

USTCTM

Incorporated

Operating and Safety Manual

Models

1000JBT 1250JBT

1400JBT 1410JBT

1500JBT 1700JBT



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FORWARD


The purpose of this manual is to provide the customer with the operating procedures essential for the promotion of proper machine operation for its intended purpose. It is important to over-stress proper usage. All information in this manual should be **READ** and **UNDERSTOOD** before any attempt is made to operate the machine.

SINCE THE MANUFACTURER HAS NO DIRECT CONTROL OVER MACHINE APPLICATION AND OPERATION, CONFORMANCE WITH GOOD SAFETY PRACTICE IN THIS AREA IS THE RESPONSIBILITY OF THE USER AND HIS OPERATING PERSONNEL.

ALL PROCEDURES HEREIN ARE BASED ON THE USE OF THE MACHINE UNDER PROPER OPERATING CONDITIONS, WITH NO DEVIATIONS FROM THE ORIGINAL DESIGN. ALTERATION AND/OR MODIFICATION OF THE MACHINE IS STRICTLY FORBIDDEN WITHOUT WRITTEN APPROVAL FROM JLG INDUSTRIES, INC.


REMEMBER, EQUIPMENT IS ONLY AS SAFE AS THOSE WHO OPERATE IT!

Since safety of personnel and proper use of the machine are of primary concern, statements are used throughout this manual to emphasize certain areas. The following definitions indicate how a statement will appear in this manual.

 Whenever this symbol is seen in this manual or on the machine, personnel safety is a concern. Take time to read and understand these statements!

 **DANGER: INDICATES AN IMMINENTLY HAZARDOUS SITUATION WHICH, IF NOT AVOIDED, WILL RESULT IN DEATH OR SERIOUS INJURY.**

 **WARNING: INDICATES A POTENTIALLY HAZARDOUS SITUATION WHICH, IF NOT AVOIDED, COULD RESULT IN DEATH OR SERIOUS INJURY.**

 **CAUTION: INDICATES A POTENTIALLY HAZARDOUS SITUATION WHICH, IF NOT AVOIDED, MAY RESULT IN MINOR OR MODERATE INJURY. IT MAY ALSO BE USED TO ALERT AGAINST UNSAFE PRACTICES.**

IMPORTANT: Indicates a situation which may cause machine damage if not correctly followed.

Note: Provides information which may be of special interest.

FOREWORD

WARNING

FEDERAL OSHA REGULATIONS CONCERNING MAINTENANCE, INSPECTION, AND USE OF THIS CRANE ARE COVERED IN 29CFR, PART 1910.180 AND 29CFR, PART 1926.550. YOU AND YOUR EMPLOYER ARE RESPONSIBLE FOR THE SAFE OPERATION OF THIS CRANE AS PRESCRIBED IN THE APPLICABLE SECTIONS OF THE ABOVE OSHA REGULATIONS. IT IS ABSOLUTELY MANDATORY THAT YOU BE FAMILIAR WITH AND UNDERSTAND THE REGULATIONS. CONSULT YOUR EMPLOYER/SUPERVISOR REGARDING FEDERAL OSHA REGULATIONS BEFORE OPERATING THIS CRANE. YOU AND YOUR EMPLOYER ARE ALSO RESPONSIBLE FOR COMPLYING WITH ANY STATE, PROVINCIAL, OR LOCAL RULES AND REGULATIONS COVERING THE USE OF THIS CRANE. CHECK WITH LOCAL AUTHORITIES FOR APPLICABLE REGULATIONS AND WORK RULES.

SAFE OPERATION OF THIS CRANE REQUIRES TRAINING, EXPERIENCE AND COMPLETE KNOWLEDGE OF ALL APPLICABLE SAFETY REGULATIONS AND WORK RULES, INCLUDING THOSE IN THIS MANUAL. DO NOT ATTEMPT TO OPERATE THIS CRANE UNLESS YOU ARE QUALIFIED BY TRAINING AND EXPERIENCE. OPERATION OF THIS CRANE BY UNQUALIFIED PERSONNEL IS A VIOLATION OF OSHA REGULATIONS IN 29CFR, PART 1926.20 (b) (4).

EMPLOYERS ARE REQUIRED BY OSHA REGULATIONS IN PART 1926.20 (b) TO PROVIDE FOR FREQUENT AND REGULAR INSPECTIONS OF EQUIPMENT BY COMPETENT PERSONS AND TO PROHIBIT USE OF ANY EQUIPMENT WHICH IS HAZARDOUS OR DANGEROUS TO EMPLOYEES HEALTH OR SAFETY. DO NOT OPERATE A MALFUNCTIONING, IMPROPERLY MAINTAINED, MODIFIED, OR DAMAGED MACHINE, OR A MACHINE WHICH FOR ANY REASON MAY BE DANGEROUS TO EMPLOYEE HEALTH OR SAFETY.

SUBJECT-SECTION, PARAGRAPH

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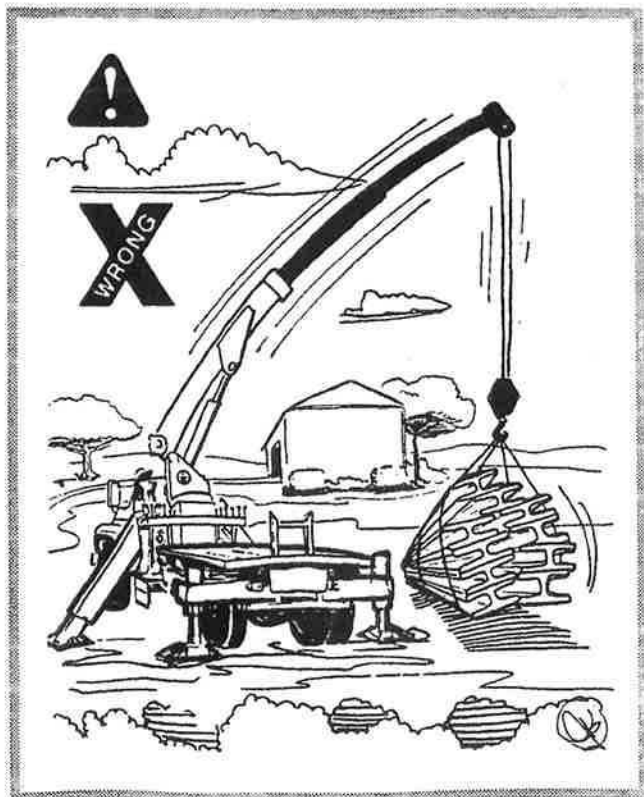
WARNING

FAILURE TO COMPLY WITH SAFETY REGULATIONS LISTED IN THIS SECTION AND ON MACHINE IS A SAFETY VIOLATION WHICH MAY RESULT IN PERSONNEL INJURY OR DEATH TO PERSONNEL OR IN MACHINE DAMAGE.

