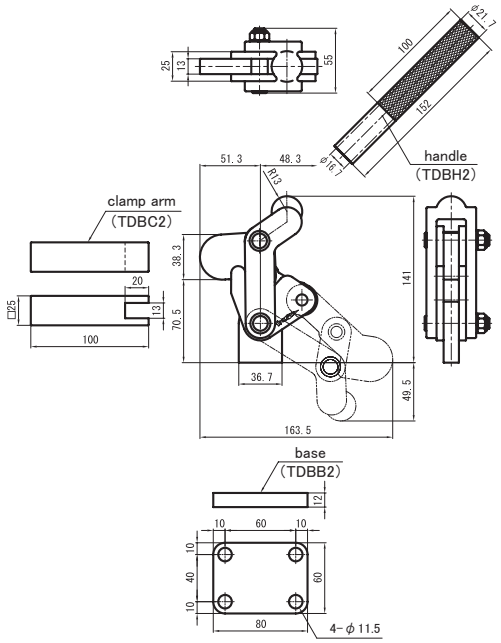
▶Feature

- Arm and handle can be welded and assembled in free angle, so this clamp can be used in many different situations.



Item No.	Base type	N.W.(g)
TDB1F	Flange	830

- Max. holding capacity : 2.0kN
- Clamp arm moving angle : 190°
- Handle operation angle : 118°



BURR CLAMP

TDB2F

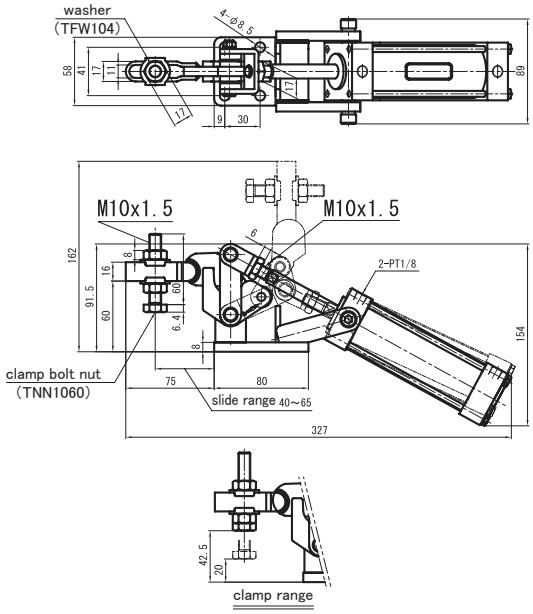
▶Feature

- Arm and handle can be welded and assembled in free angle, so this clamp can be used in many different situations.



Item No.	Base type	N.W.(g)
TDB2F	Flange	2100

- Max. holding capacity : 5.0kN
- Clamp arm moving angle : 192°
- Handle operation angle : 120°



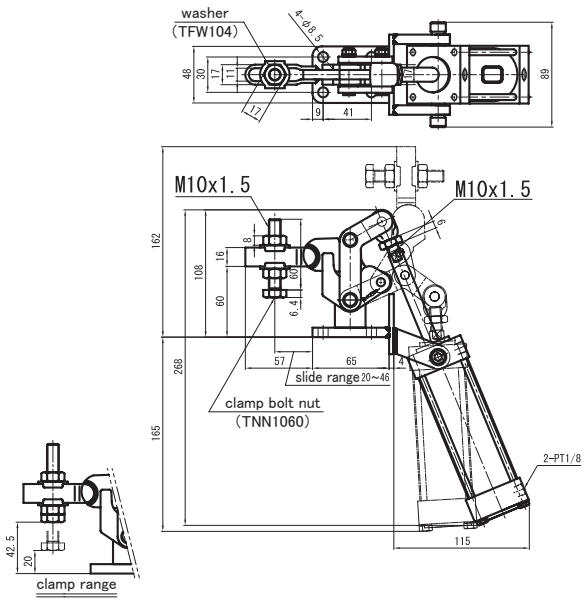
BURR CLAMP
(Air Type)

TDBA200F



Item No.	Base type	N.W.(g)
TDBA200F	Flange	1900

- Max. clamp force : 1.25kN(0.5MPa)
  : 2.5kN(1MPa)
- Outer dia. of tube : 6mm
- Cylinder stroke : 80mm
- Clamp arm moving angle : 90°
- Accessories : One-touch tube joint (2pcs)



TDBA201F



Item No.	Base type	N.W.(g)
TDBA201F	Flange	2000

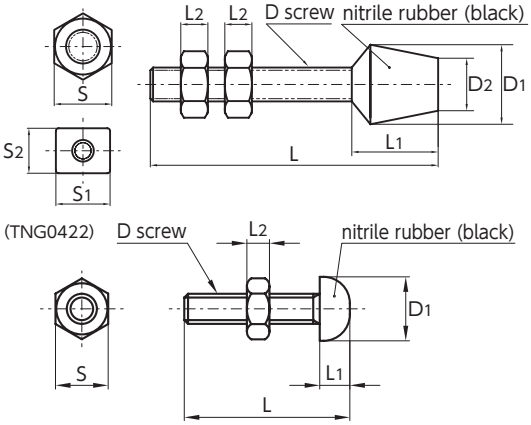
- Max. clamp force : 1.4kN(0.5MPa)
  : 2.8kN(1MPa)
- Outer dia. of tube : 6mm
- Cylinder stroke : 80mm
- Clamp arm moving angle : 90°
- Accessories : One-touch tube joint (2pcs)

TNG • TNG-H • STNG • TNS • TFW • STFW

TOGGLE CLAMP Parts

▮Bolt & nut (w/rubber head)



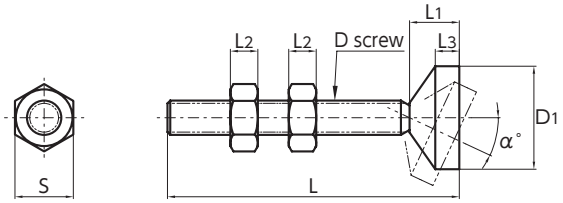


Item No.	D screw	Size(mm)							
		L	L1	L2	D1	D2	S	S1	S2
TNG0422	M4×P0.7	22	4	3	8.5	—	7	—	—
TNG0425		25	11.5		13.5	10.5		9.5	8.1
TNG0442		42							8.2
TNG0442H								—	—
TNG0644	M6×P1	44	14	5	15	10	10		
TNG0651		51							
TNG0863	M8×P1.25	63	19	6.5	18.5	13	13		
TNG0875		75							
TNG1085	M10×P1.5	85	24.5	8	23	15	17		
STNG0425	M4×P0.7	25	11.5	3	13.5	10.5	7	9.5	8.2
STNG0442		42							
STNG0651	M6×P1	51	14	5	15	10	10	—	—
STNG0875	M8×P1.25	75	19	6.5	18.5	13	13		

∗ There is only one nut for TNG0422.
∗ One of the two nuts of respectively TNG0425, TNG0442, STNG0425, STNG0442 is a square nut.
∗ The material of STNG0425, STNG0442, STNG0651, STNG0875 is SUS303.

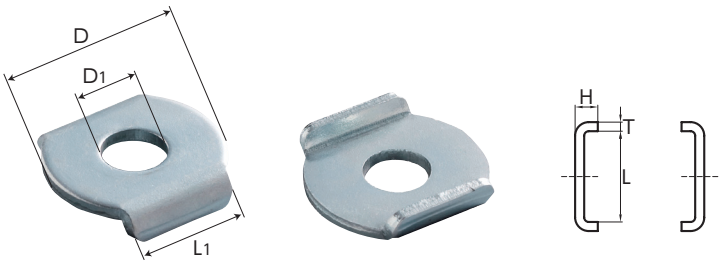
▮Bolt & nut (w/swivel head)





Item No.	D screw	Size(mm)						α°
		L	L1	L2	L3	D1	S	
TNS0650	M6×P1	50	10	5	4	12	10	7
TNS0865	M8×P1.25	65	13	6.5	5.5	20	13	
TNS1085	M10×P1.5	85	15	8			17	
TNS12100	M12×P1.75	100	20	9.6	11	25	19	

▮Washer (a pair)



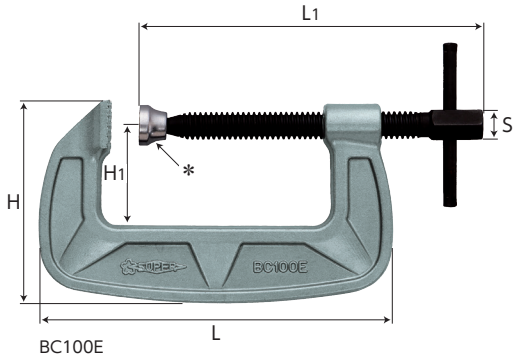
Item No.	Size(mm)					
	L	L1	H	D	D1	T
TFW041	8.3	8	3.2	12	4.3	1
TFW042	9.4	8.4	2.6	12.6	4.2	
TFW061	11.5	7	3.9	14.2	6.3	1.5
TFW062	14.3	12.8	3.2	19	6.5	
TFW063	12.6	10.8	3.4	16.6	6.8	
TFW081	15.7	15.7	4.5	21.6	8.2	2
TFW082	17.5	15	4.7	22.6		
TFW083	19.1	16.5	5	25.1		

Item No.	Size(mm)					
	L	L1	H	D	D1	T
TFW101	21.4	18.5	4.4	27	10.5	2
TFW102	19.1	16.5	5	25.1	10.2	
TFW103	22.2	22.9	8	31		3
TFW121					12.4	
STFW041	8.3	8	3.2	12	4.3	1
STFW062	14.3	12.8		19	6.5	1.5
STFW082	17.5	15	4.7	22.6	8.2	2
STFW083	19.1	16.5	5	25.1		

∗ The material of STFW041, STFW062, STFW082, STFW083 is SUS303.

BC-(E) • CC-(E)
C CLAMP

▶ Features
- Quick tightening handle.
- The final turn of the hexagonal head with a wrench ensures an even securer tightening.

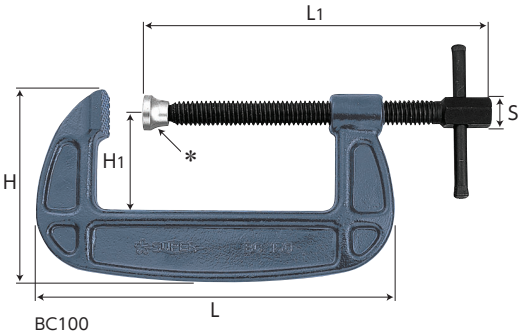


BC100E

▌Bahco type clamp
Metallic grey baking finish

Item No.	Clamp range(mm)	Size(mm)					Guaranteed load (kN)	N.W. (kg)
		L	L1	H	H1	S		
BC25E	25	78	80	60	26	12	18	0.2
BC38E	38	99	98	69	31		20	0.3
BC50E	50	118	118	78	36	14	21.8	0.45
BC75E	75	157	152	96	46	17	27.3	0.8
BC100E	100	197	190	114	56		34.3	1.3
BC125E	125	237	225	131	66	19	39.2	1.7
BC150E	150	276	262	149	76	22	44.1	2.8
BC200E	200	346	324	174	92		49	4.2

∗ An adaptor (a plate at the end of the screw) can be set.



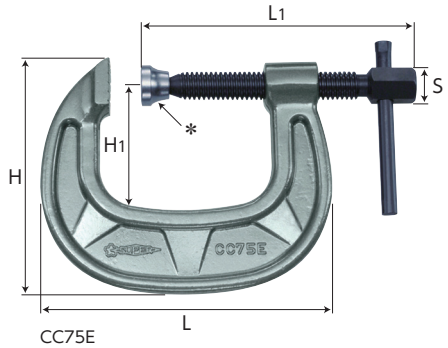
BC100

▌Bahco type clamp
Cation paint (Excellent rust proofing)

Item No.	Clamp range(mm)	Size(mm)					Guaranteed load (kN)	N.W. (kg)
		L	L1	H	H1	S		
BC25	25	78	80	60	26	12	18	0.2
BC38	38	99	98	69	31	12	20	0.3
BC50	50	116	118	78	36	14	21.8	0.45
BC75	75	157	152	96	46	17	27.3	0.8
BC100	100	197	190	114	56	17	34.3	1.3
BC125	125	237	225	131	66	19	39.2	1.7
BC150	150	276	262	149	76	22	44.1	2.8
BC200	200	346	324	174	92	22	49	4.2
BC250	250	415	386	204	108	27	58.8	7
BC300	300	485	451	230	124	27	68.6	9

∗ An adaptor (a plate at the end of the screw) can be set.

▶ Features
- Deep throat, heavy duty type.
- Quick tightening handle (removable).
- The final turn of the hexagonal head with a wrench ensures an even securer tightening.

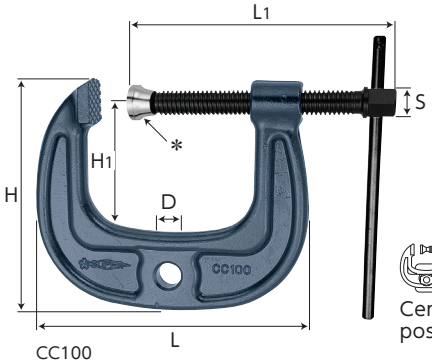


CC75E

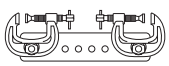
▌C clamp heavy duty wide type
Metallic grey baking finish

Item No.	Clamp range(mm)	Size(mm)					Guaranteed load (kN)	N.W. (kg)
		L	L1	H	H1	S		
CC50E	50	144	138	127	65	19	41.7	1
CC75E	75	182	171	150	80	21	46.6	1.7
CC100E	100	225	208	184	100	23	51.5	2.8
CC125E	125	265	245	215	125	26	56.4	4.1

∗ An adaptor (a plate at the end of the screw) can be set.



CC100


Center hole for positioning.

▌C clamp heavy duty wide type
Cation paint (Excellent rust proofing)

Item No.	Clamp range(mm)	Size(mm)						Guaranteed load (kN)	N.W. (kg)
		L	L1	H	H1	D	S		
CC50	50	140	134	116	55	13.1	17	41.7	1.1
CC75	75	182	165	152	80	16.1	19	46.6	1.9
CC100	100	225	201	189	105	20.1	21	51.5	2.9
CC125	125	267	237	225	130	22.1	22	56.4	4.3
CC150	150	310	269	262	155	24.1	24	66.2	6
CC200	200	395	336	335	205	28.1	27	76	12

∗ An adaptor (a plate at the end of the screw) can be set.

Tool sets / cases
Socket wrenches
Ratchet wrenches
Offset wrenches, grips
Gear wrenches, open-end spanners
Spanners
Safety ropes
Combination hammer
Sockets
Hex key wrenches
Adjustable angle wrenches
Pliers
Hook spanners, pin spanners
Toggle clamps
C clamps
L clamps
Super setters
Grip pliers
Welding tools
Iron man

FC-(E)・FC-H(SH)

L CLAMP

▶ Feature

- The tightening arm bar slides along the rail and, together with the turning handle, enables quick tightening.



FC1230E

▌Standard type (Rail size : 22×10.5mm)

Item No.	Clamp range(mm)	Depth (mm)	Full length (mm)	Pad dia. (mm)	N.W. (kg)
FC1210E	100	120	187	32	0.9
FC1215E	150	120	237		1
FC1220E	200	120	287		1.1
FC1225E	250	120	337		1.2
FC1230E	300	120	387		1.3
FC1240E	400	120	487		1.5

- Max. clamp force at 150mm : 6.5kN
- The adaptor (with stop ring) allows up to 15° tilted clamping.
- A resin pad set to avoid damage on the work object is available in option.



FC1230

▌Heavy duty type (Rail size : 27×13mm)

Item No.	Clamp range(mm)	Depth (mm)	Full length (mm)	Width across flats(mm)	Pad dia. (mm)	N.W. (kg)
FC1220	200	120	320	14	38	2
FC1225	250	120	370			2.1
FC1230	300	120	420			2.2
FC1240	400	120	520			2.5
FC1250	500	120	620			2.7
FC1260	600	120	720			3

- Max. clamp force at 150mm : 11.5kN
- This heavy type ensures an even securer tightening at the final turn of the hexagonal head (size14mm) with a wrench.
- The heavy duty adaptor allows up to 35° tilted clamping.
- V-shape adaptor available in option.



FC1430H

▌Extra heavy duty type (Rail size : 30×15mm)

Item No.	Clamp range(mm)	Depth (mm)	Full length (mm)	Width across flats(mm)	Pad dia. (mm)	N.W. (kg)
FC1425H	250	140	388	17	42	2.8
FC1430H	300	140	438			3
FC1440H	400	140	538			3.3
FC1450H	500	140	638			3.7
FC1460H	600	140	738			3.9
FC1480H	800	140	938			4.6

- Max. clamp force at 150mm : 13.5kN
- This heavy type ensures an even securer tightening at the final turn of the hexagonal head (size17mm) with a wrench.
- The heavy duty adaptor allows up to 35° tilted clamping.
- V-shape adaptor available in option.



FC1730SH

▌Super extra heavy duty type (Rail size : 40×20mm)

Item No.	Clamp range(mm)	Depth (mm)	Full length (mm)	Width across flats(mm)	Pad dia. (mm)	N.W. (kg)
FC1730SH	300	175	460	19	42	5.5
FC1740SH	400	175	560			6.1
FC1750SH	500	175	660			6.6
FC1760SH	600	175	760			7.2
FC1780SH	800	175	960			8.3
FC17100SH	1,000	175	1,160			9.4

- Max. clamp force at 150mm : 25.0kN
- This heavy type ensures an even securer tightening at the final turn of the hexagonal head (size19mm) with a wrench.
- The heavy duty adaptor allows up to 35° tilted clamping.
- V-shape adaptor available in option.

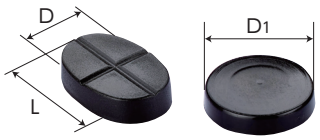
L CLAMP Parts

FCA22PR
Adaptor



Item No.	Applicable item	Size(mm)
		D
FCA22PR	FC-E	32

FCA22PP
Resin pad



Upper and lower, a pair

Item No.	Applicable item	Size(mm)		
		L	D	D1
FCA22PP	FC-E	55	35	35

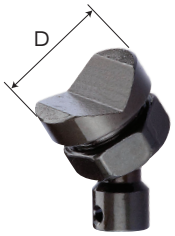
FCA-PN
Adaptor set



Item No.	Applicable item	Size(mm)
		D
FCA27PN	FC	38
FCA30PN	FC-H·FC-SH	42

* Spring pin included.

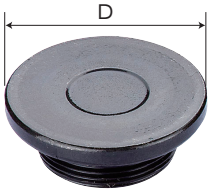
FCA-VN
V-shape adaptor set



Item No.	Applicable item	Size(mm)
		D
FCA27VN	FC	38
FCA30VN	FC-H·FC-SH	41

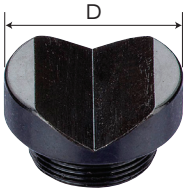
* Spring pin included.

FCA-P
Adaptor head



Item No.	Applicable item	Size(mm)
		D
FCA27P	FC	38
FCA30P	FC-H·FC-SH	42

FCA-V
V-shape adaptor head



Item No.	Applicable item	Size(mm)
		D
FCA27V	FC	38
FCA30V	FC-H·FC-SH	41

FCA-N
Adaptor nut



Item No.	Applicable item
FCA27N	FC
FCA30N	FC-H·FC-SH

FCA-J
Adaptor joint



Item No.	Applicable item
FCA27J	FC
FCA30J	FC-H·FC-SH

* Spring pin included.

FCN22
Male screw (with handle)



Item No.	Applicable item
FCN22	FC-E

FCN-H
Male screw (with handle)



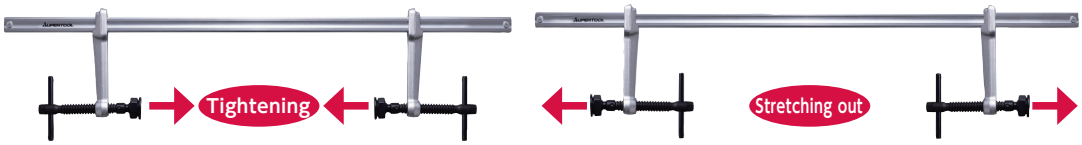
Item No.	Applicable item
FCN27H	FC
FCN30H	FC-H
FCN40H	FC-SH

Tool sets / cases
Socket wrenches
Ratchet wrenches
Offset wrenches, grips
Gear wrenches, open-end spanners
Spanners
Safety ropes
Combination hammer
Sockets
Hex key wrenches
Adjustable angle wrenches
Pliers
Hook spanners, pin spanners
Toggle clamps
C clamps
L clamps
Super setters
Grip pliers
Welding tools
Iron man

FCW
SUPER SETTER (Rail Type)

▶ Features

- Easy and flexible equipment for temporary holding of welding works, steel structures, bridges, and other civil engineering works, etc.
- Can be used not only for tightening or pressing inward but also for stretching out or pressing outward.



Item No.	Clamp range (mm)	Depth (mm)	Rail size (mm)	Rail length (mm)	Hexagon width across flats of forcing screw head (mm)	Adaptor dia. (mm)	Set N.W. (kg)	Max. clamping force at 150mm (kN)
FCW27120	0~750	120	27×13	1,000	14	38	4.1	10
FCW30140	0~750	140	30×15	1,000	17	42	4.8	12
FCW40175	0~750	175	40×20	1,000	19	42	9.6	22

FCW
SUPER SETTER



Heavy duty type (Square pipe : □40x1m) (FCW410~420)



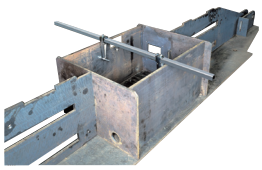
Compact and light-weighted type (Square pipe : □25x0.9mm) (FCW210)

▶ Features

- Easy and flexible equipment for temporary holding of welding works, steel structures, bridges, and other civil engineering works, etc. Also optimal for assembling temporary structures and framing on construction sites.
- Can be used not only for tightening or pressing inward but also for stretching out or pressing outward.

Item No.	Clamp range (mm)	Depth (mm)	Adaptor dia. (mm)	Set N.W. (kg)	Allowable load (kN) (at maximum clamp range)
FCW210	0~700	100	28	3.3	3.5
FCW410	0~750	100	34	6.3	5.5
FCW415	0~750	150	34	6.9	3.9
FCW420	0~750	200	34	7.5	3.0

▶ Example of use





The use for the square copper pipe STKT590 with high tensile strength offers very high robustness.

▮Parts No. (Standard parts provided in the set)

Item No.	Body S (with forcing screw, adaptor and handle)	Body P (with fixing screw)	Standard square pipe
FCW210	FCWS210	FCWP210	FCWK210
FCW410	FCWS410	FCWP410	FCWK40
FCW415	FCWS415	FCWP415	FCWK40
FCW420	FCWS420	FCWP420	FCWK40

▮Parts for super setter series

Parts	Item name	Item No.
	Body S (with forcing screw, adaptor and handle)	**FCWS210**
		FCWS410
		FCWS415
		FCWS420
	Body P (with fixing screw)	**FCWP210**
		FCWP410
		FCWP415
		FCWP420
	Body B (body only)	**FCWB210**
		FCWB410
		FCWB415
		FCWB420
	Fixing screw	**FCWU210**
		FCWU40

Parts	Item name		Item No.
	Square pipe	0.9m	**FCWK210**
		1m	**FCWK40**
		1.5m	**FCWK4015**
		2m	**FCWK4020**
	Forcing screw with handle		**FCWD210**
			FCWD40
	Forcing screw with handle (long type)		**FCWD4018**
	Adaptor for forcing screw (with spring)		**FCWH210**
			FCWH40
	Adaptor for forcing screw (with notches)		**FCWH40V**
	Fixing screw (with notches)		**FCWU40V**

∗ Hexagon width across flats of male screw : 17mm

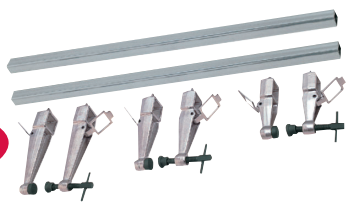
▮Super setter full set (8 items set)

- For basic operations, this set is optimal to clear every kind of works.

Item No.	Set details
FCW4000	Body S (FCWS410・415・420) ·····1 pc each Body P (FCWP410・415・420) ·····1 pc each Square pipe (1m) ·····2 pcs

▮Super setter full set (Heavy duty type)

One extra square pipe (1m) offered !

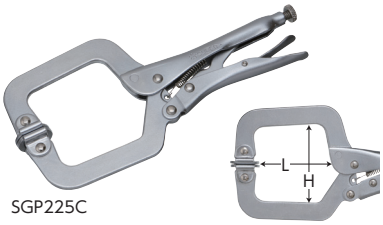


SGP • SGP-L • SGP-C
GRIP PLIERS

▶ Features
- Best suitable for sheet metal processing and welding work.
- When locked, the lock releasing lever moves to avoid finger to be pinched.


SGP175


SGP225L



SGP225C

Standard type
- Curved jaws with teeth for sure grip hold of pipe.

Item No.	Full length (mm)	Jaw opening (mm)		Cutting ability (Mild wire)	Strength capacity at max. opening (kN)	N.W. (g)
		(Square material)	(Round material)			
SGP100	113	1~14	ϕ1~17	ϕ1.2	3.5	100
SGP130	140	1~15	ϕ1~19		4.0	160
SGP175	185	1~26	ϕ1~25	ϕ2.3	11.1	320
SGP250	225	1~35	ϕ1~36		11.1	490

Long nose type
- Long nose optimal for confined spaces and intricate working.

Item No.	Full length (mm)	Jaw opening (mm)		Cutting ability (Mild wire)	Strength capacity at max. opening (kN)	N.W. (g)
		(Square material)	(Round material)			
SGP100L	133	1~10	ϕ1~18	ϕ1.2	1.7	110
SGP150L	165	1~14	ϕ1~23		2.0	170
SGP225L	216	1~20	ϕ1~30	ϕ2.3	4.0	370

Wide mouth type
- The position of flexible tip pads adapts to the workpiece, for much convenient fixing such as slant workpiece.

Item No.	Full length (mm)	Jaw opening (mm)	Mouth size (mm)		Strength capacity at max. opening (kN)	N.W. (g)
		(Square material)	L	H		
SGP100C	136	1~35	25	48	2.0	140
SGP200C	184	1~47	45	56	2.2	260
SGP225C	250	1~73	65	75	4.0	580

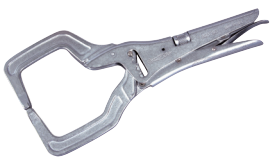
SG • SG-L • SG-C
GRIP PLIERS

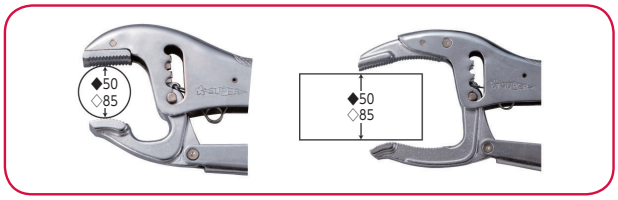
▶ Features
- The 4 steps gripping adjustment enables quick setting according to the work size.
- Unique grip position opening switching allows tight grip just by gripping the handle.
- Jaws open instantly in one touch by pressing the lever.


SG225 (Standard type)

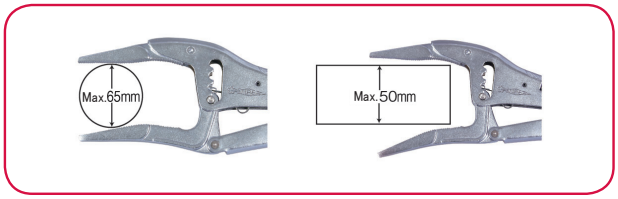

SG250 (Standard type)


SG275L (Long nose type)

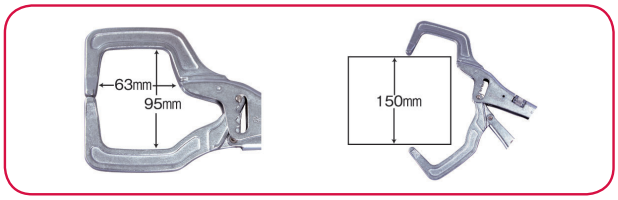

SG325C (Wide mouth type)

Standard type


- Max. jaw opening (mm) SG225=◆ SG250=◇

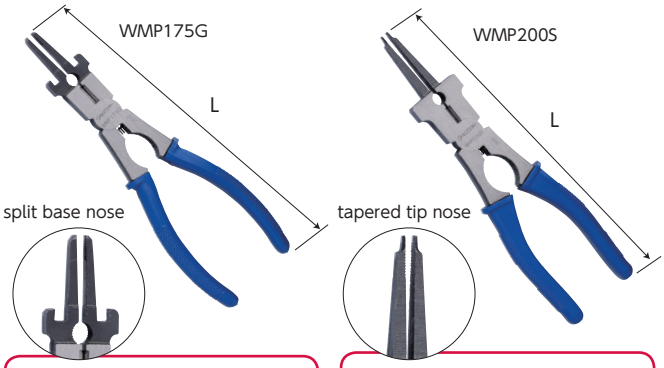
Long nose type


- Thin and long nose optimal for operation in confined spaces.

Wide mouth type


- Wide mouth and deep throat optimal for operation on works like angles and channels.

Item No.	Full length (mm)	Strength capacity at max. opening (kN)	N.W. (g)
SG225	239	4.9	550
SG250	261	4.9	650
SG275L	286	3.4	670
SG325C	326	3.4	900



* With WMP175G split base nose, you can remove spatters from nozzle tip both inside and outside the nozzle at the same time.

* With WMP200S tapered tip nose, you can work the wire bending to small diameter optimal to insert the wire through the guide module of a welding robot system.

WMP175G • WMP200S

WELDING PLIERS (Multi Type)

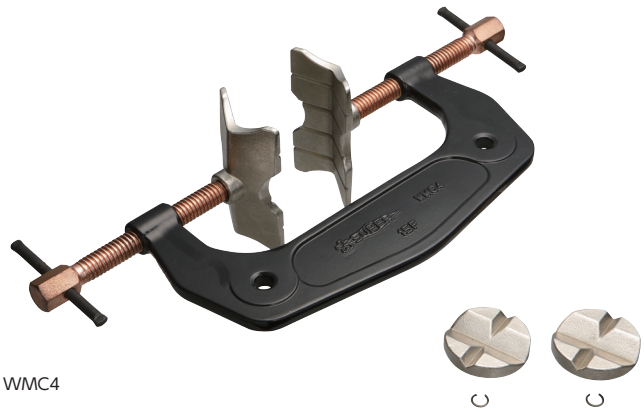
MOVIE

For the New Products page, see P.4

▶ Features

- Multi pliers to be used exclusively with CO_2 arc welding torch.
- Suitable for pulling or cutting steel and stainless steel wire.
- Optimal to remove the spatters from any parts of a nozzle and drop them with hammer function.
- Suitable for attaching and detaching tip, nozzle, insulation tube.
- Equipped with a spring for better operation efficiency.

Item No.	Size (mm)	Cutting ability (mm)	N.W. (g)
	L	Welding wire/steel·stainless steel	
WMP175G	182	ϕ1.2	175
WMP200S	212		275



WMC4

WMC

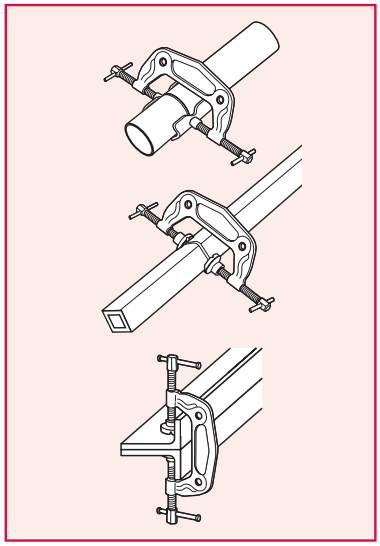
WELDING CLAMP (Multi Type)

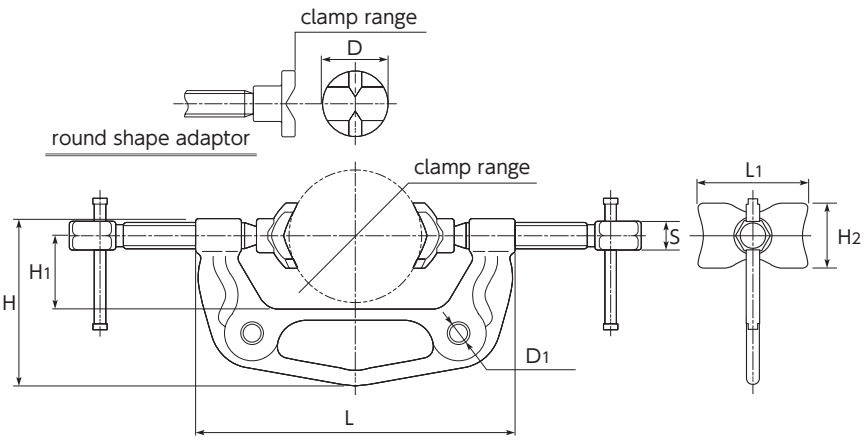
▶ Features

- Convenient for all kinds of pipe fixing and centering.
- All kinds of clamping operations can be done by changing adaptor.
- With quick tightening handle.
- The final turn of the hexagonal head with a wrench ensures even more secure tightening.
- Threads have copper plate finish to help avoid spatters.

* A round shape adaptor and a V-shape adaptor (each 1pc) are included.

▶ Example of use





Item No.	Clamp range (mm)		Size (mm)								N.W. (g)
	V-shape adaptor	Round shape adaptor	L	L1	H	H1	H2	D	D1	S	
WMC2	ϕ13.8~ϕ60.5	0~61	147	50	76.6	33.5	30	30	8.3	13	630
WMC4	ϕ42.7~ϕ114.3	0~115	241	100	130	62.5	50	50	10.5	17	2,150

WMCA-P • WMCA-V

WELDING CLAMP ROUND SHAPE ADAPTOR / V-SHAPE ADAPTOR (a Pair)



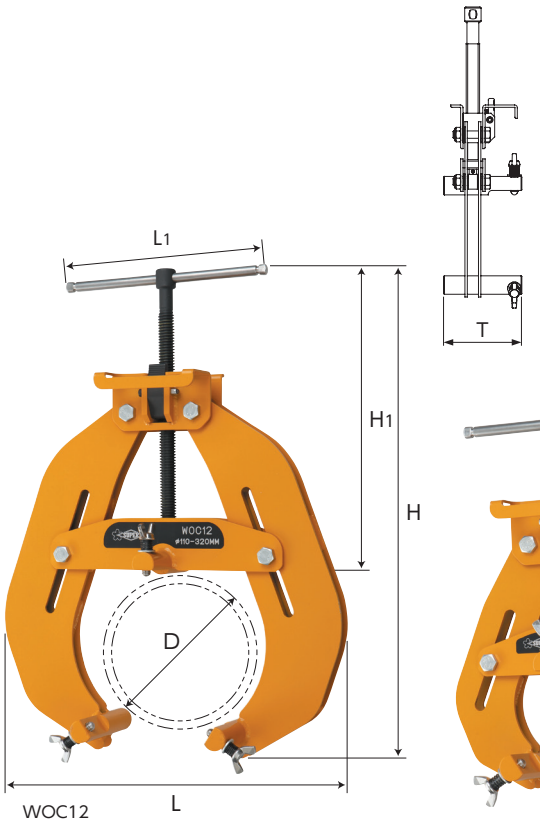
Round shape adaptor (with stop ring) WMCA4P

V-shape adaptor (with stop ring) WMCA4V

Item No.	Adaptor type	N.W. (g) (a pair)
WMCA2P	Round shape	80
WMCA4P	Round shape	300
WMCA2V	V-shape	160
WMCA4V	V-shape	540

WOC

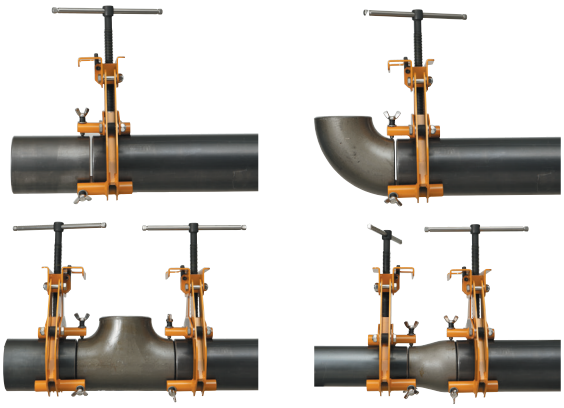
PIPE WELDING CLAMP "BRIDGE"



▶ Features

- Pipe fixing and centering can be done by anyone with easy one-touch operation.
- The body tightening screw has a quick turning mechanism enabling quick attaching and detaching.
- The parts in contact with the pipes are in stainless steel, so it can be used for both steel pipe and stainless pipe.
- No need for temporary welding with piece or for finish grinding.
- The base material prevents scratch and defect.

▶ Example of use



1 Loosen the wing bolts (3 spots). (Fig.1)

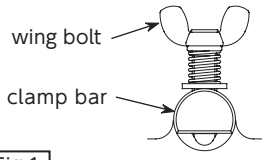


Fig.1

2 Open the claws of the pipe welding external clamp. Hold the grip and lift up the handle to open the claw by keeping pressing the fast-forward lever (Photo1) (Fig.2).



Photo1

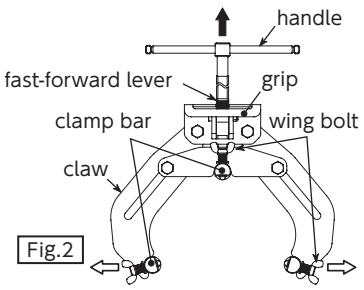
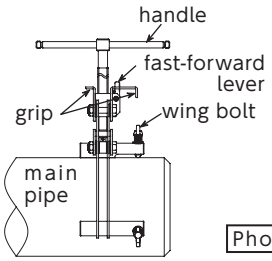


Fig.2

3 Keep open the claws, place them on the main pipe at the appropriate position and fix by tightening the handle. (Fig.3)

* Here, when you lift up the grip while pressing the fast-forward lever (photo2), the claws will close quickly.

Fig.3



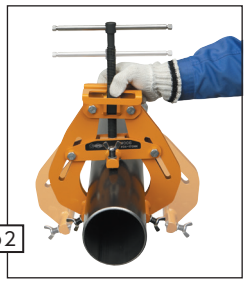


Photo2

4 Tighten the wing bolts (3 spots) until they touch the main pipe. (Fig.4)

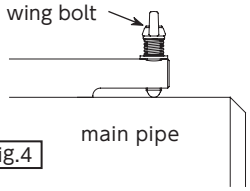


Fig.4

5 Loosen the handle, move the pipe welding external clamp to the end of the main pipe, and tighten the handle to fix firmly the clamp on the main pipe. (Fig.5)

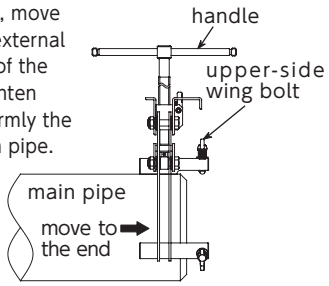


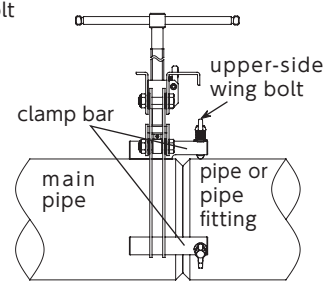
Fig.5

6 Loosen only the upper-side wing bolt (by turning about 1-2 times).

7 Insert the pipe or the pipe fitting (elbow, flange, etc.) to be welded between the clamp bars and fix it to the main pipe by tightening the upper-side wing bolt. (Fig.6)

* In case the centers are not aligned, further adjustment is to be made at the other wing bolts.
* In case a groove clearance is required, secure the indicated clearance and then fix the pipe or the pipe fitting.

Fig.6



8 Tack weld the pipe or the pipe fitting.

9 Detach the pipe welding external clamp. Hold the grip and loosen the handle. Lift up the handle while pressing the fast-forward lever (Photo1). Then the claws will open quickly.

Item No.	Applicable pipe		Size(mm)					N.W. (kg)
	Size name	External diameter D	L	L1	H	H1	T	
WOC6	1～ 6B	34～170	219～335	230	314～403	255	105	5.2
WOC12	4～12B	110～320	348～525		448～568	322		7.9

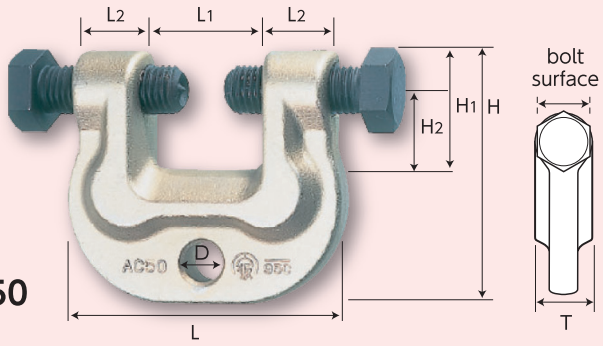
IRON MAN (Clamp for Temporary Structure)

AC・AC-H・ACL

Optimal for assembling materials for temporary structures such as working platforms.



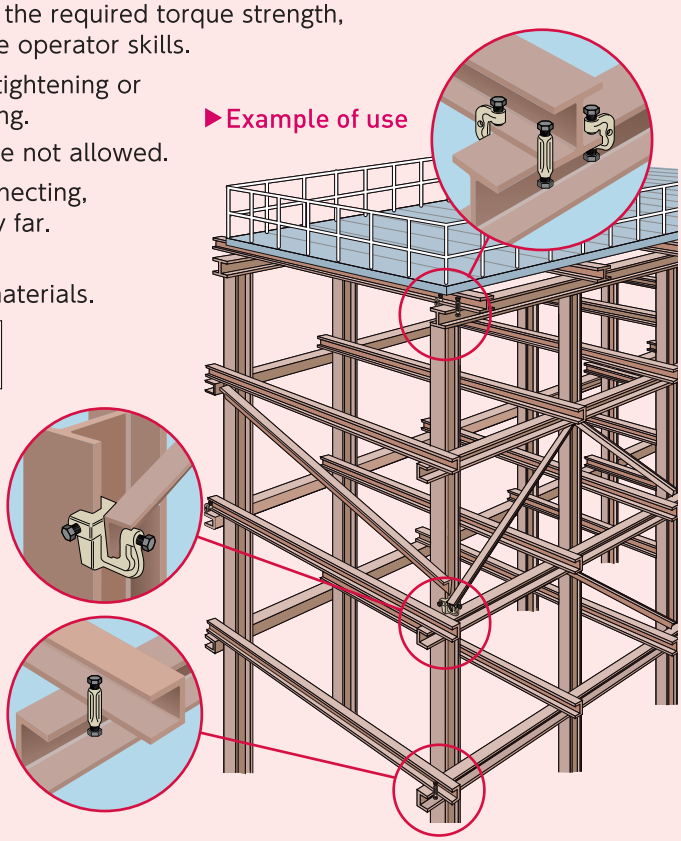
AC50

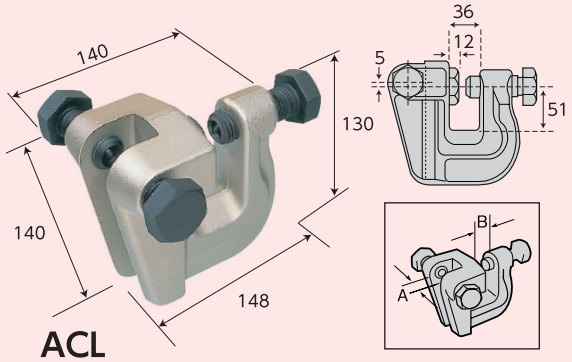


- You can assemble just by tightening the bolts at the required torque strength, so the assembling quality is not influenced by the operator skills.
- Assembly and disassembly can be done just by tightening or loosening the bolts, no need for welding or drilling.
- Can be fixed in places where fire or electricity are not allowed.
- Compared to traditional welding or bolt nut connecting, the assembling/disassembling time is reduced by far.
- The points of the bolts are induction-hardened and designed to firmly bite into and hold steel materials.

Scaffolding and Construction Equipment Association of Japan authorized items. (AC50・50H・60)

▶Example of use





ACL

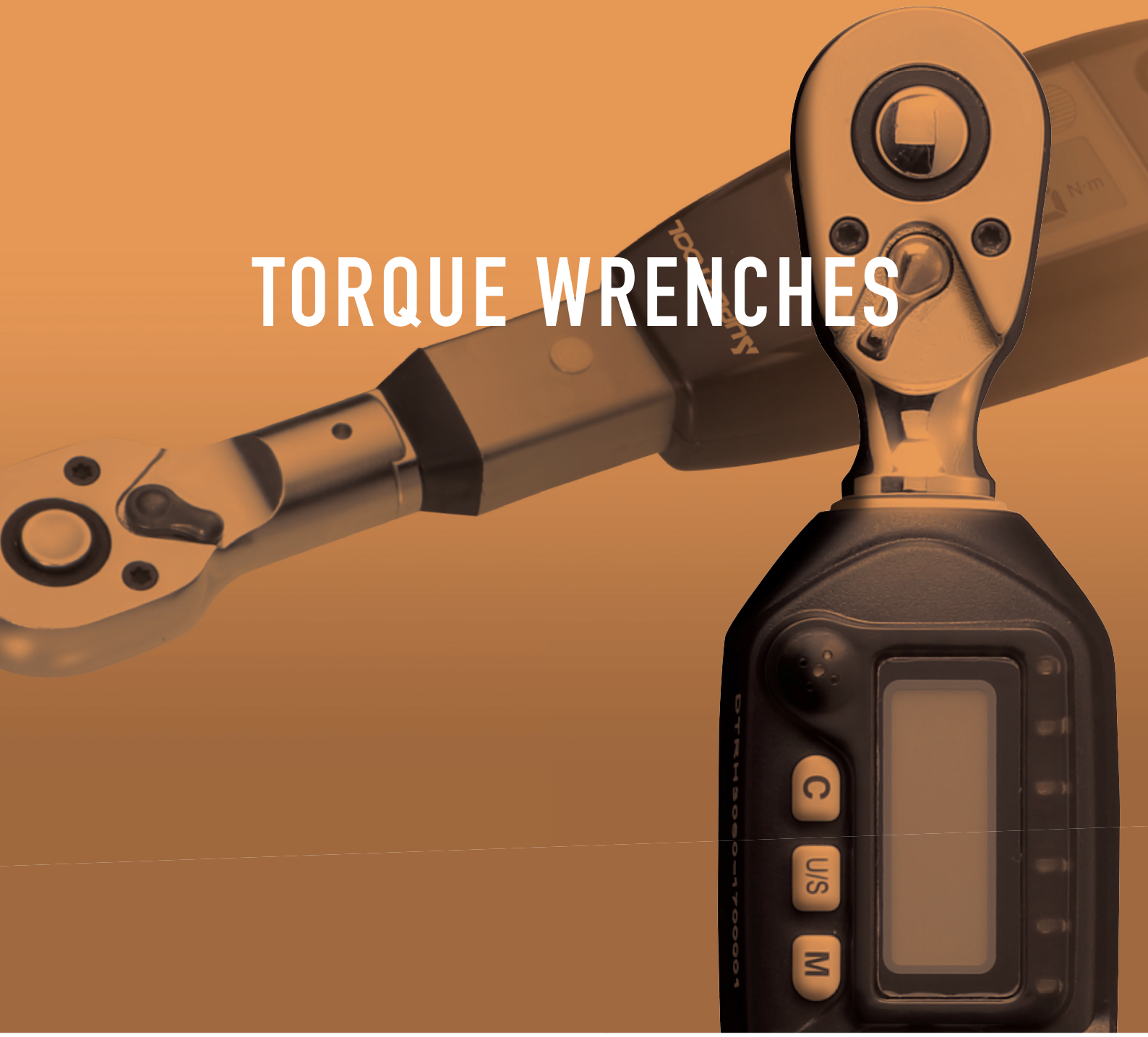
⚠ Read the operation manual before use.
Follow all safety and handling points.

Item No.	Clamp range (mm)	Load tested for deformation (opening strength resistance) (kN)	Bolt surface	Bolt tightening torque (mm)	Size (mm)								N.W. (kg)
					L	L1	L2	H	H1	H2	D	T	
AC36	9~36	10	17	49	90	40	20	65	35	25	ϕ6	20	0.55
AC45	9~45	30	24	147	114	48	28	92	44	31	ϕ12	26	1.1
AC50	9~50	50	36	294	135	55	35	120	55	36	ϕ18	38	2.6
AC50H	9~50	50	41	294	135	55	35	120	55	36	ϕ18	38	2.7
AC60	21~60	50	36	294	156	63	35	126	55	36	ϕ18	40	3.5

The opening strength resistance is a testing load only and is different from the guaranteed load.

Item No.	Clamp range (mm)	Load tested for deformation (opening strength resistance) (kN)	Bolt surface	Bolt tightening torque (mm)	N.W. (kg)
ACL	(A) 9~22<H beam side> (B) 5~19<Angle beam side>	70	36	294	4.5

TORQUE WRENCHES





Digital torque wrenches
P.80 ▶



Digital torque wrenches
Adjustable wrench type
P.81 ▶



Mechanical torque wrenches
P.82 ▶

DIGITAL TORQUE WRENCH

"Digital of torque management"
Record and manage operation results

- Memory storage of 2,000 data
- Cable type torque management system
- Dedicated software included

Accuracy
[Ratchet wrench type]
Right : ±2%
Left : ±3%
[Adjustable wrench type]
Right : ±3%
Left : ±4%



Resin case as standard acc.
Dedicated resin case for convenient storage and transport.



Notifying function
The LED indicator, the buzzer sound and the LCD display notify the situation against the set torque value.

Measurement modes switch function
You can measure with tracking mode or peak hold mode.

Adapted to both left and right direction measuring

Super light-weight design
1/2 to 1/3 lighter than a usual mechanical torque wrench.

Pass or fail notification
Against torque value you can set in advance (up to 9), a pass or fail judgement with 0~25% tolerance range up and down separately is available.

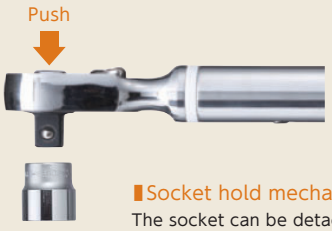
Calibration certificate included

Adjustable wrench type : extra features

Correction function when the ratchet head is replaced

Special shape
Thanks to a special design, the measuring position is almost the same even when the size of bolts and nuts to be tightened are different.





Socket hold mechanism
The socket can be detached with a one-push operation.
The socket is easy to replace, and doesn't come off easily during operation.

Tightening condition notification
The 2 colors LED lamp, the buzzer sound and the LCD display notify the tightening condition.When the tightening reaches 80% of the torque target, the LED lamp starts to light and the buzzer starts to sound intermittently. LED lamp : as the target torque is being approached, the LED lamps are lighting up in turn.



Specially shaped adjustable angle wrench
Thanks to a special design, the measuring position is almost the same even when the size of bolts and nuts to be tightened are different.



USB cable transmission
After the operation, the data are transferred and stored on the PC with the USB cable included.

●For all the appendix of the torque wrenches, please refer to P.281・282

DTRH

DIGITAL TORQUE WRENCH (Cable Type)



DTRH4200

Item No.	Torque measuring range (N·m)	Min. display unit (N·m)	Square drive (mm)	Size (mm)					N.W. (kg)
				Body max. width	L	H	T	T1	
DTRH3030	6 (1.5) ~ 30	0.01	9.5	47	221	22.5	40	10.4	0.42
DTRH3060	12 (3) ~ 60	0.01	9.5	47	230	31.5	40	14.4	0.49
DTRH3085	17 (4.2) ~ 85	0.1	9.5	47	271	31.5	40	14.4	0.54
DTRH3135	27 (6.8) ~ 135	0.1	9.5	47	380	31.5	40	14.4	0.69
DTRH4135	27 (6.8) ~ 135	0.1	12.7	47	380	31.5	40	14.4	0.71
DTRH4200	40 (10) ~ 200	0.1	12.7	40	520	41.5	45	18.0	1.31
DTRH4340	68 (17.5) ~ 340	0.1	12.7	40	640	41.5	45	18.0	1.48

∗ Figures in ( ) are the minimum values for measurement, but not covered by accuracy. ∗ AAA battery 2pcs included (for DTRH4200/4340, AA battery 2pcs)

DTMW

DIGITAL TORQUE WRENCH, ADJUSTABLE ANGLE WRENCH TYPE (Cable Type)



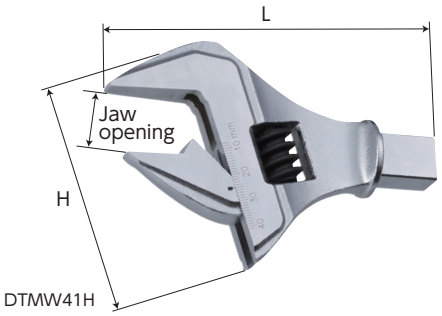
DTMW30135

Item No.	Torque measuring range (N·m)	Min. display unit (N·m)	Size (mm)						N.W. (kg)
			Jaw opening	Body max. width	L	H	T	T1	
DTMW30085	20.6 (5.1) ~ 103	0.1	5 ~ 30	47	314	61	40	6.4	0.60
DTMW30135	30.7 (7.7) ~ 153.4	0.1	5 ~ 30	39	467	71	45	7.7	1.06
DTMW41200	44.7 (11.2) ~ 223.4	0.1	10 ~ 41	39	575	87	45	9.0	1.50

∗ Figures in ( ) are the minimum values for measurement, but not covered by accuracy. ∗ AAA battery 2pcs included (for DTMW30135/41200, AA battery 2pcs)

DTMW-H

ADJUSTABLE ANGLE WRENCH HEAD FOR DIGITAL TORQUE WRENCH, ADJUSTABLE ANGLE WRENCH TYPE

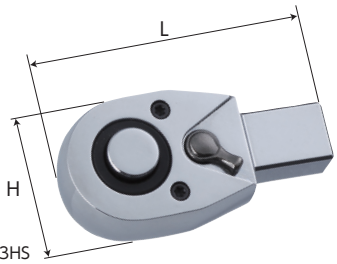


DTMW41H

Item No.	Size (mm)			Applicable item No.	N.W. (g)
	Jaw opening	L	H		
DTMW30H	5 ~ 30	103	70	DTMW30085·30135	245
DTMW41H	10 ~ 41	130	88	DTMW41200	425

DTMW-HS • DTMW-HB

RATCHET HEAD FOR DIGITAL TORQUE WRENCH, ADJUSTABLE ANGLE WRENCH TYPE



DTMW3HS

Item No.	Square drive (mm)	Size (mm)		Applicable item No.	N.W. (g)
		L	H		
DTMW3HS	9.5	60	32	DTMW30085·30135	155
DTMW4HS	12.7	60	32	DTMW30085·30135	170
DTMW4HB	12.7	80	39	DTMW41200	305

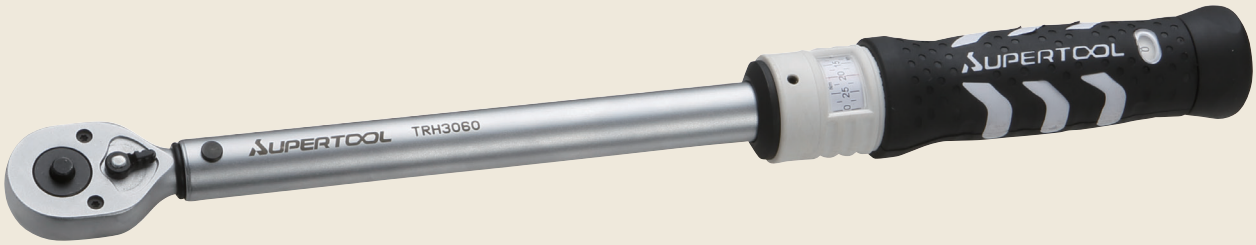
●For all the appendix of the torque wrenches, please refer to P.281・282

MECHANICAL TORQUE WRENCH

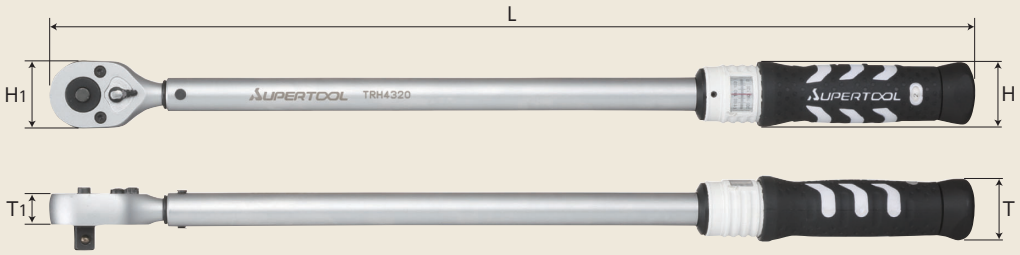
For measuring in both right and left directions

- Torque set value lock function
- Double scale display
- Calibration certificate included

Accuracy
Right : ±3%
Left : ±6%

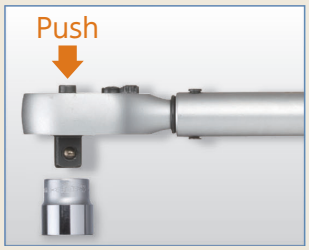


TRH3060



▮Resin case as standard acc.
Dedicated resin case for convenient storage and transport.

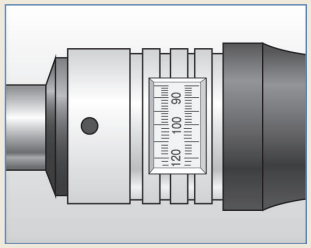




Socket hold mechanism



Torque set value lock function



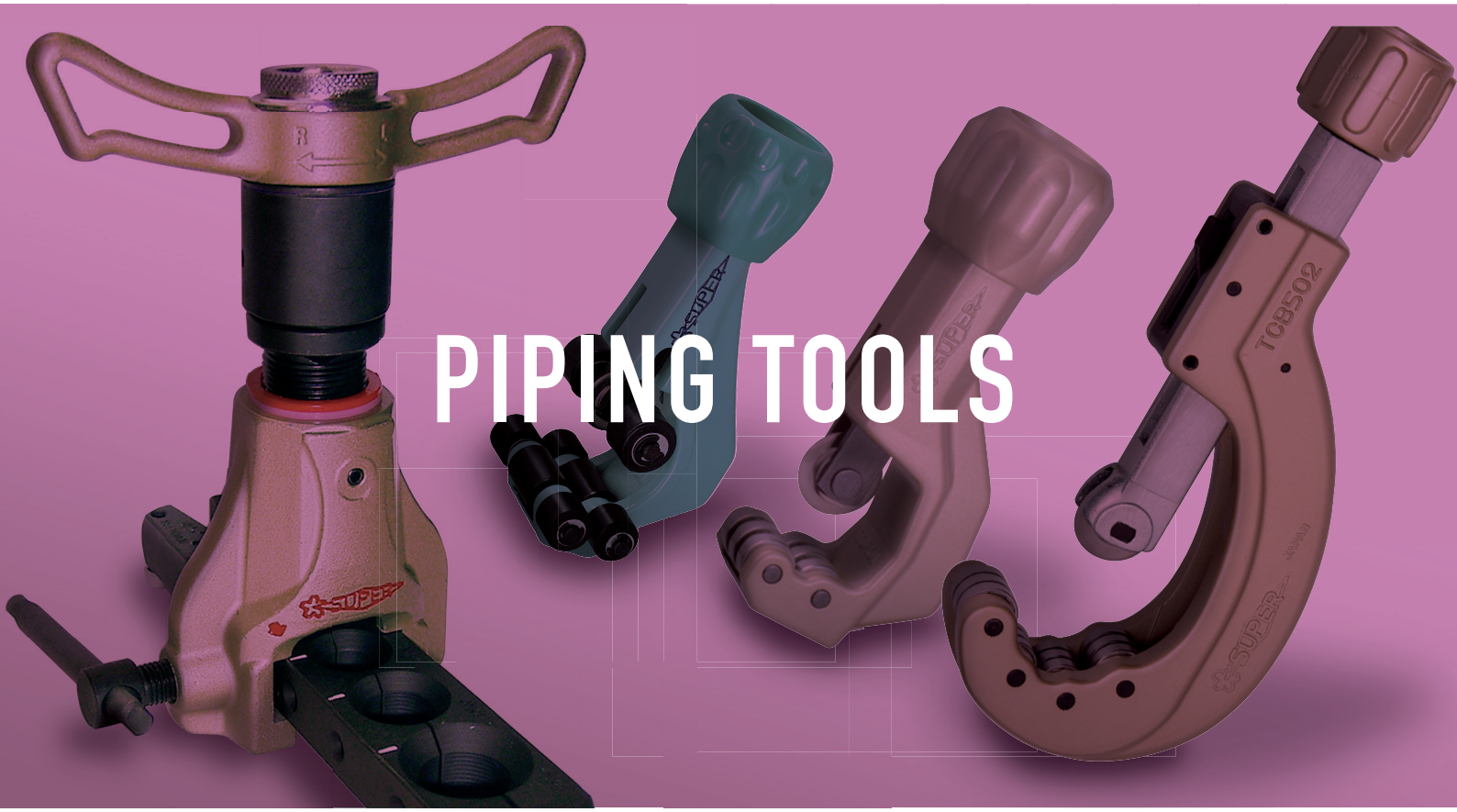


Double scale display for good recognition

Item No.	Torque measuring range (N·m)	Min. display unit (N·m)	Square drive (mm)	Size (mm)					N.W. (kg)
				L	H	H1	T	T1	
TRH3060	10~60	0.5	9.5	427	42	37	42	15.4	1.15
TRH3100	20~100	0.5	9.5	462	42	37	42	15.4	1.50
TRH4200	40~200	1.0	12.7	517	42	44	42	20.0	2.20
TRH4320	60~320	2.0	12.7	586	42	44	42	20.0	2.30

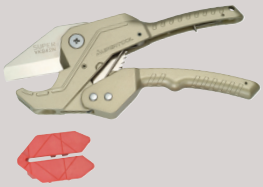
* Rachet head gear number : 32

●For all the appendix of the torque wrenches, please refer to P.281・282





Tube cutters
P.84 ▶



Other cutters
P.85 ▶



Pipe scrapers, super torque wrenches
P.87 ▶



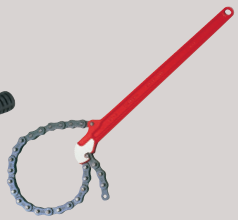
Flaring tools
P.88 ▶



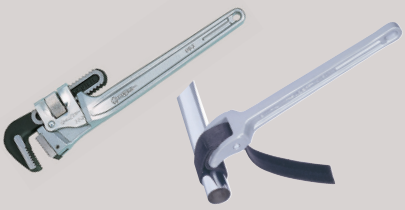
Flanging tools for flexible tube
P.93 ▶



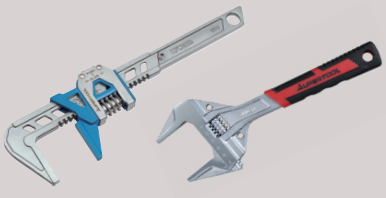
Benders
P.94 ▶



Chain pipe wrenches
P.96 ▶



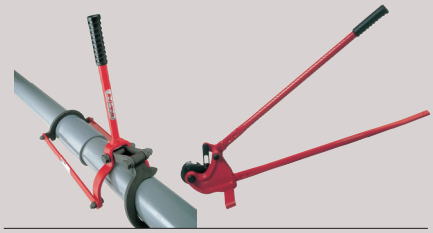
Pipe wrenches, belt wrenches
P.97 ▶



Motor wrenches, other wrenches
P.99 ▶



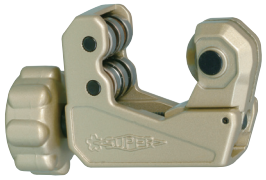
Water pump pliers
P.102 ▶



Super pilers, threaded rod cutters
P.103 ▶

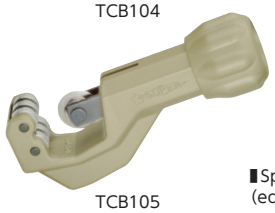


Plumbing tool set
P.104 ▶


TCB104



TCB502 (quick action mechanism)


TCB105


Spare blade
(equipped with bearings)

▶ Example of use



TCB

TUBE CUTTER WITH BEARINGS (For stainless steel, steel, copper, aluminum, brass and PVC pipes)

▶ Features

- Suitable for cutting stainless steel and copper.
- Body and knob made of aluminum enables light weight. Easy to use with compact design.
- The rollers and the cutter wheel are equipped with bearings.

Item No.	Applicable pipes (mm)		Full length (mm)	N.W. (g)	Spare blade
	External diameter	Max. thickness			
TCB104	4~28	3	78	140	TCBC105
TCB105	4~32		137	300	
TCB107	6~50		181	420	
TCB502	16~60	6	230	990	TCBC502


TC104N

Even with a small body, use range is wide and optimal for work in confined space.

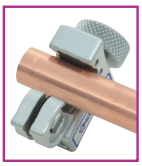


TC205 (knife for surface treatment and spare blade included)

TC-N • TC205

TUBE CUTTER (For copper, aluminum, brass and PVC pipes)

▶ Example of use



▶ Features

- Best suitable for cutting copper pipe.
- Superior sharpness and durability for cutting realized by cutter wheel made of special alloy steel with heat treatment.
- No swarf from cutting, super sharp cut and smooth cut-end-surface.

Item No.	Applicable pipes (mm)		Full length (mm)	N.W. (g)	Spare blade
	External dia.	Max. thickness			
TC103N	3~16	3	48	120	TCC105
TC104N	5~28		80	200	
TC105N	3~32		126.5	230	
TC107N	5~45		163	400	
TC205	6~60		193	750	TCC205


TC103E


TC105E

▶ Example of use



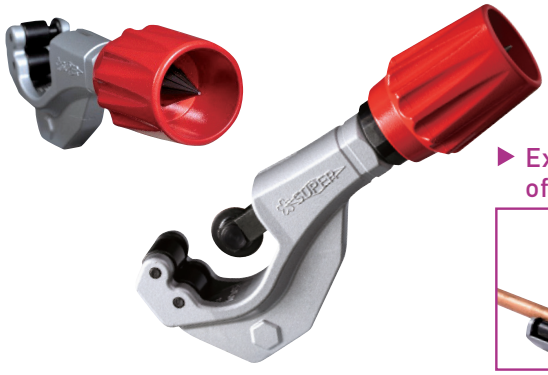
TC-E

TUBE CUTTER (For thin stainless steel [max. 1mm thick], steel, copper, aluminum, brass and PVC pipes)

▶ Features

- Suitable for cutting thin stainless pipe (max. 1mm thick).
- No swarf from cutting, super sharp cut and smooth cut-end-surface.

Item No.	Applicable pipes (mm)		Full length (mm)	N.W. (g)	Spare blade
	External dia.	Max. thickness			
TC103E	3~16	3	48	120	TCC105E
TC104E	5~28		80	200	
TC105E	3~32		126.5	230	
TC107E	5~45		163	400	



▶ Example of use



TC105R

TUBE CUTTER WITH REAMER (For copper, aluminum, brass, PVC [cutting only] pipes)

▶ Features

- Cutting + chamfering, much convenient 2 in 1 feature.
- Superior sharpness and durability for cutting realized by cutter wheel made of special alloy steel with heat treatment.
- No swarf from cutting, super sharp cut and smooth cut-end-surface.
- Reamer with 11 blades enables very smooth chamfering work.

Item No.	Applicable pipes (mm) for cutting		Internal surface chamfering ability (mm)	Full length (mm)	N.W. (g)	Spare blade
	External dia.	Max. thickness				
TC105R	3~32	3	3~13 (external diameter)	154.5	300	TCC105

●For all the appendix of the piping tools, please refer to P.283



TC104NP

Even with a small body, use range is wide and optimal for work in confined space.



TC105NP

▶ Example of use



TC-NP

COATED COPPER PIPE CUTTER (For coated copper, copper, aluminum, brass and PVC pipes)

▶ Features

- Suitable for cutting coated copper pipe.
- No swarf from cutting, super sharp cut and smooth cut-end-surface.

Item No.	Applicable pipes (mm)		Full length (mm)	N.W. (g)	Spare blade
	External dia.	Max. thickness			
TC104NP	5~32	5	86.5	200	TCC107P
TC105NP	5~30		126.5	240	
TC107NP	5~42		163	400	



TC105NF

Support rollers on both upper and lower side enable clean and complete cut.

▶ Example of use



TC107F
(spare blade included)

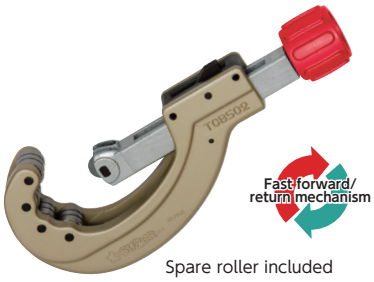
TC105NF • TC107F

FLEXIBLE STAINLESS STEEL PIPE CUTTER (For single-rigged corrugate pipe)

▶ Features

- The long type roller inside the body and the rollers at both sides of the cutter wheel enable clean and complete cut of the flexible pipe.
- No swarf from cutting, super sharp cut.

Item No.	Applicable pipes (mm)	Full length (mm)	N.W. (g)	Spare blade
	External dia. (size name)			
TC105NF	8~32 (8A~25A)	126.5	240	TCC105F
TC107F	8~42 (8A~32A)	165	450	TCC107P



Spare roller included

TCB502MR

PIPE GROOVING TOOL WITH BEARINGS (For stainless steel pipes) Quick Action Type

▶ Features

- Special pipe grooving tool for pipe connection.
- The rollers are equipped with bearings.

Item No.	Applicable pipes (mm)		Full length (mm)	N.W. (g)	Spare roller
	External dia. (size name)	Max. thickness			
TCB502MR	15.88~60.5 (13~60su)	1.5	230	1,030	TCR502H

TCBC • TCC-(E • P • F • H) • TCR502H

SPARE BLADES

▶ Feature

- Superior sharpness and durability for cutting realized by cutter wheel made of special alloy steel with heat treatment.



TCBC105

Blades come in 1 pce per pack.

Item No.	Spare blade diameter (mm)	Applicable cutter
＊**TCBC105**	22	TCB104~107
＊**TCBC502**	27.5	TCB502
TCC105E	18.7	TC103E~107E
TCR502H	18.7	TCB502MR

＊ TCBC type is equipped with bearings.



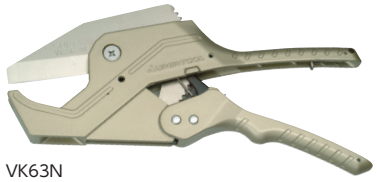
Blades come in 10 pcs per pack.

Item No.	Spare blade diameter (mm)	Applicable cutter
TCC1050	18.7	TC103~107, TC103N~107N
TCC2050	18.7	TC205
TCC1070H	18.7	TC104H~107H
TCC2060H	25.7	TC206H, TC502H
TCC1070P	23.7	TC104NP~107NP, TC107F
TCC1050F	18.7	TC105F, TC105NF

●For all the appendix of the piping tools, please refer to P.283


VK34N


VK42N


VK63N

VK-N

PVC PIPE CUTTER (Ratchet Mechanism Type)

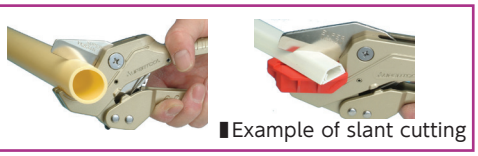
▶ Feature

- One-action release mechanism (VK-N)
  (When you full open the handle, the blade automatically opens at maximum).

▶ Accessories

- Attachment (VK4200NP) for PVC wire protector included. (VK42N only)

▶ Example of use


▮Example of slant cutting

Item No.	Applicable pipes			Full length (mm)	N.W. (g)	Spare blade
	External dia.	Size (VP)	Material			
VK34N	Under34mm	13~25	Rigid PVC pipe Polyethylene pipe, polybutene pipe	183	290	VKS34N
VK42N	Under42mm	13~30		235	420	VKS42N
VK63N	Under63mm	13~50		298	680	VKS63N

* You can find on our website, at the footer of the top page, the method to replace a spare blade.



PC38

FLEXIBLE AND PE PIPE CUTTER

▶ Example of use



▶ Features

- Super clean cut for soft resin pipes such as polyester resin flexible tube, sheath tube, polybutene tube, etc.
- By flipping the blade backward, it can be used twice.

⚠ Not for PVC pipe.

Item No.	Cutting ability (mm)	Full length (mm)	N.W. (g)	Spare blade
PC38	External dia. under 38	218	155	PCS38


VKS34N
VKS42N
PCS38
VKS63N
VKS50

VKS-N • VKS50 • PCS38

SPARE BLADE FOR PVC PIPE CUTTER

Item No.	Applicable cutter
VKS34N	VK34N
VKS42N	VK42N
VKS63N	VK63N
VKS50	VK50 (discontinued model)
PCS38	PC38

* The method to replace a VKS-N spare blade can be found on our website.


TR322


TR835S


TR1254S

▶ Example of use



TR322 • TR-S

TUBE REAMER (Tube Chamfering)

▶ Features

▮ TR322: for copper pipe (internal surface chamfering)

- Best suitable for copper, aluminum, brass and rigid PVC pipes.
- The 11 blades enables very smooth chamfering work.

▮ TR-S: for stainless steel pipe (both internal and external surface chamfering)

- Best suitable for stainless steel, copper, aluminum, brass and rigid PVC pipes.
- The cutting ability of the 40 blades offers ultra clean chamfering.

Item No.	Size (mm)			N.W. (g)
	Chamfering capacity for external and internal dia.	Full length	Diameter	
TR322	3~22 (external)	60.5	43	170
TR835S	8~35 (external)	60	48.5	200
TR1254S	12~54 (external)	84	67	450

●For all the appendix of the piping tools, please refer to P.283
▮Please refer to the pipe size name and diameter table.



PS100
PIPE SCRAPER

▶ Features
- Easy pipe deburring.
- Robust yet light-weighted, with hand-fit grip.
- Blade change is easy (one spare blade included inside the body).

Item No.	Applicable metals	Full length (mm)	N.W. (g)
PS100	Stainless steel, steel, copper, aluminum, plastic	121.5	48



CB46
COPPER PIPE BRUSH

▶ Features
- Suitable to remove dirt, inner and outer oxidized surface of pipe before blaze processing.
- The body is made of two resin pieces fixed by pins, so it is easy to change the brushes.
- High carbon steel (S45C) brushes are robust and both inner and outer pipe surface can be cleaned by this single tool.

Item No.	Applicable pipes (inch)	Full length (mm)	N.W. (g)
CB46	1/2、3/4(inner and outer)	129	54



PSS100
SPARE BLADE FOR PIPE SCRAPER (2pcs set)

Features
Material : HSS (High Speed Steel), blade tip angle : 40° , length : 12mm

Item No.
PSS100



CBB46
SPARE BRUSH

Item No.	Set details
CBB46	Inner=2, Outer=2



STW17H



STW22H



▶ Example of use



STW-H
SUPER TORQUE WRENCH (Calibration Certificate Included)

▶ Features
- For tightening flare nut of new cooling media with adequate torque value.
- The tightening torque settings are adapted to new cooling media.
- When reaching the set torque value, to indicate that the tightening is complete you will hear a click sound and feel a light “shock” in your hand.

Item No.	Mouth width (mm)	Flare nut size	Torque setting	Full length (mm)	N.W. (g)
STW17H	17	1/4inch	16N·m	220	365
STW22H	22	3/8inch	38N·m	230	410

STW2HS
SUPER TORQUE WRENCH 2PCS-SET (Calibration Certificate Included)

▶ Feature
- Fabric resin holder as standard acc.

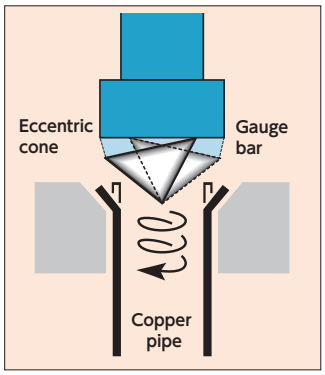
Item No.	Set details	Full length (mm)	Set N.W. (g)
STW2HS	STW17H·STW22H	250	800

⚠ After an absence of use for a long time, use a few times on preliminary operation with an adequate bolt size before using for actual work.

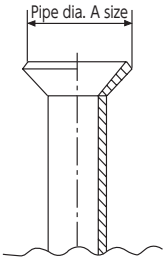
●For all the appendix of the piping tools, please refer to P.283

Eccentric Cone Type Flare Flaring cone

The precision finished flaring cone, using eccentric rotation, assures an equal flaring by the cone side, allowing an evenly neat flaring even with low force.



For new cooling media



▮Flaring process dimension standard

Size name	Diameter name	Pipe dia. A size ($^{+0}_{-0.4}$)	
		For 1st category	For 2nd category
1/4"	6.35	9	9.1
3/8"	9.52	13	13.2
1/2"	12.70	16.2	16.6
5/8"	15.88	19.4	19.7
3/4"	19.05	23.3	24.0

∗ 1st category : R407C(E), R404A, R507A, HFC134a and conventional cooling media
∗ 2nd category : R410A



TF456WQH

FLARING TOOL WITH QUICK HANDLE (Eccentric Cone Type) PAT.

Adapted to new standard / new cooling media

▶ Features

- Adapted to annealed copper pipe 3/4'', thickness 1.2mm.
- With the quick handle, no need to change the handle hold, the hands don't get tired and continuous rotation is easy.
- You can change the rotation direction quickly by sliding the handle up and down.
- As there is no switch knob at the center of the handle, the handle just fits the hand with no discomfort.
- No backlash thanks to special bearing used in the rotating part of the handle.
- Clutch mechanism used in the center of the body enables high precision flaring.

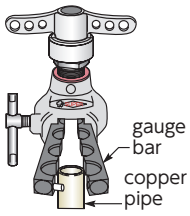
▶ Example of use



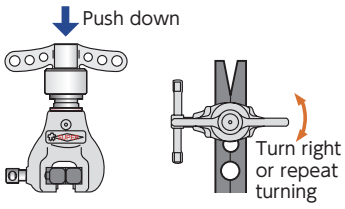
◀To switch the rotation direction, just slide the handle up and down.

Item No.	Copper pipe applicable diameter (size name) (copper pipe for general cooling media piping)	N.W. (kg)
TF456WQH	1/4・5/16・3/8・1/2・5/8・3/4	1.7

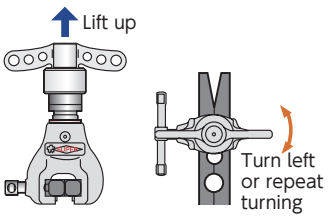
Operation procedure



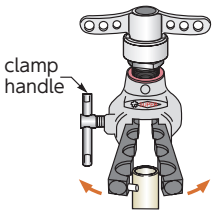
1)Open the gauge bar to the left and right and insert the copper pipe.



2)After pushing down the handle to the end, turn right until the clutch gets disengaged.
In this case, you can turn continuously without changing the handle hold.



3)After lifting up the handle to the end, turn left and return the handle completely until it stops.
In this case, you can turn continuously without changing the handle hold.



4)Loosen the clamp handle, open the gauge bar to the left and right and remove the copper pipe.

∗ The operation procedure above is an excerpt from the operation manual. Always read the operation manual and follow the instructions before use.

●For all the appendix of the piping tools, please refer to P.283



TFA455WH

FLARING TOOL WITH FEED HANDLE (Eccentric Cone Type) Aluminum Alloy Body

Adapted to new standard / new cooling media

▶ Features

- Adapted to annealed copper pipe 3/4'', thickness 1.2mm.
- Body and gauge are in aluminum, allowing super light weight.
- Clutch mechanism to prevent overload.

Item No.	Copper pipe applicable diameter (size name) (copper pipe for general cooling media piping)	N.W. (kg)
TFA455WH	1/4・3/8・1/2・5/8・3/4	0.75



TF456WH

FLARING TOOL WITH FEED HANDLE (Eccentric Cone Type)

Adapted to new standard / new cooling media

▶ Features

- Adapted to annealed copper pipe 3/4'', thickness 1.2mm.
- Clutch mechanism to prevent overload.

Item No.	Copper pipe applicable diameter (size name) (copper pipe for general cooling media piping)	N.W. (kg)
TF456WH	1/4・5/16・3/8・1/2・5/8・3/4	1.6



TF456WGH

RATCHET TYPE FLARING TOOL (Eccentric Cone Type)

Adapted to new standard / new cooling media

▶ Features

- Adapted to annealed copper pipe 3/4'', thickness 1.2mm.
- The ratchet type feed-handle allows continuous turning.
- To switch the rotation direction, you just need to turn the knob.
- Clutch mechanism to prevent overload.

Item No.	Copper pipe applicable diameter (size name) (copper pipe for general cooling media piping)	N.W. (kg)
TF456WGH	1/4・5/16・3/8・1/2・5/8・3/4	1.7

●For all the appendix of the piping tools, please refer to P.283



TF456WRH

FLARING TOOL WITH RATCHET HANDLE (Eccentric Cone Type)

Adapted to new standard / new cooling media

▶ Features

- Adapted to annealed copper pipe 3/4'', thickness 1.2mm.
- Special ratchet handle included.
- The ratchet mechanism enables a quick and easy finish.
- Clutch mechanism to prevent overload.

Item No.	Copper pipe applicable diameter (size name) (copper pipe for general cooling media piping)	N.W. (kg)
TF456WRH	1/4・5/16・3/8・1/2・5/8・3/4	1.8



▶ Example of use



TF456WDH

MANUAL / ELECTRIC FLARING TOOL (Eccentric Cone Type)

Adapted to new standard / new cooling media

▶ Features

- Adapted to annealed copper pipe 3/4'', thickness 1.2mm.
- Clutch mechanism to prevent overload.
- The built-in clutch mechanism allows safe and quick operation even in electric mode.
- Electric driver bit included (3/8" square, 8mm).

Item No.	Copper pipe applicable diameter (size name) (copper pipe for general cooling media piping)	N.W. (kg)
TF456WDH	1/4・5/16・3/8・1/2・5/8・3/4	1.6



TF459W

TF459W・TF459M

FLARING TOOL WITH FEED HANDLE (Eccentric Cone Type)

▶ Features

- Feed handle type.
- Clutch mechanism to prevent overload.

Item No.	Tube applicable diameter (size name) (mild copper, aluminum pipe)	N.W. (kg)
TF459W	1/8・3/16・1/4・5/16・3/8・7/16・1/2・5/8・3/4	1.7
TF459M	4・5・6・8・10・12・14・15・16	1.7

●For all the appendix of the piping tools, please refer to P.283



TS456WQH
(quick handle type) PAT.



TS456WH
(feed handle type)



TS456WRH
(ratchet handle type)



TS456WDH
(manual / electric type)

TS456(WQH • WH • WRH • WDH)

TUBING TOOL SET (Eccentric Cone Type)

Adapted to new standard / new cooling media

▶ Features

- Set for cutting, chamfering and flaring.
- Adapted to annealed copper pipe 3/4'', thickness 1.2mm.
- Steel case as standard acc.

Item No.	Copper pipe applicable diameter (size name) (copper pipe for general cooling media piping)	Set details	Set N.W. (kg)
TS456WQH	1/4 · 5/16 · 3/8 · 1/2 · 5/8 · 3/4	TF456WQH·TC105·TR322	4
TS456WH		TF456WH·TC105·TR322	3.8
TS456WRH		TF456WRH·TC105·TR322	4.1
TS456WDH		TF456WDH·TC105·TR322	3.9



TFG456N

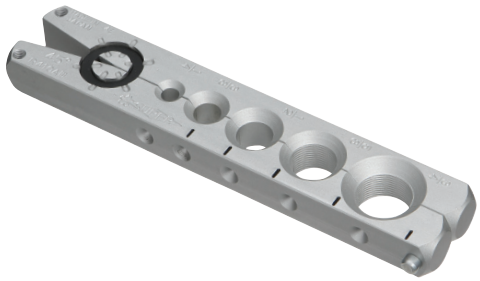
TFG-N

GAUGE BAR

Adapted to new cooling media

▮Applicable models
Eccentric Cone Type Flaring Tools all models (except TFA455WH, TF459W, TF459M).

Item No.	Number of holes	Copper pipe applicable diameter (size name) (copper pipe for general cooling media piping)	N.W. (g)
TFG455N	5	1/4 · 3/8 · 1/2 · 5/8 · 3/4	530
TFG456N	6	1/4 · 5/16 · 3/8 · 1/2 · 5/8 · 3/4	570



TFAG455N

GAUGE BAR Aluminum Alloy Body

▮Applicable model
Aluminum Flaring Tool (TFA455WH).

Item No.	Number of holes	Tube applicable diameter (size name)	N.W. (g)
TFAG455N	5	1/4 · 3/8 · 1/2 · 5/8 · 3/4	190

●For all the appendix of the piping tools, please refer to P.283


TSC420M·W


TSC457M·W

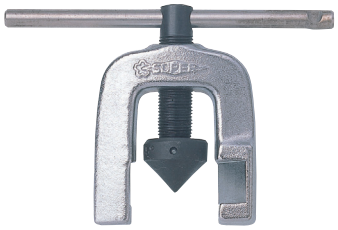
TSC-M・TSC-W

TUBING TOOL SET (Standard Type)

▶ Feature

- Steel case as standard acc.

Item No.	Gauge bar	Tube applicable diameter (size name) (mild copper, aluminum pipe)	Set N.W. (kg)
TSC420M	TFG53M·56M	4·5·6·8·10·12·14·16·20	2.2
TSC420W	TFG53W·56W	1/8·3/16·1/4·5/16·3/8·7/16·1/2·5/8·3/4	2.2
TSC457M	TFG57M	4·6·8·10·12·14·16	1.9
TSC457W	TFG57W	3/16·1/4·5/16·3/8·7/16·1/2·5/8	1.9



TFY50

YOKE (For TFG-M・W)

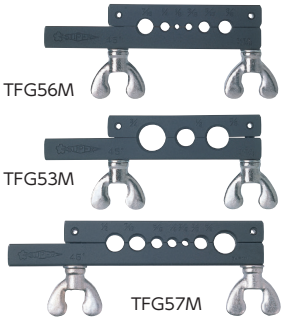
▶ Features

- Special yoke for gauge bar (TFG-M·W).
- Strong and sturdy drop forged body.

Item No.	N.W. (g)
TFY50	370

TFG-M・TFG-W

GAUGE BAR (Standard Type)



▶ Features

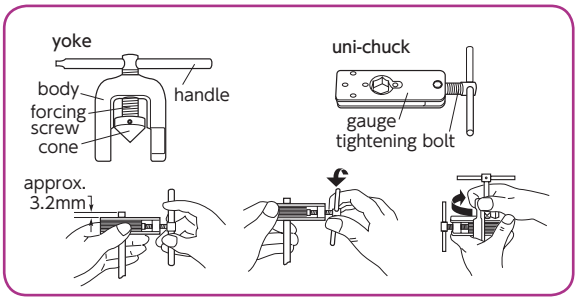
- Special gauge bar for TSC420M~TSC457W.
- Models adapted to each usage.

Item No.	Tube applicable diameter (size name)	N.W. (g)
TFG56M	4·5·6·8·10·12	520
TFG56W	1/8·3/16·1/4·5/16·3/8·7/16	520
TFG53M	14·16·20	470
TFG53W	1/2·5/8·3/4	470
TFG57M	4·6·8·10·12·14·16	650
TFG57W	3/16·1/4·5/16·3/8·7/16·1/2·5/8	650

TF416

UNI-CHUCK FLARING TOOL SET Free Expansion Type





▶ Features

- During the flaring process, the line contact by the dodecagon (12) shaped cone enables clean finish.
- Optimal for flaring tubes of air conditioning system, hydraulic equipment, central heating system, etc.

Item No.	Tube applicable diameter (size name) (mild copper, aluminum pipe)	Set N.W. (g)
TF416	4~16mm (3/16~5/8)	960

TFG416

UNI-CHUCK GAUGE Free Expansion Type



▶ Feature

- You can fix the tube with no step, just by turning the handle.

Item No.	Tube fixing capacity (no step)	N.W. (g)
TFG416	4~16 (mm) 3/16~5/8 (inch)	520

TFY416

UNI-CHUCK YOKE



▶ Features

- Special yoke for uni-chuck gauge.
- Strong and sturdy drop forged body.

Item No.	N.W. (g)
TFY416	370

●For all the appendix of the piping tools, please refer to P.283

TH406R • TH1320(R • G)

FLANGING TOOL FOR FLEXIBLE TUBE

▶ Feature

- Can flange with 2 or 3 ridges.

▶ Example of use



Rotation direction switch plate



TH406R (ratchet handle type) PAT.



TH1320R (ratchet type)

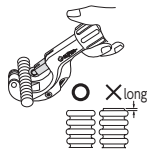


TH1320 (feed handle type)

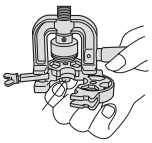


TH1320G (gear wrench type)

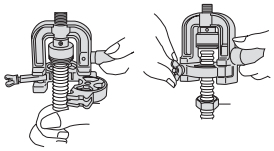
■Operation procedure (THS406R, TH406R)



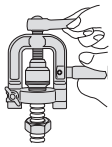
1)Cut the flexible tube at the required length.



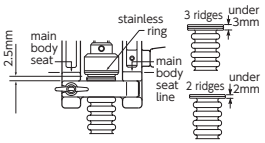
2)Adjust the holes of both side of the tool to the size of the flexible tube.



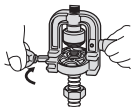
3)Set the flexible tube to the tool.



4)Flange.



5)Flanging complete.



6)Remove.

Item No.	Applicable tube material and size	N.W. (kg)
TH406R	Stainless steel flexible water tube (single corrugate tube) Size : 1/2(13)、3/4(20)(external : 16mm, 20mm)	1.5
TH1320R		1.1
TH1320		1
TH1320G		1

THS406R

FLANGING TOOL FOR FLEXIBLE TUBE AND CUTTING TOOL SET

▶ Feature

- Plastic case as standard acc.





TH406R



TC105NF

Item No.	Applicable tube material and size	Set N.W. (kg)
THS406R	Stainless steel flexible water tube (single corrugate tube) Size : 1/2(13)、3/4(20)(external : 16mm, 20mm)	2.2

●For all the appendix of the piping tools, please refer to P.283



TB396M

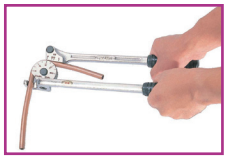
TB-M • TB-W

TUBE BENDER (Standard Type)

▶ Features

- Bending angle : 0～180°
- Optimal for bending copper tube, and can also be used for annealed stainless steel pipe and OST copper pipe. (cannot be used for cooling media, coated copper pipe, gas pipe and aluminum pipe)

▶ Example of use



⚠ Only for tubes with exactly specified outer diameter.

Item No.	Size(mm)			N.W. (kg)
	Full length	Applicable tube external diameter	Bending radius(R)	
TB394M	220	6	14.3	0.45
TB395M	224	8	17.5	0.55
TB396M	335	10	23.8	1
TB398M	462	12	38	1.8
＊**TB3910M**	735	16	57.2	2.7
TB394W	220	1/4(6.35)	14.3	0.45
TB395W	224	5/16(7.94)	17.5	0.55
TB396W	335	3/8(9.52)	23.8	1
TB398W	462	1/2(12.70)	38	1.8
＊**TB3910W**	735	5/8(15.88)	57.2	2.7
＊**TB3912W**	830	3/4(19.05)	76.2	4

For items with full length over 700m (＊ marked items), the handles are hollow pipes to reduce the net weight.



TB5681

4-HEAD TUBE BENDER

▶ Features

- Made in reinforced glass fiber plastic.
- Bending angle : 0～180°
- Can bend 4 different sizes with 1 tool.

⚠ Only for tubes with exactly specified outer diameter.

Item No.	Applicable tube		Size(mm)		N.W. (g)
	External diameter(mm)	Material	Bending radius(R)	Full length	
TB5681	5･6	Soft copper, aluminum	16	265	400
	8･10		23.5		



TB368

3-HEAD TUBE BENDER

▶ Features

- Made in die-cast aluminum alloy.
- Bending angle : 0～90°
- Can bend 5 different sizes (inches : 3 sizes ; mm : 2 sizes) with 1 tool.

⚠ Only for tubes with exactly specified outer diameter.

Item No.	Applicable tube		Size(mm)		N.W. (g)
	External diameter	Material	Bending radius(R)	Full length	
TB368	1/4･5/16･3/8(6･8mm)	Soft copper, aluminum brass	23.8	224	400

●For all the appendix of the piping tools, please refer to P.283



SPB1025NPS

▮90° bend ▮Pull-up bend ▮Offset bend



SPB-NPS

▮HYDRAULIC PIPE BENDER PUMP SET (Manual Type)

▶ Features

- For bending (up to 90°) thick (JIS standards) stainless steel pipe, gas pipe, water pipe.
- The attachment bendshoe ensures accurate bending without damaging the pipe.

▶ Accessories

- Attachment bendshoe 3 pcs.

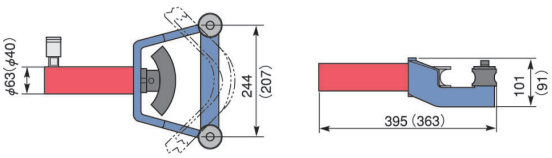
▮Applicable pipe thickness
10A=min. 2.3mm / 15A·20A=min. 2.8mm / 25A=min. 3.2mm

⚠ Can be used only for tubes of exact outer diameter. Depending on the pipe material or thickness, the bending may not be accurate.

Set Item No.	Set details			Applicable pipe size name	Bending capacity (kN)	Max. allowable pressure	Set N.W. (kg)
	Bender	Pump, hose	Attachment bendshoe.				
SPB520NPS	SPB520N	HP900N·HH2N(see p.177)	SPB10AN·15AN·20AN	10A·15A·20A	50	70MPa	18
SPB1025NPS	SPB1025N	HP900N·HH2N(see p.177)	SPB15AN·20AN·25AN	15A·20A·25A	100	70MPa	23



SPB1025N



Note : ( ) sizes are for SPB520N

SPB-N

▮PIPE BENDER (Hydraulic Type)

▶ Features

- For bending (up to 90°) thick (JIS standards) stainless steel pipe, gas pipe, water pipe.
- 3 types of attachment bendshoes adapted to bending process included.
- Adapted to our hand-operated hydraulic pump and hose (see p.177).

▶ Accessories

- Attachment bendshoes : SPB520N : 10AN, 15AN, 20AN ; SPB1025N : 15AN, 20AN, 25AN.
- Hex key wrench for attachment fixing (4mm).

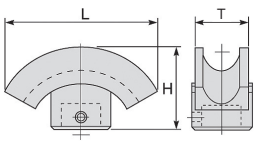
⚠ Can be used only for tubes of exact outer diameter. Depending on the pipe material or thickness, the bending may not be accurate.

Item No.	Applicable pipe size name	Bending capacity (kN)	Max. allowable pressure	Cylinder stroke (mm)	Bending radius, pipe thickness(mm)				N.W. (kg)
					10A	15A	20A	25A	
SPB520N	10A·15A·20A	50	70MPa	127	R50	R50	R50	-	7.5
					Min.2.3	Min.2.8		-	
SPB1025N	15A·20A·25A	100	70MPa	150	-	R50	R50	R70	12
					-	Min.2.8		Min.3.2	

∗ N.W. includes SPB20AN or SPB25AN on each bender.



10AN 15AN 20AN 25AN



SPB-AN

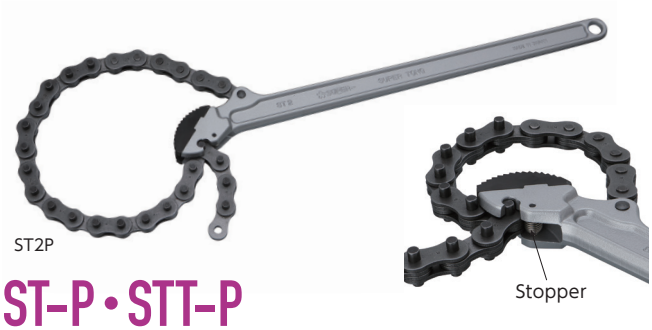
▮TUBE ATTACHMENT BENDSHOE

▶ Feature

- Different attachments adapted to the bending radius.

Item No.	Size(mm)				N.W. (kg)
	L	H	T	Bending radius	
SPB10AN	106	57	28	R50	0.65
SPB15AN	110	59	33	R50	0.74
SPB20AN	115	62	40	R50	0.88
SPB25AN	155	67	48	R70	1.28

●For all the appendix of the piping tools, please refer to P.283



ST-P • STT-P

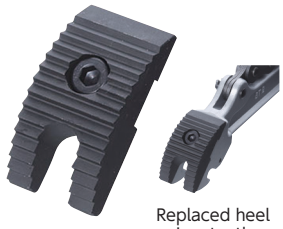
SUPER TONG, Chain Pipe Wrench Replaceable Heel Jaw Type (Heavy Duty Type for Professional Use)

▶ Features

- As a replaceable heel jaw teeth type, when the jaw teeth get worn, it can be replaced, so the tool can be used for a long time.
- Optimal for work in narrow places where pipe wrench cannot be used.
- Can work repeatedly with one-time setting (not for coated steel pipe).

Item No.	Applicable pipe		Body full length (mm)	N.W. (kg)
	Size name	External dia.(mm)		
ST1.5P	10A~100A	17~120	425	1.8
ST2P	20A~150A	25~170	510	2.6
ST2.5P	25A~200A	34~230	695	5.3

Stopper to prevent the chain from coming off included.
Chain links can be added up to twice the original chain length.



▮Heel Jaw Teeth (hex. socket head screw included)

Item No.	Applicable item
STT1.5P	ST1.5P
STT2P	ST2P
STT2.5P	ST2.5P



ST • ST-L

SUPER TONG, Chain Pipe Wrench (Heavy Duty Type for Professional Use)

▶ Features

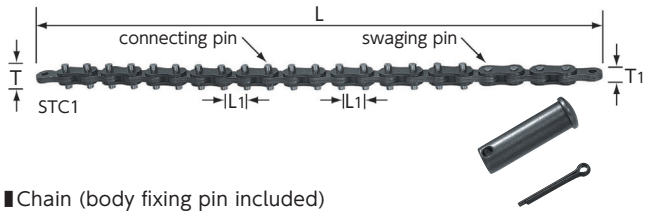
- Optimal for work in narrow places where pipe wrench cannot be used.
- Can work repeatedly with one-time setting (not for coated steel pipe).
- For ST3, 3L and 4 it is possible to add pipes (sold separately) to the handle.

Item No.	Applicable pipe		Body full length (mm)	N.W. (kg)
	Size name	External dia.(mm)		
ST0	8A~40A	12~50	230	0.3
ST1	8A~80A	14~89	305	0.8
ST1L	8A~150A	14~170	305	1.1
ST1.5	10A~100A	17~120	425	1.8
ST2	20A~150A	25~170	510	2.6
ST2L	20A~200A	25~230	510	3.1
ST2.5	25A~200A	34~230	695	5.3
ST3	25A~250A	35~270	745	6.3
ST3L	25A~300A	35~320	745	6.6
ST4	50A~500A	60~510	745	10.5

For ST1.5 and above, stopper to prevent the chain from coming off included.
Chain links can be added up to twice the original chain length (except for ST1L, 2L and 3L).

STC • STC-L • STP • STH

SUPER TONG Parts



▮Chain (body fixing pin included)

Item No.	L (mm)	L1 (mm)	Total number of links	Number of swaging pins	Number of links linked to swaging pins	T (mm)	T1 (mm)
STC0	243	14.3(9/16)	17	4	5	14	7.2
STC1	438	19(3/4)	23	4	5	20	9.6
STC1L	667	19(3/4)	35	4	5	20	9.6
STC1.5	514	19(3/4)	27	4	5	20	9.6
STC2	685	25.4(1)	27	6	7	28	12.8
STC2L	838	25.4(1)	33	6	7	28	12.8
STC2.5	857	31.8(1 1/4)	27	6	7	40	16
STC3	984	31.8(1 1/4)	31	6	7	40	16
STC3L	1,111	31.8(1 1/4)	35	6	7	40	16
STC4	1,867	38.1(1 1/2)	49	6	7	50	19.2



▮Pin

Item No.	Applicable item
STP0	ST0
STP1	ST1・1L
STP1.5	ST1.5・1.5P
STP2	ST2・2L・2P
STP2.5	ST2.5・2.5P
STP3	ST3・3L
STP4	ST4



＊Only for ST3, 3L and 4.

▮Pipe (to connect to the body)

Item No.	Applicable item	Size(mm)			N.W. (kg)
		Full length	External dia.	Pipe thickness	
STH3	ST3・3L	1,000	43	5	4.5
STH4	ST4	1,500	45	5	7.5

●For all the appendix of the piping tools, please refer to P.283



BW2

BW・BW-L

BELT WRENCH, Aluminum Alloy Body (Non-scratching Type)

▶ Features

- High strength aluminum alloy allows light body.
- Special processed nylon belt ensures outstanding non-scratch durability.

Item No.	Applicable pipe		Body full length (mm)	N.W. (g)
	Size name	External dia.(mm)		
BW2	10A～65A	15～80	300	320
BW2L	10A～250A	15～280	300	380
BW5	25A～150A	30～175	450	800
BW5L	25A～300A	30～320	450	880



Material : special processed nylon

BWS・BWP

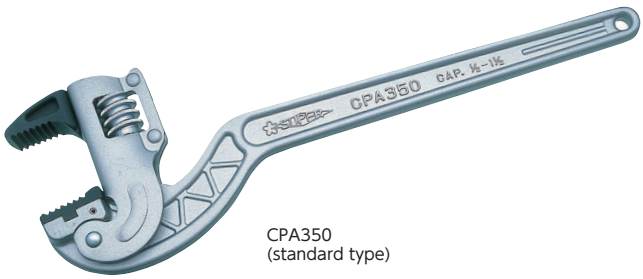
BELT WRENCH Parts

▮Spare belt

Item No.	Applicable item	Size(mm)	
		Applicable pipe external dia.	Belt width x length
BWS2450	Standard for BW2	15～80	32×450
BWS21000	Standard for BW2L	15～280	32×1,000
BWS21500	Long type for BW2、2L	15～420	32×1,500
BWS5800	Standard for BW5	30～175	45×800
BWS51250	Standard for BW5L	30～320	45×1,250
BWS51650	Long type for BW5、5L	30～450	45×1,650

▮Pin (assembling pin for belt replacement)

Item No.	Applicable item
BWP2	BW2、2L
BWP5	BW5、5L



CPA350
(standard type)

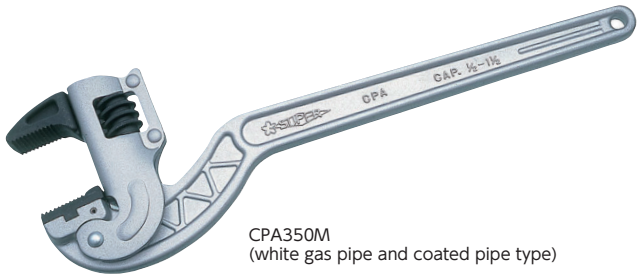
CPA

CORNER PIPE WRENCH, Aluminum Alloy Body (Standard Type)

▶ Features

- The drop-forged aluminum body is light and sturdy.
- Optimal for piping work in narrow places such as ground contact areas, near wall areas, inside grooves.

Item No.	Applicable pipe		Full length (mm)	N.W. (kg)
	Size name	External dia.(mm)		
CPA250	8A～25A	13～40	251	0.4
CPA300	10A～32A	15～46	301	0.6
CPA350	15A～40A	20～54	351	0.7
CPA450	25A～50A	30～65	451	1.2
CPA600	40A～80A	48～90	604	3



CPA350M
(white gas pipe and coated pipe type)

CPA-M

CORNER PIPE WRENCH, Aluminum Alloy Body (White Gas Pipe and Coated Pipe Type)

▶ Features

- The drop-forged aluminum body is light and sturdy.
- The middle size of the teeth range allows the wrench to fit with both white gas pipe and coated pipe, for a large variety of use.

Item No.	Applicable pipe		Full length (mm)	N.W. (kg)
	Size name	External dia.(mm)		
CPA250M	8A～25A	13～40	251	0.4
CPA300M	10A～32A	15～46	301	0.6
CPA350M	15A～40A	20～54	351	0.7
CPA450M	25A～50A	30～65	451	1.2
CPA600M	40A～80A	48～90	604	3

●For all the appendix of the piping tools, please refer to P.283



DT350E

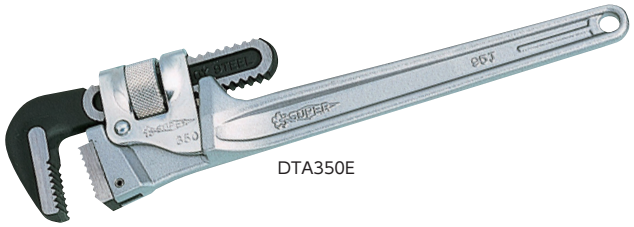
DT-E • DT900

PIPE WRENCH, Deluxe Forged Body

▶ Features

- Forged body.
- The quality is equivalent to JIS strong class.
- Optimal for gas and water pipes.
- Outstanding durability with tooth hardness of 52~58HRC.

Item No.	Applicable pipe		Full length (mm)	N.W. (kg)
	Size name	External dia.(mm)		
DT200E	6A~25A	6~34	161	0.4
DT250E	6A~32A	6~45	204	0.6
DT300E	6A~40A	10~55	245	1
DT350E	6A~50A	10~65	288	1.3
DT450E	8A~65A	13~80	372	2.1
DT600E	20A~80A	26~90	498	3
DT900	25A~100A	38~125	750	6.5



DTA350E

DTA-E

PIPE WRENCH, Aluminum Alloy Body

▶ Features

- The drop-forged aluminum body is more than 30% lighter than the deluxe pipe wrench.
- The quality is equivalent to JIS strong class.

Item No.	Applicable pipe		Full length (mm)	N.W. (kg)
	Size name	External dia.(mm)		
DTA250E	6A~32A	6~45	204	0.45
DTA300E	6A~40A	10~55	245	0.65
DTA350E	6A~50A	10~65	288	0.9
DTA450E	8A~65A	13~80	372	1.5
DTA600E	20A~80A	26~90	498	2.4



AP350E

AP-E

STRAIGHT PIPE WRENCH, Aluminum Alloy Body

▶ Features

- The high strength aluminum alloy body is very light and brings improved durability.
- The quality is equivalent to JIS strong class.

Item No.	Applicable pipe		Full length (mm)	N.W. (kg)
	Size name	External dia.(mm)		
AP250E	6A~32A	6~45	210	0.5
AP300E	6A~40A	8~55	245	0.7
AP350E	6A~50A	10~65	290	1.1
AP450E	8A~65A	15~80	370	1.7
AP600E	15A~80A	20~90	500	2.7
AP900E	25A~100A	38~125	725	4.9



AP350N
(coated pipe type)

AP-N

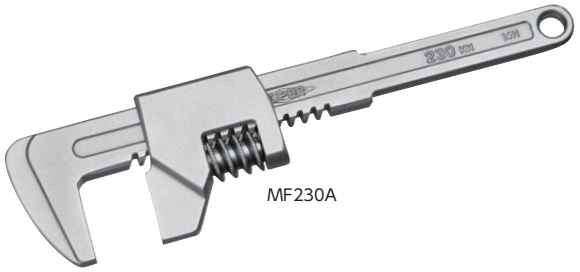
STRAIGHT PIPE WRENCH, Aluminum Alloy Body (Coated Pipe Type)

▶ Feature

- Specially designed for poly pipe and PVC coated pipe. Scratch resistant thanks to small tooth pitch.

Item No.	Applicable pipe		Full length (mm)	N.W. (kg)
	Size name	External dia.(mm)		
AP250N	15A~32A	6~45	210	0.5
AP300N	15A~40A	8~55	245	0.7
AP350N	15A~50A	10~65	290	1.1
AP450N	15A~65A	15~80	370	1.7
AP600N	15A~80A	20~90	500	2.7
AP900N	25A~100A	38~125	725	4.9

●For all the appendix of the piping tools, please refer to P.283



MF-A

MOTOR WRENCH, Aluminum Alloy Body

▶ Features

- Body and jaw are made of aluminum.
- Wide jaw opening allows wider use application compared to standard adjustable wrench.
- Optimal for plated nut and soft nut materials like copper, brass, gunmetal.

⚠ Avoid tightening work exceeding 200N·m torque.

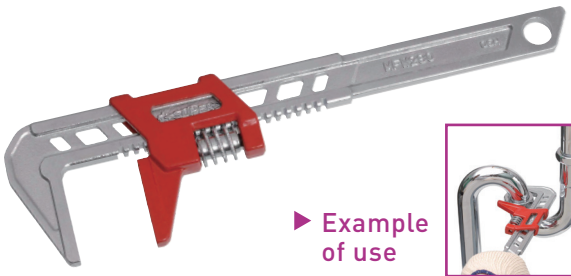
Item No.	Size (mm)				N.W. (g)
	Jaw width	Jaw depth	Jaw thickness	Full length	
MF230A	0~60	34	8.4	235	190
MF280A	0~75	40	9.5	285	280





▶ Example of use





▶ Example of use



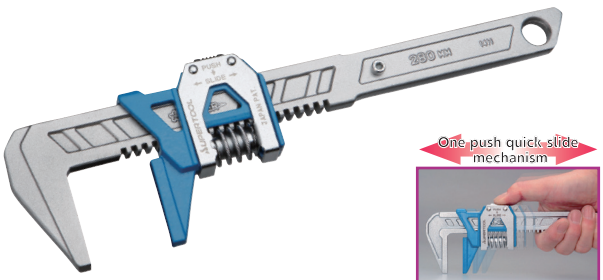
MFW280

WIDE MOTOR WRENCH, Thin and Light Type

▶ Features

- Wide jaw opening allows wider use application compared to standard adjustable wrench.
- Optimal for plated nut and soft nut materials like copper, brass, gunmetal.

Item No.	Size (mm)				N.W. (g)
	Jaw width	Jaw depth	Jaw thickness	Full length	
MFW280	0~80	48	8.5	284	450



MFW280SA

WIDE MOTOR WRENCH, Quick Adjusting Type, Aluminum Alloy Body PAT.

▶ Features

- Body is made of aluminum.
- One push quick slide mechanism enables quick jaw adjusting.
- Optimal for plated nut and soft nut materials like copper, brass, gunmetal.

