GROVE®
CRANE

A GROVE WORLDWIDE COMPANY

OPERATOR'S AND SAFETY HANDBOOK

RT500D & RT500DXL Series

S/N_____

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Death or serious injury could result from being crushed by moving machinery and revolving tires.

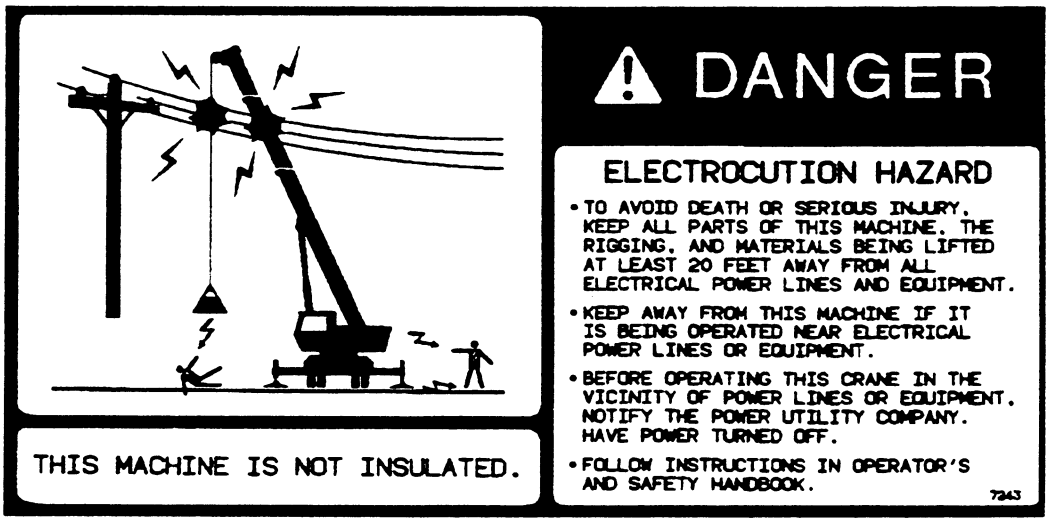
Only the crane operator shall occupy the crane when traveling or in operation.

NEVER exceed the rated capacity shown on the load chart. Always check the load chart to ensure the load to be lifted at the desired radius is within the rated capacity of the crane.

Never interfere with the proper functioning of operational aids or warning devices.

For detailed information concerning the operation and maintenance of the load moment indicating system installed on the crane see the manufacturer's manual supplied with the crane.

ELECTROCUTION HAZARD



To avoid death or serious injury, keep all parts of this machine, the rigging, and materials being lifted at least twenty (20) feet away from all electrical power lines and equipment.

Keep all personnel away from this machine if it is being operated near electrical power lines or equipment.

Before operating this crane in the vicinity of electrical power lines or equipment, notify the power utility company. Obtain positive and absolute assurance that the power has been turned off.

This machine is NOT INSULATED. Always consider all parts of the load and the crane, including the wire rope, hoist cable, pendant cables and tag lines, as conductors.

Most overhead power lines ARE NOT insulated. Treat all overhead power lines as being energized unless you have reliable information to the contrary from the utility company or owner.

The rules in this handbook must be followed at all times, even if the electrical power lines or equipment have been de–energized.

Exercise care when servicing the hydraulic system of the crane, as pressurized hydraulic oil can cause serious injury. The following precautions must be taken when servicing the hydraulic system:

1. Follow the manufacturer's recommendations when adding oil to the system. Mixing the wrong fluids could destroy seals, causing machine failure.

2. Be certain all lines, components and fittings are tight before resuming operation.

3. When checking for suspected leaks, use a piece of wood or cardboard and wear appropriate personal protective equipment.

4. Never exceed the manufacturers recommended relief valve settings.

TIRES

Inspect the tires for nicks, cuts, imbedded material and abnormal wear.

Ensure all lug nuts are properly torqued.

Ensure pneumatic tires are inflated to the proper pressure (Refer to the Tire Inflation Decal on the crane). When inflating tires, use a tire gauge, clip–on inflator, and extension hose which will permit standing clear of the tire while inflating.