1-1. GENERAL

This section prescribes the proper and safe practices for major areas of machine usage which have been divided into two basic categories: Driving and Operation. In order to promote proper usage of the machine, it is mandatory that a daily routine be established based on instructions given in this section. A maintenance program must also be established by a qualified person and must be followed to ensure that the machine is safe to operate.

The user of the machine should not accept operating responsibility until this manual has been read and operation of the machine, under the supervision of a qualified user, has been completed. If there is a question on application and/or operation, JLG Industries should be consulted before undertaking the intended use.



ALWAYS REFER TO LOAD CHART BEFORE MAKING ANY LIFTS.

WARNING

MODIFICATION OF THE MACHINE WITHOUT WRITTEN APPROVAL OF JLG INDUSTRIES, INC. OR CERTIFICATION BY A RESPONSIBLE AUTHORITY THAT THE MACHINE IS AT LEAST AS SAFE AS ORIGINALLY MANUFACTURED IS A SAFETY VIOLATION AND IS STRICTLY PROHIBITED.

DANGER

WORKING IN THE VICINITY OF ELECTRICAL POWER LINES PRESENTS A VERY SERIOUS HAZARD, AND SPECIAL PRECAUTIONS MUST BE TAKEN.

For purposes of this manual you are considered to be working in the vicinity of power lines when any part of the crane, load line, load handling device, rigging, or load, in any position can reach to within the minimum distance specified by local, state and federal regulations.

Federal regulations from 29CFR, PART 1926.550 for minimum distances are as follows:

Except where electrical distribution and transmission lines have been deenergized and visibly grounded at point of work or where insulating barriers, not a part of or an attachment to the equipment or machinery have been erected to prevent physical contact with the lines, equipment or machines shall be operated proximate to power lines only in accordance with the following. (See Figure 1-1)

A person shall be designated to observe clearance of the equipment and give timely warning for all operations where it is difficult to maintain the desired clearance by visual means.

Cage-type boom guards, insulating links, or proximity warning devices shall not alter the requirements of any other regulation of this part even if such device is required by law or regulation.

Any overhead wire shall be considered to be an energized line unless and until the person owning such line or the electrical utility authorities indicate that it is not an energized line and it has been visibly grounded.

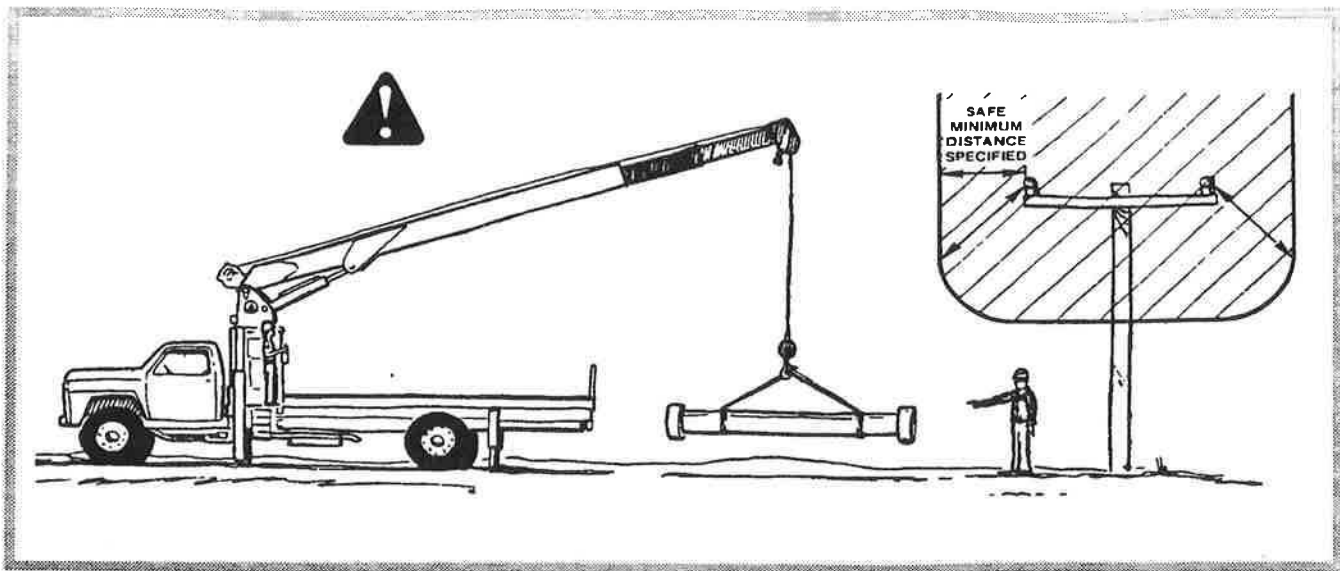


Figure 1-1. Electrical Hazard Working Vicinity.

VOLTAGE RANGE (PHASE TO PHASE)	MINIMUM SAFE DISTANCE - FEET [M]
0-300V	— Avoid Contact
Over 300V to 50KV	— 10 ft. [3.05m]
Over 50KV to 200KV	— 15 ft. [4.60m]
Over 200KV to 350KV	— 20 ft. [6.10m]
Over 350KV to 500KV	— 25 ft. [7.62m]
Over 500KV to 750KV	— 35 ft. [10.67m]
Over 750KV to 1000KV	— 45 ft. [13.72m]

DANGER

ALL GROUND PERSONNEL SHALL STAND CLEAR OF THE MACHINE AND THE LOAD AT ALL TIMES. IF THE LOAD MUST BE GUIDED INTO PLACE CONSULT YOUR LOCAL ELECTRIC UTILITY COMPANY FOR SPECIFIC PRECAUTIONS THAT MUST BE TAKEN.