⚠ Avoid tightening work exceeding 200N·m torque.

Item No.	Size (mm)				N.W. (g)
	Jaw width	Jaw depth	Jaw thickness	Full length	
MFW280SA	0~80	48	8.5	284	360

MFW280S

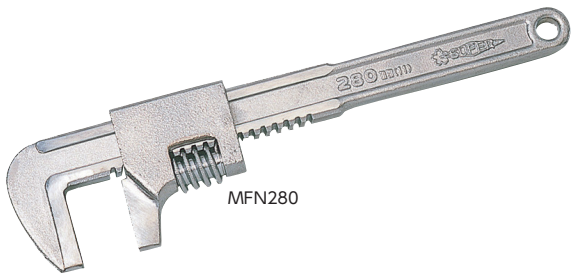
WIDE MOTOR WRENCH, Quick Adjusting Type PAT.

MOVIE

▶ Features

- One push quick slide mechanism enables quick jaw adjusting.
- Wide jaw opening allows wider use application compared to standard adjustable wrench.
- Optimal for plated nut and soft nut materials like copper, brass, gunmetal.

Item No.	Size (mm)				N.W. (g)
	Jaw width	Jaw depth	Jaw thickness	Full length	
MFW280S	0~80	48	8.5	284	490



MF230 • MFN280

MOTOR WRENCH

▶ Features

- Wide jaw opening allows wider use application compared to standard adjustable wrench.
- Optimal for plated nut and soft nut materials like copper, brass, gunmetal.

Item No.	Size (mm)				N.W. (g)
	Jaw width	Jaw depth	Jaw thickness	Full length	
MF230	0~60	34	8.4	235	430
MFN280	0~75	42	9.5	285	650

●For all the appendix of the piping tools, please refer to P.283



MFTN68A

VERTICAL MOTOR WRENCH, Aluminum Alloy Body

▶ Features

- The aluminum alloy body prevents damage on sanitary pipe nut.
- With wide jaw opening and compact and light-weighted body, optimal for use in confined space.

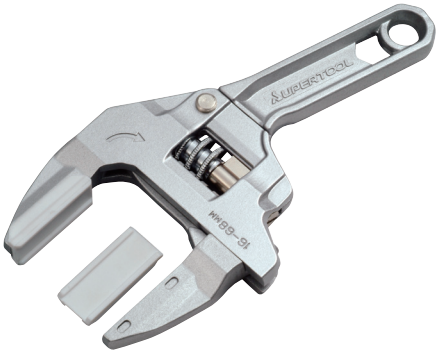
▶ Example of use



⚠ Avoid tightening work exceeding 100N·m torque.

Item No.	Size(mm)				N.W. (g)
	Jaw width	Jaw depth	Jaw thickness	Full length	
MFTN68A	16~68	60	9.5	205	210

MOVIE



MFTR68A • A68A

VERTICAL MOTOR WRENCH, Aluminum Alloy Body, Ratchet Type

▶ Features

- The aluminum alloy body prevents damage on sanitary pipe nut.
- With wide jaw opening and compact and light-weighted body, optimal for use in confined space.

▶ Example of use



attachment (for nut holding)

⚠ Avoid tightening work exceeding 100N·m torque.

▮Attachment (a pair)

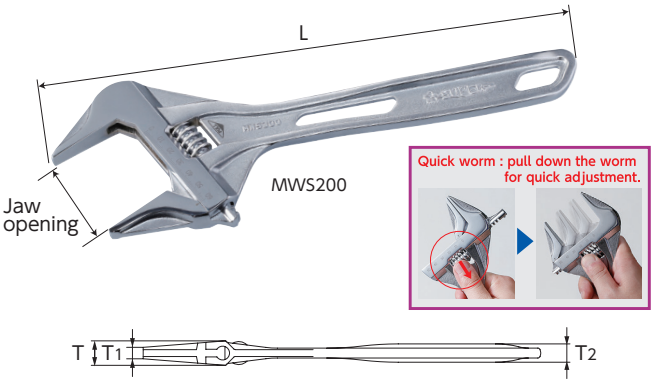
Item No.
A68A

▮Wide type with ratchet mechanism

Item No.	Size(mm)				N.W. (g)
	Jaw width	Jaw depth	Jaw thickness	Full length	
MFTR68A	16~68	60	9.5	210	250

∗ Mouth width when attachment (A68A) is put on : 12~64mm.

MOVIE



MWS

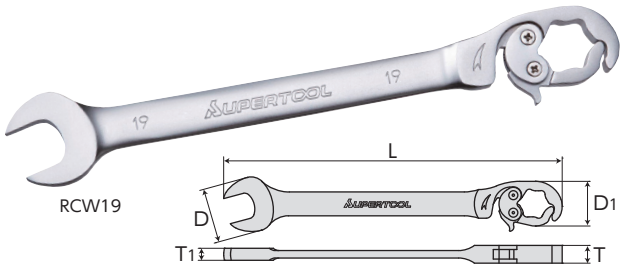
SUPER WIDE ADJUSTABLE ANGLE WRENCH (Quick Adjusting Type)

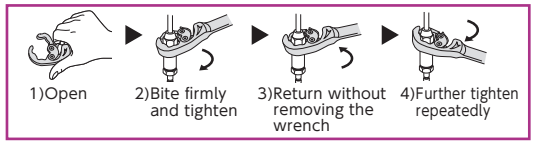
▶ Features

- Quick worm slide, super wide jaw opening, light-weighted thin type.
- The quick worm sliding mechanism allows very fast size adjustment.
- The push spring worm mechanism avoids looseness.
- The grip part is designed to be firmly grasped easily.

Item No.	Size name (mm)	Size(mm)					N.W. (g)	Guaranteed load(N·m)
		Jaw opening	L	T	T1	T2		
MWS200	200	0~38	210	13.5	6.7	10.5	270	294.2
MWS250	250	0~50	260	16	7.5	12	480	480.5
MWS300	300	0~60	320	18.5	8.3	13	810	882.6

●For all the appendix of the piping tools, please refer to P.283





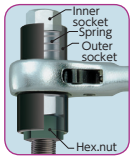
RCW

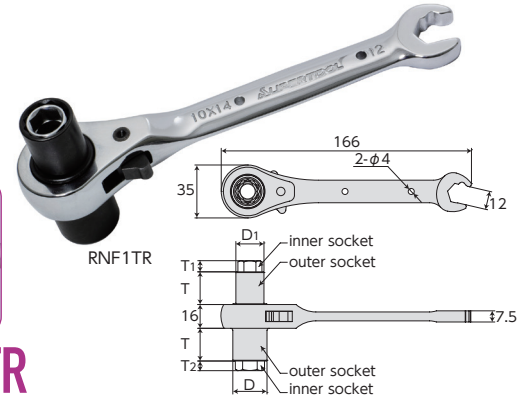
OPEN RATCHET WRENCH (Straight Type)

▶ Features

- Optimal for tightening or removing flange nut of various pipe joints.
- Open and bite at the box wrench side.
- Use for final tightening.
- Ratchet mechanism included.

Item No.	Size (mm)						N.W. (g)
	Size name	L	D	D1	T	T1	
RCW10	10	154	21.0	17.0	10.0	5.5	55
RCW12	12	170	25.4	21.0	11.0	6.3	90
RCW13	13	177	27.5	23.0	11.0	6.7	110
RCW14	14	186	29.3	24.5	12.0	7.3	125
RCW17	17	223	36.2	29.5	12.5	8.2	210
RCW19	19	248	40.0	33.0	13.0	8.8	280
RCW22	22	298	45.7	37.5		9.5	390
RCW24	24	333	51.8	42.0	15.0	10.3	570
RCW27	27	343	56.5	47.0	15.5	10.7	700





RNF-TR

5 SIZE RATCHET WRENCH PAT.

▶ Features

- When outer socket is used, inner socket is pushed up easily, and after the use, the inner socket returns to the original position by spring.
- The spanner end (12mm) also comes with a ratchet mechanism.
- Suitable for plumbing work, duct work, electric facility work, building construction and work on any kind of facilities.

Item No.	Size name (mm)		Size (mm)					N.W. (g)
	Inner socket	Outer socket	D	D1	T	T1	T2	
RNF0TR	8 10	13 14	18.9	18.2	19.5	7	6	250
RNF1TR	10 13	14 17	23	18.9	22	7.5	6.5	270

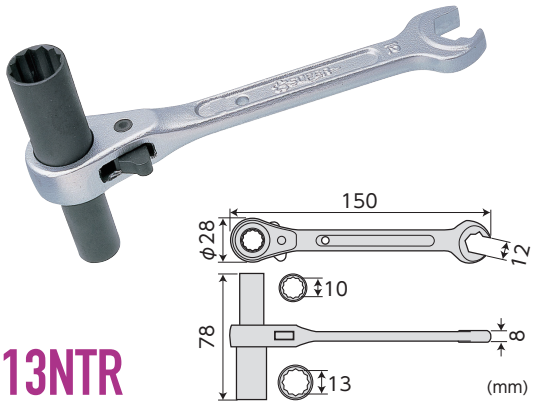
RCW-F

OPEN RATCHET WRENCH (Flex Type)

▶ Features

- Optimal for tightening or removing flange nut of various pipe joints.
- Open and bite at the box wrench side.
- Use for final tightening.
- Ratchet mechanism included.

Item No.	Size (mm)						N.W. (g)
	Size name	L	D	D1	T	T1	
RCW10F	10	154	21.0	17.0	10.0	5.5	55
RCW12F	12	170	25.4	21.0	11.0	6.3	90
RCW13F	13	177	27.5	23.0	11.0	6.7	120
RCW14F	14	186	29.3	24.5	12.0	7.3	125
RCW17F	17	223	36.2	29.5	12.5	8.2	230
RCW19F	19	248	40.0	33.0	13.0	8.8	310
RCW22F	22	298	45.7	37.5		9.5	430
RCW24F	24	333	51.8	42.0	15.0	10.3	620
RCW27F	27	343	56.5	47.0	15.5	10.7	780

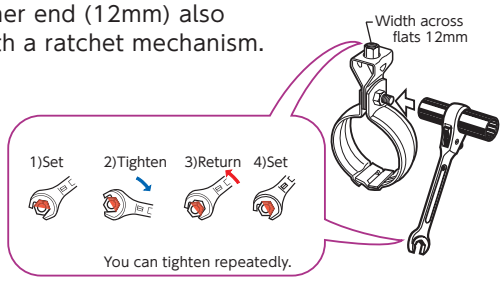


RN1013NTR

QUICK TURN WRENCH FOR PIPE SUSPENDER

▶ Features

- Long sockets with ratchet mechanism.
- The spanner end (12mm) also comes with a ratchet mechanism.



Item No.	10	13	N.W. (g)
RN1013NTR	M6·1/4	M8	200

●For all the appendix of the piping tools, please refer to P.283

Tube cutters
Other cutters
Pipe scrapers, super torque wrenches
Flaring tools
Flanging tools for flexible tube
Benders
Chain pipe wrenches
Pipe wrenches, belt wrenches
Motor wrenches, other wrenches
Water pump pliers
Super pilers, threaded rod cutters
Plumbing tool set

WATER PUMP PLIERS

▶ Features

- Firm biting on pipe, round bar, hex nut, flat board, and all kind of materials enabled by ideal jaw shape.
- 5~9 positions of jaw opening to adjust to the work size.



GW250H

GWZ250H

GW250H • GWZ250H

Standard Type (GWZ is Vinyl Grip Type)

Item No.	Size (mm)			No. of jaw position	N.W. (g)
	Full length	Jaw opening	Tip side width		
GW250H	254	0~47	10	5 adjustable type	325
GWZ250H	253	0~47	10	5 adjustable type	350



GW250M

Three-layered Structure Type

▶ Features

- The three-layered structure makes it very robust. No protruding fixing pin.
- The handle tip is equipped with a function to remove pan head screw (applicable pan head screw head external dia. : Φ3~Φ6.5mm).
- Including rubber pad to prevent scratch.



Item No.	Size (mm)			No. of jaw position	N.W. (g)
	Full length	Jaw opening	Tip side width		
GW250M	250	0~52	7	9 adjustable type	290



GWP250H

GWP-H

Strong Type with Pitch (JIS)

Item No.	Size (mm)			No. of jaw position	N.W. (g)
	Full length	Jaw opening	Tip side width		
GWP250H	255	0~43	9.5	5 adjustable type	375
GWP300H	305	0~58	11.5	6 adjustable type	685



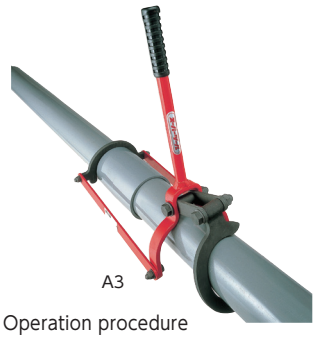
GWS250H

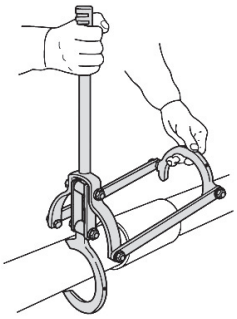
Spring Type

Item No.	Size (mm)			No. of jaw position	N.W. (g)
	Full length	Jaw opening	Tip side width		
GWS250H	252	0~46	10	8 adjustable type	330

* Spring equipped inside, optimal for continuous work.

●For all the appendix of the piping tools, please refer to P.283

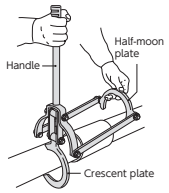




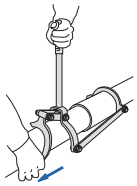
A
SUPER PILER (PVC Pipe Joiner)

▶ Features
- Most convenient for inserting, holding or removing all kinds of PVC pipe and pipe fitting in easy manner.
- Optimal in narrow places and inside grooves.

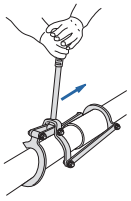
▮Operation procedure



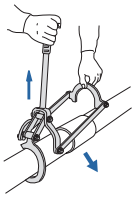
1) Lift the handle and the half-moon plate up and set the crescent plate from the side of the pipe as shown in the drawing.



2) Hold the handle as shown in the drawing, seize the crescent plate lower side with the other hand and pull it completely in the direction of the arrow. (If the crescent plate is not pulled enough, the pipe cannot be inserted correctly).



3) After having set and pressure inserted the pipe, keep pulling with force the handle in the direction of the arrow until the pipes are completely fixed by the adhesive.



4) Lift the handle and the crescent plate up and push slightly in the direction of the arrow to remove the piler, as shown in the drawing.

Item No.	Applicable pipe(mm)		N.W. (kg)
	Size name	External diameter	
A3	75	89	2.7
A4	100	114	3.7
A5	125	140	6
A6	150	165	7
A8	200	216	9





Clean cut with no damage on the screw thread.
Can cut with no burr, so the nut can be smoothly inserted.

▶ Example of use



NK3W
THREADED ROD CUTTER

▶ Features
- As the cutter is designed to disperse the load, rods can be cut with very low force in 2 actions.
- Optimal for HVAC (Heating, Ventilation, Air Conditioning), electric pipes, mechanical installations (water and gas pipe fittings, sprinkler installations), any duct fittings.
- Light-weighted and easy to carry.

Item No.	Cutting ability		Full length (mm)	N.W. (g)
	Screw size name	Material		
NK3W	W3/8"	Mild steel	765	4,100





Blade fixing bolt

NKS3W
SPARE BLADE

▶ Feature
- Easy to replace and outstanding durability.

Item No.	Applicable item	N.W.(g)
NKS3W	NK3W	30

●For all the appendix of the piping tools, please refer to P.283

H4000S

PLUMBING TOOL SET FOR PROFESSIONAL (Standard Type)



▶ Features

- Suitable for any kind of piping works like gas pipe, water pipe, etc.
- Composed of 2 trays (upper and lower tray).

■Set details

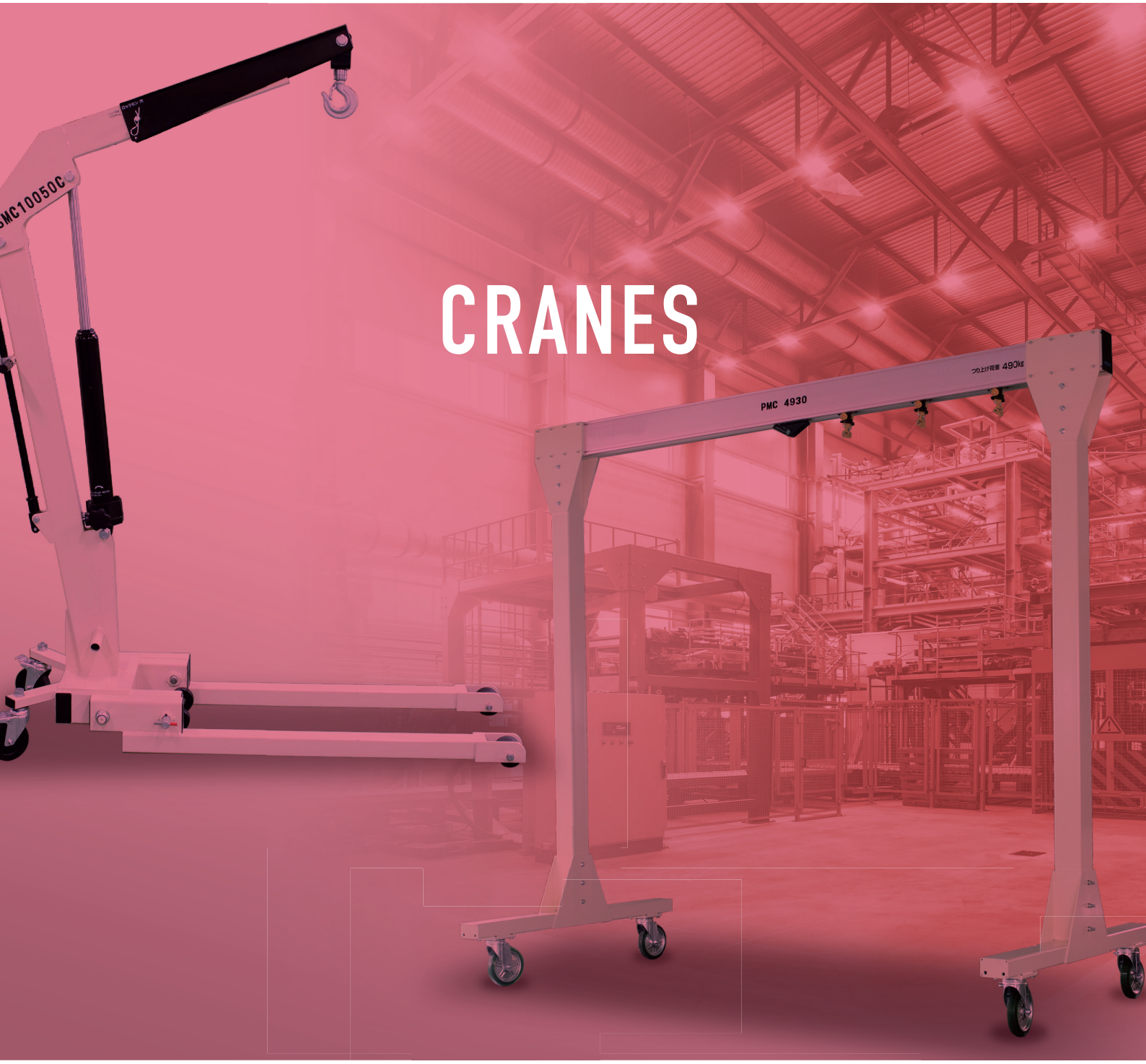
Item name	Item No.	Size	Q'ty
Adjustable angle wrench	**MAN250**	250	1
	MAN300	300	1
Pipe wrench, aluminum alloy body	**DTA300E**	300	1
	DTA350E	350	1
Corner pipe wrench, aluminum alloy body	**CPA300**	300	1
	CPA350	350	1
PVC pipe cutter	**VK42N**	VP13～VP30	1
Water pump pliers	**GW250H**	250	1
Combination pliers	**CPZ200**	200	1
Vertical motor wrench, aluminum alloy body	**MFTN68A**	Jaw width: 16～68mm	1
Wide motor wrench	**MFW280**	Jaw width:0～80mm	1

Item name	Item No.	Size	Q'ty
Pipe scraper	**PS100**	Blade length:12mm	1
Tube cutter with bearings	**TCB105**	ϕ4～ϕ32mm	1
Side cutting pliers	**SZ175S**	175	1
Long nose pliers	**SL150S**	150	1
Super saw (replaceable blade type)	**S6010**	Full length:370mm	1
Cushion screwdriver	**KD610**	⊖6mm×100	1
	KD815	⊖8mm×150	1
	KD210	⊕No.2×100	1
	KD315	⊕No.3×150	1
Tool case (plastic)	**SR450S**	455×240×206mm	1

Item No.	Total Q'ty (pcs)	Set N.W.(kg)
H4000S	21	9

●For all the appendix of the piping tools, please refer to P.283

CRANES





Multi cranes
P.106 ▶

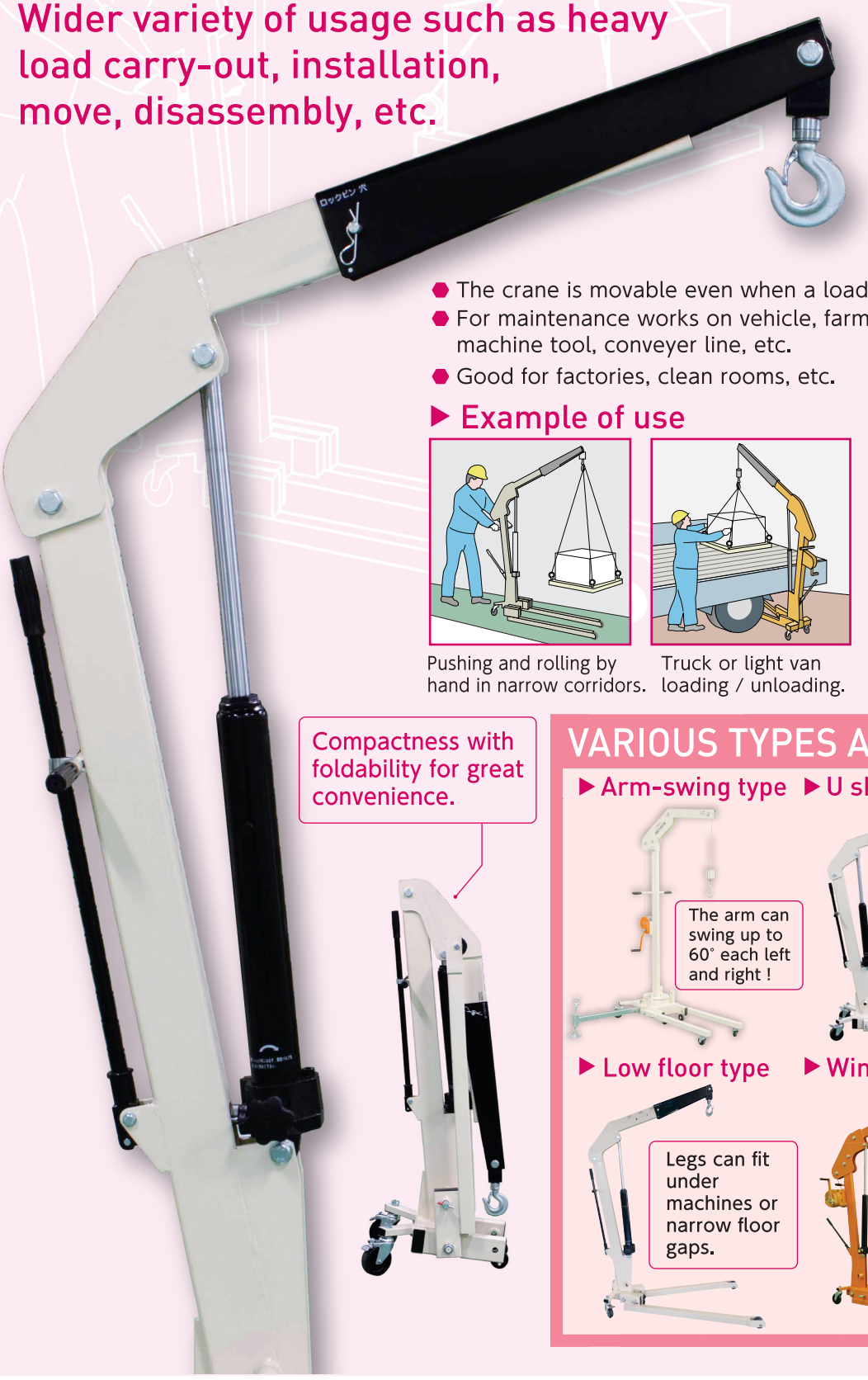


Portable gate type cranes
P.109 ▶

MULTI CRANE

Ideal for load lifting and handling in workplace without fixed crane equipment !!

Wider variety of usage such as heavy load carry-out, installation, move, disassembly, etc.

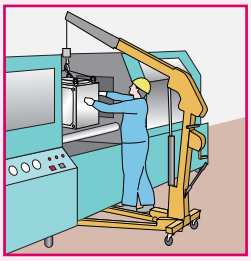


- The crane is movable even when a load is being lifted up.
- For maintenance works on vehicle, farming machinery, machine tool, conveyer line, etc.
- Good for factories, clean rooms, etc.

▶ Example of use

Pushing and rolling by hand in narrow corridors.

Truck or light van loading / unloading.



Machine work loading / unloading.

Compactness with foldability for great convenience.

VARIOUS TYPES AVAILABLE !

▶ Arm-swing type

The arm can swing up to 60° each left and right !

▶ U shaped leg type



Movable even in narrow corridor.

▶ Low floor type

Legs can fit under machines or narrow floor gaps.

▶ Winch type

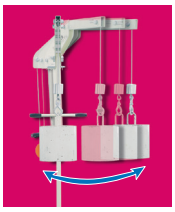


Load can be lifted up or down with a manual winch.

SMC150TH

ARM-SWING TYPE MULTI CRANE (Light-weight Type)





Right / left max. swing angle up to 60°

▶ Example of use



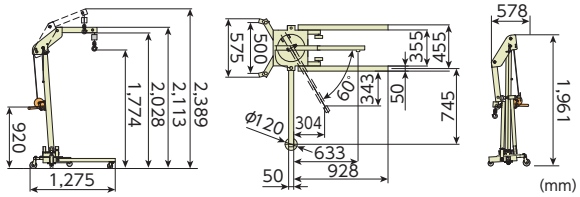
Loading / unloading goods on / from a pallet in a warehouse or a factory.



Loading / unloading work into / from a machine.

▶ Features

- When you insert the outrigger, the crane arm can swing with max. angle up to 60° each right and left.
- The swing lock mechanism allows arm swing only in the direction of the outrigger.
- If you move back the arm into the front position and you remove the outrigger, the safety design allows you to push and roll by hand the loaded crane.
- The U shaped legs allow, during movement, easy operation even through narrow corridor.
- Light-weight and compact type.



Specifications, dimensions table

Item No.	Rated capacity (kg)	Arm swing angle	Arm height adjustment	Lifting height (mm)	N.W. (kg)
SMC150TH	150	60° right/left	2 steps	1,774・2,028	105

SMC-H

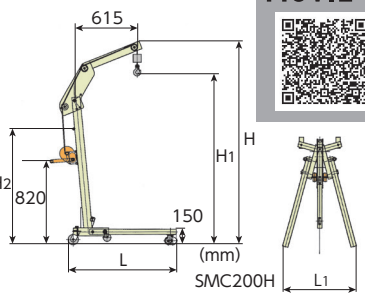
MULTI CRANE (Light-weight Type)

Light and compact



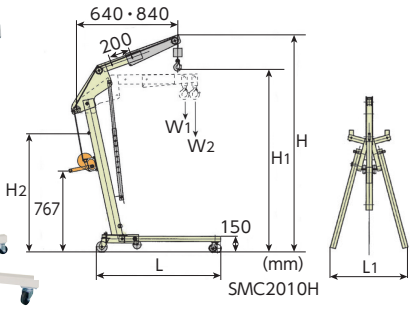
SMC200H

MOVIE





SMC2010H



▶ Features

- Ideal in workplace without fixed crane equipment.
- Very smoothly moveable with 4 swivel wheels.
- Load can be lifted up or down with a manual winch.
- The arm and legs are foldable, enabling use anywhere anytime and compact storage.

Applications

- Maintenance works on vehicle, farming machinery, machine tool, conveyer line, etc.
- Vehicle loading or unloading.

MOVIE

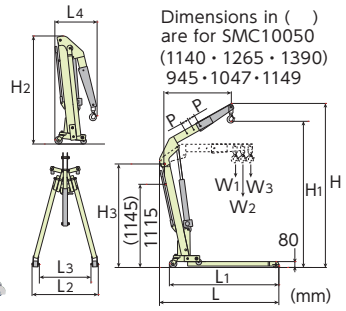
Specifications, dimensions table

Item No.	Size (mm)					Rated capacity (kg)		Arm length adjustment	N.W. (kg)
	L	L1	H	H1	H2	W1	W2		
SMC200H	1,060	680	2,015	1,660	1,145	200		Fixed type	45
SMC2010H	1,170	737	2,065	1,740	1,125	200	100	2 steps type	55

SMC

MULTI CRANE (Low Floor Type)





▶ Features

- Ideal in workplace without fixed crane equipment.
- Very smoothly moveable with 4 swivel wheels.
- The arm vertical move is hydraulic type, and the arm length is adjustable at 3 steps.
- Compact foldable type enabling use anywhere anytime.

Applications

- Maintenance works on vehicle, farming machinery, machine tool, conveyer line, etc.
- Vehicle loading or unloading.

Specifications, dimensions table

Item No.	Rated capacity (kg)			Size (mm)										N.W. (kg)
	W1	W2	W3	L	L1	L2	L3	L4	H	H1	H2	H3	P	
SMC5030	500	400	300	1,610	1,470	890	695	530	2,335	2,095	1,465	1,405	102	75
SMC10050	1,000	750	500	1,710	1,555	955	760	605	2,580	2,340	1,585	1,520	125	100

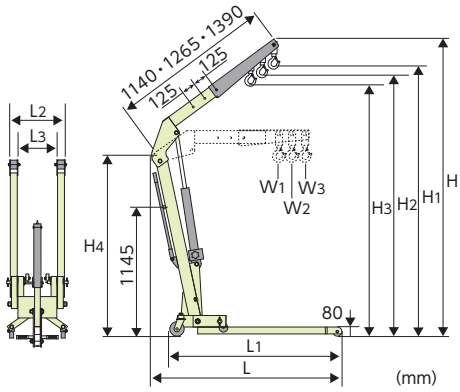
SMC10050C

MULTI CRANE (Low Floor Type) U Shaped Leg Type



Applications

- Maintenance works on vehicle, farming machinery, machine tool, conveyer line, etc.
- Vehicle loading or unloading.

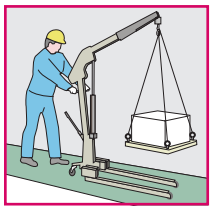


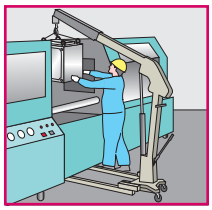
For the New Products page, see P.5

▶Features

- Ideal for lifting and moving loads in workplace without fixed crane equipment.
- Compact foldable type enabling use anywhere anytime.
- The arm vertical move is hydraulic type, and the arm length is adjustable at 3 steps.
- The U shaped legs are very compact, enabling move even through narrow corridor.

▶ Example of use





Specifications, dimensions table

Item No.	Rated capacity(kg)			Size(mm)									N.W. (kg)
	W1	W2	W3	L	L1	L2	L3	H	H1	H2	H3	H4	
SMC10050C	1,000	750	500	1,710	1,555	500	305	2,580	2,340	2,265	2,190	1,520	105

SMC・SMC-H

MULTI CRANE (Winch Type and Economy Type)



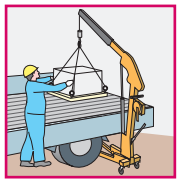
● Winch type (SMC-H)　● Economic type (SMC)

▶ Features

MOVIE

- The arm length is adjustable at 3 steps and the rated capacity remains the same at every step.
- Very smoothly moveable with wheels.
- The arm vertical move is hydraulic type, allowing easy control.
- For the SMC-H type, load can be lifted up or down with a manual winch.
- The crane arm and legs are foldable for compact storage, enabling use anywhere anytime.

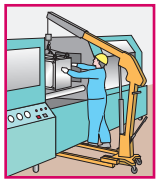
▶ Example of use



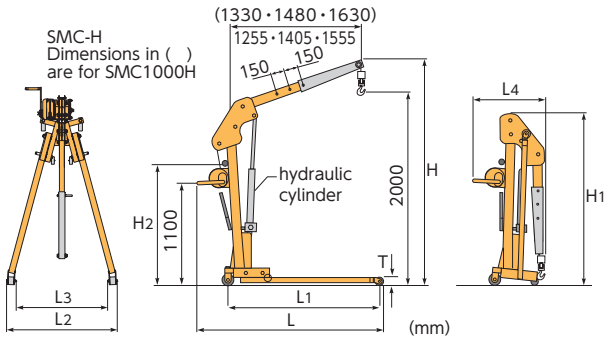
● Truck or light van loading / unloading.

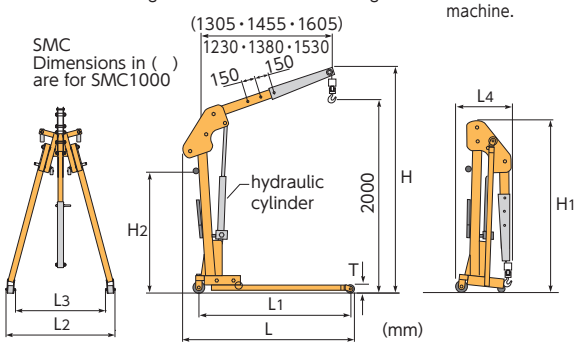


● Pushing and rolling by hand the crane with load hanged.



● Loading / unloading work into / from a machine.





Specifications, dimensions table

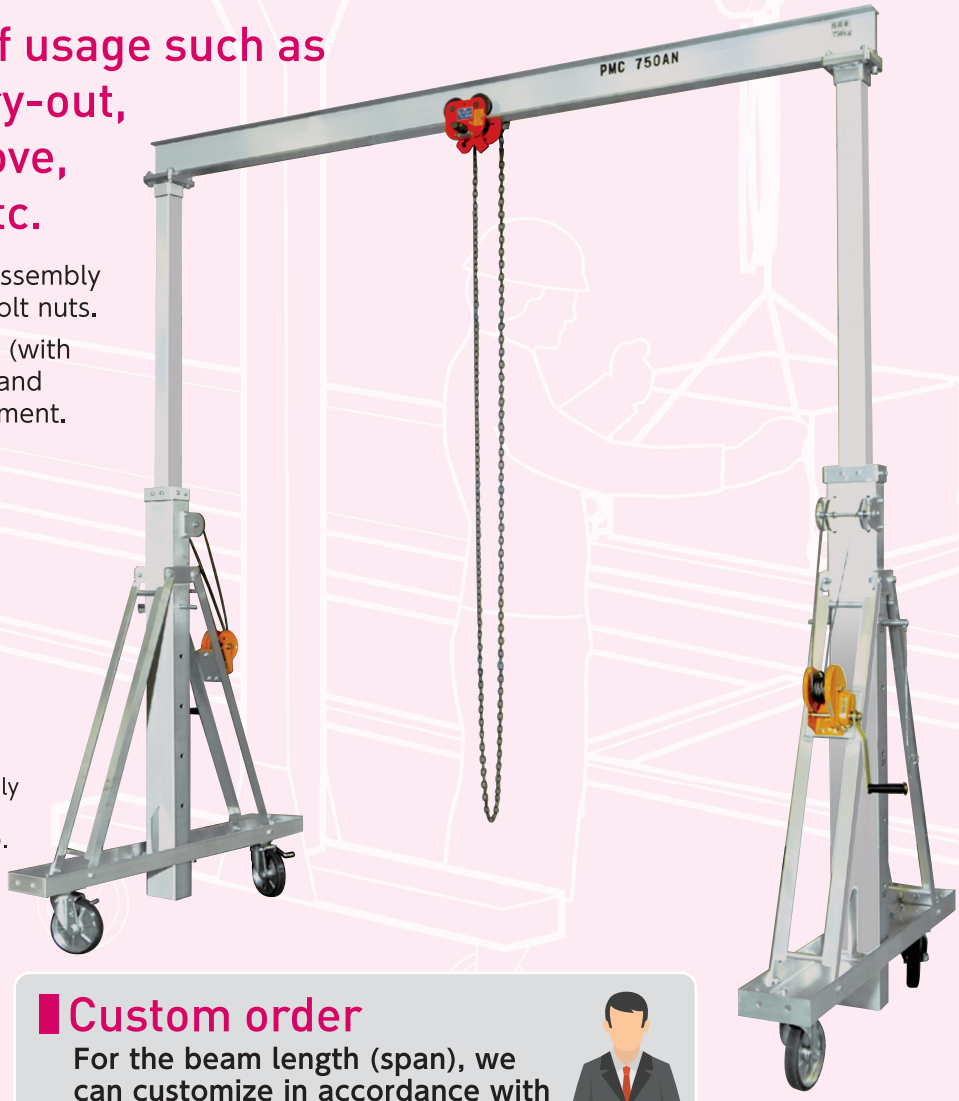
Item No.	Rated capacity (kg)	Size(mm)									N.W. (kg)
		L	L1	L2	L3	L4	H	H1	H2	T	
SMC500	500	1,920	1,640	1,125	930	645	2,245	1,790	1,285	90	130
SMC1000	1,000	2,065	1,840	1,181	985	785	2,235	1,882	1,380	110	190
SMC500H	500	2,000	1,640	1,125	930	840	2,300	1,790	1,285	90	135
SMC1000H	1,000	2,180	1,840	1,181	985	980	2,345	1,882	1,380	110	200

PORTABLE GATE TYPE CRANE

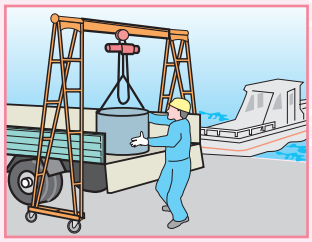
Ideal in workplace without fixed crane equipment !

Wider variety of usage such as heavy load carry-out, installation, move, disassembly, etc.

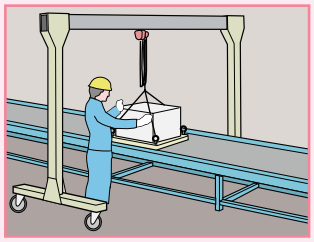
- Easy assembly and disassembly just by tightening the bolt nuts.
- Including swivel casters (with brake for all 4 wheels) and a plain trolley for movement.



▶ Example of use



The lateral movement of the hoist can be operated smoothly with the geared trolley (attached with the main body).



Optimal in workplace with no crane equipment.

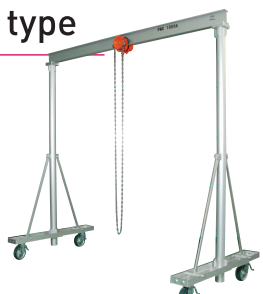
Custom order

For the beam length (span), we can customize in accordance with specific requirement.



LARGE LINE UP !

Light type



Aluminum made, light-weight and yet very rigid !

Telescopic type



Easy height adjustment !

Aluminum rail type



Quiet and light operation movement with the aluminum rail !

PMC

PORTABLE GATE TYPE CRANE (Aluminum Rail Type)



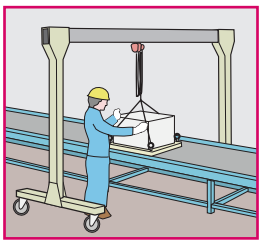
● Hoist not included

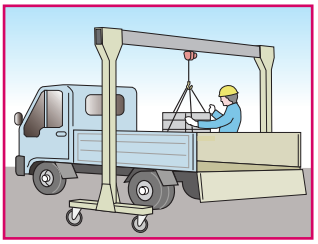
⚠ Don't move the crane with the load lifted.

▶ Features

- Ideal in workplace without fixed crane equipment.
- As the crane rail is made of light aluminum, the load moving operation is very light.
- Easy assembly, disassembly and transport.
- Including casters (swivel caster with brake for all 4 wheels) and a plain trolley for movement.
- The pillar parts are in steel.

▶ Example of use



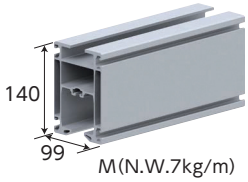


▮Plain trolley

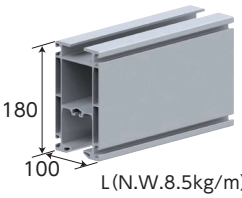


hoist hook fixing part

▮Aluminum rail



M(N.W.7kg/m)



L(N.W.8.5kg/m)

▮Cable Hanger (3 pcs included)



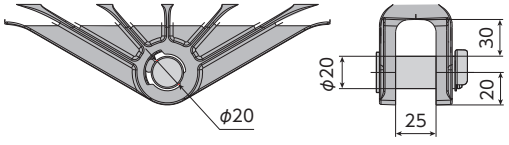
cable hanger for power supply cable

＊Upon request, we can provide a beam of your required length (span).

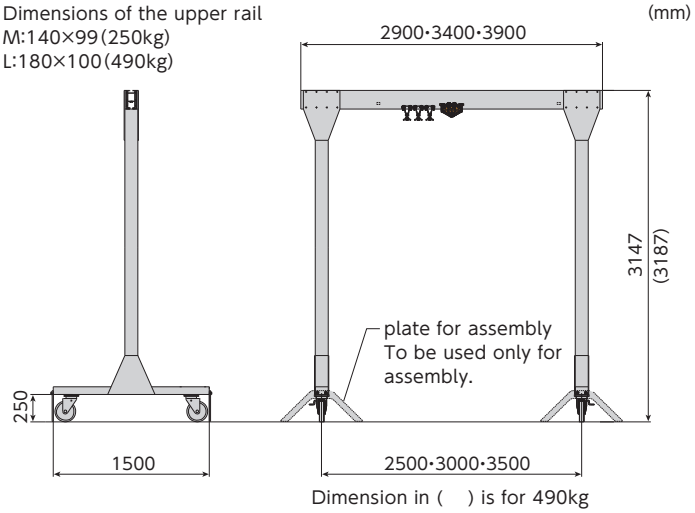
CAUTIONS

- The values of rated capacity include the weights of a hoist and a hanger (the weight of the load must be calculated by reducing the weights of a hoist and a hanger from the rated capacity).
- The hoist is not included (always use a hoist adapted to the rated capacity, the lifting height and the dimension of the fixing hook).
- The lifting height will be reduced if a hoist is attached.

▮Dimensions of the trolley's hoist fixing part



Dimensions of the upper rail
M:140×99(250kg)
L:180×100(490kg)



Dimension in ( ) is for 490kg

Item No.	Rated capacity(kg)	Span(m)	Lifting height(m)	N.W. (kg)
PMC2525	250	2.5	3	270
PMC2530	250	3.0	3	275
PMC2535	250	3.5	3	280
PMC4925	490	2.5	3	300
PMC4930	490	3.0	3	305
PMC4935	490	3.5	3	310

＊Assembly is to be made by the user.

PMC-A

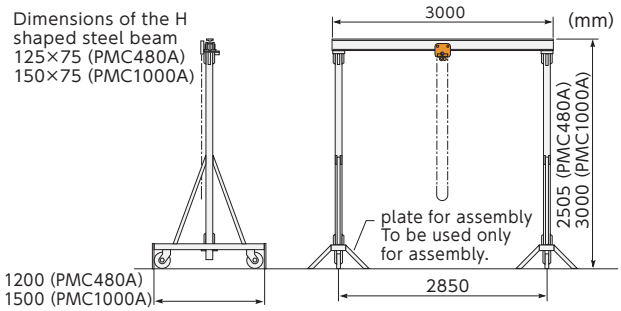
PORTABLE GATE TYPE CRANE (Aluminum Type)



★Upon request, we can provide a crane of your required dimensions.

▶ Features

- Ideal in workplace without fixed crane equipment.
- Light-weight and yet very robust.
- Easy assembly and disassembly.
- Smooth carriage and transport.
- Including casters (swivel caster with brake for all 4 wheels) and a geared trolley for movement.



Item No.	Rated capacity (kg)	Lifting height (m)	N.W. (kg)
PMC490A	490	2.3	104
PMC1000A	1,000	2.8	124

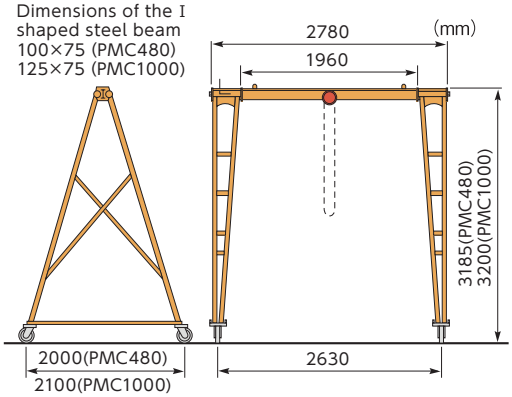
∗ Assembly is to be made by the user.

PMC

PORTABLE GATE TYPE CRANE



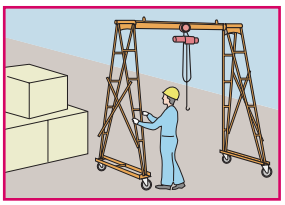
∗ Upon request, we can provide a beam of your required length (span).



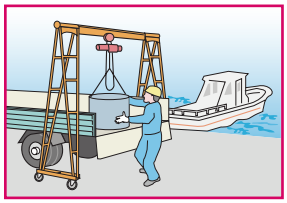
★ Upon request, we can provide a crane of your required dimensions.

▶Features

- Ideal in workplace without fixed crane equipment.
- This crane can be assembled, disassembled and moved by a small number of people, and using this crane makes useless any crane equipment.
- Including casters (swivel caster with brake for all 4 wheels) and a geared trolley for movement.



● With the casters, you can move the crane anywhere.



● The lateral movement of the hoist can be operated smoothly with the geared trolley (attached with the main body).

▶ Example of use



Item No.	Rated capacity (kg)	Lifting height (m)	N.W. (kg)
PMC490	490	3	333
PMC1000	1,000	3	377

∗ Assembly is to be made by the user.

CAUTIONS

- The values of rated capacity include the weights of a hoist and a hanger (the weight of the load must be calculated by reducing the weights of a hoist and a hanger from the rated capacity).
- The hoist is not included (always use a hoist adapted to the rated capacity, the lifting height and the dimension of the fixing hook).
- The lifting height will be reduced if a hoist is attached.
- Dimensions of the trolley's hoist fixing hook.

PMC480A, PMC480 ⟩ 28×38mm、PMC1000A, PMC1000 ⟩ 30×40mm



● Hoist not included

⚠ Don't move the crane with the load lifted.

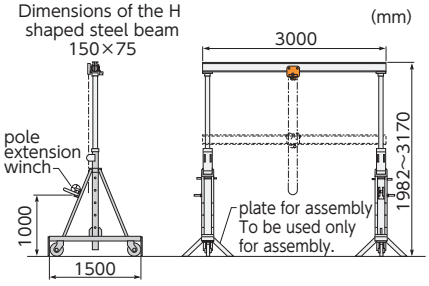
★ Upon request, we can provide a crane of your required dimensions.

PMC1000AN

ALUMINUM PORTABLE GATE TYPE CRANE (Telescopic Type)

▶ Features

- Ideal in workplace without fixed crane equipment.
- The gate can be manually raised and lowered (5 steps adjustment), so the crane can be compactly stored and is easy to handle.
- Light-weight and yet very robust.
- Easy assembly and disassembly. ● Smooth carriage and transport.
- Including casters (swivel caster with brake for all 4 wheels) and a geared trolley for movement.
- The lifting height can be adjusted by 5 steps of 200mm each.



Item No.	Rated capacity (kg)	Lifting height (mm)	N.W. (kg)
PMC1000AN	1,000	2,200~3,000	173

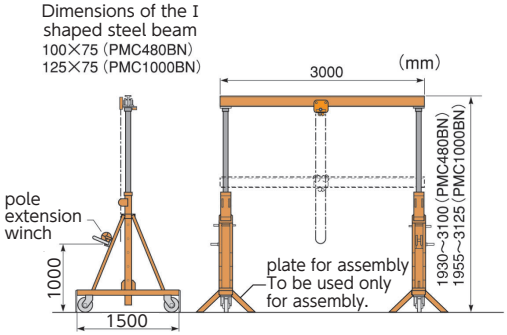
∗ Assembly is to be made by the user.



● Hoist not included

⚠ Don't move the crane with the load lifted.

∗ Upon request, we can provide a beam of your required length (span).



★ Upon request, we can provide a crane of your required dimensions.

PMC-BN

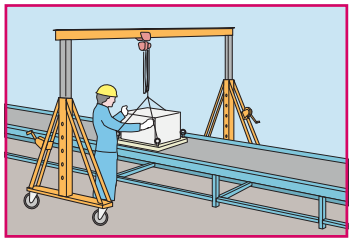
PORTABLE GATE TYPE CRANE (Telescopic Type)

MOVIE

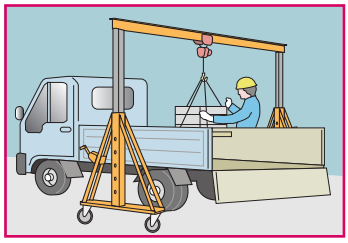
▶ Features

- Ideal in workplace without fixed crane equipment.
- The gate can be manually raised and lowered, so the crane is easy to handle and can be compactly stored.
- Including casters (swivel caster with brake for all 4 wheels) and a geared trolley for movement.
- The lifting height can be adjusted by 5 steps of 200mm each.

▶ Example of use



● Lifting height is adjustable according to the workplace environment (5 steps adjustment).



● With the casters, you can move the crane anywhere.
● The lateral movement of the hoist can be operated smoothly with the geared trolley (attached with the main body).

Item No.	Rated capacity (kg)	Lifting height (mm)	N.W. (kg)
PMC490BN	490	2,200~3,000	259
PMC1000BN	1,000	2,200~3,000	273

∗ Assembly is to be made by the user.

CAUTIONS

- The values of rated capacity include the weights of a hoist and a hanger (the weight of the load must be calculated by reducing the weights of a hoist and a hanger from the rated capacity).
- The hoist is not included (always use a hoist adapted to the rated capacity, the lifting height and the dimension of the fixing hook).
- The lifting height will be reduced if a hoist is attached.
- Dimensions of the trolley's hoist fixing hook.
  PMC1000AN 30×40mm、PMC480BN 28×38mm、PMC1000BN 30×40mm



LIFTING CLAMPS FOR STEEL



Vertical & lateral lifting clamps
P.117 ▶



Vertical lifting clamps
P.118 ▶



Lateral lifting clamps
P.123 ▶



Horizontal lateral lifting clamps, lifting hooks
P.125 ▶



Steel beam lifting clamps
P.126 ▶



Screw cam clamps
P.127 ▶



Beam clamps, safety belt clamps
P.132 ▶



Super foot locks, lifting hooks
P.133 ▶



Super lock hooks
P.134 ▶



Drum lift clamps
P.136 ▶



Lifting hooks for forklift, rail clamps
P.137 ▶



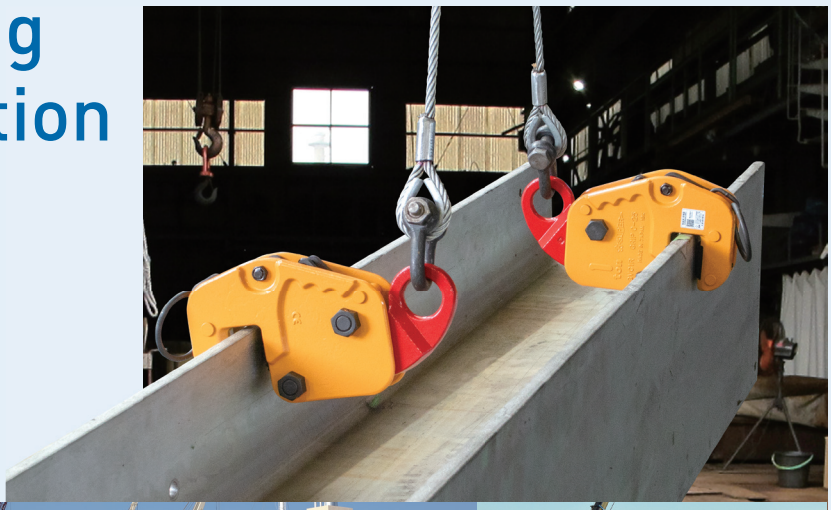
Reinforcing rod vertical lifting clamps
P.138 ▶

Vertical & lateral lifting clamps
Vertical lifting clamps
Lateral lifting clamps
Horizontal lateral lifting clamps, lifting hooks
Steel beam lifting clamps
Screw cam clamps
Beam clamps, safety belt clamps
Super foot locks, lifting hooks
Super lock hooks
Drum lift clamps
Lifting hooks for forklift, rail clamps
Reinforcing rod vertical lifting clamps

LIFTING CLAMPS FOR STEEL

For safe and efficient work, at every manufacturing and construction sites.

Supertool safe and secure lifting clamps.













1 The die-forging method for strong, safe and secure lifting clamp for steel



Die-forging is a method which consists of beating (hardening) the metal in order to mold it and yield a solider metal.

It offers many advantages that cannot be realized by the other methods such as machining or can-manufacturing.

*Except some products



Specific advantages of die-forging

▶ Dense structure with no internal defect

In the die-forging manufacturing method, the metal is compressed in a mold to obtain the product shape. By heating and beating the piece, the bubbles get pressure-bonded and this compensate the defects inside the metal. Thus, the metal crystal structure gets refined and improves the clamps' mechanical characteristics.

▶ "Metal Flow" for high resistance of products

With the die-forging method, the crystal structure gets refined and a formation called "Metal Flow", which take the shape of the product, is produced. This "Metal Flow" has lines looking like tree's growth rings, and these lines improve the metal toughness and shock resistance.

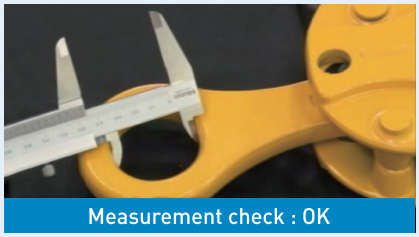
2 High functionality and high quality maintained by a safe and secure quality control management

To materialize functional characteristics focusing on safety, appropriate heat treatment is operated to appropriate materials and high toughness is maintained. Internal tests are proceeded where a load more than 3 times heavier than the rated capacity is applied to the super clamps.





Measurement check : OK



Measurement check : OK

Operation check : OK



Visual check : OK

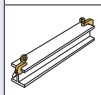


[Tested model : SVC1H (1 ton capacity)]

Vertical & lateral lifting clamps
Vertical lifting clamps
Lateral lifting clamps
Horizontal lateral lifting clamps, lifting hooks
Steel beam lifting clamps
Screw cam clamps
Beam clamps, safety belt clamps
Super foot locks, lifting hooks
Super lock hooks
Drum lift clamps
Lifting hooks for forklift, rail clamps
Reinforcing rod vertical lifting clamps

CLAMP USE CHART

○ Compliant item △ Item that can be used

			GVC–R	SVC–(H/HN/WH/WHN/E/L)	GVC-E	HLC–(H/HN/WH/WHN)	HLC–U	HPC–N	HLC–(S/W)	HHC	SWC–(S/N)	SDC–(S/N/WN)	SJC–(S)	SSC–N	SUC	SCC/–W
																
Page number			P.117	P.118~121	P.122	P.123	P.124	P.125	P.126	P.125	P.127	P.128	P.129	P.130	P.130	P.131
Usage	Lifting	Vertical lifting	○	○							○	○				○
		Lateral lifting	○		○	○	○	○	○	○	○	○	○	○	○	△
	Steel plate turning-over			○							○	○				
	Steel beam turning-over		○	○	○	○	○		○		○	○	○		○	△
	Horizontal pulling										○	○	○	○	○	○
	Hoist, chain block hanging										○	○	○	○	○	
Work	Steel plate (vertical lifting)		○	○							○	○				○
	Steel plate (lateral lifting)		○		○	○	○	○		○	○	○	○	○	○	△
	H shaped steel beam		○													
			*Check carefully the sling rope lifting angle during lifting. The clamp cannot be used if the lifting angle exceeds the limit mentioned in the operation manual available on our website.													
			○	○							○	○				○
			○		○	○	○	○		○	○	○	○	○	○	△
			○		○	○	○	○	○			○	○		○	
			*Check carefully the sling rope lifting angle during lifting. The clamp cannot be used if the lifting angle exceeds the limit mentioned in the operation manual available on our website.													
			○		○	○	○	○			○	○	○	○	○	△
							○			○						
	I shaped steel beam		○		○	○	○	○		○	○	○	○	○	○	△
	U shaped steel beam		○		○	○	○	○		○	○	○	○	○	○	△
	Angle steel beam		○		○	○	○		○			○	○		○	△
			*Check carefully the sling rope lifting angle during lifting. The clamp cannot be used if the lifting angle exceeds the limit mentioned in the operation manual available on our website.													
	Pipe (vertical lifting)			○							○	○				○
	Pipe (lateral lifting)						○			○	○	○	○	○	○	△

Note 1 : For the steel beam, the longer side must be in horizontal position.
Note 2 : For the ▲ marks (item that can be used), please refer to the operation manual.
Note 3 : For details, please refer to the operation manual of each clamp, available on our website.

★The product parts list and operation manual can be downloaded from our website.
●For all the appendix, please refer to P.284~286

Vertical & lateral lifting clamps
Vertical lifting clamps
Lateral lifting clamps
Horizontal lateral lifting clamps, lifting hooks
Steel beam lifting clamps
Screw cam clamps
Beam clamps, safety belt clamps
Super foot locks, lifting hooks
Super lock hooks
Drum lift clamps
Lifting hooks for forklift, rail clamps
Reinforcing rod vertical lifting clamps

GVC-R

VERTICAL & LATERAL LIFTING CLAMP (Lock Handle Type)

Cam, pad line type

MOVIE

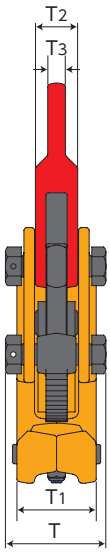
For the New Products page, see P.4

▶ Features

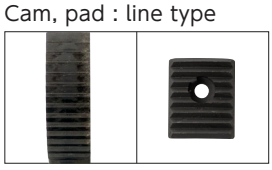
- Not only suitable for H shaped and I shaped steel beams, but enables also stable lifting operation for steel plates.
- The spring-type tightening lock mechanism assures a positive initial clamp force.
- Can be used for both vertical and lateral lifting. The line-type cam brings a sure grip.
- GVC0.5R can be used also for steel beam with 100mm wide flanges.







Cam, pad : line type



TIGHTENING AND RELEASING LOCK MECHANISM

Tightening lock mechanism

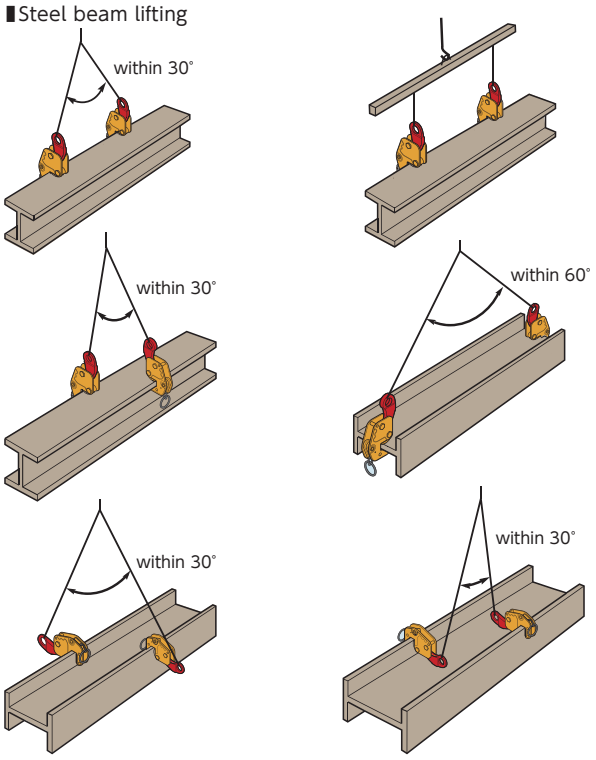
When you pull downward the lock handle, the lock gets set and the clamp grips firmly the workpiece. This lock is very safe and even if the sling rope loosens, or if a shock occurs, the clamp will not come off.

Releasing lock mechanism

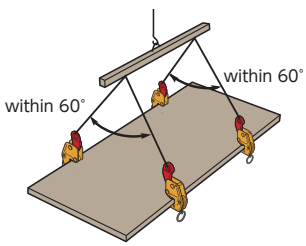
When you pull upward the lock handle, the lock gets released. Never attempt a lifting operation in this state. It would be dangerous as the tightening would be insufficient.

▶ Example of use ⚠ Always lift a load at 2 or more points for safety.

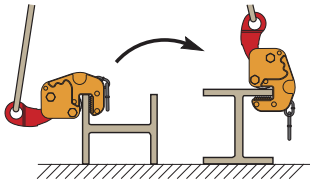
Steel beam lifting



Steel plate lifting



Steel beam turning-over



Item No.	Rated capacity (ton)	Clamp range (mm)	Size (mm)														N.W. (kg)
			L	L1	L2	L3	H(MAX)	H1	H2	H3	D	D1	T	T1	T2	T3	
GVC0.5R	0.5	0~20	103	47	21	6	229	145	34	23	30	26	55	45	24	10	2.6
GVC1R	1	0~25	130	62	26	10	278	183	40	28	35	30	64	52	29	12	4.5

★The product parts list and operation manual can be downloaded from our website.
●For all the appendix, please refer to P.284~286

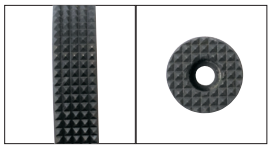
SVC-H • SVC-WH • SVC-HN • SVC-WHN

MOVIE

VERTICAL LIFTING CLAMP (Lock Handle Type)

SVC0.5H~5WH

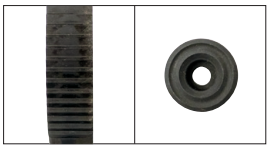
Cam, pad cross type, normal pitch



(P=3.0)

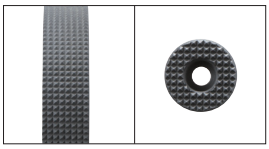
SVC7H~10WH

Cam, pad line type

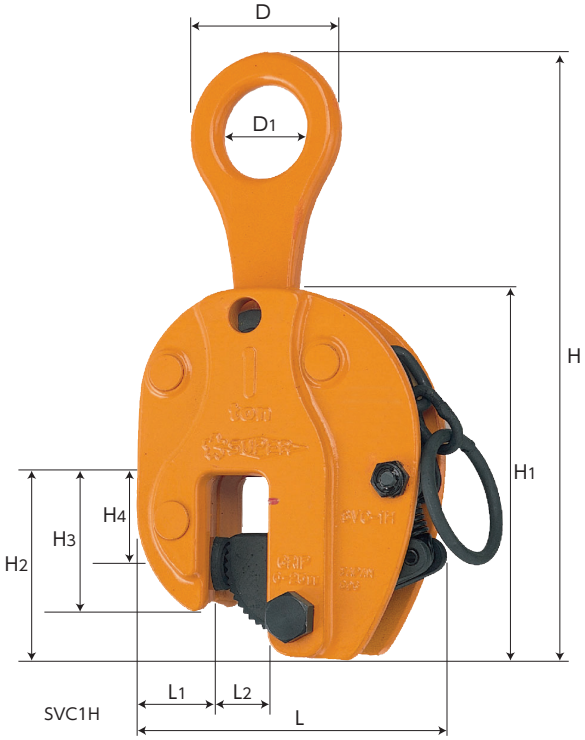


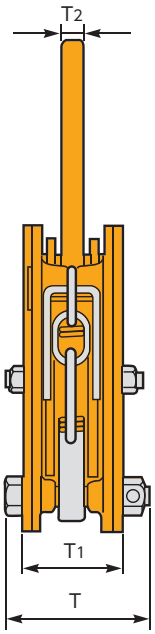
SVC-HN • SVC-WHN

Cam, pad cross type, fine pitch



(P=2.0)

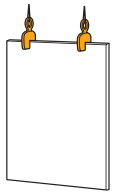




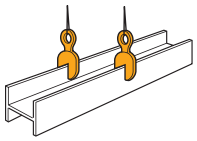
Example of use

⚠ Always lift a load at 2 or more points for safety.

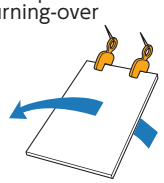
Steel plate vertical lifting



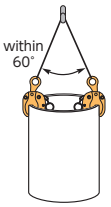
Steel beam lifting



Steel plate turning-over



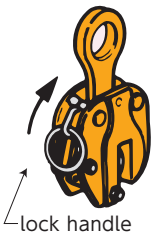
Pipe lifting



When lifting a pipe, position the clamps so that they face each other as shown on the drawing. (the lifting angle of the sling rope must be kept within 60° .)

Features

- Standard clamp for vertical lifting of steel plates and other steel structures.
- The tightening lock mechanism (Lock Handle Type).
- Including a releasing lock pin for 7 & 10 ton.
- (SVC-HN•SVC-WHN)The Cam & Pad is designed for less biting marks on the load with the fine pitch cross pattern.





Tightening lock mechanism

When you pull upward the lock handle, the lock gets set and the clamp grips firmly the load. This lock is very safe and even if the sling rope loosens, or if a shock occurs, the clamp will not come off.

Releasing lock mechanism

When you pull downward the lock handle, the lock gets released.
Never attempt a lifting operation in this state. It would be dangerous as the tightening would be insufficient.

Item No.	Rated capacity(ton)	Clamp range(mm)	Size(mm)													N.W. (kg)
			L	L1	L2	H(MAX)	H1	H2	H3	H4	D	D1	T	T1	T2	
SVC0.5H	0.5	0~19	131	36	26	250	158	80	60	36	64	36	67	49	12	3
SVC1H	1	0~25	152	42	32	310	185	90	69	45	85	48	81	59	16	6
***SVC1WH**	1	0~40	165	43	44	360	225	104	70	45	85	48	72	53	16	6.2
SVC2H	2	0~30	172	48	39	375	210	100	77	47	106	60	97	71	18	10.5
SVC3H	3	0~35	182	51	42	405	225	105	81	47	117	66	102	75	20	12.5
***SVC3WH**	3	25~60	212	56	67	432	253	123	99	65	117	66	102	75	20	15
***SVC5H**	5	0~40	220	65.5	49.5	455	260	120	95	49	148	84	122	92	22	21.5
***SVC5WH**	5	25~65	245	65.5	74.5	485	285	141	116	70	148	84	122	92	22	25
***SVC7H**	7	10~70	340	100	75	615	402	195	145	80	120	60	149	95	25	43
***SVC7WH**	7	30~90	360	100	95	615	402	195	145	80	120	60	149	95	25	45
***SVC10H**	10	20~80	360	100	85	645	412	205	145	80	130	65	177	116	32	56
***SVC10WH**	10	40~100	380	100	105	645	412	205	145	80	130	65	177	116	32	60
SVC0.5HN	0.5	0~19	131	36	26	250	158	80	60	36	64	36	67	49	12	3
SVC1HN	1	0~25	152	42	32	310	185	90	69	45	85	48	81	59	16	6
***SVC1WHN**	1	0~40	165	43	44	360	225	104	70	45	85	48	72	53	16	6.2

For ∗ marked items, the main body is made of high-tensile steel plates.

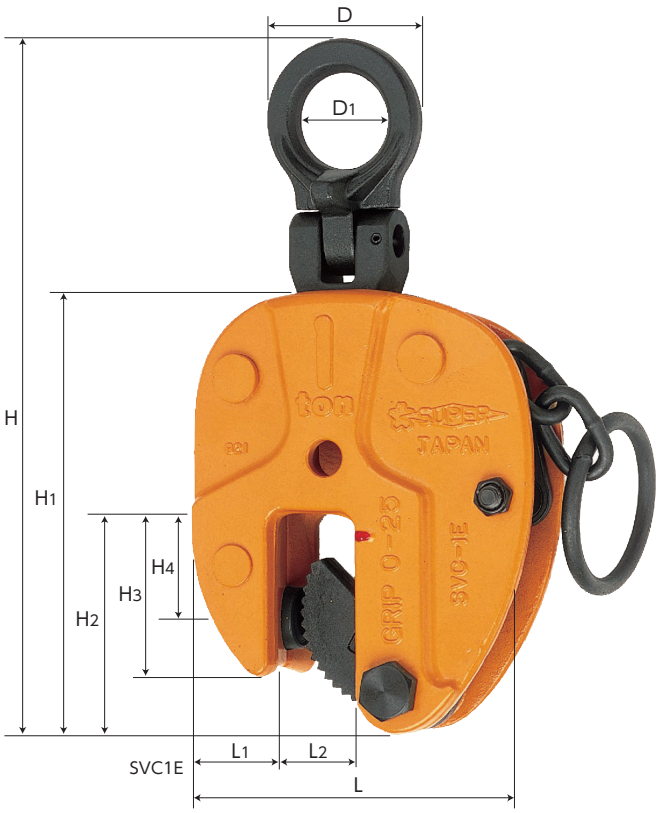
★The product parts drawings and operation manual can be downloaded from our website.

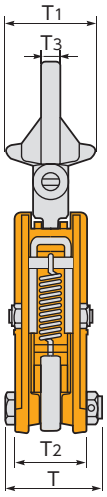
●For all the appendix, please refer to P.284~286

SVC-E

VERTICAL LIFTING CLAMP (Lock Handle Type with Universal Shackle)

Cam, pad cross type, normal pitch



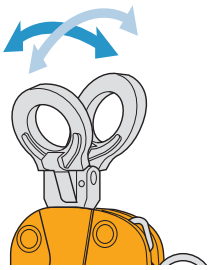


▶ Features

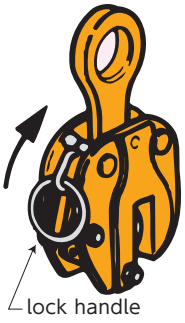
- For vertical lifting of steel plates and other steel structures, with more lifting directions possible and light-weight type.
- The spring-type tightening lock mechanism assures a positive initial clamp force.

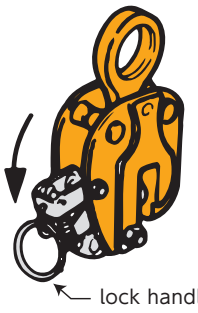
UNIVERSAL SHACKLE TYPE

The universal shackle allows the cam to generate a clamping force on the load at any direction it is pulled.



TIGHTENING AND RELEASING LOCK MECHANISM





▮Tightening lock mechanism

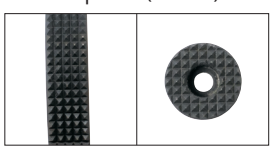
When you pull upward the lock handle, the lock gets set and the clamp grips firmly the workpiece. This lock is very safe and even if the sling rope loosens, or if a shock occurs, the clamp will not come off.

▮Releasing lock mechanism

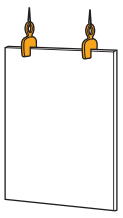
When you pull downward the lock handle, the lock gets released. Never attempt a lifting operation in this state. It would be dangerous as the tightening would be insufficient.

▶ Example of use ⚠ Always lift a load at 2 or more points for safety.

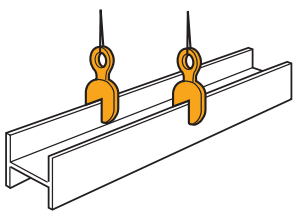
Cam, pad : cross type, normal pitch (P=3.0)



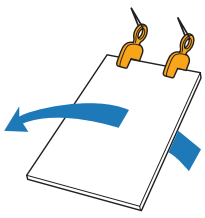
▮ Steel plate vertical lifting



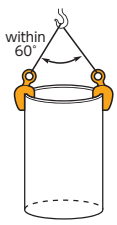
▮ Steel beam lifting



▮ Steel plate turning-over



▮ Pipe lifting

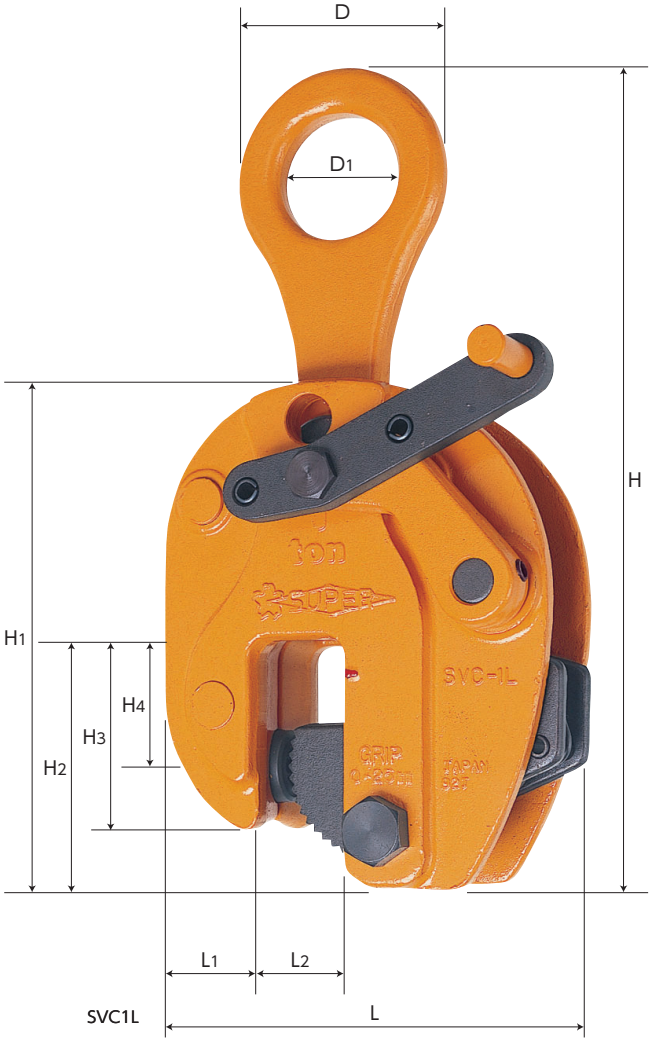


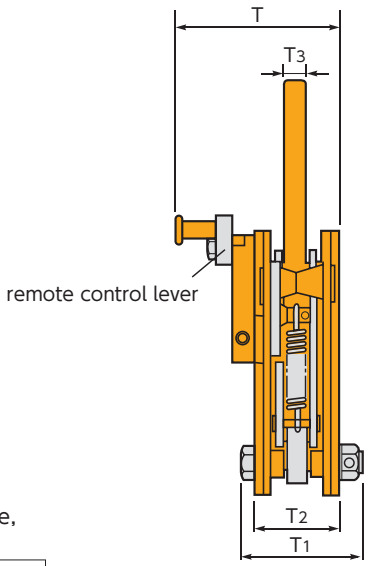
When lifting a pipe, position the clamps so that they face each other as shown on the drawing. (the lifting angle of the sling rope must be kept within 60° .)

Item No.	Rated capacity (ton)	Clamp range (mm)	Size (mm)														N.W. (kg)
			L	L1	L2	H (MAX)	H1	H2	H3	H4	D	D1	T	T1	T2	T3	
SVC0.3E	0.3	0~16	100	25	19	176	110	57	48	30	45	26	50	39	36	8	1.6
SVC0.5E	0.5	0~19	110	28	22	204	125	67	53	34	52	30	55.5	45	40	10	2.1
SVC1E	1	0~25	130	35	29	257	160	80	60	38	60	35	67.5	53	48	12	3.7
SVC1.5E	1.5	0~28	150	39	33	290	174	88	67	42	76	45	76.5	67	55	14	5.5
SVC2E	2	0~32	162	43	37	335	194	97	73	45	94	55	82	83	58	16	7

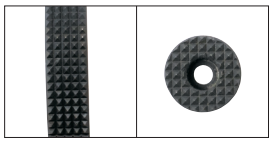
★The product parts list and operation manual can be downloaded from our website.

●For all the appendix, please refer to P.284~286





Cam, pad : cross type, normal pitch (P=3.0)



SVC-L

VERTICAL LIFTING CLAMP (Lock Lever Type)

Cam, pad cross type, normal pitch

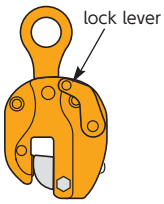
▶ Features

- The spring-type tightening lock mechanism assures a positive initial clamp force.
- The lever and the rope allow to unlock the clamp and to remove it from the load remotely from the floor.

▶ Accessories

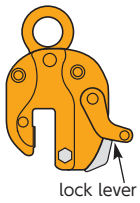
- Remote control lever
- Remote control rope

TIGHTENING AND RELEASING LOCK MECHANISM



Tightening lock mechanism

- When you push upward the lock lever, the lock gets set and the clamp grips firmly the workpiece.
- As the spring brings always a certain clamping force, even with the shock of the workpiece landing or when the sling rope loosens, the clamp will not come off.

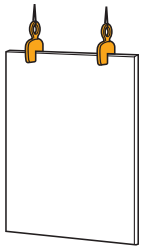


Releasing lock mechanism

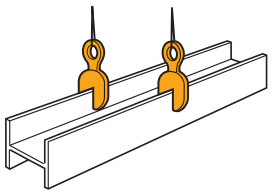
- When you push downward the lock lever, the cam retracts inside the main body, the releasing lock gets set and the release position is locked.
- With the remote control lever, it is easy to unlock and remove the clamp from high places.

▶ Example of use ⚠ Always lift a load at 2 or more points for safety.

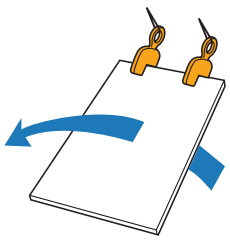
Steel plate vertical lifting



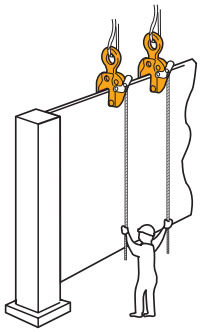
Steel beam lifting



Steel plate turning-over



Including a remote control rope

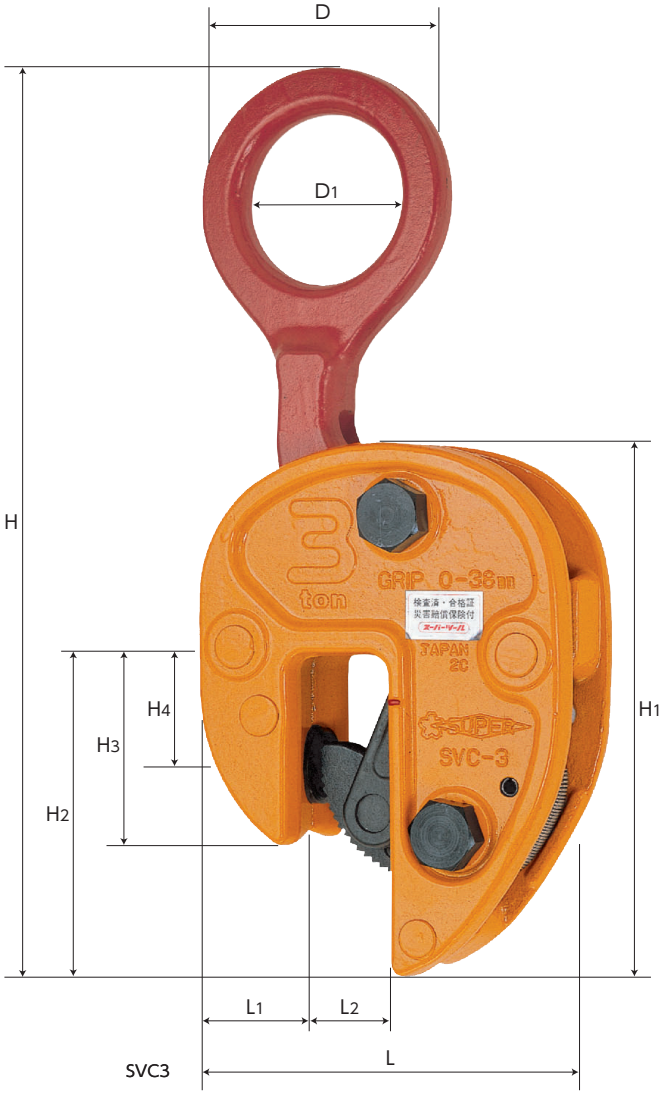


Item No.	Rated capacity (ton)	Clamp range (mm)	Size (mm)														N.W. (kg)
			L	L1	L2	H (MAX)	H1	H2	H3	H4	D	D1	T	T1	T2	T3	
SVC0.5L	0.5	0~19	131	36	26	250	158	80	60	36	64	36	89 (80)	67	49	12	3
SVC1L	1	0~25	152	42	32	310	185	90	69	45	85	48	113 (104)	81	59	16	6
SVC2L	2	0~30	172	48	39	375	210	100	77	47	106	60	130 (118)	97	71	18	10.5
SVC3L	3	0~35	182	51	42	405	225	105	81	47	117	66	141 (129)	102	75	20	12.5
＊ **SVC5L**	5	0~40	220	65	50	455	260	120	95	49	148	84	157 (145)	122	92	22	21.5

Note : The values between brackets refer to the dimension when the remote control lever is not installed.
For ＊ marked item, the main body is made of high-tensile steel plates.

★The product parts list and operation manual can be downloaded from our website.

●For all the appendix, please refer to P.284~286



SVC

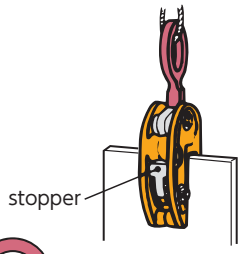
VERTICAL LIFTING CLAMP (Open Lock Type)

Cam, pad cross type, normal pitch

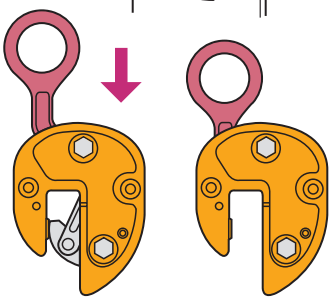
▶ Features

- For vertical lifting of steel plates and other steel structures (light-weight and compact type).
- All the major components are protected inside the body, with no protrusion, for easy handling operation.
- With the stopper, the cam stays locked in release position and the load is easy to set. As lifting is impossible unless the stopper is released, the safety can be easily confirmed.

TIGHTENING AND RELEASING LOCK MECHANISM



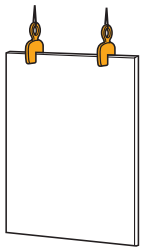
▮ Tightening lock mechanism
When you push the stopper, a click sound is heard and the clamp grips firmly the workpiece.



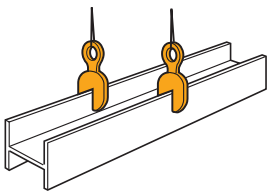
▮ Releasing lock mechanism
When you fully push downward the shackle as shown in the drawing, the cam retracts inside the main body, the releasing lock gets set and the release position is locked.

▶ Example of use ⚠ Always lift a load at 2 or more points for safety.

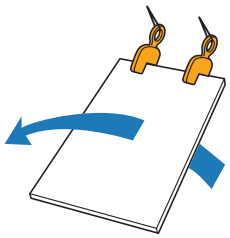
▮ Steel plate vertical lifting



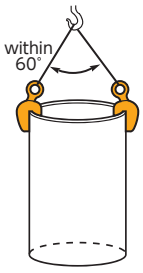
▮ Steel beam lifting



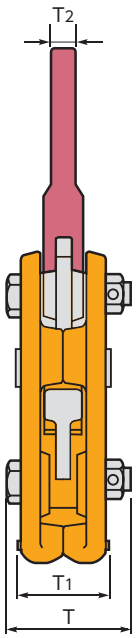
▮ Steel plate turning-over



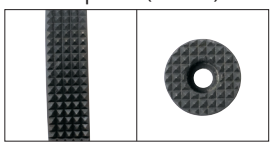
▮ Pipe lifting



When lifting a pipe, position the clamps so that they face each other as shown on the drawing. (the lifting angle of the sling rope must be kept within 60° .)



Cam, pad : cross type, normal pitch (P=3.0)



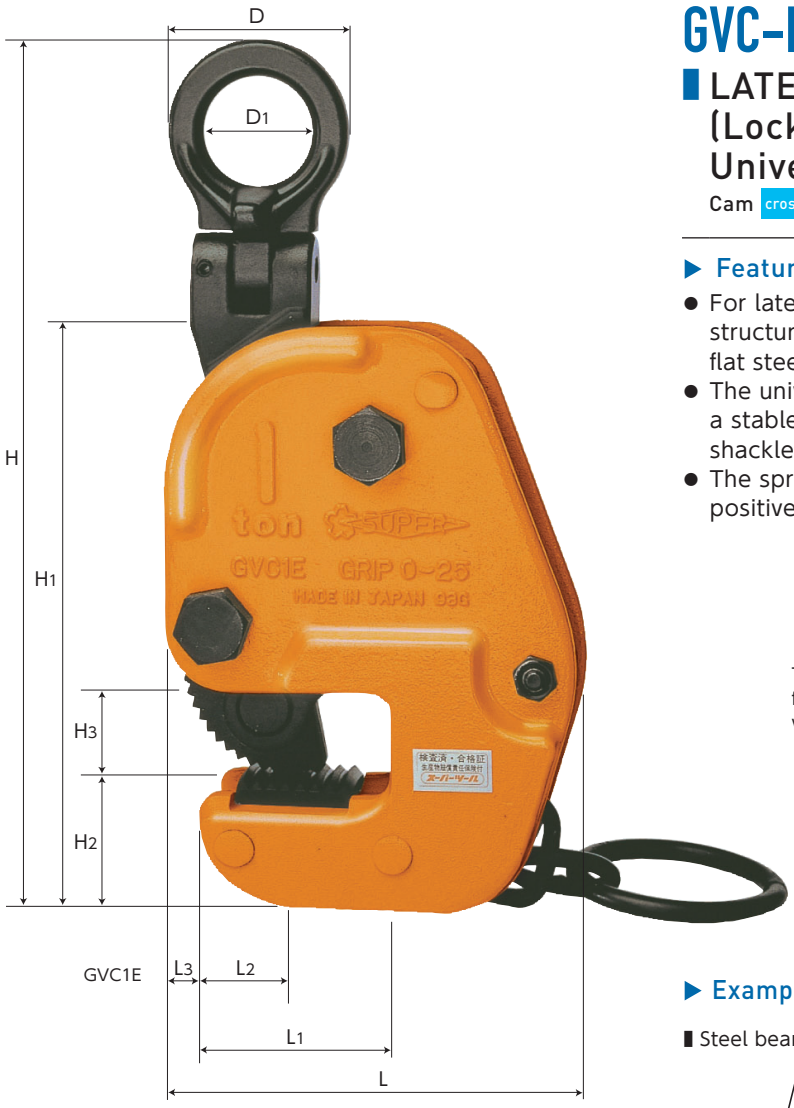
Item No.	Rated capacity (ton)	Clamp range (mm)	Size (mm)													N.W. (kg)
			L	L1	L2	H(MAX)	H1	H2	H3	H4	D	D1	T	T1	T2	
SVC0.5	0.5	0~19	108	29	22	210	138	85	54	33	54	35	45	31	9	1.6
SVC1	1	0~25	126	35	28	265	165	101	62	38	72	46	58	42	12	3.2
SVC2	2	0~32	152	43	35	330	200	120	73	45	96	61	72	56	16	6
SVC3	3	0~38	168	47	41	385	225	135	81	48	116	74	84	66	19	9
SVC5	5	0~50	212	59	54	485	276	162	99	61	146	92	101	81	25	18

★The product parts list and operation manual can be downloaded from our website.
●For all the appendix, please refer to P.284~286

GVC-E

LATERAL LIFTING CLAMP (Lock Handle Type with Universal Shackle)

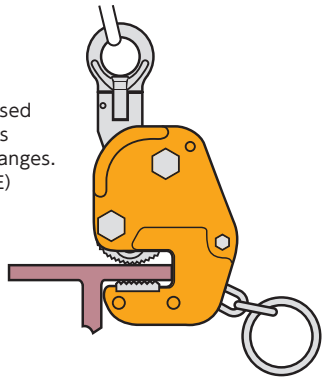
Cam cross type, normal pitch Pad line type



▶ Features

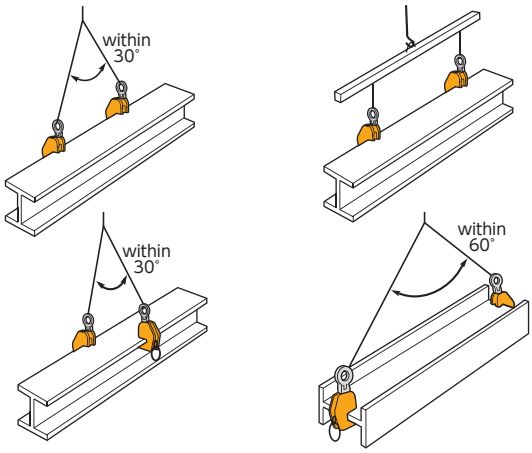
- For lateral (horizontal) lifting of steel beams for structure (H beam, I beam, T beam, L beam, etc.) and flat steel bars.
- The universal shackle and the arc-shaped pad provide a stable lateral (horizontal) clamping force (universal shackle type).
- The spring-type tightening lock mechanism assures a positive initial clamp force (lock handle type).

This clamp can be used for clamping I beams with 100mm wide flanges. (GVC0.35E,GVC0.5E)

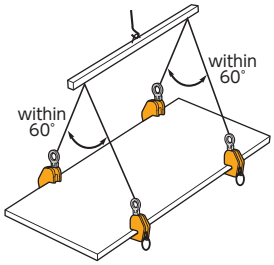


▶ Example of use ⚠ Always lift a load at 2 or more points for safety.

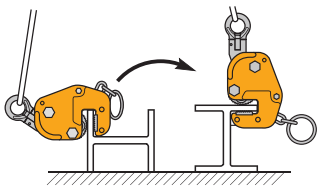
▮ Steel beam lifting

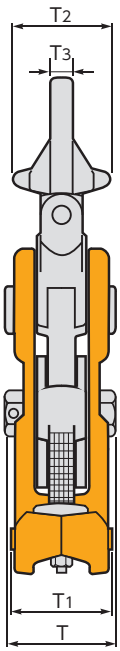


▮ Steel plate lifting



▮ Steel beam turning-over





Cam : cross type, normal pitch (P=3.0)



Pad : line type



Item No.	Rated capacity (ton)	Clamp range (mm)	Size (mm)														N.W. (kg)
			L	L1	L2	L3	H(MAX)	H1	H2	H3	D	D1	T	T1	T2	T3	
GVC0.35E	0.35	0~16	87	42	21	6	191	120	26	19	45	26	51	41	39	8	1.7
GVC0.5E	0.5	0~20	103	47	20	6	229	145	34	23	52	30	55	45	45	10	2.6
GVC1E	1	0~25	130	62	26	10	276	183	40	28	60	35	64	52	53	12	4.5
GVC2E	2	5~35	163	70	27	12	343	222	50	38	76	45	79	63	67	14	9

★The product parts list and operation manual can be downloaded from our website.

●For all the appendix, please refer to P.284~286

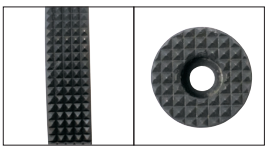
HLC-H • HLC-WH • HLC-HN • HLC-WHN

MOVIE

LATERAL LIFTING CLAMP (Lock Handle Type)

HLC0.5H~5WH

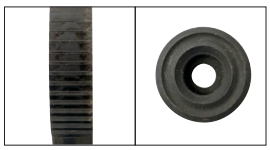
Cam, pad cross type, normal pitch



(P=3.0)

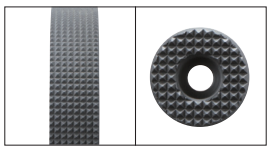
HLC7H~10WH

Cam, pad line type

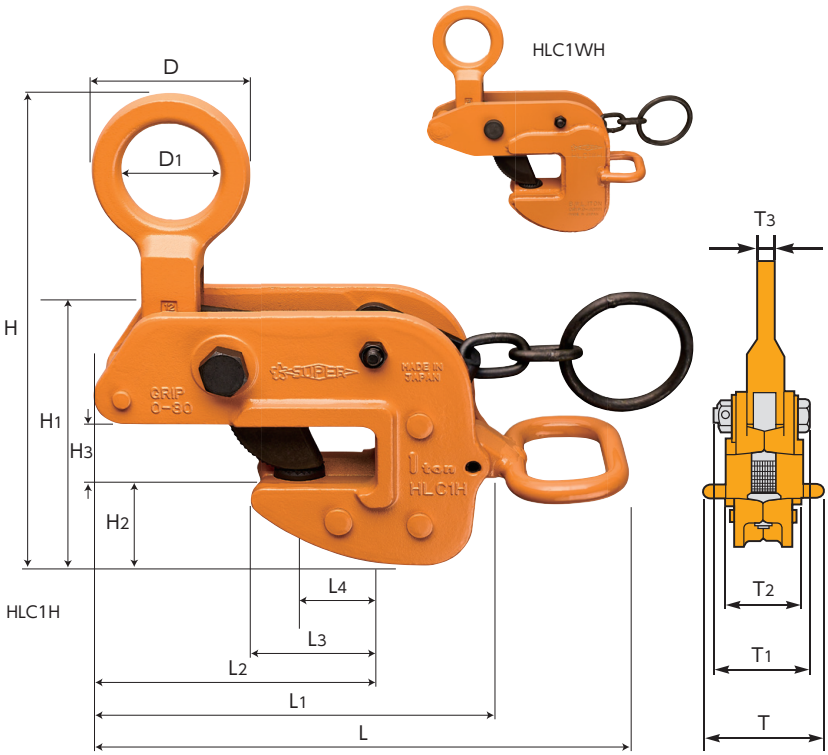


HLC-HN • HLC-WHN

Cam, pad cross type, fine pitch



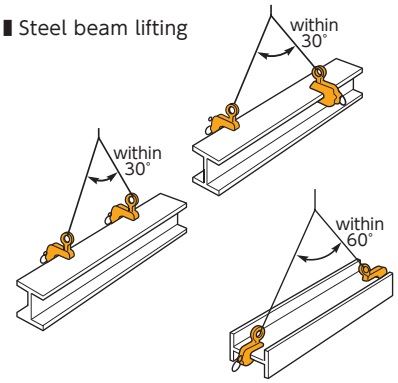
(P=2.0)



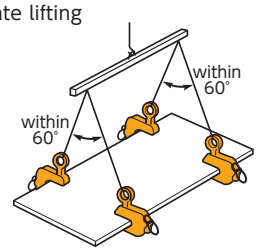
▶ Example of use

⚠ Always lift a load at 2 or more points for safety.

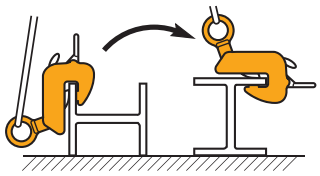
Steel beam lifting



Steel plate lifting



Steel beam turning-over



▶ Features

- For lateral (horizontal) lifting of steel beams for structure (H beam, I beam, T beam, L beam, etc.) and flat steel bars.
- The spring-type tightening lock mechanism assures a positive initial clamp force (lock handle type).
- The handle makes it easy and safe to set and remove the clamp onto and from the load.
- (HLC-HN•HLC-WHN) The Cam & Pad is designed for less biting marks on the load with the fine pitch cross pattern.

Item No.	Rated capacity (ton)	Clamp range (mm)	Size (mm)															N.W. (kg)
			L	L1	L2	L3	L4	H (MAX)	H1	H2	H3	D	D1	T	T1	T2	T3	
HLC0.5H	0.5	0~25	229	173	122	56	34	208	115	38	27	65	40	86	65	49	12	3
HLC1H	1	0~30	273	203	143	65	40	246	140	48	32	80	50	104	80	61	16	5.5
* **HLC1WH**	1	0~40	262	209	151	62	35	270	161	56	43	80	50	100	68	64	16	5.9
HLC2H	2	0~35	307	237	162	74	45	292	168	58	37	100	60	104	93	75	18	9.5
HLC3H	3	0~40	350	270	181	83	50	337	195	68	42	120	70	118	106	87	20	13.5
* **HLC3WH**	3	25~60	360	303	208	98	65	379	229	77	65	120	70	112	99.5	91	20	19
* **HLC5H**	5	0~45	372	312	212	90	55	388	222	81	47	140	80	112	110.5	103	22	23
* **HLC5WH**	5	25~65	407	347	227	105	70	419	245	81	70	140	80	112	110.5	103	22	29
* **HLC7H**	7	10~70	529	458	328	130	80	525	300	95	75	160	80	124	140	124	25	50
* **HLC7WH**	7	30~90	529	458	328	130	80	552	320	95	95	160	80	124	140	124	25	52
* **HLC10H**	10	20~80	553	482	342	134	80	573	335	100	85	160	80	142	166	142	32	70
* **HLC10WH**	10	40~100	553	482	342	134	80	593	355	100	105	160	80	142	166	142	32	72
HLC0.5HN	0.5	0~25	229	173	122	56	34	208	115	38	27	65	40	86	65	49	12	3
HLC1HN	1	0~30	273	203	143	65	40	246	140	48	32	80	50	104	80	61	16	5.5
* **HLC1WHN**	1	0~40	262	209	151	62	35	270	161	56	43	80	50	100	68	64	16	5.9

For * marked items, the main body is made of high-tensile steel plates.

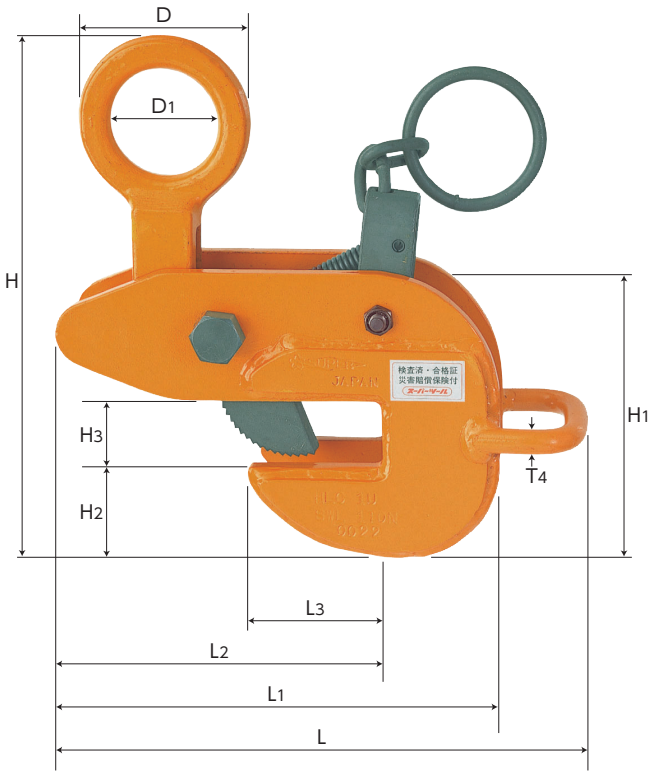
★The product parts drawings and operation manual can be downloaded from our website.

●For all the appendix, please refer to P.284~286

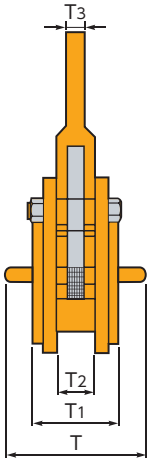
HLC-U

LATERAL LIFTING CLAMP (Split Jaw Type)

Cam cross type, normal pitch



HLC1U



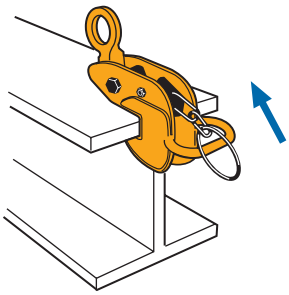
Cam : cross type, normal pitch (P=3.0)



▶ Features

- For lateral (horizontal) lifting of steel beams for structure (H beam, I beam, T beam, L beam, etc.) and flat steel bars (ideal for clamping at the longer end of the steel beam at 2-point lifting).
- The spring-type tightening lock mechanism assures a positive initial clamp force.
- The handle makes it easy and safe to set and remove the clamp onto and from the load.

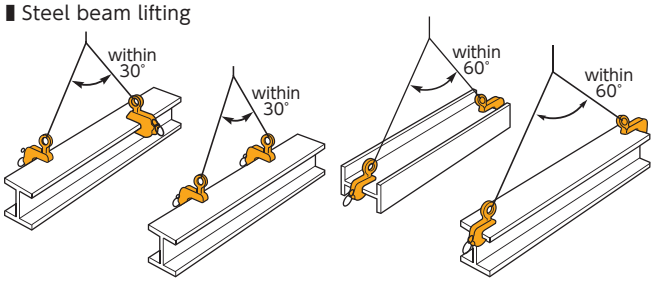
As the clamping part is split, this clamp can also be set in the direction shown in the drawing.



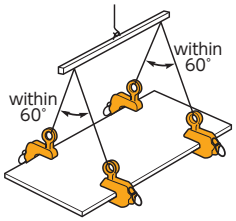
▶ Example of use

⚠ Always lift a load at 2 or more points for safety.

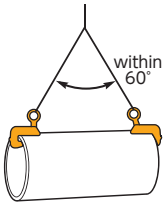
▮ Steel beam lifting



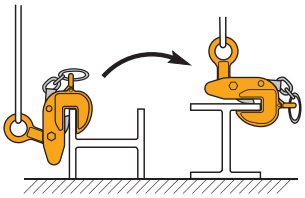
▮ Steel plate lifting



▮ Pipe lifting



▮ Steel beam turning-over

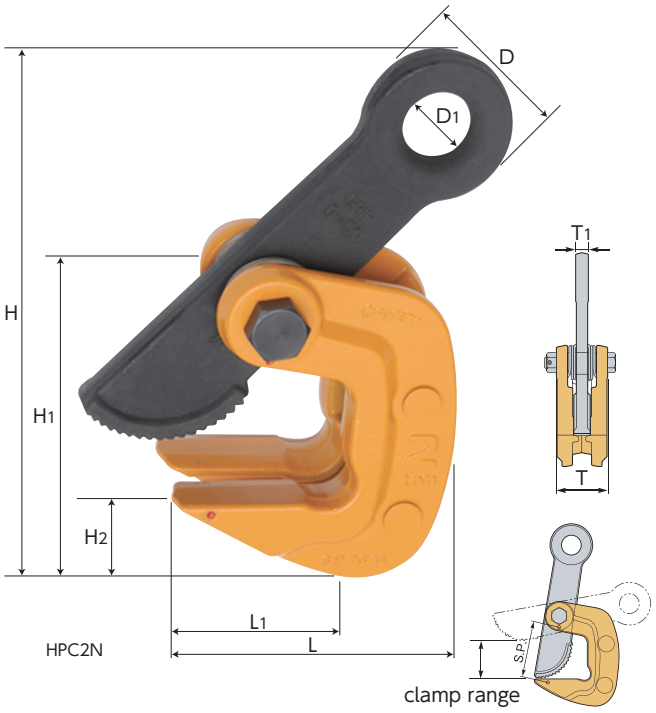


Item No.	Rated capacity (ton)	Clamp range (mm)	Size (mm)															N.W. (kg)
			L	L1	L2	L3	H (MAX)	H1	H2	H3	D	D1	T	T1	T2	T3	T4	
＊ **HLC0.5U**	0.5	0～25	212	170	130	56	208	112	35	28	65	40	84	57	27	12	12	3.2
＊ **HLC1U**	1	0～30	250	208	152	65	246	141	46	33	80	50	84	64	34	16	12	5.1
＊ **HLC2U**	2	0～35	283	241	173	74	292	171	58	38	100	60	98	80	38	18	12	8.7
＊ **HLC3U**	3	0～40	329	273	193	83	337	200	70	43	120	70	112	90	42	20	16	13.5
＊ **HLC5U**	5	0～45	370	314	218	90	385	229	86	48	140	80	112	102	46	22	16	21.5

For ＊ marked items, the main body is made of high-tensile steel plates.

★The product parts list and operation manual can be downloaded from our website.

●For all the appendix, please refer to P.284～286



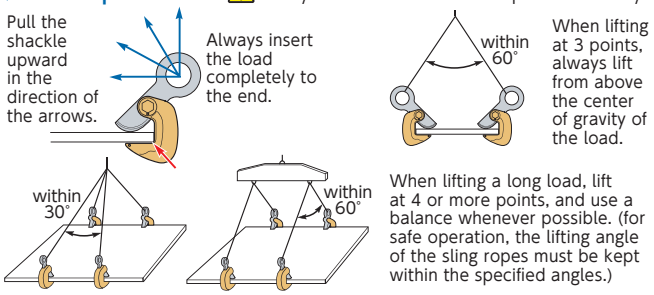
HPC-N
HORIZONTAL LATERAL LIFTING CLAMP

▶ Features

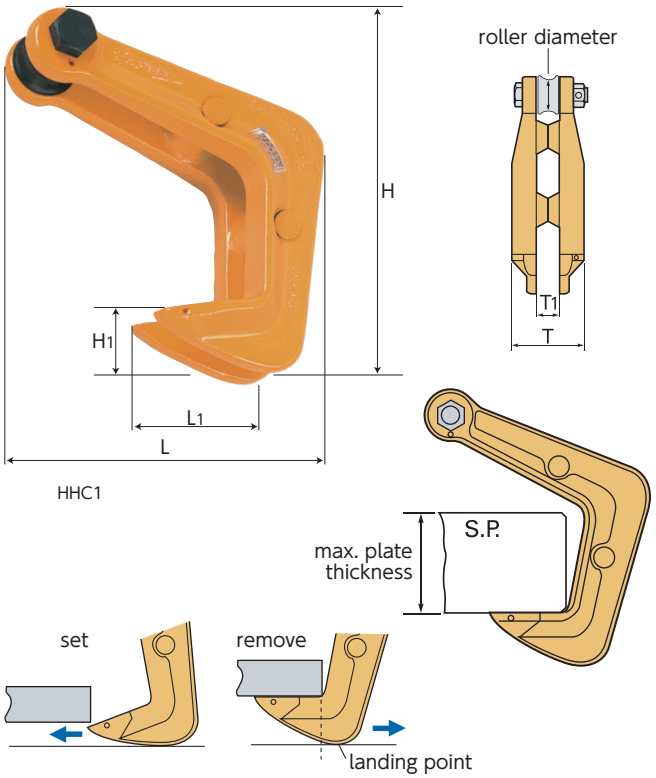
- For lateral (horizontal) lifting of steel plates, flat steel bars, H beams, etc.
- With the spring mechanism, it is unnecessary to hold the clamp after setting it onto the load. And when the load lands on the floor, the initial clamp force assures that the clamp does not come off.
- The clamp body can be easily checked for deformation by measuring the safety points.

▶ Example of use

⚠ Always lift a load at 2 or more points for safety.



Item No.	Rated capacity (ton)	Clamp range (mm)	Size (mm)									N.W. (kg)
			L	L1	H (MAX)	H1	H2	D	D1	T	T1	
HPC0.5N	0.5	0~35	82.5	51.5	170	96.5	25	40	18	40	10	0.9
HPC1N	1	0~40	98	59	204	117	32	50	23	51	13	1.8
HPC2N	2	0~50	125	73	268	152.5	33	67	30	67	17	4.0
HPC3N	3	0~60	150	88	329	181	51	82	36	80	22	6.8
HPC5N	5	0~80	195	117	415	236	66	101	46	102	28	15



HHC
LIFTING HOOK

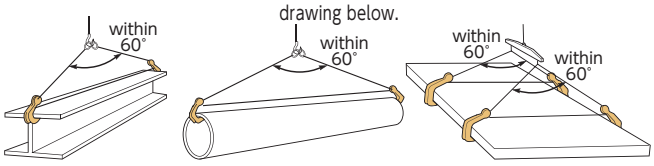
▶ Features

- Ideal for lifting and handling various steel structures.
- The roller at the head of the hook prevents from damaging the wire rope.
- The sharp hook ends enable easy inserting into small clearance.
- The landing point designed slightly outside of the hook makes the remove operation very smooth.
- Safety points are marked on the body to prevent overload incident.

▶ Example of use

⚠ For safety, always use lifting hooks at 4 or more points in opposite positions. For steel beams, and pipes, lift at 2 points positioned at both ends.

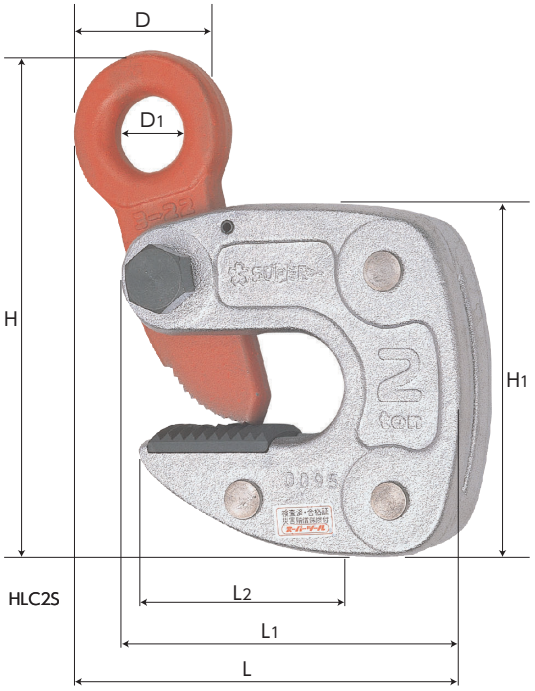
∗ Always hang the wire rope as shown in the drawing below.

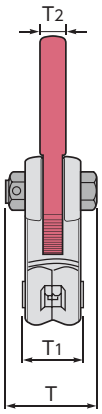


∗ Conduct daily inspection to confirm that all parts are functioning properly. Especially, always check carefully the use limit of the safety points.