WIRE ROPE

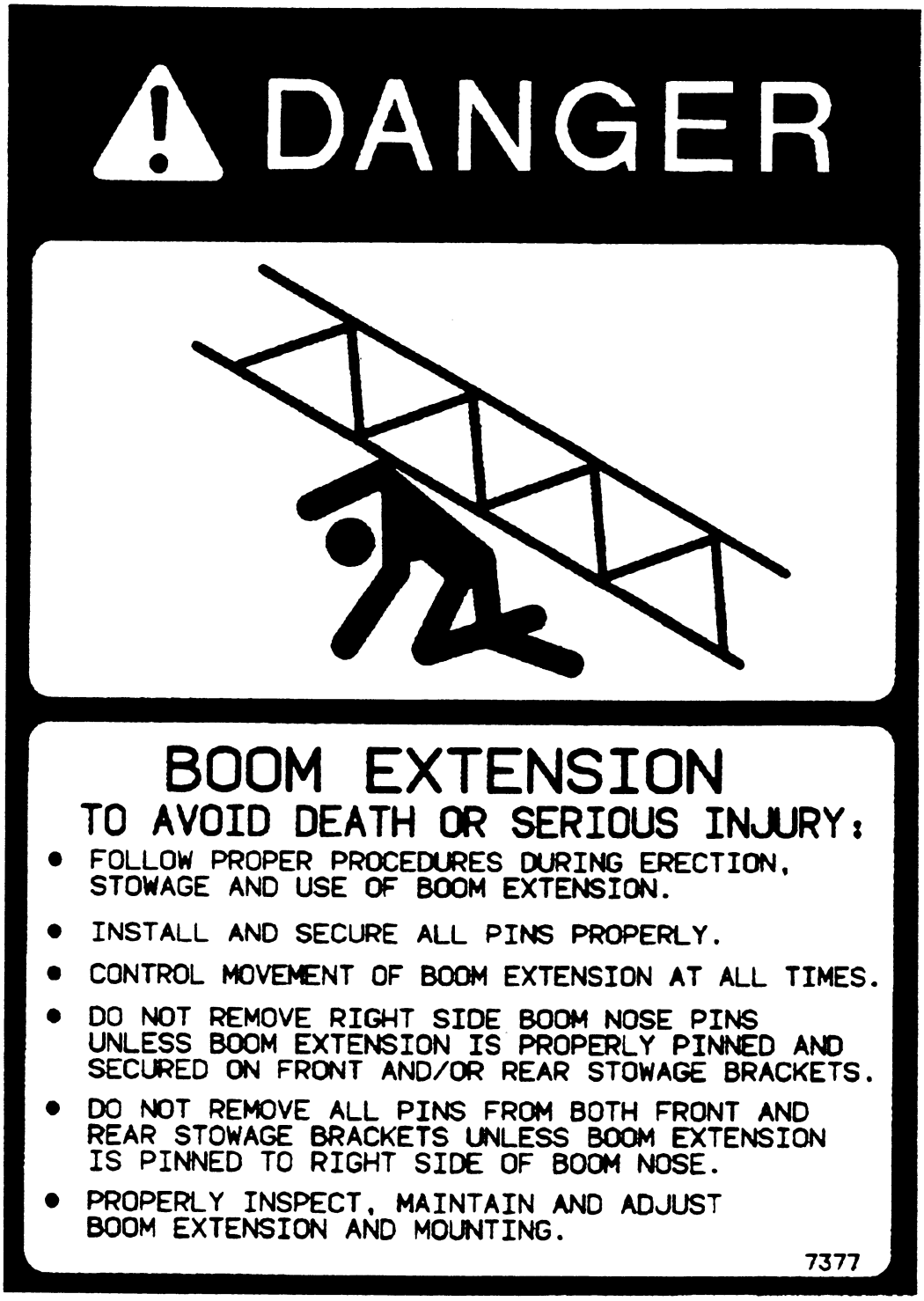
Use ONLY the wire rope specified by Grove as indicated on the crane's load capacity chart. Substitution of an alternate wire rope may require the use of a different permissible line pull and, therefore, require different reeving.