Use a signal person: it is extremely difficult to judge distances between your crane and power lines. Do not rely on your own judgement. It is mandatory that you use a signal person when working in the vicinity of electrical lines.

The sole responsibility of the signal person is to observe, from the best vantage point, the approach of any part of the crane or load to the power line. The signal person must be in direct communication with the operator, and the operator must pay close attention to the signals.

DANGER

EQUIPMENT MAY BECOME ELECTRICALLY CHARGED WHEN WORKING IN THE VICINITY OF HIGH FREQUENCY TRANSMITTERS.

ALWAYS CONTACT THE OWNERS OF THE POWER LINES OR THE NEAREST ELECTRIC UTILITY BEFORE BEGINNING WORK IN THE VICINITY OF ELECTRIC POWER LINES.

WARNING

IT IS THE RESPONSIBILITY OF THE USER AND THE ELECTRIC UTILITY TO SEE THAT NECESSARY PRECAUTIONS ARE TAKEN.

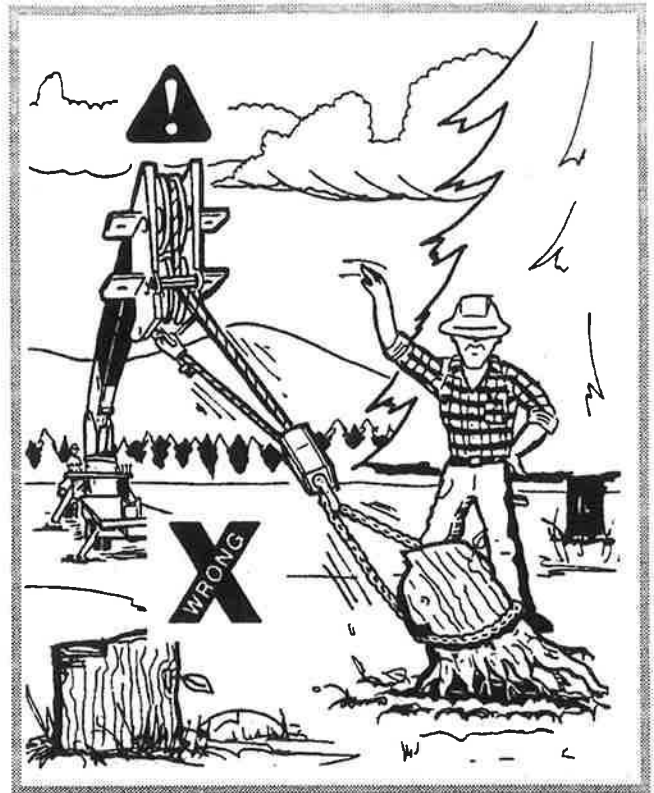
CONSIDER ALL LINES TO BE POWER LINES AND TREAT ALL POWER LINES AS ENERGIZED.

USE A SLOW OPERATING CYCLE TO ALLOW TIME TO REACT TO AVOID JUDGEMENT ERROR AND TO REACT TO SIGNALS.

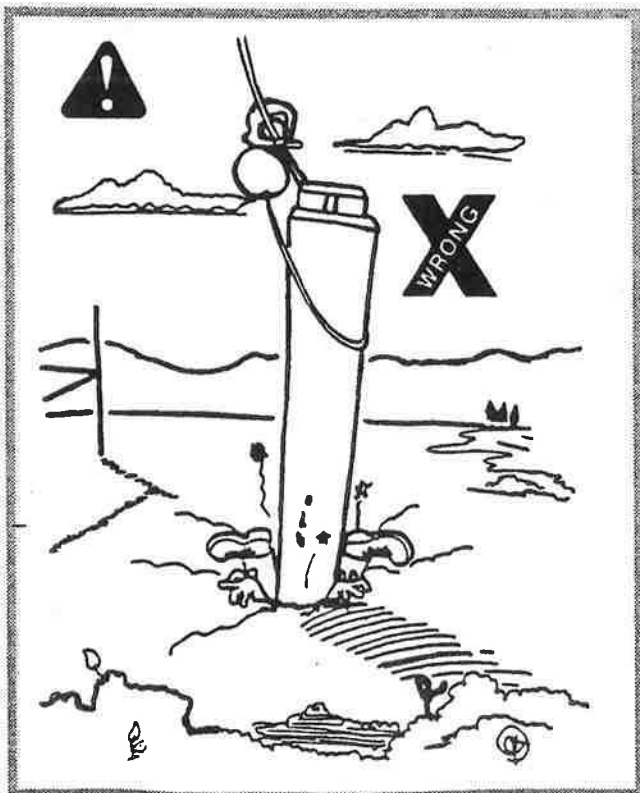
MAINTAIN SAFE CLEARANCE FROM ELECTRICAL LINES AND APPARATUS. YOU MUST ALLOW FOR BOOM SWAY, ROCK OR SAG AND ELECTRICAL LINE SWAYING. THE MACHINE DOES NOT PROVIDE PROTECTION FROM CONTACT WITH OR PROXIMITY TO AN ELECTRICALLY CHARGED CONDUCTOR.

1-2. LOAD LIFTING SAFETY

- DO NOT EXCEED THE LOAD CHART CAPACITIES OR THE LOAD RADIUS FOR THE LOAD BEING LIFTED. ALWAYS REFER TO THE LOAD CHART BEFORE MAKING ANY LIFTS. UNDER NO CIRCUMSTANCES SHOULD LOAD CHART CAPACITIES BE EXCEEDED. NEVER GUESS AT THE LOAD WEIGHT. DETERMINE WEIGHT OF LOAD BEFORE ATTEMPTING THE LIFT.
- DO NOT DEPEND ON MACHINE STABILITY AS A MEANS TO DETERMINE PROPER LOAD CAPACITY.
- RATED LOADS ON THE MAIN BOOM ARE BASED ON BOTH MACHINE STRENGTH AND STABILITY WITH FREELY SUSPENDED LOADS. OVERLOADING THIS MACHINE MAY CAUSE STRUCTURAL COLLAPSE OR INSTABILITY.
- ENSURE THAT THE LOAD IS SECURED AND PROPERLY RIGGED BEFORE STARTING ANY LIFTING OPERATIONS.