Item No.	Rated capacity (ton)	Size (mm)								N.W. (kg)
		Max. plate thickness	L	L1	H	H1	T	T1	Roller dia.	
HHC0.5	0.5	58	121	42	152	27	63	30	19	1.1
HHC1	1	65	144	47	178	33	80	40	23.5	2.1
HHC2	2	80	182	58	223	42	105	54	30	4.5
HHC3	3	95	215	68	264	49	125	65	35	7.8
HHC5	5	125	279	90	342	60	160	85	44	16.5

★The product parts list and operation manual can be downloaded from our website.
●For all the appendix, please refer to P.284~286





HLC-S • HLC-W

STEEL BEAM LIFTING CLAMP

Cam, pad line type

▶ Features

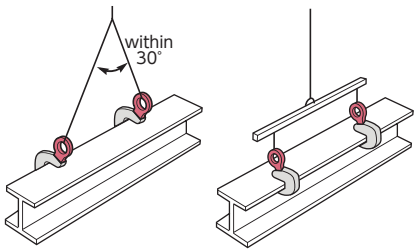
- Special clamp for lateral lifting of steel structures (H beam, I beam, T beam, L beam, etc.) (light-weight and compact type).
- When lifting a steel beam, it will be almost perfectly horizontal, assuring efficient operability.
- With the spring mechanism, no need to hold the clamp by hand when you set the load. And when the load lands on the floor, the initial clamp force assures that the clamp does not come off.
- The wide diameter shackle of HLC1W allows easy handling operation.
- This clamp is designed with ideal mechanic properties, making it light-weight, compact, easy to use and safe.
- The action of the arc-shaped pad provides a stable clamping force.


HLC0.5S

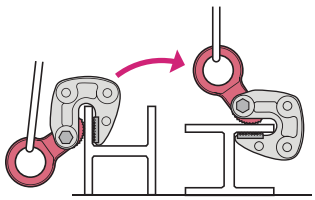

HLC1W

▶ Example of use ⚠ Always lift a load at 2 or more points for safety.

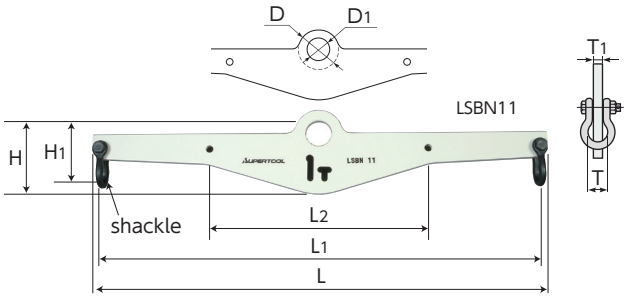
▮ Steel beam lifting



▮ Steel beam turning-over



Item No.	Rated capacity (ton)	Clamp range (mm)	Size (mm)										N.W. (kg)
			L (MIN)	L1	L2	H (MAX)	H1	D	D1	T	T1	T2	
HLC0.5S	0.5	1~13	119	100	65	139	97	46	23	48.5	31	14	1.3
HLC1S	1	1~13	108	108	66	152	104	51	23	52	32	14	1.5
HLC1W	1	2~20	152	123	75	188	118	72	46	52	32	14	2.5
HLC2S	2	3~22	143	142	87	199	136	66	30	67	42	18	3.7
HLC3S	3	12~35	192	184	108	263	179	80	36	77	48	22	8.1



LSBN

BALANCE

▶ Features

- Special balance for lifting long loads.
- New design enabling efficient use of the lifting height (H1 : guaranteed lifting height).
- Span can be adjusted to the load size or length for convenient use.

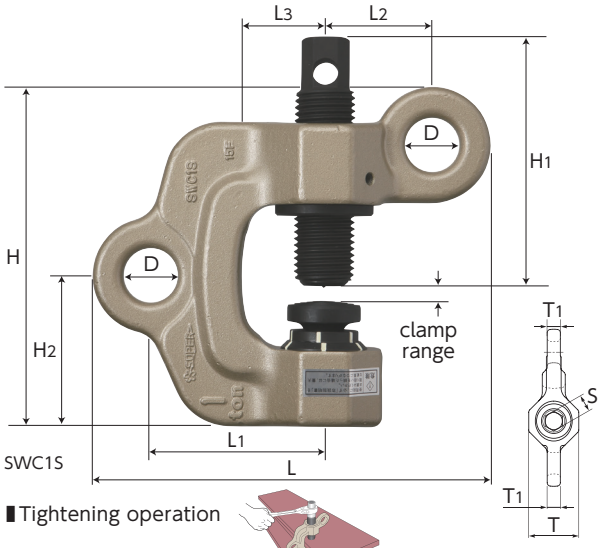
∗ Use the item size adapted to the load size or weight.

Item No.	Rated capacity (ton)	Size (mm)									Shackle JIS B2801	N.W. (kg)
		L	L1	L2	H	H1	D	D1	T	T1		
LSBN11	1	1,044	1,000	500	170	137	110	60	40	19	BB-14	16
LSBN11.5		1,544	1,500	1,000	190	137						27
LSBN21	2	1,056	1,000	500	210	175	150	80	53	25	BB-18	28
LSBN22		2,056	2,000	1,500	260	175						62
LSBN31	3	1,062	1,000	500	240	199	180	90	58	28	BB-20	36
LSBN32		2,062	2,000	1,500	300	199						83
LSBN51	5	1,080	1,000	500	270	229	210	100	70	36	BB-24	57
LSBN52		2,080	2,000	1,500	335	229						125

∗ Other rated capacity or span are available upon request.

★The product parts list and operation manual can be downloaded from our website.

●For all the appendix, please refer to P.284~286



SWC-S

SCREW CAM CLAMP (Double Eye Type) Twist Cam Type PAT.

MOVIE



▶ Features

- All-purpose clamp that can be used for a variety of operations such as lifting up and down, lateral pulling and turning over.
- Adequacy of tightening can be visually confirmed by secure and safe structure of the twist cam.
- When used in horizontal lifting, the screw is placed on top (operator's side), so the tightening operation can be done easily (when installing underneath a beam, the tightening can be done on the operator's side).
- The tightening mechanism with a screw and a circular cam (special spring type) provides sure clamping force on a load even when the load is landed or when vibrations occur during the lifting operation.
- The tightening check marks have phosphorescent (glow in the dark) paint for easy visual recognition.

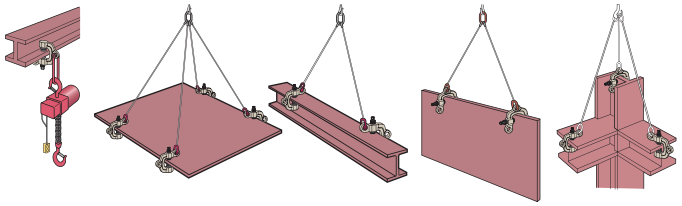
▶ Accessories

- 17x21 Double Size Ratchet Wrench (Short Type)

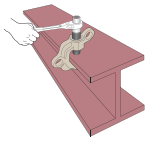
▶ Example of use

⚠ Always lift a load at 2 or more points for safety.

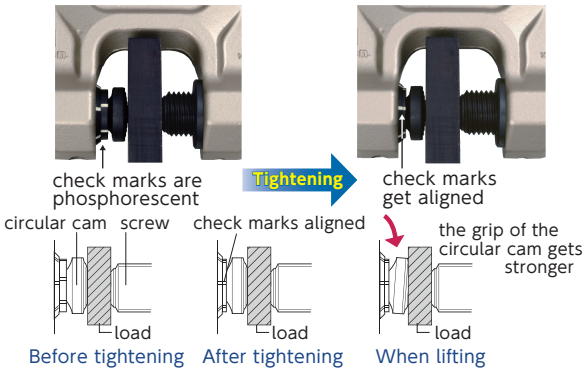
Industry-first. With a design unique among the conventional screw type clamps, the screw tightening can always be done at the operator's side.



▮Tightening operation

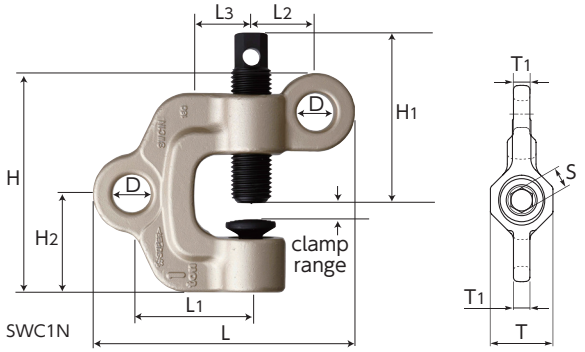


▮Visual safety check



Item No.	Rated capacity (ton)	Clamp range (mm)	Size (mm)											N.W. (kg)
			L	L1	L2	L3	H	H1	H2	D	T	T1	S	
SWC0.5S	0.5	0~25	151.5	63	43.5	30	130	88	57.5	22	50	14	17	1.9
SWC1S	1	0~40	191.5	84	51.5	40	164	120	72.5	26	61	16	21	3.5
SWC2S	2	0~40	224.0	94	62.0	40	184	129	79.0	32	77	18	21	5.8

Note : After having checked that the check marks are aligned, operate tightening over 25N·m (approx. 250kgf·cm).



SWC-N

SCREW CAM CLAMP (Double Eye Type) PAT.

＊The features (except the twist cam with check marks) and the examples of use are the same as SWC-S.

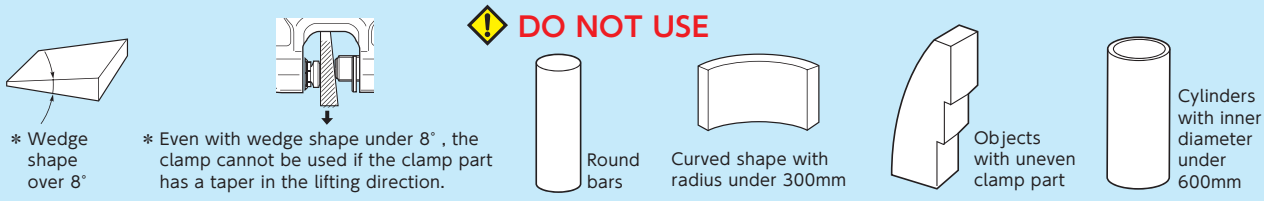
▶ Accessories

- 17x21 Double Size Ratchet Wrench (Short Type)

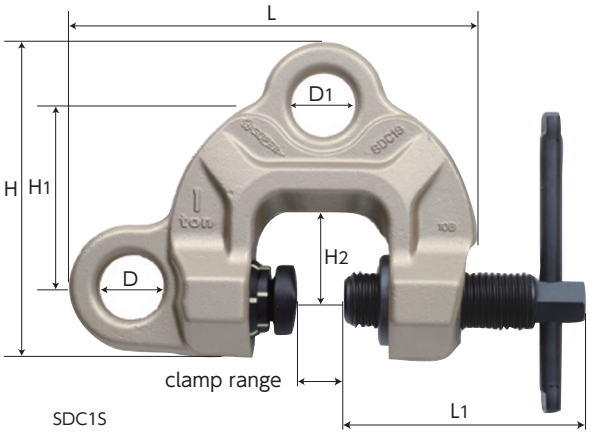
Item No.	Rated capacity (ton)	Clamp range (mm)	Size (mm)											N.W. (kg)
			L	L1	L2	L3	H	H1	H2	D	T	T1	S	
SWC0.5N	0.5	0~25	147	63	39	30	122	89	45	22	46	14	21	1.8
SWC1N	1	0~40	185	84	45	40	156	121	58.5	26	50	16	21	3.2
SWC2N	2	0~40	215	94	53	40	170	121	63.5	32	60	18	21	5.0

Note : For the torque value of the screw tightening, operate tightening over 25N·m (approx. 250kgf·cm).

＊Common to all the screw cam clamps (SCC, SCC-W, SDC-S, SJC-S, SDC-N, SDC-WN, SJC, SUC, SWC-N, SSC-N, SWC-S).
●The clamp cannot be used for the load shapes described below.



★The product parts list and operation manual can be downloaded from our website.
●For all the appendix, please refer to P.284~286



SDC1S



SDC-S

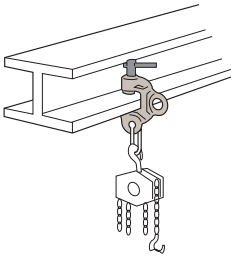
SCREW CAM CLAMP (Double Eye Type) Twist Cam Type PAT.

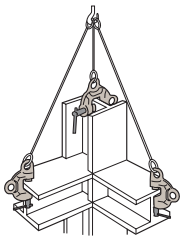


▶ Features

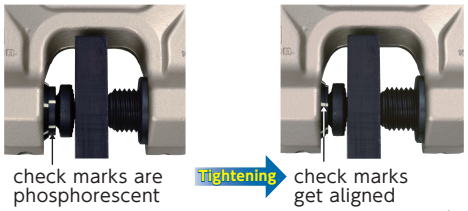
- All-purpose clamp that can be used for a variety of operations such as lifting up and down, lateral pulling and turning over.
- Adequacy of tightening can be visually confirmed by secure and safe structure of the twist cam.
- The tightening mechanism with a screw and a circular cam (special spring type) provides sure clamping force on a load even when the load is landed or when vibrations occur during the lifting operation.
- The tightening check marks have phosphorescent (glow in the dark) paint for easy visual recognition.

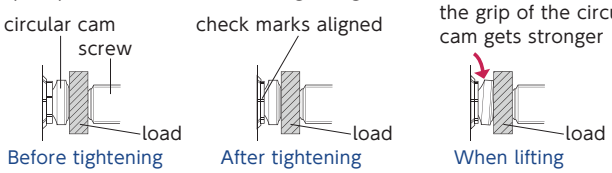
▶ Example of use ⚠ Always lift a load at 2 or more points for safety.





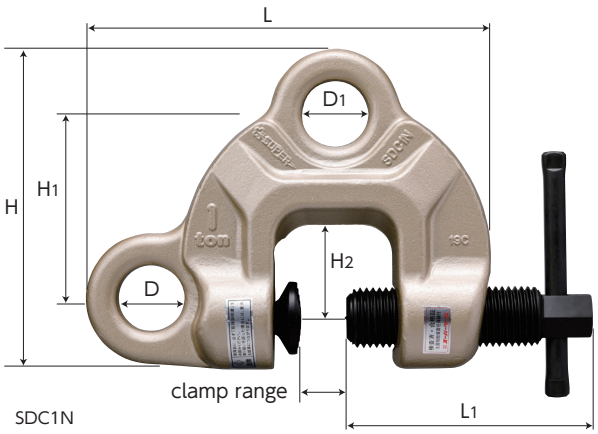
■Visual safety check



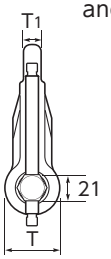


Item No.	Rated capacity (ton)	Clamp range (mm)	Size (mm)										N.W. (kg)
			L	L1	H	H1	H2	D	D1	T	T1	S	
SDC0.5S	0.5	0~25	158	89	121	71.5	30	27	27	46	13	17	1.9
SDC1S	1	0~40	208	121	161	94	45	32	32	54	14	21	3.6
SDC2S	2	0~40	227	121	177	105	45	36	32	60	18	21	4.8
SDC3.2S	3.2	0~40	252	136	196	118.5	50	45	35	64	20	21	7
SDC6.3S	6.3	0~50	291	152	225	132	55	50	41	90	43	21	16

Note : After having checked that the check marks are aligned, operate tightening over 25N·m (approx. 250kgf·cm).



SDC1N



SDC-N • SDC-WN

SCREW CAM CLAMP (Double Eye Type) PAT.

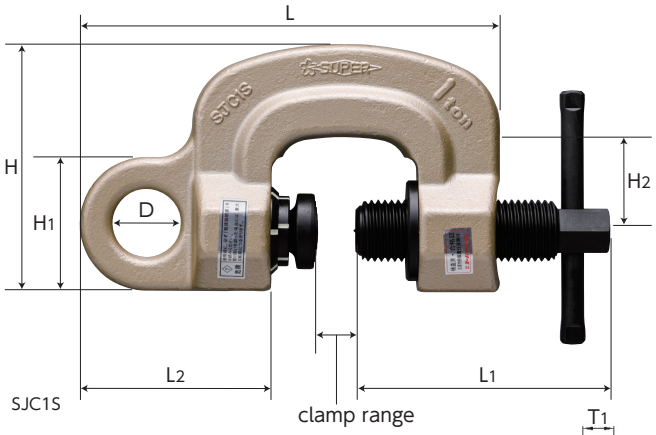
＊ The features (except the twist cam with check marks) and the examples of use are the same as SDC-S.

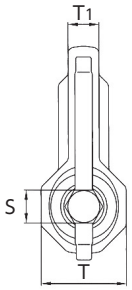
Item No.	Rated capacity (ton)	Clamp range (mm)	Size (mm)									N.W. (kg)
			L	L1	H	H1	H2	D	D1	T	T1	
SDC0.5N	0.5	0~25	145.5	89	119	68.5	30	27	27	46	15	2.0
SDC1N	1	0~40	199	121	157	90	45	32	32	50	16	3.4
SDC1.5WN	1.5	10~50	214	121	164	96	45	36	32	50	18	6.0
SDC2N	2	0~40	215	121	168.5	96	45	36	32	55	19	4.5
SDC3N	3	0~40	236.5	136	180.5	103	50	45	35	60	20	5.9
SDC3WN	3	35~75	269.5	136	190.5	113	50	45	35	60	20	7.8
SDC5N	5	0~50	270	152	215	123	55	50	37	80	43	13.3

Note : For the torque value of the screw tightening, operate tightening over 25N·m (approx. 250kgf·cm).

★The product parts list and operation manual can be downloaded from our website.

●For all the appendix, please refer to P.284~286





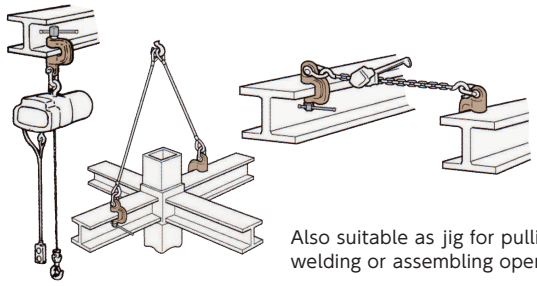
SJC-S

SCREW CAM CLAMP (Single Eye Type) Twist Cam Type PAT.

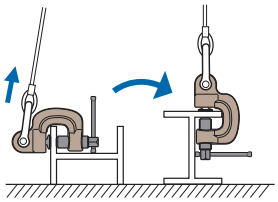
▶ Features

- All-purpose clamp that is especially ideal as lifting piece for chain blocks or hoists.
- The tightening mechanism with a screw and a circular cam (special spring type) provides sure clamping force on a load even when the load is landed or when vibrations occur during the lifting operation.
- High frequency quenching of special alloy steel gives greater toughness and durability.
- The main body has a champagne gold baked-on finish.
- The tightening check marks have phosphorescent (glow in the dark) paint for easy visual recognition.

▶ Example of use ⚠ Always lift a load at 2 or more points for safety.

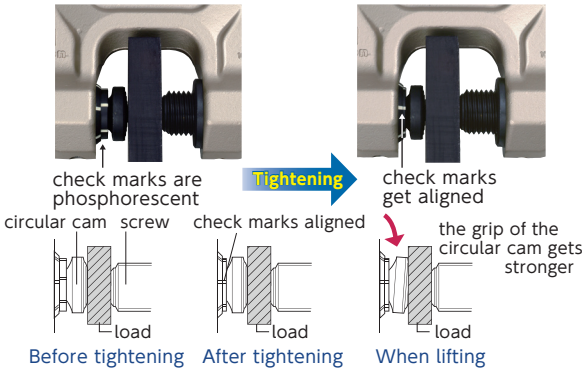


Also suitable as jig for pulling in welding or assembling operations.



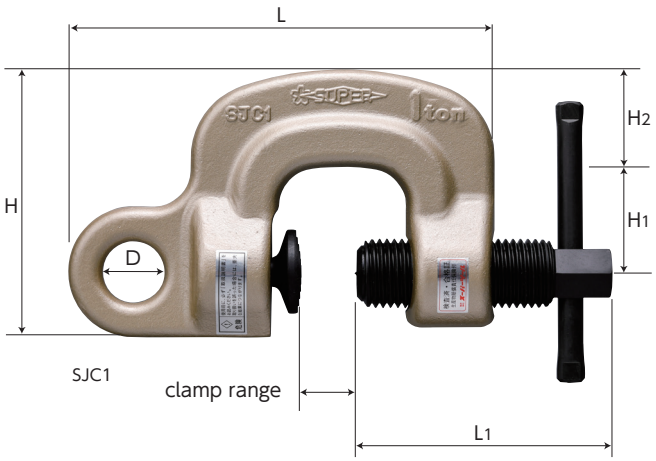
Also suitable for steel beam turning-over.

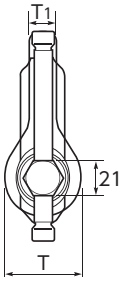
▮Visual safety check



Item No.	Rated capacity (ton)	Clamp range (mm)	Size (mm)										N.W. (kg)
			L	L1	L2	H	H1	H2	D	T	T1	S	
SJC0.5S	0.5	0~25	158	89	74	107.5	49	45	27	44	16	17	1.7
SJC1S	1	0~40	200	121	91	118.5	64	45	32	52	18	21	3.0

Note : After having checked that the check marks are aligned, operate tightening over 25N·m (approx. 250kgf·cm).





SJC

SCREW CAM CLAMP (Single Eye Type)

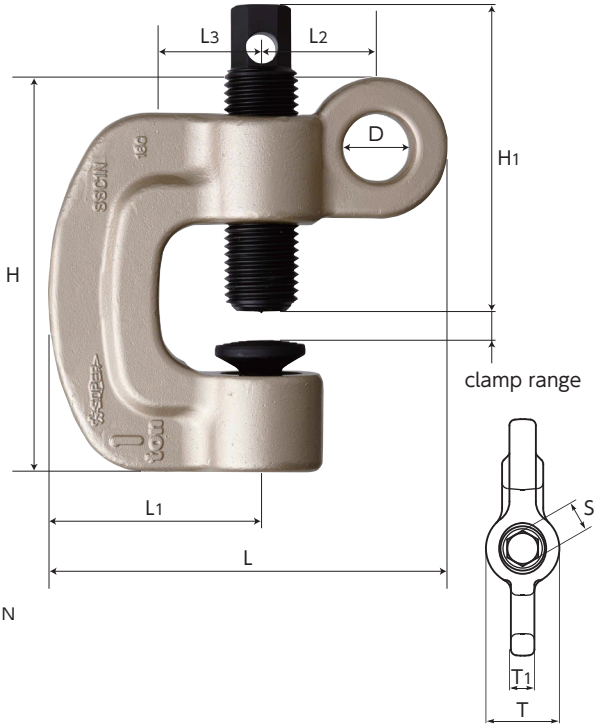
∗ The features (except the twist cam with check marks) and the examples of use are the same as SJC-S.

Item No.	Rated capacity (ton)	Clamp range (mm)	Size (mm)								N.W. (kg)
			L	L1	H	H1	H2	D	T	T1	
SJC0.5	0.5	0~25	147.5	89	102.5	45	35	22	40	14	1.6
SJC1	1	0~40	182	109	115	45	42	26	46	16	2.6
SJC2	2	0~40	195	121	137	45	57	36	55	25	3.8
SJC3	3	0~40	219.5	136	155	50	65	45	60	30	4.8

Note : For the torque value of the screw tightening, operate tightening over 25N·m (approx. 250kgf·cm).

★The product parts list and operation manual can be downloaded from our website.

●For all the appendix, please refer to P.284~286



SSC1N

SSC-N

SCREW CAM CLAMP (Single Eye Type) PAT.

▶ Features

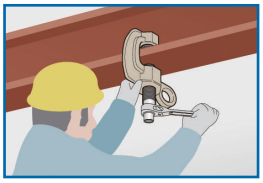
- Ideal clamp for lifting up and down, and especially suitable as lifting piece for chain blocks or hoists.
- When used in horizontal lifting, the screw is placed on top (operator's side), so the tightening operation can be done easily (when installing underneath a beam, the tightening can be done on the operator's side).
- The circular cam has a mechanism with a spring making it always return to its original position.

▶ Accessories

- 17x21 Double Size Ratchet Wrench (Short Type)

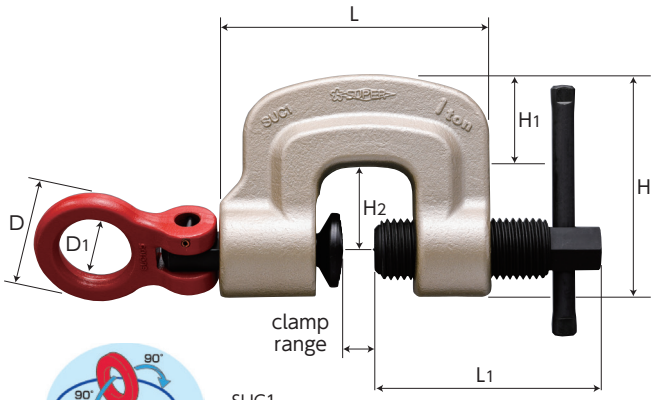
▶ Example of use

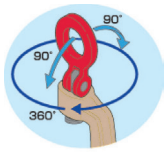
⚠ Always lift a load at 2 or more points for safety.



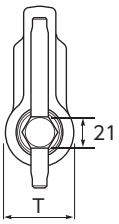
Item No.	Rated capacity (ton)	Clamp range (mm)	Size (mm)										N.W. (kg)
			L	L1	L2	L3	H	H1	D	T	T1	S	
SSC0.5N	0.5	0~25	129.5	68	39	30	122	89	22	46	16	21	1.8
SSC1N	1	0~40	161.0	88	45	40	156	121	26	50	18	21	3.2
SSC2N	2	0~40	186.0	100	53	40	170	121	32	60	28	21	5.0

Note : For the torque value of the screw tightening, operate tightening over 25N·m (approx. 250kgf·cm).





SUC1



SUC

SCREW CAM CLAMP (Universal Shackle Type) PAT.

▶ Features

- The shackle turns at 360° in all lifting or pulling directions, enabling a stable lifting angle and a wide range for pulling operations.
- The screw and the circular cam provide sure clamping force.
- The cam tilts and the clamping force increases in proportion to the load weight in the lateral direction.
- The circular cam has a mechanism with a spring making it always return to its original position.

▮Applications

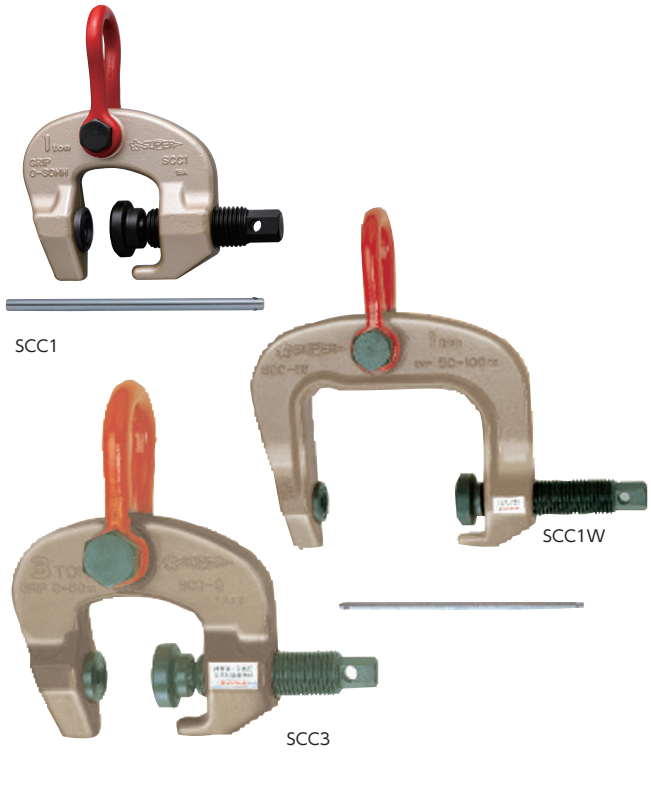
- Ideal for lifting, horizontal pulling and turning-over of steel plates and steel beams in industries like civil engineering, construction, shipbuilding, can manufacturing industry.
- Also most suitable as light-weight and compact type for lifting down chain blocks or hoists as a jig, or horizontally pulling structural steel.

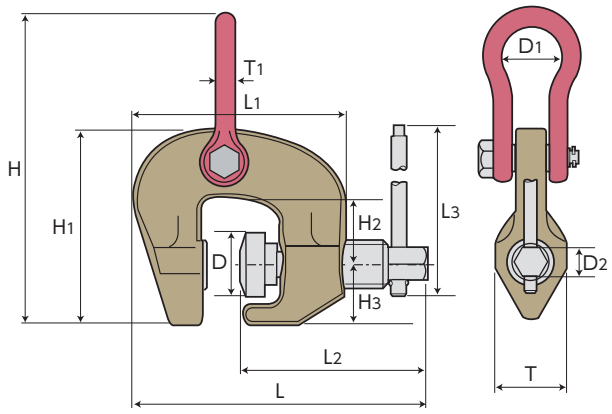
Item No.	Rated capacity (ton)	Clamp range (mm)	Size (mm)								N.W. (kg)
			L	L1	H	H1	H2	D	D1	T	
SUC0.5	0.5	0~25	119.5	89	91	38	30	60	35	46	2.4
SUC1	1	0~30	129.5	109	108	45	40				3.0
SUC1.6	1.6	0~30	132.5		110			75	45	50	3.7
SUC3.2	3.2	0~40	165	136	130	55	45	80	50	60	6.0

Note : For the torque value of the screw tightening, operate tightening over 25N·m (approx. 250kgf·cm).

★The product parts list and operation manual can be downloaded from our website.

●For all the appendix, please refer to P.284~286





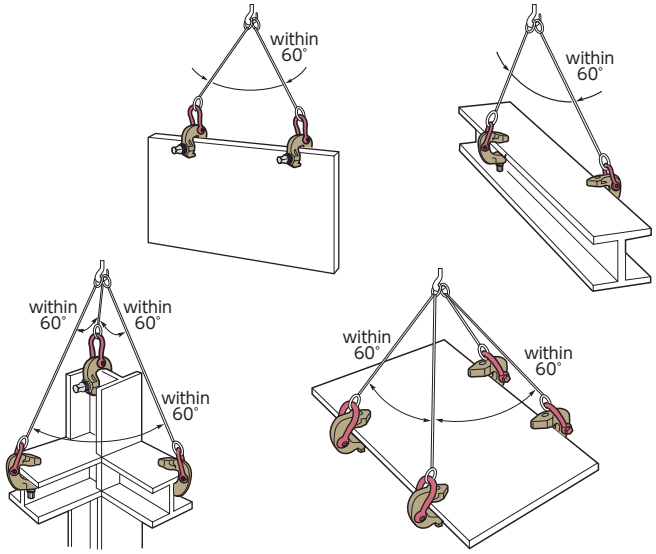
SCC • SCC-W • SCH0.5L

SCREW CAM CLAMP (All-purpose Type)

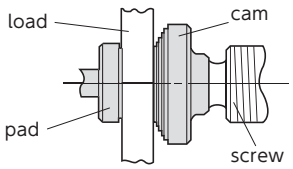
▶ Features

- Simple all-purpose clamp showing its great power especially for lifting steel materials with complicated shapes (spherical plate, curved plate, etc.).
- Ideal for lifting, turning-over, pulling operations.
- The tightening mechanism with a screw cam (universal spherical type) provides sure clamping force on a load even when the load is landed or when vibrations occur during the lifting operation.
- The cam and the pad can be easily replaced.
- During lifting, the cam tilts in accordance with the load weight, the cam teeth bite harder into the load and the clamping force increases.

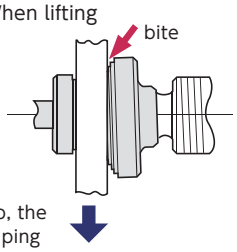
▶ Example of use ⚠ Always lift a load at 2 or more points for safety.



▮During initial tightening

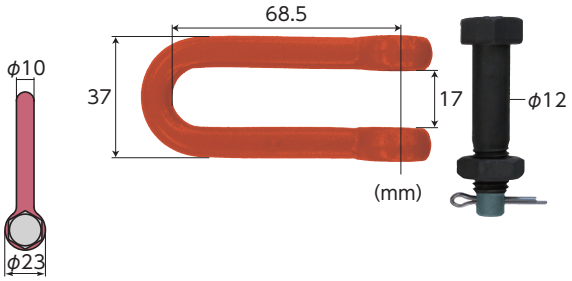


▮When lifting



As an anti-vibration type clamp, the cam bites harder and the clamping force gets stronger in proportion of the load weight.

▮PARTS / Long Shackle for SCC0.5



Item No.
SCH0.5L

Item No.	Rated capacity (ton)	Clamp range (mm)	Size (mm)													N.W. (kg)
			L (MIN)	L1	L2	L3	H	H1	H2	H3	D	D1	D2	T	T1	
SCC0.3W	0.3	50～100	196	176	116	75	155	91	35	16	26	17	14	32	10	1.3
SCC0.5	0.5	0～28	123	104	89	60	113	76	26.5	16	26	17	14	30	10	0.8
SCC1	1	0～30	175	148	126	190	204	128	45	38	42	38	21	46	12	3.2
SCC1W	1	50～100	258	225	153	190	273	190	88	38	42	45	21	46	16	6
SCC1.5	1.5	0～32	187	154	135	190	229	143	52	39	42	45	21	46	16	4
SCC3	3	0～50	224	190	165	240	265	165	60	45	49	50	21	54	19	6
SCC3W	3	25～75	250	215	165	240	291	191	76	45	49	50	21	54	19	7.8
SCC6	6	0～75	291	255	215	240	365	214	76	54	63	80	21	69	31.5	18

Note : For the torque value of the screw tightening, operate tightening over 35N•m (approx. 350kgf•cm) [for SCC0.3W and SCC0.5, over 5N•m (approx. 50kgf•cm)].

★The product parts list and operation manual can be downloaded from our website.

●For all the appendix, please refer to P.284～286

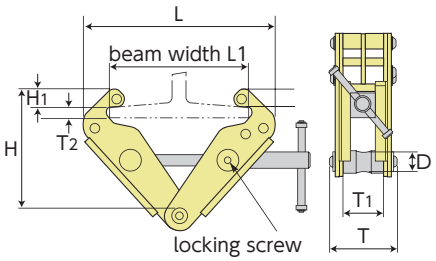


SBN

BEAM CLAMP (Deluxe Type)

▶ Features

- Lifting piece for chain blocks or hoists.
- Ideal for being fixed to H or I beam, and hanging a chain block or a wheel.
- Suitable as a connecting clamp to beams in various sites like factories and construction sites.
- Can be easily fixed or removed just by tightening or loosening the screw.
- The head part (H1) is small, to fit conveniently even in narrow spaces.
- For permanent fixing or fixing in a place with vibrations, tighten the locking screw on the side of the clamp with a hex key wrench to prevent main screw loosening.



▶ Example of use



Item No.	Rated capacity (ton)	Size (mm)								N.W. (kg)
		Applicable beam width L1	Applicable beam thickness T2	L	H (MAX)	H1	D	T	T1	
SBN1	1	75~230	9~25	300	191	26	20	77	46	4.8
SBN2	2	75~230	9~25	304	191	26	20	97	58	6.2
SBN3	3	80~320	10~35	425	265	26~41	32	117	69	12.6
SBN5	5	90~320	10~35	425	265	32~41	32	125	69	14.3

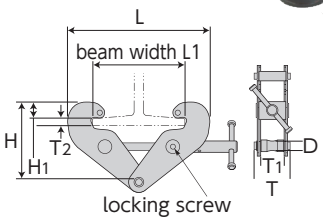


SBN-E

BEAM CLAMP (Standard Type)

▶ Features

- Lifting piece for chain blocks or hoists.
- Ideal for being fixed to H or I beam, and hanging a chain block or a wheel.
- Suitable as a connecting clamp to beams in various sites like factories and construction sites.
- Can be easily fixed or removed just by tightening or loosening the screw.
- For permanent fixing or fixing in a place with vibrations, tighten the locking screw on the side of the clamp with a hex key wrench to prevent main screw loosening.



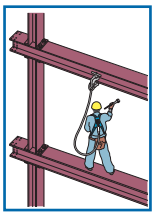
▶ Example of use

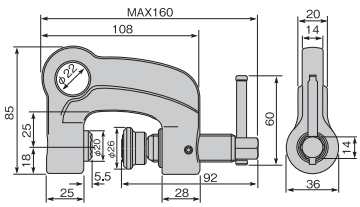


Item No.	Rated capacity (ton)	Size (mm)								N.W. (kg)
		Applicable beam width L1	Applicable beam thickness T2	L	H (MAX)	H1	D	T	T1	
SBN1E	1	75~230	8~20	350	198	32~48	20	84	50	3.8
SBN2E	2	75~230	8~20	350	200	32~50	20	94	50	4.6
SBN3E	3	80~320	10~32	451	285	42~60	22	122	70	9.2
SBN5E	5	90~320	10~32	451	285	42~60	28	129	70	11



▶ Example of use





SSCC160A

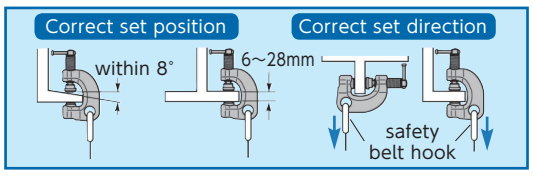
SAFETY BELT CLAMP, Aluminum Alloy Body (for Preventing Accidental Falling)

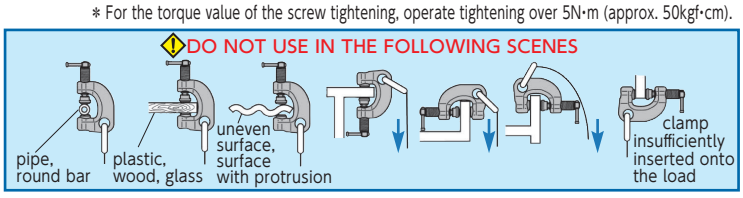
▶ Feature

- The main body is made of forged aluminum, offering light weight and strength.

Item No.	Max. equipped weight (kg)	Clamp range (mm)	N.W. (g)
SSCC160A	100	6~28	500

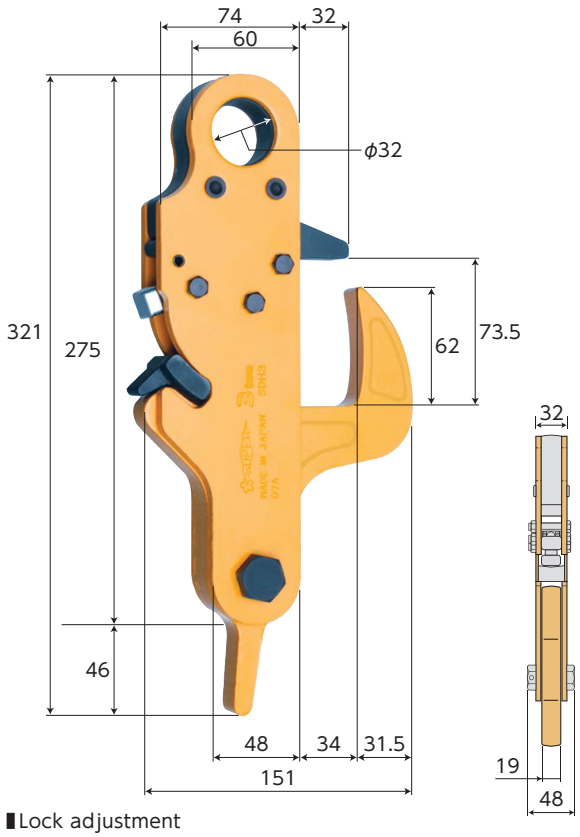
* The max. equipped weight is the total weight of the operator's body and all his equipments.
* For the torque value of the screw tightening, operate tightening over 5N·m (approx. 50kgf·cm).





★The product parts list and operation manual can be downloaded from our website.

●For all the appendix, please refer to P.284~286



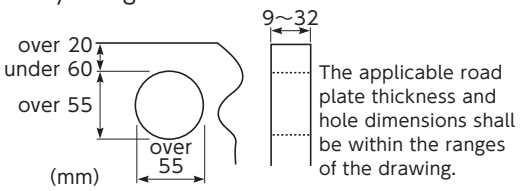
SDH3

SUPER FOOT LOCK

MOVIE

▶ Features

- Hook dedicated to road plates (extraction type).
- Ideal for laying and removing road plates.
- You can easily remove the hook just by lifting it when the lock is released.



▶ Example of use

Setting



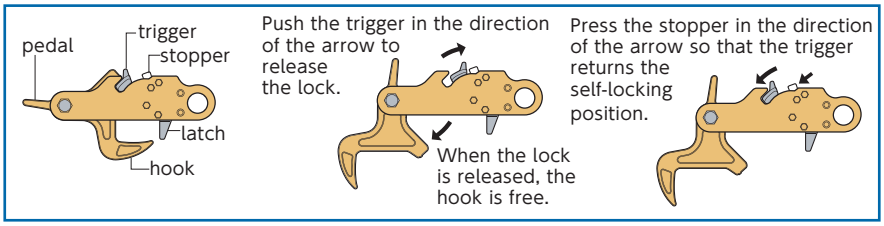
Lifting



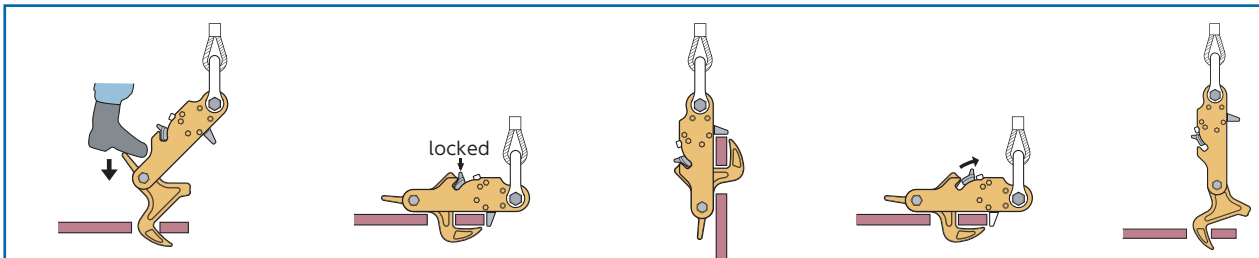
Extracting



Lock adjustment



How to use (extraction type)



1)Setting
In this state where the hook is free, insert the hook end into the road plate hole and step on the pedal with your foot.

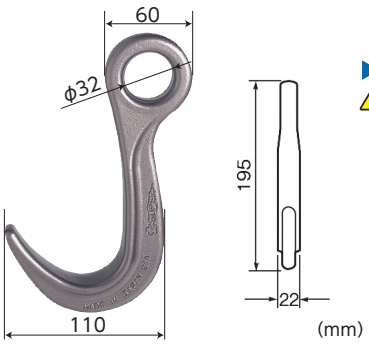
2)Locking
When the hook is completed inserted into the road plate hole, push down the main body until it gets parallel to the road plate, and the hook gets automatically locked.

3)Lifting
After having confirmed that the hook is locked by the trigger, lift the road plate.

4)Releasing
After having lifted it, land the road plate and push the trigger in the direction of the arrow to release the lock.

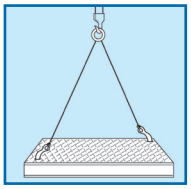
5)Extracting
Just by lifting it, you can extract it automatically from the road plate.

Item No.	Rated capacity (ton)	N.W. (kg)
SDH3	3	3.8



▶ Example of use

⚠ Always lift a load at 2 or more points for safety.



FKH1

LIFTING HOOK (for Road Decking Panels)

▶ Features

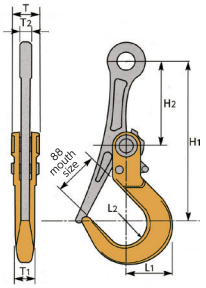
- Hook dedicated to road decking panels.
- Ideal for lifting and installing road decking panels.
- Light weight and simple design for easy operation.

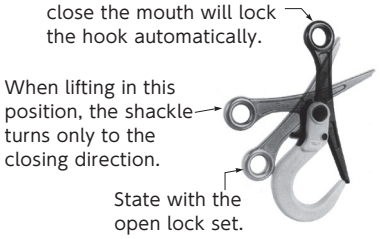
Item No.	Rated capacity (ton)	N.W. (kg)
FKH1	1	0.95

★The product parts list and operation manual can be downloaded from our website.

●For all the appendix, please refer to P.284~286







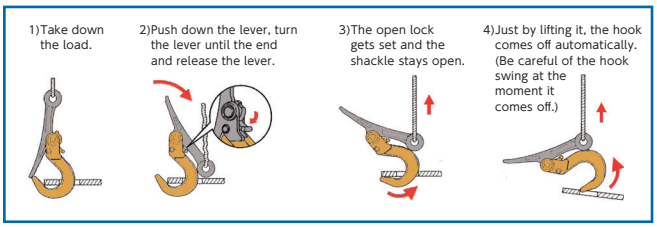
SLH3A

SUPER LOCK HOOK (Open / Close Lock Type)

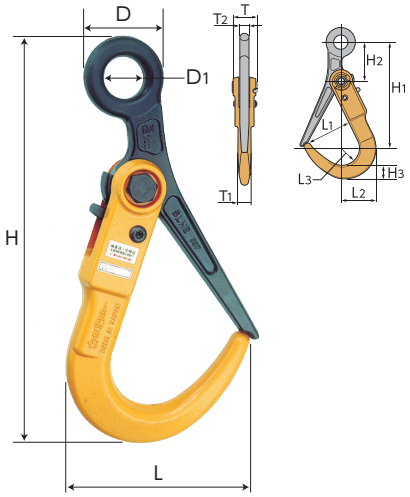
▶ Features

- During lifting, the close lock is automatically set so that the load can be lifted safely without coming off.
- When removing the hook, as a lever enables to set an open lock, removing the hook from works like a crane for instance is very easy.
- The hook mouth opens widely, making load set or remove operation very simple.

▮Open lock mechanism



Item No.	Rated capacity (ton)	Size (mm)											N.W. (kg)
		L	L1	L2	H	H1	H2	D	D1	T	T1	T2	
SLH3A	3	169	78	38	383	280	145	64	32	54	33	18	3.8



SLH2N

SLH-N

SUPER LOCK HOOK

▶ Example of use

▮Laying and removing road plates



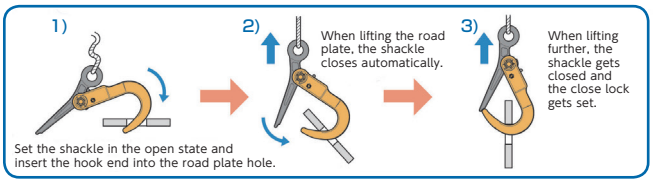
▮As a safety hook for direct lifting

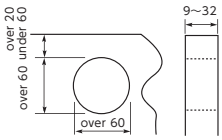


▶ Features

- Ideal for laying or removing road plates and for lifting wire ropes and sling belts.
- The hook mouth opens widely, making load set or remove operation very simple.
- During lifting, the close lock is automatically set so that the load can be lifted safely without coming off.

▮Operation instructions for lifting a road plate

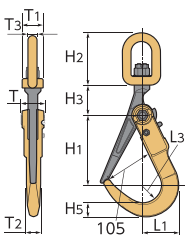




The applicable road plate thickness and hole dimensions shall be within the ranges of the drawing and the chart.

Item No.	Rated capacity (ton)	Size (mm)													N.W. (kg)
		H	H1	H2	H3	L	L1	L2	L3	D	D1	T	T1	T2	
SLH1N	1	298	210	80	28	140	80	65	32	56	24	48	28	16	2.5
SLH2N	2	336	236	89	30	166	105	75	38	64	32	54	29	18	3.2
SLH3N	3	339	236	89	33	169	105	78	38	64	32	54	31	18	3.4





SLH-S

SUPER LOCK HOOK (with Swivel)

▶ Example of use

▮Laying and removing road plates



▮As a safety hook for direct lifting



▶ Feature

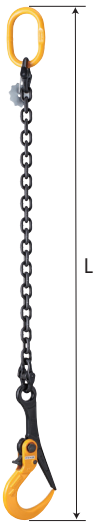
- The swivel eye included enables smooth returning of wire rope, thereby preventing the road plate from turning.



Item No.	Rated capacity (ton)	Size (mm)													N.W. (kg)
		H	H1	H2	H3	H4	H5	L	L1	L2	L3	T	T1	T2	T3	
SLH2S	2	402	147	117	70	50	30	166	75	47	38	54	46	29	19	4.2
SLH3S	3	405					33	169	78					31		4.5

★The product parts list and operation manual can be downloaded from our website.

●For all the appendix, please refer to P.284~286



SLH3AC

SUPER LOCK HOOK WITH CHAIN SLING (Open / Close Lock Type)

▶ Features

- Chain slings can be used safely for a longer time than wire ropes.
- Including a tag showing the serial number and the rated capacity for control.
- When removing the hook, as a lever enables to set an open lock, removing the hook from works like a crane for instance is very easy.

Item No.	Rated capacity (ton)	Set details		L (mm)	N.W. (kg)
		Super lock hook item No.	Chain item No.		
SLH3AC	3	SLH3A	CSC31	1,391	7.3



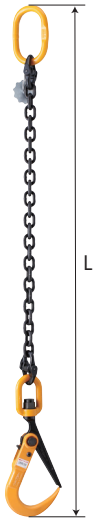
SLH-NC

SUPER LOCK HOOK WITH CHAIN SLING

▶ Features

- Chain slings can be used safely for a longer time than wire ropes.
- Including a tag showing the serial number and the rated capacity for control.

Item No.	Rated capacity (ton)	Set details		L (mm)	N.W. (kg)
		Super lock hook item No.	Chain item No.		
SLH2NC	2	SLH2N	CSC31	1,344	6.7
SLH3NC	3	SLH3N	CSC31	1,347	6.9



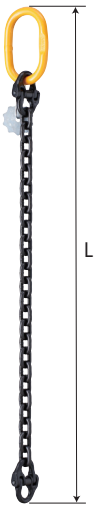
SLH-SC

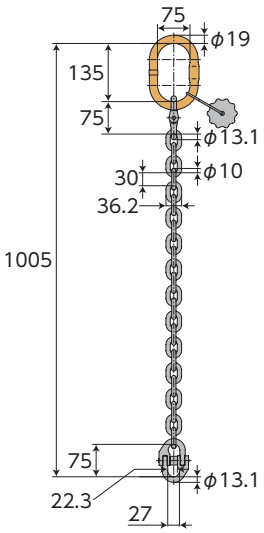
SUPER LOCK HOOK WITH CHAIN SLING (with Swivel)

▶ Features

- Chain slings can be used safely for a longer time than wire ropes.
- Including a tag showing the serial number and the rated capacity for control.
- The swivel eye included enables smooth returning of the chain, thereby preventing the road plate from turning.

Item No.	Rated capacity (ton)	Set details		L (mm)	N.W. (kg)
		Super lock hook item No.	Chain item No.		
SLH2SC	2	SLH2S	CSC31	1,407	7.7
SLH3SC	3	SLH3S	CSC31	1,410	8.0





CSC31

CHAIN SLING

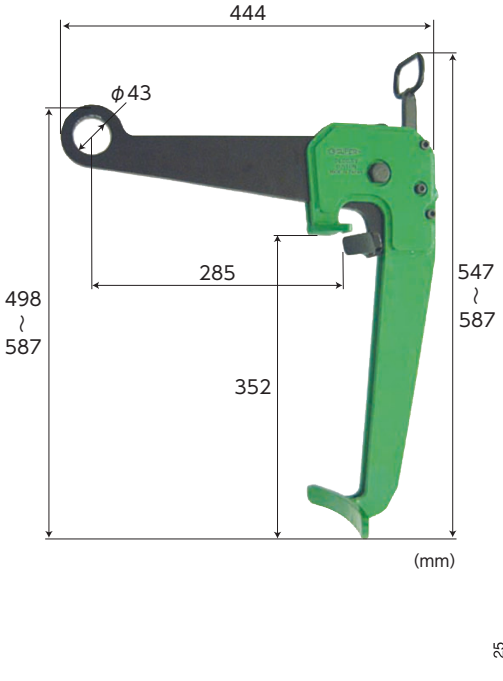
▶ Features

- Convenient for using directly with our super lock hooks.
- Our chain slings are based on JISV class, making them light-weight and strong.

Item No.	Rated capacity (ton)	L (mm)	N.W. (kg)
CSC31	3	1,037	3.5

★The product parts list and operation manual can be downloaded from our website.
●For all the appendix, please refer to P.284～286

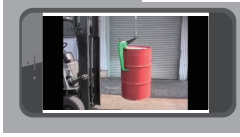
Vertical & lateral lifting clamps
Vertical lifting clamps
Lateral lifting clamps
Horizontal lateral lifting clamps, lifting hooks
Steel beam lifting clamps
Screw cam clamps
Beam clamps, safety belt clamps
Super foot locks, lifting hooks
Super lock hooks
Drum lift clamps
Lifting hooks for forklift, rail clamps
Reinforcing rod vertical lifting clamps



DLC0.5V

DRUM LIFT CLAMP (Vertical Lifting)

MOVIE

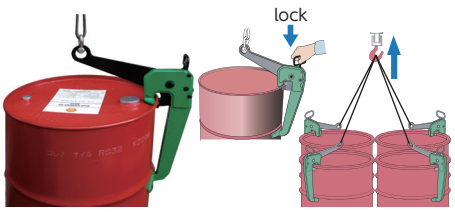


Features

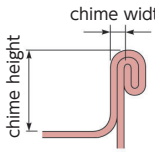
- Clamp dedicated to vertical lifting of drum cans.
- Easy operation with firm locking (by wedge method).
- You can safely lift a drum can vertically.
- Easy to lock by pushing and pulling the handle.
- The lifting ring diameter is large enough to be hooked directly.

Example of use

⚠ You cannot lift a drum can with no lid. Don't use for turning over a drum can.

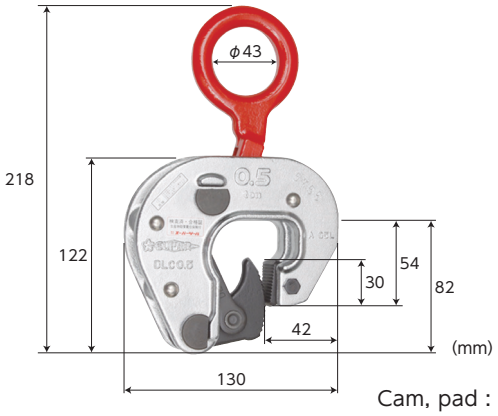


Applicable drum cans

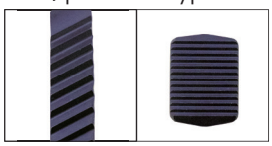


JIS Z1601 type : H class and M class (with 600mmϕ lid) and drum cans with lid of 500 to 700mm in diameter, with chime thickness of 2 to 3.5mm and chime height of 22 to 28mm (lifting is vertical only for 600mmϕ lid).

Item No.	Rated capacity (ton)	Clamp range (mm)	N.W. (kg)
DLC0.5V	0.5	2~3.5	9



Cam, pad : line type



DLC0.5

DRUM LIFT CLAMP

Features

- Clamp dedicated to lifting drum cans.
- Easy lifting of steel drums and drums without lid by one touch grip of the chime.
- Drum cans can be easily lifted vertically and turned over.

Applicable drum can

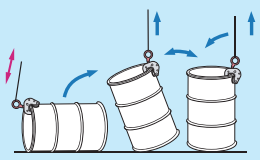
Chime height over 25mm and
Drum conforming to JIS Z1600 H class or M class
Drum conforming to JIS Z1601 H class or M class

Item No.	Rated capacity (ton)	N.W. (kg)
DLC0.5	0.5	2

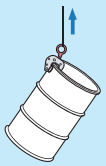
Example of use

⚠ You cannot lift a drum can with no chime. Do not lift 5 or more drum cans for safety.

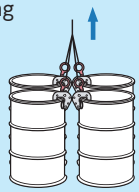
Pulling up, laying down



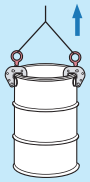
One point lifting



Lifting of 4 drum cans
In this case they can be lifted vertically.



2 points lifting
For safe lifting and handling of heavy drums.

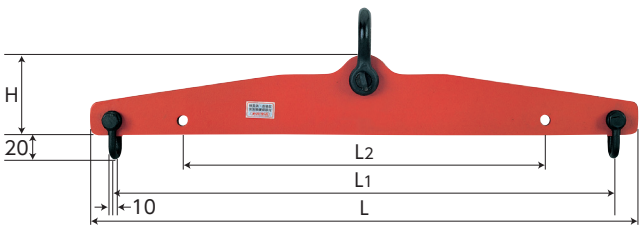


2 points lifting
By setting 2 drum lift clamps to a balance, you can lift vertically as shown in the drawing.



DSB1S

BALANCE FOR DRUM LIFT CLAMP



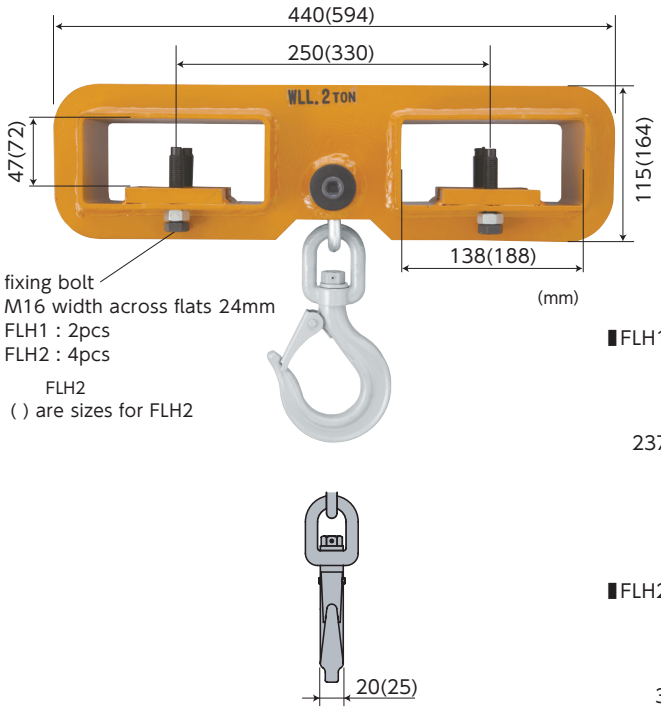
Features

- Balance dedicated to drum lift clamp (DLC0.5).
- Lifting width between 2 points (L1, L2).

Item No.	Rated capacity (ton)	Size (mm)				N.W. (kg)
		L	L1	L2	H	
DSB1S	1	675	615	445	100	6

★The product parts list and operation manual can be downloaded from our website.

●For all the appendix, please refer to P.284~286

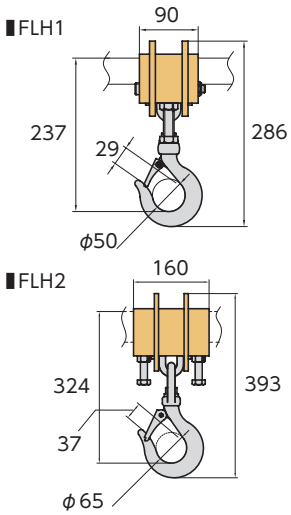


FLH

LIFTING HOOK FOR FORKLIFT

▶ Features

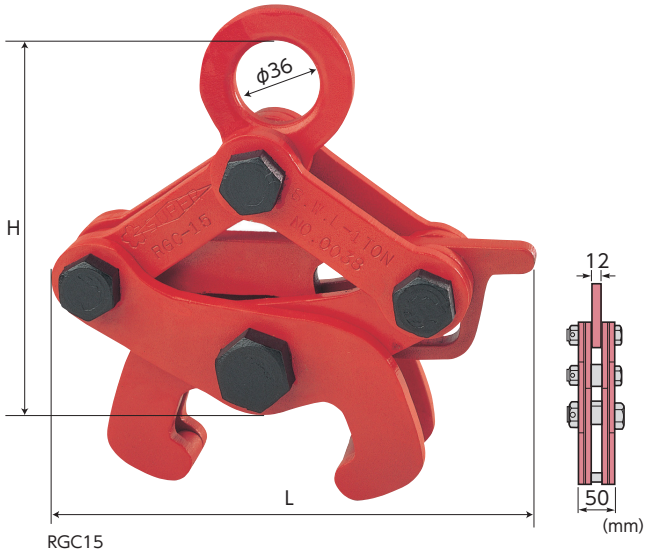
- Balance with hook dedicated to forklifts.
- Can be used immediately just by setting to the forklift jaws.
- Fixing can be done very simply by tightening the fixing bolts.
- The swivel hook with latch allows free hook direction and prevents vibrations.



▶ Example of use



Item No.	Rated capacity (ton)	Applicable forklift claw size (mm)		N.W. (kg)
		Width	Thickness	
FLH1	1	70～120	15～40	12
FLH2	2	120～150	38～65	24



RGC

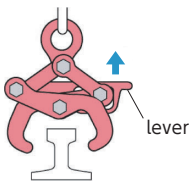
RAIL CLAMP

▶ Feature

- Clamp dedicated to various types of rail for railroads.

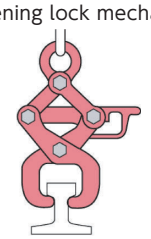
TIGHTENING AND RELEASING LOCK MECHANISM

▮Releasing lock mechanism



Position the clamp above the rail as shown in the drawing. Pull the shackle while raising the lever to tighten the clamp.

▮Tightening lock mechanism



When the lever is released, the tightening lock is set automatically, and you can lift the rail as shown in the drawing.

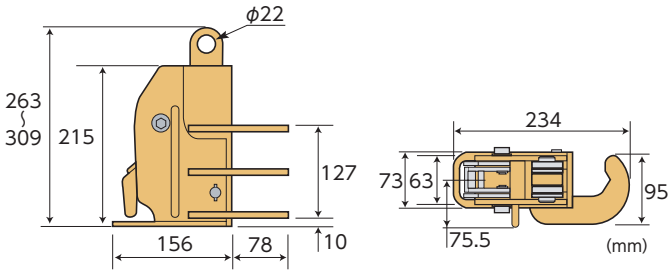
⚠ Always lift a load at 2 or more points for safety.

Item No.	Rated capacity (ton)	Applicable rail (Nominal)	Application	Size (mm)		N.W. (kg)
				H	L	
RGC10	1	6kg rail 9kg rail 10kg rail	Rails for civil engineering trolley	198	205	5
RGC15	1	12kg rail 15kg rail 22kg rail		198	205	5
RGC30	1	30kg rail 37kg rail	Small to medium railroad rails	198	205	5

Item No.	Rated capacity (ton)	Applicable rail (Nominal)	Application	Size (mm)		N.W. (kg)
				H	L	
RGC50	1	40kgN rail 50kg rail 50kgN rail 60kg rail	Small to medium railroad rails Railway, subway and major railroad rails Shinkansen rails	198	205	5
RGC75	1	CR73K rail CR74K rail	Crane rails CR-73K (old size rails)	228	254	6
RGC100	1	CR100K rail CR101K rail	Crane rails CR-100K (old size rails)	234	264	6

★The product parts list and operation manual can be downloaded from our website.
●For all the appendix, please refer to P.284～286





TVC1

REINFORCING ROD VERTICAL LIFTING CLAMP

▶ Features

- Ideal for assembling, pressure welding and extracting reinforcing steel rods.
- This clamp allows sure and safe vertical lifting of pre-assembled rods and round or irregulars shaped bars.
- The open lock is a center lever type, enabling remote control with the rope included.
- As the clamp body has been designed to have no superfluous components protruding on the sides, rod lifting operations and remote operations can be done smoothly.
- When clamping a load, the curved shaped holding plate and the cam generate a sure grip of the rod.

▶ Example of use

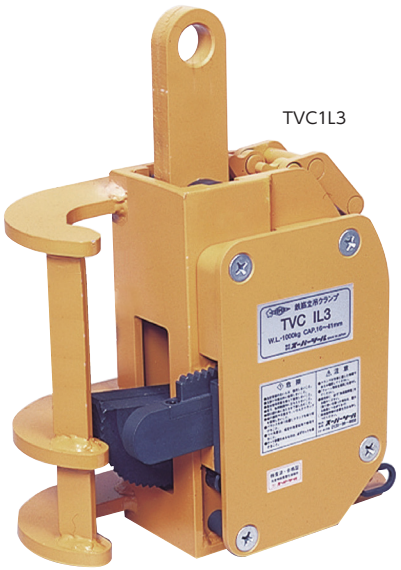
When you connect the rope to the remote control lever and you pull it, the open lock gets set and the clamp can be easily removed.

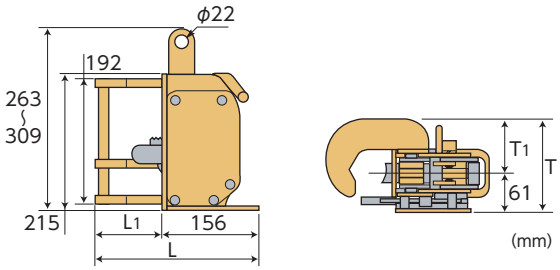
▶ Accessories

- Rope for remote control (2.9m) included



Item No.	Rated capacity (ton)	Applicable diameters (mm)	Applicable reinforcing rod name	N.W. (kg)
TVC1	1	ϕ16~41	D16~D38	6





TVC1L

REINFORCING ROD VERTICAL LIFTING CLAMP (Double Lock Type)

▶ Features

- Clamp for reinforcing rod including a safety lever to prevent rod dropping off.
- This clamp allows sure and safe vertical lifting of pre-assembled rods and round or irregulars shaped bars.
- The open lock is a center lever type, enabling remote control with the rope included.
- When the remote lever is pulled up, the anti-drop off lever on the side of the body comes out to prevent safely reinforcing rod from coming off from the push up pressure.

▶ Example of use

1. When the remote control lever is pulled up, the cam bites the reinforcing rod and the anti-drop off lever comes out.
2. To release the rod, pull down the stopper of the anti-drop off lever and pull the rope. The open lock gets set and the clamp can be easily removed.

▶ Accessories

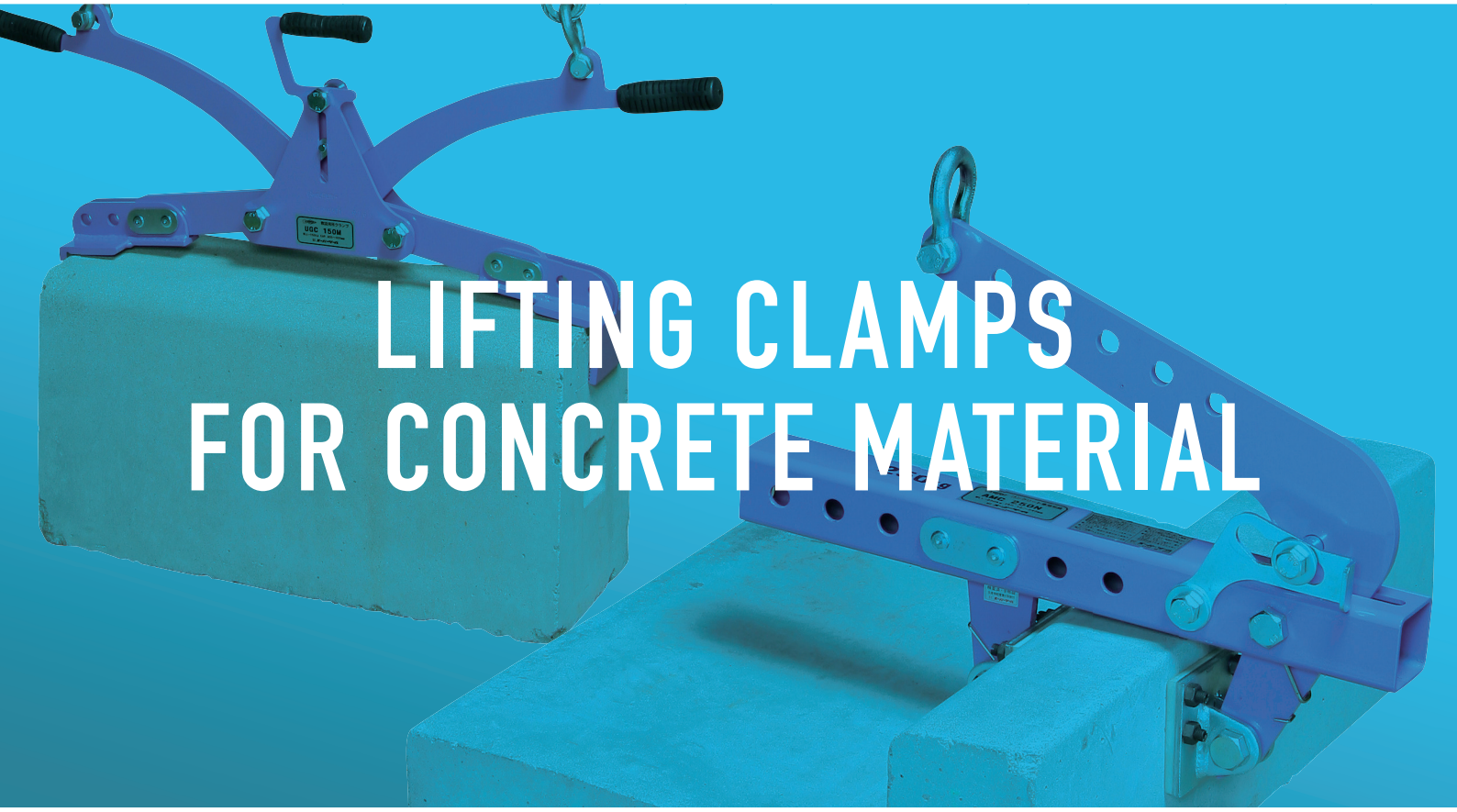
- Ropes for remote control (yellow : 2.9m ; white : 1.5m) included



Item No.	Rated capacity (ton)	Applicable diameters (mm)	Applicable reinforcing rod name	Size (mm)				N.W. (kg)
				L	L1	T	T1	
TVC1L3	1	ϕ16~41	D16~D38	234	78	124	63	11
TVC1L5	1	ϕ35~55	D35~D51	264	108	148	87	12

★The product parts list and operation manual can be downloaded from our website.

●For all the appendix, please refer to P.284~286



LIFTING CLAMPS FOR CONCRETE MATERIAL



Lifting clamps for concrete material (cam type, pad type)
P.141 ▶



Lifting clamps for concrete material (manual, machine type)
P.142 ▶



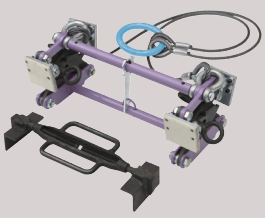
Lifting clamps for concrete material (adjustable clamp range type)
P.143 ▶



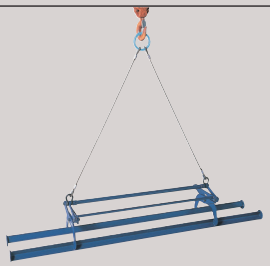
Balances
P.143 ▶



Lifting clamps for concrete material (adjustable clamp range type)
P.144 ▶



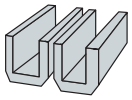
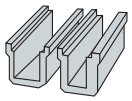
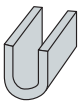
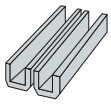
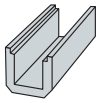
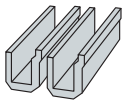
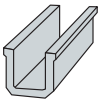
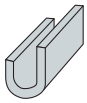
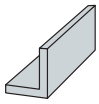
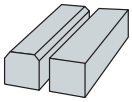
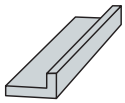
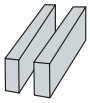
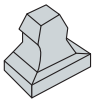
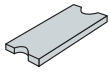
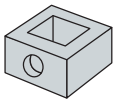
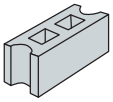
Internal expanding lifting clamps for U shaped gutter
P.145 ▶



Batch lifting clamps for bank block
P.147 ▶

APPLICABLE CONCRETE MATERIALS AND CLAMPS CHART

○ Compliant item △ Item that can be used

Concrete materials \ Lifting clamps for concrete material		CGC	CGC-N	SKC (SKC-M) (SKC-W)	SKC-D	BUC-N BUC-A	UGC-M	AMC-N	KBC (KBC-WH) (KBC-WA)
U shaped gutter Single side thick U shaped gutter		○	○	○	○	○	△	○	
Drop-lid type U shaped gutter Single side thick drop-lid type U shaped gutter		○ 1000			○	○			
U flume		○	○	○	○			△	
Long U shaped gutter Single side thick long U shaped gutter					○	○			
U shaped gutter (large drainage ditch)					○	○			
Special U shaped gutter Single side thick special U shaped gutter		△	△	△	○	○		△	
Flume (aqueduct)					○	○			
Retaining gutter block		△	△	△	○			△	
L shaped panel		○	○	○	○			○	
Boundary block							○	○	
L shaped concrete block							○	○	
Concrete board		○ vertical lifting	○ vertical lifting	○ vertical lifting	○ vertical lifting		○	○	
Bank block									○ batch lifting
U shaped ditch lid							○		
Concrete pipe for well (assembly sewage manhole)		○		○	○				
Catch basin								△	
Block							○	○	

Note : Even for same item name, it can be compliant or not with the concrete material depending on the item size. Always check with the operation manual.


CGC250


CGC500

CGC

LIFTING CLAMP FOR CONCRETE MATERIAL (Cam Type)

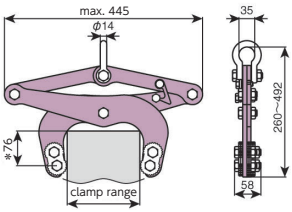
▶ Features

- Ideal for various kinds of concrete materials like U shaped gutters, U flumes, L shaped panels, boards.
- New cam design with 4 adjustable positions, allowing outstanding durability.
- The releasing lock can be easily set and released by a single action with the hook plate.

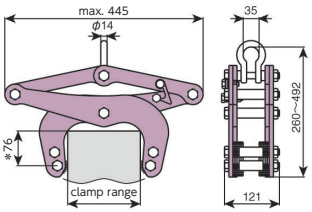
▶ Example of use

⚠ Always lift a load at 2 or more points for safety.

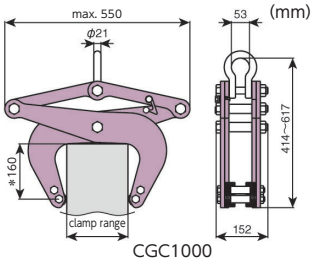




CGC250



CGC500



CGC1000

∗ : dimensions with concrete material at max. thickness.

Item No.	Rated capacity(kg)	Clamp range(mm)	N.W.(kg)
CGC250	250	30~160	6
CGC500	500	30~160	12
CGC1000	1000	30~180	26


CGC250N


CGC500N

CGC-N

LIFTING CLAMP FOR CONCRETE MATERIAL (Pad Type)

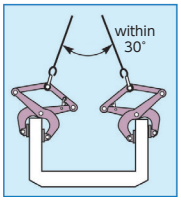
▶ Features

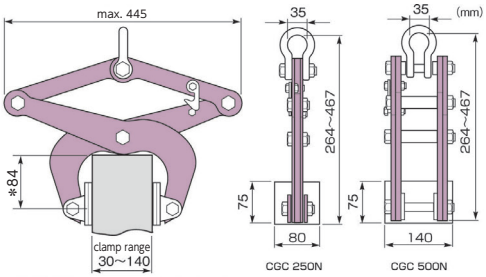
- Ideal for various kinds of concrete materials like U shaped gutters, U flumes, L shaped panels, boards.
- The spike design of the special rubber pads allows to grip firmly the load (can also be used as non-marring type).
- The releasing lock can be easily set and released by a single action with the hook plate.

▶ Example of use

⚠ Always lift a load at 2 or more points for safety.





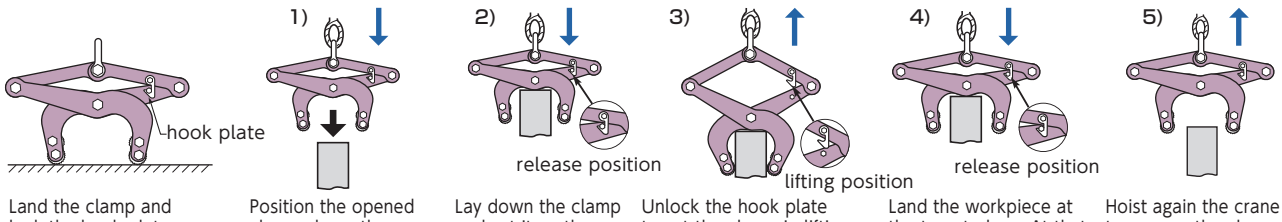


∗ : dimensions with concrete material at max. thickness.

Item No.	Rated capacity(kg)	Clamp range(mm)	N.W.(kg)
CGC250N	250	30~140	6
CGC500N	500	30~140	12

▌RELEASE & LOCK MECHANISM OPERATION

With CGC and CGC-N clamps, when you lock the hook plate, the releasing lock mechanism allows easy set or remove of the workpiece.



Land the clamp and lock the hook plate to set the clamp in release position.

Position the opened clamp above the workpiece.

Lay down the clamp and set it on the workpiece.

Unlock the hook plate to set the clamp in lifting position. Hoist the crane hook to lift the workpiece.

Land the workpiece at the target place. At that time, the hook plate gets locked automatically.

Hoist again the crane to remove the clamp, in the release position, from the workpiece.

★The product parts list and operation manual can be downloaded from our website.

SKC150(M)・SKC250(W)・SKC1250D

LIFTING CLAMP FOR CONCRETE MATERIAL (Manual / Machine Type)

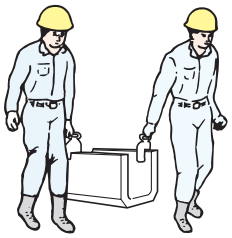
▶ Features

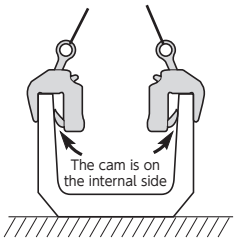
- Ideal for lifting and handling concrete materials like reinforced concrete U shaped gutters, single side thick U shaped gutters, U flumes.
- Compact, light-weight and easy to handle.
- Including a mechanism making that the clamping force increases in proportion to the load weight.
- One touch open/close mechanism for easy operation.

▶ Example of use

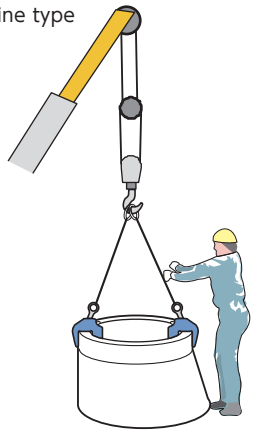
⚠ Always lift a load at 2 or more points for safety.

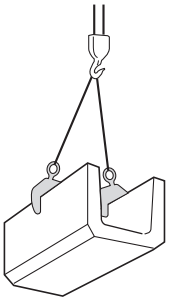
▮Manual type



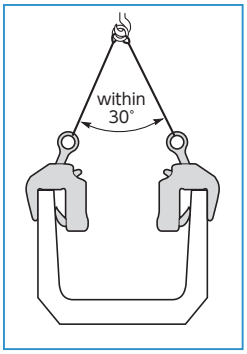


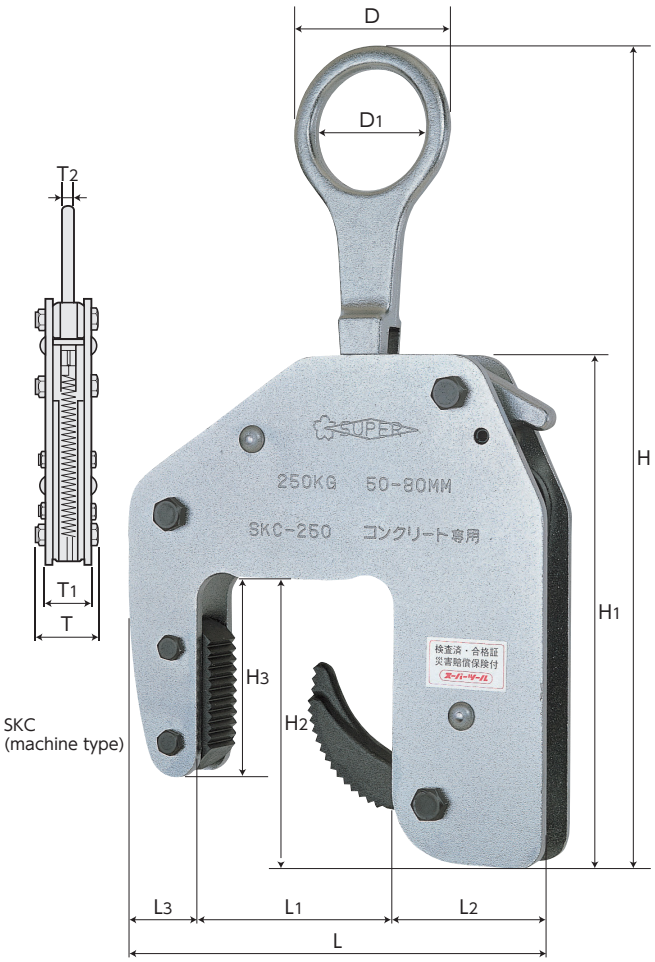
▮Machine type



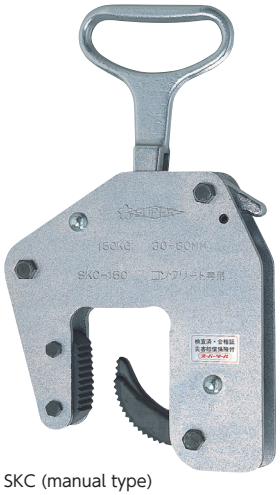


＊SKC1250D (deep wide type) shows its great power especially for lifting assembly sewage manhole.

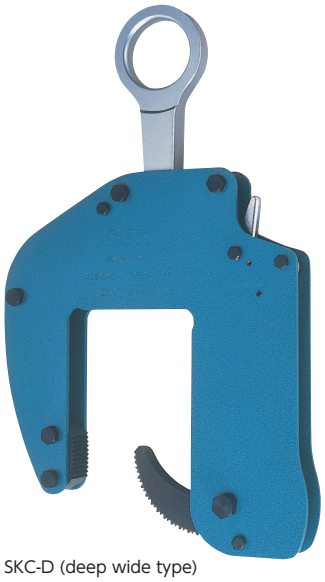




SKC (machine type)



SKC (manual type)



SKC-D (deep wide type)

Item No.	Item type	Rated capacity (kg)	Clamp range (mm)	Size (mm)													N.W. (kg)
				L	L1	L2	L3	H	H1	H2	H3	D	D1	T	T1	T2	
SKC150	Manual type	150	30～60	185	65	65	55	258～312	200	108	83	112	—	44.5	31	16	3
SKC150M	Machine type	150	30～60	185	65	65	55	274～328	200	108	83	70	50	44.5	31	10	3
SKC250	Machine type	250	50～80	190	85	66	39	278～332	205	112	85	70	50	44.5	32	10	3
SKC250W	Machine type	250	70～100	210	105	66	39	278～332	205	112	85	70	50	44.5	32	10	3.5
SKC1250D	Deep wide type	1250	73～137	355	145	125	80	477～558	385	242.5	192.5	100	70	60.5	37	18	10

★The product parts list and operation manual can be downloaded from our website.



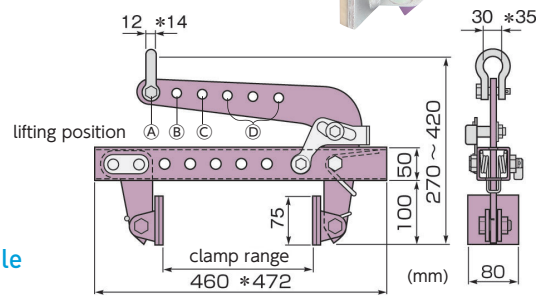
AMC-N • AMB-N

UNIVERSAL LIFTING CLAMP FOR CONCRETE MATERIAL Adjustable Clamp Range Type (Pad Type)

▶ Features

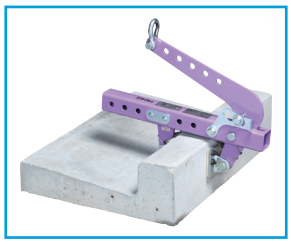
- Universal Clamp for lifting all kinds of concrete materials.
- Especially ideal for pedestrian road boundary blocks and small L shaped panels.
- By changing the pad position, you can adjust the clamp range to wide workpiece.
- By adjusting the shackle above the center of gravity of the workpiece, you can keep the balance of the workpiece.
- The spike design of the special rubber pads allows to grip firmly the load (can also be used as non-marring type).
- The open lock can be locked manually for smooth remove of the lifting piece.
- With the optional parts (sold separately), you can connect two clamps.

∗ Do not use with drop-lid type U shaped gutters. The rated capacity (kg) changes with the shackle position.

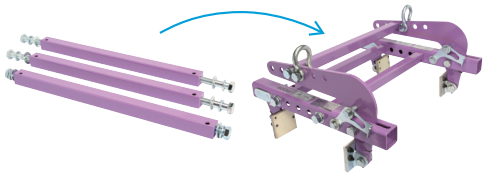


Note : ∗ are dimensions for AMC500N

▶ Example of use



▮Optional parts (sold separately)



∗ The rated capacity of the connected clamps is equal to the sum of each clamp rated capacity.

Optional parts item No.
AMB250N
AMB500N

Item No.	Rated capacity (kg) by lifting position				Clamp range (mm)	N.W. (kg)
	Ⓐ	Ⓑ	Ⓒ	Ⓓ		
AMC250N	140	165	200	250	10~240	5.5
AMC500N	280	330	400	500	10~240	7.5

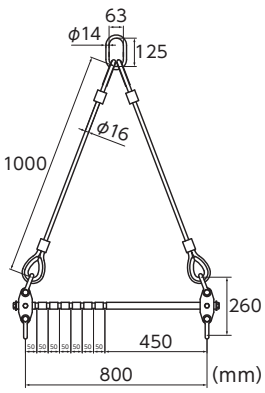


LSB2H

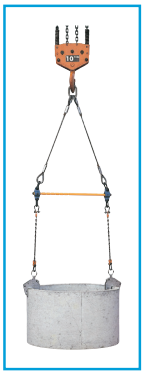
BALANCE (Adjustable Span Type, with Upper Wire Rope and Ring)

▶ Features

- Ideal for safe, well balanced lifting operations.
- When lifting or holding balance of a long workpiece, this balance can be used safely with lifting clamps.
- Adjustable span type with 8 steps from 450 to 800mm, adapted to long or large workpieces.



▶ Example of use



Item No.	Rated capacity (kg)	Adjustable span steps (mm)	N.W. (kg)
LSB2H	2000	450·500·550·600·650·700·750·800	20

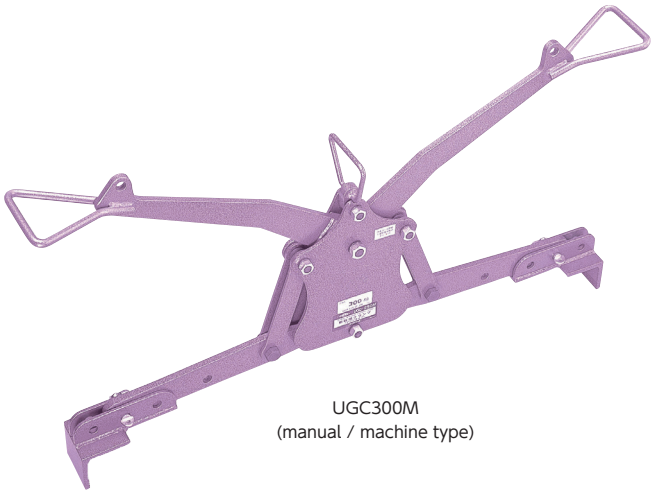
★The product parts list and operation manual can be downloaded from our website.

UGC-M

UNIVERSAL LIFTING CLAMP FOR CONCRETE MATERIAL (Adjustable Clamp Range Type)



UGC150M
(manual / machine type)



UGC300M
(manual / machine type)

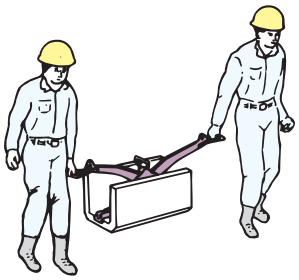
▶ Features

- Ideal for handling and laying U shaped gutters, lids, edge stones, blocks.
- With clamp claw thickness of 9mm, the clearance between the materials can be easily set.
- By changing the toggle pins locations, the clamp range can be easily adjusted.
- The clamp claw teeth provide a firm grip that prevents slipping.
- The design of the clamp claws has been improved to prevent material corner from getting nicked during lifting.

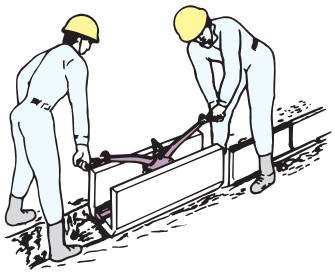
▶ Example of use



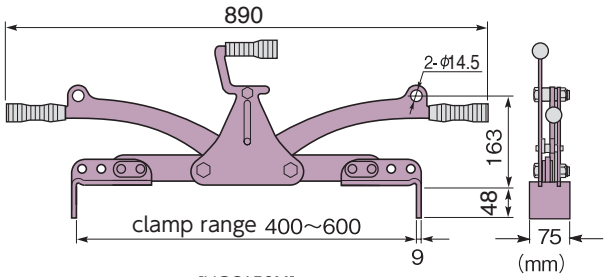
Lifting with a crane
(UGC150M)



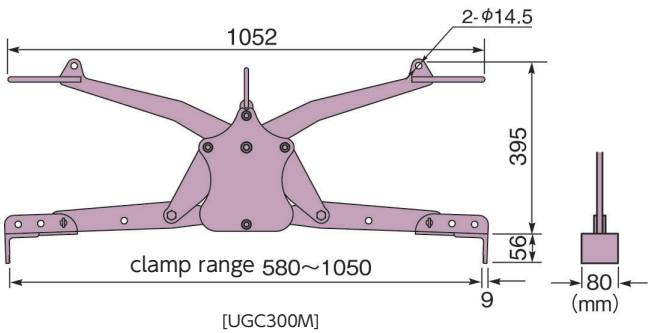
U shaped gutters can be clamped at both ends for easy handling and laying.



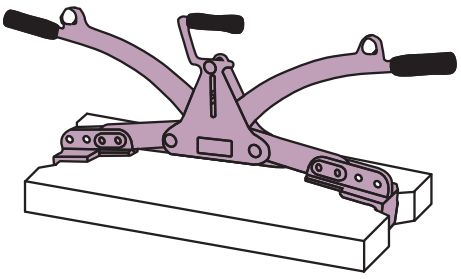
As the U shaped gutter is clamped from inside, the clamp doesn't interfere with the alignment levelling strings.



[UGC150M]



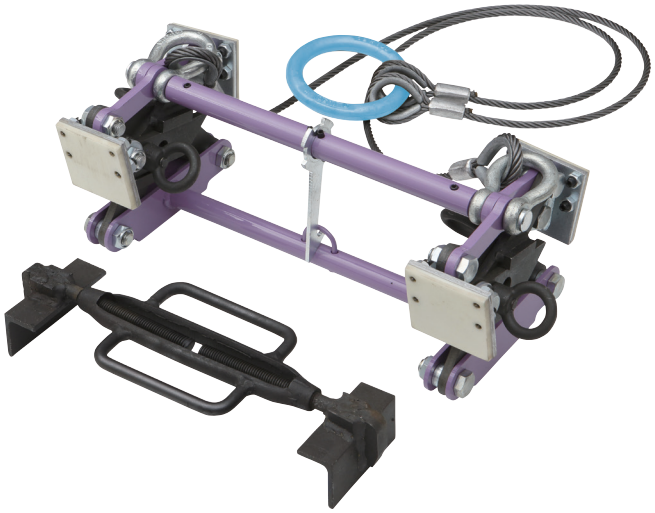
[UGC300M]



Ideal for lifting gutter lid.

Item No.	Rated capacity(kg)	Clamp range(mm)	N.W.(kg)
UGC150M	150	400~ 600	9
UGC300M	300	580~1050	17

 ★The product parts list and operation manual can be downloaded from our website.

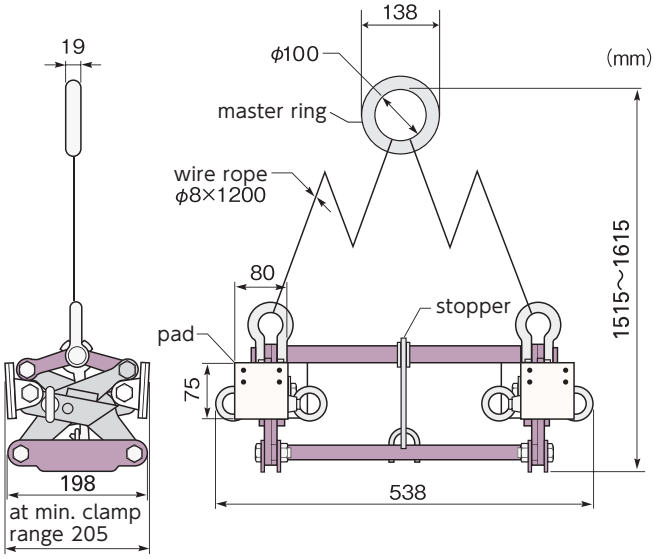


BUC240N

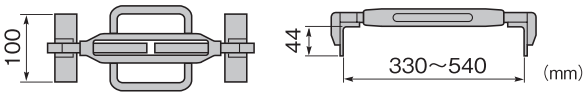
INTERNAL EXPANDING LIFTING CLAMP FOR U SHAPED GUTTER (Pad Type with Wire Rope and Ring)

▶ Features

- For JIS reinforced concrete U shaped gutters and JIS drop-lid type U shaped gutters (only 250 / 300A).
- Dedicated for lifting concrete U shaped underground cable box (adjustable clamp range type).
- Including a holder for preventing the cracking of U shaped gutter.
- The inside clamping avoids touching the alignment levelling strings, and makes unnecessary to leave a clearance space outside the workpiece.
- The spike design of the special rubber pads allows to grip firmly the load (can also be used as non-marring type).
- Applicable type of workpieces : JIS U shaped gutter 240, 300A/B/C and JIS drop-lid type 250, 300A, up to 2m length.



▮Cracking prevention holder



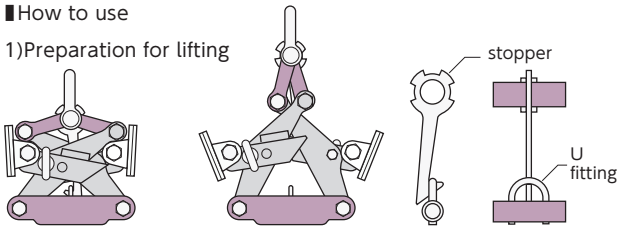
▶ Example of use

⚠ For long gutters, always use a balance and lift at 2 or more points for safety.



▮How to use

1)Preparation for lifting



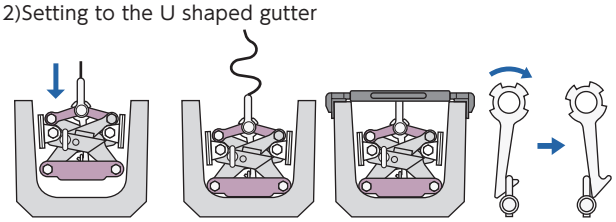
Releasing lock position

Not in releasing lock position

Hook surely to the U fitting.

Lift the clamp to check if the clamp is in releasing lock position as shown in the drawing above.
If not, hook the stopper to the main body U fitting and lift again so that the clamp gets in releasing lock position.

2)Setting to the U shaped gutter



Slowly lower the clamp in releasing lock position until the bottom of the gutter.

The wire rope is completely loosened.

Set the cracking prevention holder.

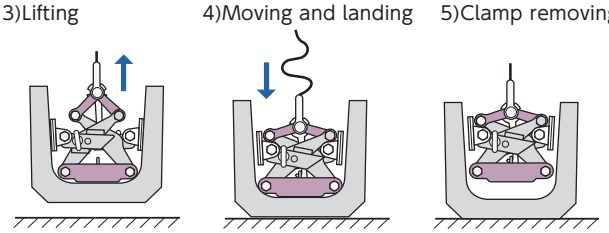
Remove the stopper from the U fitting.

Position the clamp in releasing lock position above the U shaped gutter and land it to the bottom of the gutter until the wire is completely loosened.
Next, set the cracking prevention holder just beside the clamp. Here, rotate the knob of the holder to make the arm firmly hold the U shaped gutter.
Next, remove the stopper from the U fitting, and then the load can be lifted.

3)Lifting

4)Moving and landing

5)Clamp removing



When the load is lifted, the clamp gets automatically into tightening position. When you hoist the crane, the U shaped gutter is firmly gripped and lifted.

After moving the U shaped gutter to the target place and confirming that it is stable, hoist down until the wire rope is completely loosened.

Hook the stopper to the U fitting and lift again to set the clamp in releasing lock position and then you can move the clamp alone to the next load to be operated.

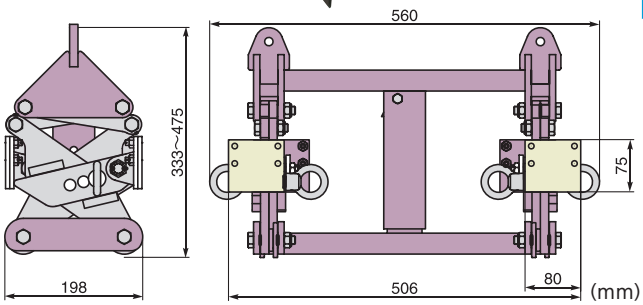
Item No.	Rated capacity (kg)	Clamp range (mm)	N.W. (kg)
BUC240N	500	Level 1 220~240 Level 2 260~290	12

★The product parts list and operation manual can be downloaded from our website.

BUC1000A • BUM1000A • BUF1000A

AUTOMATIC INTERNAL EXPANDING LIFTING CLAMP FOR U SHAPED GUTTER (Pad Type with Wire Rope and Ring)



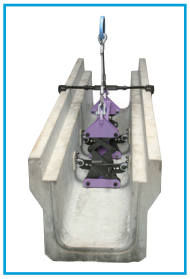


▶ Features

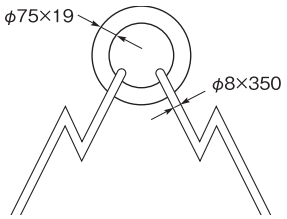
- Dedicated for lifting all kinds of concrete U shaped gutters (automatic setting and removing type).
- Including a holder for preventing the cracking of U shaped gutter (always use together with the main body).
- With the fully automated setting / removing mechanism, the repeated handling operations gets faster and easier, bringing higher productivity.
- The spike design of the special rubber pads allows to grip firmly the load (can also be used as non-marring type).
- The inside clamping avoids touching the alignment levelling strings, and makes unnecessary to leave a clearance space outside the workpiece.

▶ Example of use

⚠ For long gutters, always use a balance and lift at 2 or more points for safety.

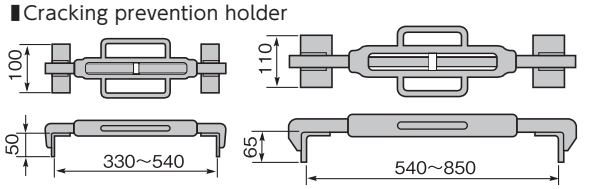


▮Master ring, wire rope



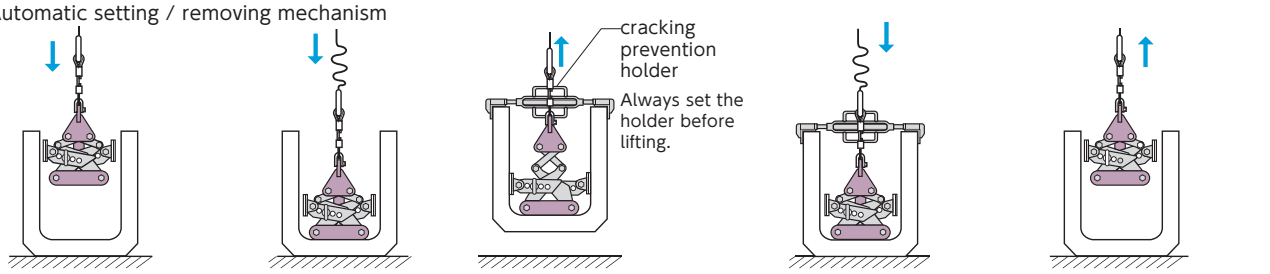
Item No.	Rated capacity (kg)	Clamp range (mm)	U shaped gutter size name	N.W. (kg)
BUC1000A	1000	①210~250	240·250	26
		②250~290	300	
		③290~330	—	

▮Cracking prevention holder



Crack prevention small　　Crack prevention large　(mm)

▮Automatic setting / removing mechanism



1)Land slowly the clamp in releasing lock position until the bottom of the gutter.

2)Hoist down until the wire rope is completely loosened.

3)When the load is lifted, the clamp gets automatically into tightening position.

4)Hoist down until the wire rope is completely loosened.

5)When the clamp is lifted again, it gets automatically into releasing lock position and the clamp alone is lifted.

▮BUM1000A middle parts set (sold separately)
(middle plate with pad, crack prevention large holder)



▮BUF1000A full parts set (sold separately)
(middle plate with pad, long plate with pad, crack prevention large holder, joint bar)



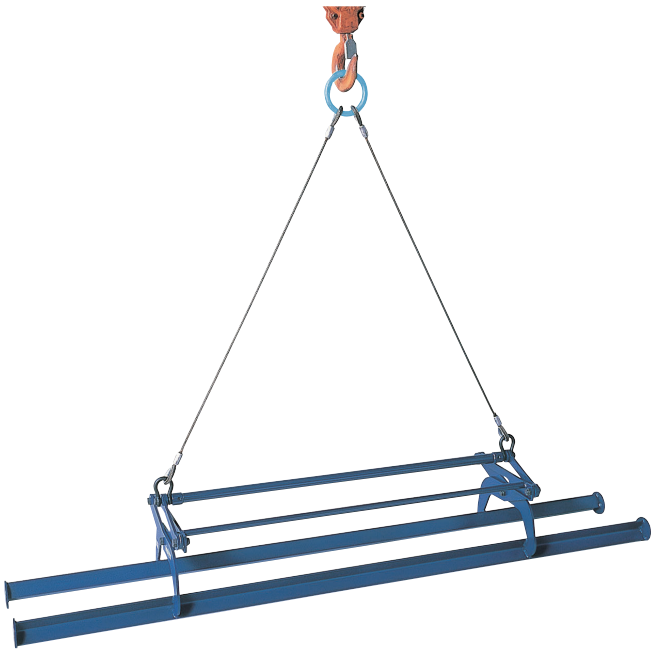
Item No.	Middle plate			Long plate		
	Clamp range (mm)	U shaped gutter size name	N.W. (kg)	Clamp range (mm)	U shaped gutter size name	N.W. (kg)
BUM1000A	①320~360	350·360	28	—	—	—
	②360~400	400		—	—	
	③400~440	450		—	—	
	④440~480	500		—	—	
BUF1000A	①320~360	350·360		①480~520	500	31
	②360~400	400		②520~560	600	
	③400~440	450		③560~600	—	
	④440~480	500		—	—	—

＊ The clamp range ①~④ can be changed by adjusting the position of the adjustment plate holes.

★The product parts list and operation manual can be downloaded from our website.

KBC500WH

BATCH LIFTING CLAMP FOR BANK BLOCK (with Wire Rope and Ring)



▶ Features

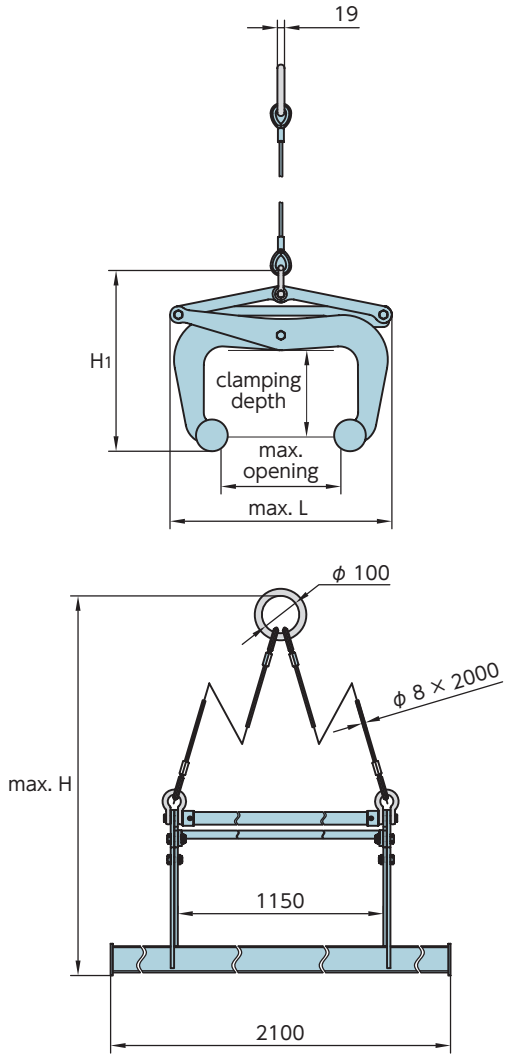
- Dedicated for lifting bank blocks with necks.
- Can lift together in one batch up to 7 bank blocks. Ideal for handling, loading and unloading operations.
- The automatic opening mechanism allows easy clamp removing operation.

▶ Example of use

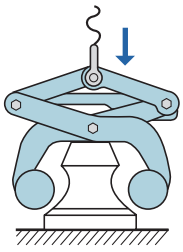


Shape of applicable blocks
Bank blocks with necks.
Max. 7 pieces.

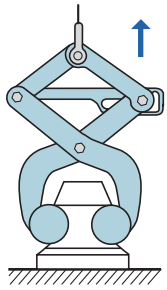




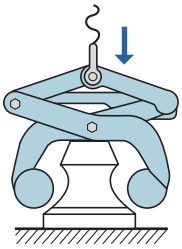
▮Automatic releasing mechanism



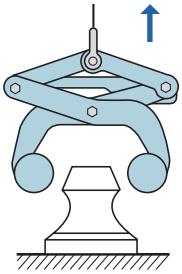
1)Set the stopper in release position, lower the clamp so that the legs of the tongs properly fit into the bank block neck.



2)When the legs are fully set, remove the stopper and lift the clamp so that the legs close and the bank block gets lifted.



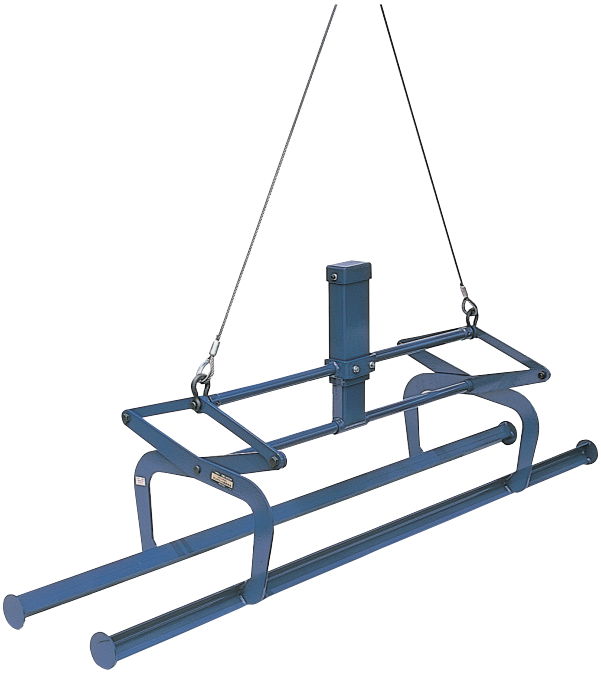
3)Move the load to the target place and land it until the wire rope is completely loosened.



4)The stopper gets locked automatically into the release position and then you can lift the clamp alone.

Item No.	Rated capacity (kg)	Clamp range (mm)	Size (mm)					N.W. (kg)
			(max. opening)	(clamping depth)	L (MAX)	H (MAX)	H1	
KBC500WH	500	60～270	300	230	600	2780	484～760	48

★The product parts list and operation manual can be downloaded from our website.



KBC500WA

AUTOMATIC BATCH LIFTING CLAMP FOR BANK BLOCK (with Wire Rope and Ring)

▶ Features

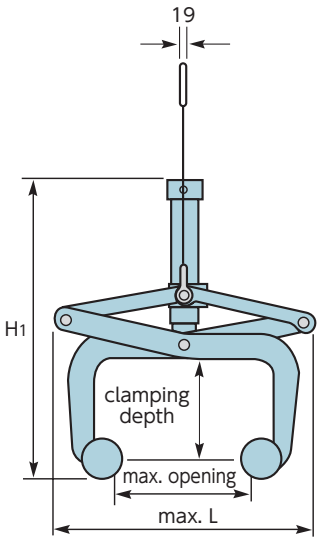
- Dedicated for lifting bank blocks with necks.
- Can lift together in one batch up to 7 bank blocks. Ideal for handling, loading and unloading operations.
- The automatic setting / removing mechanism allows operations with one operator. The workability is greatly improved compared to conventional manual clamp types.

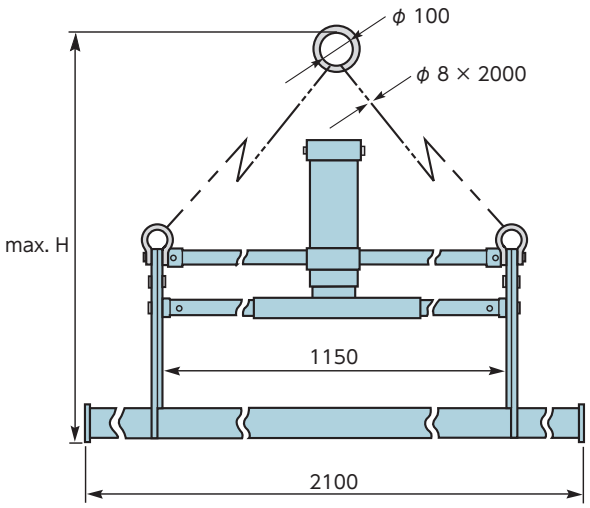
▶ Example of use



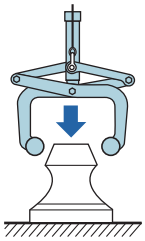
Shape of applicable blocks
Bank blocks with necks.
Max. 7 pieces.



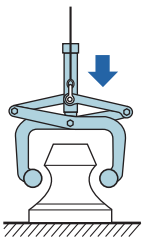




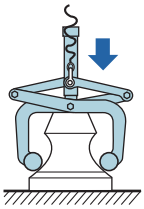
▮Automatic setting / removing mechanism



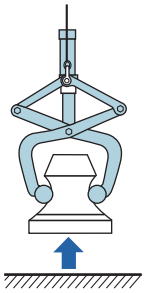
1)As a preparation before lifting, lift the clamp in release position.



