



Portable Portal Crane
Instruction Manual

Product No.:
PMC 750AN

PMC 480BN
PMC 1000BN

- We are thankful to you for your interest in and recent purchase of SUPERTOOL's Portable Portal Crane.

This Manual describes proper assembling, operational and maintenance methods for you to ever use this Portable Portal Crane without any troubles.

Before assembly, never fail to read through this Instruction Manual to enhance working efficiency.

* 1. Before operating the product, you asked to thoroughly read this MANUAL for proper operation.

Improper use without observing the warning signs and cautions described herein may cause accidents.

* 2. Please keep this MANUAL at a safe place for future references.

Request:

Please note that due to some quality improvement in the future may cause some change in the content of the MANUAL.

Nov., 2011

Danger: Before Use

Please keep daily maintenance and take care of the following cautions so that you can make safer, easier and longer use of this Portable Portal Crane.

1. Never fail to install a hoist corresponding to the capacity of a crane with a load limiter.

The display capacity of the crane is **lifting load**.

(This is the load applicable to the crane including the weights of a hoist and clamps.)

2. Never lift a work beyond the capacity of the crane.
3. Never fail to lock the four wheels before lifting a work. In addition, install the beam horizontally.
4. Do not swing a suspended load to and fro. If you swing it to a great extent, then a load more than the capacity may be applied to the crane, causing a breakage or a falling over.
5. Never use this crane at an unstable place.
6. Wear a helmet whenever you walk into the area of use.
7. Do not enter the areas under the beam and a lifted work just to avoid a worst case.
8. Never move the crane to a different place with a work kept lifted.
(Falling over or breakage may occur.)
9. Since there are parts of the unit which are assembled with bolts and nuts, they will be loosened during a long time of use. Check for loosened parts before use. (Make a visual check for marked parts.)
10. Make an inspection of each part of the unit according to the inspection standard.

11. Never execute unauthorized remodeling of the unit. (If remodeled, the unit will be given no guarantee and insurance.)

Meanings of Warning Labels:

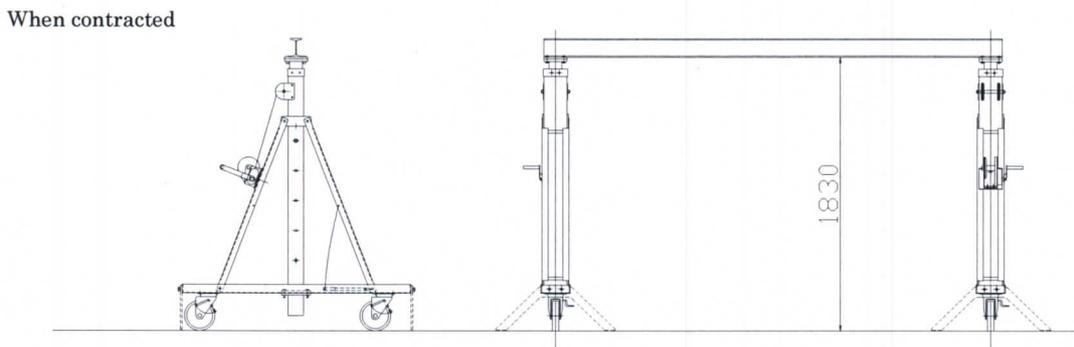
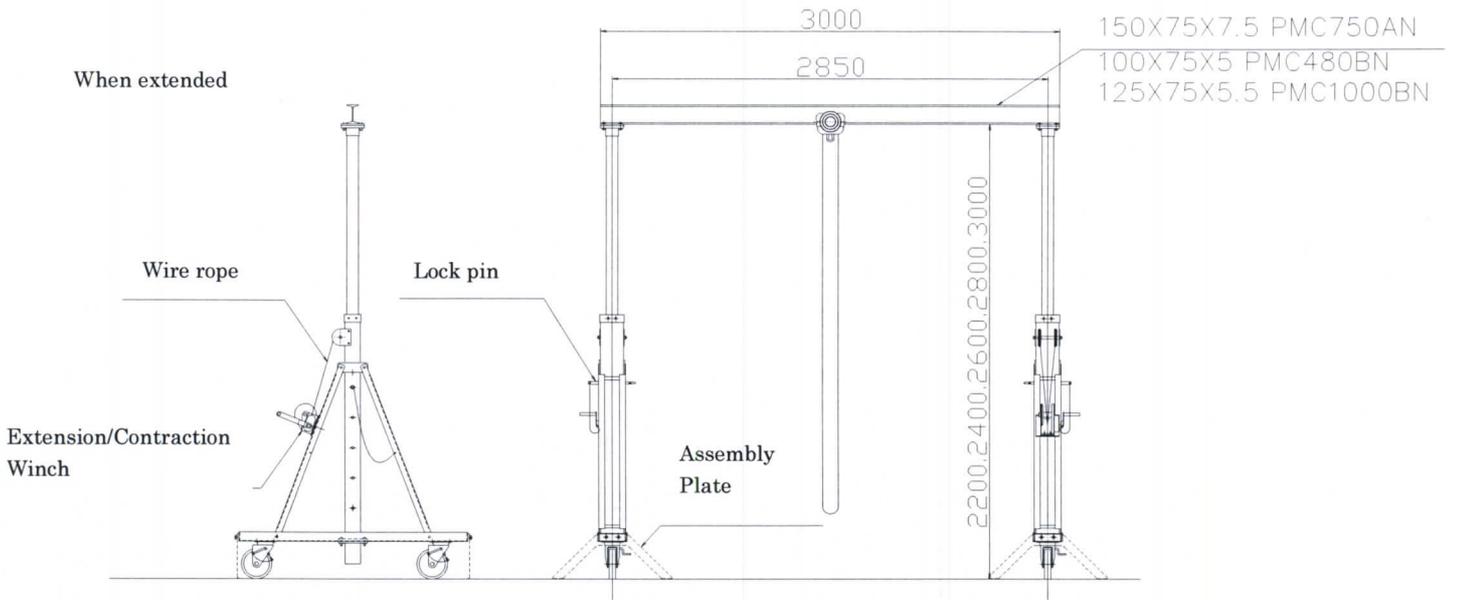
▲Danger: Improper operation may cause a potentially hazardous situation, resulting in a loss of life or severe injury.