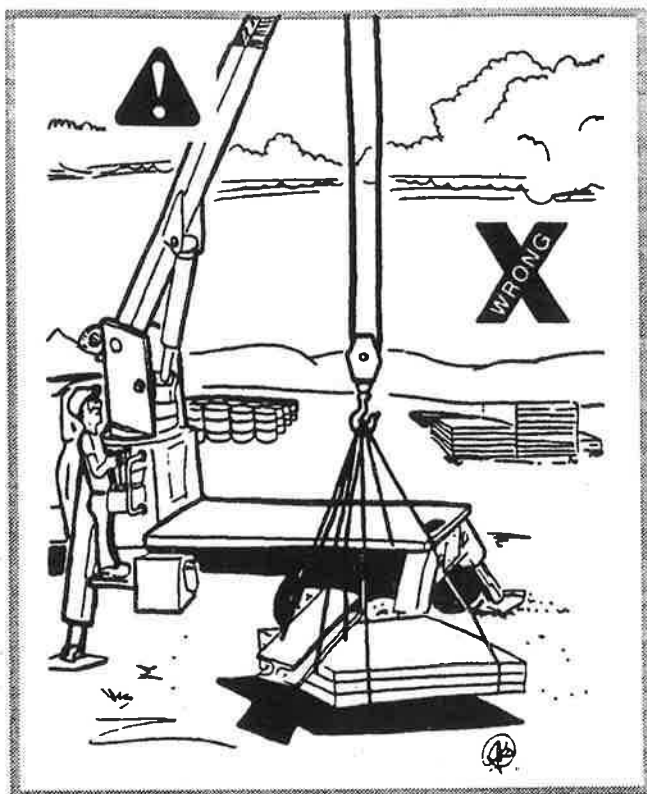


NEVER USE BOOM FOR ANYTHING OTHER THAN LIFTING FREELY SUSPENDED LOADS.



NEVER WRAP A HOIST LINE AROUND THE LOAD.

- NEVER LIFT TWO OR MORE SEPARATELY RIGGED LOADS AT THE SAME TIME EVEN IF COMBINED LOAD WEIGHT IS WITHIN RATED CAPACITY.
- PRE-PLAN ALL LIFTS AND UNDERSTAND EMERGENCY PROCEDURES TO BE USED, SHOULD THE UNEXPECTED OCCUR.
- NEVER ALLOW THE LOAD TO STRIKE ANY PORTION OF THE BOOM DURING A LIFT, OR ALLOW THE BOOM TO REST ON OR HIT A BUILDING OR ANY OTHER OBJECT.
- BEFORE STARTING ANY LIFTING OPERATIONS, CHECK HOIST BRAKE OPERATION BY RAISING THE LOAD SLIGHTLY AND CHECKING THAT BRAKE DOES NOT SLIP.
- EXTREME CAUTION MUST BE USED IN PERFORMING LIFTS INVOLVING TWO (2) OR MORE CRANES. CONSULT YOUR SUPERVISOR AND A RIGGING SPECIALIST BEFORE ATTEMPTING THIS TYPE OF LIFT. SUCH LIFTS MUST BE SUPERVISED BY A QUALIFIED THIRD PERSON.



NEVER LIFT TWO SEPARATE LOADS AT THE SAME TIME.

- A MINIMUM OF FIVE (5) CABLE WRAPS MUST REMAIN ON HOIST DRUM AT ALL TIMES.
- DO NOT ALLOW THE HOOKBLOCK TO CONTACT THE BOOM TIP BY WINCHING UP OR EXTENDING THE BOOM. THIS CONDITION WHICH IS KNOWN AS "TWO-BLOCKING" WILL CAUSE LOAD DROPPING, CABLE BREAKAGE, EQUIPMENT DAMAGE, AND POSSIBLE PERSONNEL INJURY.
- DO NOT USE THE ANTI-TWO BLOCK DEVICE TO STOP UPWARD MOTION OF THE HOOKBLOCK OR OTHER LIFTING DEVICE, OR AS A SUBSTITUTE FOR GOOD OPERATOR JUDGEMENT AND SAFE OPERATING PROCEDURES.
- KEEP LOAD HANDLING DEVICES A MINIMUM OF 12 INCHES BELOW BOOM HEAD.

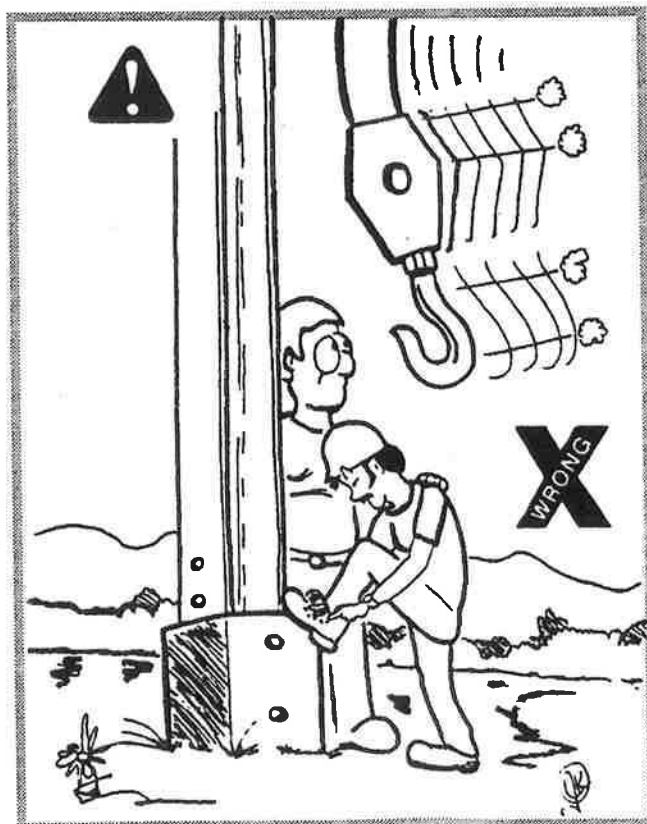
Note

See Figure 3-3 or for proper anti-two block installation.