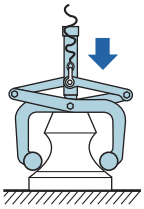
2)Lower the clamp slowly so that it stay aligned with the center of the block until the clamp main body and the guide pipes touch the block and keep lowering until the wire rope is completely loosened.



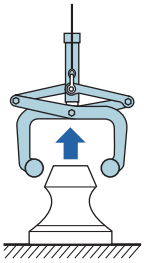
3)Stabilize the clamp horizontally on the block.



4)When the load is lifted, the clamp gets locked automatically into tightening position and grips firmly the bank block.



5)Move the load to the target place and land it until the wire rope is completely loosened.



6)When the clamp is lifted, it gets locked automatically into release position so that you can move the clamp alone and switch smoothly to the next operation.

By repeating procedures 1)~5), transportation of bank blocks batches can be quickly operated just by moving laterally and hoisting up and down the crane.

Item No.	Rated capacity (kg)	Clamp range (mm)	Size (mm)					N.W. (kg)
			(max. opening)	(clamping depth)	L (MAX)	H (MAX)	H1	
KBC500WA	500	60~270	300	230	600	2810	700~1010	56

 ★The product parts list and operation manual can be downloaded from our website.



LIFTING CLAMPS FOR HOUSING



Lifting clamps for formwork / panel
P.150 ▶



Lifting clamps for panel / beam
P.150 ▶



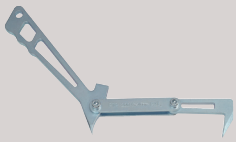
Lifting clamps dedicated for wooden beam
P.152 ▶



Balance sets
P.153 ▶



Balances
P.153 ▶



Panel pullers
P.153 ▶

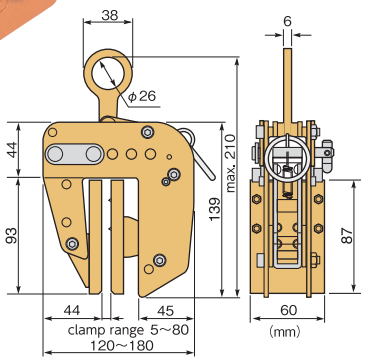


Lifting clamps for ALC panel
P.154 ▶



Horizontal lifting clamps for ALC panel
P.154 ▶





PTC100

LIFTING CLAMP FOR FORMWORK / PANEL (Ultra-light-weight and Compact Type)

▶ Features

- Ideal for lifting and installing formwork and wooden panels.
- The spring-type tightening lock mechanism assures a positive initial clamp force.
- The tightening lock can be released remotely, avoiding dangerous operations in high places.
- The urethane pad with spikes on one side ensures a firm grip, for even safer operation.
- The two pads come with urethane rubber to prevent scratches on the panel surface.

Remotely controllable opening mechanism included

Also usable for soundproof walls

Applicable loads : Siding boards, decoration panels for outer walls, external heat insulating wall materials, wooden panels, etc.
∗ Do not use for ALC panels, extruded cement panels.

▶ Accessories

- Rope for remote control (1.5m) included

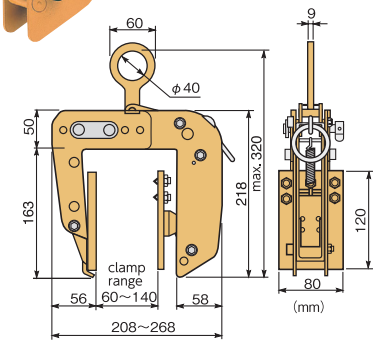
▶ Example of use



⚠ Always use this clamp in pair with a balance.

Item No.	Rated capacity (kg)	Clamp range - 5 steps adjustment (mm)	N.W. (kg)
PTC100	100	5~20	1.8
		20~35	
		35~50	
		50~65	
		65~80	





PTC150

LIFTING CLAMP FOR PANEL / BEAM (Wide Type)

▶ Features

- Ideal for lifting and installing wooden panels, 2 × 4 housing panels and for lifting and moving wooden beams.
- The tightening lock can be released remotely, avoiding dangerous operations in high places.

∗ Do not use for ALC panels, extruded cement panels.

Remotely controllable opening mechanism included

Also usable for soundproof walls

▶ Accessories

- Rope for remote control (1.5m) included

▶ Example of use

⚠ Always use this clamp in pair with a balance.

▮Panel lifting



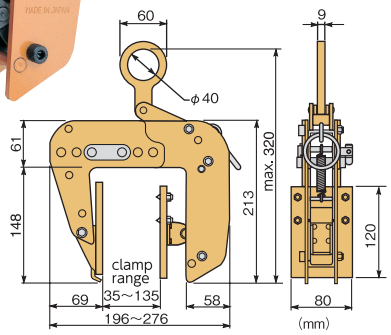
▮Wooden beam lifting



Item No.	Rated capacity (kg)	Clamp range - 4 steps adjustment (mm)	N.W. (kg)
PTC150	150	60~ 80	3.6
		80~100	
		100~120	
		120~140	

 ★The product parts list and operation manual can be downloaded from our website.





PTC200

LIFTING CLAMP FOR 2 × 4 PANEL (Wide Type)

▶ Features

- Ideal for lifting and installing wooden panels and especially 2 X 4 housing panels.
- The tightening lock can be released remotely, avoiding dangerous operations in high places.

Remotely controllable opening mechanism included

∗ Do not use for ALC panels, extruded cement panels.

Also usable for soundproof walls

▶ Accessories

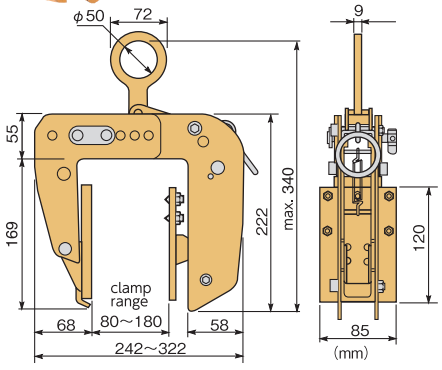
- Rope for remote control (1.5m) included

▶ Example of use ⚠ Always use this clamp in pair with a balance.



Item No.	Rated capacity (kg)	Clamp range - 5 steps adjustment (mm)	N.W. (kg)
PTC200	200	35～ 55	4
		55～ 75	
		75～ 95	
		95～115	
		115～135	





PTC250

LIFTING CLAMP FOR PANEL / BEAM (Super Wide Type)

▶ Features

- Ideal for lifting and installing wooden panels, and especially 2 × 4 and 2 × 6 housing panels, and for lifting and moving wooden beams.
- The tightening lock can be released remotely, avoiding dangerous operations in high places.

Remotely controllable opening mechanism included

∗ Do not use for ALC panels, extruded cement panels.

Also usable for soundproof walls

▶ Accessories

- Rope for remote control (1.5m) included

▶ Example of use ⚠ Always use this clamp in pair with a balance.

▮Wooden beam lifting



▮Panel lifting



Item No.	Rated capacity (kg)	Clamp range - 5 steps adjustment (mm)	N.W. (kg)
PTC250	250	80～100	5.8
		100～120	
		120～140	
		140～160	
		160～180	

★The product parts list and operation manual can be downloaded from our website.



PSC100

LIFTING CLAMP FOR PANEL (Ultra-light-weight and Compact Type)

▶ Features

- Ideal for lifting and installing wooden panels.
- The tightening lock can be released remotely, avoiding dangerous operations in high places.

Remotely controllable opening mechanism included

Also usable for soundproof walls

* Do not use for ALC panels, extruded cement panels.

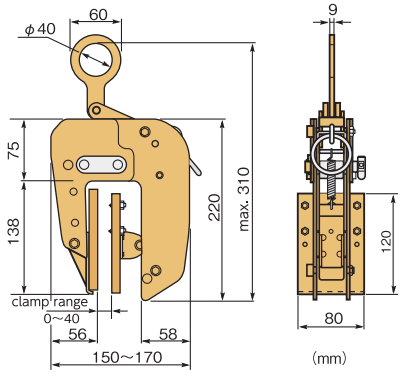
▶ Accessories

- Rope for remote control (1.5m) included

▶ Example of use

⚠ Always use this clamp in pair with a balance.





Item No.	Rated capacity (kg)	Clamp range - 2 steps adjustment (mm)	N.W. (kg)
PSC100	100	0~20	3.5
		20~40	

BLC200

LIFTING CLAMP FOR WOODEN BEAM (Double Cam Type)

▶ Features

- Ideal for lifting and installing wooden beams.
- The spring-type tightening lock mechanism assures a positive initial clamp force.
- The tightening lock can be released remotely, avoiding dangerous operations in high places.

Remotely controllable opening mechanism included

▶ Accessories

- Rope for remote control (2m) included

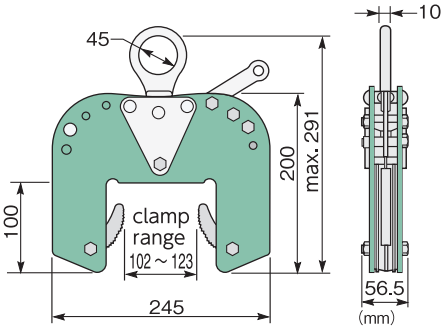
▶ Example of use

⚠ Always use this clamp in pair with a balance.









Item No.	Rated capacity (kg)	Clamp range (mm)	N.W. (kg)
BLC200	200	102~123	3.7

★The product parts list and operation manual can be downloaded from our website.



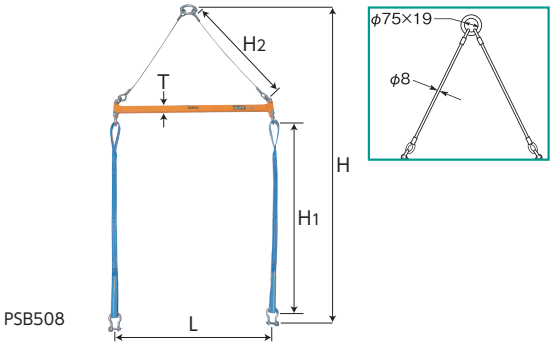
PTC-S • PSC-S • BLC-S

LIFTING CLAMP BALANCE SET FOR PANEL / WOODEN BEAM

▶ Feature

- Set of 2 lifting clamps and 1 applicable balance.

Lifting clamp for housing panel	Set item No.	Set details	
		Lifting clamp (2 pcs)	Balance (1pc)
Formwork / panel lifting	**PTC100S**	PTC100	PSB508
Panel / beam lifting	**PTC150S**	PTC150	PSB508
2 × 4 panel lifting	**PTC200S**	PTC200	PSB508
Panel / beam lifting	**PTC250S**	PTC250	PSB610
Panel lifting	**PSC100S**	PSC100	PSB508
Wooden beam lifting	**BLC200S**	BLC200	PSB508



PSB508

PSB

2-POINT LIFTING BALANCE

▶ Feature

- Balance dedicated for safe and well-balanced lifting operations.

▶ Accessories

- Sling belts
- Shackles

Item No.	Rated capacity (kg)	Size (mm)					N.W. (kg)	Applicable lifting clamp for panel
		L	H	H1	H2	T		
PSB508	500	800	2000	1000	800	□40×□20	5.2	PSC100·PTC100·150·200·BLC200
PSB610	600	1000	1960	1000	800	□40×□20	6	PTC·PSC·BLC·PAC
PSB620	600	2000	2500	1000	1600	□50×□30	7.2	



PSBSL150

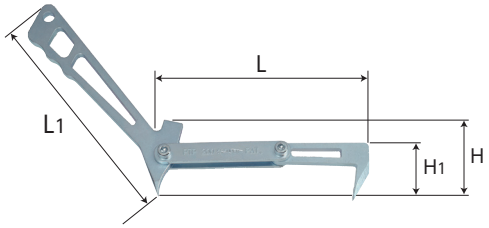
PSBSL

SLING BELT FOR BALANCE (a Pair)

▶ Feature

- Long swing belts common for all balance sizes.

Item No.	Belt full length (m)	Belt width (mm)
PSBSL150	1.5	25
PSBSL200	2	25



PTP200

PANEL PULLER (Panel Pulling Tool)

▶ Feature

- Must-have tool for construction method with 2 × 4 panels.

▮Applications

- ●Pulling together 2 panels.
- ●Adjusting outside panels with ink marking.
- ●Pulling and connecting joint parts of floor and ceiling panels.
- ●Pulling together 2 beams.
- ●Pulling together and assembling wooden formwork panels.

▶ Example of use

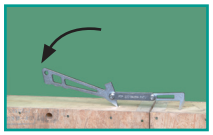


▶ How to use

▮Setting



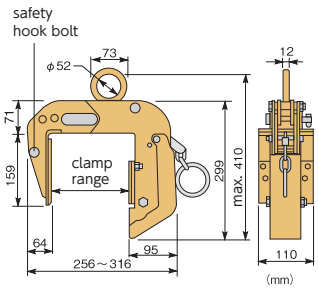
▮Pulling together



Item No.	Size (mm)					N.W. (g)
	Pulling stroke	L	L1	H	H1	
PTP200	30	212	250	80	60	760

★The product parts list and operation manual can be downloaded from our website.





PAC260

LIFTING CLAMP FOR ALC PANEL

▶ Features

- Clamp dedicated for lifting ALC panels.

Remotely controllable opening mechanism included

▶ Common features for PAC260 and PSC260

- The spring-type tightening lock mechanism assures a positive initial clamp force.
- Including a mechanism making that the clamping force increases in proportion to the load weight.
- The tightening lock can be released remotely, avoiding dangerous operations in high places.
- The urethane pad with spikes on one side ensures a firm grip, for even safer operation.
- The two pads come with urethane rubber to prevent scratches on the panel surface.
- The two pads come with urethane rubber to prevent scratches on the panel surface.
- A safety hook bolt for setting a sling belt is included to provide extra safety.

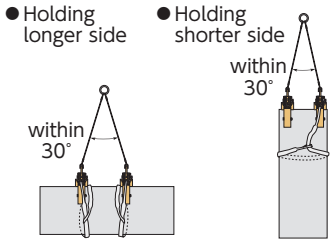
▶ Accessories

- Rope for remote control (2m) included

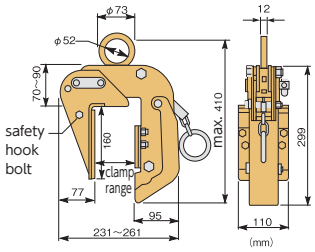
Item No.	Rated capacity (kg)	Clamp range - 3 steps adjustment (mm)	N.W. (kg)
PAC260	260	90~105 115~130 140~155	6.9

▶ Example of use

⚠ Always use this clamp in pair.







PSC260

LIFTING CLAMP FOR EXTRUDED CEMENT PANEL

▶ Feature

- Ideal for lifting and installing extruded cement panels.

∗ The other features and the examples of use are the same as for PAC260.

Remotely controllable opening mechanism included

Item No.	Rated capacity (kg)	Clamp range - 2 steps adjustment (mm)	N.W. (kg)
PSC260	260	50~65 70~85	6.9

UGC200W

HORIZONTAL LIFTING CLAMP FOR ALC PANEL

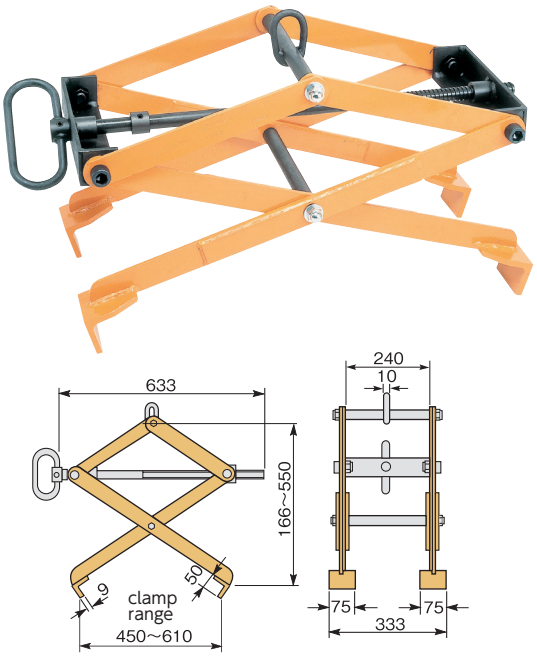
▶ Features

- Ideal for lifting and installing ALC panels.
- Easy to transport and install floor panels and lids for U shaped gutters with one operator.
- Clamping range can be adjusted to the width of the workpiece by turning the handle.
- The firm clamping of the workpiece with a screw tightening lock ensures the operation safety.



▶ Example of use

⚠ Lift with one clamp.



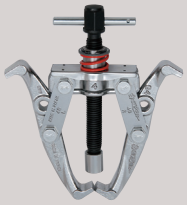
Item No.	Rated capacity (kg)	Clamp range (mm)	N.W. (kg)
UGC200W	200	450~610	18



GEAR PULLERS



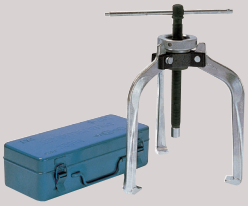
Gear pullers (2-claw type)
P.156 ▶



Gear pullers (auto-grip, G type)
P.158 ▶



Gear pullers (3-claw type)
P.159 ▶



Shock speed pullers
P.161 ▶



Sliding gear pullers
P.162 ▶



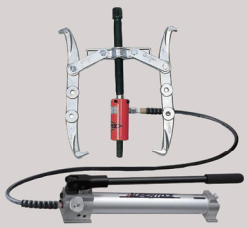
Bearing pullers
P.165 ▶



Bearing puller sets
P.166 ▶



Bearing insertion tool sets
P.172 ▶



Hydraulic pullers
P.173 ▶



Accessories
P.174 ▶

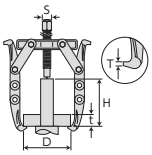


G3 (G3~8 with handle) G4·6·8 G10 G12~24

G

GEAR PULLER, G Type (Heavy Duty Type for Professional Use)

▶ Features

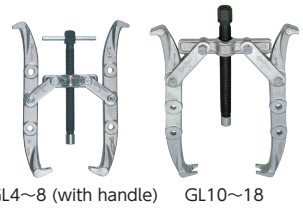


- The reaching range of the claws can be extended by shifting the claw holes (2 holes for G4~10, 3 holes for G12~24).
- For G4~24, the steel ball inside the adaptor significantly reduces frictional resistance.
- H indicates the claw reaching length when, with D at shortest length, the forcing screw is lifted to the highest point.

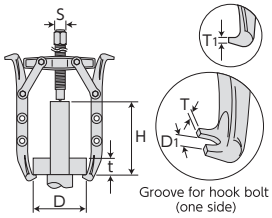
▶ Accessories



Item No.	Size (mm)						Breaking load (kN)	N.W. (kg)
	D	t	H	T	S	Forcing screw dia.		
	Pulled object diameter	Pulled object width when D at max.	Claw reaching length	Claw tip thickness	Forcing screw hex. width across flats			
G3	40~75	30	55	3.5	14	12	20	0.4
G4	50~100	45	100	4.1	17	14	40	0.8
G6	60~150	60	150	5.3	19	18	60	1.9
G8	80~200	100	240	6.7	22	22	80	3.8
G10	100~250	120	250	7.4	30	28	100	6
G12	120~300	125	275	8	32	32	120	9
G15	150~375	130	320	8.7	41	38	150	11
G18	180~450	140	370	9.8	46	44	180	15
G24	280~600	175	575	17.5	46	44	240	45



GL4~8 (with handle) GL10~18



Groove for hook bolt (one side)

GL

GEAR PULLER, GL Type (Heavy Duty Type for Professional Use)

▶ Features

- With longer claws and 3 holes for all size, the reaching range of the claws can be even more extended than G type.
- One claw is designed with a groove for hook bolt (for bearing separator BS).
- The steel ball inside the adaptor significantly reduces frictional resistance.
- H indicates the claw reaching length when, with D at shortest length, the forcing screw is lifted to the highest point.

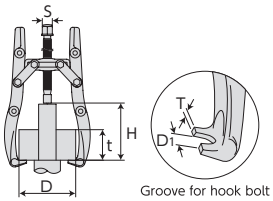
▶ Accessories



Item No.	Size (mm)							Forcing screw dia.	Breaking load (kN)	N.W. (kg)
	D	t	H	D1	T	T1	S			
	Pulled object diameter	Pulled object width when D at max.	Claw reaching length	Bolt groove width	Claw tip thickness		Forcing screw hex. width across flats			
GL4	50~100	60	150	10	5.8	4.1	17	14	40	1
GL6	60~150	70	190	12	6.7	5.3	19	18	60	2.3
GL8	80~200	100	275	16	7.4	6.7	22	22	80	4.4
GL10	100~250	125	300	18	8	7.4	30	28	100	7
GL12	120~300	170	350	20	8.7	8	32	32	120	10
GL15	150~375	185	400	24	9.8	8.7	41	38	150	13
GL18	180~450	200	440	27	10.8	9.8	46	44	180	16



GLL4~8 (with handle) GLL10·12



Groove for hook bolt

GLL

GEAR PULLER, GLL Type (Heavy Duty Type for Professional Use)

▶ Features

- With longer claws and 3 holes for all size, the reaching range of the claws can be even more extended than GL type.
- The claws are designed with a groove for hook bolt (for bearing separator BS).
- The steel ball inside the adaptor significantly reduces frictional resistance.
- H indicates the claw reaching length when, with D at shortest length, the forcing screw is lifted to the highest point.

▶ Accessories



Item No.	Size (mm)						Forcing screw dia.	Breaking load (kN)	N.W. (kg)
	D	t	H	D1	T	S			
	Pulled object diameter	Pulled object width when D at max.	Claw reaching length	Bolt groove width	Claw tip thickness	Forcing screw hex. width across flats			
GLL4	50~100	60	200	10	5.8	17	14	40	1.1
GLL6	60~150	70	250	12	6.7	19	18	60	2.4
GLL8	80~200	100	350	16	7.4	22	22	80	4.8
GLL10	100~250	125	400	18	8	30	28	100	7.5
GLL12	120~300	170	450	20	8.7	32	32	120	10.6

●For all the appendix of the gear pullers, please refer to P.288

GJ • GA-N • GN • GZ • GSR • GLJ • GLLJ

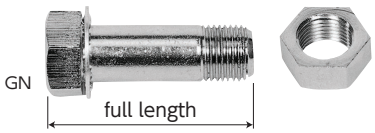
GEAR PULLER, G, GL, GLL, GT Types Parts



- The reaching range of the claws can be extended by using the 2 or 3 holes and both claws at the top and bottom. (1 hole for GJ3, 2 holes for GJ4~10, 3 holes for GJ12~24)

Claw (1 pc)

Item No.	Applicable puller	Full length (mm)
GJ3	G3	90
GJ4	G4·(GT4)·GT100·(G4S)·G100S·GT100S	137
GJ6	G6·(GTW6)·GT150·(G6S)·G150S·GT150S	222.6
GJ8	G8·(GT8)·GT200·(G8S)·G200S·GT200S	300
GJ10	G10·(GT10)·GT250	340
GJ12	G12·GT12	380
GJ15	G15·GT15	450
GJ18	G18·GT18	500
GJ24	G24	800

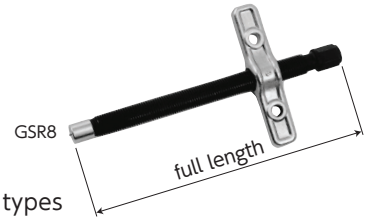


- Common for G, GL, GLL types

Bolt, nut, washer with teeth (1 set of 4 pcs)

Item No.	Full length (mm)
GN3	24
GN4	32.5
GN6	42
GN8	48

Item No.	Full length (mm)
GN10	52
GN12	57
GN15	63
GN18	63
GN24	84

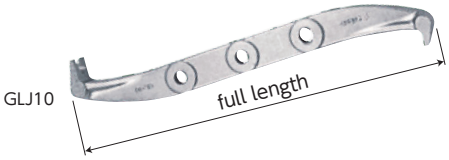


- No adaptor for GSR3
- Common for G, GL, GLL types

Forcing screw, body (with adaptor)

Item No.	Full length (mm)
GSR3	120
GSR4	149
GSR6	210
GSR8	300

Item No.	Full length (mm)
GSR10	314
GSR12	357
GSR15	427
GSR18	485
GSR24	675

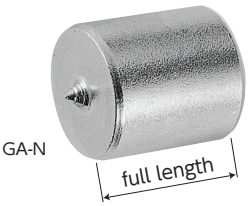


- With longer claws and 3 holes for all size, the reaching range of the claws can be even more extended than GJ claws. (Other parts of GL type are common to G type)

Claw (1 pc)

Item No.	Full length (mm)
GLJ4	221.3
GLJ6	292.6
GLJ8	360

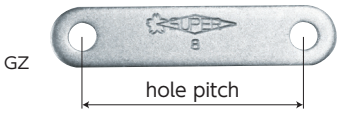
Item No.	Full length (mm)
GLJ10	430
GLJ12	500
GLJ15	550
GLJ18	600



Adaptor (with ball and stop ring)

Item No.	Applicable puller	Full length (mm)	Dia. (mm)
GA4N	G4·GL4·GLL4·(GT4)·GT100·(G4S)·G100S·GT100S·ABT90·ABT90L·ABW200·BS1S	19.8	16
GA6N	G6·GL6·GLL6·(GTW6)·GT150·(G6S)·G150S·GT150S·SSP5·BPS6·BS2S	22	18
GA8N	G8·GL8·GLL8·(GT8)·GT200·(G8S)·G200S·GT200S·SSP8	24.5	20
GA10N	G10·GL10·GLL10·(GT10)·GT12·GT250	31.5	26
GA12N	G12·GL12·GLL12·SSP12	36.5	31
GA15N	G15·GL15·GT15	36.5	35
GA18N	G18·GL18·GT18	46.5	38
GA24N	G24	46.5	44

∗ The items in ( ) are discontinued.



- Common for G, GL, GLL types
- The washer structure can stretch to prevent claw breakage by overload.

Washer (1 set of 4 pcs)

Item No.	Hole pitch (mm)
GZ3	36
GZ4	45
GZ6	55
GZ8	100

Item No.	Hole pitch (mm)
GZ10	110
GZ12	130
GZ15	160
GZ18	190
GZ24	240



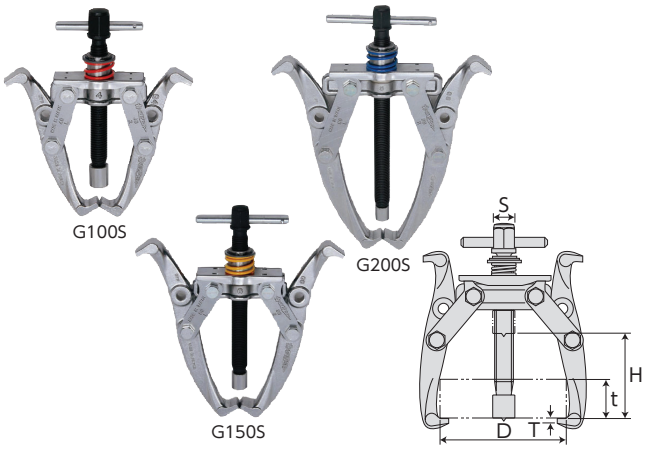
- With longer claws and 3 holes for all size, the reaching range of the claws can be even more extended than GLJ claws. (Other parts of GLL type are common to G type)

Claw (1 pc)

Item No.	Full length (mm)
GLLJ4	259.1
GLLJ6	319.6

Item No.	Full length (mm)
GLLJ8	431
GLLJ10	498.4
GLLJ12	564.8

●For all the appendix of the gear pullers, please refer to P.288



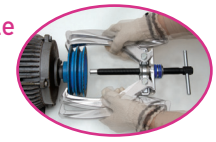
G-S

GEAR PULLER, G Type (Auto-grip Type)

▶ Feature

- The claws close with the force of a spring, allowing easier setting to the object to be pulled and outstanding operability.
  The reaching range of the claws can be extended by setting the longer GL type claws.

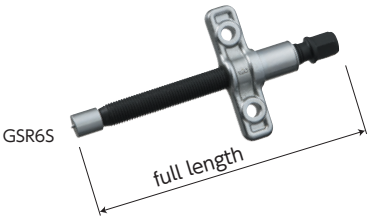
▶ Example of use



Item No.	Size (mm)						Breaking load (kN)	N.W. (kg)
	D	t	H	T	S	Forcing screw dia.		
	Pulled object diameter	Pulled object width when D at max.	Claw reaching length	Claw tip thickness	Forcing screw hex. width across flats			
G100S	50~100	45	90	4.1	17	14	40	0.85
G150S	60~150	60	145	5.3	19	18	60	1.95
G200S	80~200	100	235	6.7	22	22	80	4.3

GSR-S • GB-S • GP-S • GN-S • GZ-S • GC-S

GEAR PULLER, G Type Auto-grip Type Parts (2-claw type)



Forcing screw, body (with adaptor)

Item No.	Applicable puller	Full length (mm)
GSR4S	(G4S)・G100S	154
GSR6S	(G6S)・G150S	215
GSR8S	(G8S)・G200S	311



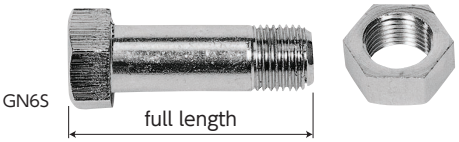
Spring

Item No.	Applicable puller
GB4S	(G4S)・G100S
GB6S	(G6S)・G150S
GB8S	(G8S)・G200S



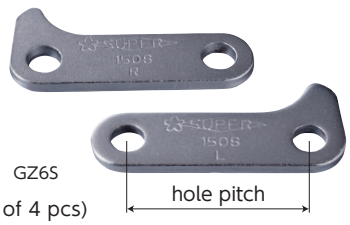
Plate

Item No.	Applicable puller
GP4S	(G4S)・G100S
GP6S	(G6S)・G150S
GP8S	(G8S)・G200S



Bolt, nut (1 set of 4 pcs)

Item No.	Applicable puller	Full length (mm)
GN4S	(G4S)・G100S	32.5
GN6S	(G6S)・G150S	42
GN8S	(G8S)・G200S	48



Washer (1 set of 4 pcs)

Item No.	Applicable puller	Hole pitch (mm)
GZ4S	(G4S)・G100S	45
GZ6S	(G6S)・G150S	55
GZ8S	(G8S)・G200S	100



Washer, C type stop ring

Item No.	Applicable puller
GC4S	(G4S)・G100S
GC6S	(G6S)・G150S
GC8S	(G8S)・G200S

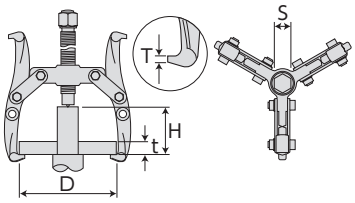
∗ The items in ( ) are discontinued.

★Claws and adaptors are common parts (see P.157)
●For all the appendix of the gear pullers, please refer to P.288



▶ Accessories

GP grease (10g) included for GT12·15·18



GT

GEAR PULLER, GT Type (3-claw Type)

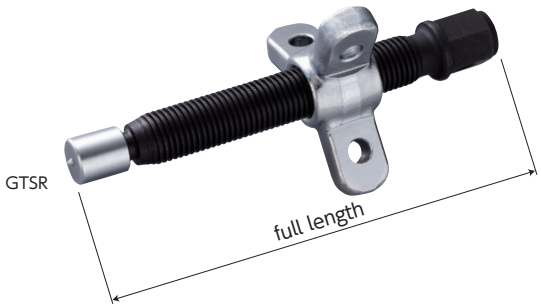
▶ Features

- The reaching range of the claws can be extended by shifting the claw holes (2 holes for GT100～250, 3 holes for GT12～18).
- The load is more stable than with 2-claw type.
- The steel ball inside the adaptor significantly reduces frictional resistance.
- H indicates the claw reaching length when, with D at shortest length, the forcing screw is lifted to the highest point.

Item No.	Size (mm)					Forcing screw dia.	Number of claw hole	Breaking load ((kN)	N.W. (kg)
	D	t	H	T	S				
	Pulled object diameter	Pulled object width when D at max.	Claw reaching length	Claw tip thickness	Forcing screw hex. width across flats				
GT100	50～100	45	85	4.1	19	18	2	50	1.2
GT150	60～150	60	140	5.3	22	22	2	75	2.8
GT200	80～200	100	230	6.7	30	28	2	100	7
GT250	100～250	120	245	7.4	32	32	2	125	9.5
GT12	120～300	125	275	8	32	32	3	125	14
GT15	150～375	130	320	8.7	41	38	3	150	18.5
GT18	180～450	140	370	9.8	46	44	3	180	26

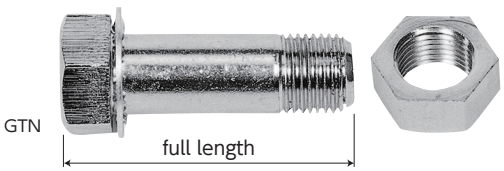
GTSR • GTN • GTZ

GEAR PULLER GT Type Parts



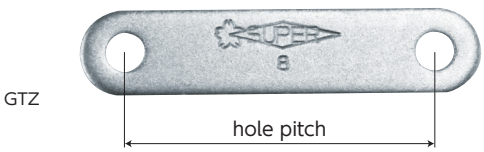
▮Forcing screw, body (with adaptor)

Item No.	Applicable puller	Full length (mm)
GTSR4	(GT4)·GT100	169
GTSR6	(GTW6)·GT150	220
GTSR8	(GT8)·GT200	331
GTSR10	(GT10)·GT250	365
GTSR12	GT12	365
GTSR15	GT15	419
GTSR18	GT18	472



▮Bolt, nut, washer with teeth (1 set of 6 pcs)

Item No.	Applicable puller	Full length (mm)
GTN4	(GT4)·GT100	32.5
GTN6	(GTW6)·GT150	42
GTN8	(GT8)·GT200	48
GTN10	(GT10)·GT250	52
GTN12	GT12	57
GTN15	GT15	63
GTN18	GT18	63



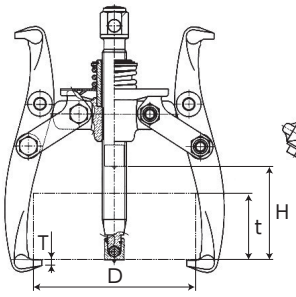
▮Washer (1 set of 6 pcs)

Item No.	Applicable puller	Hole pitch (mm)
GTZ4	(GT4)·GT100	45
GTZ6	(GTW6)·GT150	55
GTZ8	(GT8)·GT200	100
GTZ10	(GT10)·GT250	110
GTZ12	GT12	130
GTZ15	GT15	160
GTZ18	GT18	190

∗ The items in ( ) are discontinued.

★Claws and adaptors are common parts (see P.157)
●For all the appendix of the gear pullers, please refer to P.288


GT200S



GT-S

GEAR PULLER, GT Type (Auto-grip Type)

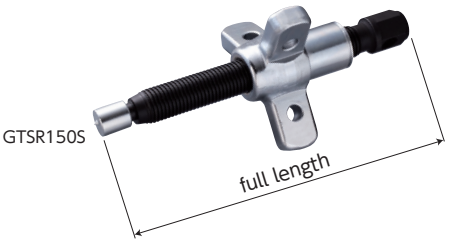
▶ Feature

- The claws close with the force of a spring, allowing easier setting to the object to be pulled and outstanding operability.
  The reaching range of the claws can be extended by setting the longer GL type claws.

Item No.	Size (mm)						Breaking load (kN)	N.W. (kg)
	D	t	H	T	S	Forcing screw dia.		
	Pulled object diameter	Pulled object width when D at max.	Claw reaching length	Claw tip thickness	Forcing screw hex. width across flats			
GT100S	50~100	45	80	4.1	19	18	50	1.5
GT150S	60~150	60	135	5.3	22	22	75	3.4
GT200S	80~200	100	225	6.7	30	28	100	8.8

GTSR-S • GTB-S • GTP-S • GTN-S • GTZ-S • GTC-S

GEAR PULLER, GT Type Auto-grip Type Parts (3-claw type)



Forcing screw, body (with adaptor)

Item No.	Applicable puller	Full length (mm)
GTSR100S	GT100S	169
GTSR150S	GT150S	220
GTSR200S	GT200S	331


GTB150S

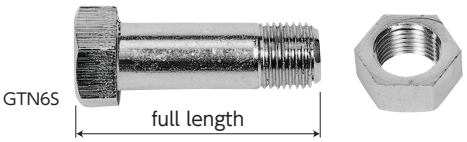
Spring

Item No.	Applicable puller
GTB100S	GT100S
GTB150S	GT150S
GTB200S	GT200S


GTP150S

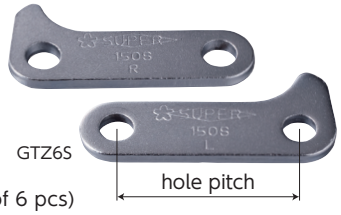
Plate

Item No.	Applicable puller
GTP100S	GT100S
GTP150S	GT150S
GTP200S	GT200S



Bolt, nut (1 set of 6 pcs)

Item No.	Applicable puller	Full length (mm)
GTN4S	GT100S	32.5
GTN6S	GT150S	42
GTN8S	GT200S	48



Washer (1 set of 6 pcs)

Item No.	Applicable puller	Hole pitch (mm)
GTZ4S	GT100S	45
GTZ6S	GT150S	55
GTZ8S	GT200S	100

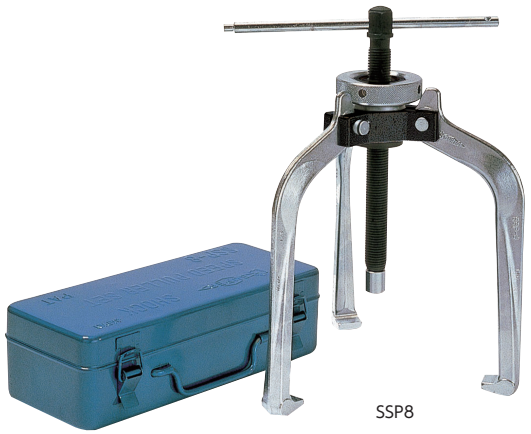

GTC150S

Washer, C type stop ring

Item No.	Applicable puller
GTC100S	GT100S
GTC150S	GT150S
GTC200S	GT200S

★Claws and adaptors are common parts (see P.157)

●For all the appendix of the gear pullers, please refer to P.288



SSP8

SSP

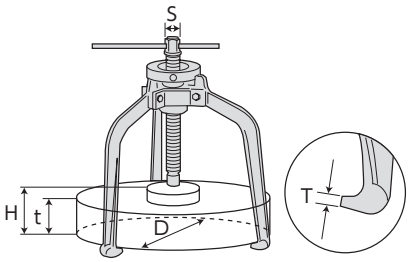
SHOCK SPEED PULLER SET (Heavy Duty Type for Professional Use)

▶ Features

- Outstanding pulling force for burned or rusted gears or pulleys, by giving impacts to the forcing screw with a hammer (No other pullers have this unique mechanism).
- Steel case as standard acc.
- H indicates the claw reaching length when, with D at shortest length, the forcing screw is lifted to the highest point.

▶ Example of use





▶ Accessories

GP grease (10g) (all size)



Hex key wrench (all size)



Super head spanner (SSP5·8)



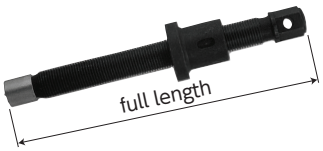
Single-size ratchet wrench with grip (SSP12)



Item No.	Size (mm)						Guaranteed load (kN)	Set N.W. (kg)
	D	t	H	T	S	Forcing screw dia.		
	Pulled object diameter	Pulled object width when D at max.	Claw reaching length	Claw tip thickness	Forcing screw hex. width across flats			
SSP5	55~125	125	140	5	19	18	50	3
SSP8	80~200	175	200	7	22	22	100	6
SSP12	120~300	225	270	9	32	32	200	17

SPSR • SPJ • SPN • SPA • SPB • SPH • SPU

SHOCK SPEED PULLER Parts



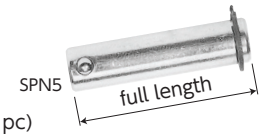
▮Forcing screw, body (with adaptor)

Item No.	Full length (mm)
SPSR5	208
SPSR8	270
SPSR12	355



▮Claw (1 pc)

Item No.	Full length (mm)
SPJ5	210
SPJ8	296
SPJ12	400



▮Pin (1 pc)

Item No.	Full length (mm)
SPN5	33.5
SPN8	44.5
SPN12	66.4



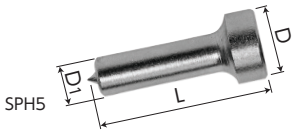
▮Adjustment screw

Item No.
SPA5
SPA8
SPA12



▮Body

Item No.
SPB5
SPB8
SPB12



▮Auxiliary adaptor with step

Item No.	Size (mm)		
	L	D	D1
SPH5	45	18	10
SPH8	60	20	13
SPH12	85	26	15



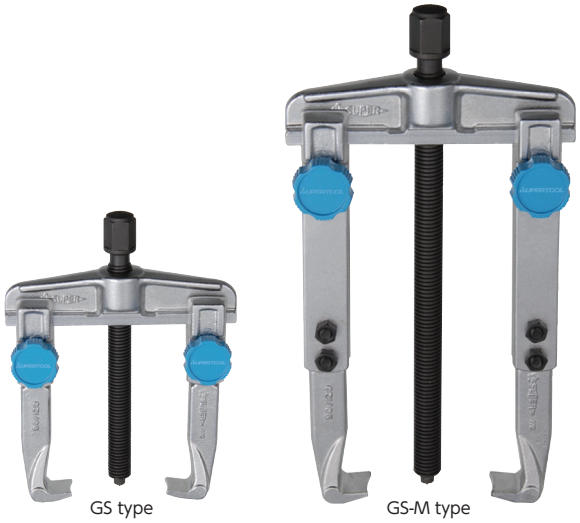
▮Handle

Item No.
SPU5
SPU8
SPU12

●For all the appendix of the gear pullers, please refer to P.288

GS • GS-M

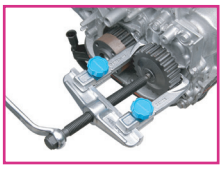
SLIDING GEAR PULLER, GS Type

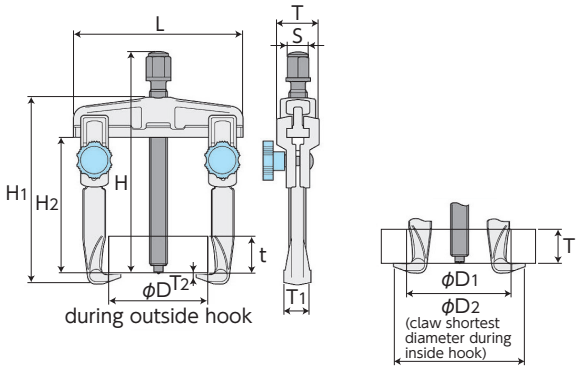


▶ Features

- The claws slide horizontally and show great pulling capacities in confined places.
- By resetting the claws, the puller can fit for both outside and inside hook.
- The claw position fixing can be easily achieved just by turning the knob.
- The GS-M type has a long claw reaching length and appropriate forcing screw length allowing efficient operations. Ideal especially for operations like motor disassembly.

▶ Example of use





Type	Item No.	Size (mm)														Guaranteed load (kN)	N.W. (kg)
		Pulled object size				L	H	H1	H2	T	S	T1	T2	Forcing screw dia.			
		External dia. D during outside hook	External dia. D1 during inside hook	D2	Max. width t				Claw reaching length		Forcing screw hex. width across flats	Claw tip width	Claw tip thickness				
GS Type	**GS90**	15~90	70~140	91	100	136	170	142	103	35	17	21.5	3	14		45	1
	GS120	20~120	70~180	94		176		148									1.2
	GS160	25~160	100~220	126	155	220	240	212	160	43	19	26	4.5	18		60	2.6
	GS200	25~200	100~260	128		260		218									2.9
GS-M Type	**GS90M**	15~90	70~140	91	175	136	245	217	178	35	17	21.5	3	14		45	1.6
	GS120M	20~120	70~180	94		176		223									1.8
	GS160M	25~160	100~220	126	305	220	390	362	310	43	19	26	4.5	18		60	4.1
	GS200M	25~200	100~260	128		260		368									4.4

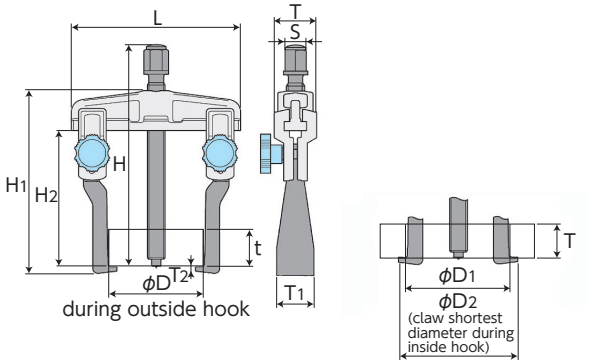
GS-T • GS-TM

SLIDING GEAR PULLER, GS-T Type (Thin Claw Type)



▶ Feature

- The thin claws show great pulling capacities for objects where you don't have enough space to set conventional gear puller claws.

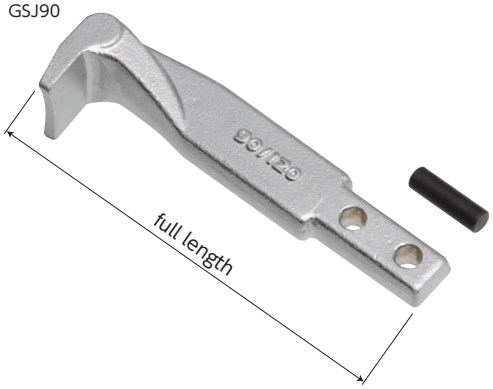


Type	Item No.	Size (mm)														Guaranteed load (kN)	N.W. (kg)
		Pulled object size				L	H	H1	H2	T	S	T1	T2	Forcing screw dia.			
		External dia. D during outside hook	External dia. D1 during inside hook	D2	Max. width t				Claw reaching length		Forcing screw hex. width across flats	Claw tip width	Claw tip thickness				
GS-T Type	**GS90T**	20~90	80~140	91	100	136	170	137	103	35	17	28	2.7	14		20	1.1
	GS120T	25~120	80~180	94		176		143									1.3
	GS160T	30~160	110~220	131	155	220	240	211	160	43	19	32	3.5	18		35	2.9
	GS200T	30~200	110~260	133		260		216									3.2
GS-TM Type	**GS90TM**	20~90	80~140	91	175	136	245	212	178	35	17	28	2.7	14		20	1.6
	GS120TM	25~120	80~180	94		176		218									1.8
	GS160TM	30~160	110~220	131	305	220	390	361	310	43	19	32	3.5	18		35	4.2
	GS200TM	30~200	110~260	133		260		366									4.5

●For all the appendix of the gear pullers, please refer to P.288

GSJ • GSJ-T • GSB • GSS • GSS-M • GSH-S • GSH-MS
SLIDING GEAR PULLER Parts

GSJ90



GSJ-T



GSB



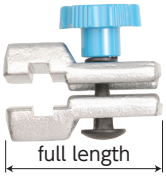
GSS



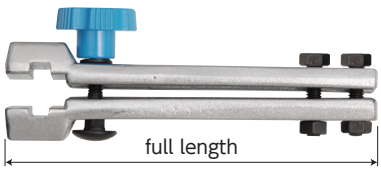
GSS-M



GSH-S



GSH-MS



■Claw (1 pc) with pin

Item No.	Applicable puller	Full length (mm)
GSJ90	GS90·120·90M·120M	103
GSJ160	GS160·200·160M·200M	155

■Thin claw (1 pc) with pin

Item No.	Applicable puller	Full length (mm)
GSJ90T	GS90T·120T·90TM·120TM	97.7
GSJ160T	GS160T·200T·160TM·200TM	152.5

■Body

Item No.	Applicable puller
GSB90	GS90·90M·90T·90TM
GSB120	GS120·120M·120T·120TM
GSB160	GS160·160M·160T·160TM
GSB200	GS200·200M·200T·200TM

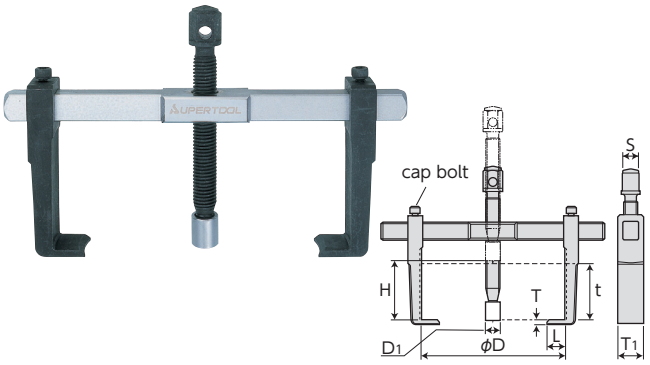
■Forcing screw (with adaptor)

Item No.	Applicable puller	Full length (mm)
GSS90	GS90·120·90T·120T	170
GSS160	GS160·200·160T·200T	240
GSS90M	GS90M·120M·90TM·120TM	245
GSS160M	GS160M·200M·160TM·200TM	390

■Hook set (with knob, bolt, washer)

Item No.	Applicable puller	Full length (mm)
GSH90S	GS90·120·90T·120T	55
GSH160S	GS160·200·160T·200T	71
GSH90MS	GS90M·120M·90TM·120TM	130
GSH160MS	GS160M·200M·160TM·200TM	221

●For all the appendix of the gear pullers, please refer to P.288



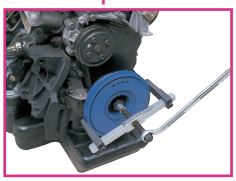
ABW200

SLIDING GEAR PULLER, Super Wide Type

▶ Features

- Ideal for removing car crank pulleys.
- The sliding claws can be fixed to the appropriate position with the cap bolts.
- H indicates the claw reaching length when the forcing screw is lifted to the highest point.

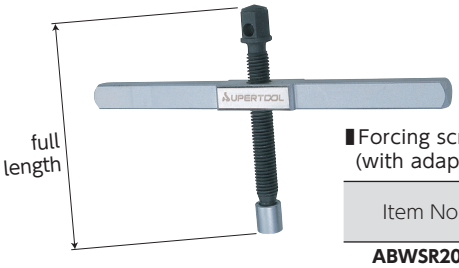
▶ Example of use



Item No.	Size (mm)								Forcing screw dia.	Guaranteed load (kN)	N.W. (kg)
	D	t	D1	H	L	T	T1	S			
	Pulled object diameter	Pulled object max. thickness	Adaptor external dia.	Claw reaching length	Claw tip length	Claw tip thickness	Claw tip width	Forcing screw hex. width across flats			
ABW200	50~200	50	16	50	18	4	28	17	14	30	1.5

ABWSR200 • ABWJ200

SLIDING GEAR PULLER, Super Wide Type Parts



▮Forcing screw, body (with adaptor)

Item No.	Full length (mm)
ABWSR200	138



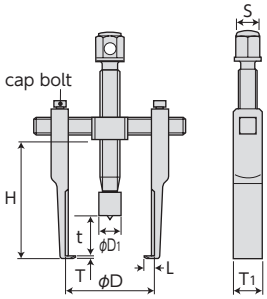
▮Claw (1 pc)

Item No.	Full length (mm)
ABWJ200	98

ABT90 • ABT90L

SLIDING GEAR PULLER, Super Thin Claw Type

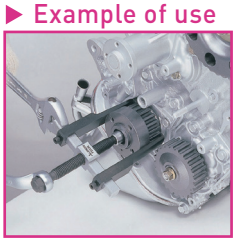




▶ Features

- Ideal for removing pulleys and gears with little space for claws.
- The sliding claws can be fixed to the appropriate position with the cap bolts.
- ABT90L is long claw type.
- H indicates the claw reaching length when the forcing screw is lifted to the highest point.

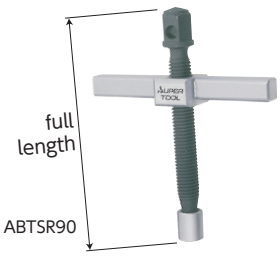
▶ Example of use



Item No.	Size (mm)								Forcing screw dia.	Guaranteed load (kN)	N.W. (kg)
	D	t	D1	H	L	T	T1	S			
	Pulled object diameter	Pulled object max. thickness	Adaptor external dia.	Claw reaching length	Claw tip length	Claw tip thickness	Claw tip width	Forcing screw hex. width across flats			
ABT90	40~90	50	16	70	5	2	22	17	14	25	0.6
ABT90L	40~90	50	16	100	5	2	22	17	14	25	0.8

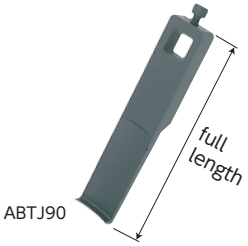
ABTSR90(L) • ABTJ90(L)

SLIDING GEAR PULLER, Super Thin Claw Type Parts



▮Forcing screw, body (with adaptor)

Item No.	Full length (mm)
ABTSR90	138
ABTSR90L	168



▮Claw (1 pc)

Item No.	Full length (mm)
ABTJ90	112.5
ABTJ90L	142.5

●For all the appendix of the gear pullers, please refer to P.288

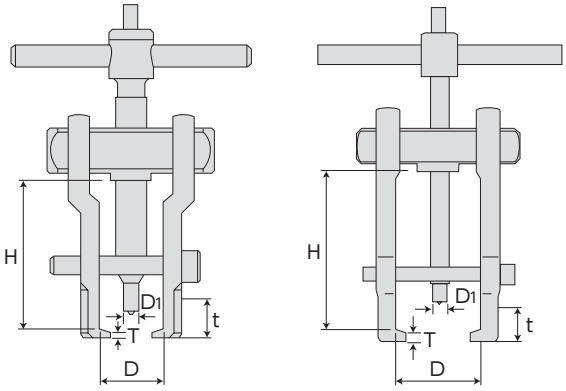


AB0N　　AB1N·2N·3N

AB-N
ARMATURE BEARING PULLER

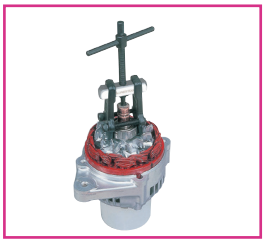
▶ Features

- Ideal for small diameter bearings removing operations in products like electric tools, home appliances or bicycles.
- H indicates the claw reaching length when the forcing screw is lifted to the highest point.



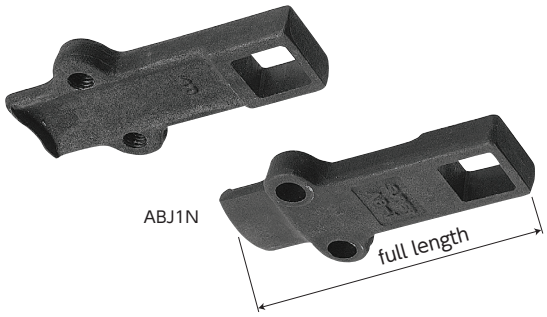
(AB0N)　　(AB1N·2N·3N)

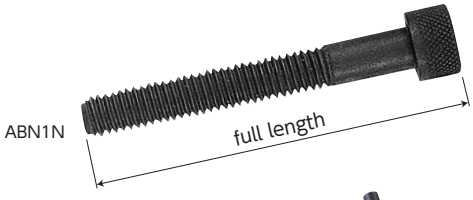
▶ Example of use

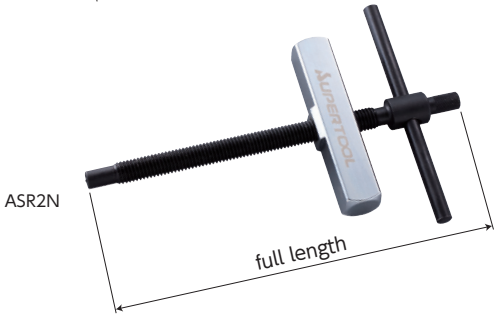


Item No.	Size (mm)						Guaranteed load (kN)	N.W. (kg)
	D	t	D1	H	T	Forcing screw dia.		
	Pulled object dia.	Pulled object max. thickness	Forcing screw end dia.	Claw reaching length				
AB0N	10~25	8	4	40	1	8	6	0.2
AB1N	19~35	8	6	50	1	8	10	0.3
AB2N	24~55	12	8	100	1.2	10	13	0.7
AB3N	35~80	15	12	160	1.5	16	18	1.9

ABJ-N • ABN-N • ASR-N
ARMATURE BEARING PULLER Parts







▮Claw (left / right pair)

Item No.	Full length (mm)
ABJ0N	62
ABJ1N	72
ABJ2N	131
ABJ3N	210

* The claw pair comes as 1 claw with screw holes and 1 claw with bolt holes.

▮Opening stopper bolt (1 pc)

Item No.	Full length (mm)
ABN0N	40
ABN1N	51
ABN2N	78
ABN3N	108

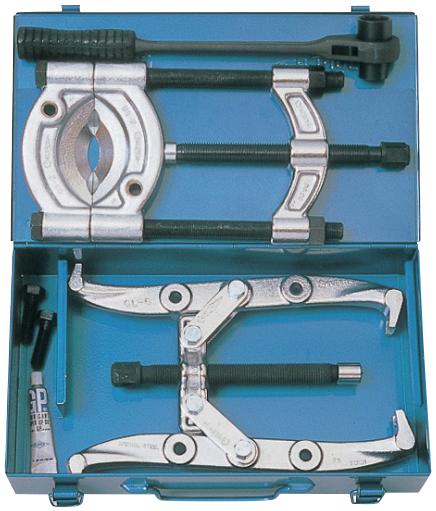
▮Forcing screw, body

Item No.	Full length (mm)
ASR0N	95
ASR1N	105
ASR2N	165
ASR3N	245

●For all the appendix of the gear pullers, please refer to P.288

G1000 • G2000 • G4000

BEARING GRIP PULLER SET (Heavy Duty Type for Professional Use)



G2000

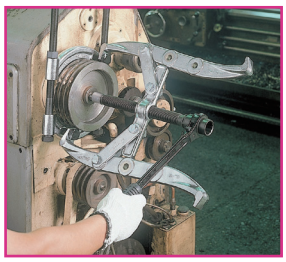
▶ Features

- Ideal for removing bearings and gears with no space.
- Ideal puller set for removing pulleys with large diameter.
- Steel case as standard acc.

▶ Accessories

- GP grease (10g)
- Hook bolt for GL

▶ Example of use



Item No.	Gear puller GL type	Bearing separator	Ratchet wrench with grip	Breaking load (kN)	Set N.W. (kg)
G1000	GL4	BS1S	RNG14×17	40	4
G2000	GL6	BS2S	RNG19×22	60	8
G4000	GL8	BS4	RNG22×27	80	14

P1000 • P2000 • P4000

BEARING PUSH PULLER SET (Heavy Duty Type for Professional Use)



P1000

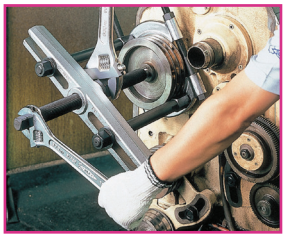
▶ Feature

- Ideal puller set for removing and inserting bearings, gears and pulleys in deep places.
- Steel case as standard acc (special strengthened cardboard case for P4000).

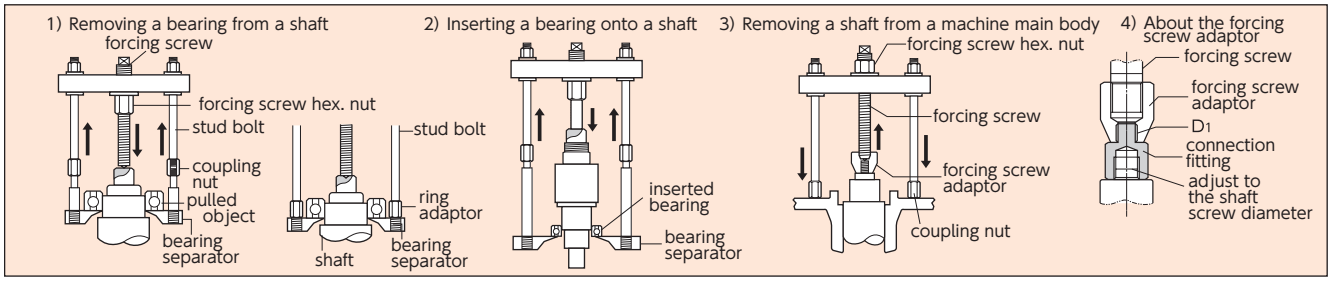
▶ Accessories

- GP grease (10g)

▶ Example of use







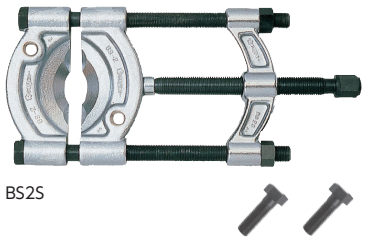
1) Set as shown in the drawing, fix the forcing screw hex. nut with a spanner and tighten the square part of the forcing screw. When the bearing is at the bottom of the shaft, add a stud bolt by connecting with a coupling nut, as shown in the drawing. For P1000, the hole diameter of the separator screw and the external diameter of the stud bolt screw are different. Before use, screw the ring adaptor into the stud bolt.
2) Set as shown in the drawing and follow the operation detailed in 1).
3) Set as shown in the drawing, fix the square part of the forcing screw with a spanner and tighten the forcing screw hex. nut.
4) If the diameters of the forcing screw adaptor and the shaft screw don't match, make a connection fitting separately.

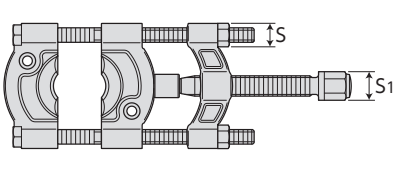
Item No.	Push puller	Forcing screw adaptor	Bearing separator	Ring adaptor	Coupling nut	Stud bolt	Ratchet wrench with grip	Guaranteed load (kN)	Set N.W. (kg)
P1000	PP2	PPN2	BS1S	PPA1 (2pcs)	PCU2 (2pcs)	PSN2125 (2pcs)	RNG14×17	60	7
P2000	PP2	PPN2	BS2S	—	PCU2 (2pcs)	PSN2125 (2pcs)	RNG19×22	100	11
P4000	PP4	PPN4	BS4	—	PCU4 (4pcs)	PSN4115 (2pcs) PSN4420 (2pcs)	RG27	200	22

●For all the appendix of the gear pullers, please refer to P.288

BS • BS-S

BEARING SEPARATOR (Heavy Duty Type for Professional Use)

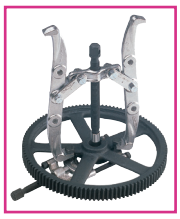




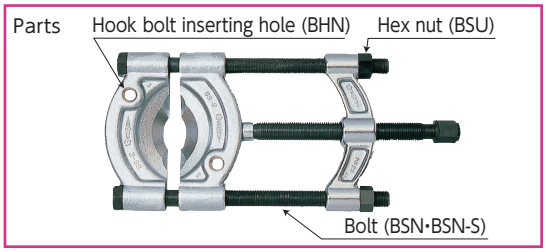
▶ Features

- Ideal for removing bearings and gears with no spaces for G or GL type claws.
- Ideal for removing pulleys with large perimeter.

▶ Example of use



Item No.	Size (mm)						Guaranteed load (kN)	N.W. (kg)	Applicable puller	
	D·applicable diameter	H	L	D1	S1	S			Gear puller (GL·GLL type)	Push puller
			Bolt length	Body screw dia.	Forcing screw hex width across flats	Nut hex width across flats				
BS1	6~60	60	120	M10	—	14	60	0.5	GL·GLL4	PP2
BS1S	6~60	60	160	M10	17	14	60	0.9	GL·GLL4	PP2
BS2	9~115	110	205	M12	—	22	100	2.3	GL·GLL6	PP2
BS2S	9~115	110	255	M12	19	22	100	3.5	GL·GLL6	PP2
BS4	25~230	155	330	M16	—	27	200	5	GL·GLL8·10	PP4



BSB • BSR • BHN • BSU • BSN • BSN-S

BEARING SEPARATOR Parts





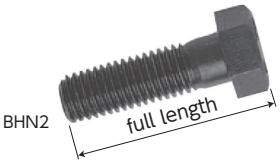
Body (1 set)

Item No.
BSB1
BSB2
BSB4

Speeder (Body, forcing screw set)

Item No.
BSR1
BSR2

∗ The tip of this forcing screw includes an adaptor to reduce frictional resistance.





Hook bolt (1 pc)

Item No.	Size (mm)		
	Screw dia.	Hex. width across flats	Full length
BHN1	M10	17	42
BHN2	M12	19	48
BHN4	M16	24	60

Hex nut (1 pc)

Item No.	Size (mm)	
	Screw diameter	Hex width across flats
BSU1	M10×1	14
BSU2	M16×1.5	22
BSU4	M20×1.5	27





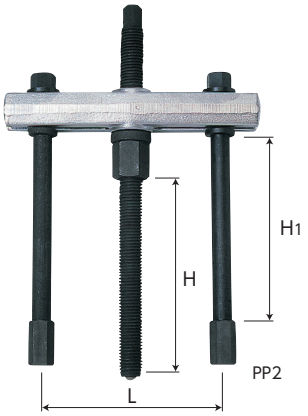
Bolt for BS (1 pc)

Item No.	Size (mm)	
	Nominal diameter	Bolt length
BSN1	M10×1	120
BSN2	M16×1.5	205
BSN4	M20×1.5	330

Bolt for BS1S·2S (1 pc)

Item No.	Size (mm)	
	Nominal diameter	Bolt length
BSN1S	M10×1	160
BSN2S	M16×1.5	255

●For all the appendix of the gear pullers, please refer to P.288



PP

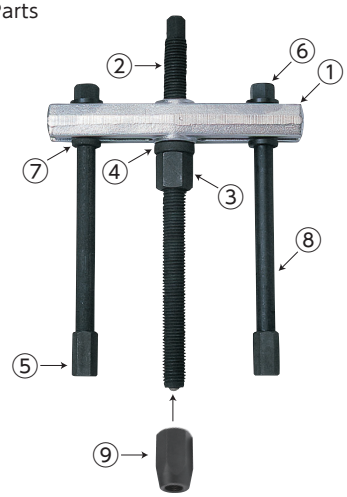
PUSH PULLER (Heavy Duty Type for Professional Use)

▶ Feature

- Setting this push puller with a bearing separator allows even more applications.

Item No.	Size (mm)			Guaranteed load (kN)	Set N.W. (kg)
	L	H Max.	H1		
PP2	65~200	223	150	100	2.7
PP4	90~330	233	245	200	7

Parts



PPB • PPS • PPU • PPZ • PCU • PSU • PSZ • PPA • PSN • PPN

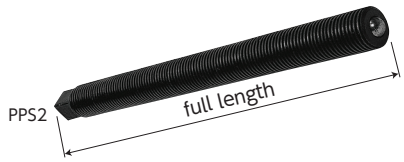
BEARING PUSH PULLER SET Parts



PPB2

Body (①)

Item No.
PPB2
PPB4



PPS2

Forcing screw (②)

Item No.	Size (mm)	
	Screw diameter (30° trapezoidal thread)	Full length
PPS2	TM20×2.5	305
PPS4	TM28×3	340



PPU2

Hex nut for forcing screw (③)

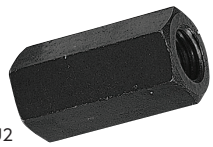
Item No.	Size (mm)	
	Screw diameter (30° trapezoidal thread)	Hex width across flats
PPU2	TM20×2.5	27
PPU4	TM28×3	36



PPZ2

Washer for forcing screw (④)

Item No.
PPZ2
PPZ4



PCU2

Coupling nut (⑤)

Item No.	Size (mm)	
	Screw dia.	Hex width across flats
PCU2	M12	19
PCU4	M16	24



PSU2

Nut with washer for stud bolt (⑥)

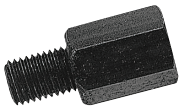
Item No.	Size (mm)	
	Screw dia.	Hex width across flats
PSU2	M12	19
PSU4	M16	24



PSZ2

Washer for stud bolt (⑦)

Item No.
PSZ2
PSZ4



PPA1

Ring adaptor

Item No.	Applicable model	Size (mm)	
		Screw dia.	Hex width across flats
PPA1	for BS1·1S	M12×M10	19

∗ Required only when using a bearing separator.



PSN2150

Stud bolt (1 pc) (⑧)

Item No.	Screw diameter × length (mm)
PSN2125	M12×125
PSN2150	M12×150
PSN4115	M16×115
PSN4245	M16×245
PSN4420	M16×420



PPN2

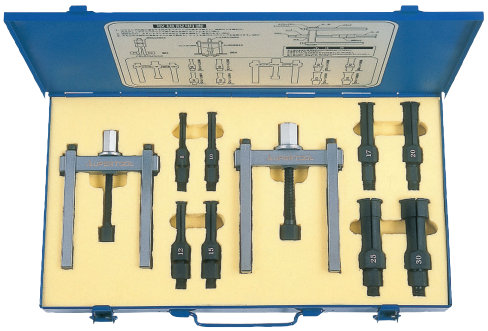
Adaptor for forcing screw (⑨)

Item No.	Size (mm)	
	Forcing screw side dia. (30° trapezoidal thread screw)	Connection side dia. (metric coarse thread screw)
PPN2	TM20×2.5	M16
PPN4	TM28×3	M20

●For all the appendix of the gear pullers, please refer to P.288

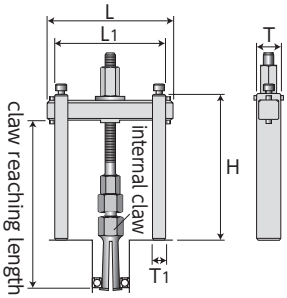

BP15S


BP30S

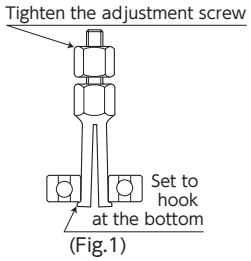

BP30FS

BP-S • BP30FS
BEARING PULLER SET

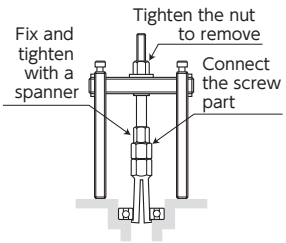
▶ Features



- Dedicated tool set for removing bearings from inner rings.
- Chuck the internal claw on the bearing internal diameter, set on the stand and then the bearing can be removed just by turning the nut.



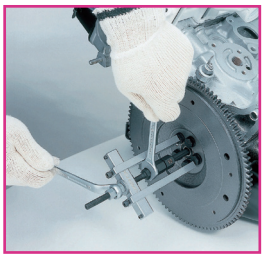
(Fig.1)



(Fig.2)

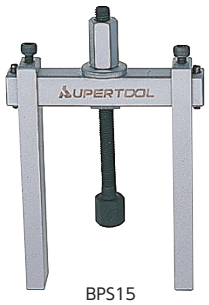
1) Insert the internal claw matching with the bearing internal diameter at the bottom of the bearing, tighten the adjustment screw and set so that the internal claw is firmly hooked to the bottom of the bearing. (Fig.1)
2) Connect and fix the lower part of the standing puller forcing screw to the adjustment screw. (Fig.2)
3) Fix the hex. part of the forcing screw lower part with a spanner, tighten the nut and remove the bearing. (Fig.2)

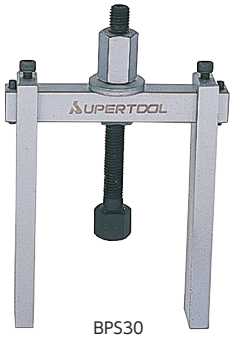
▶ Example of use





Item No.	Size (mm)							Set N.W. (kg)
	Applicable bearing (internal diameter)	L	L1	T	T1	H	Claw reaching length	
BP15S	ϕ8、ϕ10、ϕ12、ϕ15	100	42~88	20	10	120	Max.150	1.5
BP30S	ϕ17、ϕ20、ϕ25、ϕ30	110	47~98	25	10	130	Max.150	2
BP30FS	ϕ8、ϕ10、ϕ12、ϕ15、ϕ17、ϕ20、ϕ25、ϕ30	Set of the 2 items above						3.8


BPS15

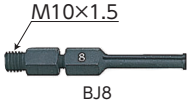

BPS30

BPS • BJ
BEARING PULLER SET Parts

▮Stand set

Item No.	Applicable internal claw
BPS15	BJ 8~15
BPS30	BJ17~30

▮Internal claw



BJ8



BJ10

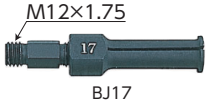


BJ12

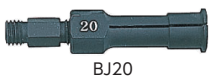


BJ15

Item No.	Applicable stand	Applicable bearing (internal diameter) (mm)
BJ8	BPS15	ϕ8
BJ10	BPS15	ϕ10
BJ12	BPS15	ϕ12
BJ15	BPS15	ϕ15



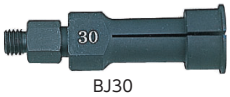
BJ17



BJ20



BJ25

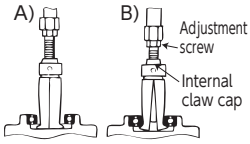


BJ30

Item No.	Applicable stand	Applicable bearing (internal diameter) (mm)
BJ17	BPS30	ϕ17
BJ20	BPS30	ϕ20
BJ25	BPS30	ϕ25
BJ30	BPS30	ϕ30

●For all the appendix of the gear pullers, please refer to P.288





A) Insert the internal claw onto the bearing.
B) Fix the internal claw cap and tighten the adjustment screw.
* The adjustment screw gets pulled out, the internal claw tips open, hook the bearing bottom part and hold the bearing, as shown on Fig. B).

BH32

SLIDE HAMMER BEARING PULLER SET (Heavy Duty Type for Professional Use)

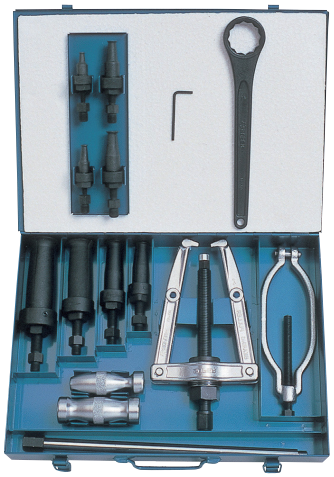
▶ Features

- Dedicated tool set for removing bearings from inner rings.
- Steel case as standard acc.

▶ Example of use



Set item No.	Item name	Item No.	Q'ty	Set N.W. (kg)
BH32	Slide hammer	**BPH6**	1 set	4.5
	Internal claw	**BPJ0~4**	5	



BP60

BEARING PULLER SET (Heavy Duty Type for Professional Use)

▶ Features

- Dedicated tool set for removing bearings from inner and outer rings.
- Steel case as standard acc.

Set item No.	Item name	Item No.	Q'ty	Set N.W. (kg)
BP60	Slide hammer	**BPH6**	1 set	14
	Internal claw	**BPJ0~7**	8	
	Standing puller	**BPS6**	1	
	Opening stopper	**BPU6**	1	
	Single size offset wrench	**BPM6**	1	
	Hex key wrench	**BPX4**	1	

BPS • BPJ • BPH • BPSJ • BPU • BPM

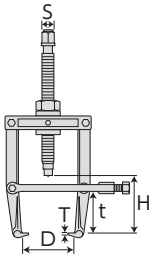
BEARING PULLER SET Parts

▶ Features

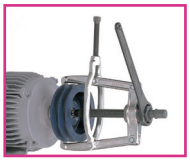
- Dedicated for removing outer ring by setting with the opening stopper (BPU6) for stable operation.
- H indicates the claw reaching length when the forcing screw is lifted to the highest point.

Standing puller





▶ Example of use



Standing puller (outer ring removing ability table)

Item No.	Size (mm)					Breaking load (kN)
	D	t	H	T	S	
	Pulled object		Claw reaching length	Claw tip thickness	Forcing screw hex. width across flats	
	Dia. (external diameter)	Width				
BPS6	45~150	Max. 55	Max. 150	6	22	60

Internal claw (inner ring removing ability table)



Item No.	Pulled object (mm)		Applicable bearing No.
	Dia. (internal dia.)	Width	
BPJ0	10.0~13.0	12	00·01
BPJ1	12.0~15.0	13	01·02
BPJ2	15.0~20.0	15	02·03·04
BPJ3	20.0~25.0	17	04·05

Item No.	Pulled object (mm)		Applicable bearing No.
	Dia. (internal dia.)	Width	
BPJ4	25.0~32.0	20	05·06
BPJ5	34.5~41.5	23	07·08
BPJ6	44.0~51.0	27	09·10
BPJ7	55.0~60.0	31	11·12



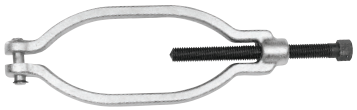
Slide hammer

Item No.	Full length (mm)
BPH6	511



Standing puller claw (1 pc)

Item No.	Full length (mm)
BPSJ	222.8



Opening stopper

Item No.
BPU6



Offset wrench

Item No.
BPM6

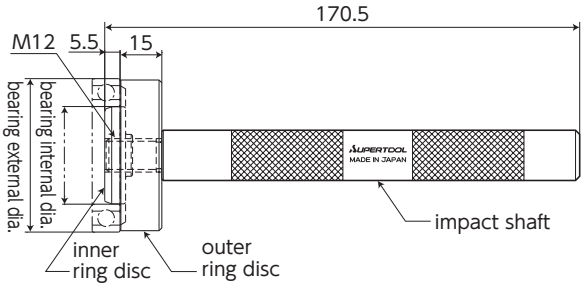
●For all the appendix of the gear pullers, please refer to P.288

BI75S
BEARING INSERTION TOOL SET



▶ Features

- Tool set for inserting bearings onto housings (bearing cases).
- Case external dimensions : 520 × 265 × 90mm



Set item No.	Item name	Q'ty	Set N.W. (kg)
BI75S	Impact shaft	1	6.5
	Outer ring disc	19 sizes	
	Inner ring disc	11sizes	
	Dedicated aluminum case	1	

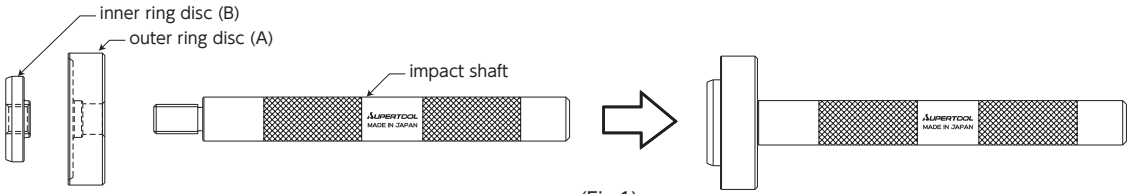
Applicable bearing

Bearing internal dia.	ϕ17、ϕ20、ϕ22、ϕ25、ϕ28、ϕ30、ϕ32、ϕ35、ϕ40、ϕ45、ϕ50
Bearing external dia.	ϕ26、ϕ30、ϕ32、ϕ35、ϕ37、ϕ40、ϕ42、ϕ44、ϕ47、ϕ50、ϕ52、ϕ55、ϕ56、ϕ58、ϕ62、ϕ65、ϕ68、ϕ72、ϕ75

Operation instructions

1) Assembly

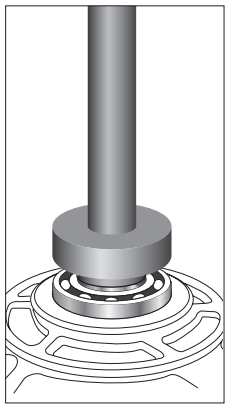
Select the outer ring disc and the inner ring disc matching with the bearing internal and external diameters (the internal and external diameter size of the applicable bearing is displayed on each inserting disc.) . Set the outer ring disc to the impact shaft and then screw in and fix the inner ring disc. (Fig.1)

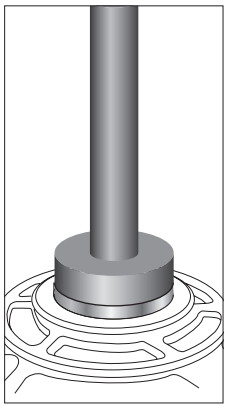


(Fig.1)

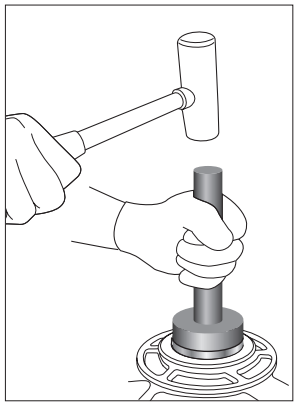
2) Bearing insertion

Insert the inner ring disc onto the bearing inner ring (Fig.2) and hit the impact shaft with a hammer to insert the bearing onto the housing (Fig.3).





(Fig.2)



(Fig.3)

During the operation, check that the bearing is inserted straightly.

●For all the appendix of the gear pullers, please refer to P.288



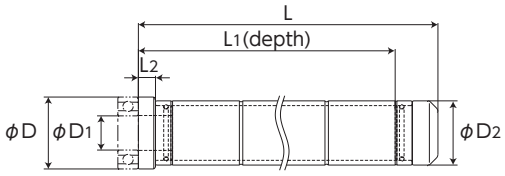
BI50110S

BEARING INSERTION TOOL SET

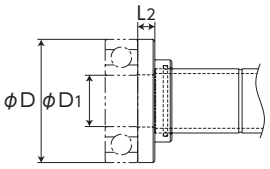
▶ Features

- Tool set for inserting bearings onto shafts or housings (bearing cases).
- Case external dimensions : 445×380×120mm

Set item No.	Item name	Q'ty	Set N.W. (kg)
BI50110S	Main body (impact head already set)	3 sizes	15
	Inserting disc	33 sizes	
	Hammer	1	
	Dedicated aluminum case	1	



Inserting disc (type A)



Inserting disc (type B)

▮Dimensions and applicable bearings

Size(mm)						Inserting disc		Main body name
Applicable bearing		D2	L	L1	L2			
External dia.D	Internal dia.D1					Name	Type	
26	10	25	245	220	10	1026	A	A
30		25	245	220	10	1030	A	A
35		25	245	220	10	1035	A	A
28	12	25	245	220	10	1228	A	A
32		25	245	220	10	1232	A	A
37		25	245	220	10	1237	A	A
32	15	25	245	220	20	1532	B	A
35		25	245	220	20	1535	B	A
42		25	245	220	10	1542	B	A

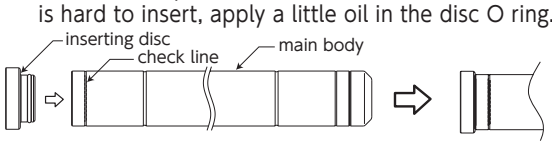
Size(mm)						Inserting disc		Main body name
Applicable bearing		D2	L	L1	L2			
External dia.D	Internal dia.D1					Name	Type	
35	17	25	245	220	20	1735	B	A
40		25	245	220	10	1740	B	A
47		25	245	220	10	1747	B	A
42	20	37.5	245	220	10	2042	A	B
47		37.5	245	220	10	2047	A	B
52		37.5	245	220	10	2052	A	B
47	25	37.5	245	220	20	2547	B	B
52		37.5	245	220	10	2552	B	B
62		37.5	250	225	15	2562	B	B
55	30	37.5	245	220	10	3055	B	B
62		37.5	250	225	15	3062	B	B
72		37.5	250	225	15	3072	B	B
62	35	60	250	225	15	3562	A	C
72		60	245	220	15	3572	B	C
80		60	245	220	15	3580	B	C
68	40	60	250	225	15	4068	A	C
80		60	245	220	15	4080	B	C
90		60	245	220	15	4090	B	C
75	45	60	245	220	15	4575	B	C
85		60	245	220	15	4585	B	C
100		60	245	220	15	45100	B	C
80	50	60	245	220	15	5080	B	C
90		60	245	220	15	5090	B	C
110		60	245	220	15	50110	B	C

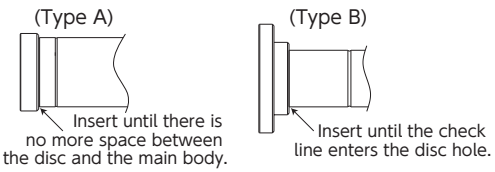
▮Operation instructions

1) Assembly

●Select the inserting discs matching with the bearing internal and external diameters (the internal and external diameter size of the applicable bearing is displayed on each inserting disc.) .

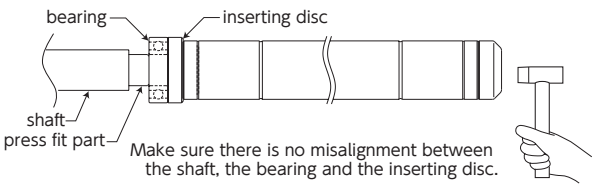
●Insert the inserting disc until the bottom of the main body and fix it (Insert the inserting disc straightly into the main body to avoid crooked insertion. If the disc is hard to insert, apply a little oil in the disc O ring.).



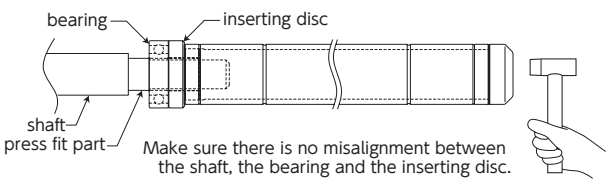


2) Bearing insertion

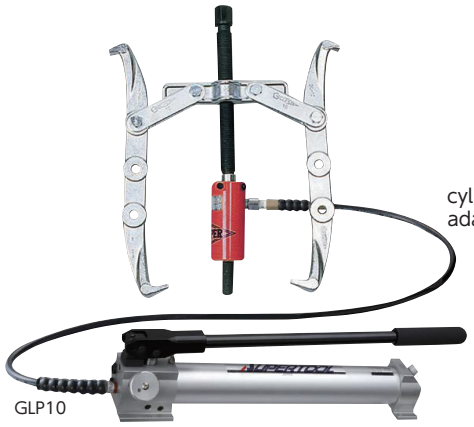
●When inserting to the shaft end :
Set the bearing and the inserting disc to the shaft and insert with the hammer included.

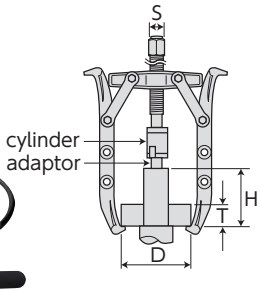


●When inserting to the shaft bottom :
After passing the bearing onto the shaft, pass the shaft onto the inserting disc hole and insert with the hammer included.



●For all the appendix of the gear pullers, please refer to P.288


GLP10



GLP

2-CLAW HYDRAULIC PULLER SET

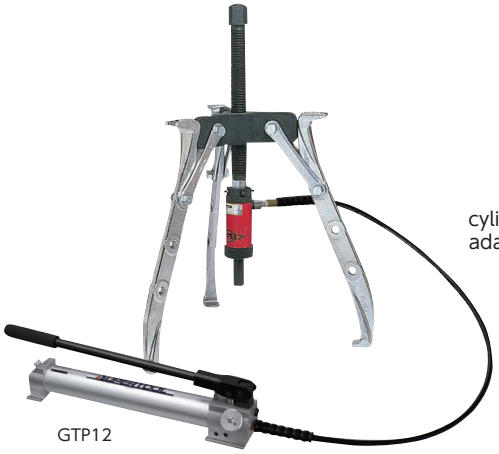
▶ **Feature**
- Easy to remove rusted or burned gears and pulleys with hydraulic power.

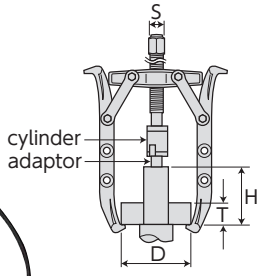
▶ **Accessories**
- Ratchet wrench with grip (RG), each 1 pc

■Set hydraulic pump, hose, cylinder item No.

Set item No.	Hydraulic pump, hose, cylinder
GLP10•12	HP500AN•HH2N•GPC1012
GLP15•18	HP500AN•HH2N•GPC1518
GLP24	HP500AN•HH2N•GPC24

Item No.	Size(mm)							Max. load (kN)	Set N.W. (kg)
	D	T	H		S	Forcing screw external dia.	Cylinder stroke		
			Claw reaching length		Forcing screw hex. width across flats				
	Pulled object diameter	Pulled object width when D is at max.	Cylinder adaptor						
			L in use	S in use					
GLP10	100~250	125	125	150	30	28	50	100	16
GLP12	120~300	170	175	200	32	32	50	100	19
GLP15	150~375	185	180	210	41	38	50	140	27
GLP18	180~450	200	220	250	46	44	50	140	30
GLP24	280~600	175	300	—	46	44	50	230	63


GTP12



GTP

3-CLAW HYDRAULIC PULLER SET

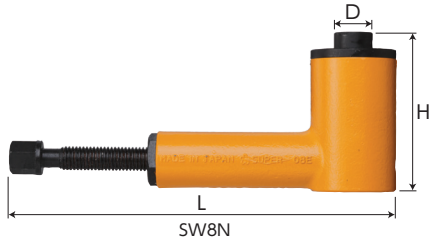
▶ **Features**
- Easy to remove rusted or burned gears and pulleys with hydraulic power.
- The setting is more stable with 3 claws.

▶ **Accessories**
- Ratchet wrench with grip (RG), each 1 pc

■Set hydraulic pump, hose, cylinder item No.

Set item No.	Hydraulic pump, hose, cylinder
GTP10•12	HP500AN•HH2N•GPC1012
GTP15•18	HP500AN•HH2N•GPC1518

Item No.	Size(mm)							Max. load (kN)	Set N.W. (kg)
	D	T	H		S	Forcing screw external dia.	Cylinder stroke		
			Claw reaching length		Forcing screw hex. width across flats				
	Pulled object diameter	Pulled object width when D is at max.	Cylinder adaptor						
			L in use	S in use					
GTP10	100~250	125	125	150	32	32	50	100	20
GTP12	120~300	170	175	200	32	32	50	100	24
GTP15	150~375	185	180	210	41	38	50	140	35
GTP18	180~450	200	220	250	46	44	50	140	42



SW8N

▶ **Example of use**



SW-N

POWER PUSHER

▶ **Features**
- When rusted or burned gears and pulleys are hard to get removed, use the power pusher as shown in the example of use. The hydraulic force of the power pusher enables easy removing operation.
- Can be widely used as a compact high power jack.

Item No.	Size(mm)				Applicable puller		Max. load (kN)	N.W. (kg)
	Stroke	L	H	D	Gear puller	Shock speed puller		
SW8N	15	172~223	88~103	22	8~24	8•12	80	1.6
SW16N		210~284	98~113	25	18•24	12	160	2.7

●For all the appendix of the gear pullers, please refer to P.288



HP500AN

HAND-OPERATED HYDRAULIC PUMP, Aluminum Alloy Body (for Single Action Type Cylinder)

The pump head is made of robust duralumin

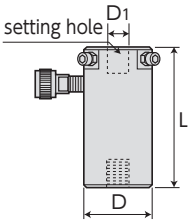
▶ Features

- This aluminum pump net weight is about half of a steel pump.
- Output type pump with high / low pressure 2 steps automatic switching.

Item No.	Output pressure (MPa)	Effective oil quantity (cm³)	Applicable gear puller size	N.W. (kg)
HP500AN	1.4~70	500	10·12·15·18·24	4.5



GPC



GPC

HYDRAULIC PULLER CYLINDER

▶ Feature

- For the gear puller, use with long claws (GLJ).

Item No.	Size (mm)				Applicable gear puller size	Included adaptor	Max. load (kN)	Set N.W. (kg)
	Stroke	L	D	D1				
GPC1012	50	132	57	26/32	10·12	GLA12S、12L	100	2.9
GPC1518	50	178	70	32/40	15·18	GLA18S、18L	140	6
GPC24	50	199	86	40	24	GLA24	230	9.7



HH2N

HYDRAULIC HOSE

▶ Feature

- Can be used with all hand-operated pumps in general.

▶ Accessories

- Coupling HCFN (female) for cylinder side setting

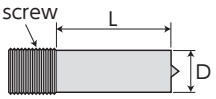
Item No.	Size (mm)			Pressure at max. use (MPa)	Hose material	Included coupling (male)	Connection screw dia. (R)	N.W. (kg)
	Internal dia.	External dia.	Full length					
HH2N	6.35	15	2,000	70	Oilproof synthetic rubber	HCMN	3/8	1.25

GLA-L • GLA-S • GLA24

CYLINDER ADAPTOR



GLA12L



▶ Feature

- Exclusively for GPC use.

Item No.	Size (mm)		Screw	Applicable cylinder	N.W. (g)
	L	D			
GLA12S	30	21	Metric M24×2	GPC1012	110
GLA12L	55				230
GLA18S	35	32	Unified 1-8UNC	GPC1518	300
GLA18L	65				500
GLA24	100	40	Unified 1½-16UNF	GPC24	1,400

GP50

GP GREASE



▶ Feature

- Special lubrication grease with outstanding protection properties against friction and high temperature of gears and screws.

Item No.	Quantity (g)
GP50	50

●For all the appendix of the gear pullers, please refer to P.288

HYDRAULIC TOOLS





Hydraulic cylinders
P.176 ▶



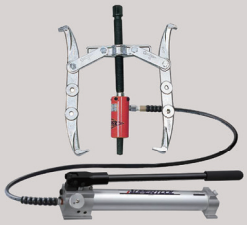
Hydraulic pumps
P.177 ▶



Hydraulic hoses
P.177 ▶



Power pushers
P.178 ▶



Hydraulic puller sets
P.178 ▶



Pipe benders
P.178 ▶

HC-S-N

HYDRAULIC CYLINDER (Single Action Type)



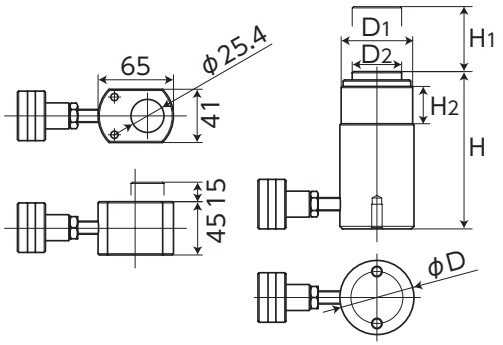
HC10S100N

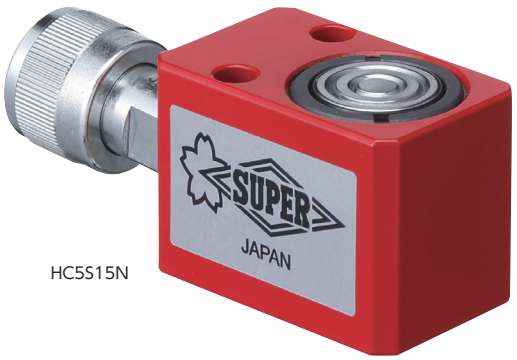
▶ Features

- Single action type with a built-in spring, so that hydraulic fluid moves back and forth inside one single high pressure hose.
- The maximum height is designed at the lowest possible.

Item No. display

HC	5	S	15	N
HC type	lifting capacity (ton) 5:50kN 10:100kN 23:230kN	spring return (S)	stroke (mm)	new type





HC5S15N

Specifications

		50kN			100kN			230kN		
Item No.	Unit	HC5S15N	HC5S25N	HC5S75N	HC10S25N	HC10S50N	HC10S100N	HC23S25N	HC23S50N	HC23S100N
Max. allowable pressure	MPa	70			70			70		
Lifting capacity	kN	50			100			230		
Stroke : H1	mm	15	25	75	25	50	100	25	50	100
Min. height : H	mm	45	97	157	106	122	172	140	166	216
Head diameter : D2	mm	25.4			38.1			57.2		
External diameter : (d×) D	mm	41×65	49		57			85		
Pressure receiving area	cm^2	7.2			14.5			33.2		
Required oil volume	cm^3	11	18	55	37	79	150	86	170	339
Coupling connection opening dia.	Rc	3/8			3/8			3/8		
Included coupling (item No.)	—	HCFN			HCFN			HCFN		
Collar screw diameter : D1.	inch	—	1 13/16"-16		2 1/4"-14			3 5/16"-12		
Collar screw length : H2	mm	—	23		26			49		
N.W.	kg	1.5	2.0	3.0	2.0	2.3	3.3	5.9	6.4	8.2



HP500AN

HP-AN

HAND-OPERATED HYDRAULIC PUMP, Aluminum Alloy Body (for Single Action Type Cylinder)

The pump head is made of robust duralumin

▶ Features

- Aluminum pump net weight is about half of a steel pump.
- Output type pump with high / low pressure 2 steps automatic switching.

Item No.	Effective oil quantity (cm³)	Max. allowable pressure (MPa)		Output quantity by one stroke (cc)		Output opening dia. (Rc)	Outer size (mm) L × H × T (approx.)	N.W. (kg)
		At high pressure	At low pressure	At high pressure	At low pressure			
HP500AN	500	70	1.4	1.6	6.3	3/8	503×120×98	4.5
HP1500AN	1,500	70	1.4	2.8	12.5	3/8	568×150×140	5.6



HP900N

HAND-OPERATED HYDRAULIC PUMP (for Single Action Type Cylinder)

▶ Feature

- Output type pump with high / low pressure 2 steps automatic switching.

Item No.	Effective oil quantity (cm³)	Max. allowable pressure (MPa)		Output quantity by one stroke (cc)		Output opening dia. (Rc)	Outer size (mm) L × H × T (approx.)	N.W. (kg)
		At high pressure	At low pressure	At high pressure	At low pressure			
HP900N	900	70	1.4	2.8	12.5	3/8	510×150×136	7.5


HCFN

HH2N

HYDRAULIC HOSE

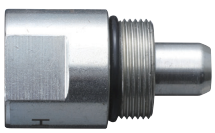
▶ Feature

- Can be used with all hand-operated pumps in general.

▶ Accessories

- Coupling HCFN (female) for cylinder side setting

Item No.	Size (mm)			Max. allowable pressure (MPa)	Hose material	Included coupling (male)	Connection screw dia. (R)	N.W. (kg)
	Internal dia.	External dia.	Full length					
HH2N	6.35	15	2,000	70	Oilproof synthetic rubber	HCMN	3/8	1.25


HCMN


HCFN

HCMN • HCFN

HYDRAULIC COUPLING

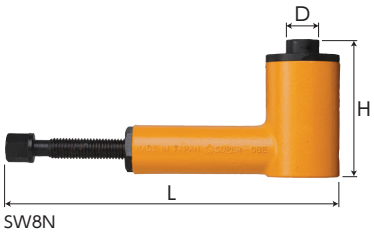
Product renewal for easier pairing with cylinder and hose

▶ Feature

- Generally, when connecting a cylinder to a high pressure hose, set HCFN (female) at the cylinder side and HCMN (male) at the hose side.

Item No.	Applicable hydraulic hose/device (cylinder) (item No.)	Connection screw dia. (R)	N.W. (g)
HCMN (male)	Hydraulic hose : HH2N	3/8	120
HCFN (female)	Hydraulic device : HC5S15N~HC23S100N·SPB520N·SPB1025N	3/8	130

SW-N
POWER PUSHER



SW8N

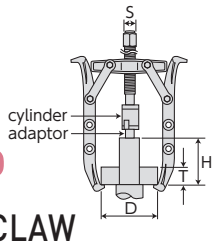
▶ Example of use

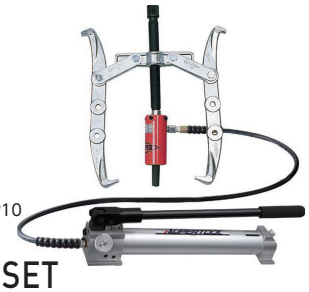


▶ Features
- Can be widely used as a compact high power jack.
- Can be set vertically, horizontally, diagonally, etc., in any direction.
- The piston is using a spring back method, so that when the screw is loosened, the position automatically gets down even with no load.
- When rusted or burned gears and pulleys are hard to get removed, use the power pusher as shown in the example of use. The hydraulic force of the power pusher enables easy removing operation.

Item No.	Size (mm)				Applicable puller		Max. load (kN)	N.W. (kg)
	Stroke	L	H	D	Gear puller	Shock speed puller		
SW8N	15	172~223	88~103	22	8~24	8·12	80	1.6
SW16N	15	210~284	98~113	25	18·24	12	160	2.7

∗ For the applicable gear puller, please refer to the gear puller category (P.156~161)




GLP10

GLP
2-CLAW HYDRAULIC PULLER SET

▶ Feature
- Easy to remove rusted or burned gears and pulleys with hydraulic power.

▶ Accessories
- Ratchet wrench with grip (RG), each 1 piece

Item No.	Size (mm)							Max. load (kN)	Set N.W. (kg)
	D	T	H		S	Forcing screw external dia.	Cylinder stroke		
			Claw reaching length		Forcing screw hex. width across flats				
	Pulled object dia.	Pulled object width when D is at max.	Cylinder adaptor						
			L in use	S in use					
GLP10	100~250	125	125	150	30	28	50	100	16
GLP12	120~300	170	175	200	32	32	50	100	19
GLP15	150~375	185	180	210	41	38	50	140	27
GLP18	180~450	200	220	250	46	44	50	140	30
GLP24	280~600	175	300	—	46	44	50	230	63


SPB1025NPS



SPB-NPS
HYDRAULIC PIPE BENDER PUMP SET (Manual Type)

▶ Features
- For bending (up to 90°) thick (JIS standards) stainless steel pipe, gas pipe, water pipe.
- The attachment bendshoe ensures accurate bending without damaging the pipe.

▶ Accessories
- Attachment bendshoes :
  SPB520N : 10AN, 15AN, 20AN
  SPB1025N : 15AN, 20AN, 25AN
- Hex key wrench for attachment fixing (4mm)

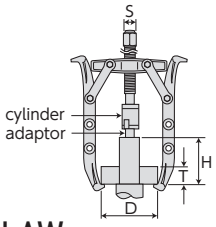
Applicable pipe thickness
10A=min. 2.3mm
15A·20A=min. 2.8mm
25A=min. 3.2mm

⚠ Can be used only for tubes of exact external diameter.
Depending on the pipe material or thickness, the bending may not be accurate.

Set item No.	Set details item No.		
	Bender	Pump	Attachment bendshoe.
SPB520NPS	SPB520N	HP900N	SPB10AN·15AN·20AN
SPB1025NPS	SPB1025N	HP900N	SPB15AN·20AN·25AN

Set item No.	Applicable pipe size name	Bending capacity (kN)	Max. allowable pressure	Set N.W. (kg)
SPB520NPS	10A·15A·20A	50	70MPa	18
SPB1025NPS	15A·20A·25A	100	70MPa	23

GTP
3-CLAW HYDRAULIC PULLER SET



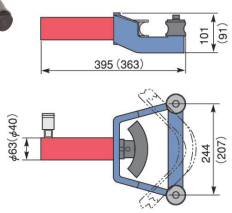

GTP12

▶ Features
- Easy to remove rusted or burned gears and pulleys with hydraulic power.
- The setting is more stable with 3 claws.

▶ Accessories
- Ratchet wrench with grip (RG), each 1 piece

Item No.	Size (mm)							Max. load (kN)	Set N.W. (kg)
	D	T	H		S	Forcing screw external dia.	Cylinder stroke		
			Claw reaching length		Forcing screw hex. width across flats				
	Pulled object dia.	Pulled object width when D is at max.	Cylinder adaptor						
			L in use	S in use					
GTP10	100~250	125	125	150	32	32	50	100	20
GTP12	120~300	170	175	200	32	32	50	100	24
GTP15	150~375	185	180	210	41	38	50	140	35
GTP18	180~450	200	220	250	46	44	50	140	42


SPB1025N



SPB-N
PIPE BENDER (Hydraulic Type)

Note : ( ) sizes for SPB520N

▶ Feature
- Adapted to our hand-operated hydraulic pump and hose.

▶ Accessories
- Attachment bendshoes :
  SPB520N : 10AN, 15AN, 20AN
  SPB1025N : 15AN, 20AN, 25AN
- Hex key wrench for attachment fixing (4mm)

⚠ Can be used only for tubes of exact external diameter.
Depending on the pipe material or thickness, the bending may not be accurate.

Item No.	Applicable pipe size name	Bending capacity (kN)	Max. allowable pressure	Cylinder stroke (mm)
SPB520N	10A·15A·20A	50	70MPa	127
SPB1025N	15A·20A·25A	100	70MPa	150

Item No.	Bending radius (mm)				N.W. (kg)
	10A	15A	20A	25A	
SPB520N	R50	R50	R50		7.5
SPB1025N		R50	R50	R70	12.0

∗ N.W. includes SPB20AN or SPB25AN on each bender.



MICRO AIR GRINDERS & CARBIDE BURS



Micro air grinders
P.180 ▶



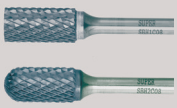
Super carbide burs
ϕ3mm P.182 ▶
ϕ6mm P.184 ▶



Super carbide burs (long shank)
ϕ3mm P.183 ▶
ϕ6mm P.186 ▶



Super carbide burs (titanium coating)
ϕ3mm P.183 ▶
ϕ6mm P.185 ▶



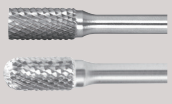
Super carbide burs, hard type (aluminum coating)
ϕ6mm P.185 ▶



Super carbide burs (middle shank)
ϕ6mm P.186 ▶



Super carbide burs (aluminum cut)
ϕ6mm P.187 ▶



Super carbide burs (diamond cut)
ϕ6mm P.187 ▶



Super carbide burs (cylindrical corner R cut shape)
P.188 ▶



MS3H

MS6H

MS-H
MICRO AIR GRINDER (Straight Type)

▶ Features
- Precision machining achieved with high speed rotation and high output.
- Excellent qualitative performance with no decentering vibration, and long-time durability.
- The back exhaust system prevents chips scattering and reduces the noise.

Applications
- Precision grinding of all types of metal molds.
- Deburring, chamfering, polishing, carving and internal surface machining of all types of metal.
- Cutting, grinding and polishing of plastic, stone, wood materials.
- Finishing of all types of welded surfaces.
- Many other purposes such as chamfering complicated round surfaces, internal surfaces or wheels.

Air supplier : nipple R1/4

Item No.	Size (mm)			Max rotation (r.p.m.)	Air supply pressure (MPa)	Air consumption quantity	Main body N.W. (g)
	Chucking dia.	Full length	Main body external dia.				
MS3H	∗φ2.35・φ3	138	φ16	57,000	0.6	160$^{N\ell}$/min	100
MS6H	∗φ3・φ6	160	φ24	30,000	0.6	200$^{N\ell}$/min	260

∗ To use the size with the ∗ mark, purchase the optional collet.


MS3H(φ3collet)

Set details

Item name	Q'ty
MS3H main body	1
Rubber grip	1
Air hose set (1.5m)	1
Double size spanner (6×8mm)	1
Fixing pin (φ3mm)	1
Spindle oil (15cc)	1
Mounted wheel (R3613)	1
Mounted wheel (W31013)	1


MS6H(φ6collet)

Set details

Item name	Q'ty
MS6H main body	1
Air hose set (1.5m)	1
Double size spanner (10×12mm)	2
Spindle oil (15cc)	1
Mounted wheel (R61616)	1
Mounted wheel (R61925)	1


MSK3H2.4

Optional collet

Item No.	Applicable grinder
MSK3H2.4	Collet for MS3H (φ2.35)
MSK6H3	Collet for MS6H (φ3)



R・W
MOUNTED WHEEL (Cylindrical Type)

For MS3H・6H

Applications

R (Red) : For grinding raw materials of alloy steel, tool steel or carbon steel.

W (White) : For grinding quenched materials of alloy steel, tool steel or carbon steel.

Item No.	Size (mm)				Grain size	Q'ty for 1 pack
	L	L1	D	D1		
R3613 (red)	30	13	6	φ3	#80	10
W31013 (white)	30	13	10	φ3	#80	10
R61616 (red)	38	16	16	φ6	#60	5
R61925 (red)	38	25	19	φ6	#60	5

SUPER CARBIDE BURS

The most appropriate bur type can be selected among 4 types.

- A large number of bur shapes that fit well to the workpiece are available.
- Originally developed bur shapes enable smooth work without making any overcuttings even at high speed rotation.

▶ BUR TYPES

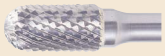
Double cut (W)
Most widely used and excellent cutting and finishing capacity.



Single cut (S)
Fine quality finishing with sharp-edged cutting.



Diamond cut (D)
Thinnest chips obtained and ideal for difficult-to-cut materials



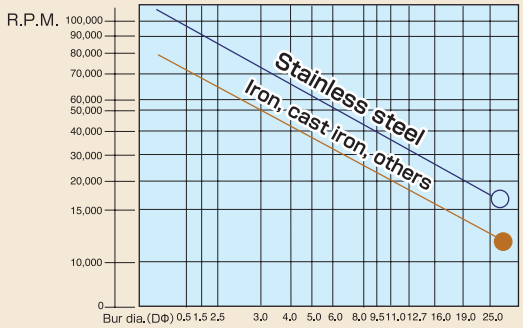
Aluminum Cut (A)
Ideal mainly for aluminum and also for non-ferrous metals and light metals.



▶ BUR TYPE PER MATERIAL

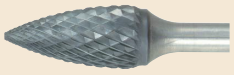
Bur type \ Material	Aluminum	Brass, copper	Fiberglass	Cast iron	Plastic	Iron	Stainless steel	Titanium alloy
Double cut		●		●		●	●	●
Single cut		●		●		●	●	●
Diamond cut			●			●		
Aluminum cut	●				●			

▶ SUPER CARBIDE BURS RECOMMENDED R.P.M.



- Smoother and more secure cutting operation can be performed when applying the above-mentioned bur diameter and rotation speed conditions.

▶ BUR COATING



Aluminum coating

- Aluminum coating is praised for its strong hardness and excellent cutting abilities ● Outstanding durability.
- Ideal for cutting high hardness steel (~55HRC) or SUS.



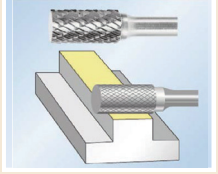
Titanium coating

- The titanium (TiN) coating treatment provides high surface hardness, longer bur life and better cut-ship removal.

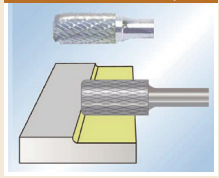
▶ EXAMPLE OF USE PER BUR SHAPE

●Select the bur shape that fits your need. ●Titanium coating (TiN/TiCN coating) burs are also available.