Always make daily inspections of the wire rope, keeping in mind that all wire rope will eventually deteriorate to a point where it is no longer usable. Wire rope shall be taken out of service when any of the following conditions exist:

1. For rotation resistant running ropes – more than two (2) broken wires in a length of rope equal to six(6) times the rope diameter, or more than four (4) broken wires in a length of rope equal to thirty (30) times the rope diameter.

2. For running ropes other than rotation resistant – six (6) broken wires in one rope lay or three (3) broken wires in one strand.

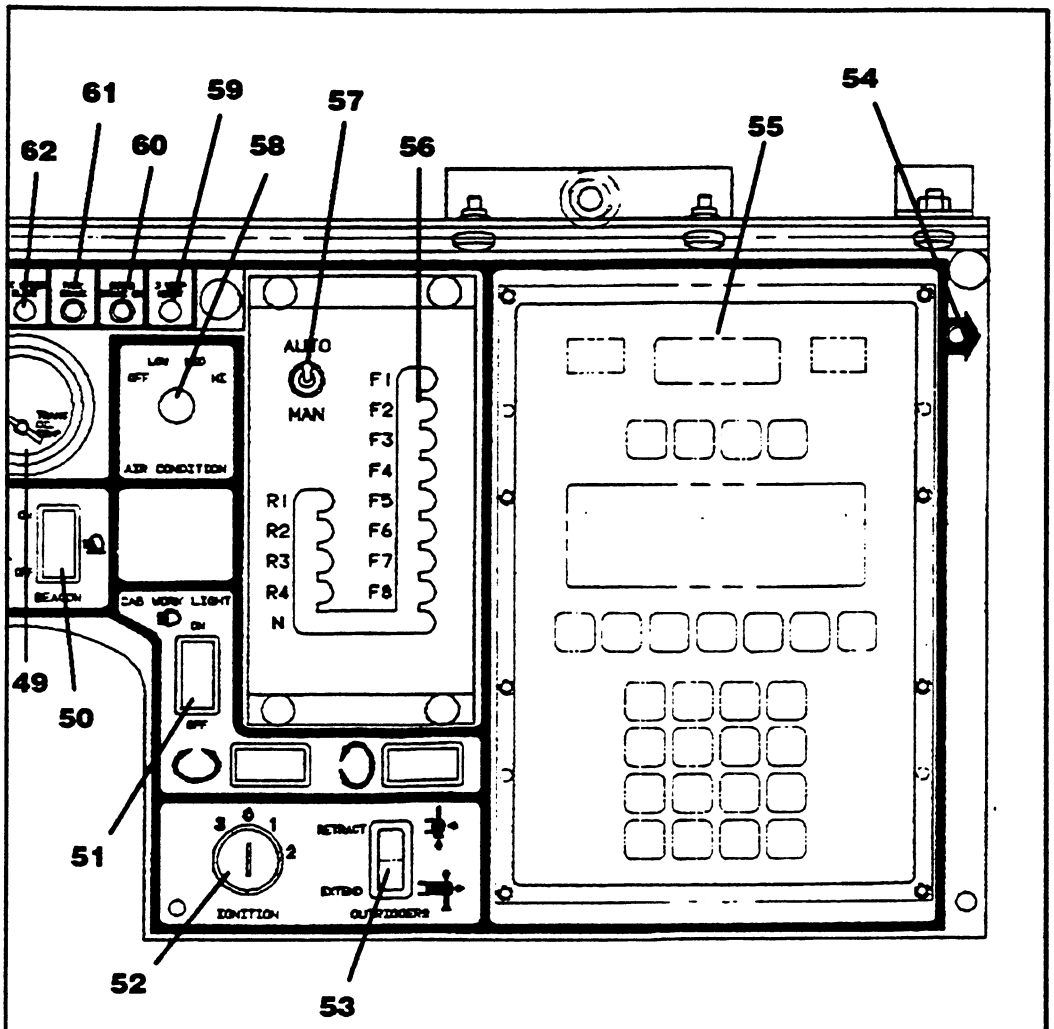
BOOM EXTENSION/JIB



To avoid death or serious injury, follow proper procedures during erection, stowage and use of the boom extension/jib.

