

OPERATOR'S MANUAL

This manual has been prepared for and is considered part of the

600H-BC/RM Series Cranes

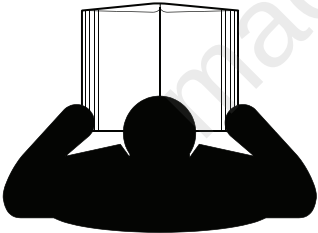
This Manual is divided into the following sections:

SECTION 1	INTRODUCTION
SECTION 2	SAFETY PRECAUTIONS
SECTION 3	CONTROLS AND OPERATING PROCEDURES
SECTION 4	SET-UP
SECTION 5	LUBRICATION PROCEDURE AND CHARTS
SECTION 6	MAINTENANCE CHECKLIST
OPTIONS	ROTATING STEEL PERSONNEL BASKET

NOTICE

The crane serial number is the only method your distributor or the factory has of providing you with correct parts and service information.

The crane serial number is identified on the builder's decal attached to the right side of the turret. **Always furnish crane serial number** when ordering parts or communicating service problems with your distributor or the factory.





WARNING

To prevent death or serious injury:

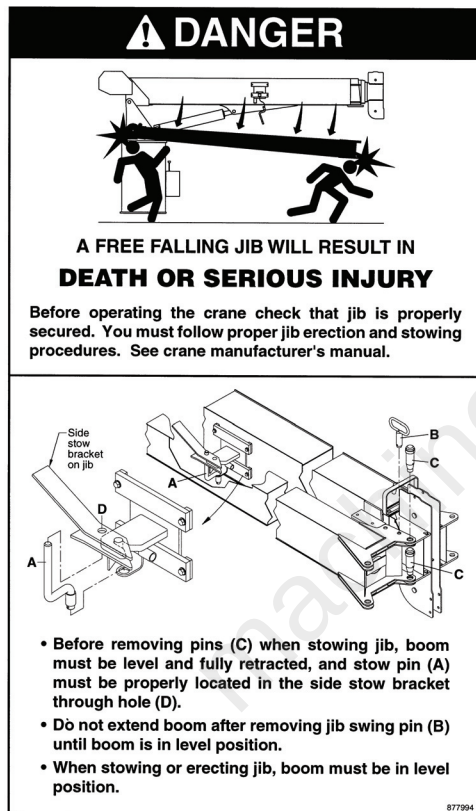
- Avoid unsafe operation and maintenance.
- This crane must be operated and maintained by trained and experienced personnel. Manitowoc is not responsible for qualifying these personnel.
- Do not operate or work on this crane without first reading and understanding Operator's Manual and Rating Plate supplied with crane.
- Store Operator's Manual in holder provided on crane.
- Attach laminated Capacity Charts supplied with crane to chain in operator's cab.
- If Operator's Manual or Capacity Charts are missing from cab, contact your distributor for new ones.



CAUTION

Use caution during this step. The jib is free to swing away from the boom upon boom extension.

10. Using tag line, swing jib into deployed position.
11. Remove cable keeper pins from boom sheave case and jib. Remove hook block. Pivot jib slightly to allow for loadline to be removed from boom sheave case. Remove loadline from boom sheave case and place in an area to minimize possible damage.
12. Pivot jib into place, visually aligning the upper C2 pin holes. Install upper C2 pin and spring clip. A slight hammer strike may be necessary to install pins. Always use proper eye protection during this step.



13. Using jib jack, position jib so that lower C2 pin holes are in alignment and install lower C2 pin and spring clip.
 - a. Remove the jack handle and check that the jack release valve is closed.
 - b. Extend the jack so that the lower C2 pin holes are aligned.
 - c. Install the lower C2 pin and spring clip.
 - d. Open the jack release valve and retract the jack.