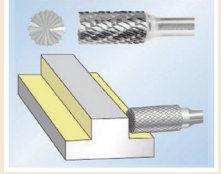
SB1 Cylindrical Shape



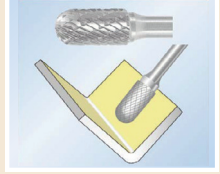
SB1-CR Corner R Cut Shape



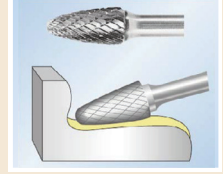
SB1-E Cylindrical End Cut Shape



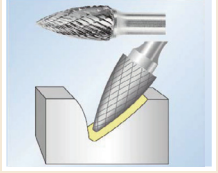
SB2 Cylindrical Ball Nose Shape



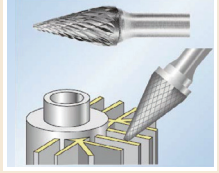
SB3 Round Nose Tree Shape



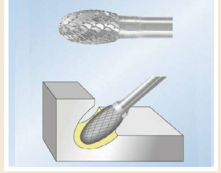
SB4 Pointed Tree Shape



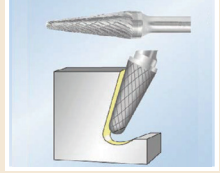
SB5 Pointed Cone Shape



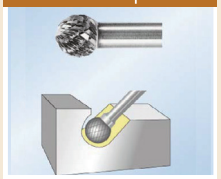
SB6 Egg Shape



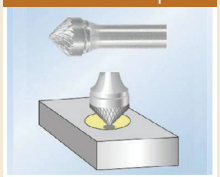
SB7 Tapered Shape



SB8 Ball Shape



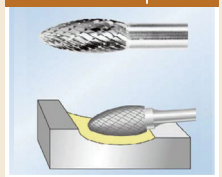
SB49 Pointed Cone Shape 90°



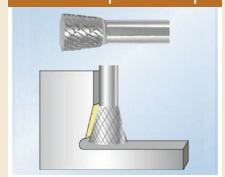
SB50 Pointed Cone Shape 60°



SB51 Flame Shape



SB52 Reverse Tapered Shape



⚠ Caution : (Carbide burs cut with the rotational force.) Do not push too hard, otherwise overheating may cause shank distortion, decentering, bur chipping or head coming off.



SB-A-(E・ES・S)・SB-B-(E・ES・S)・SB-D-(S)
SUPER CARBIDE BUR

Shank diameter ϕ3mm (All carbide)

Shape	Item No. (W. cut)	Item No. (S. cut)	Size (mm) L	L1	D
	SB1A01	SB1A01S	38	6	1.5
	SB1A02	SB1A02S	38	11	2.5
	SB1A03	SB1A03S	38	14	3
	SB1A01E	SB1A01ES	38	14	3
	SB2A01	SB2A01S	38	11	2.5
	SB2A02	SB2A02S	38	14	3
	SB3A01	SB3A01S	38	12.7	3
	SB3A02	SB3A02S	38	6	3
	SB4A01	SB4A01S	38	9.5	3
	SB4A02	SB4A02S	38	6	3
	SB4A03	SB4A03S	38	12.7	3
	SB5A01	SB5A01S	38	16	3 7°
	SB5A02	SB5A02S	38	8.9	3 12°
	SB5A03	SB5A03S	38	11	3 14°
	SB6A01	SB6A01S	38	5.5	3
	SB7A01	SB7A01S	38	12.7	3 8°
	SB7A02	SB7A02S	38	9.5	3 8°
	SB8A01	SB8A01S	38	2.3	2.5
	SB8A02	SB8A02S	38	2.5	3
	SB49A01	SB49A01S	38	1.5	3 90°
	SB50A01	SB50A01S	38	2.5	3 60°
	SB51A01	SB51A01S	38	6.3	3
	SB52A01	SB52A01S	38	4	3 10°

Shank diameter ϕ3mm (All carbide)

Shape	Item No. (W. cut)	Item No. (S. cut)	Size (mm) L	L1	D
	SB1D01	SB1D01S	38	12.7	4
	SB1D02	SB1D02S	38	12.7	5
	SB2D03	SB2D03S	38	12.7	4
	SB2D04	SB2D04S	38	12.7	5
	SB3D08	SB3D08S	38	12.7	5
	SB4D09	SB4D09S	38	12.7	5
	SB5D12	SB5D12S	38	12.7	5 16°
	SB6D07	SB6D07S	38	7.1	5
	SB7D11	SB7D11S	38	12.7	5 14°
	SB8D05	SB8D05S	38	3.4	4
	SB8D06	SB8D06S	38	4.7	5
	SB51D10	SB51D10S	38	9.5	5
	SB52D13	SB52D13S	38	6.3	5 10°

Shank diameter ϕ3mm

Shape	Item No. (W. cut)	Item No. (S. cut)	Size (mm) L	L1	D
	SB1B01	SB1B01S	50	12.7	6.3
	SB1B02E	SB1B02ES	43	4.7	6.3
	SB2B03	SB2B03S	50	12.7	6.3
	SB3B06	SB3B06S	50	12.7	6.3
	SB4B07	SB4B07S	50	12.7	6.3
	SB5B08	SB5B08S	54	12.7	6.3 22°
	SB6B05	SB6B05S	47	9.5	6.3
	SB8B04	SB8B04S	44	5	6.3
	SB52B09	SB52B09S	44	6	6.3 10°

SB-A-(E)- • SBT-A-
SUPER CARBIDE BUR



Shank diameter ϕ3mm (All carbide) Long Shank

Shape	Item No. (W. cut)	Size (mm) L1	Size (mm) D
	SB1A0175	6	1.5
	SB1A0275	11	2.5
	SB1A0375	14	3
	SB1A01E75	14	3
	SB2A0275	14	3
	SB3A0175	12.7	3
	SB4A0375	12.7	3
	SB5A0375	11	3 14"
	SB6A0175	5.5	3
	SB7A0175	12.7	3 8"
	SB8A0275	2.5	3
	SB51A0175	6.3	3



Shank diameter ϕ3mm (All carbide) Long Shank

Shape	Item No. (W. cut)	Size (mm) L1	Size (mm) D
	SB1A01100	6	1.5
	SB1A02100	11	2.5
	SB1A03100	14	3
	SB1A01E100	14	3
	SB2A02100	14	3
	SB3A01100	12.7	3
	SB4A03100	12.7	3
	SB5A03100	11	3 14"
	SB6A01100	5.5	3
	SB7A01100	12.7	3 8"
	SB8A02100	2.5	3
	SB51A01100	6.3	3

⚠ Lower the rotation speed.



Shank dia. ϕ3mm Titanium Coating Type (All carbide)

▶ **Feature** ● The titanium (TiN) coating treatment provides high surface hardness, longer bur life and better cut-chip removal.

Shape	Item No. (W. cut)	Size (mm) L	Size (mm) L1	Size (mm) D
	SBT1A01	38	6	1.5
	SBT1A02	38	11	2.5
	SBT1A03	38	14	3
	SBT2A01	38	11	2.5
	SBT2A02	38	14	3
	SBT3A01	38	12.7	3
	SBT4A01	38	9.5	3

Shape	Item No. (W. cut)	Size (mm) L	Size (mm) L1	Size (mm) D
	SBT4A03	38	12.7	3
	SBT5A01	38	16	3 7"
	SBT5A03	38	11	3 14"
	SBT6A01	38	5.5	3
	SBT7A01	38	12.7	3 8"
	SBT8A01	38	2.3	2.5
	SBT8A02	38	2.5	3

SB3SH • SB3S
SUPER CARBIDE BUR SET


SB3SH



SB3S

▶ **Accessories** ● Plastic case as standard acc.

Shank diameter ϕ3mm (W. cut) 5pcs-set

Set item No.	Set details
SB3SH	SB1A03・SB2A02・SB3A01・SB5A01・SB8A02

Shank diameter ϕ3mm (W. cut) 10pcs-set

Set item No.	Set details
SB3S	SB1A01・SB1A03・SB2A01・SB2A02・SB3A01・SB4A01・SB5A01・SB5A03・SB7A01・SB8A02

SB-C-(E・ES・S)
SUPER CARBIDE BUR

Shank dia. ϕ6mm ★ marked items : all carbide





Item No. (W. cut)	Item No. (S. cut)	Size (mm)		
		L	L1	D
SB1C01★	SB1C01S★	50	16	3
SB1C02★	SB1C02S★	50	16	4
SB1C03★	SB1C03S★	50	16	5
SB1C04★	SB1C04S★	50	16	6
SB1C05	SB1C05S	63	19	8
SB1C06	SB1C06S	63	19	9.5
SB1C07	SB1C07S	69	25	11
SB1C08	SB1C08S	69	25	12.7
SB1C09	SB1C09S	69	25	16
SB1C10	SB1C10S	69	25	19



Item No. (W. cut)	Item No. (S. cut)	Size (mm)		
		L	L1	D
SB1C01E★	SB1C01ES	50	16	3
SB1C02E★	SB1C02ES★	50	16	4
SB1C03E★	SB1C03ES★	50	16	5
SB1C04E★	SB1C04ES★	50	16	6
SB1C05E	SB1C05ES	63	19	8
SB1C06E	SB1C06ES	63	19	9.5
SB1C07E	SB1C07ES	69	25	11
SB1C08E	SB1C08ES	69	25	12.7
SB1C09E	SB1C09ES	69	25	16
SB1C10E	SB1C10ES	69	25	19



Item No. (W. cut)	Item No. (S. cut)	Size (mm)		
		L	L1	D
SB2C01★	SB2C01S★	50	16	3
SB2C02★	SB2C02S★	50	16	4
SB2C03★	SB2C03S★	50	16	5
SB2C04★	SB2C04S★	50	16	6
SB2C05	SB2C05S	63	19	8
SB2C06	SB2C06S	63	19	9.5
SB2C07	SB2C07S	69	25	11
SB2C08	SB2C08S	69	25	12.7
SB2C09	SB2C09S	69	25	16
SB2C10	SB2C10S	69	25	19



Item No. (W. cut)	Item No. (S. cut)	Size (mm)		
		L	L1	D
SB3C01★	SB3C01S★	50	12.7	3
SB3C02★	SB3C02S★	50	16	6
SB3C03	SB3C03S	63	19	9.5
SB3C04	SB3C04S	69	25	11
SB3C05	SB3C05S	69	25	12.7
SB3C06	SB3C06S	69	25	16
SB3C07	SB3C07S	69	25	19



Item No. (W. cut)	Item No. (S. cut)	Size (mm)		
		L	L1	D
SB4C01★	SB4C01S★	50	16	6
SB4C02	SB4C02S	63	19	8
SB4C03	SB4C03S	63	19	9.5
SB4C04	SB4C04S	69	25	12.7
SB4C05	SB4C05S	69	25	16
SB4C06	SB4C06S	69	25	19



Item No. (W. cut)	Item No. (S. cut)	Size (mm)		
		L	L1	D
SB5C01★	SB5C01S★	50	12.7	6 22°
SB5C02★	SB5C02S★	50	19	6 14°
SB5C03★	SB5C03S★	50	25	6 10°
SB5C04	SB5C04S	63	16	9.5 28°
SB5C05	SB5C05S	69	22	12.7 28°
SB5C06	SB5C06S	73	25	16 31°



Item No. (W. cut)	Item No. (S. cut)	Size (mm)		
		L	L1	D
SB6C01★	SB6C01S★	50	9.5	6
SB6C02	SB6C02S	60	16	9.5
SB6C03	SB6C03S	66	22	12.7
SB6C04	SB6C04S	69	25	16
SB6C05	SB6C05S	69	25	19

14°



Item No. (W. cut)	Item No. (S. cut)	Size (mm)		
		L	L1	D
SB7C01★	SB7C01S★	50	16	6
SB7C02	SB7C02S	69	22	8
SB7C03	SB7C03S	74	27	9.5
SB7C04	SB7C04S	76	28	12.7
SB7C05	SB7C05S	77	30	16
SB7C06	SB7C06S	85	38	19



Item No. (W. cut)	Item No. (S. cut)	Size (mm)		
		L	L1	D
SB8C01	SB8C01S	50	2.5	3
SB8C02★	SB8C02S★	50	4	5
SB8C03★	SB8C03S★	50	5	6
SB8C04	SB8C04S	50	6.4	8
SB8C05	SB8C05S	52	8	9.5
SB8C06	SB8C06S	54	9.5	11
SB8C07	SB8C07S	55	11	12.7
SB8C08	SB8C08S	58	14	16
SB8C09	SB8C09S	62	16	19

90°



Item No. (W. cut)	Item No. (S. cut)	Size (mm)		
		L	L1	D
SB49C01★	SB49C01S★	50	3	6
SB49C02	SB49C02S	52	4.7	9.5
SB49C03	SB49C03S	54	6.3	12.7
SB49C04	SB49C04S	57	8	16
SB49C05	SB49C05S	58	9.5	19

60°



Item No. (W. cut)	Item No. (S. cut)	Size (mm)		
		L	L1	D
SB50C01★	SB50C01S★	50	4	6
SB50C02	SB50C02S	55	8	9.5
SB50C03	SB50C03S	58	11	12.7
SB50C04	SB50C04S	61	14.5	16
SB50C05	SB50C05S	65	17.5	19



Item No. (W. cut)	Item No. (S. cut)	Size (mm)		
		L	L1	D
SB51C01	SB51C01S	63	19	8
SB51C02	SB51C02S	76	32	12.7
SB51C03	SB51C03S	80	36	16
SB51C04	SB51C04S	85	41	19

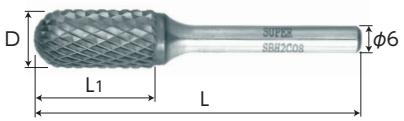


Item No. (W. cut)	Item No. (S. cut)	Size (mm)		
		L	L1	D
SB52C01★	SB52C01S★	50	8	6 10°
SB52C02	SB52C02S	53	9.5	9.5 13°
SB52C03	SB52C03S	57	12.7	12.7 28°
SB52C04	SB52C04S	63	19	16 18°
SB52C05	SB52C05S	60	16	19 30°

SBH-C-(E) • SBT-C-
SUPER CARBIDE BUR

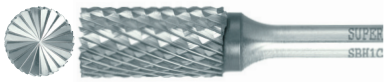
Shank dia. ϕ6mm Hard Type (Aluminum coating : TiAlN)

▶ **Features**
- Bur shape fitted for heavy cutting.
- Ideal for cutting high hardness steel (~55HRC) or SUS.
- Outstanding durability.





Item No. (W. cut)	Size (mm)		
	L	L1	D
SBH1C06	63	19	9.5
SBH1C08	69	25	12.7



Item No. (W. cut)	Size (mm)		
	L	L1	D
SBH1C06E	63	19	9.5
SBH1C08E	69	25	12.7



Item No. (W. cut)	Size (mm)		
	L	L1	D
SBH2C06	63	19	9.5
SBH2C08	69	25	12.7



Item No. (W. cut)	Size (mm)		
	L	L1	D
SBH3C03	63	19	9.5
SBH3C05	69	25	12.7



Item No. (W. cut)	Size (mm)		
	L	L1	D
SBH4C03	63	19	9.5
SBH4C04	69	25	12.7

28°



Item No. (W. cut)	Size (mm)		
	L	L1	D
SBH5C05	69	22	12.7



Item No. (W. cut)	Size (mm)		
	L	L1	D
SBH6C02	60	16	9.5
SBH6C03	66	22	12.7

14°



Item No. (W. cut)	Size (mm)		
	L	L1	D
SBH7C03	74	27	9.5
SBH7C04	76	28	12.7



Item No. (W. cut)	Size (mm)		
	L	L1	D
SBH8C05	52	8	9.5
SBH8C07	55	11	12.7

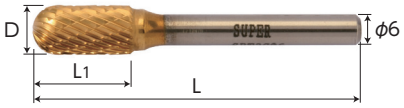


Item No. (W. cut)	Size (mm)		
	L	L1	D
SBH51C02	76	32	12.7

Shank dia. ϕ6mm Titanium Coating Type

★ marked items : all carbide

▶ **Feature** ● The titanium (TiN) coating treatment provides high surface hardness, longer bur life and better cut-chip removal.





Item No. (W. cut)	Size (mm)		
	L	L1	D
SBT1C02★	50	16	4
SBT1C03★	50	16	5
SBT1C04★	50	16	6
SBT1C05	63	19	8
SBT1C06	63	19	9.5



Item No. (W. cut)	Size (mm)		
	L	L1	D
SBT2C02★	50	16	4
SBT2C03★	50	16	5
SBT2C04★	50	16	6
SBT2C05	63	19	8
SBT2C06	63	19	9.5



Item No. (W. cut)	Size (mm)		
	L	L1	D
SBT3C02★	50	16	6
SBT3C03	63	19	9.5



Item No. (W. cut)	Size (mm)		
	L	L1	D
SBT4C01★	50	16	6
SBT4C02	63	19	8
SBT4C03	63	19	9.5



Item No. (W. cut)	Size (mm)		
	L	L1	D
SBT5C02★	50	19	6 (14°)
SBT5C04	63	16	9.5 (28°)



Item No. (W. cut)	Size (mm)		
	L	L1	D
SBT6C02	60	16	9.5

14°



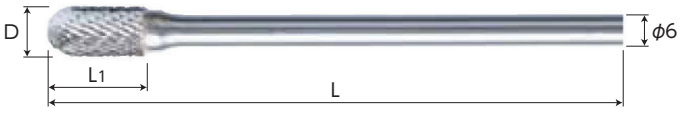
Item No. (W. cut)	Size (mm)		
	L	L1	D
SBT7C01★	50	16	6
SBT7C02	69	22	8
SBT7C03	74	27	9.5



Item No. (W. cut)	Size (mm)		
	L	L1	D
SBT8C03★	50	5	6
SBT8C04	50	6.4	8
SBT8C05	52	8	9.5

SB-C-M • SB-C-(L • SL)
SUPER CARBIDE BUR

Shank dia. ϕ6mm Middle Shank



▶ Feature

- Shank length : 80mm type.



Item No. (W. cut)	Size (mm)		
	L	L1	D
SB1C04M	93	12.7	6
SB1C06M	99	19	9.5
SB1C08M	105	25	12.7



Item No. (W. cut)	Size (mm)		
	L	L1	D
SB2C04M	93	12.7	6
SB2C05M	99	19	8
SB2C06M	99	19	9.5
SB2C08M	105	25	12.7



Item No. (W. cut)	Size (mm)		
	L	L1	D
SB3C02M	93	12.7	6
SB3C03M	99	19	9.5
SB3C05M	105	25	12.7



Item No. (W. cut)	Size (mm)		
	L	L1	D
SB4C01M	93	12.7	6
SB4C03M	99	19	9.5
SB4C04M	105	25	12.7



Item No. (W. cut)	Size (mm)		
	L	L1	D
SB6C01M	90	9.5	6
SB6C02M	96	16	9.5
SB6C03M	102	22	12.7

14°



Item No. (W. cut)	Size (mm)		
	L	L1	D
SB7C01M	96	16	6
SB7C03M	107	27	9.5
SB7C04M	108	28	12.7



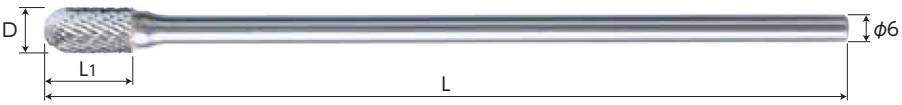
Item No. (W. cut)	Size (mm)		
	L	L1	D
SB8C03M	85	5	6
SB8C04M	86	6.4	8
SB8C05M	88	8	9.5
SB8C07M	91	11	12.7



Item No. (W. cut)	Size (mm)		
	L	L1	D
SB51C01M	99	19	8
SB51C02M	112	32	12.7

⚠ Lower the rotation speed.

Shank dia. ϕ6mm Long Shank



▶ Feature

- Shank length : 150mm type.



Item No. (W. cut)	Item No. (S. cut)	Size (mm)		
		L	L1	D
SB1C04L	**SB1C04SL**	163	12.7	6
SB1C06L	**SB1C06SL**	169	19	9.5
SB1C08L	**SB1C08SL**	175	25	12.7



Item No. (W. cut)	Item No. (S. cut)	Size (mm)		
		L	L1	D
SB2C04L	**SB2C04SL**	163	12.7	6
SB2C06L	**SB2C06SL**	169	19	9.5
SB2C08L	**SB2C08SL**	175	25	12.7



Item No. (W. cut)	Item No. (S. cut)	Size (mm)		
		L	L1	D
SB3C02L	**SB3C02SL**	163	12.7	6
SB3C03L	**SB3C03SL**	169	19	9.5
SB3C05L	**SB3C05SL**	175	25	12.7



Item No. (W. cut)	Item No. (S. cut)	Size (mm)		
		L	L1	D
SB4C01L	**SB4C01SL**	163	12.7	6
SB4C03L	**SB4C03SL**	169	19	9.5
SB4C04L	**SB4C04SL**	175	25	12.7



Item No. (W. cut)	Item No. (S. cut)	Size (mm)		
		L	L1	D
SB6C01L	**SB6C01SL**	160	9.5	6
SB6C02L	**SB6C02SL**	166	16	9.5
SB6C03L	**SB6C03SL**	172	22	12.7

14°



Item No. (W. cut)	Item No. (S. cut)	Size (mm)		
		L	L1	D
SB7C01L	**SB7C01SL**	172	16	6
SB7C03L	**SB7C03SL**	177	27	9.5
SB7C04L	**SB7C04SL**	178	28	12.7



Item No. (W. cut)	Item No. (S. cut)	Size (mm)		
		L	L1	D
SB8C03L	**SB8C03SL**	155	5	6
SB8C05L	**SB8C05SL**	158	8	9.5
SB8C07L	**SB8C07SL**	161	11	12.7



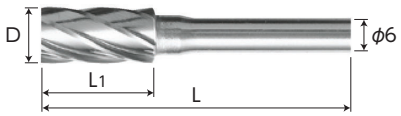
Item No. (W. cut)	Item No. (S. cut)	Size (mm)		
		L	L1	D
SB51C01L	**SB51C01SL**	169	19	8
SB51C02L	**SB51C02SL**	182	32	12.7

⚠ Lower the rotation speed.

SB-C-SA
SUPER CARBIDE BUR

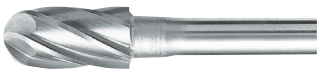
Shank dia. ϕ6mm Aluminum Cut

★ marked items : all carbide





Item No. (S. cut)	Size (mm)		
	L	L1	D
SB1C01SA★	50	19	6
SB1C02SA	63	19	9.5
SB1C03SA	69	25	12.7
SB1C04SA	69	25	16
SB1C05SA	69	25	19



Item No. (S. cut)	Size (mm)		
	L	L1	D
SB2C01SA★	50	19	6
SB2C02SA	63	19	9.5
SB2C03SA	69	25	12.7
SB2C04SA	69	25	19



Item No. (S. cut)	Size (mm)		
	L	L1	D
SB3C01SA★	50	19	6
SB3C02SA	63	19	9.5
SB3C03SA	69	25	12.7
SB3C04SA	69	25	16
SB3C05SA	76	32	19



Item No. (S. cut)	Size (mm)		
	L	L1	D
SB6C01SA	60	16	9.5
SB6C02SA	66	22	12.7
SB6C03SA	69	25	16
SB6C04SA	69	25	19



Item No. (S. cut)	Size (mm)		
	L	L1	D
SB7C01SA	74	27	9.5
SB7C02SA	76	28	12.7
SB7C03SA	77	30	16
SB7C04SA	85	38	19



Item No. (S. cut)	Size (mm)		
	L	L1	D
SB8C01SA★	50	5	6
SB8C02SA	52	8	9.5
SB8C03SA	55	11	12.7
SB8C04SA	58	14	16
SB8C05SA	62	16	19

SB6SH • SB6S-
SUPER CARBIDE BUR SET

▶ Accessories

● Plastic case as standard acc.



Shank dia. ϕ6mm (W. cut) 5pcs-set

Set item No.	Set details
SB6SH	SB1C06・SB2C06・SB3C03・SB7C03・SB8C05



Shank dia. ϕ6mm (W. cut) 10pcs-set

Set item No.	Set details
SB6S1	SB1C06・SB2C06・SB3C03:2pcs/set SB4C03・SB5C04・SB7C03・SB8C05:1pcs/set



Shank dia. ϕ6mm (W. cut) 10pcs-set

Set item No.	Set details
SB6S2	SB1C06・SB2C06・SB3C03:3pcs/set SB8C05:1pcs/set

SB-C-D
SUPER CARBIDE BUR

Shank dia. ϕ6mm Diamond Cut





Item No.	Size (mm)		
	L	L1	D
SB1C01D	63	19	9.5



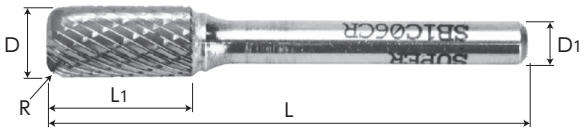
Item No.	Size (mm)		
	L	L1	D
SB2C02D	63	19	9.5



Item No.	Size (mm)		
	L	L1	D
SB3C03D	63	19	9.5

SB1A03CR • SB1C-CR

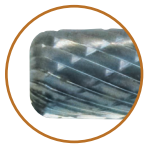
SUPER CARBIDE BUR (Cylindrical Corner R Cut Shape)



▶ Features

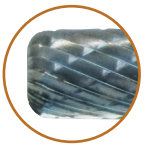
- The corners of the bur tip are rounded, providing a better processing control, a wider processing range and allowing rounded corner processing.
- Avoids bur tip chipping.
- Shows its cutting ability from the beginning of processing, and makes also fine finish.

Corner radius shape





Corner radius shape





SB1C06CR

Shank diameter D1ϕ3mm

★ marked items : all carbide

Item No. (W. cut)	Size (mm)			
	L	L1	D	Corner R
SB1A03CR★	38	14	3	0.7R

Shank diameter D1ϕ6mm

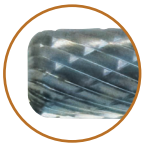
★ marked items : all carbide

Item No. (W. cut)	Size (mm)			
	L	L1	D	Corner R
SB1C04CR★	50	18	6	1.3R
SB1C05CR	64	20	8	1.5R
SB1C06CR	64	19	9.5	1.5R
SB1C08CR	70	25	12.7	2R
SB1C09CR	70	25	16	2.6R

SB6CRSH

SUPER CARBIDE BUR SET (Cylindrical Corner R Cut Shape)

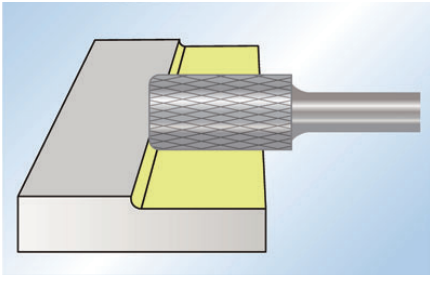
Corner radius shape





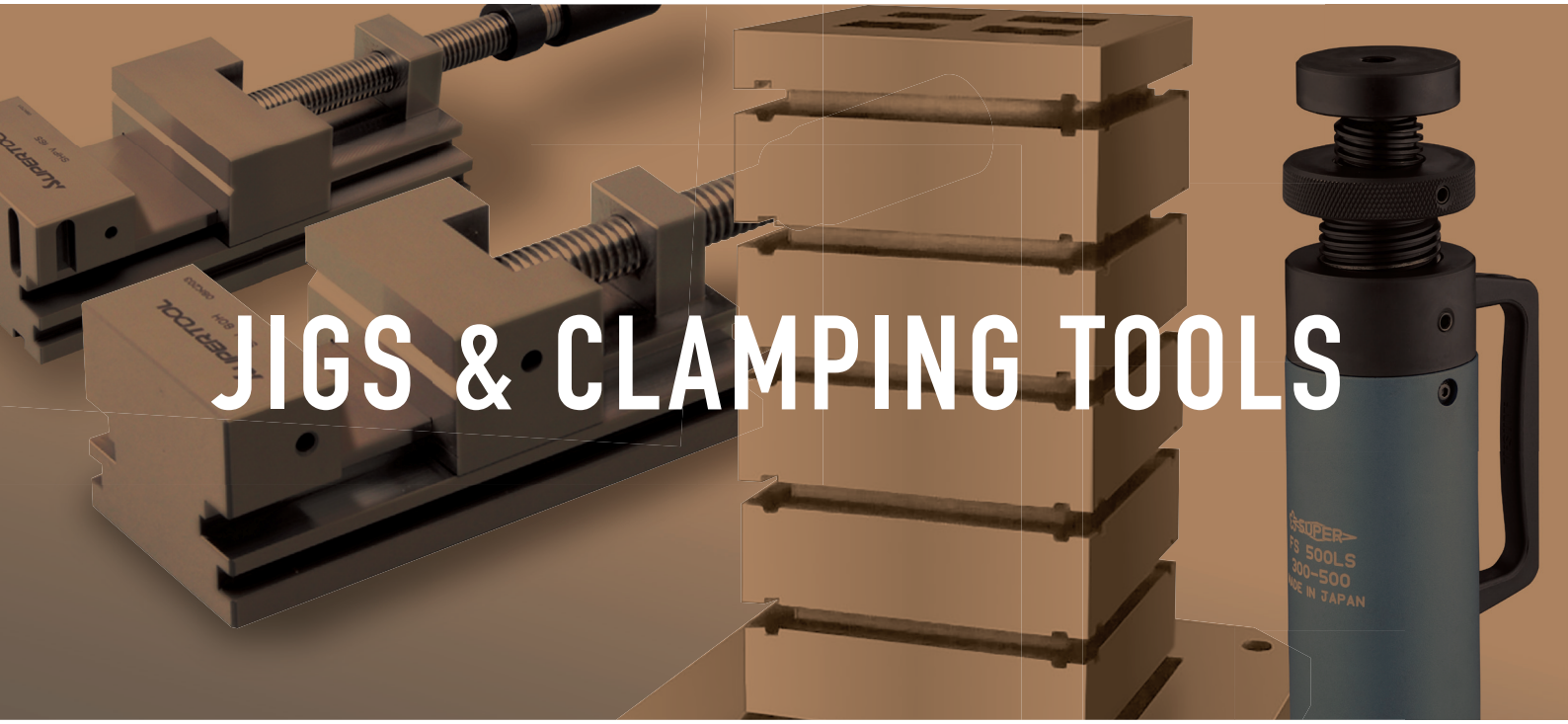
▶ Features

- The corners of the bur tip are rounded, providing a better processing control, a wider processing range and allowing rounded corner processing.
- Avoids bur tip chipping.
- Shows its cutting ability from the beginning of processing, and makes also fine finish.
- Plastic case as standard acc.

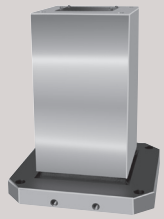


Shank diameter D1ϕ6mm (W. cut) 5pcs-set

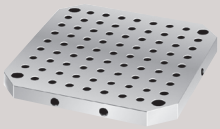
Set item No.	Set details
SB6CRSH	SB1C04CR·SB1C05CR·SB1C06CR·SB1C08CR·SB1C09CR



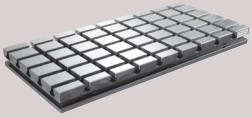
JIGS & CLAMPING TOOLS



Jig blocks
P.192 ▶



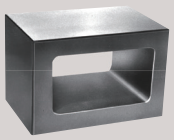
Sub tables
P.213 ▶



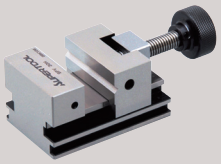
Jig plates
P.216 ▶



Angle plates
P.219 ▶



Setting blocks
P.223 ▶



Precision vises
P.224 ▶



Vacuum chucks
P.226 ▶



Clamp kits
P.227 ▶



Screw supports
P.228 ▶



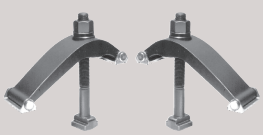
Mini blocks
P.232 ▶



Mini supports
P.232 ▶



Clamping tools
P.233 ▶



Clamps
P.246 ▶



Pin wrench handles
P.254 ▶

JIG CATEGORY

USE OF FC300, BEST SUITABLE MATERIAL FOR JIG BASE

The floor surface and the edge locator standard surface grinded edges realize a high precision finish.

Appealing points! Value type

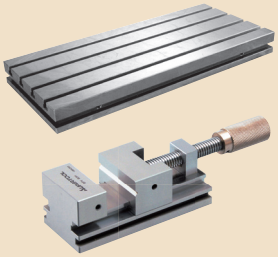
- Affordable price !
- Short delivery time !
- Processing such as tapping hole can be done by the user's machine!





Rich product lineup

Besides blocks, plates, clamping tools, etc. are also available.







Item No. display

Shape			
JA	Angle plate for large device	BC	Cross block
AP	Angle plate	BR	2-face block
PJ	Jig plate	BS	4-face block
PS	Sub table		

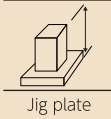
Type			
V	Value type	H	Threaded hole type
B	Bushing type	E	Economy type
T	T-slot type	S	Standard type
TC	Cross T-slot type		

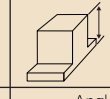
Size of T-slot or bush, size			
A	12mm	D	22mm
B	16mm	E	24mm
C	18mm		14mm

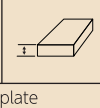
B	S	T	4	5	5	2	0	B	

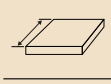
Base size			
8	□800	4	□400
6	□630	3	□300
5	□500		

Size			
4-face block	2-face block	Sub table	
Jig plate	Angle plate		



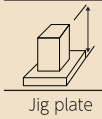


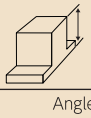


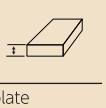


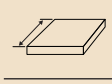


Size			
4-face block	2-face block	Sub table	
Jig plate	Angle plate		











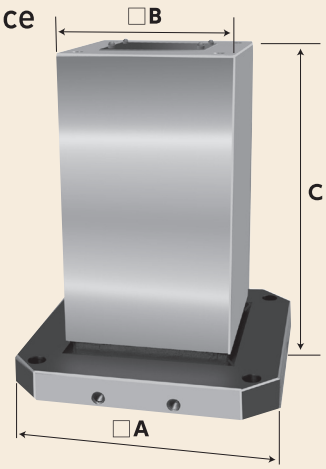
Finish	
S	Grinding finish high precision type

HOW TO SELECT YOUR JIG BLOCK

Follow the steps 1 to 6 to select your product.

Select the pallet size, the height and the vertical plate length (width)

▶ 4-face



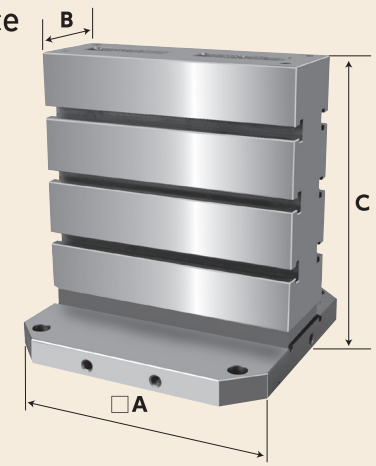
Select the jig block with same size as your machine table.

1 A = Machine pallet size

2 B = Vertical plate length (width)

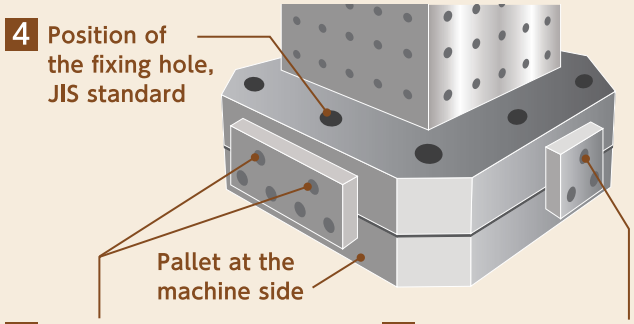
3 C = Height

▶ 2-face



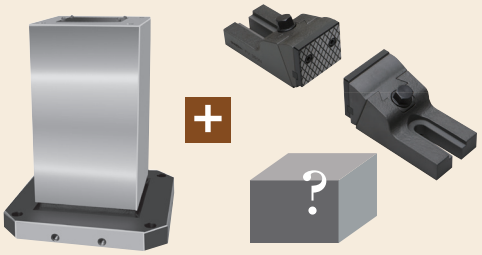
▶ For a horizontal type machine center, check carefully the height limit or the allowable swing range !

4 5 Select the table



Depending on the manufacturer, the positions may not fit the JIS standard. Always check the position of the fixing holes and the edge locator bolt holes.

6 Select the weight



Jig block + Jigs + workpiece

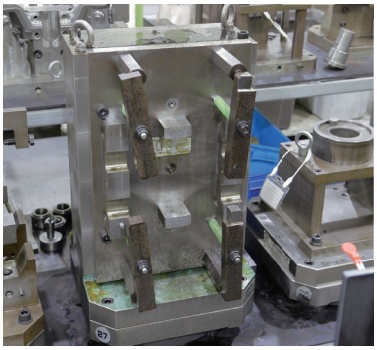
=

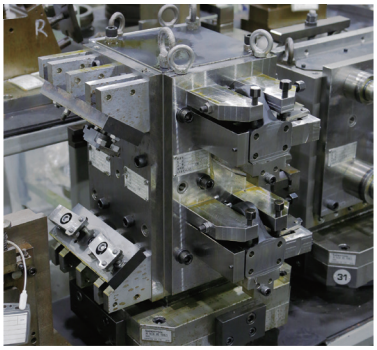
? kg Total load weight

CUSTOMIZABLE !

Customized products adapted to your machine specifications or your processing requirements can be supplied.









BSV

4-FACE JIG BLOCK FOR MC

BSV44525~68035 Value Type

▶ Features

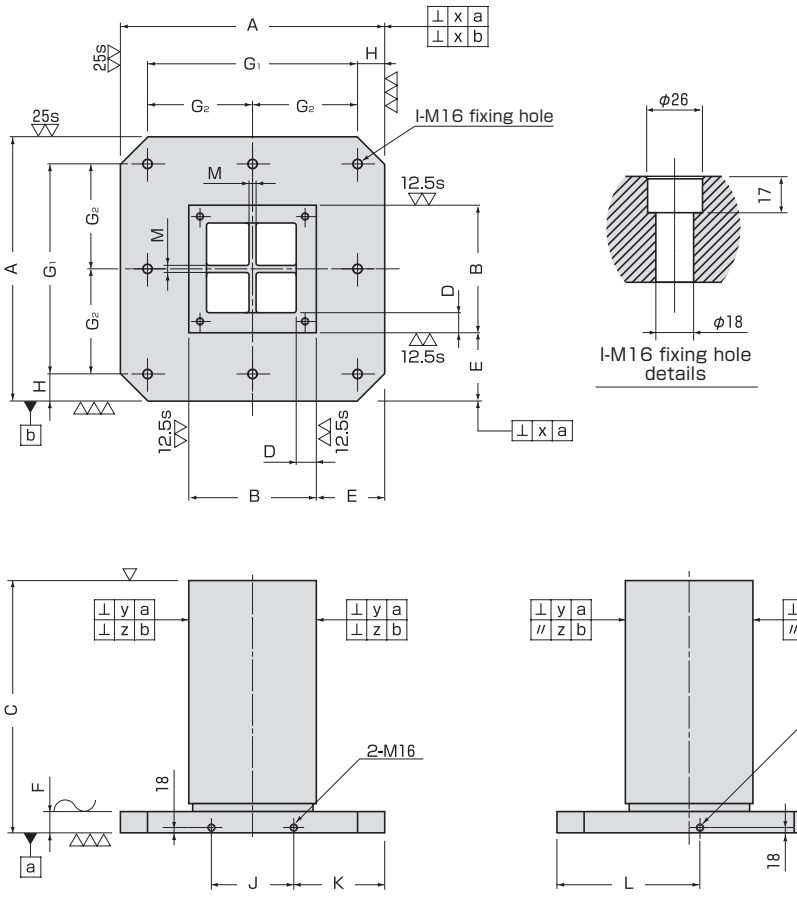
- Light-weight and affordable type.
- Processing such as tapping hole can be done by the user's machine.
- Top surface lid included.

Note : As the vertical plate surface thickness is 40mm, you cannot proceed T-slot machining.

- Material : FC300
- Heat treatment : Annealing
- Finish : Floor surface / locator surface : machine finish
  Vertical plate surface : machine finish (self cut type)

▶ Accessories

- Eye bolt (M16) 2 pcs for lifting



Item No.	Size (mm)							
	A	B	Size tolerance	C	D	E	Size tolerance	F
BSV44525	400	250	251.0±0.2	450	40	75	74.5±0.2	50
BSV45525	400	250	251.0±0.2	550	40	75	74.5±0.2	50
BSV55530	500	300	301.0±0.2	550	40	100	99.5±0.2	50
BSV56530	500	300	301.0±0.2	650	40	100	99.5±0.2	50
BSV67035	630	350	351.0±0.2	700	40	140	139.5±0.2	55
BSV68035	630	350	351.0±0.2	800	40	140	139.5±0.2	55

Item No.	Size (mm)											N.W. (kg)
	G1	G2	H	I	J	K	L	M	x	y	z	
BSV44525	320	—	40	4	110	145	225	30	0.03	0.05	0.05	160
BSV45525	320	—	40	4	110	145	225	30	0.03	0.06	0.06	185
BSV55530	400	200	50	8	150	175	275	30	0.04	0.06	0.06	252
BSV56530	400	200	50	8	150	175	275	30	0.04	0.07	0.07	284
BSV67035	500	250	65	8	200	215	340	40	0.04	0.07	0.07	415
BSV68035	500	250	65	8	200	215	340	40	0.04	0.08	0.08	452



BRV

2-FACE JIG BLOCK FOR MC

BRV44515~68025 Value Type

▶ Features

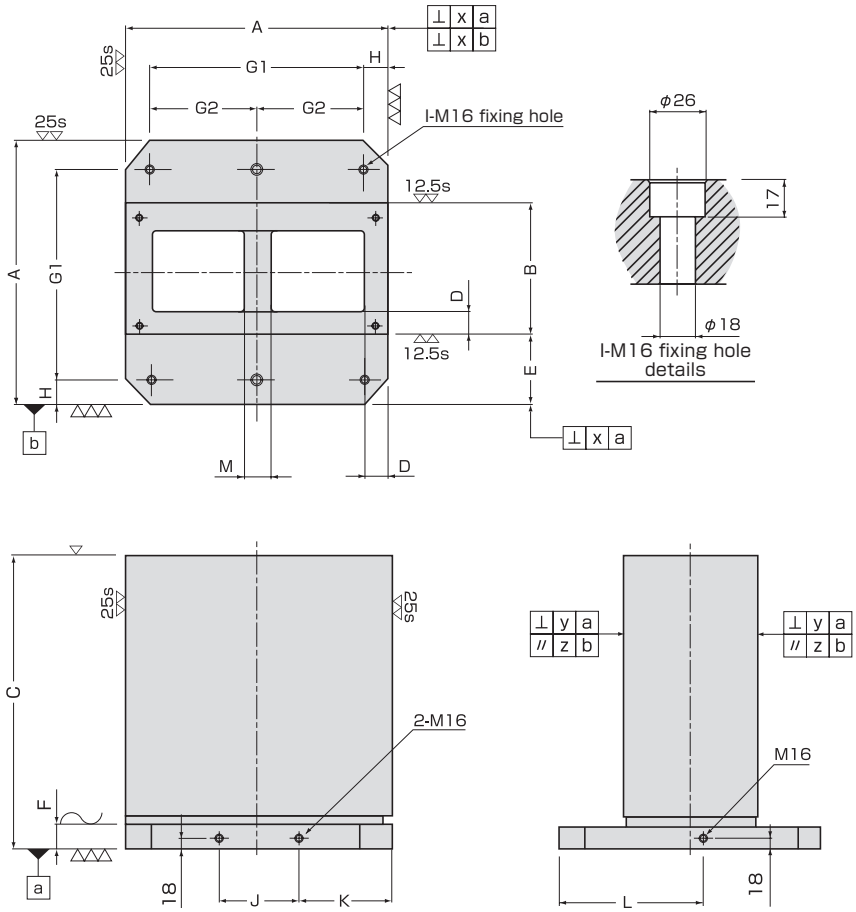
- Light-weight and affordable type.
- Machine finished on the lower plate and the edge locator part.
- Processing such as tapping hole can be done by the user's machine.
- Top surface lid included.

Note : As the vertical plate surface thickness is 40mm, you cannot make T-slot machining.

- Material : FC300
- Heat treatment : Annealing
- Finish : Floor surface / locator surface : machine finish
  Vertical plate surface : machine finish (self cut type)

▶ Accessories

- Eye bolt (M16) 2 pcs for lifting

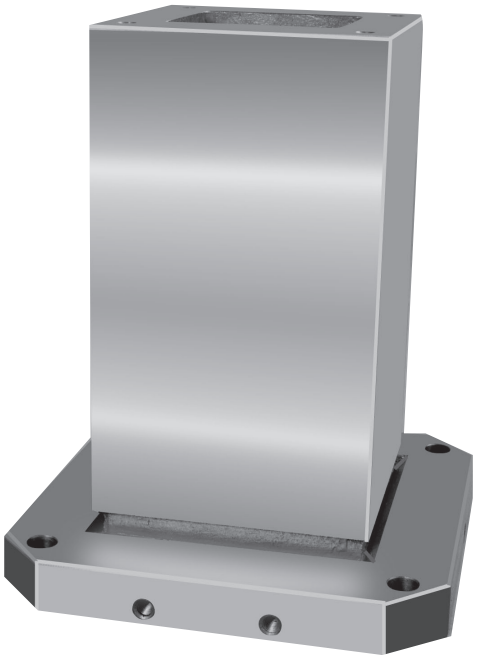


Item No.	Size (mm)							
	A	B	Size tolerance	C	D	E	Size tolerance	F
BRV44515	400	150	151.0±0.2	450	40	125	124.5±0.2	50
BRV45515	400	150	151.0±0.2	550	40	125	124.5±0.2	50
BRV55520	500	200	201.0±0.2	550	40	150	149.5±0.2	50
BRV56520	500	200	201.0±0.2	650	40	150	149.5±0.2	50
BRV67025	630	250	251.0±0.2	700	40	190	189.5±0.2	55
BRV68025	630	250	251.0±0.2	800	40	190	189.5±0.2	55

Item No.	Size (mm)											N.W. (kg)
	G1	G2	H	I	J	K	L	M	x	y	z	
BRV44515	320	—	40	4	110	145	225	40	0.03	0.05	0.05	169
BRV45515	320	—	40	4	110	145	225	40	0.03	0.06	0.06	197
BRV55520	400	200	50	6	150	175	275	40	0.04	0.06	0.06	274
BRV56520	400	200	50	6	150	175	275	40	0.04	0.07	0.07	311
BRV67025	500	250	65	6	200	215	340	50	0.04	0.07	0.07	472
BRV68025	500	250	65	6	200	215	340	50	0.04	0.08	0.08	520

BSE • BSS

4-FACE JIG BLOCK FOR MC



BSE33515~88050 Economy Type

▶ Features

- Affordable type.
- Processing such as T-slot and tapping hole can be done by the user's machine.
- Material : FC300
- Heat treatment : Annealing
- Finish : Floor surface / locator surface : machine finish
  Vertical plate surface : machine finish (self cut type)

▶ Accessories

- Eye bolt (M16) 2 pcs for lifting

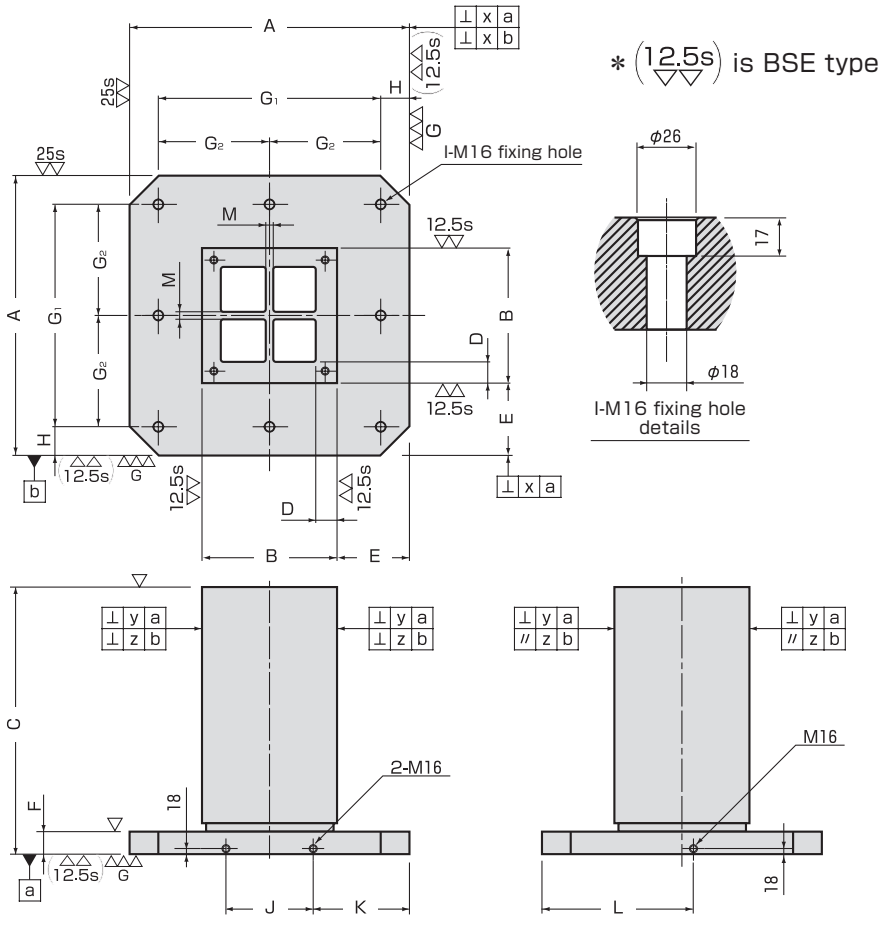
BSS33515~89055 Standard Type

▶ Features

- Great versatility allowing T-slot and tapping hole to be done according to the application.
- Material : FC300
- Heat treatment : Annealing
- Finish : Floor surface / locator surface : grinding finish
  Vertical plate surface : machine finish (self cut type)

▶ Accessories

- Eye bolt (M16) 2 pcs for lifting



For BSS33515, 34020, the size and position of the pulling screws and the fixing holes are manufactured as required in the order.

Upon request, we can provide a product of your required specifications.

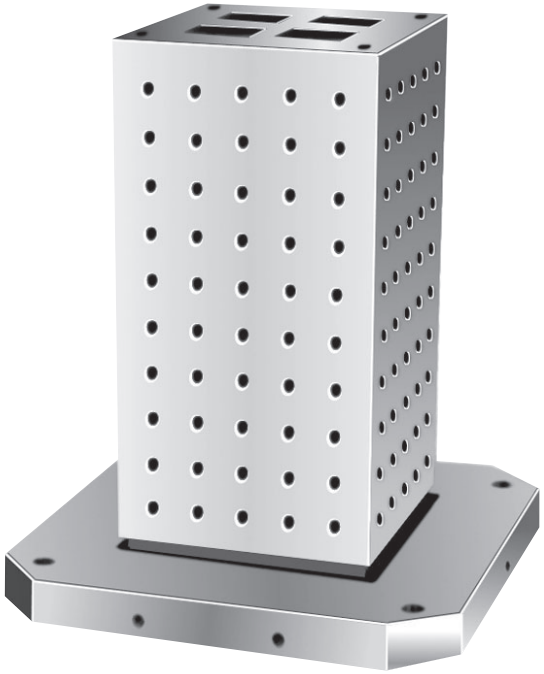
BSE

Item No.	Size (mm)																			N.W. (kg)
	A	B	Size tolerance	C	D	E	Size tolerance	F	G1	G2	H	I	J	K	L	M	x	y	z	
BSE33515	300	150	151.0±0.2	350	40	75	74.5±0.2	25	—	—	—	—	—	—	—	—	0.04	0.03	0.03	56
BSE45025	400	250	251.0±0.2	500	50	75	74.5±0.2	50	320	—	40	4 pcs	110	145	225	—	0.05	0.05	0.05	177
BSE45520	400	200	201.0±0.2	550	50	100	99.5±0.2	50	320	—	40	4 pcs	110	145	225	—	0.05	0.05	0.05	160
BSE45525	400	250	251.0±0.2	550	50	75	74.5±0.2	50	320	—	40	4 pcs	110	145	225	—	0.05	0.05	0.05	191
BSE46025	400	250	251.0±0.2	600	50	75	74.5±0.2	50	320	—	40	4 pcs	110	145	225	20	0.05	0.05	0.05	228
BSE55530	500	300	301.0±0.2	550	50	100	99.5±0.2	50	400	—	50	4 pcs	150	175	275	20	0.06	0.06	0.06	280
BSE56030	500	300	301.0±0.2	600	50	100	99.5±0.2	50	400	—	50	4 pcs	150	175	275	20	0.06	0.06	0.06	301
BSE57025	500	250	251.0±0.2	700	50	125	124.5±0.2	50	400	—	50	4 pcs	150	175	275	20	0.06	0.06	0.06	293
BSE66045	630	450	451.0±0.2	600	50	90	89.5±0.2	50	500	250	65	8 pcs	200	215	340	—	0.06	0.06	0.06	412
BSE67540	630	400	401.0±0.2	750	50	115	114.5±0.2	50	500	250	65	8 pcs	200	215	340	20	0.06	0.06	0.06	518
BSE88050	800	500	501.0±0.2	800	50	150	149.5±0.2	50	640	320	80	8 pcs	270	265	425	20	0.06	0.1	0.1	736

BSS

Item No.	Size (mm)							
	A	B	Size tolerance	C	D	E	Size tolerance	F
BSS33515	300	150	151.0±0.2	350	40	75	74.5±0.2	25
BSS34020	300	200	201.0±0.2	400	40	50	49.5±0.2	25
BSS43728	400	280	281.0±0.2	370	50	60	59.5±0.2	40
BSS45024	400	240	241.0±0.2	500	50	80	79.5±0.2	50
BSS45025	400	250	251.0±0.2	500	50	75	74.5±0.2	50
BSS45520	400	200	201.0±0.2	550	50	100	99.5±0.2	50
BSS45525	400	250	251.0±0.2	550	50	75	74.5±0.2	50
BSS46025	400	250	251.0±0.2	600	50	75	74.5±0.2	50
BSS54536	500	360	361.0±0.2	450	50	70	69.5±0.2	40
BSS55530	500	300	301.0±0.2	550	50	100	99.5±0.2	50
BSS56028	500	280	281.0±0.2	600	50	110	109.5±0.2	50
BSS56030	500	300	301.0±0.2	600	50	100	99.5±0.2	50
BSS57025	500	250	251.0±0.2	700	50	125	124.5±0.2	50
BSS65645	630	450	451.0±0.2	560	50	90	89.5±0.2	40
BSS66045	630	450	451.0±0.2	600	50	90	89.5±0.2	50
BSS67031	630	310	311.0±0.2	700	50	160	159.5±0.2	50
BSS67040	630	400	401.0±0.2	700	50	115	114.5±0.2	50
BSS67530	630	300	301.0±0.2	750	50	165	164.5±0.2	50
BSS67540	630	400	401.0±0.2	750	50	115	114.5±0.2	50
BSS87950	800	500	501.0±0.2	790	50	150	149.5±0.2	50
BSS88040	800	400	401.0±0.2	800	50	200	199.5±0.2	50
BSS88042	800	420	421.0±0.2	800	50	190	189.5±0.2	50
BSS88050	800	500	501.0±0.2	800	50	150	149.5±0.2	50
BSS89055	800	550	551.0±0.2	900	50	125	124.5±0.2	50

Item No.	Size (mm)											N.W. (kg)
	G1	G2	H	I	J	K	L	M	x	y	z	
BSS33515	—	—	—	—	—	—	—	—	0.02	0.05	0.03	56
BSS34020	—	—	—	—	—	—	—	—	0.02	0.05	0.03	82
BSS43728	320	—	40	4 pcs	110	145	225	—	0.02	0.05	0.03	145
BSS45024	320	—	40	4 pcs	110	145	225	—	0.02	0.05	0.03	172
BSS45025	320	—	40	4 pcs	110	145	225	—	0.02	0.05	0.03	177
BSS45520	320	—	40	4 pcs	110	145	225	—	0.02	0.05	0.03	160
BSS45525	320	—	40	4 pcs	110	145	225	—	0.02	0.05	0.03	191
BSS46025	320	—	40	4 pcs	110	145	225	20	0.02	0.05	0.03	228
BSS54536	400	—	50	4 pcs	150	175	275	—	0.02	0.05	0.03	233
BSS55530	400	—	50	4 pcs	150	175	275	20	0.02	0.05	0.03	280
BSS56028	400	—	50	4 pcs	150	175	275	20	0.02	0.05	0.03	285
BSS56030	400	—	50	4 pcs	150	175	275	20	0.02	0.05	0.03	301
BSS57025	400	—	50	4 pcs	150	175	275	20	0.02	0.05	0.03	293
BSS65645	500	250	65	8 pcs	200	215	340	—	0.02	0.05	0.03	376
BSS66045	500	250	65	8 pcs	200	215	340	—	0.02	0.05	0.03	412
BSS67031	500	250	65	8 pcs	200	215	340	20	0.02	0.05	0.03	404
BSS67040	500	250	65	8 pcs	200	215	340	20	0.02	0.05	0.03	489
BSS67530	500	250	65	8 pcs	200	215	340	20	0.02	0.05	0.03	415
BSS67540	500	250	65	8 pcs	200	215	340	20	0.02	0.05	0.03	518
BSS87950	640	320	80	8 pcs	270	265	425	—	0.02	0.05	0.03	672
BSS88040	640	320	80	8 pcs	270	265	425	—	0.02	0.05	0.03	602
BSS88042	640	320	80	8 pcs	270	265	425	20	0.02	0.05	0.03	653
BSS88050	640	320	80	8 pcs	270	265	425	20	0.02	0.05	0.03	736
BSS89055	640	320	80	8 pcs	270	265	425	20	0.02	0.05	0.03	870



BSH

4-FACE JIG BLOCK FOR MC (Threaded Hole Type 12・16)

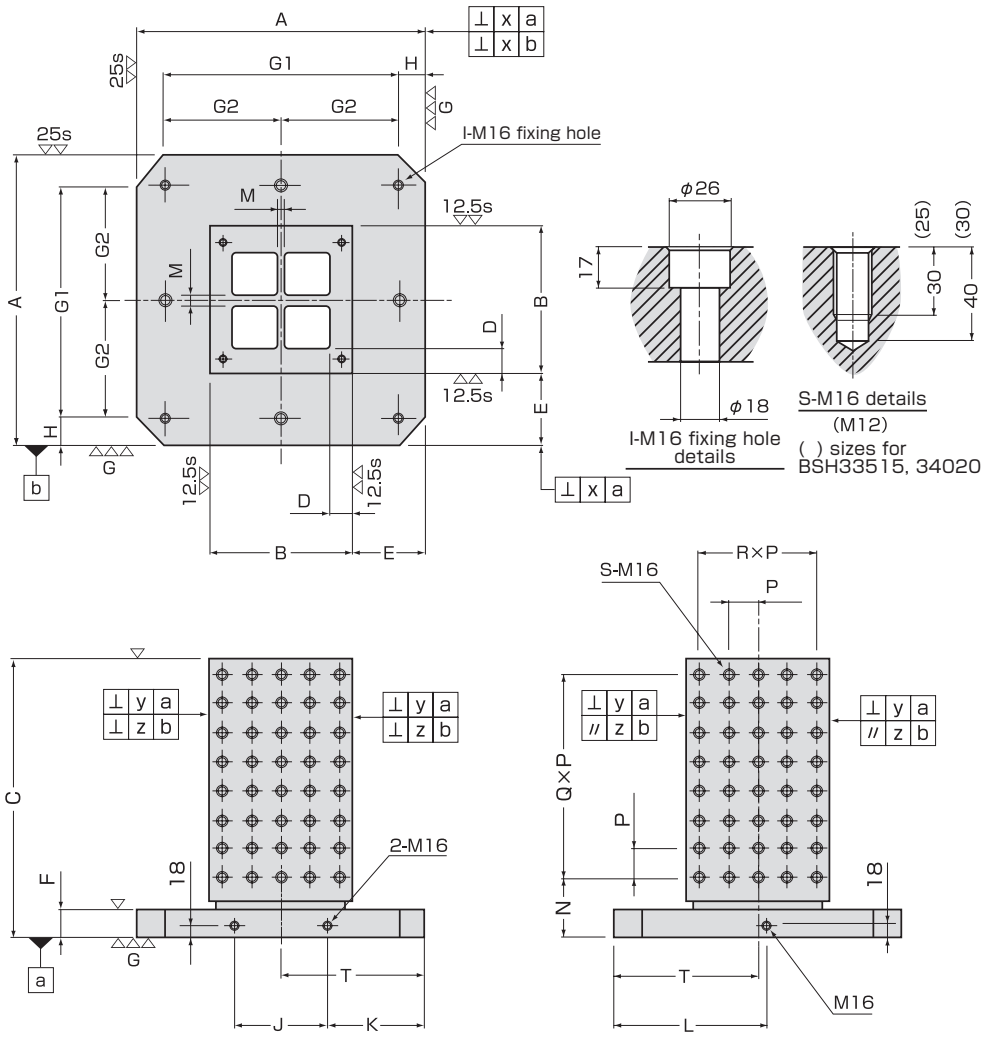
BSH33515~89055

▶ Features

- BSS type with tapping holes (for M12・M16 screw) positioned at 50mm pitch.
- Material : FC300
- Heat treatment : Annealing
- Finish : Floor surface / locator surface : grinding finish
  Vertical plate surface : machine finish (self cut type)

▶ Accessories

- Eye bolt (M16) 2 pcs for lifting



For BSH33515, 34020, the size and position of the pulling screws and the fixing holes are manufactured as required in the order.

Upon request, we can provide a product of your required specifications.

Item No.	Size (mm)									
	A	B	Size tolerance	C	D	E	Size tolerance	F	G1	G2	H
BSH33515	300	150	151.0±0.2	350	40	75	74.5±0.2	25	—	—	—
BSH34020	300	200	201.0±0.2	400	40	50	49.5±0.2	25	—	—	—
BSH43728	400	280	281.0±0.2	370	50	60	59.5±0.2	40	320	—	40
BSH45024	400	240	241.0±0.2	500	50	80	79.5±0.2	50	320	—	40
BSH45025	400	250	251.0±0.2	500	50	75	74.5±0.2	50	320	—	40
BSH45520	400	200	201.0±0.2	550	50	100	99.5±0.2	50	320	—	40
BSH45525	400	250	251.0±0.2	550	50	75	74.5±0.2	50	320	—	40
BSH46025	400	250	251.0±0.2	600	50	75	74.5±0.2	50	320	—	40
BSH54536	500	360	361.0±0.2	450	50	70	69.5±0.2	40	400	—	50
BSH55530	500	300	301.0±0.2	550	50	100	99.5±0.2	50	400	—	50
BSH56028	500	280	281.0±0.2	600	50	110	109.5±0.2	50	400	—	50
BSH56030	500	300	301.0±0.2	600	50	100	99.5±0.2	50	400	—	50
BSH57025	500	250	251.0±0.2	700	50	125	124.5±0.2	50	400	—	50
BSH65645	630	450	451.0±0.2	560	50	90	89.5±0.2	40	500	250	65
BSH66045	630	450	451.0±0.2	600	50	90	89.5±0.2	50	500	250	65
BSH67031	630	310	311.0±0.2	700	50	160	159.5±0.2	50	500	250	65
BSH67040	630	400	401.0±0.2	700	50	115	114.5±0.2	50	500	250	65
BSH67530	630	300	301.0±0.2	750	50	165	164.5±0.2	50	500	250	65
BSH67540	630	400	401.0±0.2	750	50	115	114.5±0.2	50	500	250	65
BSH87950	800	500	501.0±0.2	790	50	150	149.5±0.2	50	640	320	80
BSH88040	800	400	401.0±0.2	800	50	200	199.5±0.2	50	640	320	80
BSH88042	800	420	421.0±0.2	800	50	190	189.5±0.2	50	640	320	80
BSH88050	800	500	501.0±0.2	800	50	150	149.5±0.2	50	640	320	80
BSH89055	800	550	551.0±0.2	900	50	125	124.5±0.2	50	640	320	80

Item No.	Size (mm)														N.W. (kg)
	I	J	K	L	M	N	P	Q	R	S	T	x	y	z	
BSH33515	—	—	—	—	—	75	50	5	2	72	150	0.02	0.05	0.03	54
BSH34020	—	—	—	—	—	75	50	6	2	84	150	0.02	0.05	0.03	80
BSH43728	4 pcs	110	145	225	—	90	50	5	4	120	200	0.02	0.05	0.03	138
BSH45024	4 pcs	110	145	225	—	90	50	7	2	96	200	0.02	0.05	0.03	167
BSH45025	4 pcs	110	145	225	—	90	50	7	2	96	200	0.02	0.05	0.03	172
BSH45520	4 pcs	110	145	225	—	90	50	8	2	108	200	0.02	0.05	0.03	155
BSH45525	4 pcs	110	145	225	—	90	50	8	4	180	200	0.02	0.05	0.03	183
BSH46025	4 pcs	110	145	225	20	90	50	9	2	120	200	0.02	0.05	0.03	222
BSH54536	4 pcs	150	175	275	—	100	50	6	4	140	250	0.02	0.05	0.03	226
BSH55530	4 pcs	150	175	275	20	100	50	8	4	180	250	0.02	0.05	0.03	271
BSH56028	4 pcs	150	175	275	20	100	50	9	4	200	250	0.02	0.05	0.03	275
BSH56030	4 pcs	150	175	275	20	100	50	9	4	200	250	0.02	0.05	0.03	291
BSH57025	4 pcs	150	175	275	20	100	50	11	2	144	250	0.02	0.05	0.03	286
BSH65645	4 pcs	200	215	340	—	120	50	8	6	252	315	0.02	0.05	0.03	363
BSH66045	4 pcs	200	215	340	—	120	50	8	6	252	315	0.02	0.05	0.03	399
BSH67031	8 pcs	200	215	340	20	120	50	11	4	240	315	0.02	0.05	0.03	392
BSH67040	8 pcs	200	215	340	20	120	50	10	6	308	315	0.02	0.05	0.03	473
BSH67530	8 pcs	200	215	340	20	120	50	12	4	260	315	0.02	0.05	0.03	402
BSH67540	8 pcs	200	215	340	20	120	50	12	6	364	315	0.02	0.05	0.03	500
BSH87950	4 pcs	270	265	425	—	150	50	12	8	468	400	0.02	0.05	0.03	647
BSH88040	4 pcs	270	265	425	—	150	50	12	6	364	400	0.02	0.05	0.03	583
BSH88042	8 pcs	270	265	425	20	150	50	12	6	364	400	0.02	0.05	0.03	634
BSH88050	8 pcs	270	265	425	20	150	50	12	8	468	400	0.02	0.05	0.03	712
BSH89055	8 pcs	270	265	425	20	150	50	14	8	540	400	0.02	0.05	0.03	843



BST • BST-B

4-FACE JIG BLOCK FOR MC (T-slot Type 14•16)

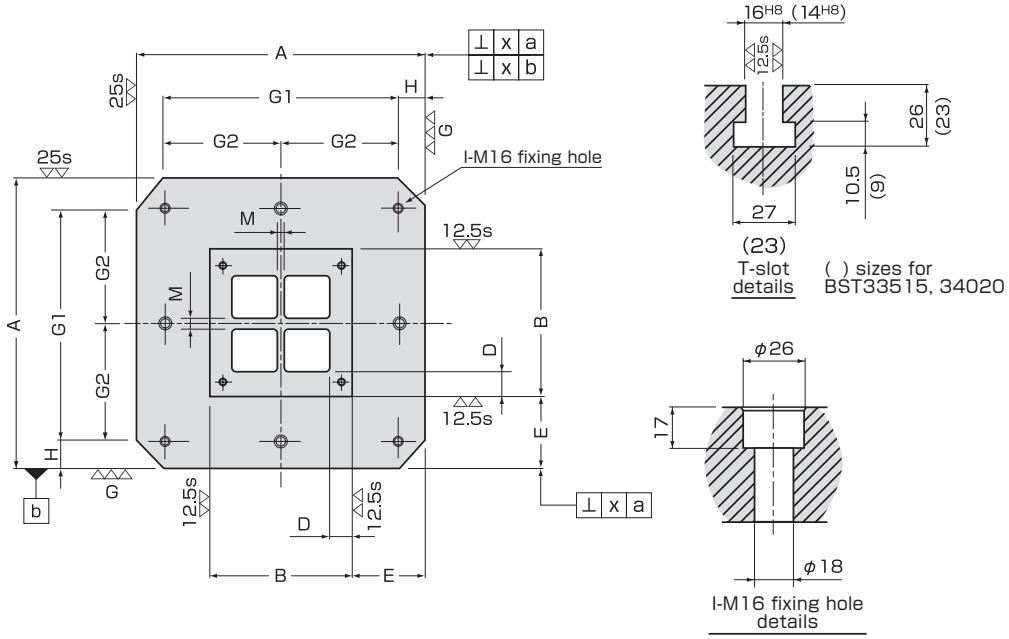
BST33515~89055B

▶ Features

- BSS type with T-slots (14•16).
- Material : FC300
- Heat treatment : Annealing
- Finish : Floor surface / locator surface : grinding finish
  Vertical plate surface : machine finish (self cut type)

▶ Accessories

- Eye bolt (M16) 2 pcs for lifting



For BST33515, 34020, the size and position of the pulling screws and the fixing holes are manufactured as required in the order.

Upon request, we can provide a product of your required specifications.

Item No.	Size(mm)											
	A	B	Size tolerance	C	D	E	Size tolerance	F	G1	G2	H	I
BST33515	300	150	151.0±0.2	350	40	75	74.5±0.2	25	—	—	—	—
BST34020	300	200	201.0±0.2	400	40	50	49.5±0.2	25	—	—	—	—
BST43728B	400	280	281.0±0.2	370	50	60	59.5±0.2	40	320	—	40	4 pcs
BST45024B	400	240	241.0±0.2	500	50	80	79.5±0.2	50	320	—	40	4 pcs
BST45025B	400	250	251.0±0.2	500	50	75	74.5±0.2	50	320	—	40	4 pcs
BST45520B	400	200	201.0±0.2	550	50	100	99.5±0.2	50	320	—	40	4 pcs
BST45525B	400	250	251.0±0.2	550	50	75	74.5±0.2	50	320	—	40	4 pcs
BST46025B	400	250	251.0±0.2	600	50	75	74.5±0.2	50	320	—	40	4 pcs
BST54536B	500	360	361.0±0.2	450	50	70	69.5±0.2	40	400	—	50	4 pcs
BST55530B	500	300	301.0±0.2	550	50	100	99.5±0.2	50	400	—	50	4 pcs
BST56028B	500	280	281.0±0.2	600	50	110	109.5±0.2	50	400	—	50	4 pcs
BST56030B	500	300	301.0±0.2	600	50	100	99.5±0.2	50	400	—	50	4 pcs
BST57025B	500	250	251.0±0.2	700	50	125	124.5±0.2	50	400	—	50	4 pcs
BST65645B	630	450	451.0±0.2	560	50	90	89.5±0.2	40	500	250	65	8 pcs
BST66045B	630	450	451.0±0.2	600	50	90	89.5±0.2	50	500	250	65	8 pcs
BST67031B	630	310	311.0±0.2	700	50	160	159.5±0.2	50	500	250	65	8 pcs
BST67040B	630	400	401.0±0.2	700	50	115	114.5±0.2	50	500	250	65	8 pcs
BST67530B	630	300	301.0±0.2	750	50	165	164.5±0.2	50	500	250	65	8 pcs
BST67540B	630	400	401.0±0.2	750	50	115	114.5±0.2	50	500	250	65	8 pcs
BST87950B	800	500	501.0±0.2	790	50	150	149.5±0.2	50	640	320	80	8 pcs
BST88040B	800	400	401.0±0.2	800	50	200	199.5±0.2	50	640	320	80	8 pcs
BST88042B	800	420	421.0±0.2	800	50	190	189.5±0.2	50	640	320	80	8 pcs
BST88050B	800	500	501.0±0.2	800	50	150	149.5±0.2	50	640	320	80	8 pcs
BST89055B	800	550	551.0±0.2	900	50	125	124.5±0.2	50	640	320	80	8 pcs

Item No.	Size(mm)												N.W. (kg)
	J	K	L	M	N	P	Q	Number of T-slots	x	y	z	u	
BST33515	—	—	—	—	75±0.05	75±0.03	3	4-4 faces	0.02	0.04	0.03	0.05	50
BST34020	—	—	—	—	75±0.05	75±0.03	4	5-4 faces	0.02	0.04	0.03	0.05	72
BST43728B	110	145	225	—	150±0.05	80±0.03	2	3-4 faces	0.02	0.04	0.03	0.05	133
BST45024B	110	145	225	—	150±0.05	100±0.03	3	4-4 faces	0.02	0.04	0.03	0.05	158
BST45025B	110	145	225	—	150±0.05	100±0.03	3	4-4 faces	0.02	0.05	0.03	0.05	163
BST45520B	110	145	225	—	150±0.05	100±0.03	3	4-4 faces	0.02	0.05	0.03	0.05	149
BST45525B	110	145	225	—	150±0.05	100±0.03	3	4-4 faces	0.02	0.05	0.03	0.05	178
BST46025B	110	145	225	20	150±0.05	100±0.03	4	5-4 faces	0.02	0.05	0.03	0.05	211
BST54536B	150	175	275	—	150±0.05	80±0.03	3	4-4 faces	0.02	0.05	0.03	0.05	213
BST55530B	150	175	275	20	150±0.05	100±0.03	3	4-4 faces	0.02	0.05	0.03	0.05	263
BST56028B	150	175	275	20	150±0.05	100±0.03	4	5-4 faces	0.02	0.05	0.03	0.05	265
BST56030B	150	175	275	20	150±0.05	100±0.03	4	5-4 faces	0.02	0.05	0.03	0.05	280
BST57025B	150	175	275	20	150±0.05	125±0.03	4	5-4 faces	0.02	0.05	0.03	0.05	276
BST65645B	200	215	340	—	150±0.05	100±0.03	3	4-4 faces	0.02	0.05	0.03	0.05	350
BST66045B	200	215	340	—	150±0.05	125±0.03	3	4-4 faces	0.02	0.05	0.03	0.05	386
BST67031B	200	215	340	20	150±0.05	125±0.03	4	5-4 faces	0.02	0.05	0.03	0.05	382
BST67040B	200	215	340	20	150±0.05	125±0.03	4	5-4 faces	0.02	0.05	0.03	0.05	460
BST67530B	200	215	340	20	150±0.05	125±0.03	4	5-4 faces	0.02	0.05	0.03	0.05	394
BST67540B	200	215	340	20	150±0.05	125±0.03	4	5-4 faces	0.02	0.05	0.03	0.05	489
BST87950B	270	265	425	—	150±0.05	125±0.03	4	5-4 faces	0.02	0.05	0.03	0.05	635
BST88040B	270	265	425	—	150±0.05	150±0.03	4	5-4 faces	0.02	0.05	0.03	0.05	573
BST88042B	270	265	425	20	150±0.05	150±0.03	4	5-4 faces	0.02	0.05	0.03	0.05	653
BST88050B	270	265	425	20	150±0.05	150±0.03	4	5-4 faces	0.02	0.05	0.03	0.05	699
BST89055B	270	265	425	20	150±0.05	150±0.03	4	5-4 faces	0.02	0.05	0.03	0.05	829



BST-C

4-FACE JIG BLOCK FOR MC (T-slot Type 18)

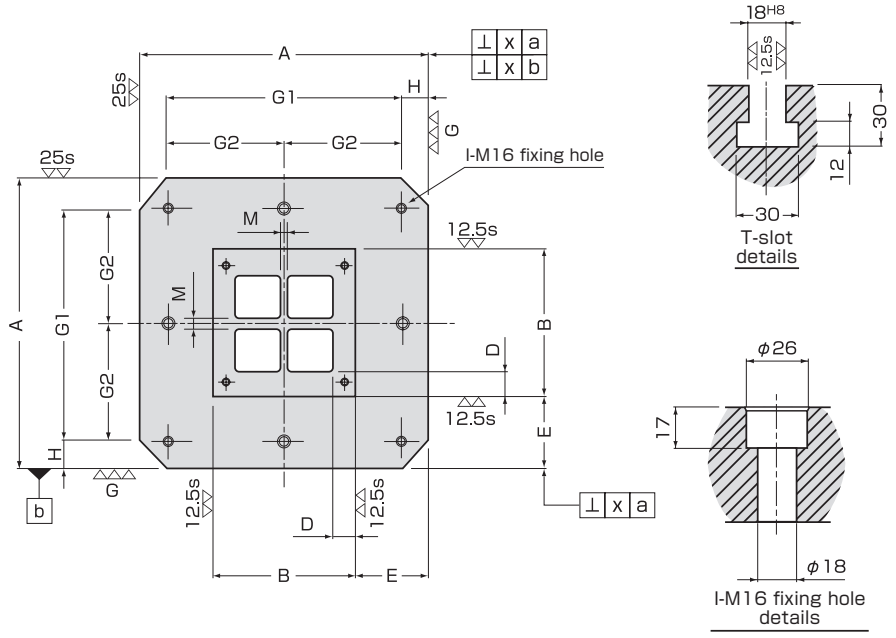
BST43728C~BST89055C

▶ Features

- BSS type with T-slots (18).
- Material : FC300
- Heat treatment : Annealing
- Finish : Floor surface / locator surface : grinding finish
  Vertical plate surface : machine finish (self cut type)

▶ Accessories

- Eye bolt (M16) 2 pcs for lifting



Upon request, we can provide a product of your required specifications.

Item No.	Size(mm)											
	A	B	Size tolerance	C	D	E	Size tolerance	F	G1	G2	H	I
BST43728C	400	280	281.0±0.2	370	50	60	59.5±0.2	40	320	—	40	4 pcs
BST45024C	400	240	241.0±0.2	500	50	80	79.5±0.2	50	320	—	40	4 pcs
BST45025C	400	250	251.0±0.2	500	50	75	74.5±0.2	50	320	—	40	4 pcs
BST45520C	400	200	201.0±0.2	550	50	100	99.5±0.2	50	320	—	40	4 pcs
BST45525C	400	250	251.0±0.2	550	50	75	74.5±0.2	50	320	—	40	4 pcs
BST46025C	400	250	251.0±0.2	600	50	75	74.5±0.2	50	320	—	40	4 pcs
BST54536C	500	360	361.0±0.2	450	50	70	69.5±0.2	40	400	—	50	4 pcs
BST55530C	500	300	301.0±0.2	550	50	100	99.5±0.2	50	400	—	50	4 pcs
BST56028C	500	280	281.0±0.2	600	50	110	109.5±0.2	50	400	—	50	4 pcs
BST56030C	500	300	301.0±0.2	600	50	100	99.5±0.2	50	400	—	50	4 pcs
BST57025C	500	250	251.0±0.2	700	50	125	124.5±0.2	50	400	—	50	4 pcs
BST65645C	630	450	451.0±0.2	560	50	90	89.5±0.2	40	500	250	65	8 pcs
BST66045C	630	450	451.0±0.2	600	50	90	89.5±0.2	50	500	250	65	8 pcs
BST67031C	630	310	311.0±0.2	700	50	160	159.5±0.2	50	500	250	65	8 pcs
BST67040C	630	400	401.0±0.2	700	50	115	114.5±0.2	50	500	250	65	8 pcs
BST67530C	630	300	301.0±0.2	750	50	165	164.5±0.2	50	500	250	65	8 pcs
BST67540C	630	400	401.0±0.2	750	50	115	114.5±0.2	50	500	250	65	8 pcs
BST87950C	800	500	501.0±0.2	790	50	150	149.5±0.2	50	640	320	80	8 pcs
BST88040C	800	400	401.0±0.2	800	50	200	199.5±0.2	50	640	320	80	8 pcs
BST88042C	800	420	421.0±0.2	800	50	190	189.5±0.2	50	640	320	80	8 pcs
BST88050C	800	500	501.0±0.2	800	50	150	149.5±0.2	50	640	320	80	8 pcs
BST89055C	800	550	551.0±0.2	900	50	125	124.5±0.2	50	640	320	80	8 pcs

Item No.	Size(mm)												N.W. (kg)
	J	K	L	M	N	P	Q	Number of T-slots	x	y	z	u	
BST43728C	110	145	225	—	150±0.05	80±0.03	2	3-4 faces	0.02	0.04	0.03	0.05	129
BST45024C	110	145	225	—	150±0.05	100±0.03	3	4-4 faces	0.02	0.04	0.03	0.05	155
BST45025C	110	145	225	—	150±0.05	100±0.03	3	4-4 faces	0.02	0.04	0.03	0.05	159
BST45520C	110	145	225	—	150±0.05	100±0.03	3	4-4 faces	0.02	0.04	0.03	0.05	146
BST45525C	110	145	225	—	150±0.05	100±0.03	3	4-4 faces	0.02	0.05	0.03	0.05	174
BST46025C	110	145	225	20	150±0.05	100±0.03	4	5-4 faces	0.02	0.05	0.03	0.05	206
BST54536C	150	175	275	—	150±0.05	80±0.03	3	4-4 faces	0.02	0.05	0.03	0.05	207
BST55530C	150	175	275	20	150±0.05	100±0.03	3	4-4 faces	0.02	0.05	0.03	0.05	259
BST56028C	150	175	275	20	150±0.05	100±0.03	4	5-4 faces	0.02	0.05	0.03	0.05	260
BST56030C	150	175	275	20	150±0.05	100±0.03	4	5-4 faces	0.02	0.05	0.03	0.05	274
BST57025C	150	175	275	20	150±0.05	125±0.03	4	5-4 faces	0.02	0.05	0.03	0.05	271
BST65645C	200	215	340	—	150±0.05	100±0.03	3	4-4 faces	0.02	0.05	0.03	0.05	342
BST66045C	200	215	340	—	150±0.05	125±0.03	3	4-4 faces	0.02	0.05	0.03	0.05	378
BST67031C	200	215	340	20	150±0.05	125±0.03	4	5-4 faces	0.02	0.05	0.03	0.05	376
BST67040C	200	215	340	20	150±0.05	125±0.03	4	5-4 faces	0.02	0.05	0.03	0.05	452
BST67530C	200	215	340	20	150±0.05	125±0.03	4	5-4 faces	0.02	0.05	0.03	0.05	388
BST67540C	200	215	340	20	150±0.05	125±0.03	4	5-4 faces	0.02	0.05	0.03	0.05	481
BST87950C	270	265	425	—	150±0.05	125±0.03	4	5-4 faces	0.02	0.05	0.03	0.05	625
BST88040C	270	265	425	—	150±0.05	150±0.03	4	5-4 faces	0.02	0.05	0.03	0.05	565
BST88042C	270	265	425	20	150±0.05	150±0.03	4	5-4 faces	0.02	0.05	0.03	0.05	645
BST88050C	270	265	425	20	150±0.05	150±0.03	4	5-4 faces	0.02	0.05	0.03	0.05	689
BST89055C	270	265	425	20	150±0.05	150±0.03	4	5-4 faces	0.02	0.05	0.03	0.05	818



BRE • BRS

2-FACE JIG BLOCK FOR MC

BRE32815~88040 Economy Type

▶ Features

- Affordable type.
- Machine finished on the lower plate and the edge locator part.
- Processing such as T-slot and tapping hole can be done by the user's machine.
- Material : FC300
- Heat treatment : Annealing
- Finish : Floor surface / locator surface : machine finish
  Vertical plate surface : machine finish (self cut type)

▶ Accessories

- Eye bolt (M16) 2 pcs for lifting

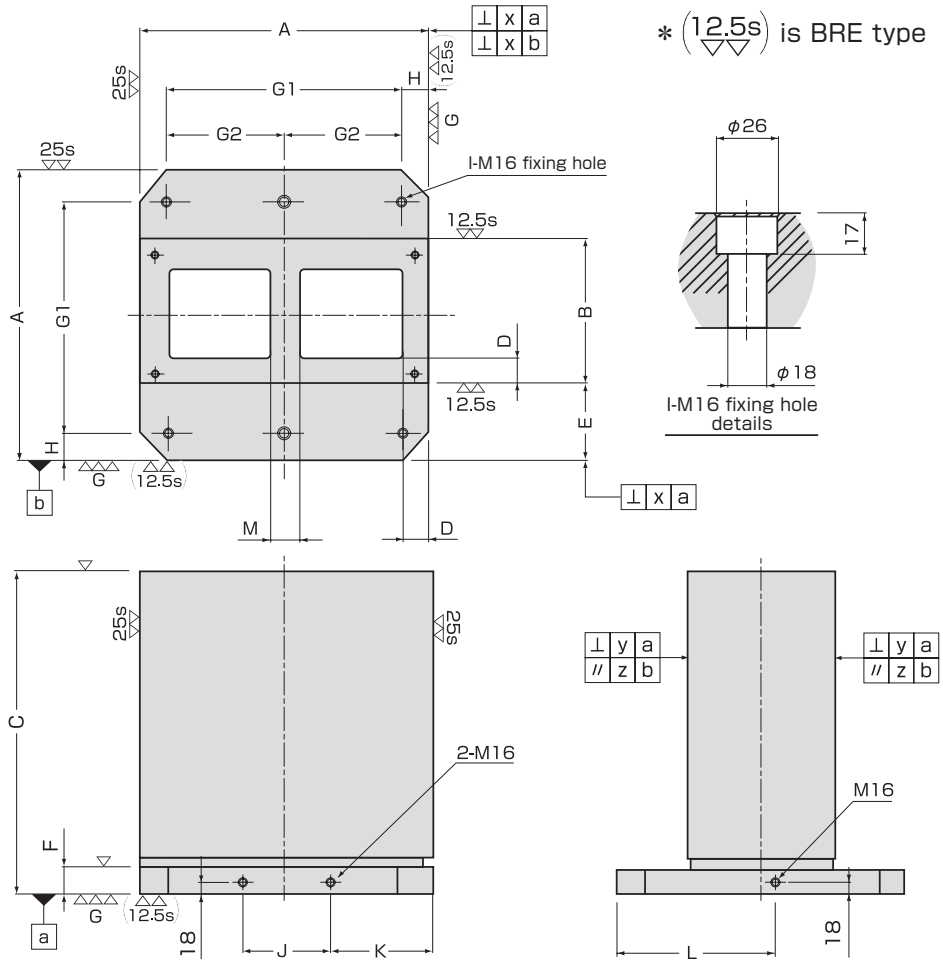
BRS32815~88040 Standard Type

▶ Features

- Great versatility allowing T-slot and tapping hole to be done according to the application.
- Material : FC300
- Heat treatment : Annealing
- Finish : Floor surface / locator surface : grinding finish
  Vertical plate surface : machine finish (self cut type)

▶ Accessories

- Eye bolt (M16) 2 pcs for lifting



* (12.5s) is BRE type

For BRS32815, the size and position of the pulling screws and the fixing holes are manufactured as required in the order.

Upon request, we can provide a product of your required specifications.

BRE

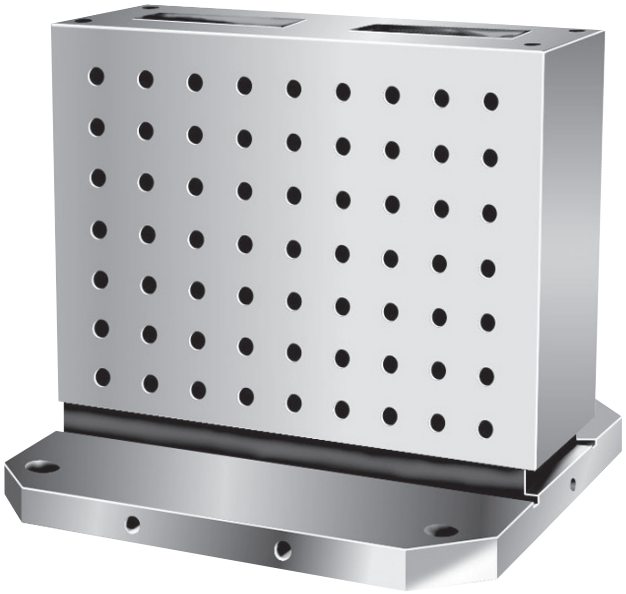
Item No.	Size (mm)							
	A	B	Size tolerance	C	D	E	Size tolerance	F
BRE32815	300	150	151.0±0.2	280	40	75	74.5±0.2	25
BRE45025	400	250	251.0±0.2	500	50	75	74.5±0.2	40
BRE55525	500	250	251.0±0.2	550	50	125	124.5±0.2	50
BRE67025	630	250	251.0±0.2	700	50	190	189.5±0.2	50
BRE88040	800	400	401.0±0.2	800	50	200	199.5±0.2	50

Item No.	Size (mm)											N.W. (kg)
	G1	G2	H	I	J	K	L	M	x	y	z	
BRE32815	—	—	—	—	—	—	—	—	0.03	0.04	0.04	67
BRE45025	320	—	40	4 pcs	110	145	225	50	0.04	0.06	0.06	239
BRE55525	400	—	50	4 pcs	150	175	275	50	0.04	0.07	0.07	327
BRE67025	500	250	65	6 pcs	200	215	340	50	0.04	0.07	0.07	511
BRE88040	640	320	80	6 pcs	270	265	425	50	0.06	0.10	0.10	822

BRS

Item No.	Size (mm)							
	A	B	Size tolerance	C	D	E	Size tolerance	F
BRS32815	300	150	151.0±0.2	280	40	75	74.5±0.2	25
BRS44414	400	140	141.0±0.2	440	50	130	129.5±0.2	40
BRS45020	400	200	201.0±0.2	500	50	100	99.5±0.2	40
BRS45025	400	250	251.0±0.2	500	50	75	74.5±0.2	40
BRS55518	500	180	181.0±0.2	550	50	160	159.5±0.2	50
BRS55520	500	200	201.0±0.2	550	50	150	149.5±0.2	50
BRS55525	500	250	251.0±0.2	550	50	125	124.5±0.2	50
BRS66522	630	220	221.0±0.2	650	50	205	204.5±0.2	50
BRS67025	630	250	251.0±0.2	700	50	190	189.5±0.2	50
BRS67030	630	300	301.0±0.2	700	50	165	164.5±0.2	50
BRS88035	800	350	351.0±0.2	800	50	225	224.5±0.2	50
BRS88040	800	400	401.0±0.2	800	50	200	199.5±0.2	50

Item No.	Size (mm)											N.W. (kg)
	G1	G2	H	I	J	K	L	M	x	y	z	
BRS32815	—	—	—	—	—	—	—	—	0.02	0.05	0.03	67
BRS44414	320	—	40	4 pcs	110	145	225	50	0.02	0.05	0.03	174
BRS45020	320	—	40	4 pcs	110	145	225	50	0.02	0.05	0.03	218
BRS45025	320	—	40	4 pcs	110	145	225	50	0.02	0.05	0.03	239
BRS55518	400	—	50	4 pcs	150	175	275	50	0.02	0.05	0.03	299
BRS55520	400	—	50	4 pcs	150	175	275	50	0.02	0.05	0.03	307
BRS55525	400	—	50	4 pcs	150	175	275	50	0.02	0.05	0.03	327
BRS66522	500	250	65	6 pcs	200	215	340	50	0.02	0.05	0.03	466
BRS67025	500	250	65	6 pcs	200	215	340	50	0.02	0.05	0.03	511
BRS67030	500	250	65	6 pcs	200	215	340	50	0.02	0.05	0.03	536
BRS88035	640	320	80	6 pcs	270	265	425	50	0.02	0.05	0.03	903
BRS88040	640	320	80	6 pcs	270	265	425	50	0.02	0.05	0.03	938



BRH

2-FACE JIG BLOCK FOR MC (Threaded Hole Type 12・16)

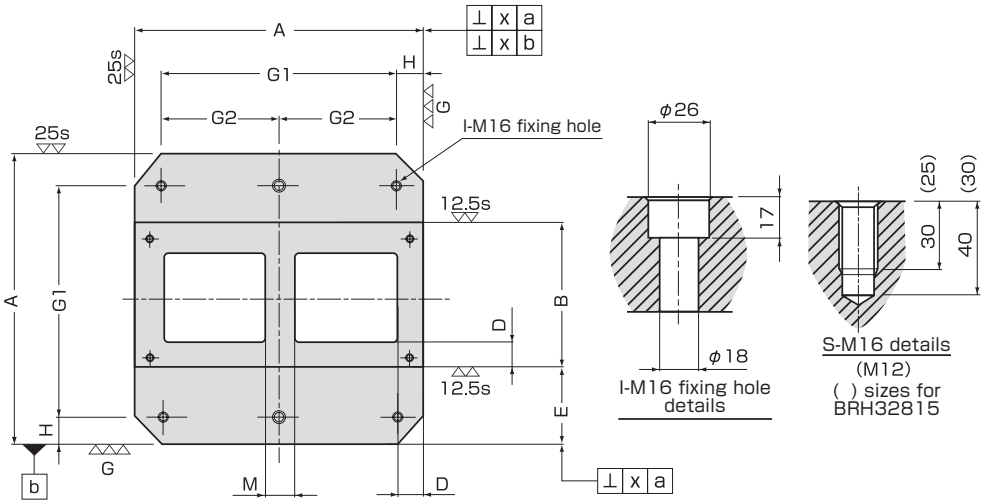
BRH32815~88040

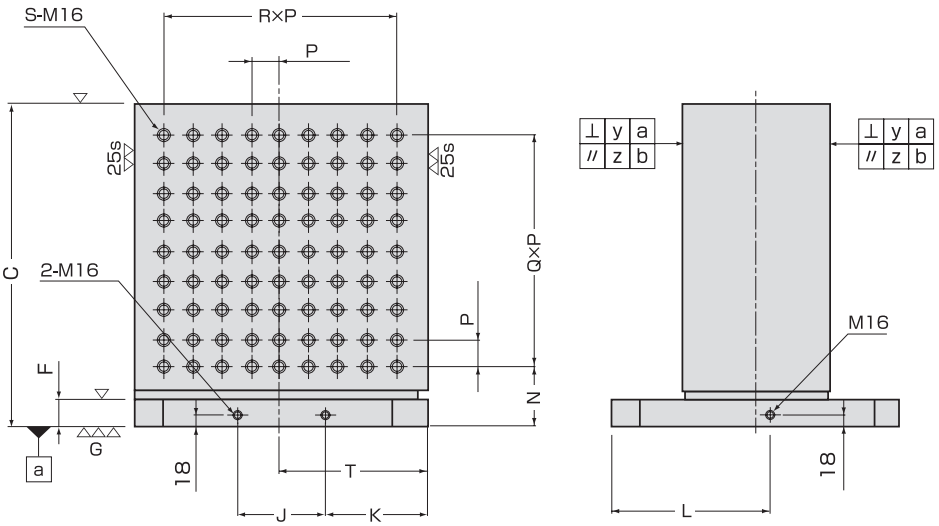
▶ Features

- BSS type with threaded holes (for M12・M16 screw) positioned at 50mm pitch.
- Material : FC300
- Heat treatment : Annealing
- Finish : Floor surface / locator surface : grinding finish
  Vertical plate surface : machine finish (self cut type)

▶ Accessories

- Eye bolt (M16) 2 pcs for lifting





For BRE32815, the size and position of the pulling screws and the fixing holes are manufactured as required in the order.

Upon request, we can provide a product of your required specifications.

Item No.	Size (mm)									
	A	B	Size tolerance	C	D	E	Size tolerance	F	G1	G2	H
BRH32815	300	150	151.0±0.2	280	40	75	74.5±0.2	25	—	—	—
BRH44414	400	140	141.0±0.2	440	50	130	129.5±0.2	40	320	—	40
BRH45020	400	200	201.0±0.2	500	50	100	99.5±0.2	40	320	—	40
BRH45025	400	250	251.0±0.2	500	50	75	74.5±0.2	40	320	—	40
BRH55518	500	180	181.0±0.2	550	50	160	159.5±0.2	50	400	—	50
BRH55520	500	200	201.0±0.2	550	50	150	149.5±0.2	50	400	—	50
BRH55525	500	250	251.0±0.2	550	50	125	124.5±0.2	50	400	—	50
BRH66522	630	220	221.0±0.2	650	50	205	204.5±0.2	50	500	250	65
BRH67025	630	250	251.0±0.2	700	50	190	189.5±0.2	50	500	250	65
BRH67030	630	300	301.0±0.2	700	50	165	164.5±0.2	50	500	250	65
BRH88035	800	350	351.0±0.2	800	50	225	224.5±0.2	50	640	320	80
BRH88040	800	400	401.0±0.2	800	50	200	199.5±0.2	50	640	320	80

Item No.	Size (mm)														N.W. (kg)
	I	J	K	L	M	N	P	Q	R	S	T	x	y	z	
BRH32815	—	—	—	—	—	75	50	3	4	40	150	0.02	0.05	0.03	66
BRH44414	4 pcs	110	145	225	50	100	50	6	6	98	200	0.02	0.05	0.03	169
BRH45020	4 pcs	110	145	225	50	100	50	7	6	112	200	0.02	0.05	0.03	212
BRH45025	4 pcs	110	145	225	50	100	50	7	6	112	200	0.02	0.05	0.03	233
BRH55518	4 pcs	150	175	275	50	100	50	8	8	162	250	0.02	0.05	0.03	291
BRH55520	4 pcs	150	175	275	50	100	50	8	8	162	250	0.02	0.05	0.03	299
BRH55525	4 pcs	150	175	275	50	100	50	8	8	162	250	0.02	0.05	0.03	318
BRH66522	6 pcs	200	215	340	50	120	50	10	10	242	315	0.02	0.05	0.03	454
BRH67025	6 pcs	200	215	340	50	120	50	11	10	264	315	0.02	0.05	0.03	497
BRH67030	6 pcs	200	215	340	50	120	50	11	10	264	315	0.02	0.05	0.03	523
BRH88035	6 pcs	270	265	425	50	150	50	12	14	390	400	0.02	0.05	0.03	883
BRH88040	6 pcs	270	265	425	50	150	50	12	14	390	400	0.02	0.05	0.03	918



BRT • BRT-B • BRT-C

2-FACE JIG BLOCK FOR MC (T-slot Type 14•16•18)

BRT32815~88040B

▶ Features

- BRS type with T-slots (14•16).
- Material : FC300
- Heat treatment : Annealing
- Finish : Floor surface / locator surface : grinding finish
  Vertical plate surface : machine finish (self cut type)

▶ Accessories

- Eye bolt (M16) 2 pcs for lifting

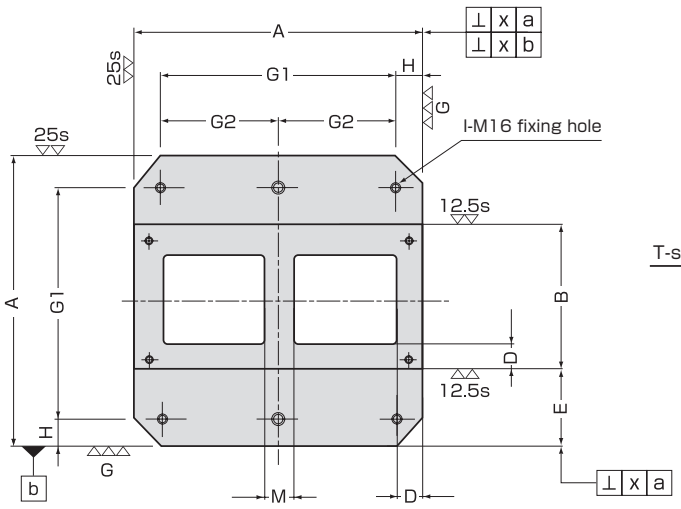
BRT44414C~88040C

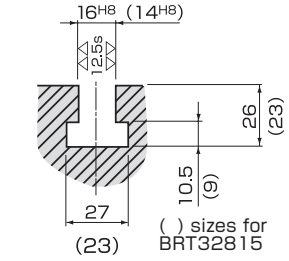
▶ Features

- BRS type with T-slots (18).
- Material : FC300
- Heat treatment : Annealing
- Finish : Floor surface / locator surface : grinding finish
  Vertical plate surface : machine finish (self cut type)

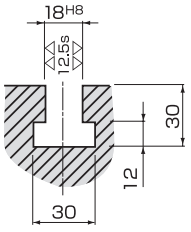
▶ Accessories

- Eye bolt (M16) 2 pcs for lifting

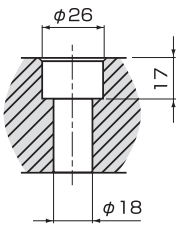




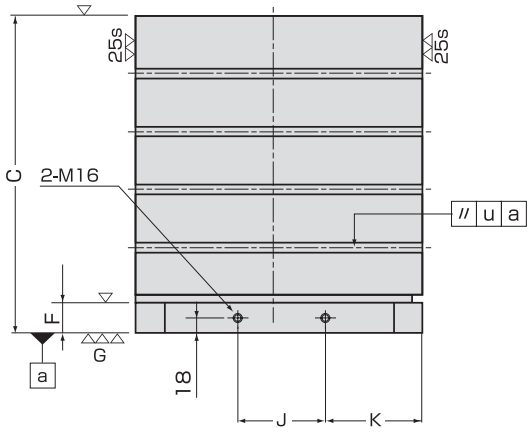
T-slot details (B type)

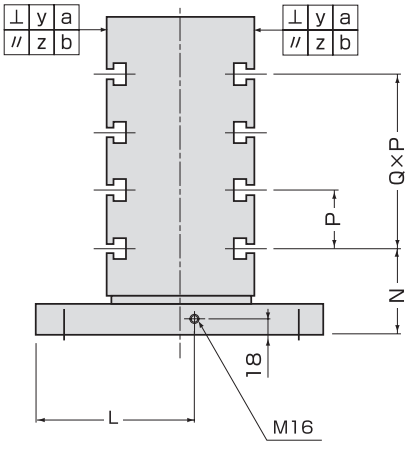


T-slot details (C type)



I-M16 fixing hole details





For BRT32815, the size and position of the pulling screws and the fixing holes are manufactured as required in the order.

Upon request, we can provide a product of your required specifications.

▌BRT･BRT-B･BRT-C

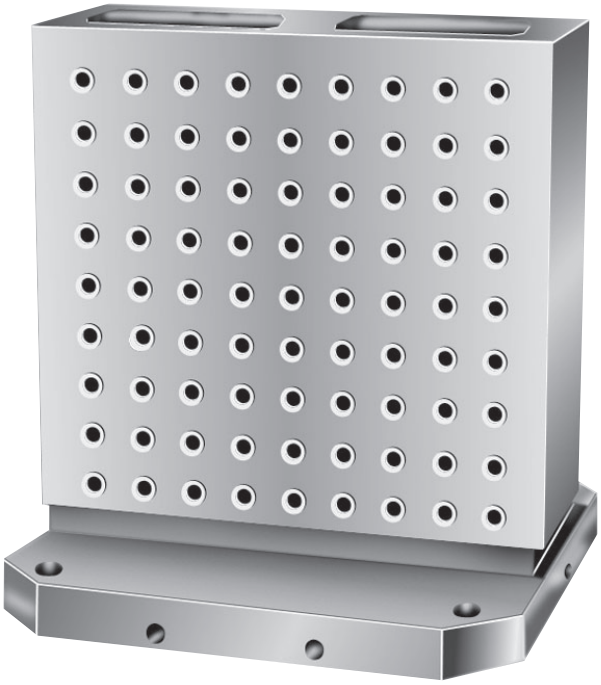
Item No.	Size (mm)															
	A	B	Size tolerance	C	D	E	Size tolerance	F	G1	G2	H	I	J	K	L	M
BRT32815	300	150	151.0±0.2	280	40	75	74.5±0.2	25	—	—	—	—	—	—	—	—
BRT44414B･C	400	140	141.0±0.2	440	50	130	129.5±0.2	40	320	—	40	4 pcs	110	145	225	50
BRT45020B･C	400	200	201.0±0.2	500	50	100	99.5±0.2	40	320	—	40	4 pcs	110	145	225	50
BRT45025B･C	400	250	251.0±0.2	500	50	75	74.5±0.2	40	320	—	40	4 pcs	110	145	225	50
BRT55518B･C	500	180	181.0±0.2	550	50	160	159.5±0.2	50	400	—	50	4 pcs	150	175	275	50
BRT55520B･C	500	200	201.0±0.2	550	50	150	149.5±0.2	50	400	—	50	4 pcs	150	175	275	50
BRT55525B･C	500	250	251.0±0.2	550	50	125	124.5±0.2	50	400	—	50	4 pcs	150	175	275	50
BRT66522B･C	630	220	221.0±0.2	650	50	205	204.5±0.2	50	500	250	65	6 pcs	200	215	340	50
BRT67025B･C	630	250	251.0±0.2	700	50	190	189.5±0.2	50	500	250	65	6 pcs	200	215	340	50
BRT67030B･C	630	300	301.0±0.2	700	50	165	164.5±0.2	50	500	250	65	6 pcs	200	215	340	50
BRT88035B･C	800	350	351.0±0.2	800	50	225	224.5±0.2	50	640	320	80	6 pcs	270	265	425	50
BRT88040B･C	800	400	401.0±0.2	800	50	200	199.5±0.2	50	640	320	80	6 pcs	270	265	425	50

▌BRT･BRT-B

Item No.	Size (mm)								N.W. (kg)
	N	P	Q	Number of T-slots	x	y	z	u	
BRT32815	75±0.05	75±0.03	2	3-2 faces	0.02	0.05	0.03	0.05	60
BRT44414B	150±0.05	100±0.03	2	3-2 faces	0.02	0.05	0.03	0.05	164
BRT45020B	150±0.05	100±0.03	3	4-2 faces	0.02	0.05	0.03	0.05	206
BRT45025B	150±0.05	100±0.03	3	4-2 faces	0.02	0.05	0.03	0.05	226
BRT55518B	150±0.05	100±0.03	3	4-2 faces	0.02	0.05	0.03	0.05	284
BRT55520B	150±0.05	100±0.03	3	4-2 faces	0.02	0.05	0.03	0.05	292
BRT55525B	150±0.05	100±0.03	3	4-2 faces	0.02	0.05	0.03	0.05	311
BRT66522B	150±0.05	150±0.03	3	4-2 faces	0.02	0.05	0.03	0.05	447
BRT67025B	150±0.05	150±0.03	3	4-2 faces	0.02	0.05	0.03	0.05	491
BRT67030B	150±0.05	150±0.03	3	4-2 faces	0.02	0.05	0.03	0.05	517
BRT88035B	150±0.05	150±0.03	4	5-2 faces	0.02	0.05	0.03	0.05	872
BRT88040B	150±0.05	150±0.03	4	5-2 faces	0.02	0.05	0.03	0.05	907

▌BRT-C

Item No.	Size (mm)								N.W. (kg)
	N	P	Q	Number of T-slots	x	y	z	u	
BRT44414C	150±0.05	100±0.03	2	3-2 faces	0.02	0.05	0.03	0.05	162
BRT45020C	150±0.05	100±0.03	3	4-2 faces	0.02	0.05	0.03	0.05	202
BRT45025C	150±0.05	100±0.03	3	4-2 faces	0.02	0.05	0.03	0.05	223
BRT55518C	150±0.05	100±0.03	3	4-2 faces	0.02	0.05	0.03	0.05	279
BRT55520C	150±0.05	100±0.03	3	4-2 faces	0.02	0.05	0.03	0.05	287
BRT55525C	150±0.05	100±0.03	3	4-2 faces	0.02	0.05	0.03	0.05	307
BRT66522C	150±0.05	150±0.03	3	4-2 faces	0.02	0.05	0.03	0.05	441
BRT67025C	150±0.05	150±0.03	3	4-2 faces	0.02	0.05	0.03	0.05	486
BRT67030C	150±0.05	150±0.03	3	4-2 faces	0.02	0.05	0.03	0.05	511
BRT88035C	150±0.05	150±0.03	4	5-2 faces	0.02	0.05	0.03	0.05	863
BRT88040C	150±0.05	150±0.03	4	5-2 faces	0.02	0.05	0.03	0.05	898



BRB-A • BRB-B

2-FACE JIG BLOCK FOR MC (Bushing Type 12・16)

BRB32815A～88040A

▶ Features

- BRS type with bushes and heliserts inserted as standard holes.
- Standard hole size : ϕ12mm
- Material : FC300
- Heat treatment : Annealing
- Finish : Floor surface / locator surface : grinding finish
  Vertical plate surface : machine finish (self cut type)

▶ Accessories

- Eye bolt (M16) 2 pcs for lifting

BRB44414B～88040B

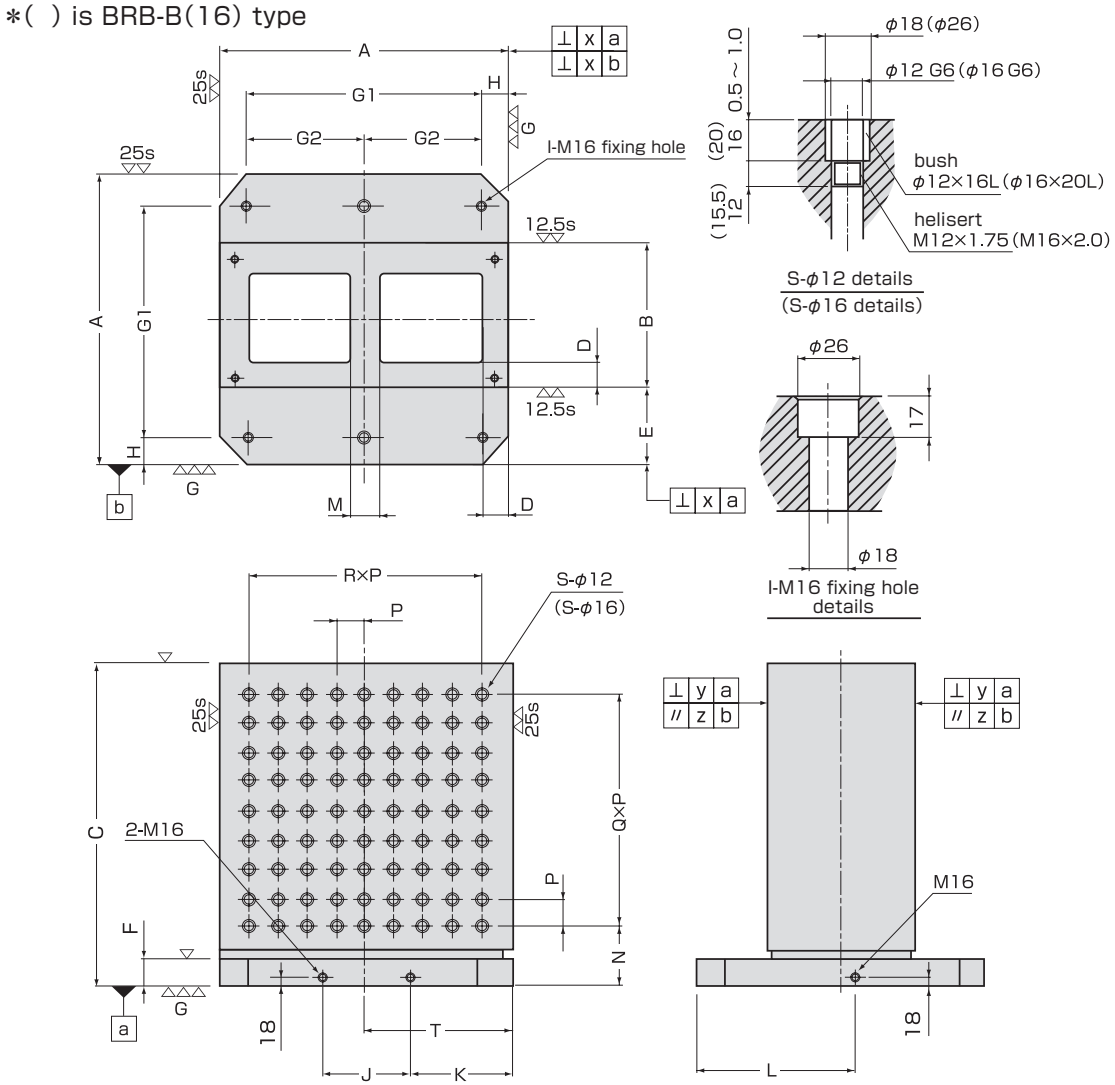
▶ Features

- BRS type with bushes and heliserts inserted as standard holes.
- Standard hole size : ϕ16mm
- Material : FC300
- Heat treatment : Annealing
- Finish : Floor surface / locator surface : grinding finish
  Vertical plate surface : machine finish (self cut type)

▶ Accessories

- Eye bolt (M16) 2 pcs for lifting

＊( ) is BRB-B(16) type



For BRB32815A, the size and position of the pulling screws and the fixing holes are manufactured as required in the order.