▲Caution: Improper operation may cause a potentially hazardous situation, resulting in occurrence of a medium level of damage or slight injury, and property damage.

Even though **▲Caution** is labeled, a serious disaster may happen depending on the circumstances. So, do not fail to abide by the important descriptions stated at the warning and caution labels, irrespective of warnings or cautions.

Features

1. The attachment of four wheels makes easy the movement of the unit.
2. Posts are extendable and contractible, so it is possible to make the unit pass through even the lower entrance.



Components

① Air Cap Winding

To be shipped are, as seen in the right figure,

(1) Beam 1pc.

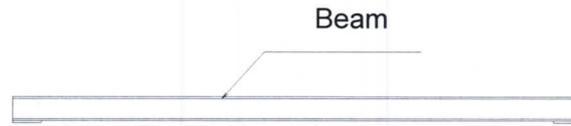
(2) Post 2pcs.

(3) Carriage + Assembly plate 1pc.

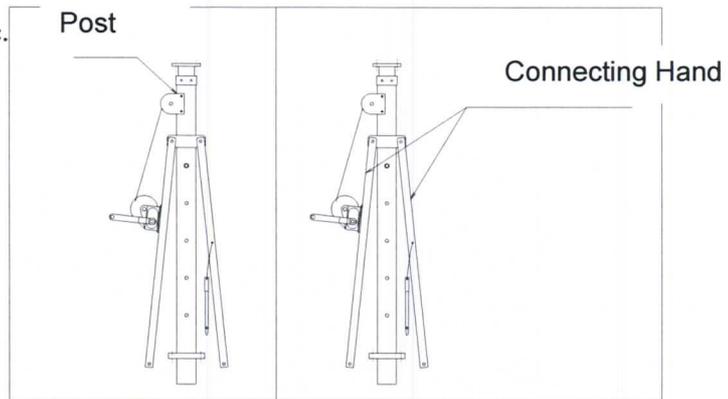
(4) Geared Trolley 1 pc.

Total: 5cs.

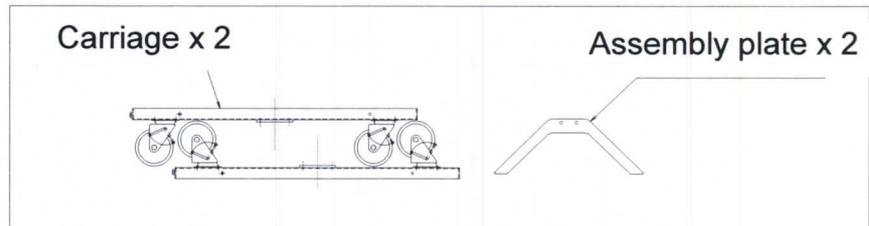
Before assembly, check for the number of components.