Install and secure all pins properly.

Control movement of boom extension/jib at all times.



49. Transmission Oil Temperature Gauge
50. Beacon Light Switch
51. Cab Work Light Switch
52. Ignition Switch
53. Outrigger Extension/Retraction Switch
54. Right Turn Signal Indicator
55. LMI Console
56. Transmission Shift Control
57. Transmission Shift Control Switch
58. Air Conditioner Control
59. Third Wrap Indicator Light
60. Swing Brake On Indicator
61. Park Brake Indicator
62. HI Speed Glide Engaged Indicator

DETAIL B

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Cab Controls and Indicators (Sheet 6 of 6)

LEFT TURN SIGNAL INDICATOR

The left turn signal indicator (35) is located on the left side of the front console panel. It is a green light that flashes when the turn signal lever is pushed down.

CAB INTERIOR LIGHT (NOT SHOWN)

The cab interior light is located on the right side of the cab above the window and provides illumination of the cab. The light is controlled by a switch on the light.

TURNTABLE GREASER BUTTON

The turntable greaser button (66) is located on the right armrest. Pushing the switch activates the bearing greaser pump to pump grease to the turntable bearing.

ARMREST ADJUSTMENT LEVER

The armrest adjustment lever (64) is located at the front of each armrest. When the adjustment lever is pushed, the armrest can be pulled out or pushed in to a length that is suitable to the operator.

SKYLIGHT WIPER SWITCH

A skylight wiper is provided to remove moisture from the skylight. The wiper (SKYLIGHT) is controlled by a switch (38) on the left side of the front console. The switch has four positions; off, on, low, and high. The on position consists of an operating range for variable intermittent operation. In addition, pushing the switch energizes the motor on the windshield washer pump assembly in the skylight washer fluid bottle. Positioning the switch to low energizes the wiper motor in low speed and positioning it to high energizes the motor for high speed. Positioning the switch to off stops the motor and causes the automatic park function of the wiper motor to return the wiper blade to the parked position.

WINDSHIELD WIPER SWITCH

The WINDSHIELD wiper switch (39) is located on the left side of the front console. The switch has four positions; off, on, low, and high. The on position consists of an operating range for variable intermittent operation. In addition, pushing the switch energizes the motor on the windshield washer pump assembly in the windshield washer fluid bottle. Positioning the switch to low energizes the wiper motor in low speed and positioning it to high energizes the motor for high speed. Positioning the switch to off stops the motor and causes the automatic park function of the wiper motor to return the wiper blade to the parked position.

BUBBLE LEVEL INDICATOR

The bubble lever indicator (7) is located on the right side of the cab. The indicator provides the operator with a visual indication for determining the levelness of the machine.

2. Ensure the swingaway, if so equipped, is properly stowed and secured.

3. Swing the boom to over–the–front and lower the boom to slightly above horizontal.

4. Position the SWING BRAKE switch on the control console to ON and engage the swing lock by pushing down on the handle.

5. Remove the hook block and/or headache ball from the hoist cable(s) and stow securely before traveling or ensure the hook block or headache ball is properly secured to the tie down provided for that purpose.

6. Ensure the outrigger stabilizers and outriggers are fully retracted and the floats are removed.

7. Ensure all four stabilizer floats are properly stowed.

8. Ensure the CRANE FUNCTION POWER switch is in the OFF position.

STEERING

Steering is accomplished by the steering wheel and the rear steer control switch. These controls, used singly or together provide front wheel steering, rear wheel steering, four–wheel steering, and crabbing capabilities.

Front Wheel Steering

Conventional front wheel steering is accomplished with the steering wheel. This method of steering should always be used when traveling at higher speeds.