14. Using winch function, unspool enough loadline to reeve loadline over jib sheave case. Keep slight tension on loadline to avoid bird caging of loadline on winch drum.
15. Route loadline over jib sheave and install keeper. Install line block to end of loadline.
16. Remove anti-two-block switch and weight/chain assembly and install on jib tip. Be certain to use keeper provided with switch.
17. Disconnect twist lock quick coupler on anti-two-block cord going to boom anti-two-block switch and attach to quick coupler on jib anti-two-block wire on rear of jib between the upper and lower jib ears.
18. Install jib swing pin B and spring clip into jib ears.
19. For manually extendable jibs, pull extension retaining pin E, and extend second section out by pulling on sheave case. The second section jib, as it extends, will hit a mechanical stop that allows for extension pin E installation. Install pin E and spring clip.
20. Make ATB cord connections as required.

Stowing Procedure

1. Using lift function, lower boom so that jib deployment pins C1 and C2 are easily accessible from the ground.

NOTE: When lowering the boom below horizontal, two persons may be required. With the telescope control in neutral, the boom may creep out when below horizontal.

2. For manually extendable jibs, pull extension retaining pin and fully retract extendable 2nd section jib into the 1st section. Retraction of 2nd section may be facilitated by attaching loadline wedge socket to jib nose. Slowly activate the winch up function until the 2nd section is fully retracted.
3. Reinstall extension retaining pin through the 1st and 2nd section jib assembly and install spring clip.
4. Remove loadline from jib sheave case. Place loadline in area to avoid possible damage from stow procedure.
5. Disconnect twist lock anti-two-block wire connector at rear of 1st section jib. Connect twist lock connector to anti-two-block switch connector on boom tip. Move weight/chain assembly to boom tip.
6. Attach tag line to sheave case end of jib.
7. Remove spring clips from pins C2 on both upper and lower jib ears.
8. Remove jib swing pin B from the boom nose.
9. Remove pins C2 from upper and lower jib ears. Do not remove C1 pins at this time. C1 pins will be used as a pivot point to swing jib into stow position. A slight

Daily Inspections

All cable in continuous service must be inspected at the beginning of each work day. Inspect the eye end and length of cable that is used in daily operation. Inspect for abrasion, corrosion, broken wires, and loose or broken servings. Inspect the remainder of the cable length used for daily operations for points showing kinks, sharp bends, or any other evidences of damage or excessive wear.

Monthly Inspections

Inspect the eye end and length of cable normally used in daily operations. Examine the rest of the cable for kinked, crushed or otherwise damaged points.

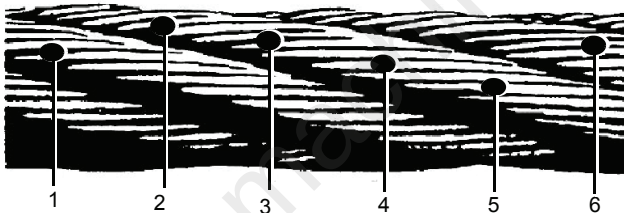
Periodic Inspections

Inspect the eye end of the cable for greater wear than the rest of the cable. If the cable is in good condition, reverse the cable on the drum so that the wear is equalized along the total length of the cable.

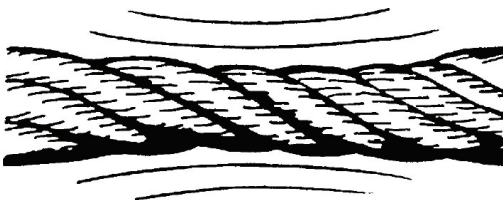
WIRE ROPE REPLACEMENT

It is difficult to determine the exact time for replacement of wire rope (winch cable) since many variable factors are involved. Proper determination of the condition of a rope depends upon the judgment of an experienced person. The following reasons are sufficient for rope replacement:

- Six randomly distributed broken wires in one rope lay or three broken wires in one strand in one lay. The rope is unsafe for further use if there are either three broken wires in one strand (Breaks 2, 3, 4) or a total of six broken wires in all strands in any one lay.