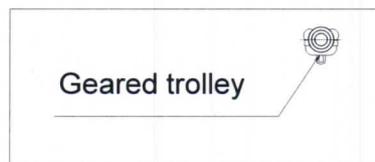
② Case x 2 (1771X400X225)



③ Case x 1 (1626X259X407)



④ Case x 1



Product No.	Capacity	Weight
PMC 750AN	750 kg	173 kg
PMC 480BN	490 kg	259 kg
PMC 1000BN	1,000 kg	273 kg

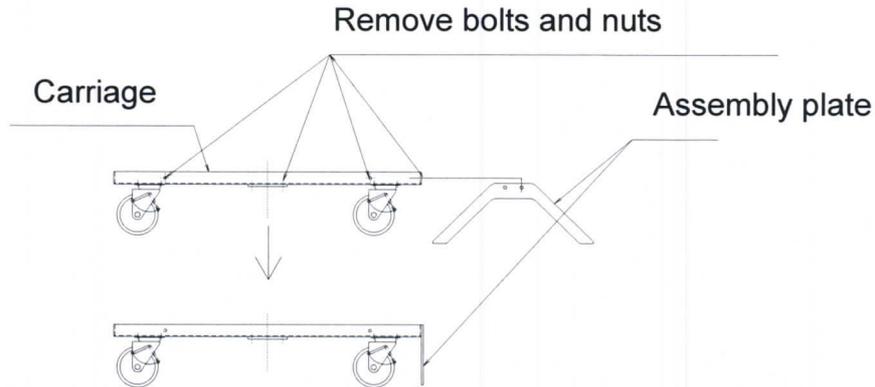
Assembly
Procedure (2

persons are required for assembly work.)

【Assembly of Carriage】

- 1) Take the carriage out of the box first, and then remove bolts and nuts attached to it. Next, install assembly plate on the carriage. (M16)

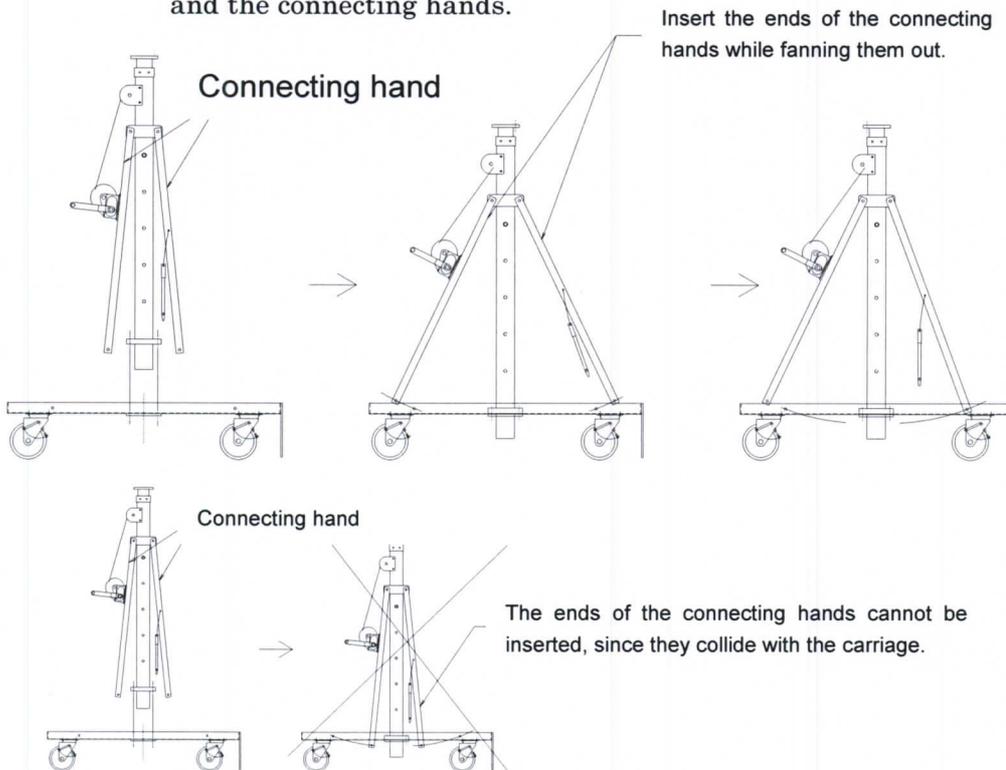
△Caution: Never fail to execute the work after putting the break on the wheels.



【Erection of the Post on the Carriage】

- 1) Next, erect the post on the carriage on a horizontal floor.

