

OPERATOR'S MANUAL

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

500E2 Telescoping Crane

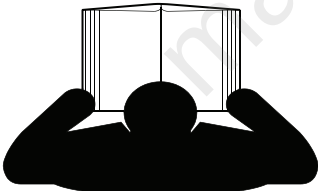
This Manual is divided into the following sections:

SECTION 1	INTRODUCTION
SECTION 2	SAFETY INFORMATION
SECTION 3	OPERATING CONTROLS AND PROCEDURES
SECTION 4	SET-UP AND INSTALLATION
SECTION 5	LUBRICATION
SECTION 6	MAINTENANCE CHECKLIST

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 crane frame. ***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. National Crane is not responsible for qualifying these personnel.
- Do not operate or work on this crane without first reading and understanding Operator's Manual and Load Chart supplied with crane.
- Store Operator's Manual in holder provided on crane.

You, the operator, are the only one who can be relied upon to assure the safety of yourself and those around you. Be a PROFESSIONAL and follow the RULES of SAFETY.

REMEMBER, failure to follow just one safety precaution could cause an accident that results in death or serious injury to personnel or damage to equipment. You are responsible for the safety of yourself and those around you.

IMMEDIATELY report all accidents, malfunctions, and equipment damages to your local National Crane distributor. Following any accident or damage to equipment, the local National Crane distributor must be immediately advised of the incident and consulted on necessary inspections and repairs. Should the distributor not be immediately available, contact should be made directly with Manitowoc Crane Care. The crane must not be returned to service until it is thoroughly inspected for any evidence of damage. All damaged parts must be repaired or replaced as authorized by your local National Crane distributor or Manitowoc Crane Care.

OPERATOR'S QUALIFICATIONS



An untrained operator subjects himself and others to death or serious injury.

YOU MUST NOT OPERATE THIS MACHINE UNLESS:

- You have been trained in the safe operation of this machine.
- You read, understand, and follow the safety and operating recommendations contained in the crane manufacture's manuals, your employers work rules and applicable government regulations.
- You are sure that all safety signs, guards, and other safety features are in place and in proper condition.

OPERATOR'S INFORMATION

You must read and understand the Operator's Manual and the Load Chart before operating the crane.

You must view and understand the safety CD titled "National Crane Safety" supplied with your new National Crane product.

The Operator's Manual and Load Chart must be readily available to the operator at all times and must remain with the crane while the crane is in use.

Ensure that all personnel working around the crane are thoroughly familiar with safe operating practices. You must be thoroughly familiar with the location and content of all placards and decals on the crane.

You must be familiar with the regulations and standards governing cranes and their operation. Work practice requirements may vary slightly between government regulations, industry standards, and employer policies so a thorough knowledge of all such relevant work rules is necessary.

OPERATIONAL AIDS

An operational aid is an accessory that provides information to facilitate operation of a crane or that takes control of particular crane functions without action of the operator when a limiting condition is sensed.

Operational Aids include, but are not limited to the following:

- Hydraulic Capacity Alert System (HCAS)
- Load Moment Indicator (LMI)
- Anti-Two Block Prevention/Warning Device
- Load Indicator
- Rated Capacity Limiter
- Rated Capacity Indicator
- Boom Angle Indicator
- Crane Level Indicator
- Boom Length Indicator
- Radius Indicator

If any operational aid is malfunctioning follow the guidance provided in ASME B30.5-2004 Section 5-3.2.1.2 (b), which is reprinted below:

(b) When operational aids are inoperative or malfunctioning, the crane and/or device manufacturer's recommendations for continued operation or shutdown of the crane shall be followed until the problems are corrected. Without such recommendations and any prohibitions from the manufacturer against further operation, the following requirements shall apply:

NOTE: Crane must be reeved for 2 part to lift the 9,000 lbs (4082 kg) load.

Two part winch capacity is 15,400 lbs (6985 kg)

After reeving for 2 part line the new Step 1 calculation is the weight of load and load handling equipment.

Load = 9000 lb (4082 kg)
 1 Part Load Block = 200 lb (90.7 kg)
 Sling = 50 lb (22 kg)
 Total Load = 9250 lb (4195 kg)

Example 3

A load of 1500 lbs (680 kg) is to be lifted from the roof of a building at a radius of 30 ft (9.14 m) and a height of 80 ft (24.38 m) and placed on the ground on the other side of the truck at a radius of 40 ft (12.19 m).

1. Weight of load and load handling equipment.

Load = 1500 lb (680 kg)
 1 Part Load Block = 150 lb (68 kg)
 Sling = 30 lb (14 kg)
 Total Load = 1680 lb (762 kg)

2. Starting Radius Given = 30 ft (9.14 m)
3. Ending Radius Given = 40 ft (12.19 m)
4. Refer to Crane load chart.

To reach the load on the roof, the jib must be utilized to clear the roof with the load.

CAUTION

Do not attempt to deploy the jib until reading and understanding jib operation information found later in this section of the manual.

Both the retracted 23' jib length and extended 41' jib length have the necessary capacity at a 30' (9.14 m) radius. Only the retracted 23' jib has the capacity at the 40' (12.19 m) radius to accomplish the task.

Starting Point: With the 23 ft (7 m) jib deployed and the boom fully extended, the capacity is 2,450 lbs (1111 kg) at a 30 ft (9.14 m) radius and boom angle of 72.1°.

Ending Point: With the main boom still fully extended, the capacity is 1,800 lbs (816 kg) at a radius of 40 ft (12.19 m) and boom angle of 65.4°.

NOTE: The capacity of the jib remains the same even with the main boom retracted. Operate with jib by radius when main boom is fully extended and operate with jib by boom angle when main boom is not fully extended. Do not exceed rated jib capacities at any reduced boom lengths.