Rear Wheel Steering

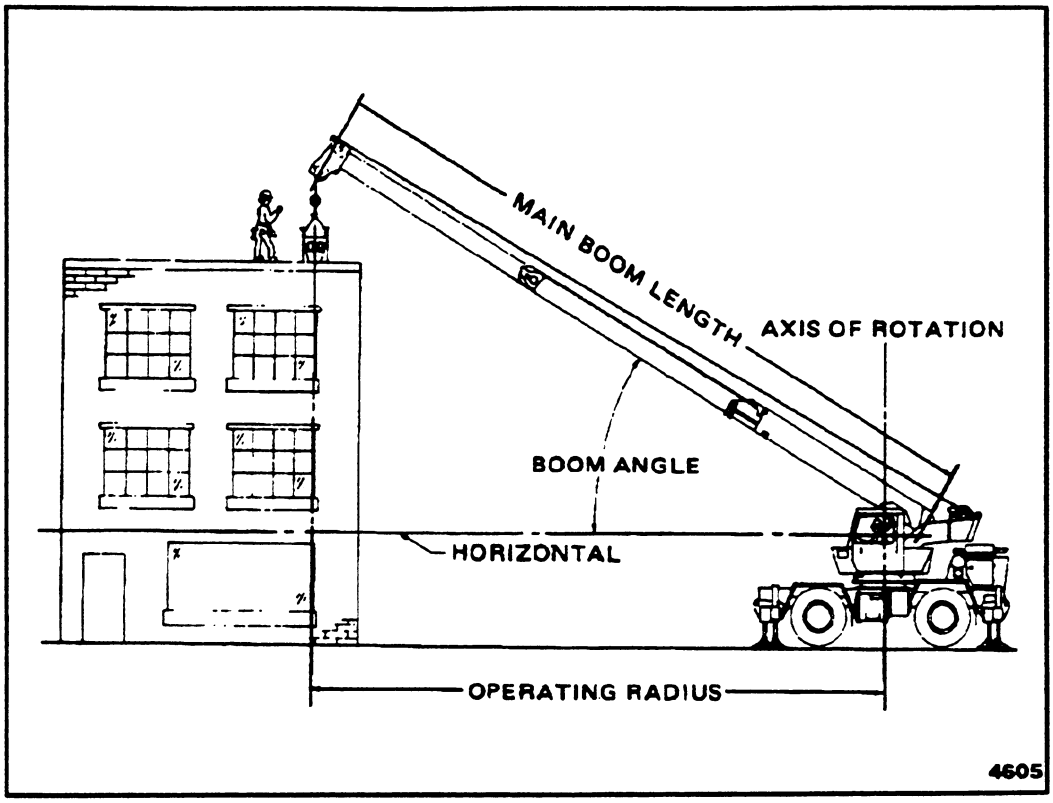
DANGER

OPERATE THE REAR STEER ONLY FOR ADDED JOB SITE MANEUVERABILITY.

Rear wheel steering is controlled by a REAR STEER control switch. Actuating the switch to the desired position activates the rear steer cylinders, thereby steering the machine in the selected direction.

Four Wheel Steering

Four–wheel steering is accomplished by using both the steering wheel and the REAR STEER control. Depending upon which direction the operator wishes to travel, the REAR STEER control switch is positioned to left or right when the steering wheel is turned left or right. This method of steering allows the machine to turn or maneuver in close, restricted areas.



Terms To Know

The load chart contains a large amount of information, which must be thoroughly understood by the operator.

The capacity charts are divided into capacities limited by structural strength and capacities limited by stability. This is shown by the bold line across the chart. Capacities above the line are limited by structural strength and capacities below the line are limited by machine stability.

The chart shows the radius of the load in a column at the left. The radius is the distance between the centerline of rotation of the crane and the center of gravity of the load. Various boom lengths are listed across the top, ranging from fully retracted to fully extended and with the swingaway extension in use. The boom angle (in degrees) required for the given lift is shown in parenthesis below the maximum total weight which can be lifted. Note that the boom lengths in between the increments shown should always be treated as if the boom was extended to the next longer length. For example, if the load chart has capacities for 48 foot and 54 foot boom lengths and the actual length of the boom in use is 50 feet, then the maximum capacity will be listed under the 54 foot boom length because the boom is beyond 48 feet in length.