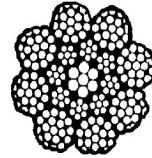


- Wear of 1/3 the original diameter of outside individual wires. Worn rope, usually indicated by flat spots on the outer wires, is unsafe for further use when less than 2/3 the thickness of the outer wire remains.
- Necking down of the rope indicates core failure.



- Kinking, crushing, bird caging, or any other damage resulting in distortion of the rope structure.

- Evidence of heat damage.
- Reductions from nominal diameter of more than 1/64 in. (0.4 mm) for diameters to 5/16 inch (8 mm), 1/32 in. (0.8 mm) for diameters 3/8 inch (9.5 mm) to 1/2 in. (12.7 mm), 3/64 in. (1.2 mm) for diameters 9/16 in. (14.3 mm) to 3/4 in. (19.1 mm) and 1/16 in. (1.6 mm) for diameters 7/8 in. (22.2 mm) to 1-1/8 in. (28.6 mm).
- One outer wire broken at its point of contact with the core of the rope which has worked its way out of, and protrudes or loops out from the rope structure. Additional inspection of this section is required.

**Care of Wire Rope**

Handle wire rope with care to prevent damage to the individual wires which affect the overall strength and performance of the rope. Do not allow the formation of kinks, because this displaces the strands of wire from their original position and relation to each other causing severe bending and unequal tensions in the strands. This distortion and wire displacement cannot be corrected even under high tension and a permanent weak point remains in the rope. Displaced or raised wires indicate a previous kink, but does not show the damaged condition of the inner rope wires.

Do not pull wire rope over a non-rotating support such as a spindle bar, a pin, or an inoperative sheave. This practice causes severe abrasion to the outer strand wires. A properly operating sheave or snatch block is essential to safety and long service life of the rope.

Do not use worn sheaves or sheaves with flat grooves because they do not provide sufficient support to prevent the distortion and flattening of the rope. Sheaves with nicked or broken flanges can cut or otherwise damage the rope.

An even distribution of rope coils over the winch drum is essential to smooth operation. This prevents the rope from cutting down through or crushing other coils on the drum resulting in damage to and difficulty in unwinding the rope.

Replacement Cable

Exercise care in selecting a replacement cable for the winch. The cable strength requirements are shown on the crane load chart. The types of cable are optional with 6 x 25 and Dyform being the most common. A high strength, rotation resistant cable is preferred and is furnished as standard by National Crane. This cable eliminates single part line load spin and prolongs cable life. It also eliminates load block spin up when multi-part reeving is used.

LMI Override

The HCA/LMI Override toggle switch is used to allow the Winch Up, Boom Down, and Tele Extend functions to be operated at the crane's lowest, or idle setting.

Once the crane is returned to a safe operating condition, all functions will be allowed at the maximum throttle setting without the use of the HCA/LMI toggle switch.

Normal Remote Control Operation Shut Down.

1. Stow the Boom.
2. Hold the Engine Switch in the "OFF" until the truck engine stops.
3. Place the Radio Remote Transmitter Power switch in the "OFF" position
4. In the Truck Cab Turn Crane Power and Remote/ SLP power switches "OFF" -.
5. Start truck from inside truck cab.
6. Stow outriggers.

7. Disengage P.T.O.

The Truck is now ready for Travel.

Remote Control Battery

Power for the Remote Control hand held transmitter is provided by 9 volt dc battery (disposable or rechargeable) Battery life 1 to 6 months, depending on use.

Battery Replacement

The battery is accessed through a black plastic cover plate on the rear of the Remote Control.

1. To change the battery insert a small straight blade tool in the SMALL slot and gently pry the cover loose.

NOTE: Do not attempt to open the cover by prying the long slot. Doing so will distort and/or break the battery cover.

2. Replace the battery.
3. Put the cover in place and gently push in on the cover until it snaps into place.



Battery Compartment Cover

Full Version Available

National Crane 600H-BC/RM Boom Truck Operator Manual

National Crane 600H-BC/RM boom truck operator manual covering controls, safe operation, setup and travel prep. 80-page searchable PDF. Instant PDF download.

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