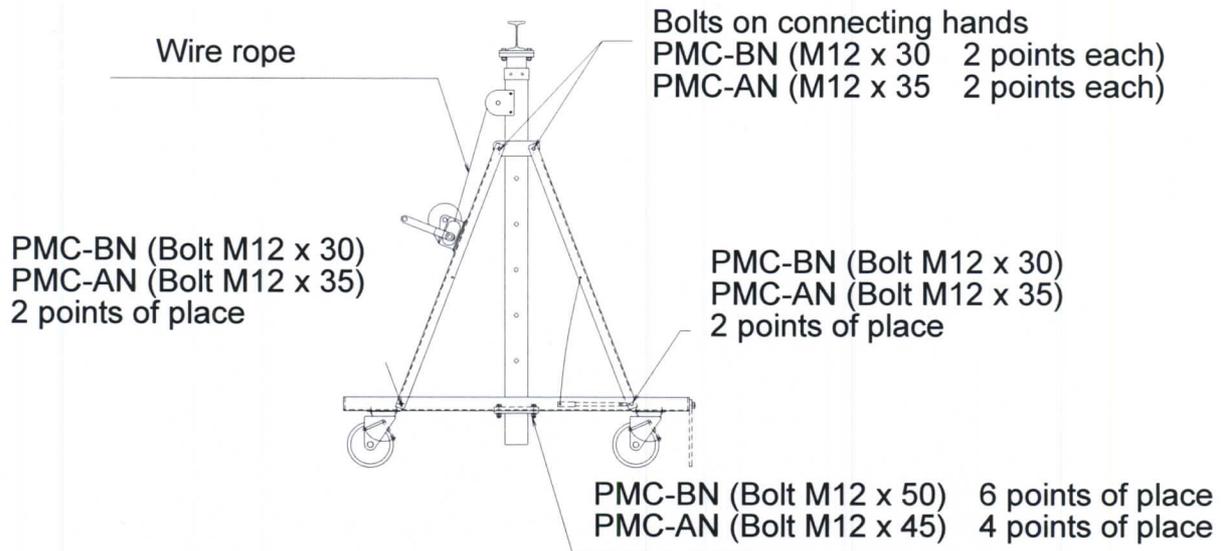
△Caution: As described below in the figure, when you erect the post, the connecting hands on both sides collide with the carriage. So, while fanning them out, two persons are required to insert their end into the prescribed points of place. Be careful not to pinch your fingers or hands when you work on the weighty post and the connecting hands.



- 2) After having inserted the post, the post and then the connecting hands are to be fixed with bolts, nuts, and spring washers.

3) Fasten the post and the upper ends of connecting hands with bolts and nuts.

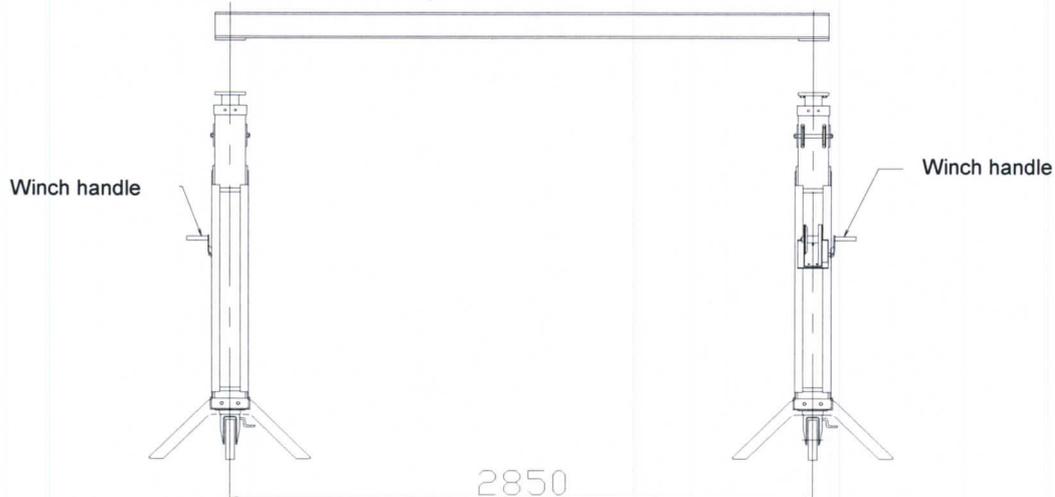
ΔDanger: At time of shipment, the post and the upper ends of connecting hands are so fastened with bolts and nuts as not be departed. Therefore, after erection of the post, never fail to fasten them securely with bolts and nuts.