Upon request, we can provide a product of your required specifications.

▌BRB-A・BRB-B

Item No.	Size (mm)															
	A	B	Size tolerance	C	D	E	Size tolerance	F	G1	G2	H	I	J	K	L	M
BRB32815A	300	150	151.0±0.2	280	40	75	74.5±0.2	25	—	—	—	—	—	—	—	—
BRB44414A・B	400	140	141.0±0.2	440	50	130	129.5±0.2	40	320	—	40	4 pcs	110	145	225	50
BRB45020A・B	400	200	201.0±0.2	500	50	100	99.5±0.2	40	320	—	40	4 pcs	110	145	225	50
BRB45025A・B	400	250	251.0±0.2	500	50	75	74.5±0.2	40	320	—	40	4 pcs	110	145	225	50
BRB55518A・B	500	180	181.0±0.2	550	50	160	159.5±0.2	50	400	—	50	4 pcs	150	175	275	50
BRB55520A・B	500	200	201.0±0.2	550	50	150	149.5±0.2	50	400	—	50	4 pcs	150	175	275	50
BRB55525A・B	500	250	251.0±0.2	550	50	125	124.5±0.2	50	400	—	50	4 pcs	150	175	275	50
BRB66522A・B	630	220	221.0±0.2	650	50	205	204.5±0.2	50	500	250	65	6 pcs	200	215	340	50
BRB67025A・B	630	250	251.0±0.2	700	50	190	189.5±0.2	50	500	250	65	6 pcs	200	215	340	50
BRB67030A・B	630	300	301.0±0.2	700	50	165	164.5±0.2	50	500	250	65	6 pcs	200	215	340	50
BRB88035A・B	800	350	351.0±0.2	800	50	225	224.5±0.2	50	640	320	80	6 pcs	270	265	425	50
BRB88040A・B	800	400	401.0±0.2	800	50	200	194.5±0.2	50	640	320	80	6 pcs	270	265	425	50

▌BRB-A

Item No.	Size (mm)									N.W. (kg)
	N	P	Q	R	S	T	x	y	z	
BRB32815A	75±0.05	50±0.02	3	4	40	150±0.05	0.02	0.05	0.03	65
BRB44414A	100±0.05	50±0.02	6	6	98	200±0.05	0.02	0.05	0.03	170
BRB45020A	100±0.05	50±0.02	7	6	112	200±0.05	0.02	0.05	0.03	214
BRB45025A	100±0.05	50±0.02	7	6	112	200±0.05	0.02	0.05	0.03	234
BRB55518A	100±0.05	100±0.02	4	4	50	250±0.05	0.02	0.05	0.03	297
BRB55520A	100±0.05	100±0.02	4	4	50	250±0.05	0.02	0.05	0.03	305
BRB55525A	100±0.05	100±0.02	4	4	50	250±0.05	0.02	0.05	0.03	325
BRB66522A	120±0.05	100±0.02	5	4	60	315±0.05	0.02	0.05	0.03	464
BRB67025A	120±0.05	100±0.02	5	4	60	315±0.05	0.02	0.05	0.03	508
BRB67030A	120±0.05	100±0.02	5	4	60	315±0.05	0.02	0.05	0.03	534
BRB88035A	150±0.05	150±0.02	4	4	50	400±0.05	0.02	0.05	0.03	900
BRB88040A	150±0.05	150±0.02	4	4	50	400±0.05	0.02	0.05	0.03	935

▌BRB-B

Item No.	Size (mm)									N.W. (kg)
	N	P	Q	R	S	T	x	y	z	
BRB44414B	100±0.05	50±0.02	6	6	98	200±0.05	0.02	0.05	0.03	166
BRB45020B	100±0.05	50±0.02	7	6	112	200±0.05	0.02	0.05	0.03	210
BRB45025B	100±0.05	50±0.02	7	6	112	200±0.05	0.02	0.05	0.03	231
BRB55518B	100±0.05	100±0.02	4	4	50	250±0.05	0.02	0.05	0.03	295
BRB55520B	100±0.05	100±0.02	4	4	50	250±0.05	0.02	0.05	0.03	303
BRB55525B	100±0.05	100±0.02	4	4	50	250±0.05	0.02	0.05	0.03	323
BRB66522B	120±0.05	100±0.02	5	4	60	315±0.05	0.02	0.05	0.03	462
BRB67025B	120±0.05	100±0.02	5	4	60	315±0.05	0.02	0.05	0.03	506
BRB67030B	120±0.05	100±0.02	5	4	60	315±0.05	0.02	0.05	0.03	532
BRB88035B	150±0.05	150±0.02	4	4	50	400±0.05	0.02	0.05	0.03	899
BRB88040B	150±0.05	150±0.02	4	4	50	400±0.05	0.02	0.05	0.03	934



BCT-B • BCT-C

4-FACE CROSS JIG BLOCK FOR MC (T-slot Type 16・18)

BCT45010B～67025B

▶ Features

- BCS type (P.212) with T-slots.
- Mechalocks can be fixed by using the T-slots (16).
- Material : FC300
- Heat treatment : Annealing
- Finish : Floor surface / locator surface : grinding finish
  Vertical plate surface : machine finish (self cut type)
  Base top side surface : casting

▶ Accessories

- Eye bolt (M16) 2 pcs for lifting

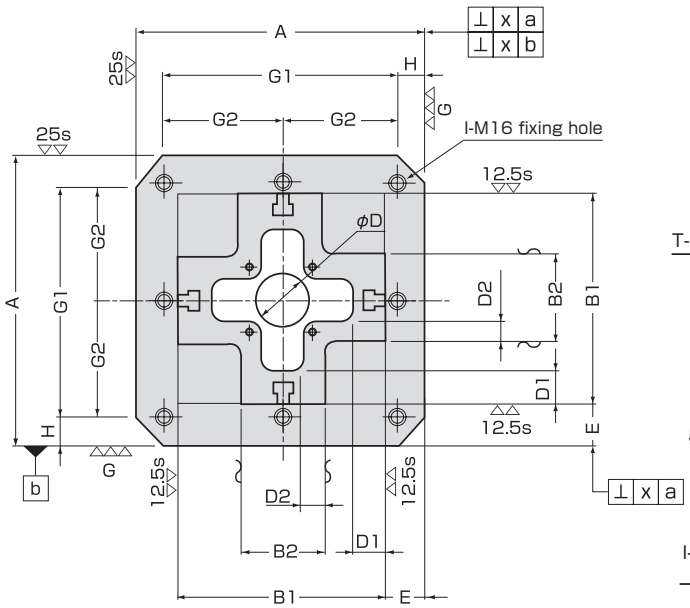
BCT45010C～67025C

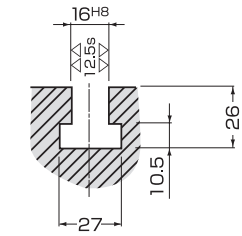
▶ Features

- BCS type (P.212) with T-slots.
- Mechalocks can be fixed by using the T-slots (18).
- Material : FC300
- Heat treatment : Annealing
- Finish : Floor surface / locator surface : grinding finish
  Vertical plate surface : machine finish (self cut type)
  Base top side surface : casting

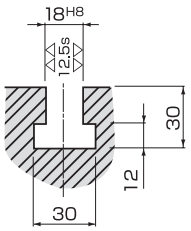
▶ Accessories

- Eye bolt (M16) 2 pcs for lifting

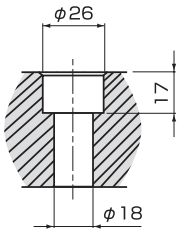




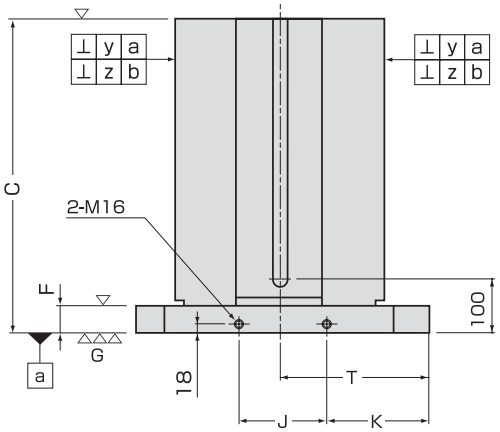
T-slot details (B type)

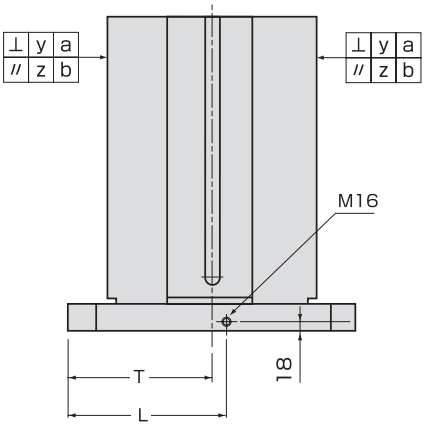


T-slot details (C type)



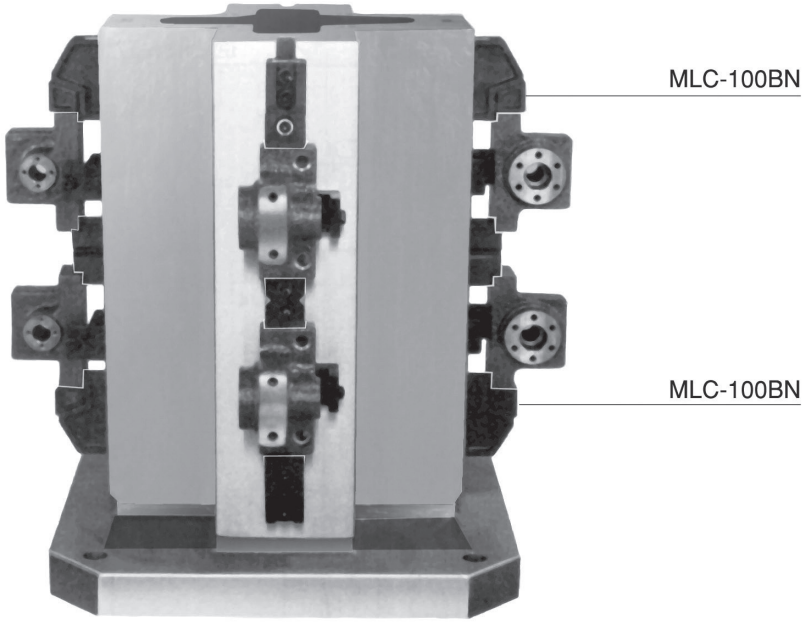
I-M16 fixing hole details





Upon request, we can provide a product of your required specifications.

▮Example of mechalock clamps (MLC) fixed to a cross jig block (BCT)



(the product of the photo is a customized product)

Item No.	Size (mm)									
	A	B1	Size tolerance	B2	C	ϕD	D1	D2	E	Size tolerance
BCT45010B·C	400	300	301.0±0.2	100	500	70	—	—	50	49.5±0.2
BCT45015B·C	400	300	301.0±0.2	150	500	—	60	40	50	49.5±0.2
BCT56015B·C	500	400	401.0±0.2	150	600	—	60	40	50	49.5±0.2
BCT56020B·C	500	400	401.0±0.2	200	600	—	60	40	50	49.5±0.2
BCT67020B·C	630	450	451.0±0.2	200	700	—	60	40	90	89.5±0.2
BCT67025B·C	630	450	451.0±0.2	250	700	—	60	40	90	89.5±0.2

Item No.	Size (mm)												N.W. (kg)
	F	G1	G2	H	I	J	K	L	T	x	y	z	
BCT45010B	50	320	—	40	4 pcs	110	145	225	200±0.05	0.02	0.05	0.03	198
BCT45015B	50	320	—	40	4 pcs	110	145	225	200±0.05	0.02	0.05	0.03	195
BCT56015B	50	400	—	50	4 pcs	150	175	275	250±0.05	0.02	0.05	0.03	318
BCT56020B	50	400	—	50	4 pcs	150	175	275	250±0.05	0.02	0.05	0.03	327
BCT67020B	50	500	250	65	8 pcs	200	215	340	315±0.05	0.02	0.05	0.03	458
BCT67025B	50	500	250	65	8 pcs	200	215	340	315±0.05	0.02	0.05	0.03	470
BCT45010C	50	320	—	40	4 pcs	110	145	225	200±0.05	0.02	0.05	0.03	196
BCT45015C	50	320	—	40	4 pcs	110	145	225	200±0.05	0.02	0.05	0.03	193
BCT56015C	50	400	—	50	4 pcs	150	175	275	200±0.05	0.02	0.05	0.03	315
BCT56020C	50	400	—	50	4 pcs	150	175	275	250±0.05	0.02	0.05	0.03	325
BCT67020C	50	500	250	65	8 pcs	200	215	340	315±0.05	0.02	0.05	0.03	456
BCT67025C	50	500	250	65	8 pcs	200	215	340	315±0.05	0.02	0.05	0.03	468



BCS

4-FACE CROSS JIG BLOCK FOR MC (Standard Type)

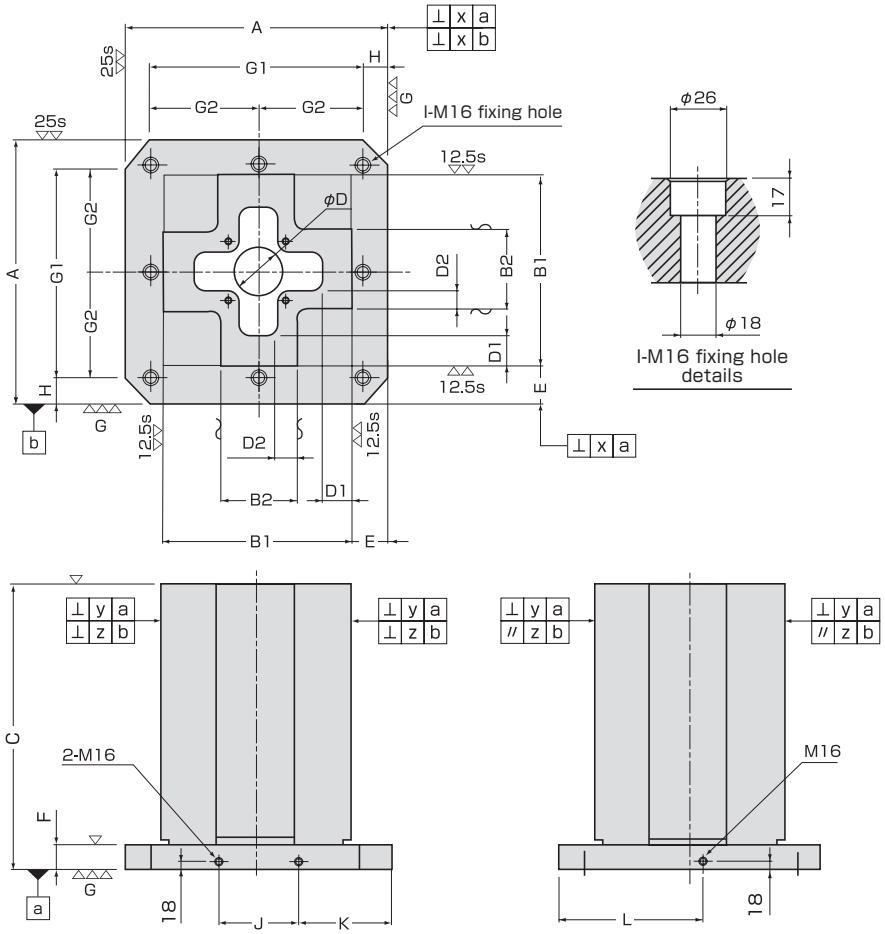
BCS45010~67025

▶ Features

- 3-face process of the work can be done in one chucking.
- Material : FC300
- Heat treatment : Annealing
- Finish : Floor surface / locator surface : grinding finish
  Vertical plate surface : machine finish (self cut type)
  Base top side surface : casting

▶ Accessories

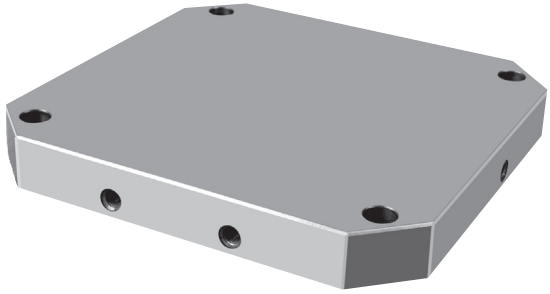
- Eye bolt (M16) 2 pcs for lifting

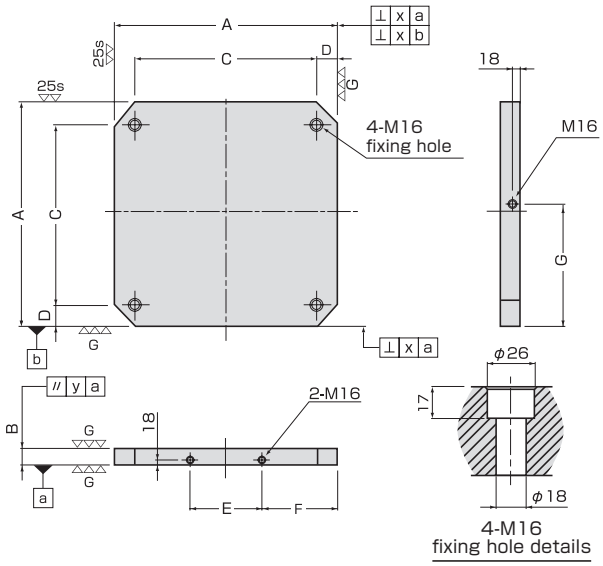


Upon request, we can provide a product of your required specifications.

Item No.	Size (mm)									
	A	B1	Size tolerance	B2	C	φD	D1	D2	E	Size tolerance
BCS45010	400	300	301.0±0.2	100	500	70	—	—	50	49.5±0.2
BCS45015	400	300	301.0±0.2	150	500	—	60	40	50	49.5±0.2
BCS56015	500	400	401.0±0.2	150	600	—	60	40	50	49.5±0.2
BCS56020	500	400	401.0±0.2	200	600	—	60	40	50	49.5±0.2
BCS67020	630	450	451.0±0.2	200	700	—	60	40	90	89.5±0.2
BCS67025	630	450	451.0±0.2	250	700	—	60	40	90	89.5±0.2

Item No.	Size (mm)											N.W. (kg)
	F	G1	G2	H	I	J	K	L	x	y	z	
BCS45010	50	320	—	40	4 pcs	110	145	225	0.02	0.05	0.03	204
BCS45015	50	320	—	40	4 pcs	110	145	225	0.02	0.05	0.03	201
BCS56015	50	400	—	50	4 pcs	150	175	275	0.02	0.05	0.03	325
BCS56020	50	400	—	50	4 pcs	150	175	275	0.02	0.05	0.03	334
BCS67020	50	500	250	65	8 pcs	200	215	340	0.02	0.05	0.03	468
BCS67025	50	500	250	65	8 pcs	200	215	340	0.02	0.05	0.03	480





PSS

SUB TABLE FOR MC (Standard Type)

PSS440~650

▶ Feature

- Ideal sub table for MC machine processing jig.
- Material : FC300
- Heat treatment : Annealing
- Finish : Grinding finish

Upon request, we can provide a product of your required specifications.

Item No.	Size (mm)									N.W. (kg)
	A	B	C	D	E	F	G	x	y	
PSS440	400	40	320	40	110	145	225	0.02	0.015	44
PSS450	400	50	320	40	110	145	225	0.02	0.015	55
PSS540	500	40	400	50	150	175	275	0.02	0.015	70
PSS550	500	50	400	50	150	175	275	0.02	0.015	87
PSS640	630	40	500	65	200	215	340	0.02	0.015	111
PSS650	630	50	500	65	200	215	340	0.02	0.015	139

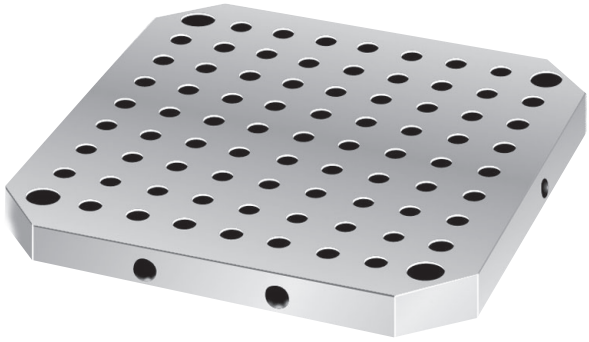
PSH

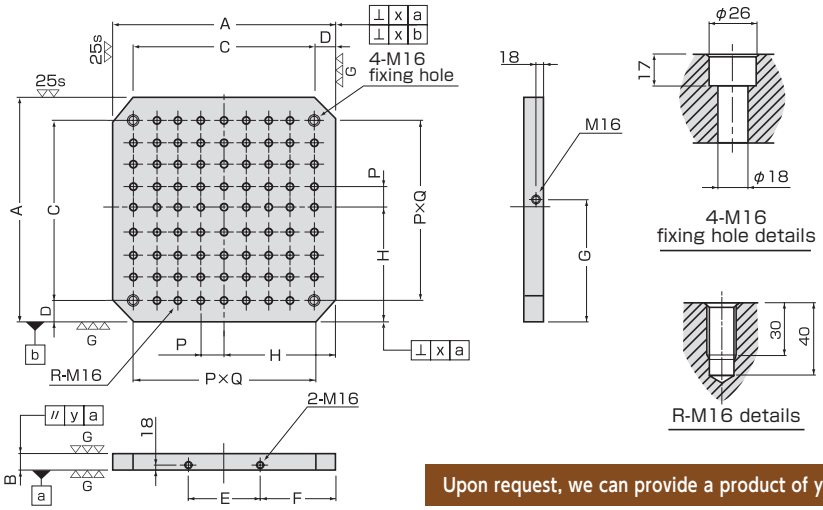
SUB TABLE FOR MC (Threaded Hole Type 16)

PSH440~650

▶ Feature

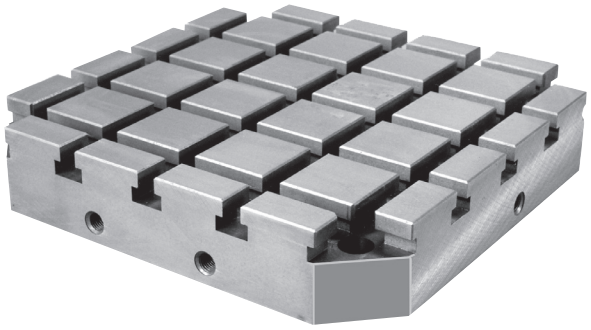
- PSS type with threaded holes (for M16 screw) positioned at 50mm pitch.
- Material : FC300
- Heat treatment : Annealing
- Finish : Grinding finish





Upon request, we can provide a product of your required specifications.

Item No.	Size (mm)													N.W. (kg)
	A	B	C	D	E	F	G	H	P	Q	R	x	y	
PSH440	400	40	320	40	110	145	225	200	50	6	45	0.02	0.015	42
PSH450	400	50	320	40	110	145	225	200	50	6	45	0.02	0.015	53
PSH540	500	40	400	50	150	175	275	250	50	8	77	0.02	0.015	66
PSH550	500	50	400	50	150	175	275	250	50	8	77	0.02	0.015	83
PSH640	630	40	500	65	200	215	340	315	50	10	117	0.02	0.015	105
PSH650	630	50	500	65	200	215	340	315	50	10	117	0.02	0.015	133



PST-B • PST-C

SUB TABLE FOR MC (T-slot Type 16•18)

PST470B~890B

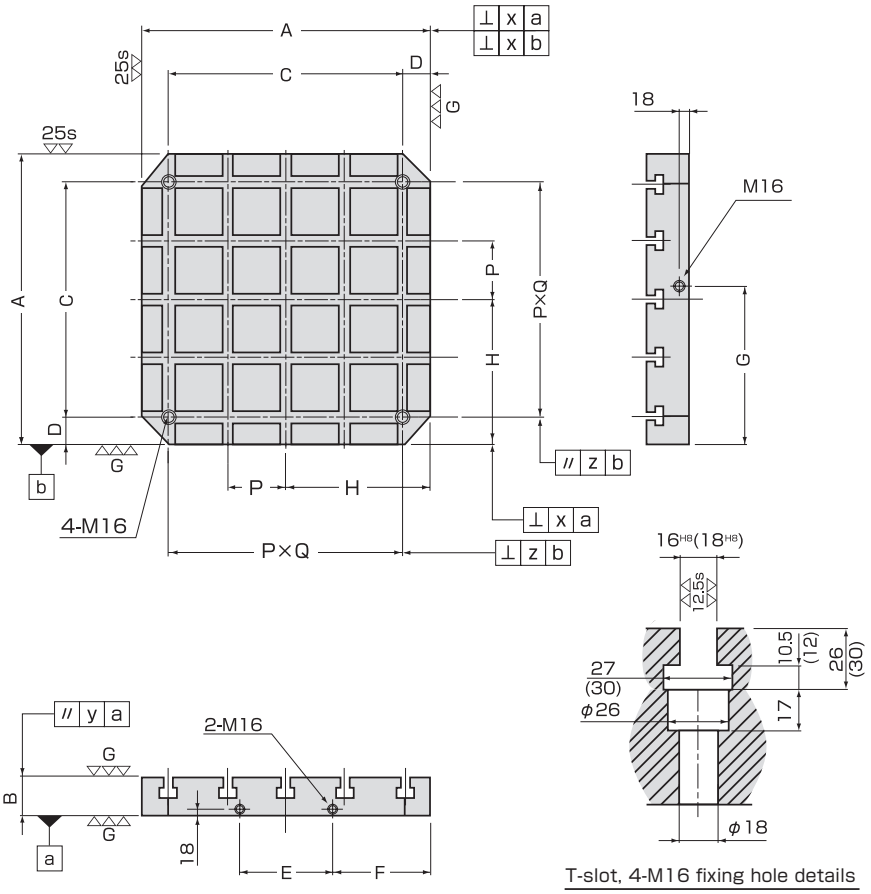
▶ Feature

- Sub table with crossed T-slots (16).
- Material : FC300
- Heat treatment : Annealing
- Finish : Grinding finish

PST470C~890C

▶ Feature

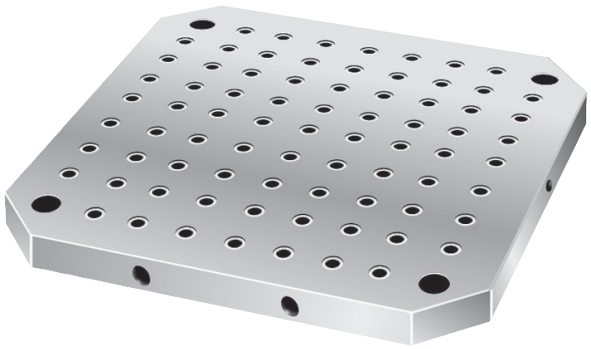
- Sub table with crossed T-slots (18).
- Material : FC300
- Heat treatment : Annealing
- Finish : Grinding finish



T-slot, 4-M16 fixing hole details

Upon request, we can provide a product of your required specifications.

Item No.	Size (mm)														N.W. (kg)
	T-slot	A	B	C	D	E	F	G	H	P	Q	x	y	z	
PST470B	16	400	70	320	40	110	145	225	200	80	4	0.02	0.015	0.03	64
PST475B	16	400	75	320	40	110	145	225	200	80	4	0.02	0.015	0.03	70
PST570B	16	500	70	400	50	150	175	275	250	100	4	0.02	0.015	0.03	105
PST575B	16	500	75	400	50	150	175	275	250	100	4	0.02	0.015	0.03	114
PST675B	16	630	75	500	65	200	215	340	315	125	4	0.02	0.015	0.03	187
PST680B	16	630	80	500	65	200	215	340	315	125	4	0.02	0.015	0.03	200
PST890B	16	800	90	640	80	270	265	425	400	160	4	0.02	0.015	0.03	373
PST470C	18	400	70	320	40	110	145	225	200	80	4	0.02	0.015	0.03	61
PST570C	18	500	70	400	50	150	175	275	250	100	4	0.02	0.015	0.03	99
PST680C	18	630	80	500	65	200	215	340	315	125	4	0.02	0.015	0.03	194
PST890C	18	800	90	640	80	270	265	425	400	160	4	0.02	0.015	0.03	364



PSB-A・PSB-B

SUB TABLE FOR MC (Bushing Type 12・16)

PSB440A～640A

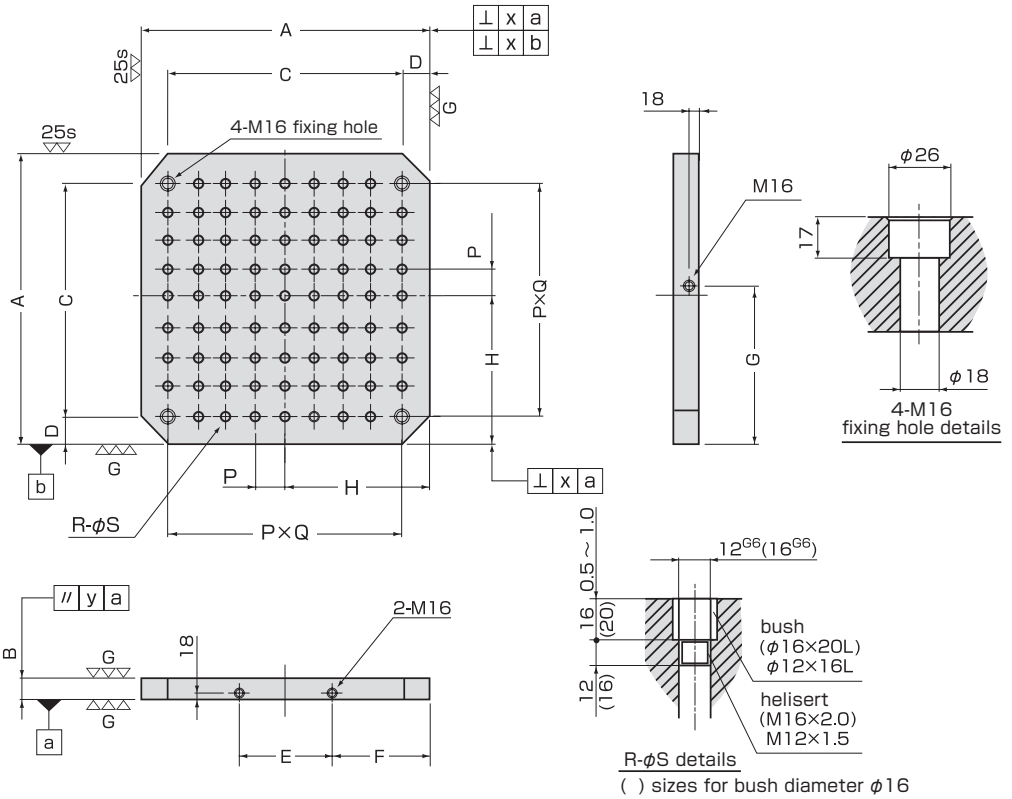
▶ Features

- Bushes and heliserts inserted with 50mm pitch as standard holes.
  Standard hole size : ϕ12mm
- Material : FC300
- Heat treatment : Annealing
- Finish : Grinding finish

PSB440B～640B

▶ Features

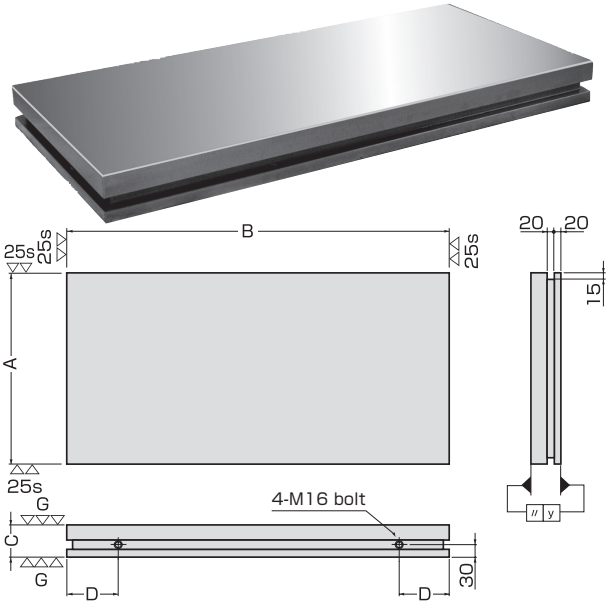
- Bushes and heliserts inserted with 50mm pitch as standard holes.
  Standard hole size : ϕ16mm
- Material : FC300
- Heat treatment : Annealing
- Finish : Grinding finish



Upon request, we can provide a product of your required specifications.

Item No.	Size (mm)														N.W. (kg)
	A	B	C	D	E	F	G	H	P	Q	R	S	x	y	
PSB440A	400	40	320	40	110	145	225	200	50	6	45	12	0.02	0.015	43
PSB540A	500	40	400	50	150	175	275	250	50	8	77	12	0.02	0.015	67
PSB640A	630	40	500	65	200	215	340	315	50	10	117	12	0.02	0.015	107
PSB440B	400	40	320	40	110	145	225	200	50	6	45	16	0.02	0.015	42
PSB540B	500	40	400	50	150	175	275	250	50	8	77	16	0.02	0.015	65
PSB640B	630	40	500	65	200	215	340	315	50	10	117	16	0.02	0.015	104

Jig blocks
Sub tables
Jig plates
Angle plates
Setting blocks
Precision vises
Vacuum chucks
Clamp kits
Screw supports
Mini blocks, mini supports
Clamping tools
Clamps



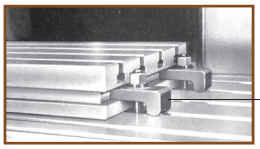
PJS

JIG PLATE (Standard Type)

PJS3065~65165

▶ Feature

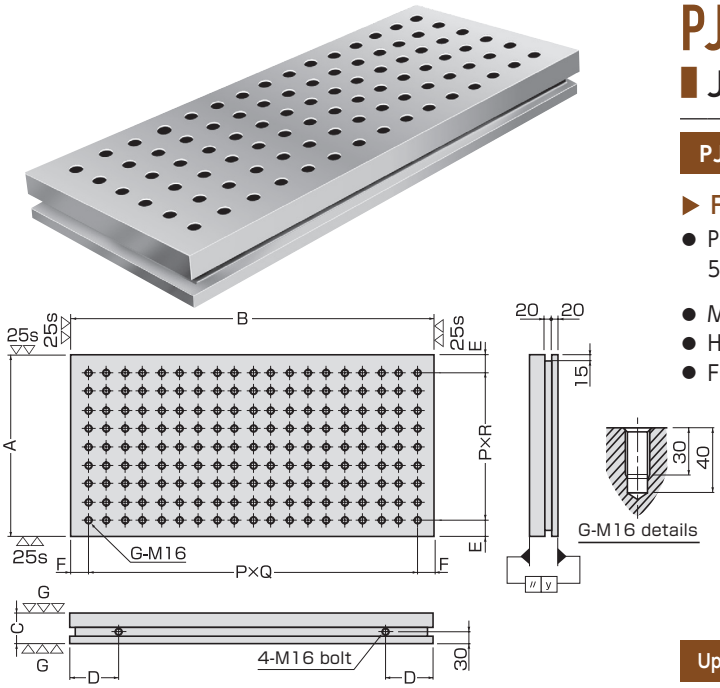
- Jig plate for set up that can be used widely from MC machine to general purpose machine.
- Material : FC300
- Heat treatment : Annealing
- Finish : Grinding finish



Solid clamp (SC) for jig plate fixing

Upon request, we can provide a product of your required specifications.

Item No.	Size (mm)					N.W. (kg)
	A	B	C	D	y	
PJS3065	300	650	70	135	0.02	94
PJS3580	350	800	75	135	0.02	146
PJS4190	410	900	75	135	0.02	194
PJS41110	410	1,100	80	135	0.02	253
PJS4590	450	900	75	135	0.02	213
PJS45110	450	1,100	80	135	0.02	279
PJS50100	500	1,000	80	135	0.02	282
PJS50110	500	1,100	80	135	0.02	310
PJS55120	550	1,200	80	175	0.02	373
PJS55130	550	1,300	80	175	0.02	404
PJS60120	600	1,200	80	175	0.02	407
PJS60140	600	1,400	90	175	0.02	536
PJS65165	650	1,650	90	225	0.02	685



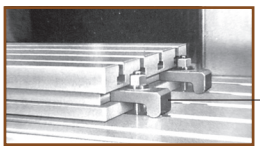
PJH

JIG PLATE (Threaded Hole Type 16)

PJH3065~65165

▶ Feature

- PJS type with threaded holes (for M16 screw) positioned at 50mm pitch.
- Material : FC300
- Heat treatment : Annealing
- Finish : Grinding finish



Solid clamp (SC) for jig plate fixing

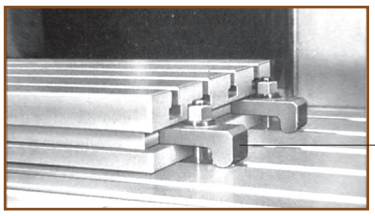
Upon request, we can provide a product of your required specifications.

Item No.	Size (mm)											N.W. (kg)
	A	B	C	D	E	F	G Number of threaded holes	P	Q	R	y	
PJH3065	300	650	70	135	50	50	60	50	11	4	0.02	91
PJH3580	350	800	75	135	50	50	90	50	14	5	0.02	141
PJH4190	410	900	75	135	30	50	136	50	16	7	0.02	185
PJH41110	410	1,100	80	135	55	50	147	50	20	6	0.02	244
PJH4590	450	900	75	135	50	50	136	50	16	7	0.02	204
PJH45110	450	1,100	80	135	50	50	168	50	20	7	0.02	268
PJH50100	500	1,000	80	135	50	50	171	50	18	8	0.02	271
PJH50110	500	1,100	80	135	50	50	189	50	20	8	0.02	298
PJH55120	550	1,200	80	175	50	50	230	50	22	9	0.02	358
PJH55130	550	1,300	80	175	50	50	250	50	24	9	0.02	388
PJH60120	600	1,200	80	175	50	50	253	50	22	10	0.02	391
PJH60140	600	1,400	90	175	50	50	297	50	26	10	0.02	517
PJH65165	650	1,650	90	225	50	50	384	50	31	11	0.02	661



PJT-B • PJT-C

JIG PLATE (T-slot Type 16・18)



Solid clamp (SC) for jig plate fixing

PJT3065B~65165B

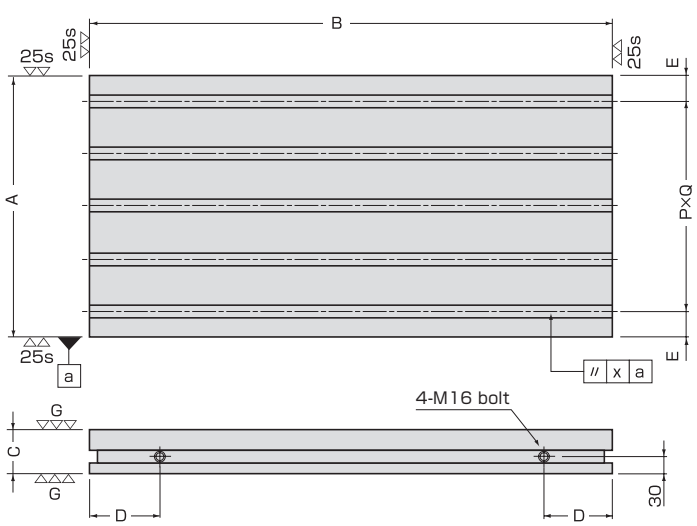
▶ Feature

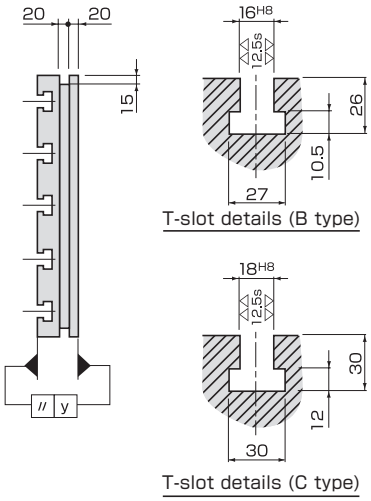
- PJS type with T-slots (16) in one direction.
- Material : FC300
- Heat treatment : Annealing
- Finish : Grinding finish

PJT3065C~65165C

▶ Feature

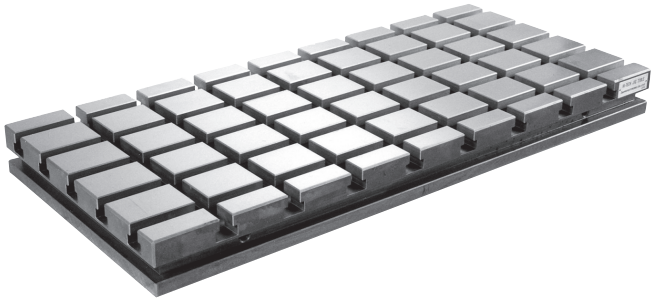
- PJS type with T-slots (18) in one direction.
- Material : FC300
- Heat treatment : Annealing
- Finish : Grinding finish





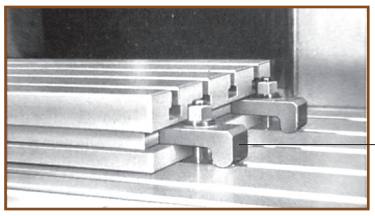
Upon request, we can provide a product of your required specifications.

Item No.	Size (mm)										N.W. (kg)
	Number of T-slots	A	B	C	D	E	P	Q	x	y	
PJT3065B	3	300	650	70	135	70	80	2	0.03	0.02	87
PJT3580B	4	350	800	75	135	55	80	3	0.03	0.02	134
PJT4190B	5	410	900	75	135	45	80	4	0.03	0.02	177
PJT41110B	5	410	1,100	80	135	45	80	4	0.03	0.02	232
PJT4590B	5	450	900	75	135	65	80	4	0.03	0.02	196
PJT45110B	5	450	1,100	80	135	65	80	4	0.03	0.02	258
PJT50100B	5	500	1,000	80	135	50	100	4	0.03	0.02	263
PJT50110B	5	500	1,100	80	135	50	100	4	0.03	0.02	289
PJT55120B	5	550	1,200	80	175	75	100	4	0.03	0.02	350
PJT55130B	5	550	1,300	80	175	75	100	4	0.03	0.02	379
PJT60120B	5	600	1,200	80	175	50	125	4	0.03	0.02	384
PJT60140B	5	600	1,400	90	175	50	125	4	0.03	0.02	509
PJT65165B	5	650	1,650	90	225	75	125	4	0.03	0.02	654
PJT3065C	3	300	650	70	135	70	80	2	0.03	0.02	85
PJT3580C	4	350	800	75	135	55	80	3	0.03	0.02	131
PJT4190C	5	410	900	75	135	45	80	4	0.03	0.02	172
PJT41110C	5	410	1,100	80	135	45	80	4	0.03	0.02	226
PJT4590C	5	450	900	75	135	65	80	4	0.03	0.02	191
PJT45110C	5	450	1,100	80	135	65	80	4	0.03	0.02	252
PJT50100C	5	500	1,000	80	135	50	100	4	0.03	0.02	257
PJT50110C	5	500	1,100	80	135	50	100	4	0.03	0.02	283
PJT55120C	5	550	1,200	80	175	75	100	4	0.03	0.02	343
PJT55130C	5	550	1,300	80	175	75	100	4	0.03	0.02	372
PJT60120C	5	600	1,200	80	175	50	125	4	0.03	0.02	378
PJT60140C	5	600	1,400	90	175	50	125	4	0.03	0.02	501
PJT65165C	5	650	1,650	90	225	75	125	4	0.03	0.02	645



PJTC-B • PJTC-C

JIG PLATE (Cross T-slot Type 16・18)



Solid clamp (SC)
for jig plate fixing

PJTC3065B～65165B

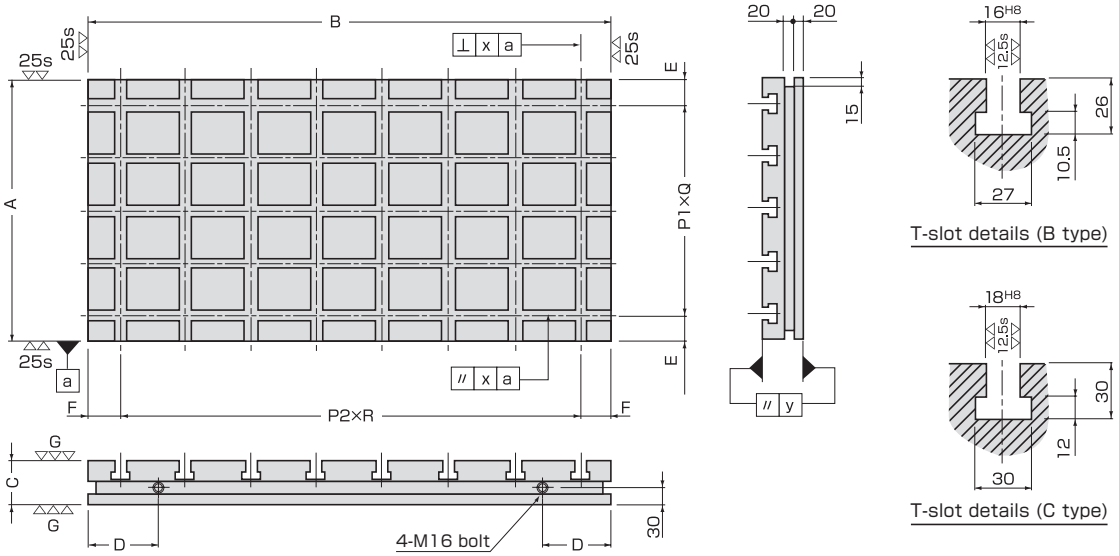
▶ Feature

- PJS type with crossed T-slots (16).
- Material : FC300
- Heat treatment : Annealing
- Finish : Grinding finish

PJTC3065C～65165C

▶ Feature

- PJS type with crossed T-slots (18).
- Material : FC300
- Heat treatment : Annealing
- Finish : Grinding finish



Upon request, we can provide a product of your required specifications.

Item No.	Size (mm)													N.W. (kg)
	Number of T-slots A × B directions	A	B	C	D	E	F	P1	Q	P2	R	x	y	
PJTC3065B	6×3	300	650	70	135	70	75	80	2	100	5	0.03	0.02	82
PJTC3580B	7×4	350	800	75	135	55	100	80	3	100	6	0.03	0.02	127
PJTC4190B	8×5	410	900	75	135	45	100	80	4	100	7	0.03	0.02	167
PJTC41110B	7×5	410	1,100	80	135	45	100	80	4	150	6	0.03	0.02	224
PJTC4590B	8×5	450	900	75	135	65	100	80	4	100	7	0.03	0.02	185
PJTC45110B	8×5	450	1,100	80	135	65	112.5	80	4	125	7	0.03	0.02	247
PJTC50100B	8×5	500	1,000	80	135	50	62.5	100	4	125	7	0.03	0.02	251
PJTC50110B	7×5	500	1,100	80	135	50	100	100	4	150	6	0.03	0.02	279
PJTC55120B	8×5	550	1,200	80	175	75	75	100	4	150	7	0.03	0.02	336
PJTC55130B	8×5	550	1,300	80	175	75	125	100	4	150	7	0.03	0.02	366
PJTC60120B	8×5	600	1,200	80	175	50	75	125	4	150	7	0.03	0.02	369
PJTC60140B	9×5	600	1,400	90	175	50	100	125	4	150	8	0.03	0.02	492
PJTC65165B	8×5	650	1,650	90	225	75	125	125	4	200	7	0.03	0.02	637
PJTC3065C	6×3	300	650	70	135	70	75	80	2	100	5	0.03	0.02	78
PJTC3580C	7×4	350	800	75	135	55	100	80	3	100	6	0.03	0.02	122
PJTC4190C	8×5	410	900	75	135	45	100	80	4	100	7	0.03	0.02	160
PJTC41110C	7×5	410	1,100	80	135	45	100	80	4	150	6	0.03	0.02	216
PJTC4590C	8×5	450	900	75	135	65	100	80	4	100	7	0.03	0.02	178
PJTC45110C	8×5	450	1,100	80	135	65	112.5	80	4	125	7	0.03	0.02	239
PJTC50100C	8×5	500	1,000	80	135	50	62.5	100	4	125	7	0.03	0.02	242
PJTC50110C	7×5	500	1,100	80	135	50	100	100	4	150	6	0.03	0.02	270
PJTC55120C	8×5	550	1,200	80	175	75	75	100	4	150	7	0.03	0.02	326
PJTC55130C	8×5	550	1,300	80	175	75	125	100	4	150	7	0.03	0.02	355
PJTC60120C	8×5	600	1,200	80	175	50	75	125	4	150	7	0.03	0.02	359
PJTC60140C	9×5	600	1,400	90	175	50	100	125	4	150	8	0.03	0.02	480
PJTC65165C	8×5	650	1,650	90	225	75	125	125	4	200	7	0.03	0.02	624



APS • APS-S

ANGLE PLATE FOR MC (Standard Type)

APS4040~6363

▶ Feature

- Angle plate with wide versatility that enables processing such as T-slot and tapping hole.
- Material : FC300
- Heat treatment : Annealing
- Finish : Machine finish (self cut type)

▶ Accessories

- Eye bolt (M16) 2 pcs for lifting

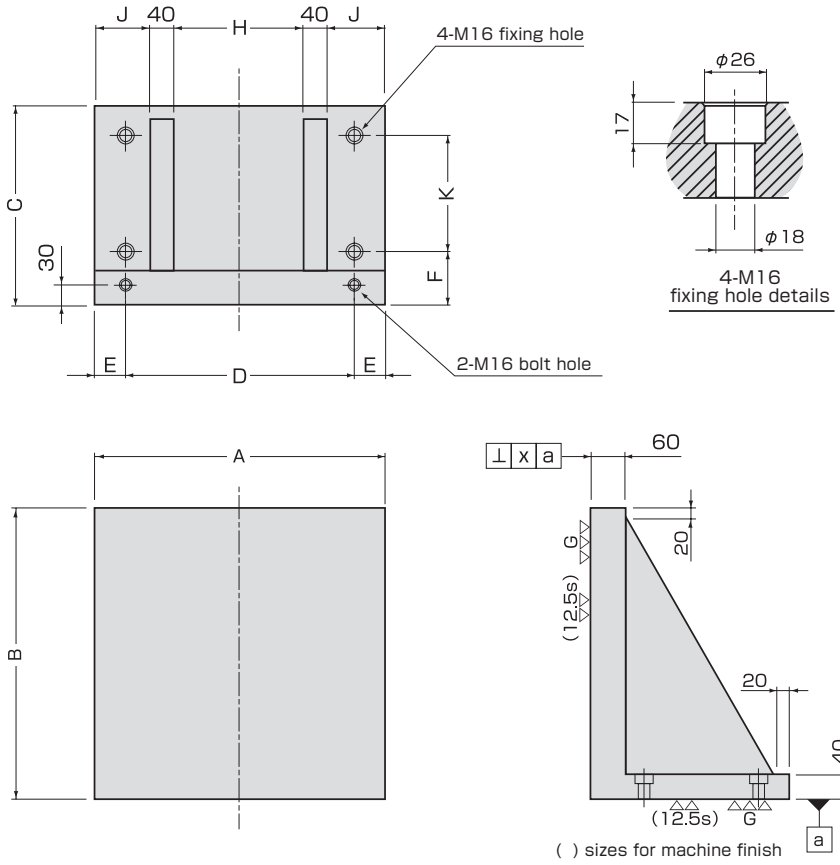
APS4040S~6363S

▶ Feature

- Angle plate with wide versatility that enables processing such as T-slot and tapping hole.
- Material : FC300
- Heat treatment : Annealing
- Finish : Grinding finish

▶ Accessories

- Eye bolt (M16) 2 pcs for lifting



Upon request, we can provide a product of your required specifications.

Item No.	Size(mm)										N.W. (kg)
	A	B	C	D	E	F	H	J	K	x	
APS4040	400	400	290	320	40	90	160	80	160	0.05	100
APS5050	500	500	340	400	50	90	220	100	200	0.05	156
APS6363	630	630	390	500	65	90	290	130	250	0.05	244
APS4040S	400	400	290	320	40	90	160	80	160	0.02	100
APS5050S	500	500	340	400	50	90	220	100	200	0.02	156
APS6363S	630	630	390	500	65	90	290	130	250	0.02	244



APH • APH-S

ANGLE PLATE FOR MC (Threaded Hole Type 16)

APH4040~6363

▶ Feature

- APS type with threaded holes (for M16 screw) positioned at 50mm pitch.
- Material : FC300
- Heat treatment : Annealing
- Finish : Machine finish (self cut type)

▶ Accessories

- Eye bolt (M16) 2 pcs for lifting

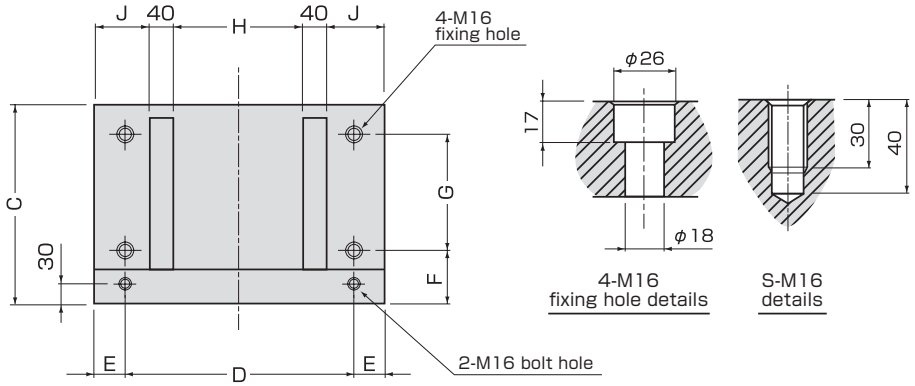
APH4040S~6363S

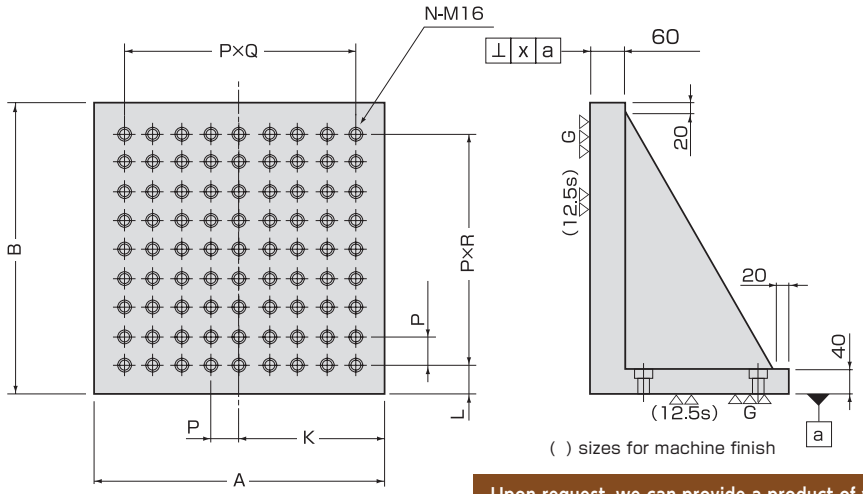
▶ Feature

- APS-S type with threaded holes (for M16 screw) positioned at 50mm pitch.
- Material : FC300
- Heat treatment : Annealing
- Finish : Grinding finish

▶ Accessories

- Eye bolt (M16) 2 pcs for lifting





Upon request, we can provide a product of your required specifications.

Item No.	Size (mm)																N.W. (kg)
	A	B	C	D	E	F	G	H	J	K	L	P	R	Q	N Number of threaded holes	x	
APH4040	400	400	290	320	40	90	160	160	80	200	50	50	6	6	49	0.05	98
APH5050	500	500	340	400	50	90	200	220	100	250	50	50	8	8	81	0.05	152
APH6363	630	630	390	500	65	90	250	290	130	315	65	50	10	10	121	0.05	238
APH4040S	400	400	290	320	40	90	160	160	80	200	50	50	6	6	49	0.02	98
APH5050S	500	500	340	400	50	90	200	220	100	250	50	50	8	8	81	0.02	152
APH6363S	630	630	390	500	65	90	250	290	130	315	65	50	10	10	121	0.02	238



APT-B • APT-C • APT-BS • APT-CS

ANGLE PLATE FOR MC (T-slot Type 16•18)

APT4040B·C～APT6363B·C

▶ Feature

- APS type with T-slots (16•18).
- Material : FC300
- Heat treatment : Annealing
- Finish : Machine finish (self cut type)

▶ Accessories

- Eye bolt (M16) 2 pcs for lifting

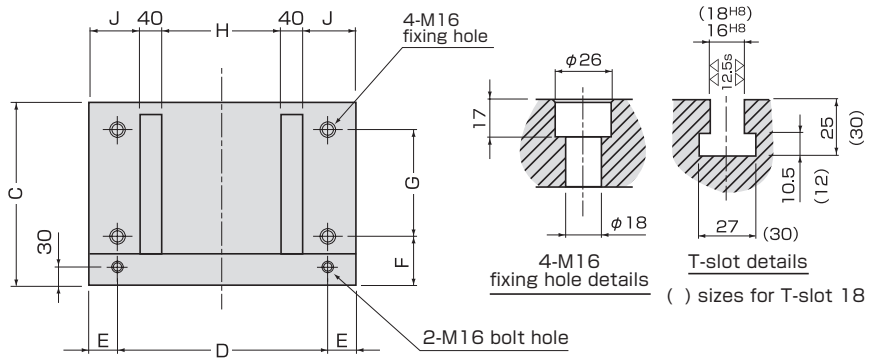
APT4040BS·CS～APT6363BS·CS

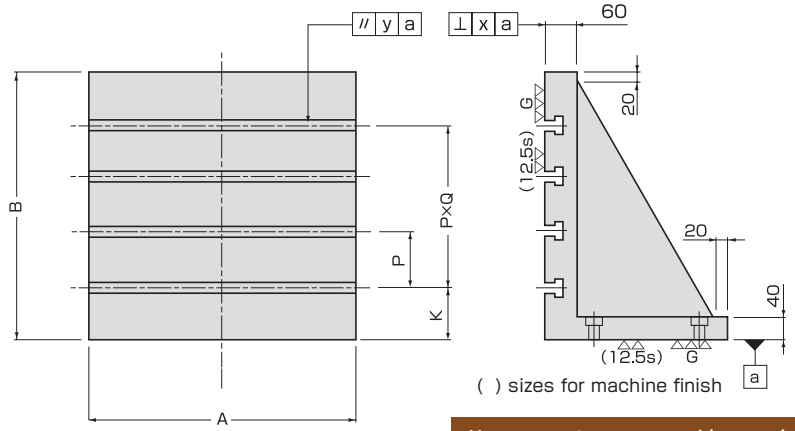
▶ Feature

- APS-S type with T-slots (16•18).
- Material : FC300
- Heat treatment : Annealing
- Finish : Grinding finish

▶ Accessories

- Eye bolt (M16) 2 pcs for lifting

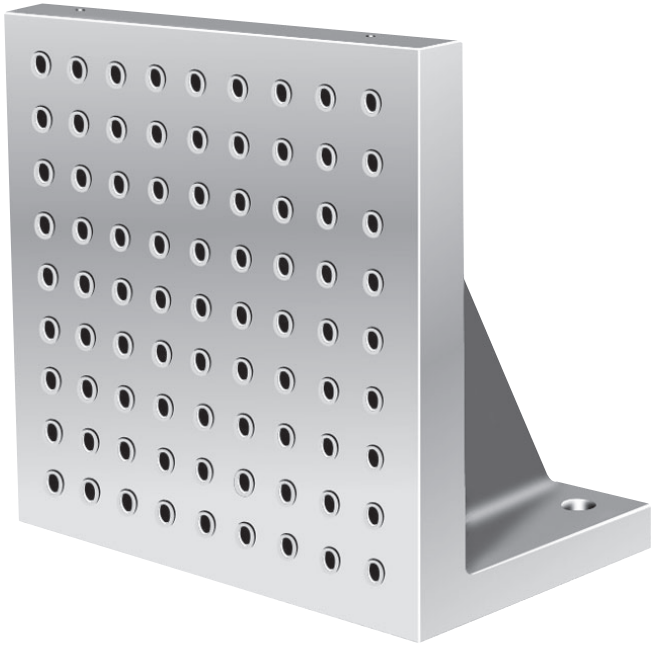




Upon request, we can provide a product of your required specifications.

Item No.	Size (mm)																N.W. (kg)
	T-slot	Number of T-slots	A	B	C	D	E	F	G	H	J	K	P	Q	x	y	
APT4040B	16	4	400	400	290	320	40	90	160	160	80	80	80	3	0.05	0.05	94
APT5050B	16	4	500	500	340	400	50	90	200	220	100	100	100	3	0.05	0.05	149
APT6363B	16	5	630	630	390	500	65	90	250	290	130	130	100	4	0.05	0.05	232
APT4040C	18	4	400	400	290	320	40	90	160	160	80	80	80	3	0.05	0.05	92
APT5050C	18	4	500	500	340	400	50	90	200	220	100	100	100	3	0.05	0.05	146
APT6363C	18	5	630	630	390	500	65	90	250	290	130	130	100	4	0.05	0.05	228
APT4040BS	16	4	400	400	290	320	40	90	160	160	80	80	80	3	0.02	0.05	94
APT5050BS	16	4	500	500	340	400	50	90	200	220	100	100	100	3	0.02	0.05	149
APT6363BS	16	5	630	630	390	500	65	90	250	290	130	130	100	4	0.02	0.05	232
APT4040CS	18	4	400	400	290	320	40	90	160	160	80	80	80	3	0.02	0.05	92
APT5050CS	18	4	500	500	340	400	50	90	200	220	100	100	100	3	0.02	0.05	146
APT6363CS	18	5	630	630	390	500	65	90	250	290	130	130	100	4	0.02	0.05	228

Jig blocks
Sub tables
Jig plates
Angle plates
Setting blocks
Precision vises
Vacuum chucks
Clamp kits
Screw supports
Mini blocks, mini supports
Clamping tools
Clamps



APB-AS・APB-BS

ANGLE PLATE FOR MC (Bushing Type 12・16)

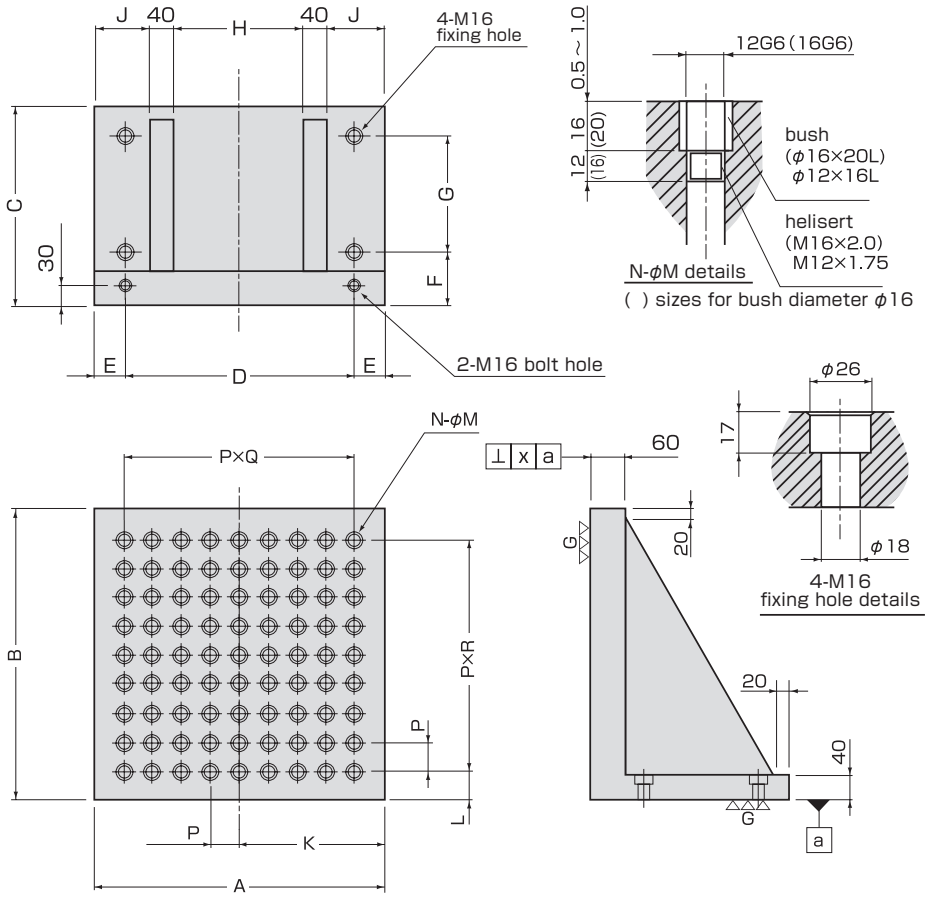
APB4040AS・BS～6363AS・BS

▶ Features

- APS-S type with bushes and heliserts inserted with 50mm pitch as standard holes.
- Standard hole size : φ12・16mm
- Material : FC300
- Heat treatment : Annealing
- Finish : Grinding finish

▶ Accessories

- Eye bolt (M16) 2 pcs for lifting



Upon request, we can provide a product of your required specifications.

Item No.	Size (mm)																	N.W. (kg)
	A	B	C	D	E	F	G	H	J	K	L	M	P	R	Q	N Number of threaded holes	x	
APB4040AS	400	400	290	320	40	90	160	160	80	200	50	12	50	6	6	49	0.02	99
APB5050AS	500	500	340	400	50	90	200	220	100	250	50	12	50	8	8	81	0.02	154
APB6363AS	630	630	390	500	65	90	250	290	130	315	65	12	50	10	10	121	0.02	240
APB4040BS	400	400	290	320	40	90	160	160	80	200	50	16	50	6	6	49	0.02	98
APB5050BS	500	500	340	400	50	90	200	220	100	250	50	16	50	8	8	81	0.02	151
APB6363BS	630	630	390	500	65	90	250	290	130	315	65	16	50	10	10	121	0.02	237

JAT-C • JAT-D • JAT-E

LARGE ANGLE PLATE FOR MC (T-slot Type 18・22・24)

▶ Feature

- For large machines such as MC machines, jig borers.
- Material : FC300
- Heat treatment : Annealing
- Finish : Machine finish

▶ Accessories

- Eye bolt (M16) 2 pcs for lifting

JAT8040C・10050C

- T-slots (18)

JAT8040D・10050D

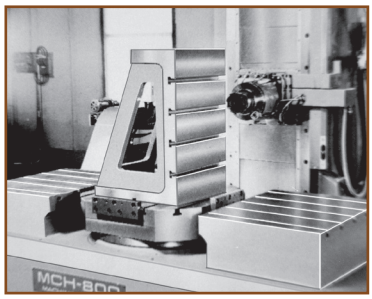
- T-slots (22)

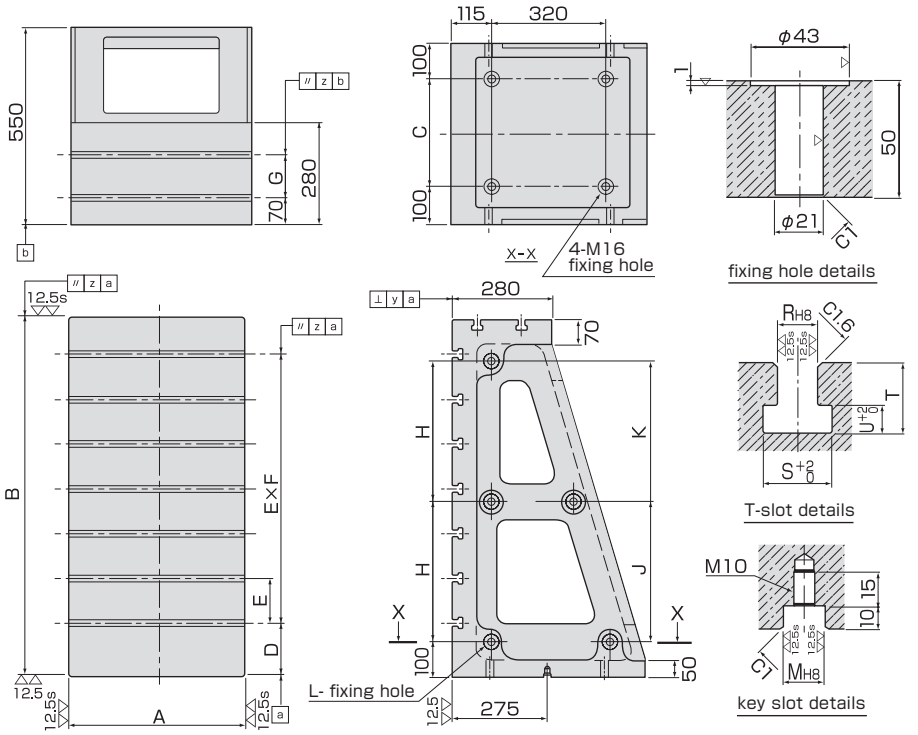
JAT8040E・10050E

- T-slots (24)



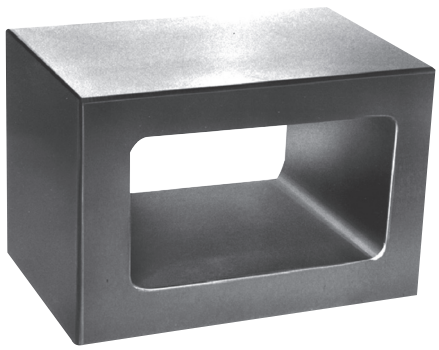
(the product on the photo is a special order product)

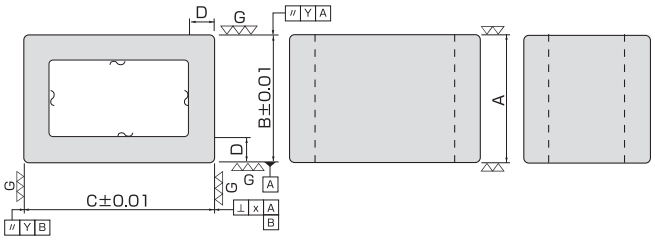




Upon request, we can provide a product of your required specifications.

Item No.	Size (mm)																		N.W. (kg)
	A	B	C	D	E	F	Number of T-slots	G	H	J	K	L	M	R	S	T	U	y	z	
JAT8040C	400	800	200	125±0.05	125±0.03	5	8	125±0.03	—	470	110	8	18	18	30	30	12	0.05	0.03	337
JAT8040D	400	800	200	125±0.05	150±0.03	4	7	150±0.03	—	470	110	8	22	22	37	38	16	0.05	0.03	365.1
JAT8040E	400	800	200	125±0.05	150±0.03	4	7	150±0.03	—	470	110	8	24	24	42	42	18	0.05	0.03	344.8
JAT10050C	500	1,000	300	150±0.05	125±0.03	6	9	125±0.03	390	390	390	10	18	18	30	30	12	0.05	0.03	481
JAT10050D	500	1,000	300	150±0.05	150±0.03	5	8	150±0.03	390	390	390	10	22	22	37	38	16	0.05	0.03	437.2
JAT10050E	500	1,000	300	150±0.05	150±0.03	5	8	150±0.03	390	390	390	10	24	24	42	42	18	0.05	0.03	439.6





SB-S

SETTING BLOCK FOR MC (Standard Type)

SB100S~200S

▶ Feature

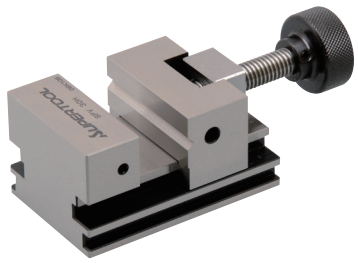
- Widely used block for built-in jigs, parallel bases, measurements and scribe markings.
- Material : FC300
- Heat treatment : Annealing
- Finish : Grinding finish

Upon request, we can provide a product of your required specifications.

Item No.	Size (mm)						N.W. (kg)
	A	B	C	D	X	Y	
SB100S	100	100	150	20	0.01	0.01	7
SB125S	125	125	200	25	0.015	0.01	14.5
SB150S	150	150	250	30	0.02	0.01	26
SB200S	200	150	300	30	0.02	0.01	37.5

SPV-(H)

PRECISION VISE



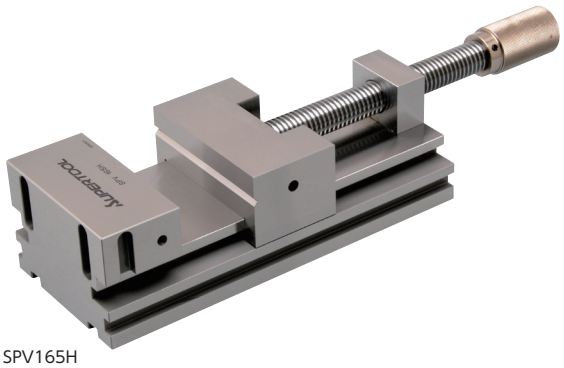
SPV30H

▶ Features

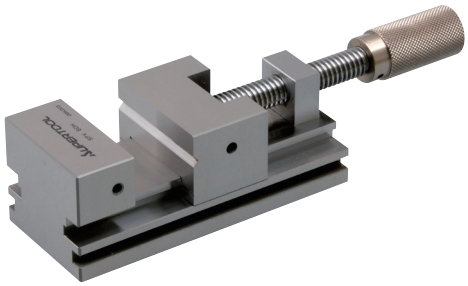
- Precision vise for ultra-precision processing with high finish accuracy.
- For a wide range of processing such as grinding, cutting, boring, etc.
- V shaped groove (G) for spherical workpiece processing, positioned at a movable jaw horizontally or vertically and horizontally (SPV80～150).
- With sub-zero treatment, the secular change is minimal.

∗ Use vise clamps (see P.246) to fix the workpiece to a machine table.

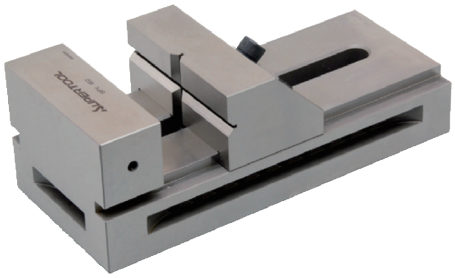
- Material / Hardness : SKS3･60HRC
- Parallelism tolerance : within 0.002/100mm
- Squareness tolerance : within 0.005/100mm



SPV165H

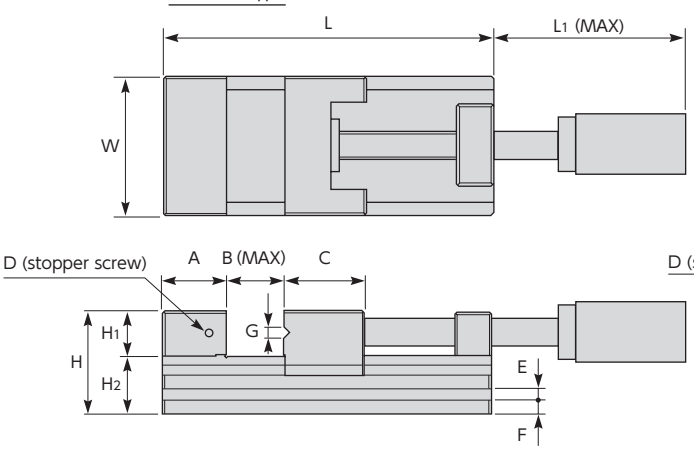


SPV80H･120H

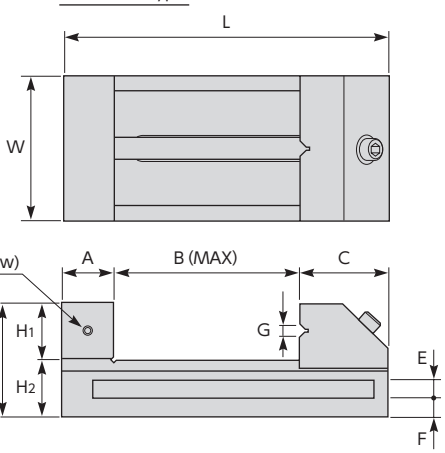


SPV80 ～ 150

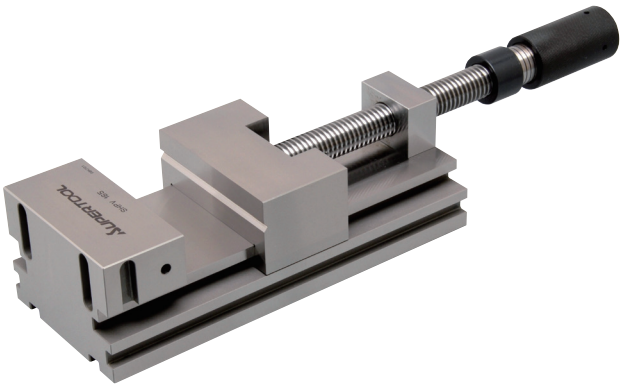
★ Handle type

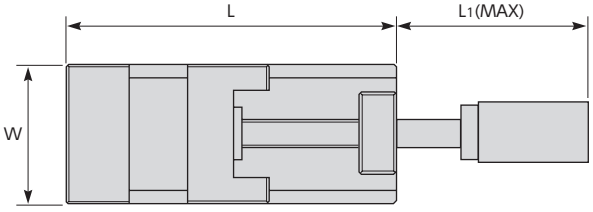


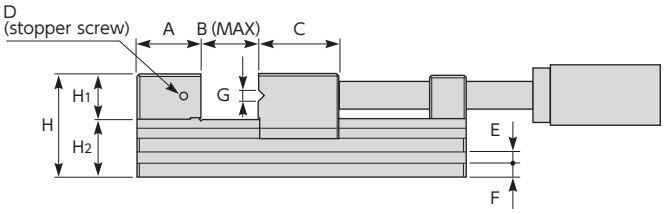
★ Wrench type



Item No.	Torque capacity (kN)	Size (mm)													Included wrench	N.W. (kg)
		L	L1	H	H1	H2	W	A	B	C	D	E (width x depth)	F	G		
SPV30H	5	95	53	50	25	25	60	25	30	30	M5	6×4	4.5	6(90°)	–	1.8
SPV80H	8	165	138	62	30	32	70	33	80	45	M6	7×7	9	6(90°)	–	4
SPV120H	8	212	183	80	40	40	90	40	120	50	M6	8.8×7	9	6(90°)	–	8.1
SPV165H	10	300	248	90	40	50	125	60	165	70	M8	11×7	12	7(90°)	10	18
SPV80	8	160	–	62	30	32	70	33	80	45	M6	8×7	9	6(90°)	5	3
SPV115	10	212	–	80	40	40	90	40	115	55	M6	10×7	12	6(90°)	5	6.6
SPV150	12	285	–	100	50	50	125	45	150	78	M8	14×12.5	18	11.5(90°)	10	15







SHPV165

HYDRAULIC PRECISION VISE

▶ Features

- Hydraulic vise for ultra-precision processing with high finish accuracy.
- For a wide range of processing such as grinding, cutting, boring, etc.
- V shaped groove (G) for spherical workpiece processing, positioned at a movable jaw horizontally.
- With sub-zero treatment, the secular change is minimal.

∗ Use vise clamps (see P.246) to fix the workpiece to a machine table.

- Material / Hardness : SKS3·60HRC
- Parallelism tolerance : within 0.002/100mm
- Squareness tolerance : within 0.005/100mm

Item No.	Torque capacity (kN)	Size (mm)													N.W. (kg)
		L	L1	H	H1	H2	W	A	B	C	D	E (width × depth)	F	G	
SHPV165	15	300	284	90	40	50	125	60	165	70	M8	11×7	12	7(90°)	18

SVAG12

VACUUM GENERATOR

▶ Features

- Light-weight and compact.
- Built-in pressure reduction valve and chuck.
- Air pressure controllable type.
- Working with a conventional compressor.
- Easy setting just by connecting to a vacuum plate (not included).

▶ Accessories

- 2-layer tube (approx. 1.5mm)
- Single layer tube (approx. 0.5mm)
- Coupler with one touch valve (1 pc)





Item No.	Depth × width × length (mm)	Max. vacuum volume (L/min)	Max. vacuum pressure (kPa)	Input pressure from compressor (MPa)	Max. air consumption (L/min)	Recommended workpiece surface roughness	N.W. (kg)
SVAG12	approx. 80×222×160	12	-88	0.5~0.7	30 (with input pressure of 0.6MPa per hour)	min. 3.2Ra	1.7

SVA
VACUUM CHUCK

MOVIE



SVA2025

▶ Features

- Instantly suck and fix a workpiece with air from a compressor. Working with processing machines such as machining centers or abrasive machines.
- As a vacuum ejector is equipped, no vacuum pump is required.
- Easy start just by connecting tube for one-touch valve to a compressor in your factory.
- Air suction is ideal for non-magnetic materials such as stainless steel, aluminum or resin.
- When the valve is off, a small quantity of air flows out of a 1mm diameter vacuum hole to prevent any foreign material from entering the air circuit.
- As most of the parts are behind the front panel, maintenance and part replacement are easy.
- The built-in pressure reduction valve allows an economical use saving air consumption and valve adjustment.
- It is possible to combine 2 units thanks to the holes for hexagon bolts at both sides of each unit.

✻ Use solid clamps (see P.246) to fix the workpiece to a machine table.

✻ Caution : The max. air consumption is approx. 0.6Mpa of input pressure. The max. vacuum capacity is a theorical value. The practical value shall be considered as approx. 80% of the theorical value. The vacuum capacity of one grid at max. vacuum pressure is approx. 8kN. This value varies depending on the size so it shall be considered as a rough indication. The vacuum capacity is proportional to the vacuum pressure and the surface size, but the surface shape, roughness or distortion may decrease the vacuum capacity. Recommended surface roughness : min. 3.2Ra

▶ Accessories

- Neolon foam band (black), approx. 2 perimeters length.
- Silicon rubber (white), approx. 1 perimeter length.
- 2-layer tube for one-touch valve, 0.5m
- Coupler with one-touch valve, 1 pc

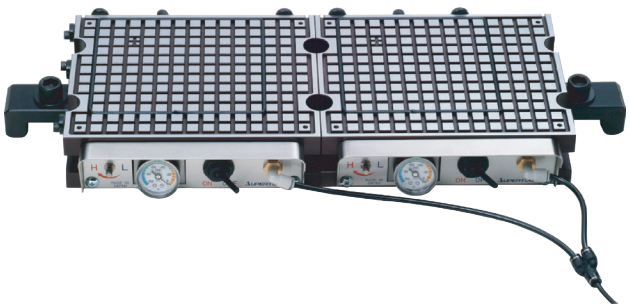
▶ Specifications

- Material : FC300
- Pressure from compressor (MPa) : 0.5～0.7MPa
- Max. vacuum pressure : -88kPa

Item No.	Size (mm)	Max. vacuum capacity (kN)	Number of grid slots	Max. air consumption (L/min)	Max. loading (kg)	N.W. (kg)
SVA2025	200×250×65	1.31	172	30	24	9
SVA2540	250×400×65	2.84	352	60	50	19
SVA3035	300×350×65	2.99	370	60	50	20
SVA3560	350×600×65	6.16	748	100	100	40

Combined use (semi-custom made)

- To connect the 2 units, use standard hex. bolts and washers.
- Applicable hex. bolt size : M16 or below
- Applicable washer : small flat washer (diameter 30) for M16 or below.



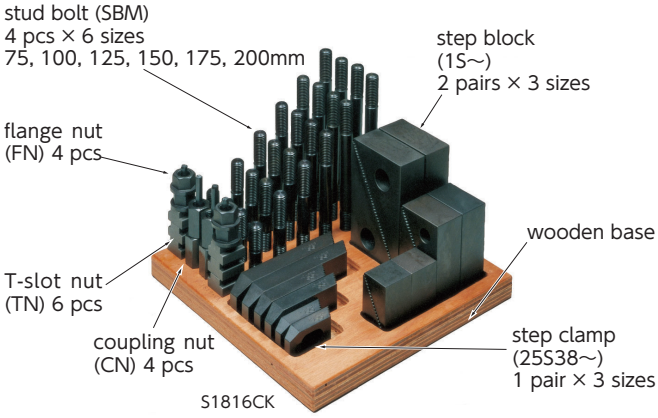
Maintenance

- Remove the 4 screws of the front panel and pull out the panel for easy maintenance.
- You can also put the unit upside down and remove the rear lid.



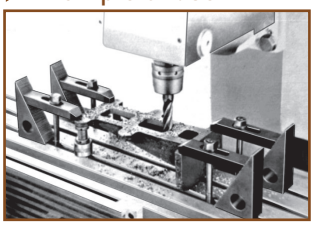
Examples of processing

	1	2	3	4
Processed material	MC nylon	Stainless steel SUS304	Aluminum A5052	Stainless steel SUS304
Processing equipment	Machining center	Machining center	Machining center	Flat surface abrasive machine
Processing type	Groove processing	Front surface shaving	Shoulder milling	Flat surface abrasion
Processing tool	ϕ4 end mill	ϕ80 face mill	ϕ33 shoulder mill	—
RPM (min^{-1})	2,400	1,000	1,500	—
Forwarding(mm/min)	200	500	400	—
Grinding depth	3.5mm	0.5mm	2mm(depth 10)	3μm



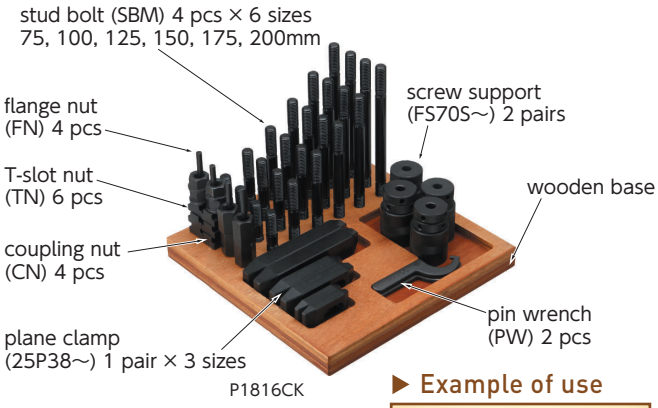
S-CK•-CK
STEP CLAMP KIT

▶ Example of use

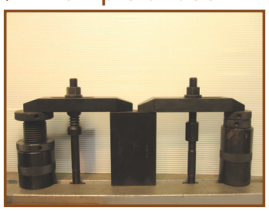


Item No.	Table slot	Stud bolt	TS set	Step clamp 1 pair × 3 sizes	Step block 2 pairs × 3 sizes	Set N.W. (kg)
S1008CK	10	8	1008TS	25S38 40S38 60S38	1S 2S 3S	6.25
S1210CK	12	10	1210TS			7.05
S1410CK	14	10	1410TS			7.26
S1412CK	14	12	1412TS	25S12 40S12 60S12		8.63
S1612CK	16	12	1612TS			8.7
S1614CK	16	14	1614TS			9.9
S1814CK	18	14	1814TS			10.1
S1816CK	18	16	1816TS	25S58 40S58 60S58		11.75

Item No.	Table slot	Stud bolt	TS set	Step clamp 1 pair × 3 sizes	Step block 2 pairs × 3 sizes	Set N.W. (kg)
1612CK	16	12	1612TS	25S12 40S12 60S12	4S 5S 6S	15.3
1614CK	16	14	1614TS			15.5
1814CK	18	14	1814TS			15.5
1816CK	18	16	1816TS	25S58 40S58 60S58		18.1
2016CK	20	16	2016TS			18.2
2018CK	20	18	2018TS	40S34 60S34 80S34		22.35
2218CK	22	18	2218TS			22.5
2220CK	22	20	2220TS			24.45

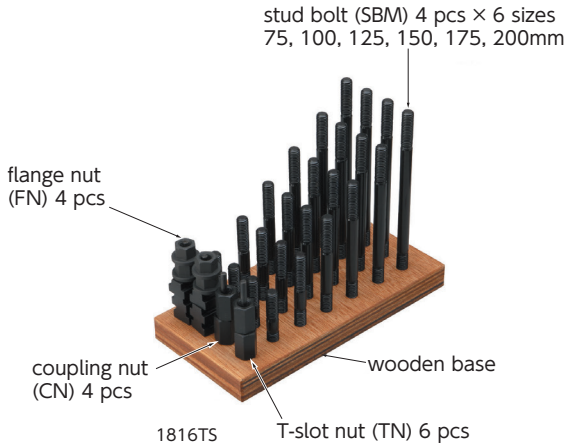


▶ Example of use



P-CK
PLANE CLAMP KIT

Item No.	Table slot	Stud bolt	TS set	Plane clamp 1 pair × 3 sizes	Screw support 2 pairs	Pin wrench 2 pcs	Set N.W. (kg)
P1210CK	12	10	1210TS	25P38 40P38 60P38	FS70S	PW355	6.92
P1412CK	14	12	1412TS	25P12 40P12 60P12			8.58
P1614CK	16	14	1614TS		FS100S	PW406	11.36
P1816CK	18	16	1816TS	25P58 40P58 60P58			13.16
P2016CK	20	16	2016TS				13.25
P2018CK	20	18	2018TS	40P34 60P34 80P34			18.08
P2220CK	22	20	2220TS				19.76



-TS
T-NUT, STUD SET

Item No.	Table slot	Stud bolt	T-slot nut	Flange nut	Coupling nut	Set N.W. (kg)
1008TS	10	8	1008TN	8MFN	8MCN	2
1210TS	12	10	1210TN	10MFN	10MCN	2.75
1410TS	14	10	1410TN	10MFN	10MCN	2.95
1412TS	14	12	1412TN	12MFN	12MCN	3.9
1612TS	16	12	1612TN	12MFN	12MCN	3.95
1614TS	16	14	1614TN	14MFN	14MCN	5
1814TS	18	14	1814TN	14MFN	14MCN	5.2
1816TS	18	16	1816TN	16MFN	16MCN	6.9
2016TS	20	16	2016TN	16MFN	16MCN	6.95
2018TS	20	18	2018TN	18MFN	18MCN	8.45
2218TS	22	18	2218TN	18MFN	18MCN	8.6
2220TS	22	20	2220TN	20MFN	20MCN	10.25
2420TS	24	20	2420TN	20MFN	20MCN	10.3

SCREW SUPPORT FOR LARGE MACHINES, LONG STROKE TYPE

Ideal for workpieces used in large machines or clamp support.

- Ideal also for preventing chattering during cutting operation.
- The lock screw (with lock piece) that locks the forcing screw helps avoiding screw loosening.

MOVIE

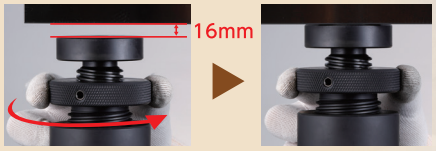
For the New Products page, see P. 5



3 For greater workability ADVANTAGES!

1 QUICK ADJUSTING

As the screw includes double thread and reverse screws, with one turn of the middle male screw the support can be quickly raised (lowered) by 16mm.



2 LESS HEAVY WEIGHT

The use of aluminum for the main body allows 25% net weight reduction (compared to our conventional models) and makes it carriable by hand (for FS500LS).



3 EXTENDABLE

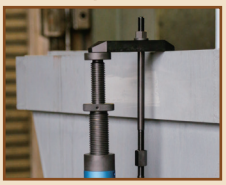
By connecting a joint support FSJ200 (sold separately), the height can be raised by 200mm each. Up to 2 joint supports can be added !

FSJ200 ▶



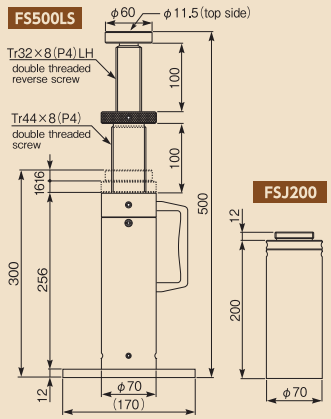


▶Example of use





▶Main body size (mm)



▶Accessories

Hex key wrench (3mm, 4mm) 2 pcs included.

Screw support for large machines, long stroke type

Item No.	Stroke (mm)	Guaranteed load (kN)	N.W. (kg)
FS500LS	300~500	150	5.5

Joint support

Item No.	Full length (mm)	Allowable load(kN)		N.W. (kg)
		For 1 joint support added	For 2 joint supports added	
FSJ200	200	120 (full length 500~700)	100 (full length 700~900)	1.6

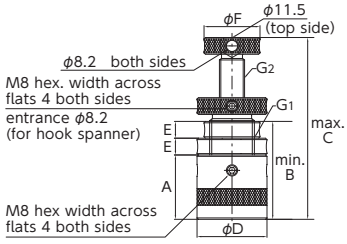
FS-LS

SCREW SUPPORT, Long Stroke Type (a Pair) PAT.

MOVIE



FS130LS



Example of use



- Material : S45C
- Heat treatment : Quenched 35~47HRC
- Finish : Black finish

Features

- Ideal for supporting heavy workpieces, adjusting clamp height and for preventing chattering during cutting operation.
- A middle screw has been added to create a long stroke (1.5 to 2 times longer than our conventional models).
- With conventional items, when the male screw is turned while there is a workpiece supported, scratches to the workpiece or misalignment could occur. But this item innovative design solves this problem with the use of a middle male screw.
- As the upper and lower screws have same direction with different pitch, middle male screw adjustment can be fine-tuned with light force.
- The lock screw (with lock piece) that locks the forcing screw helps avoiding screw loosening.
- For corrugated surfaces or irregular shaped workpiece, use screw support tips.

Accessories

- Hex key wrench, 1 pc (size 4mm)

Item No.	Size (mm)							Allowable load ((kN)	Pin wrench for upper screw	Pin wrench for middle / main body	N.W. (kg) (a pair)
	A	Stroke B~C	D	E	F	G1	G2				
FS80LS	26	50~80	50	12	40	Tr32×3	Tr18×2	80	PW406	PW508	1.2
FS130LS	46	70~130	50	12	40	Tr32×3	Tr18×2	80	PW406	PW508	1.6
FS200LS	68	100~200	60	16	50	Tr40×4	Tr25×3	150	PW508	HW105A	3.6
FS300LS	108	140~300	60	16	50	Tr40×4	Tr25×3	150	PW508	HW105A	5.0

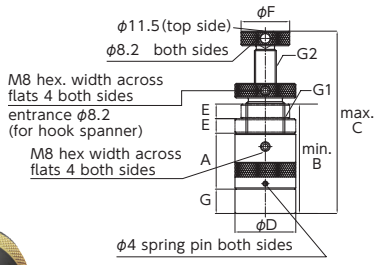
MSS-LS

MAGNETIC SCREW SUPPORT, Long Stroke Type (a Pair) PAT.

MOVIE



MSS150LS



Example of use



- Material : S45C
- Heat treatment : Quenched 35~47HRC
- Finish : Black finish

Features

- Ideal for supporting heavy workpieces, adjusting clamp height and for preventing chattering during cutting operation.
- A middle screw has been added to create a long stroke (1.5 to 2 times longer than our conventional models).
- With conventional items, when the male screw is turned while there is a workpiece supported, scratches to the workpiece or misalignment could occur. But this item innovative design solves this problem with the use of a middle male screw.
- As the upper and lower screws have same direction with different pitch, middle male screw adjustment can be fine-tuned with light force.
- The lock screw (with lock piece) that locks the forcing screw helps avoiding screw loosening.
- For corrugated surfaces or irregular shaped workpiece, use screw support tips.
- The magnet built-in at the bottom of the body makes it possible to use the screw support not only horizontally but also vertically.

Accessories

- Hex key wrench, 1 pc (size 4mm)

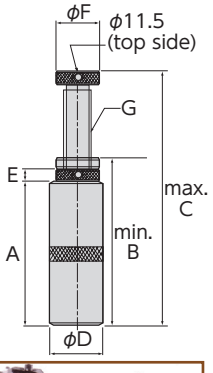
Item No.	Size (mm)								Allowable load (kN)	Pin wrench for upper screw	Pin wrench for middle / main body	N.W. (kg) (a pair)
	A	Stroke B~C	D	E	F	G	G1 (30° trapezoidal thread)	G2 (30° trapezoidal thread)				
MSS90LS	26	60~ 90	50	12	40	10	Tr32×3	Tr18×2	80	PW406	PW508	1.32
MSS150LS	46	90~150				20				PW406	PW508	2.00
MSS220LS	68	120~220	60	16	50	20	Tr40×4	Tr25×3	150	PW508	HW105A	3.94
MSS310LS	108	150~310				10				PW508	HW105A	5.02

FS-S

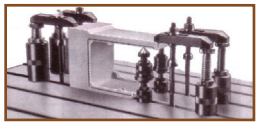
SCREW SUPPORT (a Pair)



FS100S



Example of use



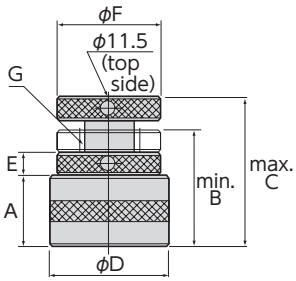
- Material : S45C
- Heat treatment : Quenched 35~47HRC
- Finish : Black finish

Feature

- For corrugated surfaces or irregular shaped workpiece, use screw support tips.

Item No.	Size (mm)						Allowable load (kN)	Applicable pin wrench	N.W. (kg) (a pair)
	A	Stroke B~C	D	E	F	G			
FS50S	21	37~50	40	8	35	Tr20×3	80	PW355	0.56
FS70S	32	50~70	40	9	35	Tr20×3	80	PW355	0.78
FS100S	46	70~100	45	12	40	Tr20×3	80	PW406	1.47
FS150S	76	100~150	50	12	45	Tr25×4	150	PW457	2.65
FS250S	120	150~250	60	15	50	Tr32×5	200	PW508	5.64
FS300S	170	200~300	60	15	50	Tr32×5	200	PW508	7.17


MSS85

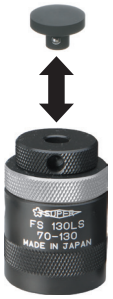


MSS
MAGNETIC SCREW SUPPORT (a Pair) PAT.

▶ Features
- The magnet built-in at the bottom of the body makes it possible to use the screw support not only horizontally but also vertically.
- For corrugated surfaces or irregular shaped workpiece, use screw support tips.
- Material : S45C
- Heat treatment : Quenched 35~47HRC
- Finish : Black finish

Item No.	Size (mm)						Allowable load (kN)	Applicable pin wrench	N.W. (kg) (a pair)
	A	Stroke B~C	D	E	F	G			
MSS50	24	40~50	45	8	35	Tr18×2	80	PW355	0.74
MSS65	34	50~65	45	8	35	Tr18×2	80	PW355	0.95
MSS85	49	65~85	45	8	35	Tr20×3	80	PW355	1.03
MSS110	63	85~110	45	11	40	Tr25×4	150	PW406	1.65
MSS165	85	110~165	50	12.5	45	Tr25×4	150	PW457	2.72
MSS265	135	165~265	60	15	50	Tr32×5	200	PW508	6.23



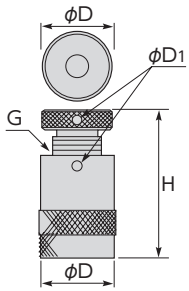


SSTA • SSTR • SSTS • SSTP
TIP FOR SCREW SUPPORT

▶ Features
- Screw support tip applicable to all kinds of work.
- With the ball plunger included, the tip doesn't come off easily.

Item No.	Main body material	Applicable screw support	Size (mm)			N.W. (g)
			Tip external diameter	Tip head height	Dowel (dia. × length)	
SSTA	S45C (40~45HRC)	FS50S~300S MSS50~265 FS80LS~300LS MSS90LS~310LS FS500LS	25	18	ϕ11×10	50
SSTR				10		38
SSTS				16		58
SSTP	Polyacetal		30	8		10


FS60



FS
SCREW SUPPORT (Plane Type)

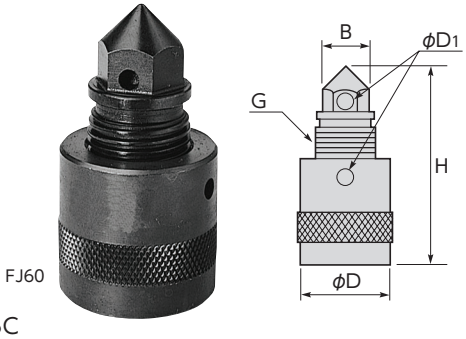
▶ Feature
- Setting the steel ball on the upper plate enables reduced friction with the work and smoother adjustment with light force.
- Material : S45C
- Heat treatment : Quenched 35~47HRC
- Finish : Black finish

Item No.	Size (mm)				Allowable load (kN)	N.W. (kg)
	H stroke	D	D1	G		
FS30	30~40 (10)	40	6.2	TM25×3	40	0.25
FS40	40~50 (10)	49		TM32×3	60	0.47
FS50	50~62 (12)	49			80	0.65
FS60	60~78 (18)	49			100	0.73
FS80	80~105 (25)	63	8.2	TM40×4	160	1.6

Item No.	Size (mm)				Allowable load (kN)	N.W. (kg)
	H stroke	D	D1	G		
FS90	90~125 (35)	63	8.2	TM40×4	160	1.8
FS100	100~145 (45)	63			160	1.9
FS130	130~200 (70)	63			160	2.6
FS160	160~260 (100)	63			160	3.2

FJ
SCREW SUPPORT (Centering Type)

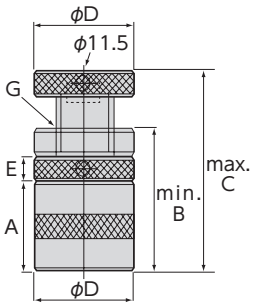
▶ Feature
- Convenient for centering operations, especially for work with unevenly processed objects.


FJ60

- Material : S45C
- Heat treatment : Quenched 35~47HRC
- Finish : Black finish

Item No.	Size (mm)					Allowable load (kN)	N.W. (kg)
	H stroke	D	D1	B hex width across flats	G		
FJ60	75~ 93 (18)	49	6.2	24	TM32×3	100	0.7
FJ80	100~125 (25)	63	8.2	30	TM40×4	160	1.6
FJ100	120~165 (45)	63		30		160	1.9


FS-P



FS-P

SCREW JACK FOR PRESSING MACHINE

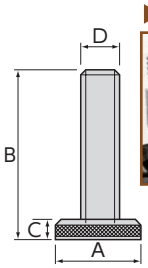
▶ Feature

- The upper plate (ϕD) is larger for pressing machine. (FS70P comes without lock nuts.)

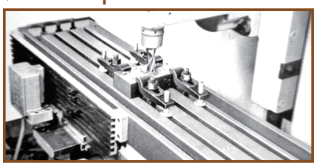
Item No.	Size (mm)					Allowable load (kN)	N.W. (kg)
	A	Stroke B~C	D	E	G		
FS70P	40	50~70	60	–	Tr40×4	400	0.97
FS100P	46	70~100	60	12	Tr40×4	400	1.4
FS150P	70	100~150	70	15	Tr44×4	600	2.75
FS200P	100	150~200	80	25	Tr52×4	800	5.2

- Material : S45C
- Heat treatment : Quenched 35~47HRC
- Finish : Black finish


CB



▶ Example of use



CB

RECEIVING SCREW

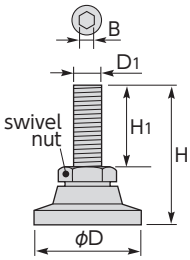
▶ Feature

- Receiving screw for strap clamps TPS, U-clamps TPU, uni-clamps FPB-B, FGB.

Item No.	Size (mm)				N.W. (g)
	A	B	C	D	
CB40	28	60	8	M12-1.75	75
CB50	30	70	10	M16-2	120
CB60	36	80	12	M18-2.5	200
CB70	50	130	15	M20-2.5	460

- Material : S45C
- Finish : Black finish


FR12



FR

SCREW SUPPORT (Screw Type)

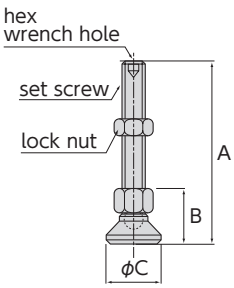
▶ Features

- Ideal for using with uni-clamps (FGB, FPB-B).
- The spherical bag-shaped swivel nut enables an inclination up to 6° in front, back, left and right directions.

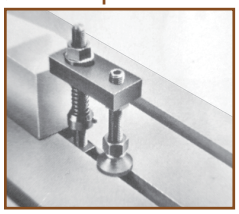
- Material : S45C
- Heat treatment : Quenched 35~47HRC
- Finish : Black finish

Item No.	Applicable main body item No.		Size (mm)					Allowable load (kN)	N.W. (g)
			H	H1	D	D1 screw dia.	B hex width across flats		
FR10	–	FPB10B	48	31	35	M10	5	11	80
FR12	FGB12	FPB12B	60	40	40	M12	6	16	117
FR16	FGB16	FPB16B	78	53	50	M16	8	28	240
FR20	FGB20	FPB20B	94	64	60	M20	10	37	445


CHS



▶ Example of use



CHS

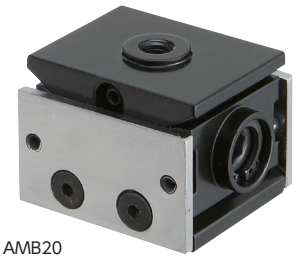
CLAMP HEEL STUD WITH SWIVEL PAD

▶ Features

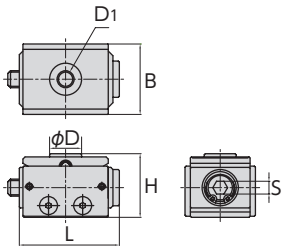
- Receiving screw with swivel pad for strap clamps TPS, U-clamps TPU, uni-clamps FPB-B, FGB.
- The swivel pad has an inclination up to 20° in front, back, left and right directions.

- Material : S45C
- Finish : Black finish

Item No.	Bolt size	Set screw	Size (mm)				Allowable load (kN)	N.W. (g)
			A	B	C	Hole hex width across flats		
CHS3000	10-P1.5	M10-80	95	25	28	5	11	96
CHS4000	12-P1.75	M12-80	100	30	32	6	16	147
CHS5000	14-P2	M14-80	105	36	36	6	22	218
CHS6000	16-P2	M16-100	125	40	40	8	28	324
CHS7000	18-P2.5	M18-100	130	45	50	8	33	453
CHS8000	20-P2.5	M20-100	142	57	60	10	37	693



AMB20



AMB

ADJUSTABLE MINI BLOCK

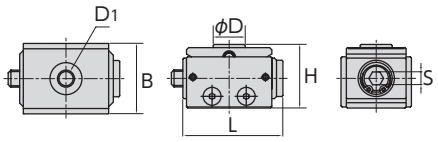
▶ Features

- Ideal for preventing chattering at processing and for centering.
- The low height makes it applicable to spaces lower than 30mm for which screw support cannot fit.
- As it can be operated from the side, it can also be used in deep spaces.
- Large jack capacity even with small size.

▶ Accessories

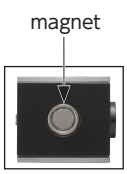
- Hex key wrench

Item No.	Size (mm)						Tightening torque (N·m)	Jack capacity (kN)	N.W. (kg)
	H	L	D	D1	S	B			
AMB20	20~26	37.0	10	M5	4	28	6.9	8	0.12
AMB26	26~35	53.5	15	M8	6	33	28.0	16	0.24

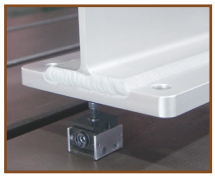




AMB20M



▶ Example of use



AMB-M

ADJUSTABLE MINI BLOCK (Magnetic Type)

▶ Features

- Ideal for preventing chattering at processing and for centering.
- The low height makes it applicable to spaces lower than 30mm for which screw support cannot fit.
- As it can be operated from the side, it can also be used in deep spaces.
- Large jack capacity even with small size.
- Thanks to its magnets (AMB20M : 1 pc, AMB26M : 2 pcs), its position doesn't move with vibrations.

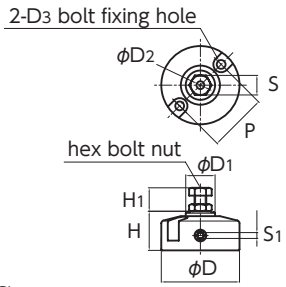
▶ Accessories

- Hex key wrench

Item No.	Size (mm)						Tightening torque (N·m)	Jack capacity (kN)	Magnet holder	N.W. (kg)
	H	L	D	D1	S	B				
AMB20M	20~26	37.0	10	M5	4	28	6.9	8	MH10	0.12
AMB26M	26~35	53.5	15	M8	6	33	28.0	16		0.24



SMS18



- Shaft material : SK3 (hardness : 60HRC)

SMS

SPRING MINI SUPPORT PAT.