- THE EFFECTS OF WIND LOADING SHOULD BE CONSIDERED DURING OPERATION. THE WIND CAN IMPOSE SUBSTANTIAL FORCES ON THE LOAD. THESE FORCES CAN SWING THE LOAD AND INCREASE BOTH THE LOAD AND LOAD RADIUS SUFFICIENTLY TO CAUSE AN OVERLOAD CONDITION.
- BE CERTAIN THE BOOM TIP IS CENTERED DIRECTLY OVER THE LOAD BEFORE LIFTING. DRAGGING THE LOAD WITH THE WINCH OR BOOM FROM ANY POSITION IS PROHIBITED.

1-3. LOAD HANDLING SAFETY

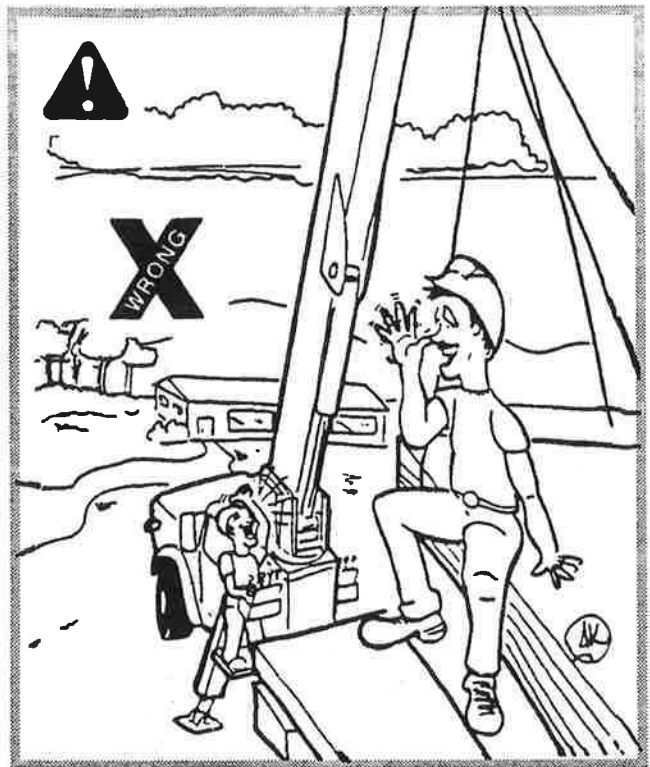
- NEVER LEAVE EQUIPMENT WITH LOAD SUSPENDED. LOWER LOAD TO THE GROUND AND STOP ENGINE BEFORE LEAVING CONTROL STATION.
- AVOID LOAD SWINGING. SUCH PRACTICE CAN CREATE UNSTABLE CONDITIONS AND PLACE UNDUE STRESS ON THE BOOM.



KEEP OPERATING AREA CLEAR OF PERSONNEL.

1-4. OUTRIGGER / STABILIZER SAFETY

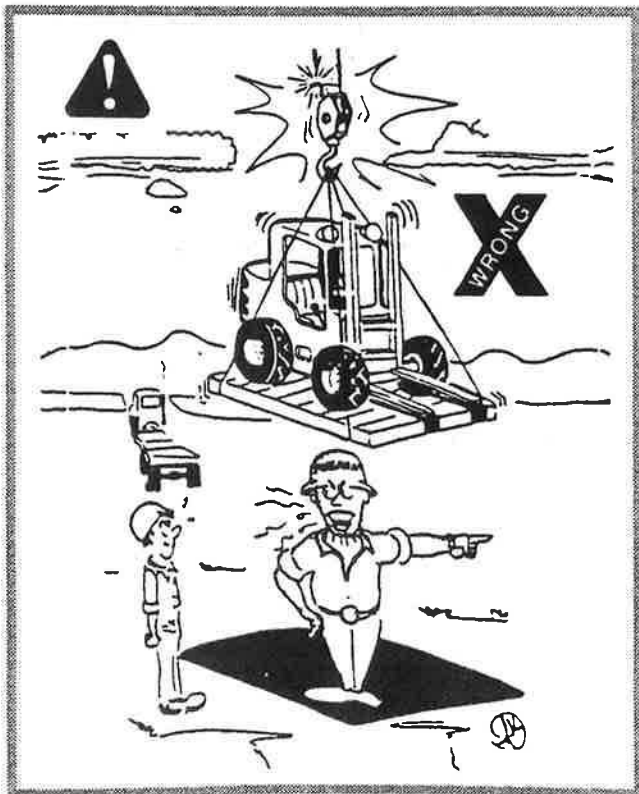
- ENSURE MACHINE IS LEVEL AND STABILIZED AND THAT THE BRAKES ARE PROPERLY SET PRIOR TO OPERATING THE BOOM. (USE THE BUBBLE LEVEL ON THE OPERATOR'S CONTROL STATION.)
- CHECK CLEARANCE ON BOTH SIDES BEFORE OUTRIGGERS ARE EXTENDED AND SET. MAKE SURE PERSONNEL ARE CLEAR OF OUTRIGGERS.
- SET OUTRIGGER PADS ONLY ON SOLID FOOTING.
- BLOCKING OR CRIBBING SHOULD BE USED UNDERNEATH OUTRIGGERS TO ASSIST IN MACHINE LEVELING WHEN CRANE IS UP ON NON-LEVEL GROUND OR WHEN SUPPORTING SURFACE IS SOFT OR UNSTABLE.
- NEVER SET AN "A" FRAME OUTRIGGER ON A CURB. THE LOAD MAY CAUSE THE UNIT TO TIP DUE TO THE SHORTENED FULCRUM POINT OF THE OUTRIGGER.