ΔCaution

- 4) After having fixed the post and the connecting hands to the carriage, check whether the wire rope is loosened or not. **If loosened, rewind it from the start.**
- 5) After completion of the assembly of the posts, erect them around 2850mm away from each other.

Next, align the beam on the upper ends of the posts and fix it on them with bolts and nuts. (Bolt: PMC-BN (M12 x 45) / PMC-AN (M12 x 50))



ΔDanger : Posts have the danger of falling over till the beam is connected to them.

Proceed with the assembly work with enough care to safety while making the arrangements for

the unit to fall over by temporarily fixing it by a crane, etc.

ΔCaution : When connecting the beam to the posts, install them so that the **winch handles turning outside**.

- 6) Since the assembly of the unit is thus completed, check again whether bolts and nuts are securely fastened, and then put markings.

ΔDanger : Ensure that the flange bolts will not be loosened during operation.

Operation with flange bolts loosened may cause serious incidents.

Note: After completion of the assembly, start operating the unit with the assembly plate removed.

Installation of Geared Trolley

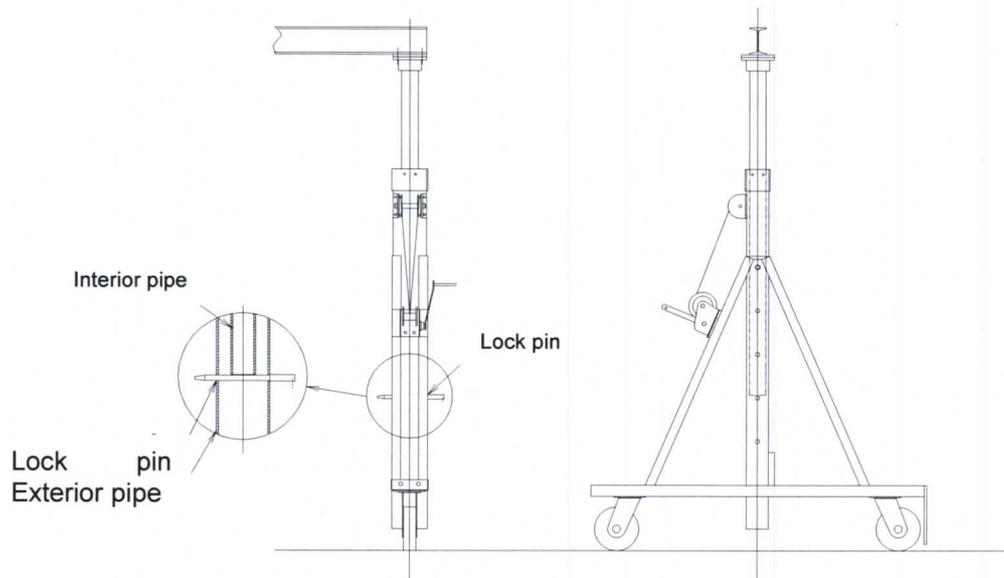
Trolley is to be installed under a stable condition after completion of the assembly of the main unit.

Trolley is to be used according to the instruction manual supplied with it.

ΔDanger: Cautions in Operation

1. You can operate the unit with the assembly plate removed.
2. Lift a work after the four wheels are locked.
3. Do not swing a work to and fro needlessly.
4. Do not move the unit with a work suspended, which has the danger of falling over or breakage.
5. When extending or contracting the posts, two persons are required to simultaneously operate the winches on both sides.
6. Never fail to insert a lock pin into the posts before operation.

Lock pin is to be so inserted as to be placed just below the lower end of the interior pipe.



7. After inserting the lock pins through the posts, **loosen the winch's wire rope**, and use the unit.

Inspection Standard

Inspection before Operation

- (1) Check to see that bolts and nuts are securely fastened.

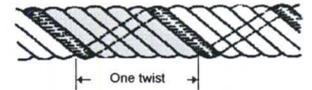
(Visual check: No displacement of markings?)

- (2) Inspection of Wire Rope (Wire used: 6mm in diameter)

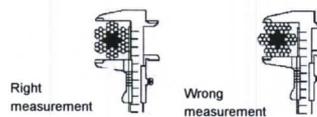
When any of the following conditions occurs, do not use the wire rope and replace it with a new one.

- 1) Whether strands are broken or not

10% of the strands is broken for 1 twist of the rope.



- 2) The decrease in nominal diameter is more than 7%.