▶ Features

- Ideal for preventing chattering at processing with the built-in spring.
- Support the workpiece naturally without deforming it.
- Can be used either as special jig for low spaces or for general use.
- The spring can be adjusted either from above or below.
- The electroless nickel plating treatment allows greater surface hardness and anti-corrosion capacity.
- Base fixing screw holes (2 spots) : M4 for SMS18, M6 for SMS30 (magnet (sold separately) can also be fixed)

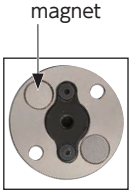
▶ Accessories

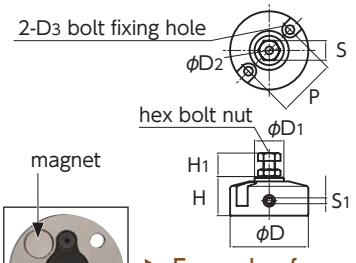
- Hex key wrench

Item No.	Size (mm)									Hex bolt nut	N.W. (kg)
	H	H1	D	D1	D2	D3	S	S1	P		
SMS18	18~23	8~12	40	15	3.5	M4	10	3	30	M6×12	0.15
SMS30	30~38	11~16	50	18	4.6	M6	13	4	36	M8×15	0.40



SMS18M





- Shaft material : SK3 (hardness : 60HRC)

SMS-M

SPRING MINI SUPPORT (MAGNETIC TYPE) PAT.

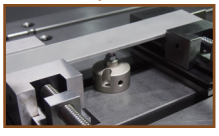
▶ Features

- Ideal for preventing chattering at processing with the built-in spring.
- Support the workpiece naturally without deforming it.
- Can be used either as special jig for low spaces or for general use.
- The spring can be adjusted either from above or below.
- The electroless nickel plating treatment allows greater surface hardness and anti-corrosion capacity.
- Thanks to its magnets (2 pcs), its position doesn't move with vibrations.
- Base fixing screw holes (2 spots) : M4 for SMS18, M6 for SMS30

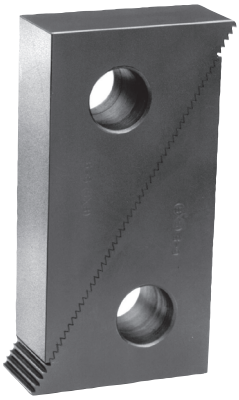
▶ Accessories

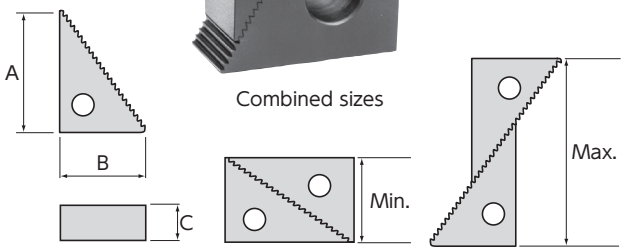
- Hex key wrench

▶ Example of use



Item No.	Size (mm)									Hex bolt nut	Magnet holder	N.W. (kg)
	H	H1	D	D1	D2	D3	S	S1	P			
SMS18M	18~23	8~12	40	15	3.5	M4	10	3	30	M6×12	MH10	0.15
SMS30M	30~38	11~16	50	18	4.6	M6	13	4	36	M8×15	MH13	0.40





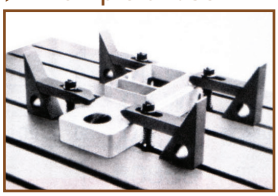
-S
STEP BLOCK (a Pair)

▶ Feature

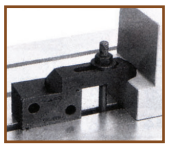
- The racks of all blocks are unified and designed to engage in any combination among 1S – 9S.
- Material : S45C
- Heat treatment : Quenched 30~35HRC
- Finish : Black finish

Item No.	Type	Size (mm)					N.W. (kg) (a pair)
		A	B	C	Combined size		
					Min.	Max.	
1S	Standard	29	18	25	19	46	0.11
2S		45	27	25	28	68	0.27
3S		98	57	25	58	150	1
4S	Medium	59	35	38	36	90	0.62
5S		98	57	38	58	150	1.59
6S		140	81	38	82	210	3.09
7S	Heavy	59	35	50	36	90	0.84
8S		98	57	50	58	150	2.1
9S		140	81	50	82	210	4.02

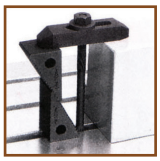
▶ Example of use



Combination of step clamp and step block



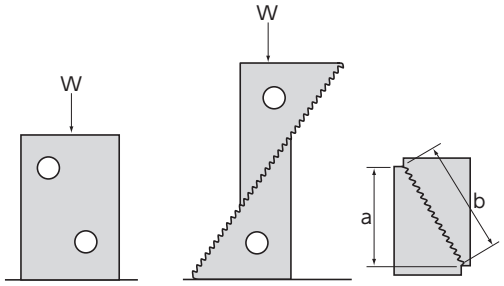
Min. (height)



Max. (height)

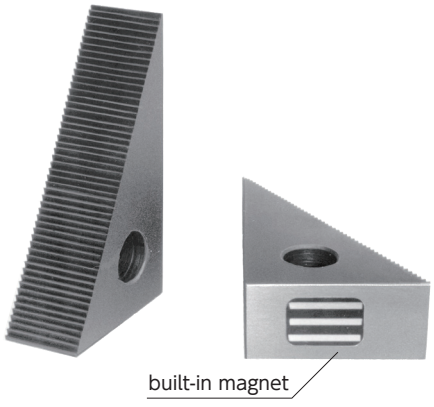
▮Step block safety strength

The table on the right shows the safety strength against a load when the teeth are 100% engaged (Fig. 2-1) or 50% engaged (Fig. 2-2).



(Fig. 2-1) (Fig. 2-2)

Item No.	Mating size (a)	Number of mating teeth (b)	Safety strength (kN)
1S	24.375	10	132
	11.000	5	66
2S	40.375	16	210
	19.200	8	105
3S	93.505	35	462
	24.600	17	224
4S	54.605	21	417
	24.375	10	198
5S	93.505	35	694
	45.000	17	338
6S	135.775	50	990
	65.800	25	495
7S	54.605	21	555
	24.600	10	266
8S	93.505	35	926
	45.000	17	446
9S	135.775	50	1325
	65.800	25	662

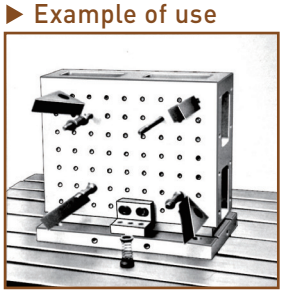


M-S
MAGNETIC STEP BLOCK (a Pair)

▶ Features

- The racks of all blocks are unified and designed to engage in any combination among 1S – 9S.
- The magnet built-in at the bottom of the body makes it possible to use the step block not only horizontally but also vertically.
- Material : S45C
- Heat treatment : Quenched 30~35HRC
- Finish : Black finish

▶ Example of use



Item No.	Type	Size (mm)					Allowable load (kN)	N.W. (kg) (a pair)
		A	B	C	Combined size			
					Min.	Max.		
M1S	Standard	29	18	25	19	46	132	0.1
M4S	Medium	59	35	38	36	90	417	0.6
M5S		98	57	38	58	150	694	1.57
M7S	Heavy	59	35	50	36	90	555	0.83
M8S		98	57	50	58	150	926	2
M9S		139	81	50	82	210	1325	4



60S58

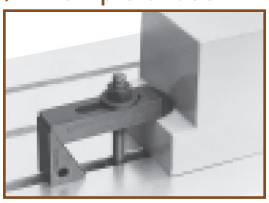
25S-・40S-・60S-・80S-・10S-

STEP CLAMP (a Pair)

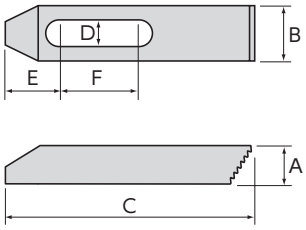
▶ Feature

- The combination with a step block simplifies height adjustment.
- Material : S45C
- Heat treatment : Quenched 35~47HRC
- Finish : Black finish

▶ Example of use



◀ Combination of step clamp and step block



Item No.	Size (mm)						Applicable bolt	N.W. (kg) (a pair)
	A	B	C	D	E	F		
25S38	12	25	63	10.6	18	19	M10	0.19
40S38	16	25	100	10.6	25	38		0.44
60S38	19	30	150	10.6	30	50		0.97
25S12	12	32	63	14.2	20	14	M12 M14	0.19
40S12	19	32	100	14.2	28	32		0.65
60S12	22	32	150	14.2	32	50		1.36
25S58	16	32	63	17	22	12	M16	0.31
40S58	19	38	100	17	31	26		0.8

Item No.	Size (mm)						Applicable bolt	N.W. (kg) (a pair)
	A	B	C	D	E	F		
60S58	22	38	150	17	34	48	M16	1.42
40S34	19	38	100	21	31	28	M18 M20	0.71
60S34	25	38	150	21	38	44		1.5
80S34	25	50	200	21	40	65		2.87
60S10	30	50	150	25	43	38	M22 M24	2.4
80S10	32	50	200	25	50	58		3.47
10S10	38	50	250	25	52	76		5.2



40P12

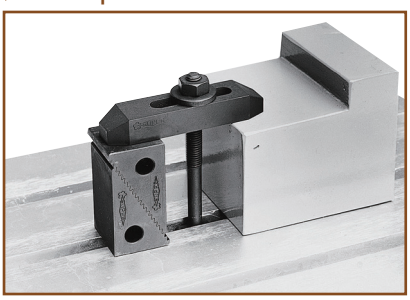
25P-・40P-・60P-・80P-・10P-

PLANE CLAMP (a Pair)

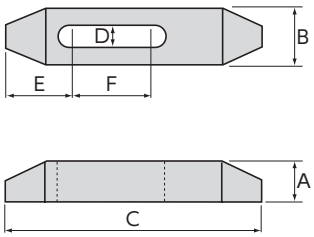
▶ Feature

- Convenient for usage with step block and screw support.
- Material : S45C
- Heat treatment : Quenched 35~47HRC
- Finish : Black finish

▶ Example of use



◀ Combination of plane clamp and step block

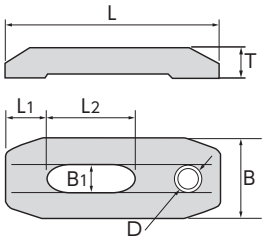


Item No.	Size (mm)						Applicable bolt	N.W. (kg) (a pair)
	A	B	C	D	E	F		
25P38	12	25	63	10.6	18	19	M10	0.19
40P38	16	25	100	10.6	25	38		0.42
60P38	19	30	150	10.6	30	50		1.09
25P12	12	32	63	14.2	20	14	M12 M14	0.25
40P12	19	32	100	14.2	28	32		0.63
60P12	22	32	150	14.2	32	50		1.17
25P58	16	32	63	17	22	12	M16	0.31
40P58	19	38	100	17	31	26		0.77
60P58	22	38	150	17	34	48		1.4

Item No.	Size (mm)						Applicable bolt	N.W. (kg) (a pair)
	A	B	C	D	E	F		
80P58	25	50	200	17	48	58	M16	2.91
40P34	19	38	100	21	31	28	M18 M20	0.71
60P34	25	38	150	21	38	44		1.47
80P34	25	50	200	21	40	65		2.79
10P34	38	50	250	21	52	76		5.37
60P10	30	50	150	25	43	38	M22 M24	2.32
80P10	32	50	200	25	50	58		3.37
10P10	38	50	250	25	52	76		5.09



FPB16B



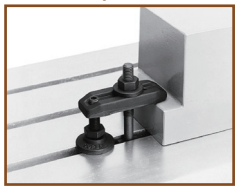
FPB-B

UNI-CLAMP (Plane Type)

▶ Feature

- Convenient usage with screw support (FR10~20) at the screw hole on the rear part.
- Material : S55C
- Heat treatment : Quenched 38~43HRC
- Finish : Black finish

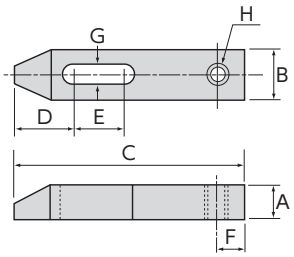
▶ Example of use



Item No.	Size (mm)							Applicable bolt	N.W. (kg)
	L	L1	L2	Screw dia. D	T	B	B1		
FPB10B	80	15	30	M10	13	30	10.5	M10	0.15
FPB12B	100	21	40	M12	15	40	13	M12	0.34
FPB16B	125	26	45	M16	20	50	17	M16	0.66
FPB20B	160	30	60	M20	25	60	21	M20	1.21



TPS



TPS

STRAP CLAMP WITH THREAD HOLE

▶ Feature

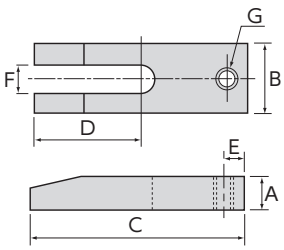
- Convenient usage with clamp heel stud with swivel pad (CHS5000~8000) at the screw hole on the rear part.
- Material : S45C
- Heat treatment : Quenched 35~47HRC
- Finish : Black finish

Item No.	Size (mm)								Applicable bolt	Applicable swivel bolt	N.W. (kg)
	A	B	C	D	E	F	G	Screw dia. H			
TPS103	19	38	100	25	22	14	14.2	M14×2	M14	CHS5000	0.43
TPS104	19	38	150	25	38	14	14.2	M14×2		CHS5000	0.67
TPS105	25	50	100	30	22	16	17	M16×2	M16	CHS6000	0.81
TPS106	25	50	150	36.5	32	16	17	M16×2		CHS6000	1.22
TPS107	25	50	175	36.5	38	16	17	M16×2		CHS6000	1.4
TPS108	30	50	150	39	25	22	21	M18×2.5	M20	CHS7000	1.36
TPS109	30	50	175	39	32	22	21	M18×2.5		CHS7000	1.61
TPS110	30	50	200	39	38	22	21	M18×2.5		CHS7000	1.88
TPS2420	38	50	200	50	43	25	25	M20×2.5	M24	CHS8000	2.3
TPS2425	38	50	250	50	70	25	25	M20×2.5		CHS8000	2.85
TPS2430	38	50	300	50	93	25	25	M20×2.5		CHS8000	3.41

* CHS bolt not included



TPU



TPU

U-CLAMP WITH THREAD HOLE

▶ Feature

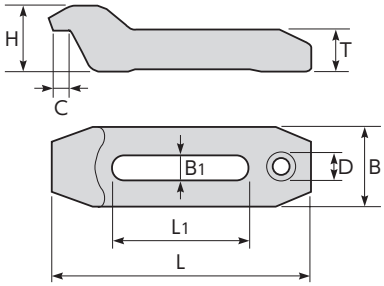
- Convenient usage with clamp heel stud with swivel pad (CHS4000~8000) at the screw hole on the rear part.
- Material : S45C
- Heat treatment : Quenched 35~47HRC
- Finish : Black finish

Item No.	Size (mm)							Applicable bolt	Applicable swivel bolt	N.W. (kg)
	A	B	C	D	E	F	Screw dia. G			
TPU200	19	38	100	60	14	14.2	M12×1.75	M14	CHS4000	0.4
TPU202	19	38	150	88	14	14.2	M12×1.75		CHS4000	0.62
TPU204	25	50	100	60	14	17	M16×2	M16	CHS6000	0.68
TPU206	25	50	150	87	14	17	M16×2		CHS6000	1.1
TPU208	30	50	150	88	20	21	M18×2.5	M20	CHS7000	1.2
TPU210	30	50	200	125	20	21	M18×2.5		CHS7000	1.6
TPU2420	45	60	200	93	25	25	M20×2.5	M24	CHS8000	3.16
TPU2425	45	60	250	120	25	25	M20×2.5		CHS8000	3.96
TPU2430	45	60	300	143	25	25	M20×2.5		CHS8000	4.86

* CHS bolt not included



FGB20



FGB

UNI-CLAMP (Duck Shaped Type)

▶ Feature

- Convenient usage with screw support plane type or screw type at the screw hole on the rear part.
- Material : S55C
- Heat treatment : Quenched 38~43HRC
- Finish : Nickel plating

▶ Example of use

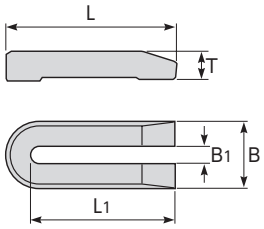


Screw support
The screw hole at the back of the duck shaped main body can receive a screw support as shown on the photo.

Item No.	Size (mm)								Applicable bolt	N.W. (kg)
	L	L1	H	Screw dia. D	T	B	B1	C		
FGB12	125	63	32	M12	17	36	13	10.5	M12	0.38
FGB16	160	80	40	M16	21	48	17	13.5	M14·M16	0.88
FGB20	200	100	50	M20	26	59	21	17.0	M18·M20	1.65
FGB24	250	125	63	M24	33	70	26	21.5	M22·M24	2.9



FUB20B



FUB-B

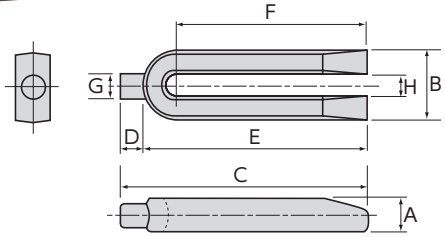
UNI-CLAMP (U Shaped Type)

▶ Feature

- Convenient usage with screw support at the rear part.
- Material : S55C
- Heat treatment : Quenched 38~43HRC
- Finish : Black finish

Item No.	Size (mm)					Applicable bolt	N.W. (kg)
	L	L1	T	B	B1		
FUB12B	100	87	20	40	13	M12	0.37
FUB16B	150	134	23	50	17	M16	0.75
FUB20B	200	181	27	60	21	M20	1.41
FUB24B	250	228	32	70	26	M24	2.35





UC4

U-CLAMP (a Pair)

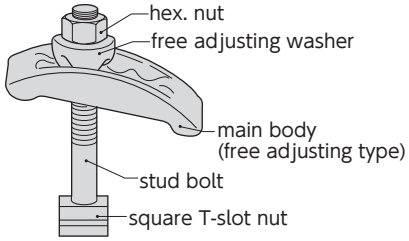
▶ Feature

- Convenient usage with screw support at the rear part.
- Material : S55C
- Heat treatment : Quenched 38~43HRC
- Finish : Black finish

Item No.	Size (mm)								Applicable bolt	N.W. (kg) (a pair)
	A	B	C	D	E	F	G	H		
UC4	19	45	114	14	100	77.5	ϕ14	17	M14·M16	0.78



FT10



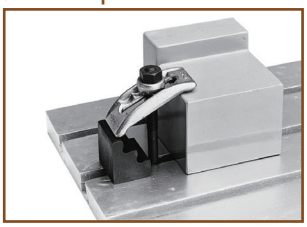
FT

UNI-CLAMP (Flexible Type)

▶ Feature

- The main body can be fixed with an inclination up to 24° .

▶ Example of use



◀ As the main body contact surface and the washer are round shaped, firm tightening can be made even for slanted clamping as shown on the photo.

Set item No.	Set details					
	Hex. nut	Free adjusting washer	Main body (flexible type)	Stud bolt	T-slot nut	Set N.W. (kg)
FT10	FTU10	FTZ10	FTB10	FTN10100	FTS1012	0.26
FT12	FTU12	FTZ12	FTB12	FTN12125	FTS1214	0.5
FT14	FTU14	FTZ14	FTB14	FTN14150	FTS1416	0.9
FT16	FTU16	FTZ16	FTB16	FTN16150	FTS1618	1

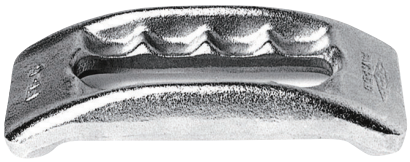
Set item No.	Set details					
	Hex. nut	Free adjusting washer	Main body (flexible type)	Stud bolt	T-slot nut	Set N.W. (kg)
FT18	FTU18	FTZ18	FTB18	FTN18175	FTS1820	1.7
FT20	FTU20	FTZ20	FTB20	FTN20180	FTS2022	1.9
FT22	FTU22	FTZ22	FTB22	FTN22200	FTS2226	3.6
FT24	FTU24	FTZ24	FTB24	FTN24250	FTS2428	4

FTBZ • FTB • FTZ

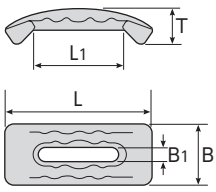
UNI-CLAMP (Flexible Type) Parts



FTBZ



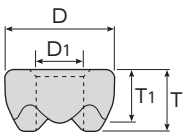
FTB



- Material : S55C
- Heat treatment : Quenched 38~43HRC
- Finish : Nickel chrome plating



FTZ



- Material : S55C
- Heat treatment : Quenched 35~47HRC
- Finish : Nickel chrome plating

▮Main body and free adjusting washer set

Item No.	Applicable bolt	Set N.W. (kg)
FTBZ10	M10	0.17
FTBZ12	M12	0.34
FTBZ14	M14	0.67
FTBZ16	M14·M16	0.67
FTBZ18	M18	1.3
FTBZ20	M18·M20	1.3
FTBZ22	M22	2.8
FTBZ24	M24	2.8
***FTBZ4.5**	M16	0.34

* Dedicated size to fit perfectly injection molding machine

▮Main body

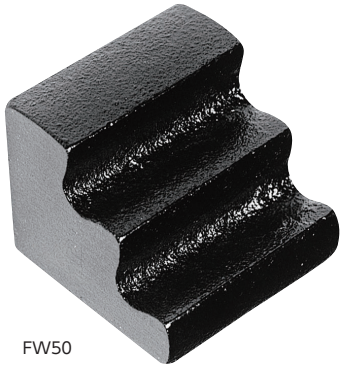
Item No.	Applicable bolt	Size (mm)					N.W. (kg)
		L	L1	T	B	B1	
FTB10	M10	80	53	19	36	10.5	0.15
FTB12	M12	100	68	24	45	13	0.3
FTB14	M14·M16	125	85	31	56	17	0.5
FTB16	M14·M16	125	85	31	56	17	0.5
FTB18	M18·M20	160	106	39	71	21	1.2
FTB20	M18·M20	160	106	39	71	21	1.2
FTB22	M22·M24	200	134	49	90	26	2.3
FTB24	M22·M24	200	134	49	90	26	2.3
***FTB4.5**	M16	100	68	24	45	17	0.28

* Dedicated size to fit perfectly injection molding machine
Note : FTB14/16, 18/20, 22/24 are common.

▮Free adjusting washer

Item No.	Applicable bolt	Size (mm)				N.W. (g)
		D	D1	T	T1	
FTZ10	M10	24	10.5	13	11	26
FTZ12	M12	30	13	16	14	56
FTZ14	M14	38	15	21	18	113
FTZ16	M16	38	17	21	18	107
FTZ18	M18	49	19	26	23	240
FTZ20	M20	49	21	26	23	230
FTZ22	M22	62	23.5	32	28	480
FTZ24	M24	62	26	32	28	460
***FTZ4.5**	M16	30	17	16	14	45

* Dedicated size to fit perfectly injection molding machine



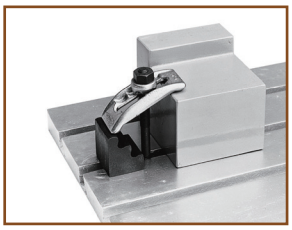
FW50

FW
STEP BLOCK (Tiered Type)

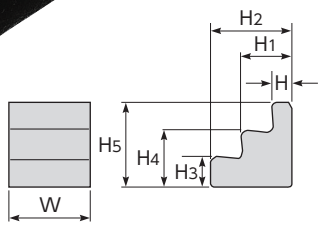
▶ Features

- Convenient step block with 6 different supporting heights when used vertically and horizontally.
- The rounded shape of the contact surface enables perfect fit even with a slightly slanted main body.

▶ Example of use



◀Combination of step block and uni-clamp



- Material : FC250
- Heat treatment : Annealing
- Finish : Black finish

Item No.	Size(mm)							N.W. (kg)
	W	6 supporting heights						
		H	H1	H2	H3	H4	H5	
FW40	40	10	22	34	16	28	40	0.27
FW50	50	13	28	43	20	35	50	0.47



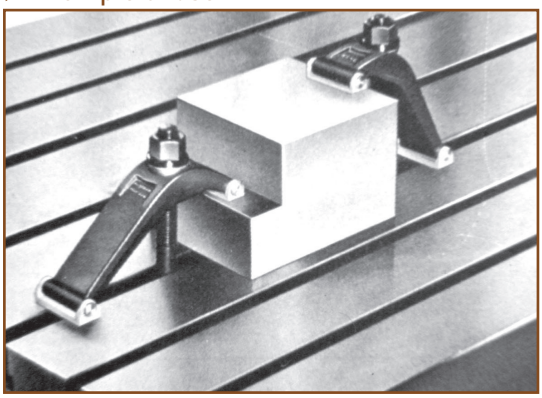
NC80

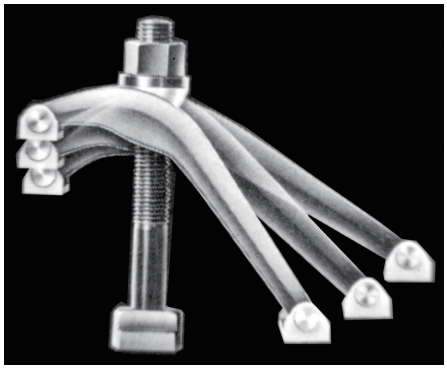
NC
SWIVEL NEW CLAMP (a Pair)

▶ Features

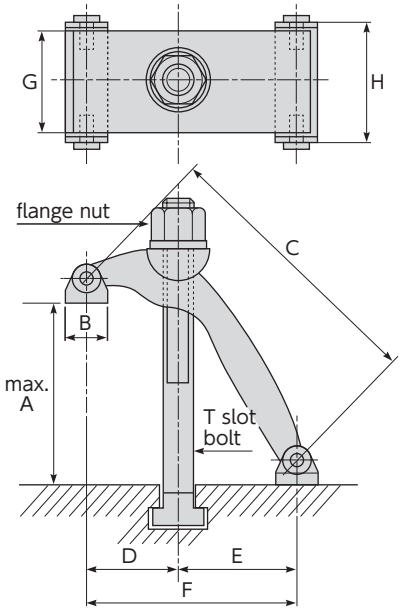
- The clamping height can be adjusted freely and this clamp allows stable clamping operation.
- The clamping ends at both sides are equipped with swivel pads to prevent damage on the machine table or the workpiece.

▶ Example of use





This swivel can fit in any direction and fix the work completely.



- Material : S45C
- Finish : Black finish

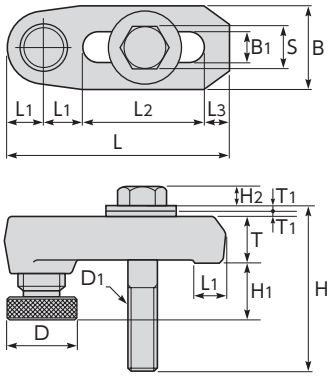
Item No.	Size(mm)								T-slot bolt	Flange nut	N.W.(kg) (a pair)
	A	B	C	D	E	F	G	H			
NC50	75	17	114	36.5	47.5	84	42	46.5	TBM12125	12MFN	1.64
NC60	85	20	146	32	78	110	49	54.5	TBM16150	16MFN	2.72
NC80	105	25	189	48	109	157	55	61.5	TBM20175	20MFN	4.96



FL
CLAW CLAMP

▶ Features

- Ideally designed and manufactured for fixing the molds of injection machines. Can also be used as clamping fixture for press.
- Wide clamp range with stepless adjustment.
- Quick and easy height adjustment can be made with the hex bolt left on.
- When setting or removing the clamp, even if the bolt is loosened, it is safe as the main body does not fall.



▶ Example of use



Item No.	Size (mm)														N.W. (kg)
	H	H1 (Clamp range)	H2	L	L1	L2	L3	D	D1	T	T1	S	B	B1	
FL12	75	15~35	8	100	19	48	14	39	M12	22	5	19	38	13	0.75
FL16	90	18~42	10	125	20	69	16	39	M16	25	6	24	45	17	1.1
FL20	110	22~50	13	160	25	90	20	48	M20	30	8	30	56	21	2.1

FLBR • FLN • FLB • FLZ • FLR
CLAW CLAMP Parts



▮Main body and adjustment screw

- Material : S55C
- Heat treatment : Quenched 38~43HRC
- Finish : Black finish

Item No.	N.W. (g)
FLBR12	610
FLBR16	840
FLBR20	1,480



▮Main body

- Material : S55C
- Heat treatment : Quenched 38~43HRC
- Finish : Black finish

Item No.	N.W. (g)
FLB12	390
FLB16	600
FLB20	1,160



▮Adjustment screw

- Material : S55C
- Heat treatment : Quenched 38~43HRC
- Finish : Black finish

Item No.	N.W. (g)
FLR12	220
FLR16	240
FLR20	320



▮Hex bolt

- Material : S45C
- Heat treatment : Quenched 22~44HRC
- Finish : Black finish

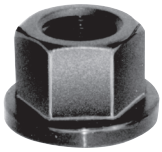
Item No.	N.W. (g)
FLN12	80
FLN16	160
FLN20	320

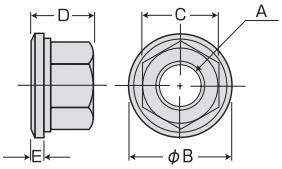


▮Flat washer

- Material : S45C
- Heat treatment : Quenched 35~45HRC
- Finish : Black finish

Item No.	N.W. (g)
FLZ12	30
FLZ16	61
FLZ20	94





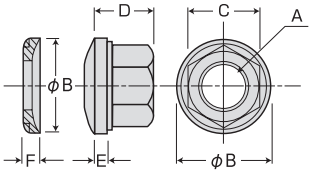
-MFN

FLANGE NUT

- Material : S45C
- Heat treatment : Quenched 30~40HRC
- Finish : Black finish

Item No.	Size (mm)					N.W. (g)
	A Screw dia.	B	C	D	E	
8MFN	M8	19	13	12	3	10
10MFN	M10	22	17	13	3	21
12MFN	M12	28	19	17	4	35
14MFN	M14	28	22	17	4	41
16MFN	M16	33	24	20	5	60
18MFN	M18	35	27	20	5	71
20MFN	M20	40	30	25	6	112
22MFN	M22	45	32	28	6	147
24MFN	M24	47	36	28	6	176





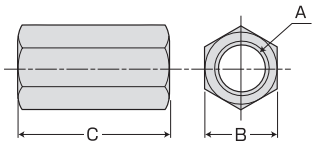
-MSFN

SPHERICAL FLANGE NUT

- Material : S45C
- Heat treatment : Quenched 28~35HRC
- Finish : Black finish

Item No.	Size (mm)						N.W. (g)
	A Screw dia.	B	C	D	E	F	
8MSFN	M8	19	13	11.5	2	4.5	20
10MSFN	M10	22	17	12	2	5	30
12MSFN	M12	28	19	16	3	6	54
14MSFN	M14	28	22	16	3	6.5	63
16MSFN	M16	35	24	18.5	3.5	7	96
18MSFN	M18	35	27	19	4	7.5	106
20MSFN	M20	40	30	23.5	4.5	8.5	161
22MSFN	M22	45	32	27	5	9	208
24MSFN	M24	48	36	27.5	5.5	9.5	270



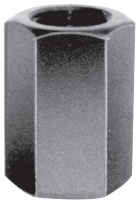


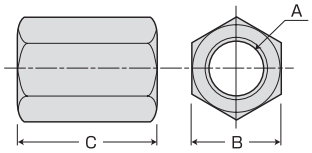
FCU

COUPLING NUT

- Material : S45C
- Heat treatment : Quenched 23~31HRC
- Finish : Black finish

Item No.	Size (mm)			N.W. (g)
	A Screw dia.	B	C	
FCU8	M8	13	24	18
FCU10	M10	17	30	41
FCU12	M12	19	36	57
FCU14	M14	22	42	88
FCU16	M16	24	48	113
FCU18	M18	27	54	165
FCU20	M20	30	60	226
FCU22	M22	32	66	273
FCU24	M24	36	72	392



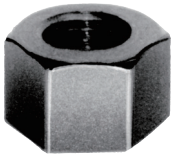


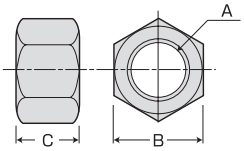
-MCN

COUPLING NUT

- Material : S45C
- Heat treatment : Quenched 30~35HRC
- Finish : Black finish

Item No.	Size (mm)			N.W. (g)
	A Screw dia.	B	C	
8MCN	M8	13	22	17
10MCN	M10	17	25	34
12MCN	M12	19	29	47
14MCN	M14	22	32	68
16MCN	M16	24	36	84
18MCN	M18	27	41	126
20MCN	M20	30	45	172
22MCN	M22	32	48	200
24MCN	M24	36	57	317



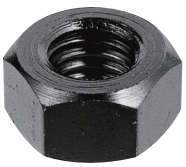


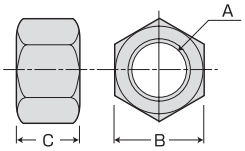
-MHN

HEAVY NUT

- Material : S45C
- Heat treatment : Quenched 23~31HRC
- Finish : Black finish

Item No.	Size (mm)			N.W. (g)
	A Screw dia.	B	C	
10MHN	M10	17	10	14
12MHN	M12	19	12	19
14MHN	M14	22	14	30
16MHN	M16	24	15	36
18MHN	M18	27	18	55
20MHN	M20	30	20	74
22MHN	M22	32	22	89
24MHN	M24	36	24	131





FTU

HEX NUT

- Material : S45C
- Heat treatment : Quenched 23~31HRC
- Finish : Black finish

Item No.	Size (mm)			N.W. (g)
	A Screw dia.	B	C	
FTU8	M8	13	6.5	5
FTU10	M10	17	8	10
FTU12	M12	19	10	16
FTU14	M14	22	11	23
FTU16	M16	24	13	30
FTU18	M18	27	15	46
FTU20	M20	30	16	58
FTU22	M22	32	18	74
FTU24	M24	36	19	100

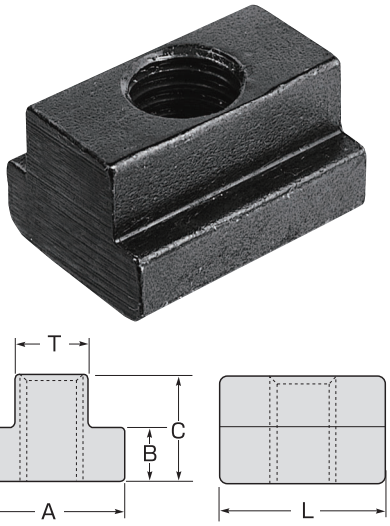
-TN • FTS
T-SLOT NUT

▶ Feature
- Caulking processed to prevent protruded bolt from scratching the machine table.



- Material : S45C
- Heat treatment : Quenched 23~31HRC
- Finish : Black finish

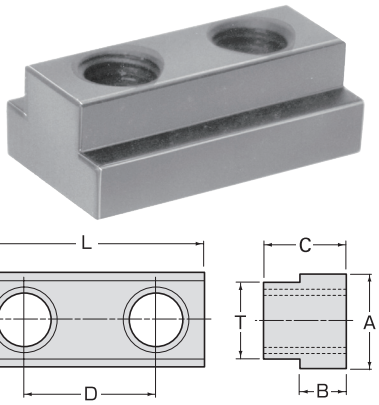
Item No.	Table slot	Size(mm)						N.W. (g)
		Screw dia.	A	B	C	T	L	
1008TN	10	M8	16	6	12	10	23	22
1210TN	12	M10	18	7	14	12	23	29
1410TN	14	M10	22.3	8.8	15.9	14	28	54
1412TN		M12	22.3	8.8	15.9		28	50
1612TN	16	M12	25.5	8.8	15.9	16	28	61
1614TN		M14	25.5	8.8	15.9		28	57
1814TN	18	M14	28.6	11.1	19.1	18	30	85
1816TN		M16	28.6	11.1	19.1		30	79
2016TN	20	M16	31.8	11.8	19.1	20	30	92
2018TN		M18	31.8	14.1	25.5		38	155
2216TN	22	M16	36.1	14.1	25.5	22	38	187
2218TN		M18	36.1	14.1	25.5		38	179
2220TN		M20	36.1	14.1	25.5		38	167
2418TN	24	M18	38.3	14.1	25.1	24	38	192
2420TN		M20	38.3	14.1	25.1		38	181
2620TN	26	M20	41.3	16.1	25.5	26	44	250
2622TN		M22	41.3	16.1	25.5		44	237
2822TN	28	M22	41.3	17.4	28.6	28	50	318
2824TN		M24	41.3	17.4	28.6		50	305



- Material : S45C
- Heat treatment : Quenched 23~31HRC
- Finish : Black finish

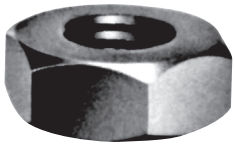
Item No.	Table slot	Size(mm)						N.W. (g)
		Screw dia.	A	B	C	T	L	
FTS810	10	M8	15	6	12	10	19	22
FTS1012	12	M10	18	7	14	12	23	29
FTS1014	14	M10	22	8	16	14	26	48
FTS1214		M12	22	8	16		26	45
FTS1215	15	M12	25	9	18	15	29	65
FTS1216	16	M12	25	9	18	16	29	67
FTS1416		M14	25	9	18		29	62
FTS1418	18	M14	28	10	20	18	32	92
FTS1618		M16	28	10	20		32	84
FTS1619	19	M16	32	12	24	19	36	135
FTS1620	20	M16	32	12	24	20	36	138
FTS1820		M18	32	12	24		36	130
FTS1822	22	M18	36	14	28	22	40	200
FTS2022		M20	36	14	28		40	189
FTS2023	23	M20	40	16	32	23	44	271
FTS2024	24	M20	40	16	32	24	44	277
FTS2026	26	M20	42	14	25	26	46	255
FTS2226		M22	42	14	25		46	240
FTS2228	28	M22	45	18	36	28	49	400
FTS2428		M24	45	18	36		49	385
FTS2432	32	M24	50	20	40	32	54	690

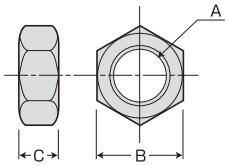
-WTN
DOUBLE T-SLOT NUT



- Material : S45C
- Heat treatment : Quenched 23~31HRC
- Finish : Black finish

Item No.	Table slot	Size(mm)							N.W. (g)
		Screw dia.	A	B	C	D	T	L	
1412WTN	14	M12	22.2	8.7	15.8	22	13.8	45	80
1612WTN	16	M12	25.4	8.7	15.8		15.8	45	90
1812WTN	18	M12	28.5	11.1	19		17.5	45	130
1816WTN		M16	28.5	11.1	19	30	17.5	55	140
2016WTN	20	M16	31.7	11.9	19		19	55	150
2220WTN	22	M20	36	13.8	25.4	40	21.7	70	290
2420WTN	24	M20	38.2	14	25.4		23.5	70	320





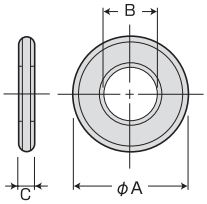
-MJN

JAM NUT

- Material : S45C
- Heat treatment : Quenched 23~31HRC
- Finish : Black finish

Item No.	Size (mm)			N.W. (g)
	A Screw dia.	B	C	
10MJN	M10	17	6	9
12MJN	M12	19	7	10
14MJN	M14	22	8	21
16MJN	M16	24	10	23
18MJN	M18	27	11	34
20MJN	M20	30	12	44



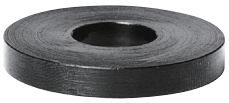


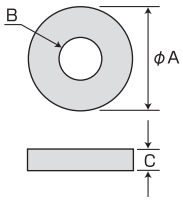
-MFW

FLAT WASHER

- Material : S45C
- Heat treatment : Quenched 27~35HRC
- Finish : Black finish

Item No.	Size (mm)			N.W. (g)
	A	B	C	
10MFW	22	11	3	7
12MFW	25	13	3	9
14MFW	28	15	3	10
16MFW	35	17	3	16
18MFW	38	19	3.5	23
20MFW	40	21	4	27
22MFW	44	23	4	34
24MFW	50	27	5	53





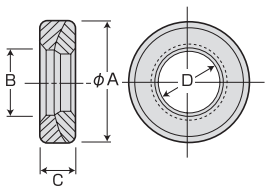
FYZ

FLAT WASHER

- Material : S45C
- Heat treatment : Quenched 35~45HRC
- Finish : Black finish

Item No.	Applicable bolt	Size (mm)			N.W. (g)
		A	B	C	
FYZ8	M8	23	8.4	3.2	8
FYZ10	M10	28	10.5	4	15
FYZ12	M12	35	13	5	30
FYZ14	M14	39	15	6	43
FYZ16	M16	45	17	6	61
FYZ18	M18	45	19	8	77
FYZ20	M20	50	21	8	94
FYZ22	M22	55	23	10	144
FYZ24	M24	60	26	10	163





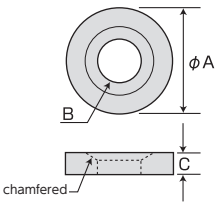
-MSW

SPHERICAL WASHER

- Material : S45C
- Heat treatment : Quenched 27~35HRC
- Finish : Black finish

Item No.	Size (mm)				N.W. (g)
	A	B	C	D	
10MSW	22	12	7	10.5	16
12MSW	28	15	9	13	33
14MSW	28	17	9.5	15	40
16MSW	35	19	10.5	17	57
18MSW	35	21	11.5	19	70
20MSW	40	24	13	22	90
24MSW	48	28	15	26	135





FXZ

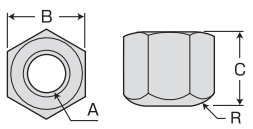
LARGE SPHERICAL WASHER

- Material : S45C
- Heat treatment : Quenched 35~45HRC
- Finish : Black finish

Item No.	Applicable bolt	Size (mm)			N.W. (g)
		A	B	C	
FXZ8	M8	23	9.5	3.2	7
FXZ10	M10	28	12	4	13
FXZ12	M12	35	14.2	5	28
FXZ14	M14	39	16	6	39
FXZ16	M16	45	19	6	56
FXZ18	M18	45	21	8	70
FXZ20	M20	50	23.2	8	87
FXZ22	M22	55	25.5	10	119
FXZ24	M24	60	28	10	163

∗ Large spherical washer (FXZ) shall be used in combination with spherical hex nut (FBU).





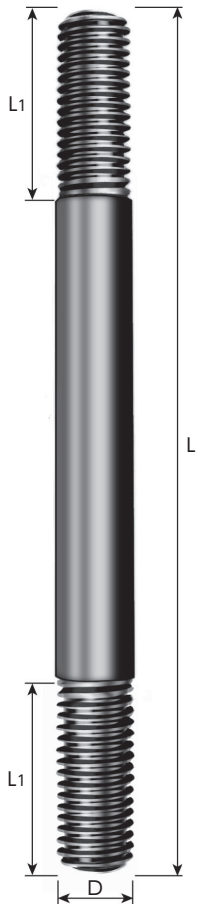
FBU

SPHERICAL HEX NUT

- Material : S45C
- Heat treatment : Quenched 23~31HRC
- Finish : Black finish

Item No.	Size (mm)				N.W. (g)
	A Screw dia.	B	C	R	
FBU8	M8	13	12	12	9
FBU10	M10	17	15	15	19
FBU12	M12	19	18	17	28
FBU14	M14	22	21	20	46
FBU16	M16	24	24	22	55
FBU18	M18	27	27	25	81
FBU20	M20	30	30	27	109
FBU22	M22	32	33	30	132
FBU24	M24	36	36	32	191

SBM
STUD BOLT



▶ Feature

- The rolling processed screw part is robust and resistant to abrasion and distortion.

- Material : S45C
- Heat treatment : Quenched 22～26HRC
- Finish : Black finish

Item No.	Size (mm) D Screw dia.	L	L1	N.W. (g)
SBM850	M8 P=1.25	50	22	18
SBM860		60	22	22
SBM870		70	30	23
SBM875		75	30	24
SBM8100		100	32	36
SBM8125		125	32	45
SBM8150		150	32	54
SBM8175		175	32	63
SBM8200		200	32	72
SBM1050	M10 P=1.5	50	22	27
SBM1060		60	22	32
SBM1070		70	30	37
SBM1075		75	30	40
SBM1090		90	32	48
SBM10100		100	32	53
SBM10120		120	32	63
SBM10125		125	32	66
SBM10150		150	32	80
SBM10175		175	32	93
SBM10200		200	32	106
SBM1250	M12 P=1.75	50	22	38
SBM1260		60	22	46
SBM1270		70	30	52
SBM1275		75	30	56
SBM1280		80	30	60
SBM1290		90	30	68
SBM12100		100	38	75
SBM12110		110	38	83
SBM12120		120	38	90
SBM12125		125	38	94
SBM12140		140	38	108
SBM12150		150	38	113
SBM12160		160	38	121

Item No.	Size (mm) D Screw dia.	L	L1	N.W. (g)
SBM12175	M12 P=1.75	175	38	131
SBM12200		200	38	150
SBM1450	M14 P=2.0	50	22	48
SBM1475		75	30	75
SBM14100		100	38	101
SBM14125		125	38	130
SBM14150		150	38	160
SBM14175		175	38	190
SBM14200		200	38	217
SBM14225		225	50	246
SBM14250		250	50	274
SBM14300		300	50	335
SBM14350		350	50	395
SBM14400		400	50	455
SBM14450		450	50	524
SBM14500		500	50	576
SBM1650	M16 P=2.0	50	22	68
SBM1660		60	22	82
SBM1670		70	30	94
SBM1675		75	30	101
SBM1680		80	30	108
SBM1690		90	30	122
SBM16100		100	38	135
SBM16110		110	38	149
SBM16120		120	38	162
SBM16125		125	38	169
SBM16130		130	38	176
SBM16140		140	38	189
SBM16150		150	38	203
SBM16160		160	38	217
SBM16170		170	38	229
SBM16175		175	38	236
SBM16180		180	38	243
SBM16190		190	38	257
SBM16200		200	38	270
SBM16225		225	50	304
SBM16250		250	50	338
SBM16275		275	50	371
SBM16300		300	50	405
SBM16350		350	50	423
SBM16400		400	50	540
SBM16450		450	50	608
SBM16500		500	50	675
SBM1875	M18 P=2.5	75	30	135
SBM18100		100	38	180
SBM18125		125	50	225
SBM18150		150	50	270
SBM18175		175	50	315
SBM18200		200	50	360
SBM18225		225	50	405

Item No.	Size (mm) D Screw dia.	L	L1	N.W. (g)
SBM18250	M18 P=2.5	250	50	450
SBM18300		300	50	540
SBM18350		350	50	630
SBM18400		400	50	720
SBM18450		450	50	810
SBM18500		500	50	900
SBM2075	M20 P=2.5	75	30	158
SBM20100		100	38	210
SBM20120		120	50	252
SBM20125		125	50	263
SBM20130		130	50	274
SBM20150		150	50	315
SBM20170		170	50	357
SBM20175		175	50	368
SBM20180		180	50	378
SBM20200		200	50	420
SBM20225		225	50	473
SBM20250		250	50	525
SBM20275		275	50	578
SBM20300		300	50	630
SBM20350		350	50	735
SBM20400		400	50	840
SBM20450		450	50	945
SBM20500		500	50	1,050
SBM2275	M22 P=2.5	75	30	195
SBM22100		100	38	260
SBM22125		125	50	325
SBM22150		150	50	390
SBM22175		175	50	455
SBM22200		200	50	520
SBM22225		225	50	585
SBM22250		250	63	650
SBM22300		300	63	780
SBM22350		350	63	910
SBM22400		400	63	1,040
SBM22450		450	63	1,170
SBM22500		500	63	1,300
SBM2475	M24 P=3.0	75	30	203
SBM24100		100	38	270
SBM24125		125	50	338
SBM24150		150	50	405
SBM24175		175	50	473
SBM24200		200	50	540
SBM24225		225	50	608
SBM24250		250	63	675
SBM24300		300	63	810
SBM24350		350	63	945
SBM24400		400	63	1,080
SBM24450		450	63	1,215
SBM24500		500	63	1,350

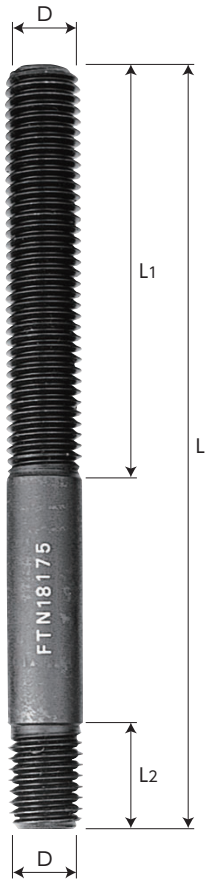
* Upon request, we can provide your required size.

FTN
STUD BOLT

▶ Features

- The rolling processed screw part is robust and resistant against abrasion and distortion.
- The thread length L1 is long so that one bolt can be used at either long or short end.
- The thread length L2 is shorter than the nut thickness so that the bolt doesn't stick out from the T-slot nut and thus avoid damaging the bottom of the table.

- Material : S45C
- Heat treatment : Quenched 22～26HRC
- Finish : Black finish



Item No.	Size (mm) D (Screw dia.)	L	L1	L2	N.W. (g)
FTN850	M8 P=1.25	50	25	10.5	16
FTN875		75	45		24
FTN8100		100	60		33
FTN8125		125	75		42
FTN8150		150	80		51
FTN8175		175	100		59
FTN8200		200	100		69
FTN1050	M10 P=1.5	50	25	12.5	25
FTN1075		75	45		38
FTN1090		90	50		46
＊**FTN10100**		100	60		51
FTN10115		115	60		59
FTN10125		125	75		65
FTN10140		140	75		74
FTN10150		150	80		80
FTN10175		175	100		93
FTN10200		200	100		107
FTN1250	M12 P=1.75	50	22	14.5	36
FTN1265		65	30		48
FTN1275		75	45		54
FTN1280		80	45		59
FTN12100		100	60		75
＊**FTN12125**		125	75		94
FTN12150		150	80		116
FTN12175		175	100		132
FTN12200		200	100		155
FTN1450	M14 P=2.0	50	22	16.5	50
FTN1475		75	45		74
FTN14100		100	60		100
FTN14125		125	75		127
＊**FTN14150**		150	90		153
FTN14175		175	90		181
FTN14200		200	100		211
FTN14225		225	100		242
FTN14250		250	100		273
FTN14300	M14 P=2.0	300	100	16.5	335
FTN14350		350	100		398
FTN14400		400	100		461
FTN1675	M16 P=2.0	75	45	18	98
FTN16100		100	60		132
FTN16125		125	75		167
＊**FTN16150**		150	90		205
FTN16175		175	90		243
FTN16200		200	100		280
FTN16250		250	100		358
FTN16300		300	100		438
FTN16350		350	100		516
FTN1875	M18 P=2.5	75	35	22	125
FTN18100		100	60		166
FTN18125		125	75		210
FTN18150		150	90		265
＊**FTN18175**		175	90		310
FTN18200		200	100		349
FTN18250		250	100		448
FTN18300		300	120		539
FTN18350		350	120		634
FTN2075	M20 P=2.5	75	35	26	154
FTN20100		100	60		208
FTN20125		125	75		261
FTN20150		150	90		318
FTN20175		175	90		378
＊**FTN20180**		180	110		384
FTN20200		200	120		427
FTN20250		250	145		540
FTN20300		300	145		662
FTN20350		350	145		784
FTN2275	M22 P=2.5	75	30	29.5	195
FTN22100		100	55		260
FTN22125		125	75		325
FTN22150		150	100		390
FTN22175		175	100		455
＊**FTN22200**		200	120		520
FTN22250		250	145		650
FTN22300		300	145		780
FTN22350		350	145		910
FTN22450		450	145		1,170
FTN2475	M24 P=3.0	75	30	33.5	218
FTN24100		100	55		294
FTN24125		125	75		370
FTN24150		150	100		450
FTN24175		175	100		533
FTN24200		200	120		610
＊**FTN24250**		250	145		774
FTN24300		300	145		948
FTN24350		350	145		1,120

The items with ＊ mark are standard parts of the flexible type uni-clamp (FT) set.

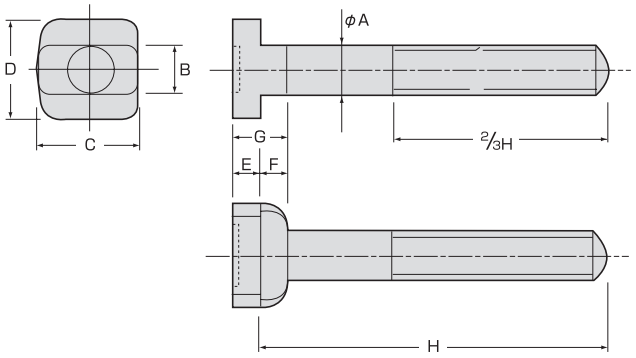
TBM

T-SLOT BOLT



▶ Feature

- Special bolt made by precision forging of the best selected carbon steel material.
- Material : S45C
- Finish : Black finish



Item No.	Table slot	Screw dia.	Size (mm)								N.W. (g)
			A	B	C	D	E	F	G	H	
TBM1250	12	M12 P=1.75	12	12	26	22	7	6	13	50	72
TBM1275	12		12	12	26	22	7	6	13	75	90
TBM12100	12		12	12	26	22	7	6	13	100	100
TBM12125	12		12	12	26	22	7	6	13	125	126
TBM12150	12		12	12	26	22	7	6	13	150	142
TBM12175	12		12	12	26	22	7	6	13	175	160
TBM12200	12		12	12	26	22	7	6	13	200	180
TBM1650	16	M16 P=2.0	16	16	32	27	8	8	16	50	128
TBM1675	16		16	16	32	27	8	8	16	75	160
TBM16100	16		16	16	32	27	8	8	16	100	192
TBM16125	16		16	16	32	27	8	8	16	125	226
TBM16150	16		16	16	32	27	8	8	16	150	260
TBM16175	16		16	16	32	27	8	8	16	175	294
TBM16200	16		16	16	32	27	8	8	16	200	328
TBM1875	18	M18 P=2.5	18	18	40	30	11	11	22	75	248
TBM18100	18		18	18	40	30	11	11	22	100	294
TBM18125	18		18	18	40	30	11	11	22	125	332
TBM18150	18		18	18	40	30	11	11	22	150	374
TBM18175	18		18	18	40	30	11	11	22	175	412
TBM18200	18		18	18	40	30	11	11	22	200	458
TBM2075	20	M20 P=2.5	20	20	40	34	11	11	22	75	278
TBM20100	20		20	20	40	34	11	11	22	100	342
TBM20125	20		20	20	40	34	11	11	22	125	388
TBM20150	20		20	20	40	34	11	11	22	150	442
TBM20175	20		20	20	40	34	11	11	22	175	490
TBM20200	20		20	20	40	34	11	11	22	200	542
TBM22100	22	M22 P=2.5	22	22	40	38	14	13	27	100	444
TBM22125	22		22	22	40	38	14	13	27	125	506
TBM22150	22		22	22	40	38	14	13	27	150	576
TBM22175	22		22	22	40	38	14	13	27	175	642
TBM22200	22		22	22	40	38	14	13	27	200	698
TBM24100	24	M24 P=3.0	24	24	50	44	16	15	31	100	616
TBM24125	24		24	24	50	44	16	15	31	125	688
TBM24150	24		24	24	50	44	16	15	31	150	766
TBM24175	24		24	24	50	44	16	15	31	175	844
TBM24200	24		24	24	50	44	16	15	31	200	922

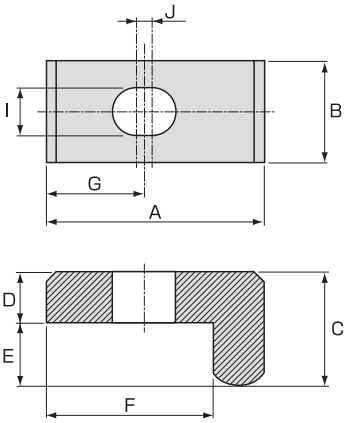


SC

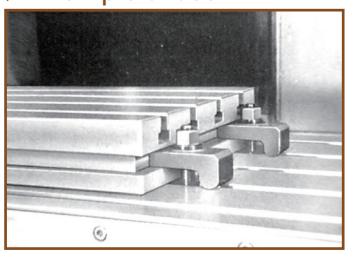
SOLID CLAMP (for Attaching Jig Plate)

▶ Feature

- Solid clamp for attaching jig plate or vacuum chuck.
- Material : S45C
- Heat treatment : Quenched 30～35HRC
- Finish : Black finish



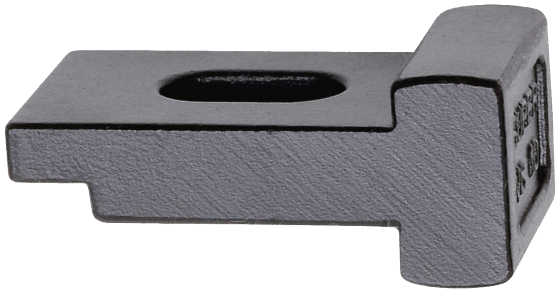
▶ Example of use



Item No.	Applicable bolt	Size (mm)									N.W. (g)
		A	B	C	D	E	F	G	I	J	
SC1400	M14	69	32	36	16	20	53	31	15	5	310
SC1600	M16	80	43	37	17	20	58	35	17	5	530
SC1800	M18	80	43	37	17	20	58	35	19	5	510

VC

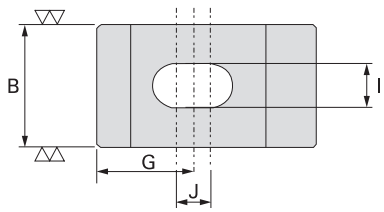
CLAMP FOR VISE

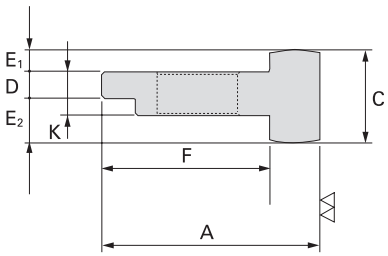


▶ Feature

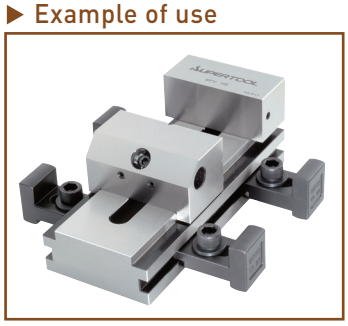
- Ideal for fixing precision vise.
- Material : SCM440
- Heat treatment : Quenched 35～40HRC
- Finish : Black finish

▮Applicable vise
VC10 : SPV30H･80H･120H･80
VC20 : SPV115･150･165H･SHPV165





▶ Example of use



Item No.	Applicable bolt	Size (mm)											N.W. (g)
		A	B	C	D	E1	E2	F	G	I	J	K	
VC10	M8	44	25	19	5.5	4.5	9	34	19.5	9	7	9	84
VC20	M12	60	32	38	8	18	12	46	28	13	12	14	250

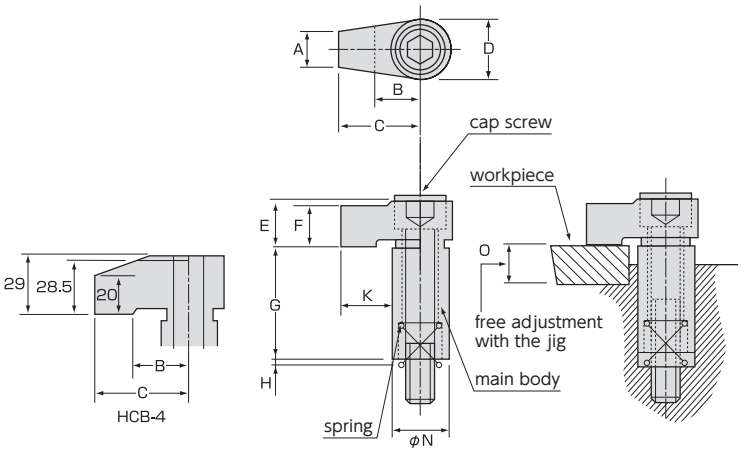
HCB

HOOK CLAMP (B Type)



▶ Feature

- A spring enables the tip to rise automatically when the bolt is loosened.



- Material : SCM440
- Heat treatment : Quenched 32~38HRC
- Finish : Grinding / black finish

Item No.	Size (mm)										Cap screw	N.W. (g)
	A	B	C	D	E	F	G	K	$N^{+0}_{-0.05}$	Stroke H		
HCB1	12	12	23	19	13	12	20	15	16	6	M 8×40	100
HCB2	16	16	31	25	16	15	39	20	22	6	M12×70	210
HCB3	17	23	42	32	22.5	21	58.5	28	28	7	M16×90	500
HCB4	20	35	50	36	–	–	59	36	28	7	M16×100	640

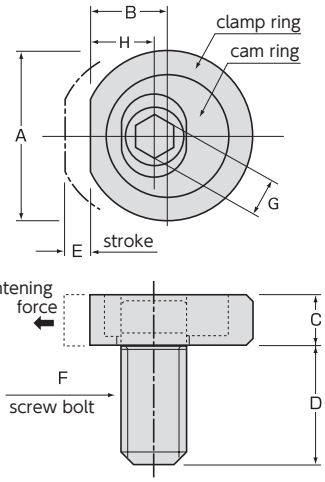
SR

SCREW LOCK



▶ Features

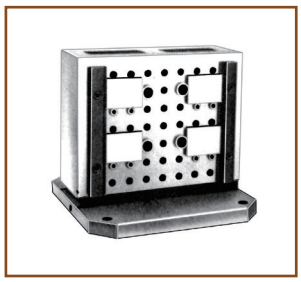
- Ideal for clamping thin works and mass production.
- Easy clamping even with irregular shaped work.
- Easy and quick clamping operation.
- Withstands repeated operations thanks to the quality and hardness of its material that reduce the stress at the clamp ring and the work contact surfaces.



- Material : S45C
- Heat treatment : Quenched 35HRC (Cam ring)
- Finish : Plating treatment (Clamp ring)

▶ Example of use





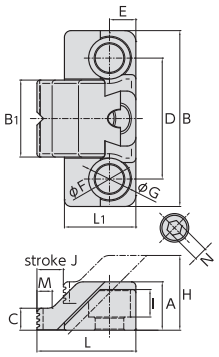


Item No.	Size (mm)								Tightening force (kN)	N.W. (g)
	A	B	C	D	E	Screw bolt F	Screw bolt G	H		
SR8	24	11	6	14	3	M 8-P1.25	5	9.5	4	22
SR10	26	11.8	8	19	4	M10-P1.5	6	9.8	5	36
SR12	30	13.5	9	19	5	M12-P1.75	8	11	6	54
SR16	38	16	12	23	6	M16-P2.0	10	13	7	120

TC-AS

SLIDE CLAMP SHORT A TYPE (Rack Type)





- Heat treatment : Quenched 30~35HRC
- Drive screw receive side at tightening operation : High frequency quenched 55HRC

▶ Features

- Ideal for side clamping.
- Its compact design allows to set more works.
- The jaw edge has a rack that clamps the work by pushing it down.
- When the clamp is tightened with the included wrench, the clamp head slides by an inclination of 45° .

▶ Accessories

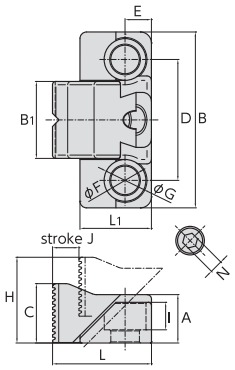
- Hex key wrench

Item No.	Size (mm)															Tightening torque (N·m)	Clamp capacity (kN)	N.W. (kg)
	A	B	B1	C	D	E	F	G	H	I	J	L	L1	M	N			
TC08AS	16	57	25	7	40	9	9	14	23	8.5	7	30	22.5	4.5	5	10	6	0.10
TC12AS	22	80	35	10	55	12	13	19	34	12.5	12	45	32.5	7.0	6	26	9	0.33

TC-BS

SLIDE CLAMP SHORT B TYPE (Rack Type)





- Heat treatment : Quenched 30~35HRC
- Drive screw receive side at tightening operation : High frequency quenched 55HRC

▶ Features

- Ideal for side clamping.
- Can be used when the work height is too low for the slide clamp short A type.
- Its compact design allows to set more works.
- The jaw edge has a rack that clamps the work by pushing it down.
- When the clamp is tightened with the included wrench, the clamp head slides by an inclination of 45° .

▶ Accessories

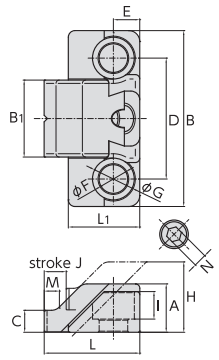
- Hex key wrench

Item No.	Size (mm)														Tightening torque (N·m)	Clamp capacity (kN)	N.W. (kg)
	A	B	B1	C	D	E	F	G	H	I	J	L	L1	N			
TC08BS	16	57	25	19	40	9	9	14	26	8.5	7	30	22.5	5	10	6	0.12
TC12BS	22	80	35	27	55	12	13	19	39	12.5	12	45	32.5	6	26	9	0.39

TC-AFS

SLIDE CLAMP SHORT A TYPE (Flat Type)





- Heat treatment : Quenched 30~35HRC
- Drive screw receive side at tightening operation : High frequency quenched 55HRC

▶ Features

- Ideal for side clamping.
- Its compact design allows to set more works.
- The jaw edge is flat and can be used as standard surface for clamping.
- When the clamp is tightened with the included wrench, the clamp head slides by an inclination of 45° .

▶ Accessories

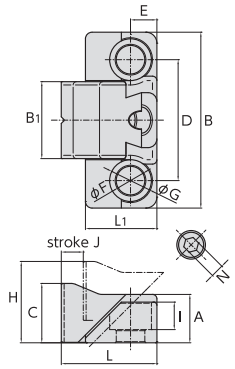
- Hex key wrench

Item No.	Size (mm)															Tightening torque (N·m)	Clamp capacity (kN)	N.W. (kg)
	A	B	B1	C	D	E	F	G	H	I	J	L	L1	M	N			
TC08AFS	16	57	25	7	40	9	9	14	22	8.5	6	29	22.5	3.5	5	10	6	0.10
TC12AFS	22	80	35	10	55	12	13	19	32	12.5	10	43.5	32.5	5.5	6	26	9	0.33

TC-BFS

SLIDE CLAMP SHORT B TYPE (Flat Type)





- Heat treatment : Quenched 30~35HRC
- Drive screw receive side at tightening operation : High frequency quenched 55HRC

▶ Features

- Ideal for side clamping.
- Can be used when the work height is too low for the slide clamp short A type.
- Its compact design allows to set more works.
- The jaw edge is flat and can be used as standard surface for clamping.
- When the clamp is tightened with the included wrench, the clamp head slides by an inclination of 45° .

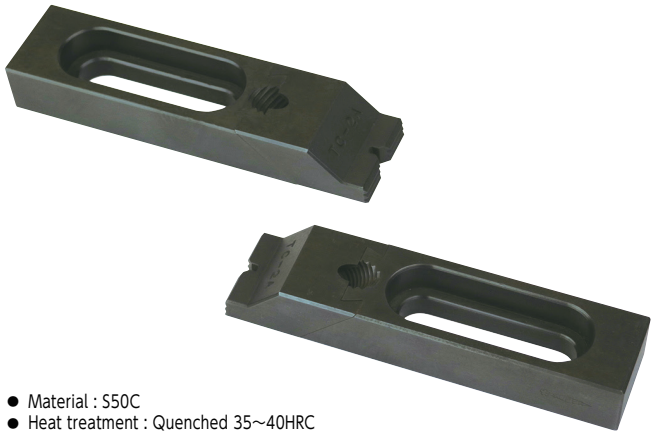
▶ Accessories

- Hex key wrench

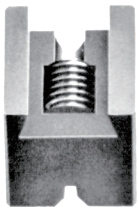
Item No.	Size (mm)														Tightening torque (N·m)	Clamp capacity (kN)	N.W. (kg)
	A	B	B1	C	D	E	F	G	H	I	J	L	L1	N			
TC08BFS	16	57	25	19	40	9	9	14	25	8.5	6	29	22.5	5	10	6	0.12
TC12BFS	22	80	35	27	55	12	13	19	37	12.5	10	43.5	32.5	6	26	9	0.39

TC-A

SLIDE CLAMP A TYPE (a Pair)



- Material : S50C
- Heat treatment : Quenched 35~40HRC
- Finish : Black finish



The drive and the screw of the tightening operation are built-in inside the edge jaw.

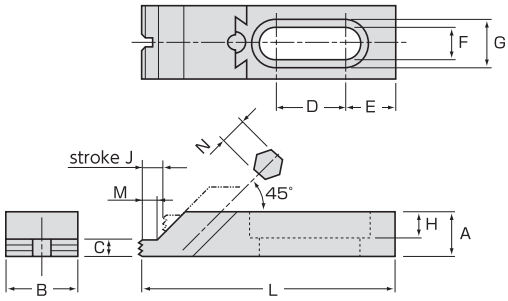
▶ Features

- The jaw edge has a rack that clamps the work by pushing it down.
- When the clamp is tightened with the included wrench, the clamp head slides by an inclination of 45° and clamps the work.

▶ Accessories

- Hex key wrench × 1pc
- Cap screw × 2 pcs
- T-slot nut × 2 pcs

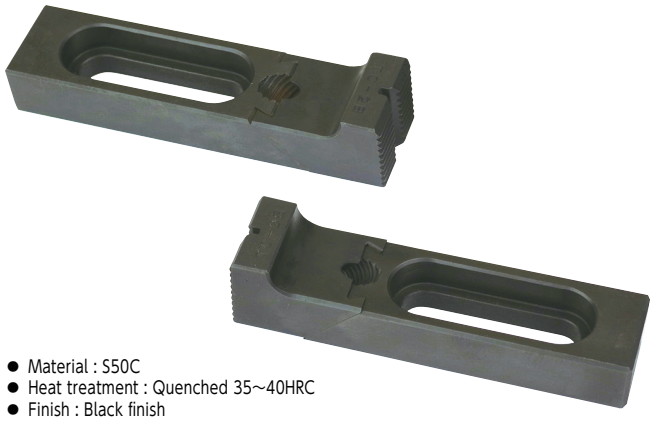




Item No.	Tightening force (kN)	Accessories			Size (mm)												N.W. (kg) (a pair)
		Cap screw	T-slot nut	Hex key wrench	A	B	C	D	E	F	G	H	J	L	M	N	
TC1A	7	M12×30	1412TN	6	22	36	9	28	16	14.5	22	12	11	103	8	6	1
TC2A	8	M16×30	1816TN	6	22	36	9	47	28.5	16.5	25	12	11	143	9	6	1.54
TC3A	10	M20×40	2220TN	8	24	46	12	60	35.5	20.5	31	14	12	180	10	8	2.88

TC-B

SLIDE CLAMP B TYPE (a Pair)



- Material : S50C
- Heat treatment : Quenched 35~40HRC
- Finish : Black finish

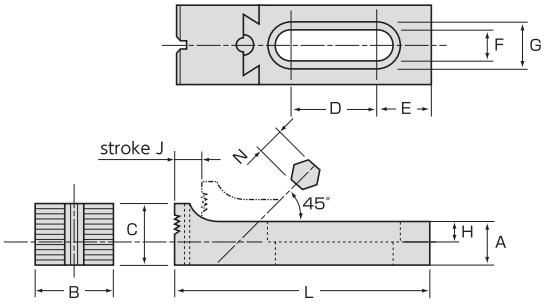
▶ Features

- Can be used when the work height is too low for the slide clamp A type or too high for free vise (FV).
- The structure and functions are the same as slide clamp A type.

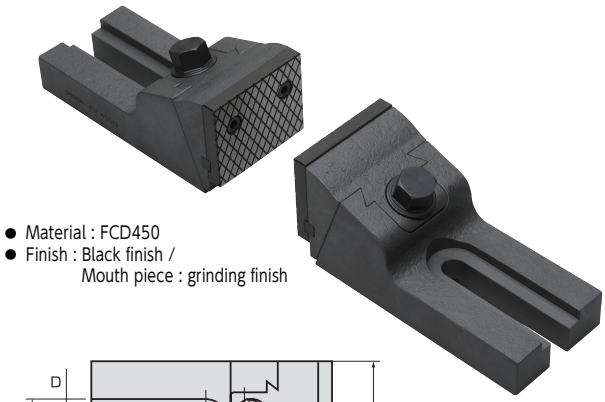
▶ Accessories

- Hex key wrench × 1pc
- Cap screw × 2 pcs
- T-slot nut × 2 pcs

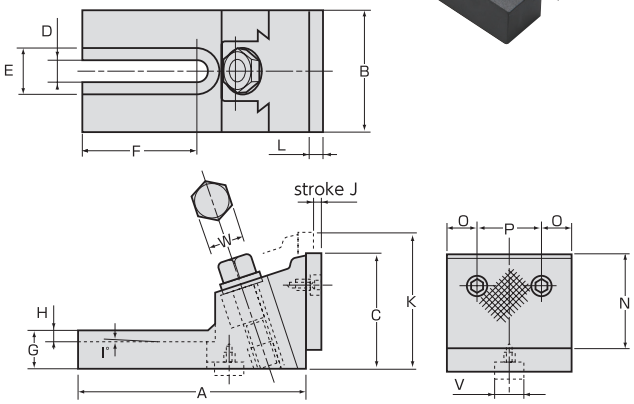




Item No.	Tightening force (kN)	Accessories			Size (mm)											N.W. (kg) (a pair)
		Cap screw	T-slot nut	Hex key wrench	A	B	C	D	E	F	G	H	J	L	N	
TC1B	7	M12×30	1412TN	6	22	36	27	28	16	14.5	22	12	11	103	6	1.18
TC2B	8	M16×30	1816TN	6	22	36	30	47	28.5	16.5	25	12	11	143	6	1.67
TC3B	10	M20×40	2220TN	8	24	46	36	60	35.5	20.5	31	14	12	180	8	3.14



- Material : FCD450
- Finish : Black finish /
  Mouth piece : grinding finish



FV-N

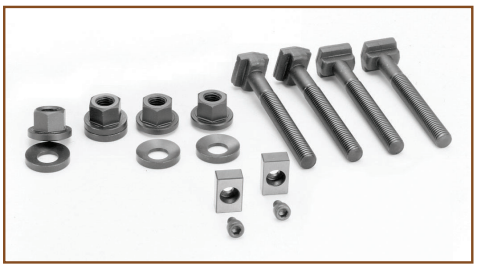
FREE VISE (a Pair)

▶ Features

- Can be used when the work is too big to fix regular vise.
- The body bottom is designed with a key pitch so that step key can be used.

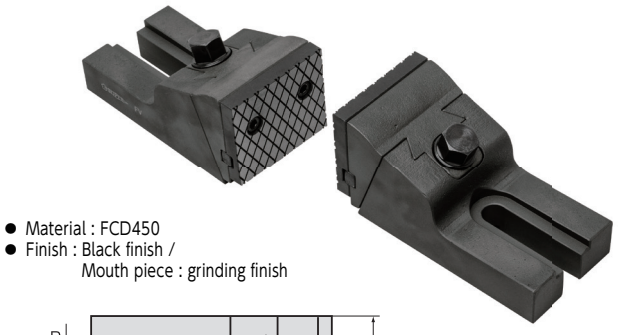
▶ Accessories

- Spherical flange nut (SFN) × 4 pcs
- T-slot bolt (TBM) × 2 pcs
- Step key (FKY) × 2 pcs
- Cap screw × 2 pcs

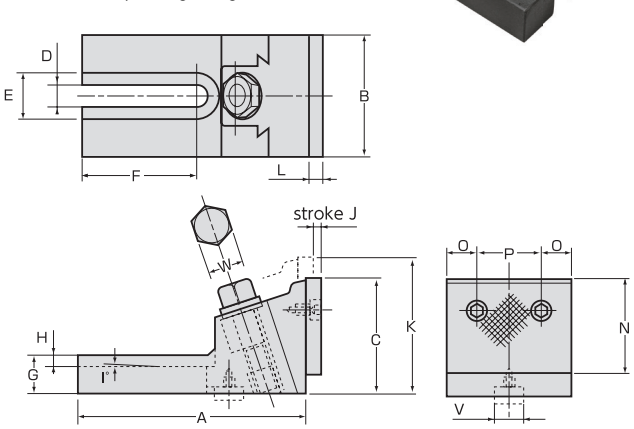


Item No.	Tightening force (kN)	Accessories				Size (mm)			
		Cap screw	Step key	T-slot bolt	Flange nut	A	B	C	D
FV350N	23	CS610	FKY16	TBM1275	12MSFN	132	70	72	14.5
FV450N	28	CS610	FKY18	TBM1675	16MSFN	180.5	85	87	17
FV550N	38	CS610	FKY20	TBM20100	20MSFN	207	110	105	21

Item No.	Size (mm)												N.W. (kg) (a pair)
	E	F	G	H	J	K	L	N	O	P	V	W	
FV350N	29	55	25	5.7	5	84	10	60	15	40	16	19	6.8
FV450N	37	80	30	7.9	5	100	12	70	17.5	50	18	24	13
FV550N	42	100	36	10.2	7	125	13	85	25	60	20	30	21



- Material : FCD450
- Finish : Black finish /
  Mouth piece : grinding finish



FV-E

FREE VISE (Economy Type) (a Pair) (* No accessories included)

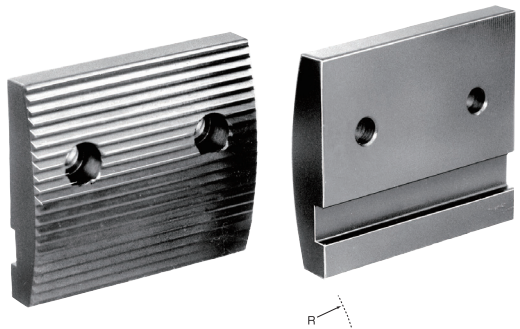
▶ Features

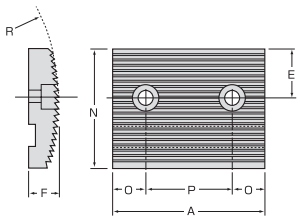
- Can be used when the work is too big to fix regular vise.
- The body bottom is designed with a key pitch so that step key can be used.

▶ Example of use



Item No.	Tightening force (kN)	Size (mm)																N.W. (kg) (a pair)
		A	B	C	D	E	F	G	H	J	K	L	N	O	P	V	W	
FV350E	23	132	70	72	14.5	29	55	25	5.7	5	84	10	60	15	40	16	19	6.8
FV450E	28	180.5	85	87	17	37	80	30	7.9	5	100	12	70	17.5	50	18	24	13
FV550E	38	207	110	105	21	42	100	36	10.2	7	125	13	85	25	60	20	30	21





- Material : S45C
- Heat treatment : Quenched 35~40HRC
- Finish : Black finish

FVJ

MOUTH PIECE WITH RACK FOR FREE VISE (a Pair)

▶ Features

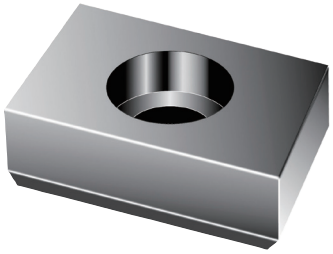
- This special mouth piece with rack offers stable work clamping.
- Even if the work clamped surface has mill scale, is corrugated or slanted, this mouth piece clamps the work surely by pushing it down.

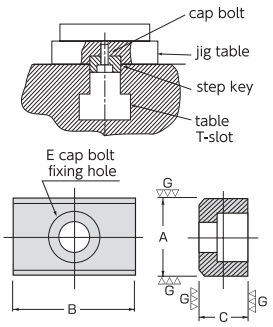
▶ Example of use



When replacing the mouth piece, bolt from conventional set can be used.

Item No.	Applicable vise	Size(mm)							N.W.(kg) (a pair)
		A	N	O	P	E	F	R	
FVJ100	FV350·N·E	70	60	15	40	22.5	13.5	100	0.69
FVJ200	FV450·N·E	85	70	18	50	23	15	175	1.1
FVJ300	FV550·N·E	110	85	25	60	28	17	220	1.9



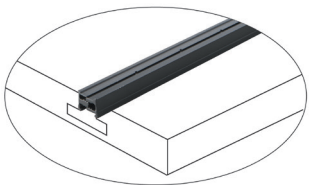


- Material : S50C
- Heat treatment : Quenched 40~45HRC
- Finish : Grinding finish

FKY

STEP KEY

Item No.	Size(mm)				N.W. (g)
	A^{h7}	B	C	E bolt	
FKY12	12	20	10	M5	17
FKY14	14	25	10	M6	21
FKY16	16	25	10	M6	26
FKY18	18	25	10	M6	30
FKY20	20	25	10	M6	34
FKY22	22	40	20	M10	126



- Material : 6063-S(JIS)

The range of the slot width available by switching the position as explained at Fig.1 is as shown on the size chart below.

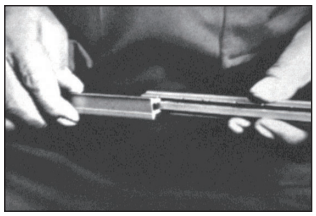


Fig.1

The switching operation is simple. Separate body A (male) and body B (female) as shown in Fig.1, and insert them so that they fit with the requested T-slot width.

TCV

ADJUSTABLE T-SLOT TIP COVER

▶ Features

- Swarf can be disposed of more easily.
- Column change can be done more simply.
- Oil and swarf get separated naturally.
- Cost saving because double purpose type.
- The cover is made of aluminum so it can be easily cut to fit the table length.

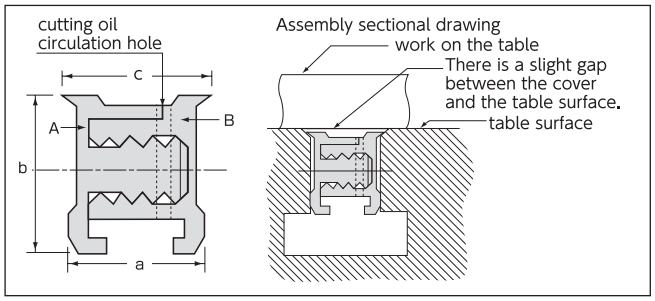
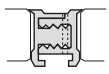
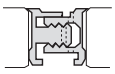
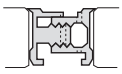
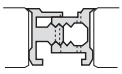


Fig.2

Position can be switched as on the chart below

TCV1218	12mm use	14mm use	16mm use	18mm use
TCV1824	18mm use	20mm use	22mm use	24mm use
combine figure				

▮Cutting the T-slot cover

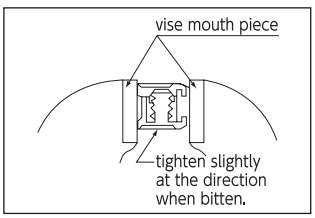


Fig.3

During cutting, tighten slightly when the piece is bitten by the vise. Bite as shown on Fig.3.

▮Caution during cutting

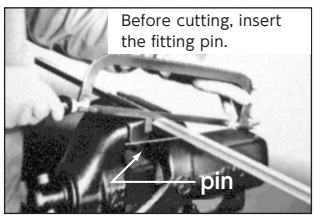


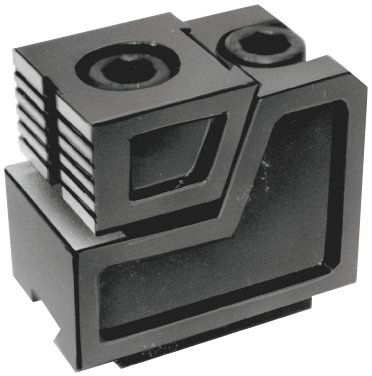
Fig.4

The pitch of the oil circulation hole is the same for body A and body B. Thus, when using the fitting pin, all the through holes of the cut body meet.

Item No.	Size details(mm)				
	a	b	c	Applicable T-slot width	Length
TCV1218100	12	14.4	13	12·14·16·18	1,000
TCV1824100	18	18	19	18·20·22·24	1,000

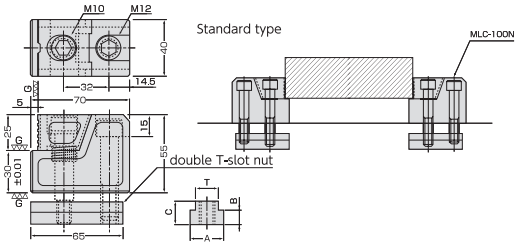
MLC100(AN • BN • CN)

MECHALOCK CLAMP (Standard Type)



▶ Features

- The compact design allows to use efficiently the space of jig block or machine table.
- It clamps with the work kept at a certain height.
- Fixing and removing the work can be easily done by the spring type slide clamp.

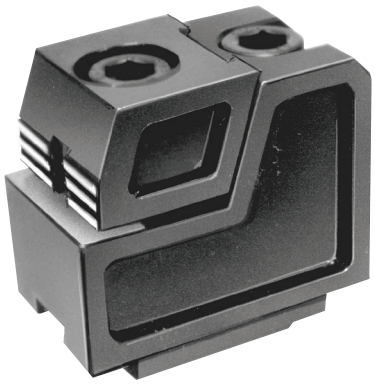


- Material : S45C
- Heat treatment : Quenched 35~40HRC
- Finish : Black finish / grinding

Item No.	Tightening force(kN)	Size(mm)						N.W. (kg)
		Applicable T-slot	Stroke	A	B	C	T	
MLC100AN	7	14	2.8	22.2	8.7	15.8	13.8	0.98
MLC100BN	7	16		25.4	8.7	15.8	15.8	1.03
MLC100CN	7	18		28.5	11.1	19	17.5	1.08

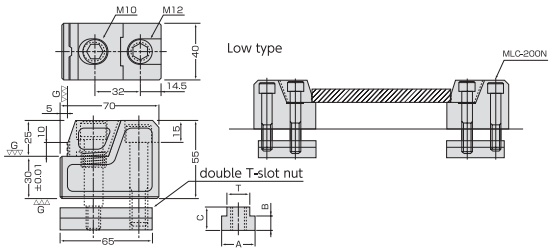
MLC200(AN • BN • CN)

MECHALOCK CLAMP (Low Type)



▶ Feature

- Ideal for thin works.

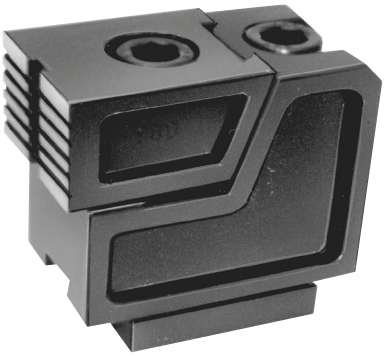


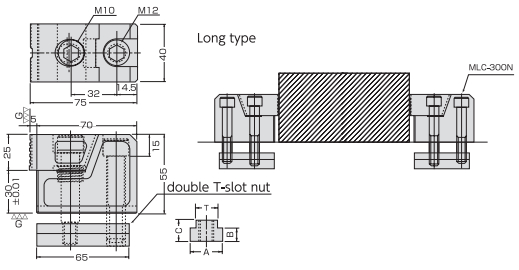
- Material : S45C
- Heat treatment : Quenched 35~40HRC
- Finish : Black finish / grinding

Item No.	Tightening force(kN)	Size(mm)						N.W. (kg)
		Applicable T-slot	Stroke	A	B	C	T	
MLC200AN	7	14	2.8	22.2	8.7	15.8	13.8	0.97
MLC200BN	7	16		25.4	8.7	15.8	15.8	1.02
MLC200CN	7	18		28.5	11.1	19	17.5	1.07

MLC300(AN • BN • CN)

MECHALOCK CLAMP (Long Type)



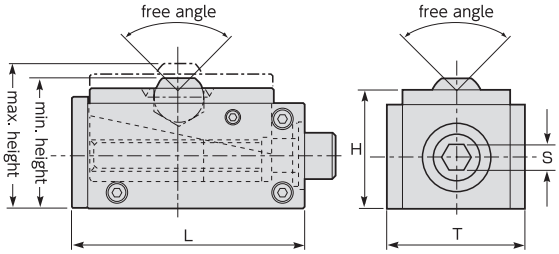


- Material : S45C
- Heat treatment : Quenched 35~40HRC
- Finish : Black finish / grinding

Item No.	Tightening force(kN)	Size(mm)						N.W. (kg)
		Applicable T-slot	Stroke	A	B	C	T	
MLC300AN	7	14	2.8	22.2	8.7	15.8	13.8	1.05
MLC300BN	7	16		25.4	8.7	15.8	15.8	1.1
MLC300CN	7	18		28.5	11.1	19	17.5	1.15



- Material : S45C
- Finish : Black finish



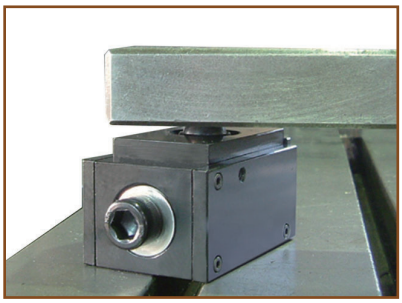
APB

ADJUSTABLE PARALLEL BLOCK

▶ Features

- This parallel block can smoothly move up and down vertically.
- The built-in bearing allows lateral adjustment with light force.
- The ball swivel angle can be freely set.
- The ball at the top part turns freely.

▶ Example of use



Item No.	Size(mm)						Allowable load (KN)	N.W. (kg)
	H	T	L	S	Height			
					Max.	Min.		
APB50	40	53	88.5	10	55	50	50	1.5
APB65	54	70	124	12	72	65	100	3.7



- Material : S50C
- Finish : Black finish

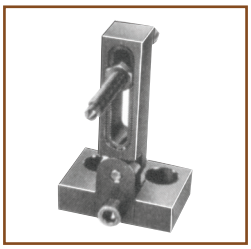
MS

MULTIPLE STOPPER

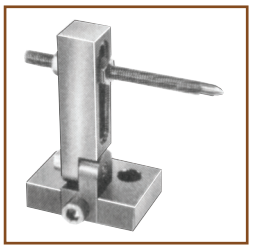
▶ Features

- The guide bolt can be vertically adjusted within 50mm range.
- When the swing bolt of the guide part is loosened, it can swing by 180° and can be fixed at any required spot.
- The stopper can also be used by loosening the fixing bolt of the body and fixing the guide part in a 90° sideway position.

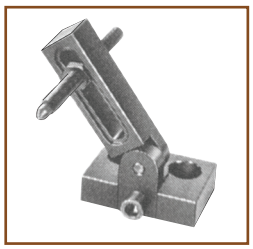
▶ Example of use



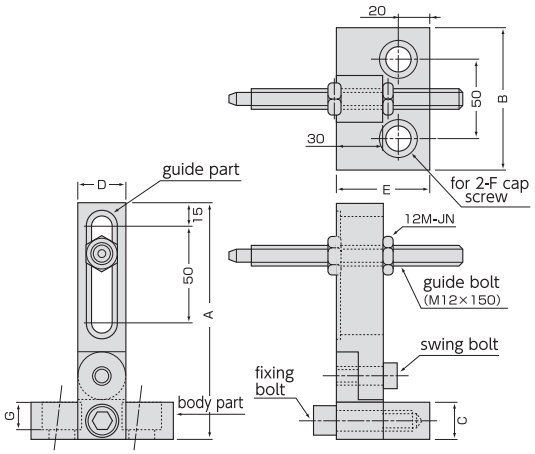
Conventional use



Sideway use



Swing use



Item No.	Size(mm)							N.W. (kg)
	A	B	C	D	E	F	G	
MS1512	150	90	23	30	60	M12	13	1.6
MS1516	150	90	23	30	60	M16	17	1.57

Jig blocks
Sub tables
Jig plates
Angle plates
Setting blocks
Precision vises
Vacuum chucks
Clamp kits
Screw supports
Mini blocks, mini supports
Clamping tools
Clamps

PW

PIN WRENCH HANDLE



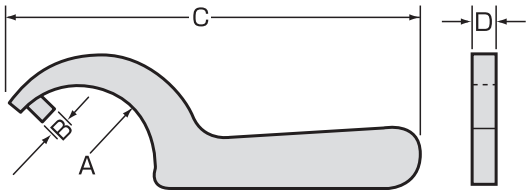
- Material : S45C
- Heat treatment : Quenched 35~37HRC
- Finish : Black finish

▶ Feature

- Special tool for screw support.

▶ Example of use

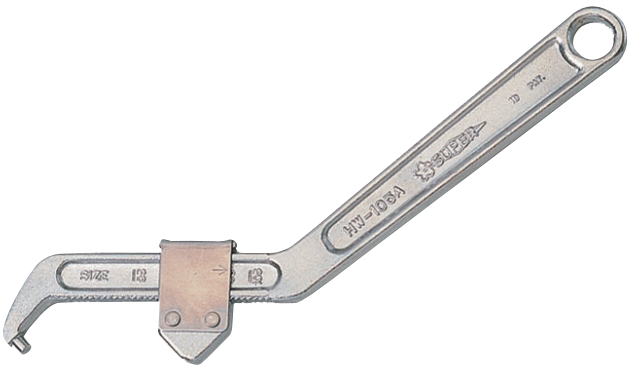




Item No.	Applicable support	Size (mm)				N.W. (g)
		A	B	C	D	
PW355	FS50S·FS70S·MSS50,65,85	17.5R	4.5	100	5	90
PW406	FS100S·MSS110	20.0R	5.5	130	6	100
PW457	FS150S·MSS165	22.5R	6.5	140	7	120
PW508	FS250S·FS300S·MSS265	25.0R	7.5	150	8	120

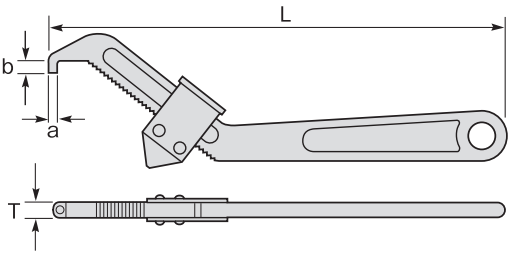
HW105A

HOOK SPANNER (Round Tip Type)



▶ Feature

- Special spanner for tightening and removing round nuts with holes.



Item No.	Size (mm)					N.W. (g)
	Applicable round nut diameter	L	a	b	T	
HW105A	35~105	270	ϕ6	6.5	8	350

KNURLING HOLDERS & BITE HOLDERS





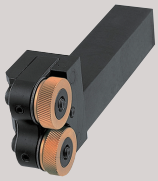
Cut knurling holders, wheels
P.256 ▶



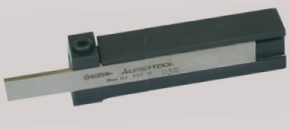
Cut knurling holders for small material (cross cut)
P.258 ▶



Cut knurling holders for small material (plain cut)
P.258 ▶



Roll knurling holders, wheels
P.260 ▶



Cut off tool holders
P.262 ▶



Cutting tool holders
P.262 ▶



Cutting bites
P.262 ▶

CUT KNURLING HOLDER

FOR REMARKABLE IMPROVEMENT OF THE KNURLING PRODUCTIVITY

- Productivity improvement depends on conditions such as the workpiece material, the processing duration, the applied machine, etc.
- Applicable also to difficult-to-process materials such as copper alloy, aluminum, stainless steel, resin, etc.
- Minimize swelling of workpiece diameter during knurling process.
- The holder head is designed to take minimum space and still be sturdy, making the tool greatly versatile.
- The load during knurling process is extremely small, which reduces load to the machine, and it is also good for the control and maintenance of the machine precision. Small materials or hollow materials can also be processed.
- Special ball bearings used at the knurling wheel rotary axis allow smooth rotation and prevent burning due to cut chip clogging, thus extending the wheel life and preventing damage to the wheel.

CUT KNURLING PROCESS CONDITIONS

▮Table 1 Process condition table (approximate value)

External dia. \ Material		Carbon steel	Mild steel	Stainless steel	Aluminum	Copper	Brass	Nylon resin (* caution)
ϕ5~ ϕ12	Peripheral speed V(m/min)	40	50	30	80	50	60	50
	Feed per revolution S'(mm/rev)	0.08	0.10	0.06	0.16	0.10	0.10	0.08
ϕ12~ ϕ50	Peripheral speed V(m/min)	40	50	30	80	50	60	50
	Feed per revolution S'(mm/rev)	0.10	0.12	0.08	0.20	0.12	0.12	0.10
ϕ50~ϕ250	Peripheral speed V(m/min)	35	45	25	75	45	55	45
	Feed per revolution S'(mm/rev)	0.10	0.12	0.08	0.20	0.12	0.12	0.10

* Caution : The values in the table are in reference with MC Nylon (MC901) and Duracon (MC90-44).
For the values of other materials, please contact Super Tool.

▮Revolution speed

$$N(rpm) = \frac{1000 \cdot V}{\pi \cdot D}$$

D=processed material diameter(mm)
V=peripheral speed(m/min)

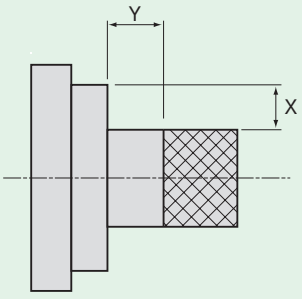
▮Feed speed

Smm/min=N·S'

S'=feed per revolution S'(mm)
N=number of revolution per minute(rpm)

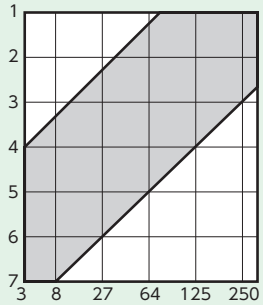
▮Cutting amount
The cutting amount of the cut knurling holder is about 80% of the knurling pitch.

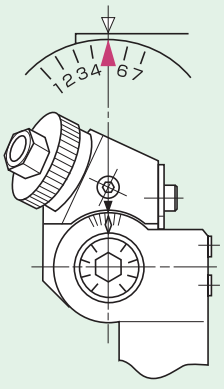
Tmm=P·0.8 P=pitch of the knurling wheel



▮Table 2 Cross cut head swing angle chart

drawing on the right
head swing angle scale





▮Table 3 Stepped part process range (unit : mm)

KH1CN20N KH1CN25N		KH1CA08,KH1CA10 KH1CA12,(R)		KH2CN20N KH2CN25N		KH2CA0.8,KH2CA10 KH2CA12,(R)	
X (Step gap)	Y	X (Step gap)	Y	X (Step gap)	Y	X (Step gap)	Y
1~4	1.5~5	under 0.5	0.6	1~4	1.5~5	under 0.5	0.6
over 4	8.5	0.5~2	0.6~3.5	4~7	5~8.5	0.5~2	0.6~3.5
		2~4	3.5~5.5	7~48	8.5	2~4	3.5~5.5
		over 4	5.5	over 48	25	over 4	5.5

*The values above are reference values. Refer to them as rough indications.

KH-CN-N

CUT KNURLING HOLDER (Cross Cut / Plain Cut)

Cross cut (for NC lathe, multi-purpose lathe)



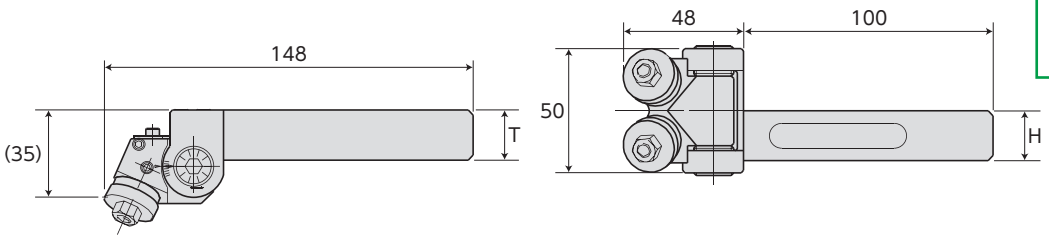


KH2CN25N

▶ Accessories



＊Knurling wheels are sold separately. (2 pcs are needed)



Item No.	Size (mm)			Applicable knurling wheel	N.W. (g)
	H	T	Knurling range		
KH2CN20N	20	20	ϕ5～ϕ250	KNCD2505～2520	650
			ϕ18～ϕ250	KNCD2106～2115	
KH2CN25N	25	25	ϕ5～ϕ250	KNCD2505～2520	840
			ϕ18～ϕ250	KNCD2106～2115	

⚠ The knurling external diameter differs depending on the pitch. Refer to the cut knurling wheel P.259.

Plain cut (for NC lathe, multi-purpose lathe)



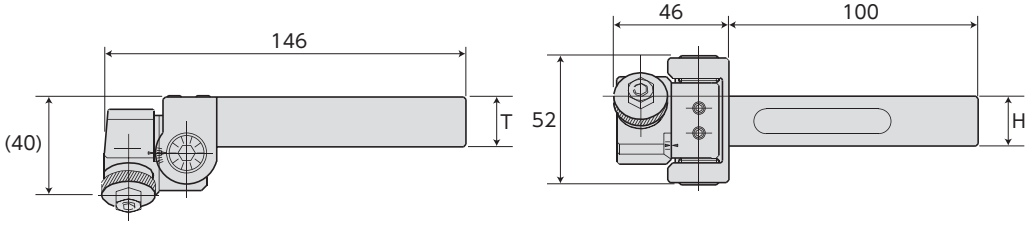


KH1CN20N

▶ Accessories



＊Knurling wheel is sold separately.



Item No.	Size (mm)			Applicable knurling wheel	N.W. (g)
	H	T	Knurling range		
KH1CN20N	20	20	ϕ5～ϕ250	KNCF2105R～2120R	710
KH1CN25N	25	25	ϕ5～ϕ250		890

⚠ The knurling external diameter differs depending on the pitch. Refer to the cut knurling wheel P.259.

KH-CA-R

CUT KNURLING HOLDER FOR SMALL MATERIAL (Cross Cut / Plain Cut)

▶ Feature

- The cut knurling holder for small material shows strong cutting abilities for small diameter knurling with small material NC lathe, auto lathe or desktop lathe.

Cross cut

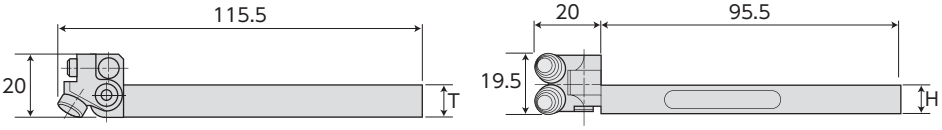


KH2CA08R

MOVIE



＊Knurling wheels are sold separately. (2 pcs are needed)



▶ Accessories



Item No.	Size (mm)			Applicable knurling wheel	N.W. (g)
	H	T	Knurling range		
KH2CA08R	8	8	ϕ3～ϕ20	KNCD0903～0910	100
KH2CA10R	10	10			130
KH2CA12R	12	12			145

⚠ The knurling external diameter differs depending on the pitch. Refer to the cut knurling wheel P.259.

Plain cut

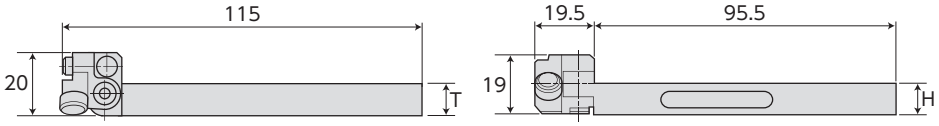


KH1CA08R

MOVIE



＊Knurling wheel is sold separately.



▶ Accessories

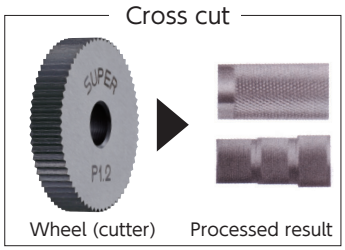


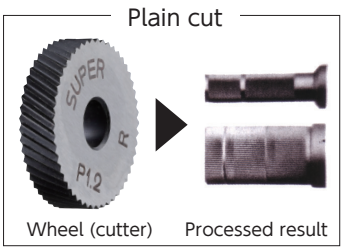
Item No.	Size (mm)			Applicable knurling wheel	N.W. (g)
	H	T	Knurling range		
KH1CA08R	8	8	ϕ3～ϕ20	KNCF0903R～0910R	100
KH1CA10R	10	10			130
KH1CA12R	12	12			145

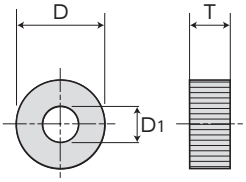
⚠ The knurling external diameter differs depending on the pitch. Refer to the cut knurling wheel P.259.

KNCD • KNCF-R
CUT KNURLING WHEEL

● Material : SKH51







Cross cut

Item No.	Pitch (mm)	Module (approximate value)	Number of knurl per inch (reference)	Size (mm)				Applicable holder
				External dia. D	Hole dia. D1	Width T	Applicable knurling range (reference)	
KNCD2520	2	0.64	12	25.4	6	5	ϕ25~ϕ250	KH2CN20N KH2CN25N
KNCD2518	1.8	0.57	14					
KNCD2516	1.6	0.51	16					
KNCD2515	1.5	0.48	17					
KNCD2512	1.2	0.38	22					
KNCD2510	1	0.32	26				ϕ15~ϕ150	
KNCD2508	0.8	0.26	32					
KNCD2506	0.6	0.19	42				ϕ5~ ϕ20	
KNCD2505	0.5	0.16	50					
KNCD2115	1.5	0.48	17	21.5	6	5	ϕ25~ϕ250	
KNCD2112	1.2	0.38	22					
KNCD2110	1	0.32	26					
KNCD2108	0.8	0.26	32				ϕ18~ϕ150	
KNCD2106	0.6	0.19	42					

Plain cut

Item No.	Pitch (mm)	Module (approximate value)	Number of knurl per inch (reference)	Size (mm)				Applicable holder
				External dia. D	Hole dia. D1	Width T	Applicable knurling range (reference)	
KNCF2120R	2	0.64	12	21.5	6	5	ϕ25~ϕ250	KH1CN20N KH1CN25N
KNCF2118R	1.8	0.57	14					
KNCF2116R	1.6	0.51	16					
KNCF2115R	1.5	0.48	17					
KNCF2112R	1.2	0.38	22					
KNCF2110R	1	0.32	26				ϕ15~ϕ150	
KNCF2108R	0.8	0.26	32					
KNCF2106R	0.6	0.19	42				ϕ5~ ϕ20	
KNCF2105R	0.5	0.16	50					

Cross cut for small material

Item No.	Pitch (mm)	Module (approximate value)	Number of knurl per inch (reference)	Size (mm)				Applicable holder
				External dia. D	Hole dia. D1	Width T	Applicable knurling range (reference)	
KNCD0910	1	0.32	26	9.5	4	2.5	ϕ12~ϕ20	KH2CA08R KH2CA10R KH2CA12R
KNCD0908	0.8	0.26	32					
KNCD0907	0.7	0.22	36					
KNCD0906	0.6	0.19	42				ϕ3~ϕ20	
KNCD0905	0.5	0.16	50					
KNCD0904	0.4	0.13	64					
KNCD0903	0.3	0.10	84					

Plain cut for small material

Item No.	Pitch (mm)	Module (approximate value)	Number of knurl per inch (reference)	Size (mm)				Applicable holder
				External dia. D	Hole dia. D1	Width T	Applicable knurling range (reference)	
KNCF0910R	1	0.32	26	9.5	4	2.5	ϕ12~ϕ20	KH1CA08R KH1CA10R KH1CA12R
KNCF0908R	0.8	0.26	32					
KNCF0907R	0.7	0.22	36					
KNCF0906R	0.6	0.19	42				ϕ3~ϕ20	
KNCF0905R	0.5	0.16	50					
KNCF0904R	0.4	0.13	64					
KNCF0903R	0.3	0.10	84					

(Reference) : For the number of knurl per inch, P (pitch) = π × m (module)

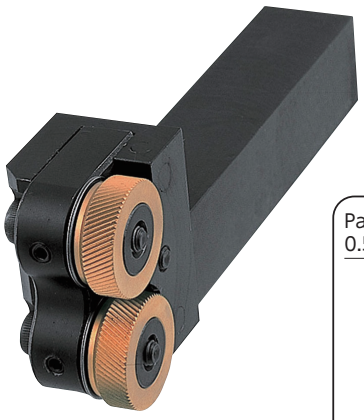
KH-E

ROLL KNURLING HOLDER (E-Type) (Cross Cut / Plain Cut)

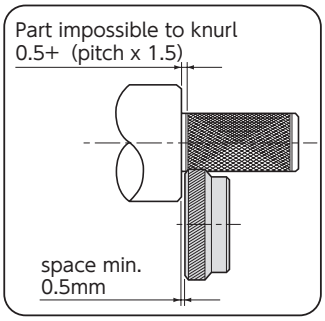
▶ Feature

- The roll knurling holder enables the knurling of stepped work up to the edge.

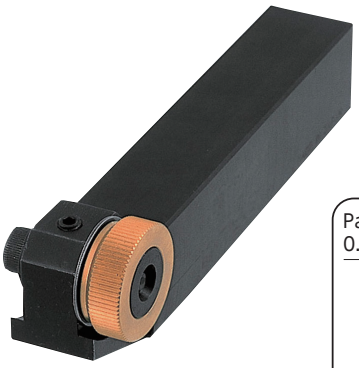
Cross cut for edge knurling



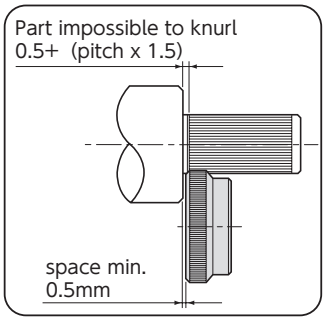
＊ Knurling wheels are sold separately.



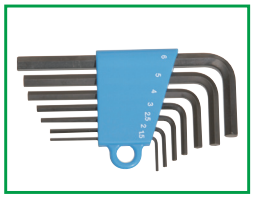
Plain cut for edge knurling

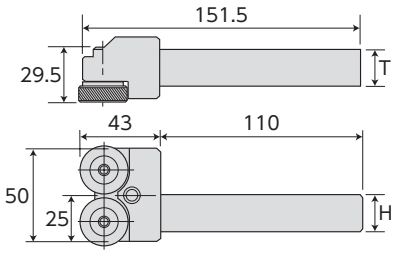


＊ Knurling wheel is sold separately.