Another important section of the load chart is the range diagram. The range diagram illustrates the tip height which can be achieved at each boom length, angle, and radius. If the operator knows the radius required for a specific lift and the tip height necessary, he can calculate the required boom length and angle needed

LOWERING AND RAISING THE CABLE

DANGER

BEFORE LOWERING OR RAISING THE CABLE (LOAD), ENSURE THE AREA BENEATH THE LOAD IS CLEAR OF ALL OBSTRUCTIONS AND PERSONNEL.

DANGER

WHEN STARTING OR STOPPING THE HOIST, DO NOT JERK THE CONTROL LEVER. JERKING THE LEVER CAUSES THE LOAD TO BOUNCE, WHICH COULD RESULT IN POSSIBLE DAMAGE TO THE CRANE.

NOTE

When the load is stopped at the desired height, the automatic brake will engage and hold the load as long as the control lever remains in neutral.

Lowering The Cable

To lower the cable, the MAIN hoist or AUX hoist control lever is pushed forward, away from the operator, to the down position and held until the hook or load is lowered to the desired height.

Raising The Cable

To raise the cable, the MAIN hoist or AUX hoist control lever is pulled back, toward the operator, to the up position and held until the hook or load is raised to the desired height.

16. Boom Pivot Shaft.

NOTE

When greasing the boom pivot shaft, better distribution of grease within the shaft is obtained if the weight of the boom is removed from the shaft. If this is not possible, slowly elevate and lower the boom while pumping grease into the fitting.

Lube Type - EP-MPG
Lube Interval - 500 hours or 12 months
Lube Amount - Until grease extrudes
Application - 2

17. Hoist.

Lube Type - EPGL-5H
Lube Interval - 500 hours or 12 months
Lube Amount - Capacity 16 quarts (15.1 liters)
Application - 1/2

18. Cable Follower/Idler Assembly.

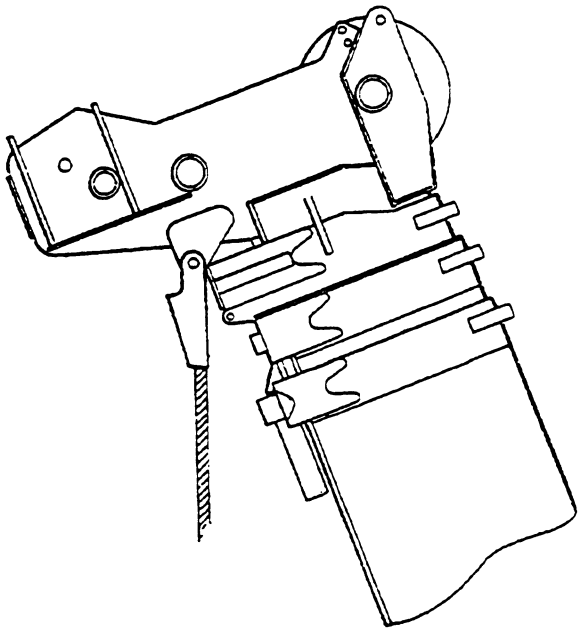
Lube Type - EP-MPG
Lube Interval - 500 hours or 12 months
Lube Amount - Until grease extrudes
Application - 3/6

NOTE

On machines with gearboxes having a square mounting plate, items 19.A. and 20 are applicable. On machines with gearboxes having round mounting plates and with serial numbers starting before 07980001, items 19.A. and 19.B. are applicable. On machines with gearboxes having round mounting plates and with serial numbers starting after 07980001, item 19.A. is applicable.

Do not mix components from different manufacturers. The fitting of the wedge (with rope) in the socket should always be checked at the time of assembly.

When assembly is complete, the boom should be raised to a working position and a load suspended to firmly seal the wedge and rope into the socket before the crane is used operationally.



CAUTION

IF THE SOCKET IS NOT POSITIONED WITH THE FLAT FACE TOWARDS THE BOOM SECTIONS, STRUCTURAL DAMAGE WILL OCCUR.

When anchoring the socket to the boom, ensure the flat face of the socket is in position as shown towards the boom sections.