5. Refer to winch load chart.

The capacity of a 1 part lines 7700 lbs (3492 kg) which is well above the 1,680 lbs (762 kg) to be lifted.

NOTE: The HCA Load Range Gauge does not provide accurate indication of overload conditions when operating with a jib deployed. The HCA will not prevent the crane from being operated in an overload condition. The Jib is equipped with a jib load limiting device which will prevent the jib from being operated in an overload condition.

The operator should proceed to lift the load as smoothly as possible.

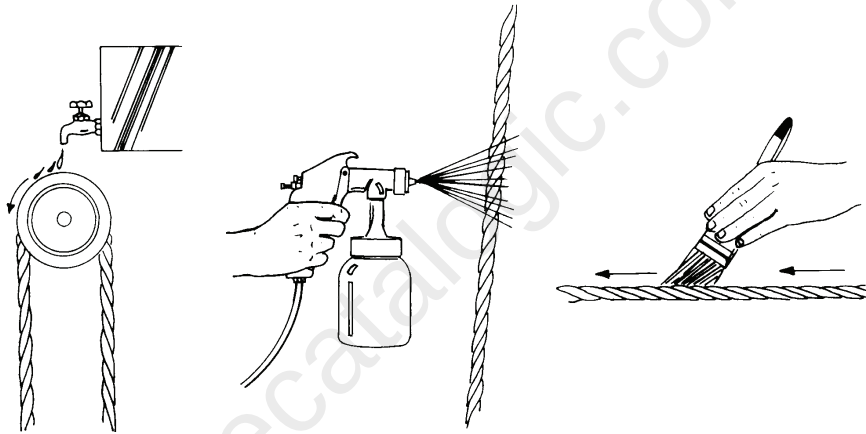
3. It should be of a viscosity capable of penetrating the interstices between wires and strands.
4. It should not be soluble in the medium surrounding it under the actual operating conditions (i.e. Water).
5. It should have a high film strength.
6. It should resist oxidation.

Before applying lubrication, accumulations of dirt or other abrasive material should be removed from the rope. Cleaning can be accomplished by using a stiff wire brush and solvent, compressed air, or live steam. Immediately after the wire rope is cleaned, it should be lubricated. Many techniques may be used to include:

- bath

- dripping
- pouring
- swabbing
- painting
- pressure spray

Whenever possible, the lubricant should be applied at the top of a bend in the rope, because at that point the strands are spread by bending and are more easily penetrated. There should be no load on the rope while it is being lubricated. It should be noted, the service life of wire rope will be directly proportional to the effectiveness of the method used and amount of lubricant reaching the working parts of the rope.



DESCRIPTION



CAUTION

- Boom tip attachment can contact jib in stowed position when boom is fully retracted.**
- Contact can cause damage to boom extension system and jib stow system.**
- Boom must be left extended .5 ft (.2m) to prevent contact.**
- Boom attachment must be removed for retracted boom lifting operations.**

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One Person Basket

There are two one person basket options available for National Cranes. The B1-S and the 2B1-S-Dual basket options. With the B1-S configuration, one single person basket is attached to the boom. With the 2B1-S-Dual configuration, two single person baskets are attached to the boom.

The one person steel basket (Figure O-4) can be attached to either the tip of the boom or the tip of the jib for the purpose of lifting personnel and their related work equipment to elevated working heights. The maximum capacity of the basket is 300 pounds when attached to either the tip of the boom or the tip of the jib. Regardless of the basket capacity, the total weight of the lifted load including rigging, basket, personnel, tools, and material shall not exceed 50 percent of the cranes rated load capacity. The maximum occupancy rating in all cases is one person.

The basket is equipped with a manually applied brake to keep basket from swinging when the basket is being loaded or after the desired work position is reached. The brake is intended to be disengaged when the basket is raised to the work position so that the basket hangs freely within 10 degrees of level until the work position is reached.



FIGURE O-4

A safety harness (Figure O-5) is provided for the basket occupant with a harness attachment link located near the basket pivot point. A gate is located at the front of the basket and is lowered for ease of entrance and exit to the basket. The gate must be in the up position when the basket is occupied.

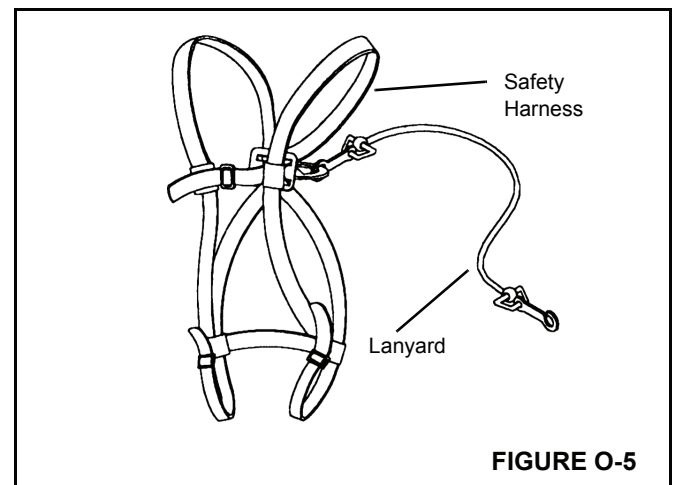


FIGURE O-5

Full Version Available

National Crane 500E2 Boom Truck Operator Manual

National Crane 500E2 boom truck operator manual covering controls, safe operation, setup and daily checks. Searchable PDF, 92 pages. Instant PDF download.

VIEW THE FULL MANUAL

<https://machinecatalogic.com/national-crane-500e2-boom-truck-operator-manual/>

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