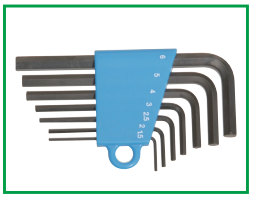
▶ Accessories

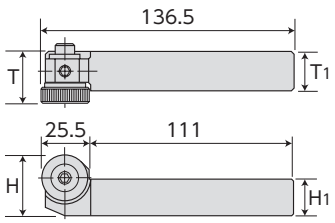




Item No.	Size (mm)			Applicable knurling wheel	N.W. (g)
	H	T	Knurling range		
KH2E20	20	20	ϕ10～ϕ250	KNE15RL～06RL	720
KH2E25	25	25			910

▶ Accessories





Item No.	Size (mm)					Applicable knurling wheel	N.W. (g)
	H	H1	T	T1	Knurling range		
KH1E20	32.5	20	27.5	20	ϕ10～ϕ250	KNE15F～06F	430
KH1E25	37.5	25	30	25			630

KNE-RL • KNE-F

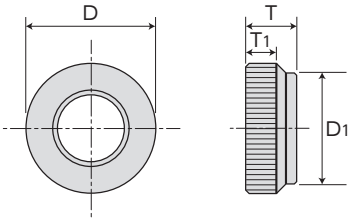
ROLL KNURLING WHEEL (E-Type)

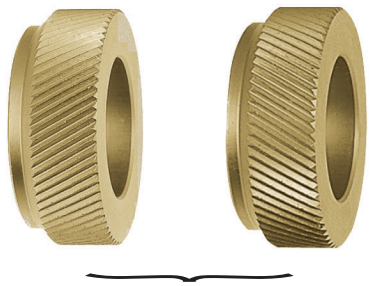
▶ Feature

- The TiN (titanium nitride) coating treatment extends the life of the wheel.

Wheel for edge knurling

- Material ：SKH51





RL (Cross cut)



F (Plain cut)

Item No.		Knurls	Number of knurl per inch	Pitch (mm)	Module	Size (mm)			
Cross cut (a pair)	Plain cut					D	D1	T	T1
KNE15RL	**KNE15F**	Coarse	17	1.5	0.48	25.4	22	10	6
KNE12RL	**KNE12F**	Medium	22	1.2	0.38				
KNE10RL	**KNE10F**		26	1	0.32				
KNE08RL	**KNE08F**		32	0.8	0.26				
KNE06RL	**KNE06F**	Fine	42	0.6	0.19				

KHS • KH

AUTO SLIDING ROLL KNURLING HOLDER

▶ Features

- Easy fixing : A mechanism for the initial positioning of the knurling wheel supporting part is included. The initial position is clearly set, so it is easy to fix to auto lathe or NC lathe.
- No need for precise positioning : The auto-sliding mechanism enables automatic centering adjustment. The centering range is within ±2.5mm to the initial position center.
- Fine finish : The knurling wheel supporting part moves up and down, which reduces the rolling force difference occurring between the 2 wheels and enables an even knurl depth.

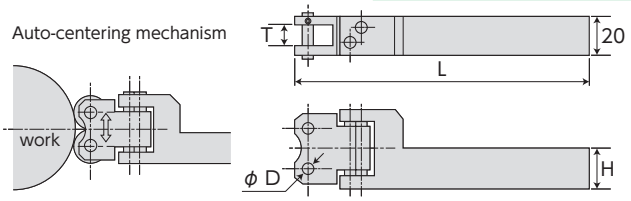
Cross cut with Japanese standard knurling wheel



● No wheel

▶ Accessories
● Hex key wrench





Item No.	Size (mm)					Applicable knurling wheel	N.W. (g)
	L	H	D	T	Knurling range		
KHS	147	20	4.7	6.5	ϕ10~ϕ250	KNSRL14~50	550

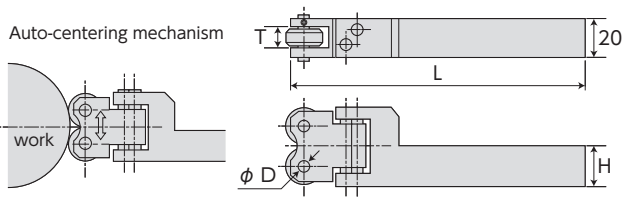
∗ Pin for wheel fixing item No. : KNSP

Cross cut with Supertool standard knurling wheel



▶ Accessories
● Medium knurl wheels
● Hex key wrench





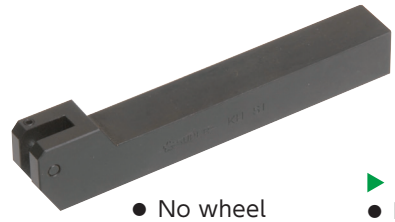
Item No.	Size (mm)					Applicable knurling wheel	N.W. (g)
	L	H	D	T	Knurling range		
KH1	130	16	5.5	8	ϕ10~ϕ250	KN12CRL~FRL	410
KH2	147	20	6.3	9.6		KN30CRL~FRL	580

∗ Pin for wheel fixing item No. : KH1P for KH1, KH2P for KH2

KHS1 • NS

ROLL KNURLING HOLDER (S1 / S Type)

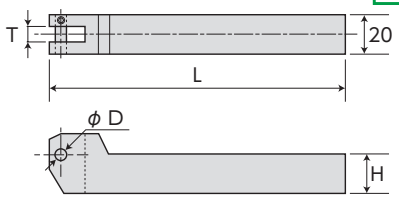
Plain cut with Japanese standard knurling wheel



● No wheel

▶ Accessories
● Hex key wrench



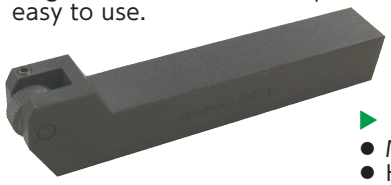


Item No.	Size (mm)					Applicable knurling wheel	N.W. (g)
	L	H	D	T	Knurling range		
KHS1	147	20	4.7	6.5	ϕ10~ϕ250	KNSF14~50	420

∗ Pin for wheel fixing item No. : KNSP

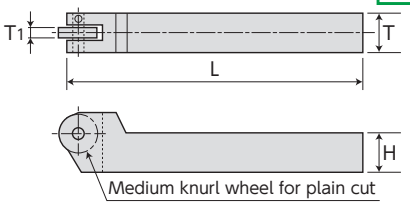
Plain cut with Supertool standard knurling wheel

● Medium knurl wheel for plain cut (1 set) is included, and the height of the wheel center is the same as the height of the holder shank part, making the holder very easy to use.



▶ Accessories
● Medium knurl wheels
● Hex key wrench





Item No.	Size (mm)					Applicable knurling wheel	N.W. (g)
	L	H	T	T1	Knurling range		
NS1	130	20	20	8	ϕ10~ϕ250	KN12CF~FF	420
NS2	150	25	25	9.6		KN30CF~FF	720
NS3	175	32	25				1,060

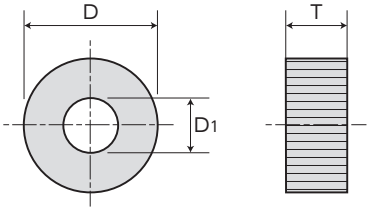
∗ Pin for wheel fixing item No. : NS1P for NS1, NS23P for NS2, NS3.

KNSRL • KNSF • KN–(CRL • MRL • FRL • CF • MF • FF) • KNPRL • KNPF

ROLL KNURLING WHEEL

Japanese standard knurling wheel (for holder KHS, KHS1)

● Material : SKS31

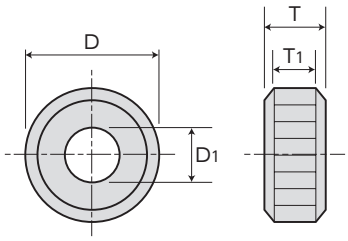




Item No.		Knurls	Number of knurl per inch	Pitch (mm)	Module	Size (mm)		
Cross cut (a pair)	Plain cut					External dia. D	Hole dia. D1	Width T
KNSRL14	**KNSF14**	Coarse	14	1.81	0.58	19.2	4.76	6.35
KNSRL16	**KNSF16**		16	1.59	0.51			
KNSRL18	**KNSF18**		18	1.41	0.45			
KNSRL20	**KNSF20**	Medium	20	1.27	0.40			
KNSRL22	**KNSF22**		22	1.16	0.37			
KNSRL24	**KNSF24**		24	1.06	0.34			
KNSRL26	**KNSF26**		26	1	0.31			
KNSRL28	**KNSF28**		28	0.91	0.30			
KNSRL30	**KNSF30**		30	0.85	0.27			
KNSRL32	**KNSF32**		32	0.79	0.25			
KNSRL34	**KNSF34**	Fine	34	0.75	0.24			
KNSRL40	**KNSF40**		40	0.64	0.20			
KNSRL50	**KNSF50**		50	0.51	0.16			

Supertool standard knurling wheel (for holder KH1·2, NS1~3)

● Material : SKS31



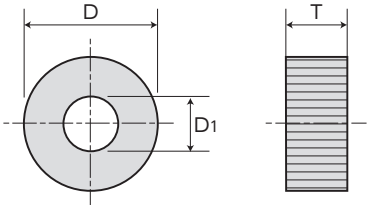


Item No.		Knurls	Number of knurl per inch	Pitch (mm)	Module	Size (mm)			
Cross cut (a pair)	Plain cut					External dia. D	Hole dia. D1	Width T	Knurl width T1
KN12CRL	**KN12CF**	Coarse	14	1.81	0.58	16	5.56	7.94	4.76
KN12MRL	**KN12MF**	Medium	22	1.16	0.37				
KN12FRL	**KN12FF**	Fine	34	0.75	0.24				

Item No.		Knurls	Number of knurl per inch	Pitch (mm)	Module	Size (mm)			
Cross cut (a pair)	Plain cut					External dia. D	Hole dia. D1	Width T	Knurl width T1
KN30CRL	**KN30CF**	Coarse	14	1.81	0.58	19.2	6.35	9.52	6.35
KN30MRL	**KN30MF**	Medium	22	1.16	0.37				
KN30FRL	**KN30FF**	Fine	34	0.75	0.24				

Knurling wheel for small material (for discontinued holder items KHN1L, KHP1, KH10AL, KH12AL)

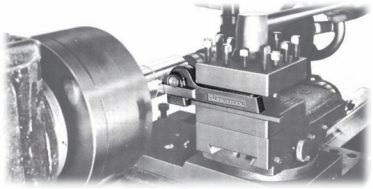
● Material : SKS31





Item No.		Knurls	Number of knurl per inch	Pitch (mm)	Module	Size (mm)		
Cross cut (a pair)	Plain cut					External dia. D	Hole dia. D1	Width T
KNPRL1.0	**KNPF1.0**	Medium	26	1	0.31	12	5	4
KNPRL0.8	**KNPF0.8**		32	0.80	0.25			
KNPRL0.6	**KNPF0.6**	Fine	42	0.60	0.19			
KNPRL0.5	**KNPF0.5**		50	0.50	0.16			





KST-S
CUTTING BITE & HOLDER SET

▶ Features
- Mold forged with special steel and heat treatment.
- The hale processing type enables softer shocking to the bite and smoother cutting operation.
- 1 bite is included.

Item No.	Applicable bite	Applicable holder	N.W. (g)
KST1S	KSTB1	KST1	305
KST2S	KSTB2S	KST2	350
KST3S	KSTB3	KST3	688



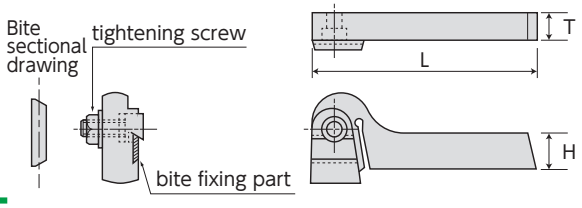
KSTB • KSTB-S
CUTTING BITE

▶ Feature
- Heat treatment appropriately applied to a special steel enables excellent toughness and outstanding durability.
- Material ：SKH57
- Hardness：66～68HRC

Item No.	Size (mm)			Applicable holder	N.W. (g)
	L	H	T		
KSTB1	90	12.7	3.2	KST1	25
KSTB2S	115	15.9	4	KST2	50
KSTB3	140	19	4.8	KST3	88



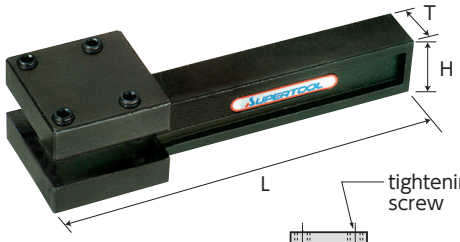




KST
CUTTING BITE HOLDER

▶ Features
- Mold forged with special steel and heat treatment.
- The hale processing type enables softer shocking to the bite and smoother cutting operation.

Item No.	Holder size (mm)			Bite size (mm)	N.W. (g)
	L	H	T		
KST1	115	19	13	3.2×12.7×90	280
KST2	135	22	15	4×15.9×115	300
KST3	160	25	17	4.8×19×140	600



KBT
BITE TOOL HOLDER

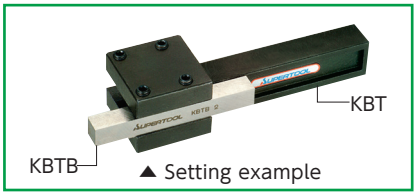
▶ Feature
- Suitable for a wide range of operations from auto lathe to NC lathe.

Item No.	Holder size (mm)			Applicable bite	Bite size (mm)	N.W. (g)
	L	H	T			
KBT10	115	16	13	KBTB1	□6.35(1/4)×65	270
KBT20	120	20	15	KBTB2	□9.52(3/8)×75	430
KBT30	140	20	17	KBTB3	□12.7(1/2)×100	660

KBTB
CUTTING BITE

- Material ：SKH57
- Hardness：66～68HRC

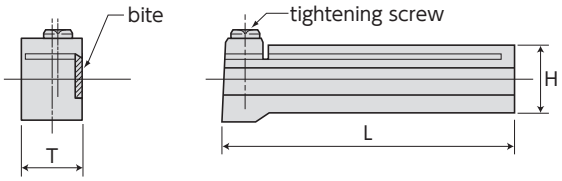
▶ Example of use



Item No.	Size (mm)	Applicable holder	N.W. (g)
KBTB1	□6.35(1/4)×65	KBT10	21
KBTB2	□9.52(3/8)×75	KBT20	55
KBTB3	□12.7(1/2)×100	KBT30	130

KCT
CUT OFF TOOL HOLDER

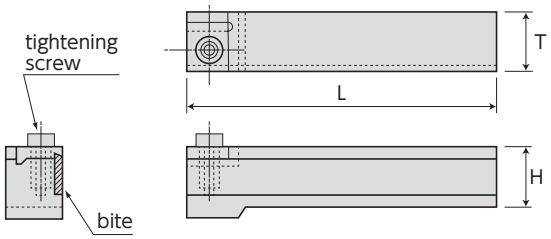




Item No.	Holder size(mm)			Applicable bite	Bite size (mm)	Lock wrench	N.W. (g)
	L	H	T				
KCT1	90	19	16	KST00	2.4×10×100	LW3	240
KCT2	100	22	19	KST10	2.4×13×115	LW4	340
KCT3	110	25	22	KST20	2.4×16×127	LW5	480
KCT4	125	28	25	KST30	3.2×19×127	LW5	680

K-S
CUTTING TOOL HOLDER



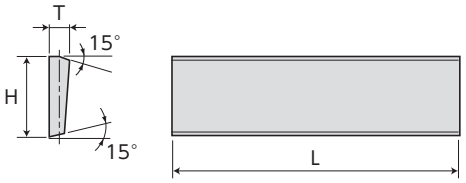


Item No.	Holder size(mm)			Applicable bite	Bite size (mm)	N.W. (g)
	L	H	T			
K19S	115	20	18	KST10	2.4×13×115	330
K20S	125	25	22	KST20	2.4×16×127	570
K21S	150	32	24	KST30	3.2×19×127	800

KST
CUTTING BITE



- Material : SKH57
- Hardness : 66~68HRC

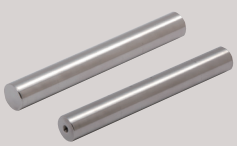


Item No.	Bite size(mm)			N.W. (g)
	L	H	T	
KST00	100(4)	10(25/64)	2.4(3/32)	22
KST10	115(4 1/2)	13(1/2)	2.4(3/32)	24
KST20	127(5)	16(5/8)	2.4(3/32)	30
KST30	127(5)	19(3/4)	3.2(1/8)	50
KST40	150(6)	22(7/8)	3.2(1/8)	70
KST50	165(6 1/2)	25(1)	4.8(3/16)	170

MAGNETIC SEPARATION



Magnets
P.266 ▶



Magnet bars
P.272 ▶



Magnetic sludge strainers
P.276 ▶



Magnetic pen bars
P.276 ▶



Magnetic bars
P.276 ▶

SMGU-A

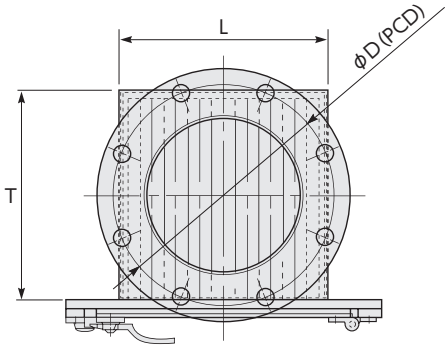
GRATE MAGNET WITH HOUSING

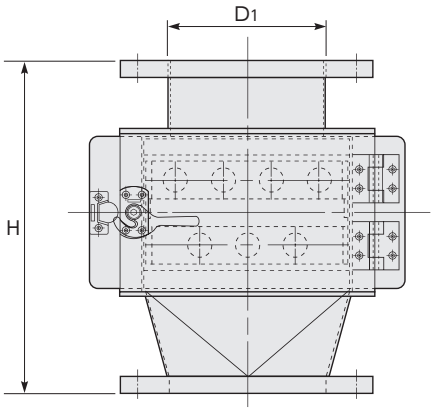


▶ Features

- Attached to an air feeding line or to a pipe duct according to the pipe diameter or to the treatment capacity, this device catches fine iron powder mixed in granular raw materials or chemical powders with its strong magnets.
- The drawers on the front of the housing allow to remove the magnets for foreign matter cleaning.
- Double pipe type (easy to clean) also available upon request.
- Sizes out of the size table below also available upon request.

- Material : SUS304 (SUS316, SUS316L also available upon request)
- Surface finish : ∗ Inner and outer surface : buff #400
  ∗ Inner surface : buff #400 ; Outer surface : pickling also available upon request.
  ∗ Surface magnetic flux density of 0.8T, 1.2T, 1.3T also available upon request.
- Example of magnet fixing : ∗ Welding on the whole circumference.
  ∗ Screw fastening / single side welding (cantilever) also available upon request.
- Environment temperature : ≦80℃





Surface finish and magnet fixing method will be provided upon adequate briefing from the end-user.

Item No.	Size (mm)					Feed / discharge port	Magnet (pipe diameter ϕ25 : SUS316L)			
	L	H	D	D1	T		Number of magnets		Number of drawer	Surface magnetic flux density
SMGU1100A	180	280	165	114.3	180	JIS 5K 100A	3	Total 3	1	1T (10,000G)
SMGU2100A		350					3·2	Total 5	2	
SMGU3100A		450					3·2·3	Total 8	3	
SMGU1125A	230	280	200	139.8	230	JIS 5K 125A	4	Total 4	1	
SMGU2125A		350					4·3	Total 7	2	
SMGU3125A		450					4·3·4	Total 11	3	
SMGU1150A	230	280	230	165.2	230	JIS 5K 150A	4	Total 4	1	
SMGU2150A		350					4·3	Total 7	2	
SMGU3150A		450					4·3·4	Total 11	3	
SMGU1200A	280	280	280	216.3	280	JIS 5K 200A	5	Total 5	1	
SMGU2200A		350					5·4	Total 9	2	
SMGU3200A		450					5·4·5	Total 14	3	
SMGU1250A	330	280	345	267.4	330	JIS 5K 250A	6	Total 6	1	
SMGU2250A		350					6·5	Total 11	2	
SMGU3250A		450					6·5·6	Total 17	3	
SMGU1300A	380	280	390	318.5	380	JIS 5K 300A	7	Total 7	1	
SMGU2300A		350					7·6	Total 13	2	
SMGU3300A		450					7·6·7	Total 20	3	

SMGS • SMGSH • SMGSS

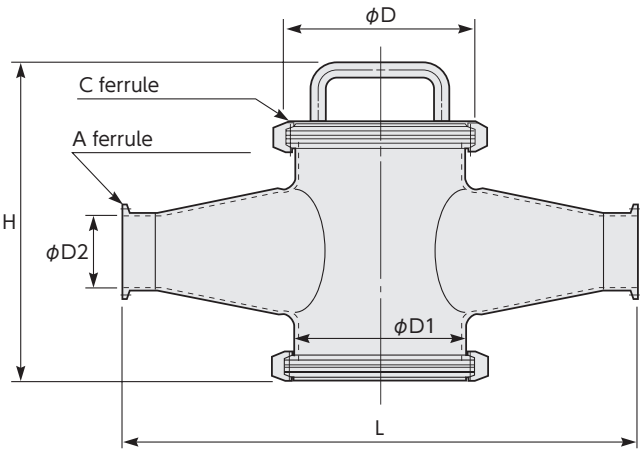
MAGNET FOR PIPELINE (Cross Tube Type 1)



▶ Features

- Set to food process pipelines of high viscosity food products such as juice, ham, sausage, jam, minced meat, seasoning, dairy products, miso paste, etc., this device catches magnetic fine particles with its strong magnets.
- Hygienic design suitable for food and pharmaceutical products.
- Sizes out of the size table below also available upon request.

▮Double pipe also available upon request.



▮General use

Item No.	Size (mm)							Number of magnets	Magnet pipe dia. (mm)	Finish	Material	Environment temperature	Surface max. magnetic flux density
	L	H	D	D1	D2	A	C						
SMGS1525	330	240	130	114	35.7	1.5S	4.5S	5	ϕ25 SUS316L	Buff #400	SUS304	≦80℃	1T (10,000G)
SMGS2025	330	240	130	114	47.8	2S	4.5S	5					
SMGS2525	420	260	155	140	59.5	2.5S	5.5S	7					
SMGS3025	420	260	155	140	72.3	3S	5.5S	7					
SMGS3525	420	260	155	140	85.1	3.5S	5.5S	7					

∗ SUS316L also available upon request.
∗ 0.8T (8,000G) also available upon request.

▮Heat resistant

Item No.	Size (mm)							Number of magnets	Magnet pipe dia. (mm)	Finish	Material	Environment temperature	Surface max. magnetic flux density
	L	H	D	D1	D2	A	C						
SMGSH1525	330	240	130	114	35.7	1.5S	4.5S	5	ϕ25 SUS316L	Buff #400	SUS304	≦120℃	1T (10,000G)
SMGSH2025	330	240	130	114	47.8	2S	4.5S	5					
SMGSH2525	420	260	155	140	59.5	2.5S	5.5S	7					
SMGSH3025	420	260	155	140	72.3	3S	5.5S	7					
SMGSH3525	420	260	155	140	85.1	3.5S	5.5S	7					

∗ SUS316L also available upon request.

▮General use, magnet pipe diameter ϕ20mm

Item No.	Size (mm)							Number of magnets	Magnet pipe dia. (mm)	Finish	Material	Environment temperature	Surface max. magnetic flux density
	L	H	D	D1	D2	A	C						
SMGSS1520	330	240	130	114	35.7	1.5S	4.5S	5	ϕ20 SUS316L	Buff #400	SUS304	≦80℃	1T (10,000G)
SMGSS2020	330	240	130	114	47.8	2S	4.5S	5					
SMGSS2520	420	260	155	140	59.5	2.5S	5.5S	7					
SMGSS3020	420	260	155	140	72.3	3S	5.5S	7					
SMGSS3520	420	260	155	140	85.1	3.5S	5.5S	7					

∗ SUS316L also available upon request.
∗ 0.8T (8,000G) also available upon request.

SMGOS • SMGOSH • SMGOSS

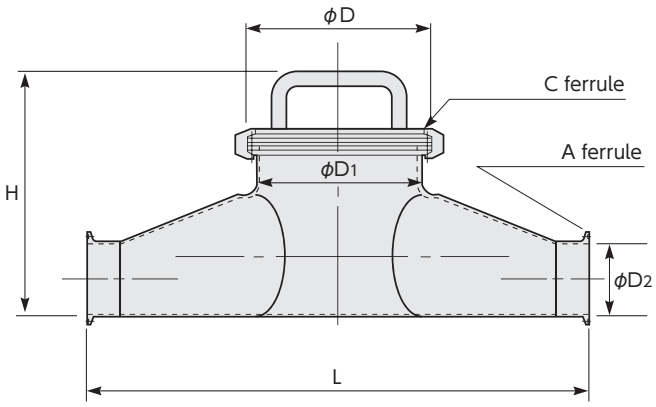
MAGNET FOR PIPELINE (Cross Tube Type 2)



▶ Features

- Set to food process pipelines of high viscosity food products such as juice, ham, sausage, jam, minced meat, seasoning, dairy products, miso paste, etc., this device catches magnetic fine particles with its strong magnets.
- Hygienic design suitable for food and pharmaceutical products.
- Bottom structure allowing little residual liquid.
- Sizes out of the size table below also available upon request.

▮Double pipe also available upon request.



▮General use

Item No.	Size (mm)							Number of magnets	Magnet pipe dia. (mm)	Finish	Material	Environment temperature	Surface max. magnetic flux density
	L	H	D	D1	D2	A	C						
SMGOS1525	330	180	130	114.3	35.7	1.5S	4.5S	5	ϕ25 SUS316L	Buff #400	SUS304	≦80℃	1T (10,000G)
SMGOS2025	330	180	130	114.3	47.8	2S	4.5S	5					
SMGOS2525	420	205	155	139.8	59.5	2.5S	5.5S	7					
SMGOS3025	420	205	155	139.8	72.3	3S	5.5S	7					
SMGOS3525	420	205	155	139.8	85.1	3.5S	5.5S	7					

∗ SUS316L also available upon request.
∗ 0.8T (8,000G) also available upon request.

▮Heat resistant

Item No.	Size (mm)							Number of magnets	Magnet pipe dia. (mm)	Finish	Material	Environment temperature	Surface max. magnetic flux density
	L	H	D	D1	D2	A	C						
SMGOSH1525	330	180	130	114.3	35.7	1.5S	4.5S	5	ϕ25 SUS316L	Buff #400	SUS304	≦120℃	1T (10,000G)
SMGOSH2025	330	180	130	114.3	47.8	2S	4.5S	5					
SMGOSH2525	420	205	155	139.8	59.5	2.5S	5.5S	7					
SMGOSH3025	420	205	155	139.8	72.3	3S	5.5S	7					
SMGOSH3525	420	205	155	139.8	85.1	3.5S	5.5S	7					

∗ SUS316L also available upon request.

▮General use, magnet pipe diameter ϕ20mm

Item No.	Size (mm)							Number of magnets	Magnet pipe dia. (mm)	Finish	Material	Environment temperature	Surface max. magnetic flux density
	L	H	D	D1	D2	A	C						
SMGOSS1520	330	180	130	114.3	35.7	1.5S	4.5S	5	ϕ20 SUS316L	Buff #400	SUS304	≦80℃	1T (10,000G)
SMGOSS2020	330	180	130	114.3	47.8	2S	4.5S	5					
SMGOSS2520	420	205	155	139.8	59.5	2.5S	5.5S	7					
SMGOSS3020	420	205	155	139.8	72.3	3S	5.5S	7					
SMGOSS3520	420	205	155	139.8	85.1	3.5S	5.5S	7					

∗ SUS316L also available upon request.

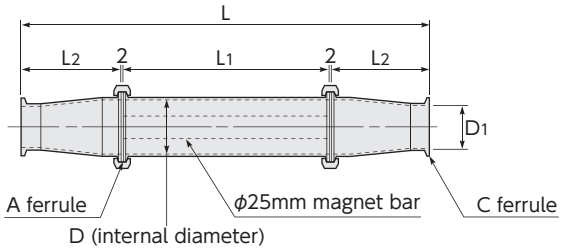


SMGE

MAGNET FOR PIPELINE (Straight Element)

▶ Features

- Efficient for mayonnaise or seasoning liquid in places with small throughput flow quantity.
- Simple structure allowing easy disassembling and cleaning.
- Compact design that takes little space when installed.
- Hygienic design suitable for food and pharmaceutical products.



Item No.	Size (mm)							Magnet pipe dia. (mm)	Finish	Material	Environment temperature	Surface max. magnetic flux density
	L	L1	L2	D	D1	A	C					
SMGE10	350	226	60	ϕ47.8	ϕ23	2S	1S	ϕ25 SUS316L	Buff #400	SUS304	≦80℃	1T (10,000G)
SMGE15	350	226	60	ϕ47.8	ϕ35.7	2S	1.5S					
SMGE20	350	226	110	ϕ59.5	ϕ47.8	2.5S	2S					

∗ SUS316L also available upon request.
∗ 1.2T (12,000G), 0.8T (8,000G) also available upon request. Sizes out of the above size table also available upon request.



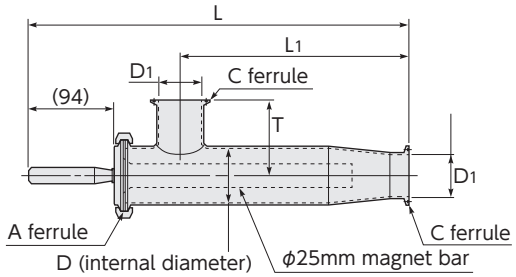
SMGLW
(The product on the photo is a double pipe type)

SMGL • SMGLW

MAGNET FOR PIPELINE (L-shaped Element)

▶ Features

- Efficient for juice, dairy products, tea, soy sauce, chili oil, minced meat, seasoning liquid, etc. in places with small throughput flow quantity.
- Simple structure allowing easy disassembling and cleaning.
- Compact design that takes little space when installed.
- Hygienic design suitable for food and pharmaceutical products.



Item No.	Size (mm)							Magnet pipe dia. (mm)	Finish	Material	Environment temperature	Surface max. magnetic flux density
	L	L1	D	D1	T	A	C					
SMGL10	(359)	200	ϕ47.8	ϕ23	55	2S	1S	ϕ25 SUS316L	Buff #400	SUS304	≦80℃	1T (10,000G)
SMGL15	(359)	200	ϕ47.8	ϕ35.7	70	2S	1.5S					
SMGL20	(416)	250	ϕ59.5	ϕ47.8	82	2.5S	2S					

∗ SUS316L also available upon request.
∗ 1.2T (12,000G), 0.8T (8,000G) also available upon request. Sizes out of the size table above also available upon request.

▮Double pipe type

Item No.	Size (mm)							Magnet pipe dia. (mm)	Finish	Material	Environment temperature	Surface max. magnetic flux density
	L	L1	D	D1	T	A	C					
SMGLW10	(391)	200	ϕ47.8	ϕ23	55	2S	1S	ϕ25 SUS316L	Buff #400	SUS304	≦80℃	0.8T (8,000G)
SMGLW15	(391)	200	ϕ47.8	ϕ35.7	70	2S	1.5S					
SMGLW20	(448)	250	ϕ59.5	ϕ47.8	82	2.5S	2S					

∗ Sizes out of the size table above also available upon request.

SMGM • SMGMH • SMGSM

GRATE MAGNET (Round-shaped)

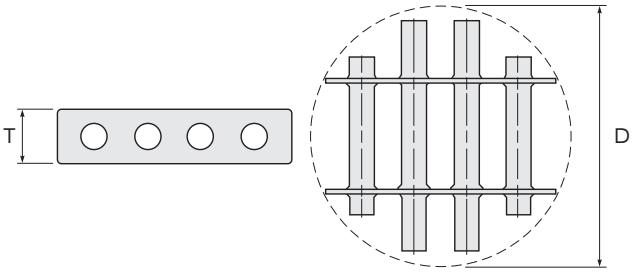


▶ Features

- Attached to a round-shaped hopper, the strong magnets displayed in grid catch foreign matters like fine iron powder or stainless steel abrasion powder during the fall of granular raw material.
- Ideal for removing foreign matters in food, pharmaceutical or chemical production lines.
- Hygienic design allowing use inside liquid tank.
- Can also be designed and manufactured according to an existing hopper.
- 2-layer type available upon request.
- Sizes out of the size table below also available upon request.

The hygienic finish enabled by original welding makes it ideal for food and pharmaceutical products.





Item No.	Size (mm)		Number of magnets	Magnet pipe dia. (mm)	Magnet flat frame		Environment temperature	Surface max. magnetic flux density
	D	T			Finish	Material		
SMGM200	ϕ200	50	4	ϕ25 SUS316L SUS304	Buff#400	SUS304	≦80℃	1T (10,000G)
SMGM250	ϕ250	50	5					
SMGM300	ϕ300	50	6					
SMGM350	ϕ350	50	7					
SMGM400	ϕ400	50	8					

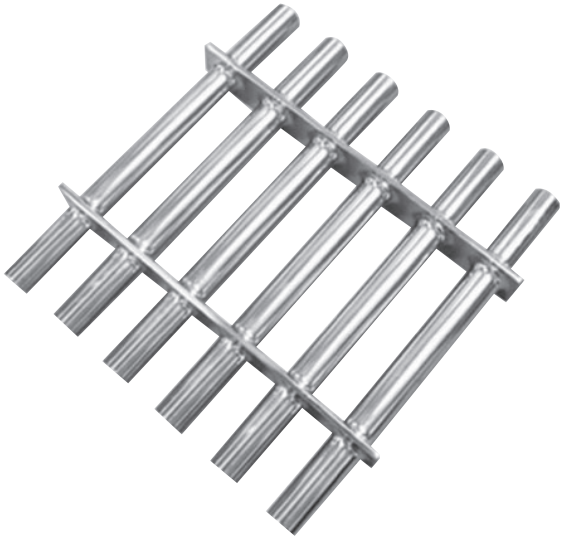
∗ Heat resistant type also available upon request.
∗ SUS316 also available upon request.

Item No.	Size (mm)		Number of magnets	Magnet pipe dia. (mm)	Magnet flat frame		Environment temperature	Surface max. magnetic flux density
	D	T			Finish	Material		
SMGMH200	ϕ200	50	4	ϕ25 SUS316L	Buff#400	SUS304	≦80℃	1.2T (12,000G)
SMGMH250	ϕ250	50	5					
SMGMH300	ϕ300	50	6					
SMGMH350	ϕ350	50	7					
SMGMH400	ϕ400	50	8					

∗ SUS316 also available upon request.

Item No.	Size (mm)		Number of magnets	Magnet pipe dia. (mm)	Magnet flat frame		Environment temperature	Surface max. magnetic flux density
	D	T			Finish	Material		
SMGSM200	ϕ200	50	4	ϕ20 SUS316L	Buff#400	SUS304	≦80℃	1T (10,000G)
SMGSM250	ϕ250	50	5					
SMGSM300	ϕ300	50	6					
SMGSM350	ϕ350	50	7					
SMGSM400	ϕ400	50	8					

∗ SUS316 also available upon request.



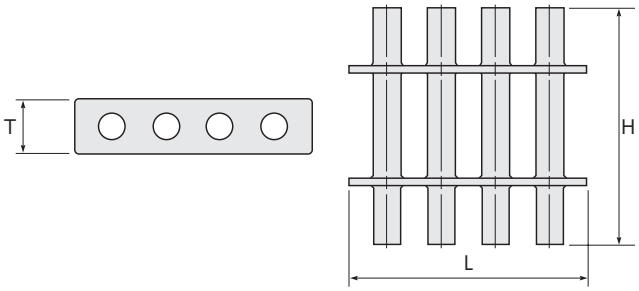
SMGK • SMGKH • SMGSK

GRATE MAGNET (Square-shaped)

▶ Features

- Attached to a square-shaped hopper, the strong magnets displayed in grid catch foreign matters like fine iron powder or stainless steel abrasion powder during the fall of granular raw material.
- Ideal for removing foreign matters in food, pharmaceutical or chemical production lines.
- Hygienic design allowing use inside liquid tank.
- Can also be designed and manufactured according to an existing hopper.
- 2-layer type available upon request.
- Sizes out of the size table below also available upon request.

▮The hygienic finish enabled by original welding makes it ideal for food and pharmaceutical products.





Item No.	Size (mm)			Number of magnets	Magnet pipe dia. (mm)	Magnet flat frame		Environment temperature	Surface max. magnetic flux density
	L	H	T			Finish	Material		
SMGK2020	200	200	50	4	ϕ25 SUS316L SUS304	Buff#400	SUS304	≦80℃	1T (10,000G)
SMGK2025	200	250	50	4					
SMGK2525	250	250	50	5					
SMGK2530	250	300	50	5					
SMGK3030	300	300	50	6					
SMGK3040	300	400	50	6					
SMGK4040	400	400	50	8					

∗ Heat resistant type also available upon request.
∗ SUS316 also available upon request.

Item No.	Size (mm)			Number of magnets	Magnet pipe dia. (mm)	Magnet flat frame		Environment temperature	Surface max. magnetic flux density
	L	H	T			Finish	Material		
SMGKH2020	200	200	50	4	ϕ25 SUS316L	Buff#400	SUS304	≦80℃	1.2T (12,000G)
SMGKH2025	200	250	50	4					
SMGKH2525	250	250	50	5					
SMGKH2530	250	300	50	5					
SMGKH3030	300	300	50	6					
SMGKH3040	300	400	50	6					
SMGKH4040	400	400	50	8					

∗ Heat resistant type also available upon request.
∗ SUS316 also available upon request.

Item No.	Size (mm)			Number of magnets	Magnet pipe dia. (mm)	Magnet flat frame		Environment temperature	Surface max. magnetic flux density
	L	H	T			Finish	Material		
SMGSK2020	200	200	50	4	ϕ20 SUS316L	Buff#400	SUS304	≦80℃	1T (10,000G)
SMGSK2025	200	250	50	4					
SMGSK2525	250	250	50	5					
SMGSK2530	250	300	50	5					
SMGSK3030	300	300	50	6					

∗ SUS316 also available upon request.

MAGNET BAR (Permanent Magnet / Nd Rare Earth)

"High magnetism, high density, high grade" finish

▶ Features

- Waterproof structure with hygienic design and high-grade finish enabled by special welding.
- Single unit that can be set freely, allowing a large range of application.
- Required length, diameter, magnetic force available upon request.

▮Pipe surface
- Material : SUS316L
- Surface finish : buff #400 finish ＊environment temperature : ≦80℃

▶ Applications

- Removal of fine iron powder, stainless steel abrasion powder from powder, grains, liquid with strong magnet.
- Ideal for removing foreign matters in food, pharmaceutical or chemical production lines.

＊ Surface max. magnetic flux density : 1.3T (13,000G) also available upon request.


(with tapping hole)

SMGB • SMGB-T
MAGNET BAR, POWERFUL TYPE

- Surface max. magnetic flux density : 0.8T(8,000G)
- Inner permanent magnet characteristic value : 1.2T(12,000G)
- Tapping hole : M6×8

Item No.		Pipe φ25× length(mm)	N.W. (kg)
Without tapping hole	With tapping hole		
SMGB810	**SMGB810T**	100	0.36
SMGB815	**SMGB815T**	150	0.54
SMGB820	**SMGB820T**	200	0.73
SMGB825	**SMGB825T**	250	0.91
SMGB830	**SMGB830T**	300	1.09
SMGB835	**SMGB835T**	350	1.27
SMGB840	**SMGB840T**	400	1.45
SMGB850	**SMGB850T**	500	1.82
SMGB860	**SMGB860T**	600	2.18


(with tapping hole)


(with tapping hole)

SMGB • SMGB-T
MAGNET BAR, SUPER POWERFUL TYPE

- Surface max. magnetic flux density : 1.0T(10,000G)
- Inner permanent magnet characteristic value : 1.35T(13,500G)
- Tapping hole : M6×8

Item No.		Pipe φ25× length(mm)	N.W. (kg)
Without tapping hole	With tapping hole		
SMGB1010	**SMGB1010T**	100	0.36
SMGB1015	**SMGB1015T**	150	0.54
SMGB1020	**SMGB1020T**	200	0.73
SMGB1025	**SMGB1025T**	250	0.91
SMGB1030	**SMGB1030T**	300	1.09
SMGB1035	**SMGB1035T**	350	1.27
SMGB1040	**SMGB1040T**	400	1.45
SMGB1050	**SMGB1050T**	500	1.82
SMGB1060	**SMGB1060T**	600	2.18

SMGB • SMGB-T
MAGNET BAR, SUPER POWERFUL TYPE

- Surface max. magnetic flux density : 1.2T(12,000G)
- Inner permanent magnet characteristic value : 1.43T(14,300G)
- Tapping hole : M6×8

Item No.		Pipe φ25× length(mm)	N.W. (kg)
Without tapping hole	With tapping hole		
SMGB1210	**SMGB1210T**	100	0.36
SMGB1215	**SMGB1215T**	150	0.54
SMGB1220	**SMGB1220T**	200	0.73
SMGB1225	**SMGB1225T**	250	0.91
SMGB1230	**SMGB1230T**	300	1.09
SMGB1235	**SMGB1235T**	350	1.27
SMGB1240	**SMGB1240T**	400	1.45
SMGB1250	**SMGB1250T**	500	1.82
SMGB1260	**SMGB1260T**	600	2.18

MAGNET BAR (Double Pipe) (Permanent Magnet / Nd Rare Earth)

"High magnetism, high density, high grade" finish

▶ Features

- Hygienic design and high-grade finish enabled by special welding.
- The double pipe structure allows to remove the iron powder easily without getting your hand dirty just by pulling out the magnet bar.
- Single unit that can be set freely, allowing a large range of application.
- All parts made of stainless steel, including the grip part.
- Required length, diameter, magnetic force available upon request.

▶ Applications

- Ideal in cases where there is a comparatively high quantity of iron powder or the likes mixed to the material.

▮Pipe surface
- Material : SUS316L
- Surface finish : buff #400 finish

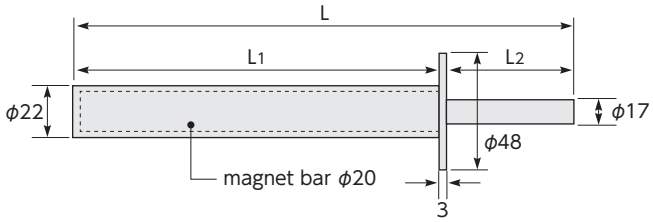
＊ environment temperature : ≦80℃



SMGB-W

MAGNET BAR, POWERFUL TYPE (Double Pipe)

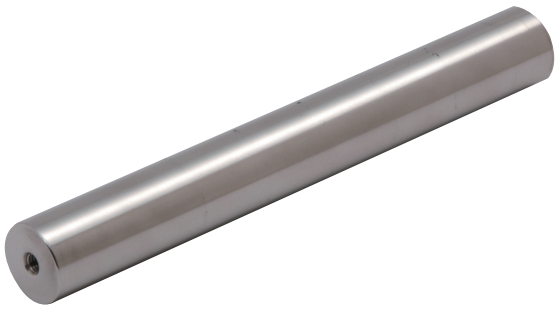
- Surface max. magnetic flux density : 0.8T(8,000G)
- Inner permanent magnet characteristic value : 1.35T(13,500G)



Item No.	ϕExternal diameter size(mm)			N.W. (kg)
	L	L1	L2	
SMGB815W	242	150	92	0.63
SMGB820W	292	200	92	0.77
SMGB825W	342	250	92	0.92
SMGB830W	392	300	92	1.06

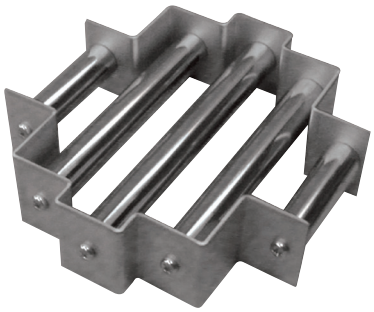
MAGNET PRODUCTS APPLICATION BY INDUSTRY

Food	Beverage	Separation of stainless steel abrasion powder and iron oxide at the pipeline after grinding for coffee, juice, tea, powder milk, etc.
	Meat processing	Separation of stainless steel abrasion powder coming from the blades during meat processing.
	Powder seasonings	Separation of the iron and stainless steel abrasion powder after grinding for red pepper, wasabi, sprinkle, etc.
	Liquid seasonings	Separation of stainless steel abrasion powder and iron oxide at the pipeline after grinding for soy sauce, soup, miso paste, etc.
	Confectioneries	Separation of stainless steel abrasion powder at the pipeline after grinding for chocolate, beans, etc.
	Cereals	Separation of abrasion powder coming from cereal refining.
Pharmaceuticals	Pharmaceutical products	Separation of stainless steel abrasion powder occurring during pharmaceutical product raw material pulverizing.
	Herbal medicines	Separation of the abrasion powder coming from the blades during medicinal herb cutting.
Cosmetics	Cosmetics related	Separation of stainless steel abrasion powder at the pipeline after raw material grinding.
Chemicals	Resins related	Separation of magnetic foreign matters from granular or pellet shape raw material at the pipeline of the injection molding machine.
	Rubbers related	Separation of magnetic foreign matters from steel tire reclaimed rubber.
Fertilizers	Fertilizers, livestock feed	Removal of toxic iron powder mixed into fertilizers, livestock feed.
Papermaking	Paper	Removal of magnetic foreign matters from recycled paper process line and separation of nail or bolt fragments from wood chips.
Glass	Glassworks	Separation of iron powder mixed into glass raw material or grinded glass.
Ceramics	Pottery and porcelain	Separation of iron powder from pottery and porcelain raw material.

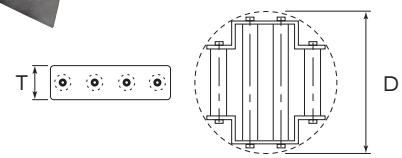


- Surface max. magnetic flux density : 0.18T(1,800G)
- Inner permanent magnet characteristic value : 0.32T(3,200G)
- Both end tapping holes : M6×8
  ＊Without tapping hole also available upon request.

Item No.	Pipe ϕ25×length (mm)	N.W. (kg)
SMGB10T	100	0.32
SMGB15T	150	0.4
SMGB20T	200	0.52
SMGB25T	250	0.65
SMGB30T	300	0.73
SMGB35T	350	0.85



▮Magnet flat frame
- Material : SUS304
- Finish : Pickling



SMGPM

GRATE MAGNET FOR RESIN MOLDING MACHINE (Round-shaped)

▶ Features

- Attached to a round-shaped hopper, the strong magnets displayed in grid catch fine iron powder during the fall of pellet shape or granular raw material.
- Can also be designed and manufactured according to an existing hopper.
- Heat resistant type also available upon request.
- Sizes out of the size table below also available upon request.
- Environment temperature : ≦80℃
- Surface max. magnetic flux density : 0.4T(4,000G)

Item No.	Size(mm)		Number of magnets	Pipe dia. (mm)
	D	T		
SMGPM200	ϕ200	50	4	ϕ22 SUS304
SMGPM250	ϕ250	50	5	
SMGPM300	ϕ300	50	6	
SMGPM350	ϕ350	50	7	
SMGPM400	ϕ400	50	8	

＊0.8T (8,000G), 0.6T (6,000G) also available upon request.
＊1.0T (10,000G), ϕ25 diameter design also available upon request.

SMGB-T

MAGNET BAR, STANDARD TYPE (Permanent Magnet Ferrite)

▶ Features

- Single unit that can be set freely, like in grate shape, allowing a large range of application.
- The waterproof structure enabled by special welding allows the use inside liquids.
- Required length, diameter, magnetic force available upon request.
- Can be used efficiently in front of discharge filter.

▮Pipe surface
- Material : SUS304
- Surface finish : Buff #200 finish
- Environment temperature : ≦80℃

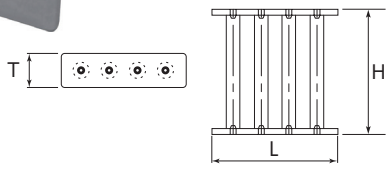
▶ Applications

- Ideal for iron removal inside powder, granular or liquid raw material.
- Removal of iron powder in food, pharmaceutical, chemical production lines.

Item No.	Pipe ϕ25×length (mm)	N.W. (kg)
SMGB40T	400	0.97
SMGB45T	450	1.06
SMGB50T	500	1.18
SMGB55T	550	1.3
SMGB60T	600	1.43



▮Magnet flat frame
- Material : SUS304
- Finish : Pickling



SMGPK

GRATE MAGNET FOR RESIN MOLDING MACHINE (Square-shaped)

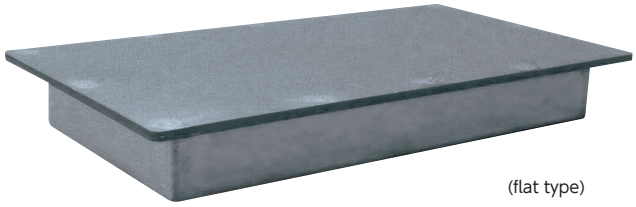
▶ Features

- Attached to a square-shaped hopper, the strong magnets displayed in grid catch fine iron powder during the fall of pellet shape or granular raw material.
- Can also be designed and manufactured according to an existing hopper.
- Heat resistant type also available upon request.
- Sizes out of the size table below also available upon request.
- Environment temperature : ≦80℃
- Surface max. magnetic flux density : 0.4T(4,000G)

Item No.	Size(mm)			Number of magnets	Pipe dia. (mm)
	L	H	T		
SMGPK150	150	150	50	3	ϕ22 SUS304
SMGPK200	200	200	50	4	
SMGPK250	250	250	50	5	
SMGPK300	300	300	50	6	
SMGPK350	350	350	50	7	
SMGPK400	400	400	50	8	

＊0.8T (8,000G), 0.6T (6,000G) also available upon request.
＊1.0T (10,000G), ϕ25 diameter design also available upon request.

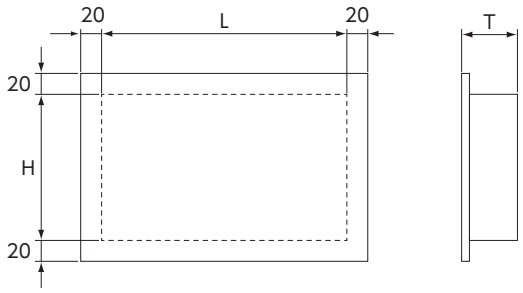
SMP-F • SMP-J
MAGNET PLATE



(flat type)

▶ Features
- Attached to a chute or a hopper, the device catches and separates magnetic foreign matters like iron powder from the raw material in chemical, pharmaceutical or other granular material industries.
- Sizes out of the size table below also available upon request.

Flat type

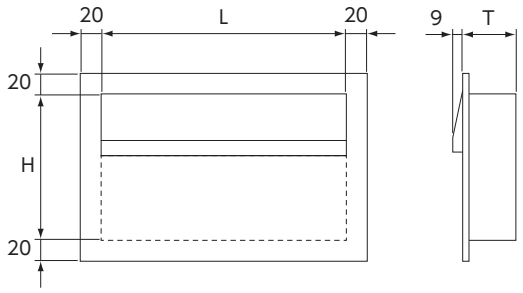


▶ Features
- High attraction force at far distance.
- Holes can be processed at the flange part.

- Material : SUS304
- Surface magnetic flux density : approx. 0.13T (1,300G)

Item No.	Size (mm)		
	L	H	T
SMP1515F	150	150	45
SMP1520F	200		
SMP1525F	250		
SMP1530F	300		
SMP1535F	350		
SMP1540F	400		
SMP1545F	450		
SMP1550F	500		
SMP1560F	600		
SMP2020F	200	200	55
SMP2025F	250		
SMP2030F	300		
SMP2035F	350		
SMP2040F	400		
SMP2045F	450		
SMP2050F	500		
SMP2060F	600		
SMP3030F	300	200	55
SMP3035F	350		
SMP3040F	400		
SMP3045F	450		
SMP3050F	500		
SMP3060F	600		

Magnetic pole board type

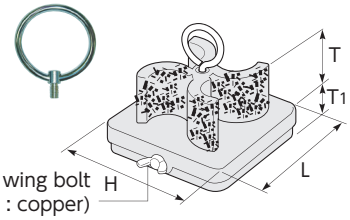


▶ Features
- Magnetic pole board set at the attraction surface.
- The magnetic pole board enables the retention of the caught iron scrap, preventing them from getting swept away with the raw material.

- Material : SUS304
- Surface magnetic flux density : approx. 0.25T (2,500G)

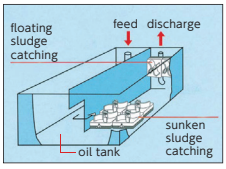
Item No.	Size (mm)		
	L	H	T
SMP1515J	150	150	45
SMP1520J	200		
SMP1525J	250		
SMP1530J	300		
SMP1535J	350		
SMP1540J	400		
SMP1545J	450		
SMP1550J	500		
SMP1560J	600		
SMP2020J	200	200	55
SMP2025J	250		
SMP2030J	300		
SMP2035J	350		
SMP2040J	400		
SMP2045J	450		
SMP2050J	500		
SMP2060J	600		
SMP3030J	300	200	55
SMP3035J	350		
SMP3040J	400		
SMP3045J	450		
SMP3050J	500		
SMP3060J	600		


MGC100





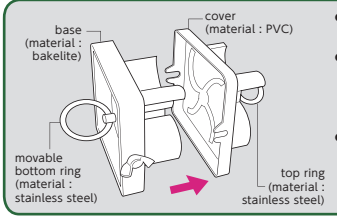
Set inside oil tank example



MGC
MAGNETIC SLUDGE STRAINER

▶ Features
- To set the device, just sink it into the water or oil tank.
- The pinnate-shaped magnets allow to catch more chips or sludge.
- The caught chips or sludge can be easily removed just by taking off the cover.
- Even with the strong magnets, the cover can be easily taken off just by pulling the top and bottom rings.

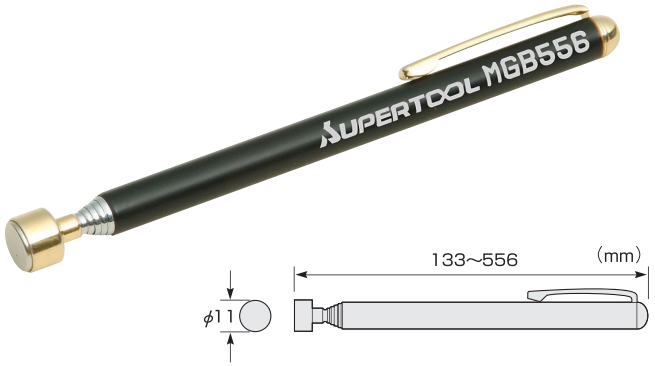
▶ How to use



- Set the top and bottom rings and the 2 wing bolts.
- Sink the device into the oil tank. It is efficient to set it at the entrance of the filter or in a place where the oil flow quantity is high.
- On a regular basis take out of oil tank, loosen the 2 wing bolts, pull the top and movable down rings and remove the caught sludge.

▶ Applications
- Purification and cleaning of water or oil tank at hydraulic units or machines (wire cut electric discharge device, machining, etc.)

Item No.	Magnet type	Magnetic flux density	Environment temperature	Size(mm)				N.W. (g)	Base color
				L	H	T	T1		
MGC100	Ferrite	0.12T(1,200G)	≦80℃	110	110	42	20	530	Black
MGC300	Neodymium	0.35T(3,500G)	≦80℃	110	110	42	20	680	Brown



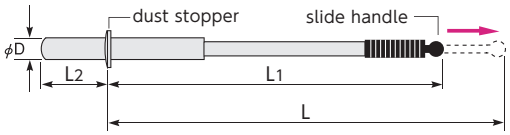
MGB556
MAGNETIC PEN BAR

▶ Features
- Telescopic pencil type.
- The main body in stainless steel is rust-resistant.
- Ultra-light-weight and strong attraction force.
- Plastic case as standard acc.

▶ Applications
- Removal of chips, abrasive powder, fallen matters from narrow spots.
- Ideal in machine assembling and processing factories.

Item No.	Magnet type	Magnetic flux density	Environment temperature	Attraction force(N)	N.W.(g)
MGB556	Neodymium	0.35T(3,500G)	≦80℃	1.5	27


MGB600S
MGB900S
MGB1200S

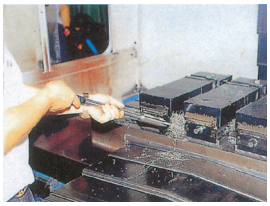


MGB-S
MAGNETIC BAR

▶ Features
- Strong magnet enabling outstanding attraction force.
- The stick shape is ideal to remove iron scrap or sludge from under a machine or from out of reach narrow spots.
- To dispose of the caught matters, just a single action (pulling the slide handle) is required.

▶ Applications
- Removal of iron scrap or sludge from narrow spots such as machining tool table slots or vise gaps.
- Removal of iron scrap or sludge from water or oil tank.

▶ Example of use





Item No.	Magnet type	Magnetic flux density	Environment temperature	Attraction force(N)	Main body material	Size(mm)				N.W. (g)
						L	L1	L2	D	
MGB600S	Neodymium	0.35T (3,500G)	≦80℃	170	Stainless steel	650	500	110	32	800
MGB900S						950	800	110	32	1,045
MGB1200S						1,200	1,040	160	32	1,220

APPENDIX

Table for width across flats and bolt / nut screw size
P.278 ▶

Conversion table for inch / mm
P.279 ▶

Table for hex key wrench / hex lobe key wrench compliant screw
P.280 ▶

Reference table for tightening torque value
P.281 ▶

Conversion table for international torque value, other
P.282 ▶

Chart for pipe size and diameter per type
P.283 ▶

Selection standards for 2-point lifting
P.284 ▶

Lifting angle and rated load of wire rope
P.285 ▶

Table for main steel material weight
P.286 ▶

Comparison table for hardness
P.287 ▶

Table for bearing size standard
P.288 ▶

Basic knowledge about magnets
P.289 ▶

Table for width across flats and bolt / nut screw size
Conversion table for inch / mm
Table for hex key wrench / hex lobe key wrench compliant screw
Reference table for tightening torque value
Conversion table for international torque value
Chart for pipe size and diameter per type
Lifting angle and rated load correlation table
Table for main steel material weight
Comparison table for hardness
Table for bearing size standard
Basic knowledge about magnets

Table for width across flats and bolt / nut screw size

Bolt / nut width across flats (wrench / spanner mouth width) (mm)	Screw size name			
	Metric screw			Whitworth screw
	Hex. bolt	Hex. bolt / small type	Hex. bolt / high tensile	
4	M2			
4.5	M2.2			
5	M2.5			
5.5	M3			
6	M3.5			
7	M4			
8	M4.5、M5			
10	M6			W¼
11	M7			
12		M8		W9⁄32
13	M8			
14	(M8)	M10		W5⁄16
16	M10			
17	(M10)	M12		W⅜
18	M12			
19	(M12)	M14		W7⁄16
21	M14	(M14)		W½
22	(M14)	M16	M12	
23		(M16)		
24	M16	M18		
26	(M16)	(M18)		W⅝
27	M18	M20	M16	
29	(M18)	(M20)		
30	M20	M22		
32	M22(M20)	M24(M22)	M20	W¾
34	M22			
35	(M22)	(M24)		W⅞
36	M24	M27	M22	
38	(M24)			
41	M27	M30	M24	W1
46	M30	M33	M27	W1⅛
50	M33	M36	M30	W1¼
54	(M36)			W1⅜
55	M36	M39		
58	(M39)			W1½
60	M39			
63	(M42)			W1⅝
65	M42			
67	(M45)			W1¾
70	M45			
71	(M48)			W1⅞
75	M48			
77	(M52)			W2
80	M52			
85				W2¼
95				W2½
105				W2¾
110				W3
120				W3¼

Conversion table for inch / mm

(1 inch = 25.40mm / 1mm = 0.03937 inch)

Inch	0	1	2	3	4	5	6	7	8	9	10	11	12
0	–	25.400	50.800	76.200	101.600	127.000	152.400	177.800	203.200	228.600	254.000	279.400	304.800
1/64	0.397	25.797	51.197	76.597	101.997	127.397	152.797	178.197	203.597	228.997	254.397	279.797	305.197
1/32	0.794	26.194	51.594	76.994	102.394	127.794	153.194	178.584	203.994	229.394	254.794	280.194	305.594
3/64	1.191	26.591	51.991	77.391	102.791	128.191	153.591	178.991	204.391	229.791	255.191	280.591	305.991
1/16	1.588	26.988	52.388	77.788	103.188	128.588	153.988	179.388	204.788	230.188	255.588	280.988	306.388
5/64	1.984	27.884	52.784	78.185	103.585	128.985	154.385	179.785	205.185	230.585	255.985	281.385	306.785
3/32	2.381	27.781	53.181	78.581	103.981	129.382	154.782	180.182	205.582	230.982	256.382	281.782	307.182
7/64	2.778	28.178	53.578	78.978	104.378	129.788	155.178	180.578	205.979	231.379	256.779	282.179	307.579
1/8	3.175	28.575	53.975	79.375	104.775	130.175	155.575	180.975	206.375	231.775	257.176	282.576	307.976
9/64	3.572	28.972	54.372	79.772	105.172	130.572	155.972	181.372	206.772	232.172	257.572	282.972	308.372
5/32	3.969	29.369	54.769	80.169	105.569	130.969	156.369	181.769	207.169	232.569	257.969	283.369	308.769
11/64	4.366	29.766	55.166	80.566	105.966	131.366	156.766	182.166	207.566	232.966	258.366	283.766	309.166
3/16	4.763	30.163	55.563	80.963	106.363	131.763	157.163	182.563	207.963	233.363	258.763	284.163	309.563
13/64	5.159	30.559	55.959	81.360	106.760	132.160	157.560	182.960	208.360	233.760	259.160	284.560	309.960
7/32	5.556	30.956	56.356	81.756	107.156	132.557	157.957	183.357	208.757	234.157	259.557	284.957	310.357
15/64	5.953	31.353	56.753	82.153	107.553	132.953	158.353	183.753	209.154	234.554	259.954	285.354	310.754
1/4	6.350	31.750	57.150	82.550	107.950	133.350	158.750	184.150	209.550	234.950	260.351	285.751	311.151
17/64	6.747	32.147	57.547	82.947	108.347	133.747	159.147	184.547	209.947	235.347	260.747	286.147	311.547
9/32	7.144	32.544	57.944	83.344	108.744	134.144	159.544	184.944	210.344	235.744	261.144	286.544	311.944
19/64	7.541	32.941	58.341	83.741	109.141	134.541	159.941	185.341	210.741	236.141	261.541	286.941	312.341
5/16	7.938	33.338	58.738	84.138	109.538	134.938	160.338	185.738	211.138	236.538	261.938	287.338	312.738
21/64	8.334	33.734	59.134	84.535	109.935	135.335	160.735	186.135	211.535	236.935	262.335	287.735	313.135
11/32	8.731	34.131	59.531	84.931	110.331	135.732	161.132	186.532	211.932	237.332	262.732	288.132	313.532
23/64	9.128	34.528	59.928	85.328	110.728	136.128	161.528	186.928	212.329	237.729	263.129	288.529	313.929
3/8	9.525	34.925	60.325	85.725	111.125	136.525	161.925	187.325	212.725	238.125	263.526	288.926	314.326
25/64	9.922	35.322	60.722	86.122	111.522	136.922	162.322	187.722	213.122	238.522	263.922	289.322	314.722
13/32	10.319	35.719	61.119	86.519	111.919	137.319	162.719	188.119	213.519	238.919	264.319	289.719	315.119
27/64	10.716	36.116	61.516	86.916	112.316	137.716	163.116	188.516	213.916	239.316	264.716	290.116	315.516
7/16	11.113	36.513	61.913	87.313	112.713	138.113	163.513	188.913	214.313	239.713	265.113	290.513	315.913
29/64	11.509	36.909	62.309	87.710	113.110	138.510	163.910	189.310	214.710	240.110	265.510	290.917	316.310
15/32	11.906	37.306	62.706	88.106	113.506	138.907	164.307	189.707	215.107	240.507	265.907	291.307	316.707
31/64	12.303	37.703	63.103	88.503	113.903	139.303	164.703	190.103	215.504	240.904	266.304	291.704	317.104
1/2	12.700	38.100	63.500	88.900	114.300	139.700	165.100	190.500	215.900	241.300	266.701	292.101	317.501
33/64	13.097	38.497	63.897	89.297	114.697	140.097	165.497	190.897	216.297	241.697	267.097	292.497	317.898
17/32	13.494	38.894	64.294	89.694	115.094	140.494	165.894	191.294	216.694	242.094	267.494	292.894	318.294
35/64	13.891	39.291	64.691	90.091	115.491	140.891	166.291	191.691	217.091	242.491	267.891	293.291	318.691
9/16	14.288	39.688	65.088	90.488	115.888	141.288	166.688	192.088	217.488	242.888	268.288	293.688	319.088
37/64	14.684	40.084	65.485	90.885	116.285	141.685	167.085	192.485	217.885	243.285	268.685	294.085	319.485
19/32	15.081	40.481	65.881	91.281	116.681	142.082	167.482	192.882	218.282	243.682	269.082	294.482	319.882
39/64	15.478	40.878	66.278	91.678	117.078	142.478	167.878	193.279	218.679	244.079	269.479	294.879	320.279
5/8	15.875	41.275	66.675	92.075	117.475	142.875	168.275	193.675	219.075	244.475	269.876	295.276	320.676
41/64	16.272	41.672	67.072	92.472	117.872	143.272	168.672	194.072	219.472	244.872	270.272	295.672	321.073
21/32	16.669	42.069	67.469	92.869	118.269	143.669	169.069	194.469	219.869	245.269	270.669	296.069	321.469
43/64	17.066	42.466	67.866	93.266	118.666	144.066	169.466	194.866	220.266	245.666	271.066	296.466	321.866
11/16	17.463	42.863	68.263	93.663	119.063	144.463	169.863	195.263	220.663	246.063	271.463	296.863	322.263
45/64	17.859	43.259	68.660	94.060	119.460	144.860	170.260	195.660	221.060	246.460	271.860	297.260	322.600
23/32	18.256	43.656	69.056	94.456	119.856	145.257	170.657	196.057	221.457	246.857	272.257	297.657	323.057
47/64	18.653	44.053	69.453	94.853	120.253	145.653	171.053	196.454	221.854	247.254	272.654	298.054	323.454
3/4	19.050	44.450	69.850	95.250	120.650	146.050	171.450	196.850	222.250	247.650	273.051	298.451	323.851
49/64	19.447	44.847	70.247	95.647	121.047	146.447	171.847	197.247	222.647	248.047	273.447	298.847	324.248
25/32	19.844	45.244	70.644	96.044	121.444	146.844	172.244	197.644	223.044	248.444	273.844	299.244	324.644
51/64	20.241	45.641	71.041	96.441	121.841	147.241	172.641	198.041	223.441	248.841	274.241	299.641	325.041
13/16	20.638	46.038	71.438	96.838	122.238	147.638	173.038	198.438	223.838	249.238	274.638	300.038	325.438
53/64	21.034	46.434	71.835	97.235	122.635	148.035	173.435	198.835	224.235	249.635	275.035	300.435	325.835
27/32	21.431	46.831	72.231	97.631	123.031	148.432	173.832	199.232	224.632	250.032	275.432	300.832	326.232
55/64	21.828	47.228	72.628	98.028	123.428	148.828	174.228	199.629	225.029	250.429	275.829	301.229	326.629
7/8	22.225	47.625	73.025	98.425	123.825	149.225	174.625	200.025	225.425	250.825	276.226	301.626	327.026
57/64	22.622	48.022	73.422	98.822	124.222	149.622	175.022	200.422	225.822	251.222	276.662	302.022	327.423
29/32	23.019	48.419	73.819	99.219	124.619	150.019	175.419	200.819	226.219	251.619	277.019	302.419	327.819
59/64	23.416	48.816	74.216	99.616	125.016	150.416	175.816	201.216	226.616	252.016	277.416	302.816	328.216
15/16	23.813	49.213	74.613	100.013	125.413	150.813	176.213	201.613	227.013	252.413	277.813	303.213	328.613
61/64	24.209	49.609	75.010	100.410	125.810	151.210	176.610	202.010	227.410	252.810	278.210	303.610	329.010
31/32	24.606	50.006	75.406	100.806	126.206	151.607	177.007	202.407	227.807	253.207	278.607	304.007	329.407
63/64	25.003	50.403	75.803	101.203	126.603	152.003	177.403	202.804	228.204	253.604	279.004	304.404	329.804

Table for width across flats and bolt / nut screw size
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Table for hex key wrench / hex lobe key wrench compliant screw

▮Metric size

Hex. bolt opposite side width mm	Hex. bolt with hole	Locking screw	Countersunk bolt	Button bolt	Taper plug
0.7		M1.4 M1.6 M1.8			
0.9		M2			
1.3	M1.4	M2.5			
1.5	M1.6 M2	M3			
2	M2.5	M4	M3	M3	
2.5	M3	M5	M4	M4	
3	M4	M6 W¼"	M5	M5	
4	M5	M8 W5⁄16"	M6	M6	PT1/16
5	M6 W¼"	M10 W⅜"	M8	M8	PT1/8
6	M8 W5⁄16"	M12 M14 W½"	M10	M10	PT1/4
8	M10 W⅜" W7⁄16"	M16 W⅝"	M12	M12	PT3/8
10	M12 W½"	M18 M20 W¾"	M14 M16	M14 M16	PT1/2
12	M14	M22 M24	M18 M20	M18 M20	
14	M16 W⅝" M18 W¾"		M22 M24	M22 M24	PT3/4
17	M20 W7⁄8" M22 W1"				PT1
19	M24 M27 W1⅛"				
21	W1¼" W1⅜"				
22	M30				PT1½
24	M33				
26	W1½" W1¾"				
27	M36 M39				
32	M42 M45 W2"				
36	M48 M52				

The figures at the right of the M (metric screw) or W (Whitworth screw) show the screw diameter.

∗ Sizes handled by Supertool are displayed in

▮Hex lobe screw

Size name	External dia. mm	Bolt with hole	Locking screw	Countersunk bolt	Button bolt
T6	1.67	M1.8 #0	M3	M2 #2	
T7	2	#1	M3.5 #6		#4
T8	2.3	M2 #2 M2.5 #3	M4 #8	M2.5 #3 #4	
T9	2.49		M4.5		
T10	2.72	M3 #4 #5	M5 #10	M3 #5 #6	M3 #6
T15	3.26	M3.5 #6		M3.5 #8	#8
T20	3.84		M6 ¼"	M4 M4.5 #10	M4
T25	4.4	M4 #8	M7	M5 #12	M5 #10
T27	4.96	M5 #10	M8 5⁄16"	¼"	¼"
T30	5.49	M6 ¼"	⅜"	M6 5⁄16"	M6
T40	6.6	M7	M10	M8 ⅜"	M8 5⁄16"
T45	7.7	M8 5⁄16"	M12 1⁄12"	7⁄16"	⅜"
T50	8.79	M10 ⅜"	M14	M10 ½"	M10
T55	11.17	M12 7⁄16" ½"	M16	M12 ⅝"	M12 ½"
T60	13.2	M14	M20	M16 ¾"	M16 ⅝"

∗ Regarding the screw name

●"Hex lobe" is one of the common names for TORX®. It is also commonly called with other names like hexalobular.

TORX® is a registered trademark of Acument Intellectual Properties, LLC.

Reference table for tightening torque value

Unit (N·m)

Bolt size name	Strength category				
	4.6	6.8	8.8	10.9	12.9
M2	0.114	0.228	0.303	0.444	0.521
M2.5	0.233	0.466	0.621	0.908	1.07
M3	0.415	0.829	1.11	1.62	1.9
M3.5	0.652	1.3	1.74	2.54	2.98
M4	0.965	1.93	2.57	3.76	4.42
M5	1.95	3.9	5.2	7.61	8.93
M6	3.31	6.63	8.84	12.9	15.2
M7	5.56	11.1	14.8	21.7	25.4
M8	8.05	16.1	21.5	31.4	36.8
M10	15.9	31.9	42.5	62.2	72.9
M12	27.8	55.6	74.1	108	127
M14	44.2	88.5	118	173	202
M16	69.0	138	184	269	316
M18	95.0	190	263	370	435
M20	135	269	373	525	616
M22	183	366	507	714	838
M24	233	466	644	908	1065
M27	341	681	942	1328	1558
M30	463	925	1280	1804	2116
M33	629	1259	1741	2455	2880
M36	808	1617	2236	3152	3698
M39	1046	2092	2894	4080	4786
M42	1293	2586	3577	5042	5914
M45	1620	3240	4482	6318	7412
M48	1939	3878	5365	7563	8872
M52	2515	5030	6959	9809	11507
M56	3124	6248	8644	12184	14293
M60	3892	7783	10767	15177	17804
M64	4714	9428	13042	18384	21566

Note 1) The torque values are for reference. As they may change according to the conditions of use, refer to them as rough indications.
Note 2) The torque values are calculated with a torque coefficient of 0.175 and a tightening coefficient of 1.15.

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Conversion table for international torque value (SI unit), other

●Based on the revision of the measurement regulation on 1st October, 1999, the torque unit has changed to the international unit system (SI unit) N·m.

Conversion table from kilogram-force meter to Newton meter

1kgf·m=9.80665N·m

kgf·m	0	1	2	3	4	5	6	7	8	9
	N·m									
0	0	9.81	19.61	29.42	39.23	49.03	58.84	68.65	78.45	88.26
10	98.07	107.87	117.68	127.49	137.29	147.1	156.91	166.71	176.52	186.33
20	196.13	205.94	215.75	225.55	235.36	245.17	254.97	264.78	274.59	284.39
30	294.2	304.01	313.81	323.62	333.43	343.23	353.04	362.85	372.65	382.46
40	392.27	402.07	411.88	421.69	431.49	441.3	451.11	460.91	470.72	480.53
50	490.33	500.14	509.95	519.75	529.56	539.37	549.17	558.98	568.79	578.59
60	588.4	598.21	608.01	617.82	627.63	637.43	647.24	657.05	666.85	676.66
70	686.47	696.27	706.08	715.89	725.69	735.50	745.31	755.11	764.92	774.73
80	784.53	794.34	804.15	813.95	823.76	833.57	843.37	853.18	862.99	872.79
90	882.6	892.41	902.21	912.02	921.83	931.63	941.44	951.25	961.05	970.86
100	980.67									

Conversion formula from kilogram-force meter to Newton meter

□(N·m)=□(kgf·m)×9.80665

＊This table shows approximate values only.

Conversion table from Newton meter to kilogram-force meter

1N·m=0.10197kgf·m

N·m	0	10	20	30	40	50	60	70	80	90
	kgf·m									
0	0	1.02	2.04	3.06	4.08	5.1	6.12	7.14	8.16	9.18
100	10.2	11.22	12.24	13.26	14.28	15.3	16.32	17.34	18.35	19.37
200	20.39	21.41	22.43	23.45	24.47	25.49	26.51	27.53	28.55	29.57
300	30.59	31.61	32.63	33.65	34.67	35.69	36.71	37.73	38.75	39.77
400	40.79	41.81	42.83	43.85	44.87	45.89	46.91	47.93	48.95	49.97
500	50.99	52.01	53.03	54.05	55.06	56.08	57.1	58.12	59.14	60.16
600	61.18	62.2	63.22	64.24	65.26	66.28	67.3	68.32	69.34	70.36
700	71.38	72.4	73.42	74.44	75.46	76.48	77.5	78.52	79.54	80.56
800	81.58	82.6	83.62	84.64	85.66	86.68	87.7	88.72	89.74	90.76
900	91.77	92.79	93.81	94.83	95.85	96.87	97.89	98.91	99.93	100.95
1000	101.97									

Conversion formula from Newton meter to kilogram-force meter

□(kgf·m)=□(N·m)×0.10197

＊This table shows approximate values only.

Conversion table from kilo Newton to kilogram-force

1kN=101.971621kgf

kN	0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
	kgf									
0	0	10.20	20.39	30.59	40.79	50.99	61.18	71.38	81.58	91.77
1	101.97	112.17	122.37	132.56	142.76	152.96	163.15	173.35	183.55	193.75
2	203.94	214.14	224.34	234.53	244.73	254.93	265.13	275.32	285.52	295.72
3	305.91	316.11	326.31	336.51	346.70	356.90	367.10	377.29	387.49	397.69
4	407.89	418.08	428.28	438.48	448.68	458.87	469.07	479.27	489.46	499.66
5	509.86	520.06	530.25	540.45	550.65	560.84	571.04	581.24	591.44	601.63
6	611.83	622.03	632.22	642.42	652.62	662.82	673.01	683.21	693.41	703.60
7	713.80	724.00	734.20	744.39	754.59	764.79	774.98	785.18	795.38	805.58
8	815.77	825.97	836.17	846.36	856.56	866.76	876.96	887.15	897.35	907.55
9	917.74	927.94	938.14	948.34	958.53	968.73	978.93	989.12	999.32	1009.52
10	1019.72	1029.91	1040.11	1050.31	1060.50	1070.70	1080.90	1091.10	1101.29	1111.49

Conversion formula from kilo Newton to kilogram-force

□(kgf)=□(kN)×101.97162129779282

＊This table shows approximate values only.

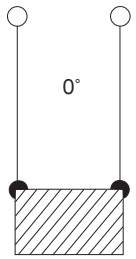
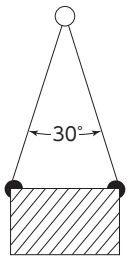
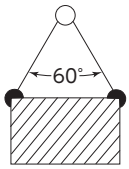
Chart for pipe size and diameter per type

Size (mm)																	
Size name	Pipe type	Steel pipe				Electrical conduit pipe		Rigid PVC pipe			Polyethylene pipe		Copper pipe				
													For AC and cooling media		For water and hot water supply		
		Carbon steel for gas pipe	Carbon steel for pressure piping	Stainless steel	Galvanized steel for water piping	Thick steel	Thin steel	Electrical conduit pipe	Pipe for general use	Thin-walled pipe	Pipe for general use	Gas pipe	Size name	External diameter	Size name	External diameter	Flare fitting
		SGP	STPG	SUS-TP	SGPW	PF	C	VE	VP	VU	PE		(JRA)		(JRA)		UNF
(A)	(B)												(B)		(B)		
6	⅛	10.5	10.5	10.5									¼	6.35	⅛	6.35	7/16–20
8	¼	13.8	13.8	13.8									⅜	9.52	¼	9.52	5/8–18
10	⅜	17.3	17.3	17.3	17.3						17		½	12.7	⅜	12.7	¾–16
13									18		21.5		⅝	15.88	½	15.88	⅞–14
14								18					¾	19.05	(⅝)	19.05	1 1/16–14
15	½	21.7	21.7	21.7	21.7							22	(⅞)	22.22	¾	22.22	(UNS)
16						21		22	22				1	25.4			
19							19.1						1⅛	28.58	1	28.58	
20	¾	27.2	27.2	27.2	27.2				26		27	27	¼	31.75			
22						26.5		26					(1⅜)	34.92	1¼	34.92	
25	1	34	34	34	34		25.4		32		34	34	1½	38.1			
28						33.3		34					1⅝	41.28	1½	41.28	
30									38		42	42	1¾	44.45			
31							31.8						2	50.8			
32	1¼	42.7	42.7	42.7	42.7								2⅛	53.98	2	53.98	
36						41.9		42					2¼	57.15			
39							38.1						2⅜	60.33			
40	1½	48.6	48.6	48.6	48.6				48	48	48	48	2½	63.5			
42						47.8		48					(2⅝)	66.68	2½	66.68	
50	2	60.5	60.5	60.5	60.5				60	60	60	60	2¾	69.85			
51							50.8						2⅞	73.03			
54						59.6		60					3	76.2			
63							63.5						(3⅛)	79.38	3	79.38	
65	2½	76.3	76.3	76.3	76.3				76	76	76		4		4	104.78	
70						75.2		76									
75							76.2		89	89	89	89					
80	3	89.1	89.1	89.1	89.1												
82						87.9		89									
90	3½	101.6	101.6	101.6	101.6												
92						100.7											
100	4	114.3	114.3	114.3	114.3			114	114	114	114	114					
104						113.4											
125	5	139.8	139.8	139.8	139.8			140	140	140	140						
150	6	165.2	165.2	165.2	165.2			165	165	165	165	165					
175	7	190.7															
200	8	216.3	216.3	216.3	216.3				216	216	216	216					
225	9	241.8															
250	10	267.4	267.4	267.4	267.4				267	267	267	267					

Supertool clamp selection standards for 2-point lifting

The maximum rated capacity of lifting clamps differs according to the lifting angle.
As shown in the following table, when the lifting angle increases, the load weight on the lifting clamps and the ropes increases and the lifting capacity rate decreases in proportion. Therefore, after paying attention to the lifting angle, always use lifting clamps and ropes with the appropriate rated capacity.

Correlation table between the lifting angle and the applicable load (for 2-point lifting)

Main item name, No.								
Vertical lifting clamps (GVC-R, SVC-HE, SVC-E, SVC-L, SVC)	Lateral, horizontal lifting clamps (GVC-R, GVC-E, HLC-HE, HLC-U)	Steel beam lifting clamps (HLC-S/W)	Screw cam clamps (SCC, SCC-N, SJC, SJC-S, SDC-S/N/WN, SWC-S/N)	Lifting hooks (HHC)				
					Lifting capacity rate ⟶	100%	96%	86%
					Clamp rated capacity (for 2 pcs)	Maximum allowable rated load for 2 clamps (ton)		
○	○	○	○	○	0.5 × 2pcs = 1 ton	1	0.96	0.86
○	○	○	○	○	1 × 2pcs = 2 ton	2	1.9	1.7
○			○		1.5 × 2pcs = 3 ton	3	2.9	2.6
○	○	○	○	○	2 × 2pcs = 4 ton	4	3.8	3.4
○	○	○	○	○	3 × 2pcs = 6 ton	6	5.8	5.2
○	○		○	○	5 × 2pcs =10 ton	10	9.6	8.6
			○		6 × 2pcs =12 ton	12	11.5	10.3
○	○				7 × 2pcs =14 ton	14	13.44	12.04
○	○				10 × 2pcs =20 ton	20	19.2	17.2

★The allowable lifting angle may differ according to the lifting clamp type and rated capacity. Always read carefully the operation manual of the purchased lifting clamps before use, and observe the precautions for safe operation.
★When lifting with 2 lifting clamps or more (with 2 lifting points or more), always use clamps of the same model and same rated capacity.

How to read the correlation table

(Example) lifting of a 5.5 ton steel load with 2 lifting points and the following lifting angles

A) When the lifting angle is at 0° (vertical lifting)
(1) In the column 0° of the correlation table, look for the smallest value above 5.5 ton. It is “6 ton”, in the 5th row from the top.
(2) Then from the “6 ton” row determined in step (1), look for the clamp rated capacity on the left. It is “3 x 2 pcs = 6 ton”.
Therefore, use 2 pcs of 3 ton lifting clamps.

B) When the lifting angle is at 60° (with same lifting load as above)
(1) In the column 60° of the correlation table, look for the smallest value above 5.5 ton. In this case it is “8.6 ton”, in the 6th row from the top.
(2) Then from the “8.6 ton” row determined in step (1), look for the clamp rated capacity on the left. It is “5 x 2 pcs = 10 ton”.
Therefore, use 2 pcs of 5 ton lifting clamps.

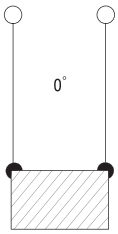
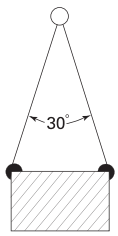
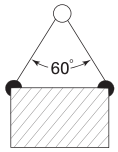
Always use clamps with same model and same rated capacity.

Lifting angle and rated load of wire rope

The maximum rated capacity of wire ropes also differs according to the lifting angle.
Therefore, after paying attention to the lifting angle, always use wire ropes with the appropriate diameter.

Correlation table between the lifting angle and the applicable load for wire rope (for 2-point lifting)

■JIS G 3525 6×24 A type

D wire rope diameter	W rated load (for 1 single rope) [Safety factor S=6]			
		(Change in % of the lifting capacity rate according to the lifting angle)		
		100%	96%	86%
(mm)	(ton)	Maximum allowable load (rated load) for 2 wire ropes (ton)		
6	0.30	0.60	0.57	0.51
8	0.53	1.07	1.03	0.92
9	0.67	1.35	1.30	1.16
10	0.83	1.67	1.61	1.44
12	1.20	2.41	2.32	2.08
14	1.64	3.28	3.15	2.83
16	2.14	4.28	4.12	3.69
18	2.72	5.44	5.23	4.69
20	3.35	6.70	6.44	5.77
22	4.06	8.12	7.81	7.00
24	4.82	9.65	9.28	8.32
26	5.66	11.3	10.8	9.76
28	6.58	13.1	12.6	11.3
30	7.55	15.1	14.5	13.0
32	8.58	17.1	16.5	14.8
36	10.8	21.7	20.8	18.7
40	13.4	26.8	25.8	23.1

Calculation formula of a wire rope diameter and rated load (for 1 single rope)

＊Refer to the calculated values as rough indications.

① $D=\sqrt{W\times C}$

② $W=\frac{D^2}{C}$

D= wire rope dia. (mm)
W= rated load (ton)
C= 120 (constant)
(with Safety factor S = 6)

★ When looking for the required wire rope diameter to lift a 3 ton load

① $D=\sqrt{W\times C}$

$D=\sqrt{3\times 120}=\sqrt{360}=19\rightarrow$ **20mm**

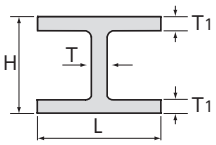
★ When looking for the maximum capacity (rated load) of a wire rope with 12mm diameter

② $W=\frac{D^2}{C}$

$W=\frac{12^2}{120}=\frac{144}{120}=1.2\rightarrow$ **1.2ton**

Table for main steel material weight (unit : kg)

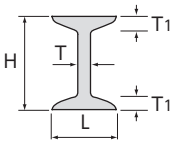
H shaped steel beam



(JIS G3192)

Standard cross section size (mm)			Unit weight	Weight of 1 beam (kg)				
H×L	T	T1	kg/m	6m	8m	10m	12m	15m
100×50	5	7	9.3	55.8	74.4	93	112	140
100×100	6	8	16.9	101	135	169	203	254
125×125	6.5	9	23.6	142	189	236	283	354
150×75	5	7	14	84	112	140	168	210
148×100	6	9	20.7	124	166	207	248	311
150×150	7	10	31.1	187	249	311	373	467
175×175	7.5	11	40.4	242	323	404	485	606
200×100	5.5	8	20.9	125	167	299	251	314
194×150	6	9	29.9	179	239	306	359	449
200×200	8	12	49.9	299	399	499	599	749
250×250	9	14	71.8	431	574	718	862	1077
294×200	8	12	55.8	335	446	558	670	837
300×300	10	15	93	558	744	930	1116	1395
350×350	12	19	135	810	1080	1350	1620	2025
400×200	8	13	65.4	392	523	654	785	981
400×400	13	21	172	1032	1376	1720	2064	2580
488×300	11	18	125	750	1000	1250	1500	1875

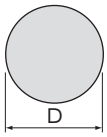
I shaped steel beam



(JIS G3192)

Standard cross section size (mm)			Unit weight	Weight of 1 beam (kg)				
H×L	T	T1	kg/m	6m	8m	10m	12m	15m
100×75	5	8	12.9	77.4	103	129	155	194
125×75	5.5	9.5	16.1	96.6	129	161	193	242
150×75	5.5	9.5	17.1	103	137	171	205	256
150×125	8.5	14	36.2	217	290	362	434	543
180×100	6	10	23.6	142	189	236	283	354
200×100	7	10	26	156	208	260	312	390
200×150	9	16	50.4	302	403	504	605	756
250×125	7.5	12.5	38.3	230	306	383	460	574
250×125	10	19	55.5	333	444	555	666	832
300×150	8	13	48.3	290	386	483	580	724
300×150	10	18.5	65.5	393	524	655	786	982
300×150	11.5	22	76.8	461	614	768	922	1152
350×150	9	15	58.5	351	468	585	702	878
350×150	12	24	87.2	523	698	872	1046	1308
400×150	10	18	72	432	576	720	864	1080
400×150	12.5	25	95.8	575	766	958	1150	1437
450×175	11	20	91.7	550	734	917	1100	1376
450×175	13	26	115	590	920	1150	1380	1725
600×190	13	25	133	798	1064	1330	1596	1995
600×190	16	35	176	1056	1408	1760	2112	2640

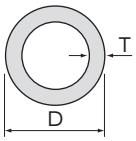
Round steel bar



(JIS G3191)

D dia. (mm)	Unit weight kg/m	Weight of 1 beam (kg)						
		4m	4.5m	5m	5.5m	6m	8m	10m
70	30.2	121	136	151	166	181	242	302
75	34.7	139	156	174	191	208	278	347
80	39.5	158	178	198	217	237	316	395
85	44.5	178	200	222	245	267	356	445
90	49.9	200	225	250	274	299	399	499
95	55.6	222	250	278	306	334	445	556
100	61.7	247	278	308	339	370	494	617
110	74.6	298	336	373	410	448	597	746
120	88.8	355	400	444	488	533	710	888
130	104	416	468	520	572	624	832	1040
140	121	484	544	605	666	726	968	1210
150	139	556	625	695	764	834	1112	1390
160	158	632	711	790	869	948	1264	1580
180	200	800	900	1000	1100	1200	1600	2000
200	247	988	1112	1235	1358	1482	1976	2470

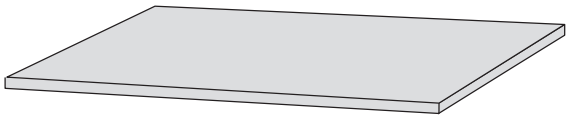
Carbon steel pipe for pipping (gas pipe)



(JIS G3452)

Size name		D external dia. (mm)	T thickness (mm)	Weight without socket (kg)				
A	B			1m	4m	4.5m	5m	5.5m
90	3½	101.6	4.2	10.1	40.4	45.4	50.5	55.6
100	4	114.3	4.5	12.2	48.8	54.9	61	67.1
125	5	139.8	4.5	15	60	67.5	75	82.5
150	6	165.2	5	19.8	79.2	89.1	99	109
175	7	190.7	5.3	24.2	96.8	109	121	133
200	8	216.3	5.8	30.1	120	135	150	166
225	9	241.8	6.2	36	144	162	180	198
250	10	267.4	6.6	42.4	170	191	212	233
300	12	318.5	6.9	53	212	238	265	292
350	14	355.6	7.9	67.7	271	305	338	372
400	16	406.4	7.9	77.6	310	349	388	427
450	18	457.2	7.9	87.5	350	394	438	481
500	20	508	7.9	97.4	390	438	487	536

Steel plate



(JIS G3193)

Thickness (mm)	Unit weight kg/m²	Weight of 1 plate (kg)			
		914×1829 (3×6)	1219×2438 (4×8)	1524×3048 (5×10)	1524×6096 (5×20)
4.5	35.32	59.1	105	164	328
6	47.1	78.8	140	219	438
9	70.65	118	210	328	656
12	94.2	158	280	438	875
16	125.6	210	373	583	1167
19	149.2	249	443	693	1386
25	196.2	328	583	911	1823
32	251.2	420	747	1167	2334
38	298.3	499	887	1386	2771

Thickness (mm)	Unit weight kg/m²	Weight of 1 plate (kg)			
		914×1829 (3×6)	1219×2438 (4×8)	1524×3048 (5×10)	1524×6096 (5×20)
40	314	525	933	1459	2917
45	353.2	591	1050	1641	3281
50	392.5	656	1167	1823	3646
60	471	788	1400	2188	4376
70	549.5	919	1633	2552	5105
80	628	1050	1806	2917	5834
90	706.5	1181	2100	3282	6563
100	785	1313	2333	3646	7293

Comparison table for hardness (approximate conversion values for steel Rockwell C hardness)

Note:1MPa=1N/mm²

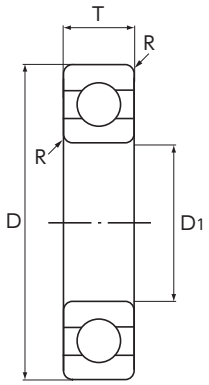
Rockwell C scale hardness (HRC)	Brinell hardness (HB)		Vickers hardness (HV)	Rockwell hardness			Shore hardness (HS)	Tensile strength (approximate value) MPa
	Standard ball	Tungsten carbide ball		A scale (HRA)	B scale (HRB)	D scale (HRD)		
68.0	—	—	940	85.6	—	76.9	97	—
67.5	—	—	920	85.3	—	76.5	96	—
67.0	—	—	900	85	—	76.1	95	—
66.4	—	(767)	880	84.7	—	75.7	93	—
65.9	—	(757)	860	84.4	—	75.3	92	—
65.3	—	(745)	840	84.1	—	74.8	91	—
64.7	—	(733)	820	83.8	—	74.3	90	—
64.0	—	(722)	800	83.4	—	73.8	88	—
—	—	(712)	—	—	—	—	—	—
63.3	—	(710)	780	83	—	73.3	87	—
62.5	—	(698)	760	82.6	—	72.6	86	—
61.8	—	(684)	740	82.2	—	72.1	—	—
61.7	—	(682)	737	82.2	—	72	84	—
61.0	—	(670)	720	81.8	—	71.5	83	—
60.1	—	(656)	700	81.3	—	70.8	—	—
60.0	—	(653)	697	81.2	—	70.7	81	—
59.7	—	(647)	690	81.1	—	70.5	—	—
59.2	—	(638)	680	80.8	—	70.1	80	—
58.8	—	630	670	80.6	—	69.8	—	—
58.7	—	627	667	80.5	—	69.7	79	—
59.1	—	—	677	80.7	—	70	—	—
57.3	—	601	640	79.8	—	68.7	77	—
57.3	—	—	640	79.8	—	68.7	—	—
56.0	—	578	615	79.1	—	67.7	75	—
55.6	—	—	607	78.8	—	67.4	—	—
54.7	—	555	591	78.4	—	66.7	73	2055
54.0	—	—	579	78	—	66.1	—	2015
53.5	—	534	569	77.8	—	65.8	71	1985
52.5	—	—	533	77.1	—	65	—	1915
52.1	—	514	547	76.9	—	64.7	70	1890
51.6	(495)	—	539	76.7	—	64.3	—	1855
51.1	—	—	530	76.4	—	63.9	—	1825
51.0		495	528	76.3	—	63.8	68	1820
50.3	(477)	—	516	75.9	—	63.2	—	1780
49.6	—	—	508	75.6	—	62.7	—	1740
49.6		477	508	75.6	—	62.7	66	1740
48.8	(461)	—	495	75.1	—	61.9	—	1680
48.5	—	—	491	74.9	—	61.7	—	1670
48.5		461	491	74.9	—	61.7	65	1670
47.2	444	—	474	74.3	—	61	—	1595
47.1	—	—	472	74.2	—	60.8	—	1585
47.1	—	444	472	74.2	—	60.8	63	1585

Rockwell C scale hardness (HRC)	Brinell hardness (HB)		Vickers hardness (HV)	Rockwell hardness			Shore hardness (HS)	Tensile strength (approximate value) MPa
	Standard ball	Tungsten carbide ball		A scale (HRA)	B scale (HRB)	D scale (HRD)		
45.7	429	429	455	73.4	—	59.7	61	1510
44.5	415	415	440	72.8	—	58.8	59	1460
43.1	401	401	425	72	—	57.8	58	1390
41.8	388	388	410	71.4	—	56.8	56	1330
40.4	375	375	396	70.6	—	55.7	54	1270
39.1	363	363	382	70	—	54.6	52	1220
37.9	352	352	372	69.3	(110)	53.8	51	1180
36.6	341	341	360	68.7	(109)	52.8	50	1130
35.5	331	331	350	68.1	(108.5)	51.9	48	1095
34.3	321	321	339	67.5	(108)	51	47	1060
33.1	311	311	328	66.9	(107.5)	50	46	1025
32.1	302	302	319	66.3	(107)	49.3	45	1005
30.9	293	293	309	65.7	(106)	48.3	43	970
29.9	285	285	301	65.3	(105.5)	47.6	—	950
28.8	277	277	292	64.6	(104.5)	46.7	41	925
27.6	269	269	284	64.1	(104)	45.9	40	895
26.6	262	262	276	63.6	(103)	45	39	875
25.4	255	255	269	63	(102)	44.2	38	850
24.2	248	248	261	62.5	(101)	43.2	37	825
22.8	241	241	253	61.8	100	42	36	800
21.7	235	235	247	61.4	99	41.4	35	785
20.5	229	229	241	60.8	98.2	40.5	34	765
(18.8)	223	223	234	—	97.3	—	—	—
(17.5)	217	217	228	—	96.4	—	33	725
(16)	212	212	222	—	95.5	—	—	705
(15.2)	207	207	218	—	94.6	—	32	690
(13.8)	201	201	212	—	93.8	—	31	675
(12.7)	197	197	207	—	92.8	—	30	655
(11.5)	192	192	202	—	91.9	—	29	640
(10)	187	187	196	—	90.7	—	—	620
(9)	183	183	192	—	90	—	28	615
(8)	179	179	188	—	89	—	27	600
(6.4)	174	174	182	—	87.8	—	—	585
(5.4)	170	170	178	—	86.8	—	26	570
(4.4)	167	167	175	—	86	—	—	560
(3.3)	163	163	171	—	85	—	25	545
(0.9)	156	156	163	—	82.9	—	—	525
—	149	149	156	—	80.8	—	23	505
—	143	143	150	—	78.7	—	22	490
—	137	137	143	—	76.4	—	21	460
—	131	131	137	—	74	—	—	450
—	126	126	132	—	72	—	20	435
—	121	121	127	—	69.8	—	19	415
—	116	116	122	—	67.6	—	18	400
—	111	111	117	—	65.7	—	15	385

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Conversion table for inch / mm
Table for hex key wrench / hex lobe key wrench compliant screw
Reference table for tightening torque value
Conversion table for international torque value
Chart for pipe size and diameter per type
Lifting angle and rated load correlation table
Table for main steel material weight
Comparison table for hardness
Table for bearing size standard
Basic knowledge about magnets

Table for bearing size standard

Deep groove ball bearing
Open type



Main size (mm)				Number
Internal dia. D1	External dia. D	Thickness T	R	
10	19	5	0.5	6800
	22	6	0.5	6900
	26	8	0.5	6000
	30	9	1	6200
	35	11	1	6300
12	21	5	0.5	6801
	24	6	0.5	6901
	28	7	0.5	16001
	28	8	0.5	6001
	32	10	1	6201
	37	12	1.5	6301
15	24	5	0.5	6802
	28	7	0.5	6902
	32	8	0.5	16002
	32	9	0.5	6002
	35	11	1	6202
	42	13	1.5	6302
17	26	5	0.5	6803
	30	7	0.5	6903
	35	8	0.5	16003
	35	10	0.5	6003
	40	12	1	6203
	47	14	1.5	6303
20	32	7	0.5	6804
	37	9	0.5	6904
	42	8	0.5	16004
	42	12	1	6004
	47	14	1.5	6204
	52	15	2	6304
22	44	12	1	60/22
	50	14	1.5	62/22
	56	16	2	63/22
25	37	7	0.5	6805
	42	9	0.5	6905
	47	8	0.5	16005
	47	12	1	6005
	52	15	1.5	6205
	62	17	2	6305

Main size (mm)				Number
Internal dia. D1	External dia. D	Thickness T	R	
28	52	12	1	60/28
	58	16	1.5	62/28
	68	18	2	63/28
30	42	7	0.5	6806
	47	9	0.5	6906
	55	9	0.5	16006
	55	13	1.5	6006
	62	16	1.5	6206
	72	19	2	6306
32	58	13	1.5	60/32
	65	17	1.5	62/32
	75	20	2	63/32
35	47	7	0.5	6807
	55	10	1	6907
	62	9	0.5	16007
	62	14	1.5	6007
	72	17	2	6207
	80	21	2.5	6307
40	52	7	0.5	6808
	62	12	1	6908
	68	9	0.5	16008
	68	15	1.5	6008
	80	18	2	6208
	90	23	2.5	6308
45	58	7	0.5	6809
	68	12	1	6909
	75	10	1	16009
	75	16	1.5	6009
	85	19	2	6209
	100	25	2.5	6309
50	65	7	0.5	6810
	72	12	1	6910
	80	10	1	16010
	80	16	1.5	6010
	90	20	2	6210
	110	27	3	6310

Main size (mm)				Number
Internal dia. D1	External dia. D	Thickness T	R	
55	72	9	0.5	6811
	80	13	1.5	6911
	90	11	1	16011
	90	18	2	6011
	100	21	2.5	6211
	120	29	3	6311
60	78	10	0.5	6812
	85	13	1.5	6912
	95	11	1	16012
	95	18	2	6012
	110	22	2.5	6212
	130	31	3.5	6312
65	85	10	1	6813
	90	13	1.5	6913
	100	11	1	16013
	100	18	2	6013
	120	23	2.5	6213
	140	33	3.5	6313
70	90	10	1	6814
	100	16	1.5	6914
	110	13	1	16014
	110	20	2	6014
	125	24	2.5	6214
	150	35	3.5	6314
75	95	10	1	6815
	105	16	1.5	6915
	115	13	1	16015
	115	20	2	6015
	130	25	2.5	6215
	160	37	3.5	6315
80	100	10	1	6816
	110	16	1.5	6916
	125	14	1	16016
	125	22	2	6016
	140	26	3	6216
	170	39	3.5	6316

Main size (mm)				Number
Internal dia. D1	External dia. D	Thickness T	R	
85	110	13	1.5	6817
	120	18	2	6917
	130	14	1	16017
	130	22	2	6017
	150	28	3	6217
	180	41	4	6317
90	115	13	1.5	6818
	125	18	2	6918
	140	16	1.5	16018
	140	24	2.5	6018
	160	30	3	6218
	190	43	4	6318
95	120	13	1.5	6819
	130	18	2	6919
	145	16	1.5	16019
	145	24	2.5	6019
	170	32	3.5	6219
	200	45	4	6319
100	125	13	1.5	6820
	140	20	2	6920
	150	16	1.5	16020
	150	24	2.5	6020
	180	34	3.5	6220
	215	47	4	6320
105	130	13	1.5	6821
	145	20	2	6921
	160	18	1.5	16021
	160	26	3	6021
	190	36	3.5	6221
	225	49	4	6321
110	140	16	1.5	6822
	150	20	2	6922
	170	19	1.5	16022
	170	28	3	6022
	200	38	3.5	6222
	240	50	4	6322

Basic knowledge about magnets

[Adsorption force]

The force needed to separate a magnet from the piece it is attached to is called the adsorption force.
The unit used to describe the adsorption force is the kilogram-force (kgf).

[Attraction force]

When a piece is attracted to a magnet placed at distance, the applied force is called the attraction force. If the attraction force is strong, it doesn't mean necessarily that the adsorption force is strong too.
The unit used to describe the attraction force is the millimeter (mm).

[Residual magnetic flux density]

Also called remanence. The higher this value is, the stronger is the magnetic force. However, for applied equipment, the residual magnetic flux density cannot be considered as strictly equal to the performance.

[Coercivity]

The higher this value is, the less magnetic force is lost. The lower it is, the more easily the magnet gets demagnetized.

[Maximum energy product]

The maximum energy product (BH) is the product of the residual magnetic flux density (Br) and the coercivity (Hc). The higher Br, Hc and BH max are, the better and more stable is the magnet.

[Curie point]

The Curie point is the temperature at which the residual magnetic flux density of a magnet gets to 0.
For ferrite magnet, the Curie point is at approximately 460℃.

[Magnetic flux density]

The magnetic flux density is the amount of magnetic flux through a unit area. It is not directly visible to the eye, but for instance when a sheet of paper is placed on top of a magnet and some iron powder is sprinkled over it, the shape of the iron powder distribution on the sheet can be seen. The unit of the magnetic flux is called Wb (Weber). The magnetic flux density is described as the amount of magnetic flux through a cross-sectional area of 1m2. A magnetic flux density of 1W/m2 is called 1T (Tesla). [Originally, the unit G (Gauss) was commonly used, but it changed to T (Tesla) under the SI system. (1T=10,000G, 1mT=10G)]

Magnet types and properties

	Alnico magnet	Ferrite magnet	Samarium-cobalt magnet (rare earth)	Neodymium magnet (rare earth)
Residual magnetic flux density Br (kG)	11.5	4.4	11	13
Coercivity HCB (kOe)	1.6	3.2	6.8	10
Coercivity HCJ (kOe)	1.6	3.3	7	11
Maximum energy product (MGOe) (BH) max.	11	4.6	30	40
Temperature coefficient Br (%/℃)	-0.02	-0.18	-0.03	-0.12
Curie point ℃	850	460	800	310
Specific gravity	7.3	5	8.4	7.5

- **Alnico magnet**
  This magnetic material has a high magnetic flux density. Its magnetic properties are little dependent to temperature change and it doesn't get demagnetized easily on low temperature or when heated. Its hardness is strong (very hard to cut or to drill) and it is a highly stable magnet material. Alnico magnet has been a major material for a long time, but sourcing issues of cobalt and nickel, its main components, as well as unstable costs led to its replacement by less expensive ferrite magnet. But with its high magnetic resistance to temperature change, there is still a strong demand mainly for measuring instruments.

- **Ferrite magnet**
  This magnet material is currently used in every kind of fields. Its main component is a metallurgical powder obtained from iron oxide and while its residual magnetic flux density is rather low, it possesses the big advantage of having a high coercivity. There are two types of ferrite, isotropic and anisotropic. Compared to isotropic ferrite, the magnetic force of anisotropic ferrite is approximatively twice stronger. The low raw material costs allow relatively affordable product prices. However, as a metallurgic product, it is extremely fragile and processing like cutting or drilling are very difficult. The magnet properties variability under temperature change is relatively highy.

- **Samarium-cobalt magnet (rare earth)**
  This material is composed of two series. The series 1:5 has an excellent magnetic anisotropy and a high coercivity, and the series 2:17 has a high magnetic energy. Compared to neodymium magnet, the temperature coefficient of residual magnetic flux density and coercivity is lower for both series, which have excellent stability against heat. Their corrosion resistance is also better than neodymium, so they can be used without any surface treatment like nickel plating applied for neodymium. The high cost of samarium and cobalt raw materials makes this magnet own cost relatively high, and it also has low mechanical strength, so it breaks easily and it is hard to handle.

- **Neodymium magnet (rare earth)**
  This material has high magnetic properties, and its relatively abundant main components, neodymium and iron make its cost relatively lower than samarium-cobalt. Then, its specific gravity being more than 10% lower than samarium-cobalt, it is really considered as a magnet with high energy density. Moreover, its high mechanical strength makes it hard to break or crack and easy to handle. On the other hand, as its temperature coefficient of residual magnetic flux density and coercivity is higher than samarium-cobalt, attention must be paid to the temperature of use and the working points. The variability of magnetic flux amount due to the environment temperature for neodymium is lower than for ferrite, but relatively high compared to samarium-cobalt, and as it gets largely demagnetized especially under high temperature environment, special attention is required.
  Additionally, its corrosion resistance is low so it rusts easily, and for application under high temperature and high humidity conditions, surface treatment is required.

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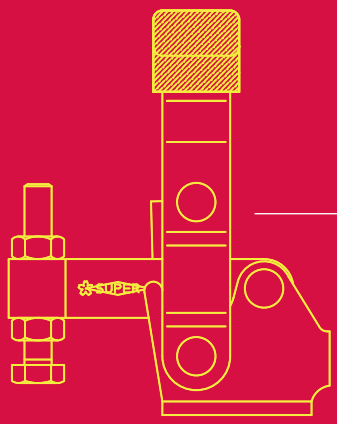
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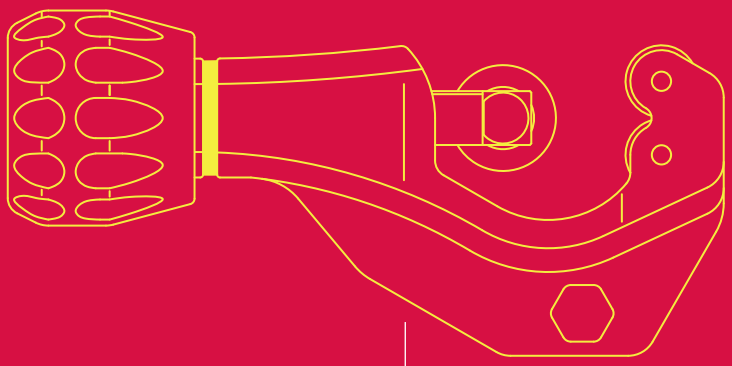
T

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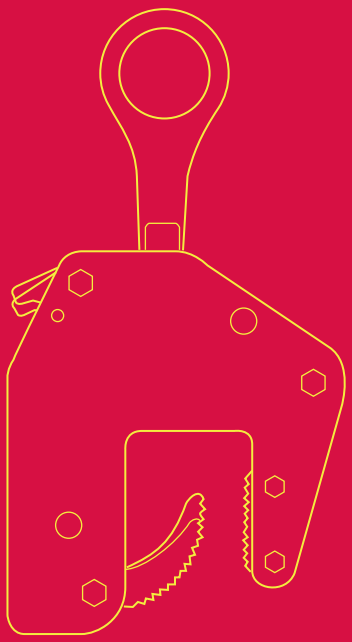
TOGGLE CLAMP



TUBE CUTTER

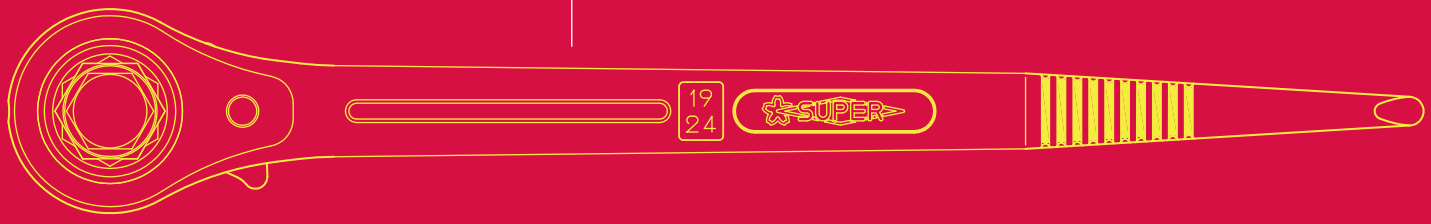


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