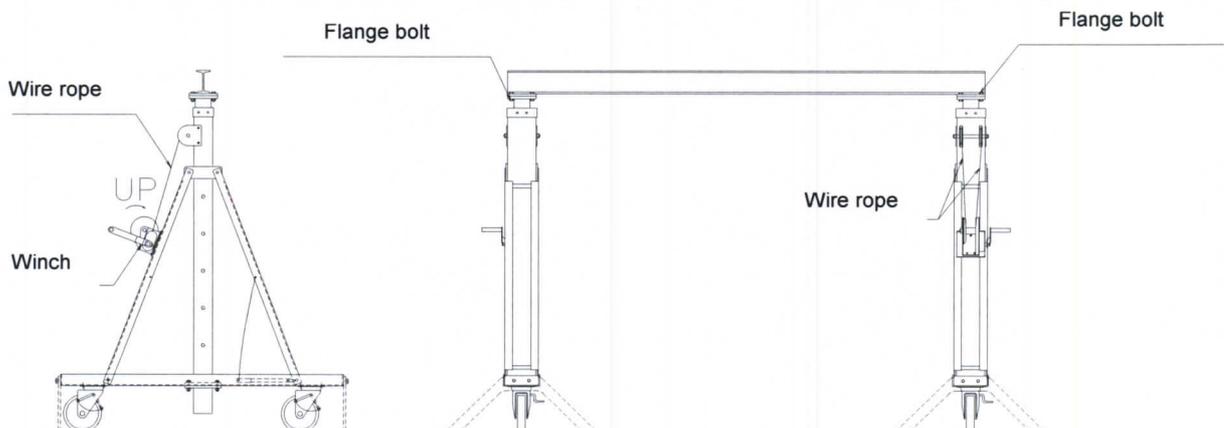


- 3) The wire rope is distorted or kinked.
- 4) The wire is conspicuously deformed.

☆How to Inspect wire rope is according to the wire rope inspection standard of JIS Standard.

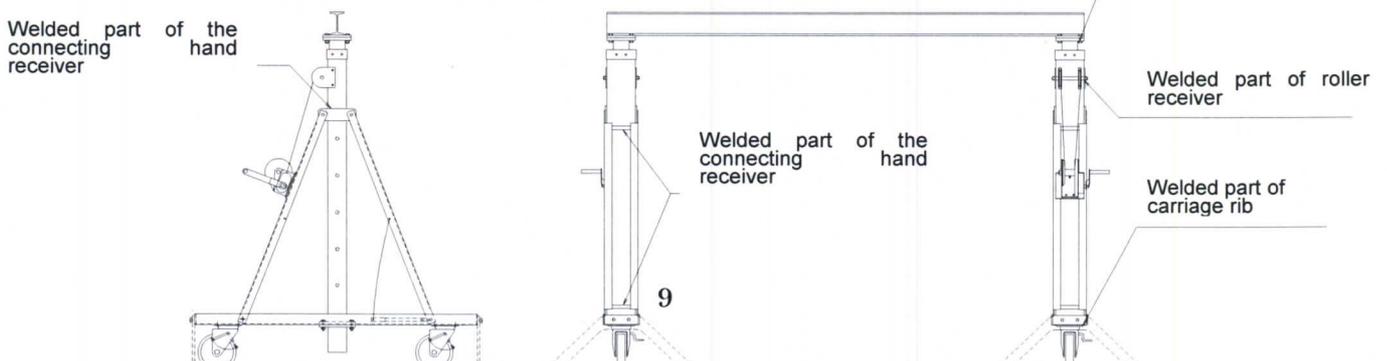
- (3) Check to see that the winches operate properly.

- 1) Check to see that the posts can be normally extended and contracted by operating the winches.