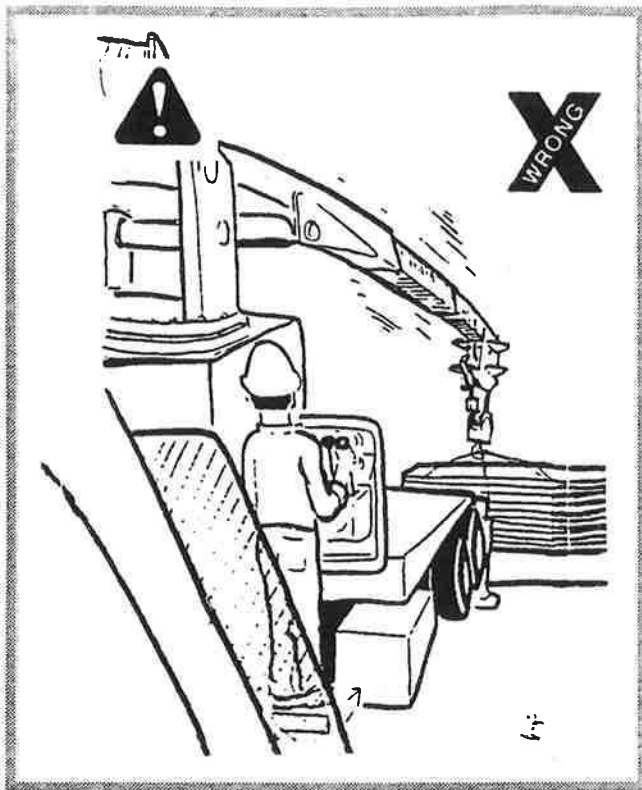
**ALLOW NO ONE TO RIDE THE LOAD.**

- DO NOT ATTEMPT TO "WALK" MACHINE SIDWAYS ON OUTRIGGERS AS SERIOUS DAMAGE WILL OCCUR TO OUTRIGGER COMPONENTS.
- OUTRIGGERS MUST BE PROPERLY EXTENDED, FIRMLY SET, AND CRANE LEVEL, BEFORE ANY CRANE OPERATION IS PERMISSIBLE.

1-5. OPERATING SAFETY

- ALLOW ONLY AUTHORIZED AND QUALIFIED PERSONNEL TO OPERATE THE EQUIPMENT. SUCH PERSONNEL MUST BE TRAINED AND BE FAMILIAR WITH THE MANUFACTURERS INSTRUCTIONS AND MANUALS, AND ALL WORKSITE AND LOCAL RULES PERTAINING TO CRANE OPERATION AND MUST HAVE DEMONSTRATED AN UNDERSTANDING OF PROPER MACHINE OPERATION.
- CHECK CLEARANCES AROUND TURN-TABLE, BOOM AND LOAD DURING SWINGING, RAISING, LOWERING AND TELESCOPING OPERATIONS.

**DO NOT POSITION LOAD OR BOOM OVER PERSONNEL**



NEVER GUESS AT THE LOAD WEIGHT.

- NEVER USE BOOM FOR ANY OTHER PURPOSES THAN HOISTING AND POSITIONING INTENDED LOADS.
- NEVER SMOKE OR ALLOW AN OPEN FLAME WHEN REFUELING THE TRUCK FUEL TANK. STOP THE TRUCK ENGINE DURING REFUELING.
- AT ALL TIMES, ENSURE THAT HANDS, FEET, HAIR AND LOOSE CLOTHING ARE KEPT AWAY FROM MOVING SHEAVES, DRUMS AND CABLES.
- UNDER NO CIRCUMSTANCES SHOULD ANY PART OF THE EQUIPMENT BE MODIFIED IN ANY WAY WITHOUT THE EXPRESS PERMISSION OF THE MANUFACTURER. SUCH MODIFICATION WILL NOT ONLY VOID ANY WARRANTY CONSIDERATION, BUT COULD SERIOUSLY AFFECT SAFE OPERATION OF THE CRANE.
- NEVER ALLOW PERSONNEL TO RIDE THE LOAD, SLING OR HOOK.
- KNOW ALL STANDARD HAND SIGNALS. (SEE FIGURES 1-2 AND 1-3.)
- DO NOT OPERATE THE EQUIPMENT IF WARNING OR CAUTION PLACARDS ARE MISSING OR ILLEGIBLE.
- MACHINE WILL UPSET IF BOOM IS EXTENDED OVER SIDE WITHOUT OUTRIGGERS SET.
- NO "ON RUBBER" CRANE OPERATION IS PERMITTED, INCLUDING SWINGING, ELEVATING AND TELESCOPING BOOM.
- ALWAYS REMOVE HOOKBLOCK OR HEADACHE BALL ALONG WITH OPTIONAL BOOM EXTENSION WHEN PERSONNEL PLATFORM IS INSTALLED.
- OPERATING AREA FOR FRONT MOUNTED PEDESTAL IS RESTRICTED TO 180° OVER REAR OF UNIT, UNLESS EQUIPPED WITH FRONT BUMPER STABILIZER, WHICH PERMITS 360° OPERATION.

1-6. OPERATING AREA SAFETY

- ENSURE THAT AREAS AROUND AND UNDER SUSPENDED LOADS ARE KEPT CLEAR OF PERSONNEL AND EQUIPMENT. KEEP EYES AND MIND ON THE OPERATION AT HAND.
- NEVER POSITION BOOM OVER GROUND PERSONNEL EVEN IF NO LOAD IS ATTACHED TO OR SUSPENDED FROM BOOM.
- KEEP DECK, FOOT HOLDS, HAND HOLDS, FOOT WEAR, AND ALL CONTROL SURFACES FREE OF OIL, MUD, GREASE, SIMILAR SLIPPERY SUBSTANCES AND DEBRIS.

1-7. WIRE ROPE SAFETY

- ENSURE THAT CABLE IS PROPERLY ROUTED AROUND SHEAVES AND DRUMS BEFORE OPERATION AND AFTER ANY SLACK HAS BEEN PRESENT IN THE CABLE. CHECK FOR OVERLAPPING CABLE ON WINCH DRUM.
- DO NOT OPERATE THE CRANE WITH WORN, DAMAGED OR FRAYED CABLES OR IMPROPERLY INSTALLED CLAMPS. (SEE SECTION 2-3 FOR INSPECTION OF CABLE.)