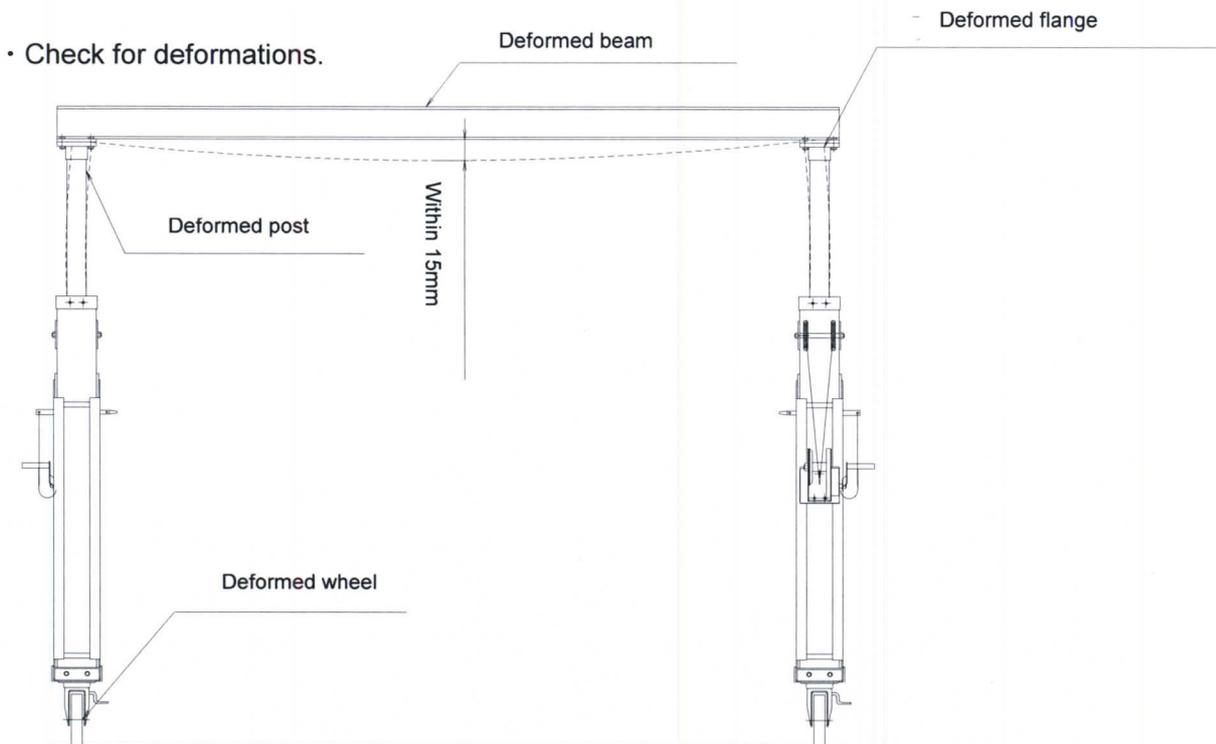


Biannual Inspection

- Check for abnormalities with welded parts.



Biannual Inspection



When you find out abnormalities as the results of inspections of the above points, immediately stop using the unit and ask for the Maker's inspection.

☆ Winches (for extension and contraction of posts)

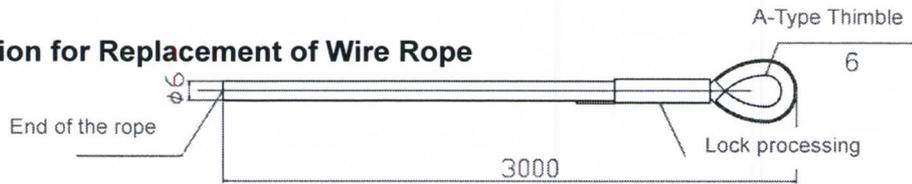
(1) Check for loosened bolts and nuts.

- (i) Check to see that bolts for fixing winches are not loosened.
- (ii) Check to see that bolts and nuts for fixing drum shaft, stoppers, and handles are not loosened.
- (iii) Check to see that C-shaped snap ring for fixing pinion shaft is not departed.

△Danger : Loosened bolts and nuts may directly cause incidents. Securely fasten them for installation or fixation. Further, when bolts and nuts are found to be loosened or C-shaped snap ring is off the groove during operation, immediately stop operation and fasten them or install it and then restart operation.

- (2) Check to see that the wire rope can be smoothly rewound and it is in a normal state.

Specification for Replacement of Wire Rope

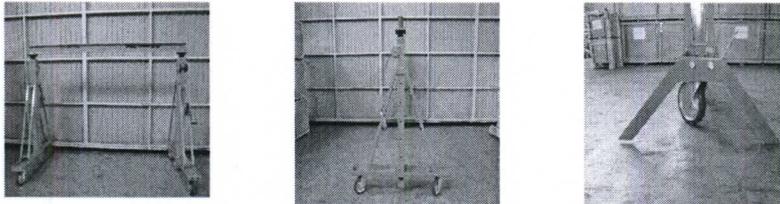


(As regards wire rope prepared by the user, it shall be outside of our guarantee.
Two wire ropes are used for each post.)

Method of Replacement of Wire Rope

Removal of Wire Rope

- 1) Attach the assembly plate to the posts and contract the posts. Then, remove the beam on a stable place. At this time, apply the brake on the wheels so as for the posts not to move.