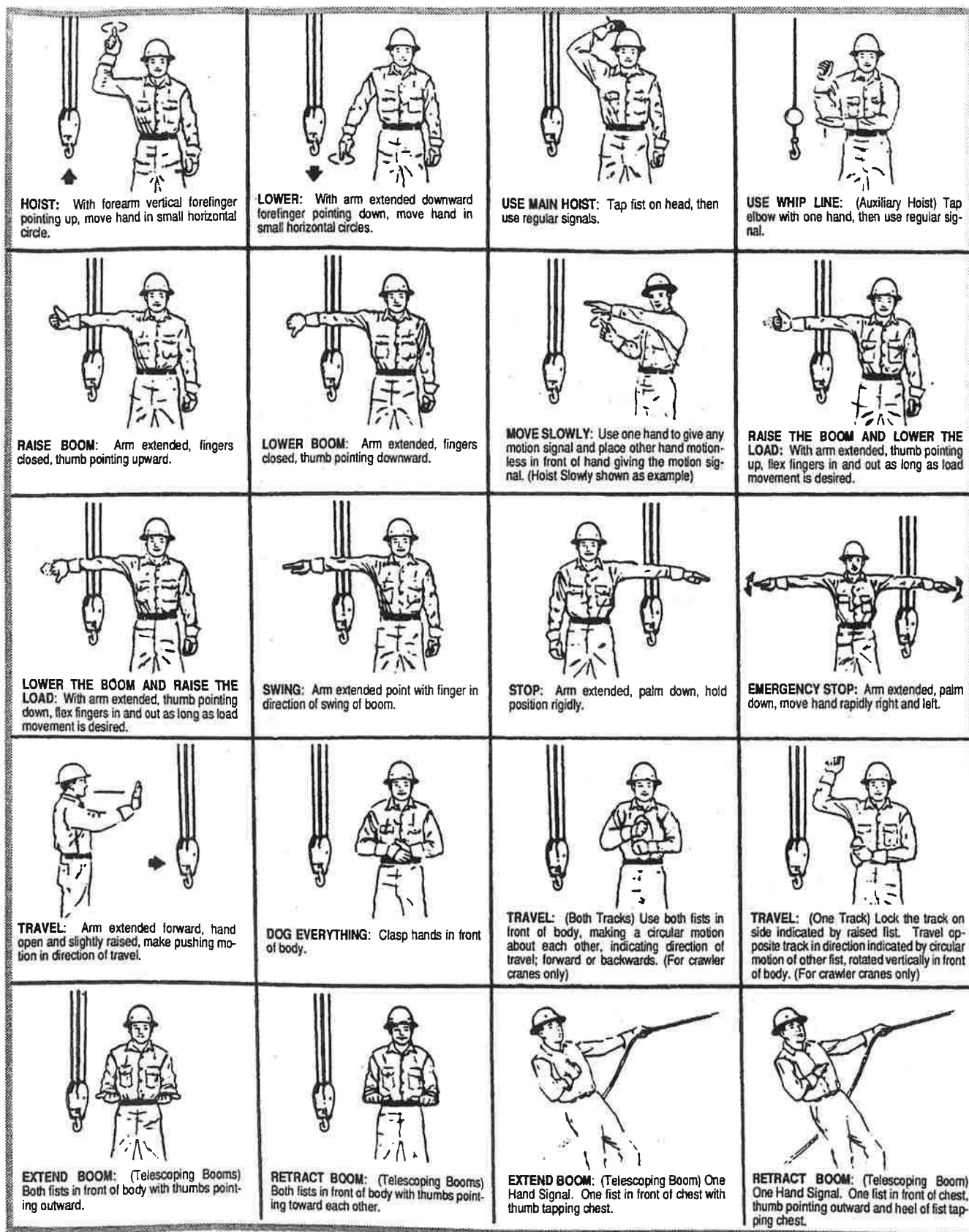


Figure 1-2. Hand Signals – Standard Crane Operation.









 <p>RAISE BOOM Arm extended fingers closed, thumb pointing upward.</p>	 <p>LOWER BOOM Arm extended, fingers closed, thumb pointing downward.</p>
 <p>MOVE SLOWLY Use one hand to give any motion signal and place other hand motionless in front of hand giving the motion signal. (Raise boom slowly, shown as example.)</p>	 <p>SWING Arm extended, point with finger in direction of swing of boom.</p>
 <p>STOP Arm extended, palm down. Move arm back and forth.</p>	 <p>EMERGENCY STOP Both arms extended, palms down, move arms back and forth.</p>
 <p>EXTEND BOOM (Telescoping Boom) Both fists in front of body with thumbs pointing upwards.</p>	 <p>RETRACT BOOM (Telescoping Boom) Both fists in front of body with thumbs pointing toward each other.</p>

Figure 1-3. Hand Signals – Personnel Platform.

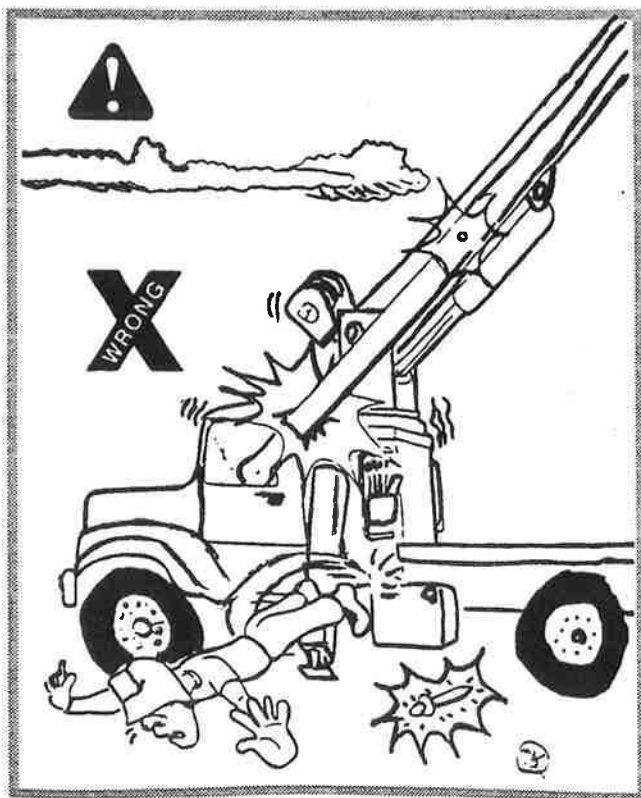
- AVOID HANDLING CABLES WITH BARE HANDS.
- NEVER WRAP A HOIST LINE AROUND THE LOAD IN PLACE OF A SLING OR CHAIN. NEVER USE DISCARDED WIRE ROPE TO MAKE SLINGS.