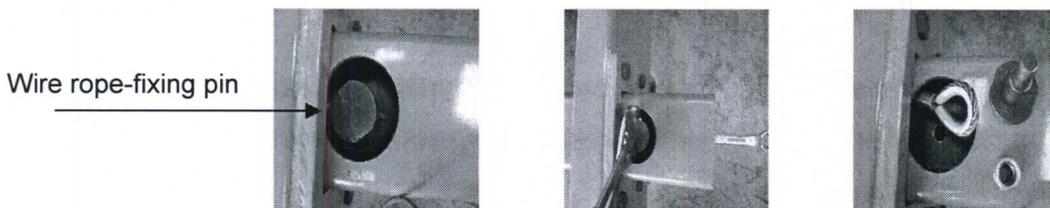
- 2) Reversely rotate the extendable winch to loosen the wire rope, and then remove the wire rope from the winch.



- 3) Remove the assembly plate attached on the post, and then make the unit fall over.



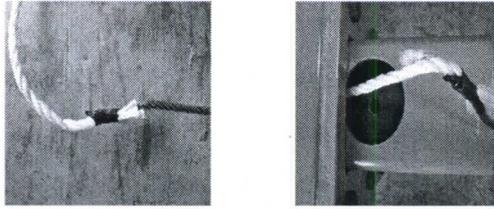
- 4) While grabbing the the pin fixing the wire rope with such a tool as monkey wrench through the opening at lower part of the post, remove the U-shaped nut from inside the rectangular pipe and then the pin fixing the wire rope.



When the pin fixing the wire rope is removed, take out the wire rope through the opening at the lower part of the post.

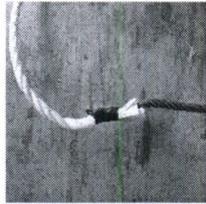
- 5) When you take out the wire rope through the opening at the lower part of the post, never fail to attach a guiding rope (around 4 to 6mm) to the end of the taken-out wire rope for taking in a new wire rope as described in the picture.

At that time, do not take out the whole of the guiding rope attached to the end of the wire rope.

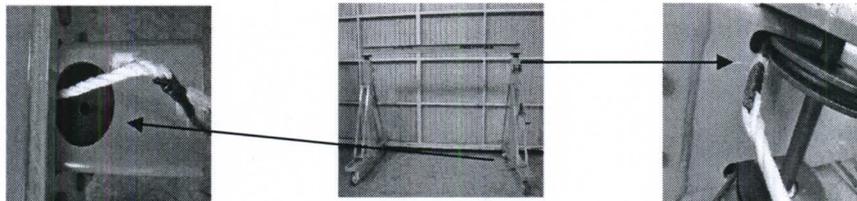


Taking-in of New Wire Rope

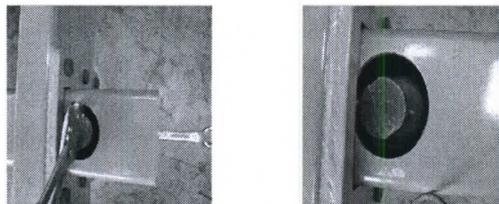
- 1) Remove the guiding rope attached to the end of the taken-out wire rope, and then connect a newly-to-be-replaced wire rope to the guiding rope as described in the picture.



- 2) Draw in the guiding rope so that the new wire rope can be taken out through the roller of the post of the unit.

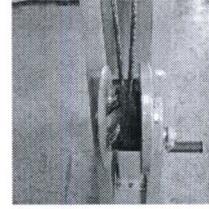


- 3) When the new wire rope is through, in an order contrary to that of removing the older wire rope, while grabbing the pin fixing the wire rope with such a tool as monkey wrench through the opening at the lower part of the unit, fasten the U-shaped nut (M12) inside the rectangular pipe.



- 4) As you removed the wire ropes from the winches, carefully wind the wire ropes around the post-extendable winches evenly across the width.

At that time, check to see that the direction in which wire ropes are wound is right.



Take care for wire ropes not to be wound one-sidedly.

Further, replace the two wire ropes with new ones at the same time.

Items to Be Checked for:

- 1) Check to see that bolts and nuts are securely fastened.
Apply Product No. 262 manufactured by Japan Loctite Co. Ltd. or the counterpart to the assembled parts with bolts and nuts before fastening them tightly.
- 2) Check to see that the wire ropes are rightly in the grooves.
- 3) Check to see that the wire ropes are not kinked.
- 4) Check to see that the wire ropes can be smoothly wound up.
- 5) Check to see that the direction in which the wire ropes are wound up is right.
- 6) Check to see that the posts can be smoothly extended and contracted.

Replacing work is completed when all these are confirmed OK.



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