1-8. DRIVING SAFETY

- NEVER DRIVE MACHINE WITH OUTRIGGERS EXTENDED.
- ENSURE OUTRIGGERS ARE COMPLETELY RETRACTED PRIOR TO MOVING.
- IF EQUIPPED WITH THE OPTIONAL FRONT STABILIZER, CYLINDER MUST BE FULLY RETRACTED, TILTED BACK AND PINNED PRIOR TO MOVING.
- ALWAYS POST A LOOKOUT WHEN BACKING UP TO VERIFY THAT THE REARWARD AREA IS CLEAR.
- ENSURE THAT TURNTABLE, BOOM AND HOOKBLOCK ARE IN THE STOWED POSITION WHEN TRAVELING.



AVOID OVERHANGING LOADS.



ALWAYS SECURE JIB ATTACH PINS.

- ENSURE THAT JIB STOWAGE PINS AND EXTENDABLE JIB PIN ARE IN PLACE AND SECURED WITH HAIR PINS PRIOR TO MOVING MACHINE.
- BE AWARE OF CLEARANCES WHEN TRAVELING.
- CHECK TIRE CONDITION WEEKLY AND MAINTAIN CORRECT PRESSURE AT ALL TIMES ON ALL WHEELS.
- AVOID OVERHANGING LOADS WHEN TRAVELING. ALWAYS ENSURE LOAD IS PROPERLY SECURED TO DECK. ENSURE TIE-DOWNS, CHAINS AND SLINGS ARE STRONG ENOUGH TO RESTRAIN LOAD.
- WHEN HAULING A LOAD, ALWAYS ENSURE LOAD IS WITHIN RATED TRUCK CAPACITY. OVER THE ROAD WEIGHT LIMITS MAY VARY FROM STATE TO STATE, THEREFORE OWNER/OPERATOR MUST COMPLY WITH ANY LOCAL OR FEDERAL REGULATIONS COVERING THE USE OF THIS EQUIPMENT ON PUBLIC STREETS OR HIGHWAYS.

2-1. MACHINE INSPECTION REQUIREMENTS

It should be noted that Occupational Safety and Health Administration (OSHA) regulations state that all cranes of the type covered by this manual be inspected and maintained on a regular basis in accordance with recommendations made by the equipment manufacturer. In addition, a thorough annual inspection must be performed and a complete record of the inspection dates and results be maintained. These legal requirements from a part of OSHA Regulations 29CFR Parts 1910.180 and 1926.550. They are also specified in American National Standards Institute (ANSI) (formerly United States of America Standards Institute) standard B305-1982-Safety Code For Cranes, Derricks, Hoists, Jacks and Slings.

JLG Industries, Inc. recommends that inspection procedures outlined in this and other manuals pertaining to this unit be followed and that a written record be maintained and available for review by Department of Labor personnel should the need arise. Further requirements are of course dependent upon state and local ordinances which govern the particular area in which the equipment operates.

2-2. PREPARATION FOR USE

Before a new unit is initially placed into service and periodically thereafter, it should be thoroughly inspected for signs of damage, oil, fuel and hydraulic leaks and correct cable routing. Security of attaching hardware should also be checked.

All preparation necessary to place the unit in a state of operational readiness is the responsibility of management personnel. Most requirements are relatively simple involving common sense coupled with a series of visual inspection guidelines.

The mandatory inspection checks and lubrication points to be covered prior to operation are illustrated and defined in Figure 2-1. The checklist items can be conducted on a sequential walk-around inspection basis.

WARNING

SINCE THE MACHINE MANUFACTURER HAS NO CONTROL OVER THE FIELD INSPECTION AND MAINTENANCE, SAFETY IN THIS AREA IS THE RESPONSIBILITY OF THE OWNER/OPERATOR.

2-3. OPERATOR'S DAILY CHECKLIST

This paragraph provides a listing of those inspection procedures which must be performed before placing the unit in operation each day. Also, careful attention should be paid during actual operation of the unit to observe any defects which might appear between regular inspections especially those conditions which could possibly constitute a safety hazard.

Proper inspection of the crane is also of extreme importance and reference should be made to the appropriate vehicle components which have been modified or relocated during installation of the crane.

WARNING

DO NOT OPERATE MACHINE UNTIL CORRECTIVE MEASURES HAVE BEEN TAKEN AND ALL MALFUNCTIONS HAVE BEEN CORRECTED.

1. Visually inspect machine for loose or missing parts, foreign objects, hydraulic leaks from lines or components, and structural damage.
2. Ensure that tires are inflated to the proper pressure. Refer to pressure nameplate.
3. With all systems shut down and machine in stowed or travel mode, check oil level in hydraulic fluid reservoir. If necessary fill to the **FULL** mark on the dipstick.

Note

On new machines, those recently overhauled, or after changing hydraulic oil, operate all systems a minimum of two complete cycles and recheck oil in reservoir.

WARNING

NEVER HANDLE CABLES WITH BARE HANDS, BROKEN OR FRAYED WIRE STRANDS CAN CAUSE SEVERE CUTS. ALWAYS WEAR PROTECTIVE GLOVES IF IT IS NECESSARY TO HANDLE THE CABLE.

4. Inspect cable for defects as follows:
 - a. Corrosion.
 - b. More than one broken wire in any one strand.
 - c. More than one broken wire near an attach fitting.
 - d. Excessive wear and/or broken wires in cable sections under sheaves where cable travel is limited.

- e. Evidence of noticeable reduction in original cable diameter after allowance for normal stretch and diameter reductions of newly rigged cable.
 - f. Excessive abrasion, scrubbing and peeling of outer wires; pitting, deformation, kinking, bird caging or other damage resulting in physical changes to the cable structure.
 - g. Cracked, bent, worn or improperly installed wedge socket.
5. Inspect hook for security of attachment, proper swivel lubrication and for nicks, cracks, gouges, deformation or evidence of any other damage. Check operation of hook safety latch.
 6. Inspect the hookblock and snatch block for security of attachments, proper lubrication and for nicks, cracks, gouges, deformation or evidence of any other damage.
 7. Check wedge socket for proper size and proper cable installation. (See Figure 3-8)
 8. Ensure that all components requiring lubrication are serviced as necessary. (See Figure 2-1)
 9. Ensure that all control placards, located adjacent to the corresponding control device, and all safety, warning and instruction placards are securely attached and legible.
 10. Using all applicable safety precautions, start engine and with PTO engaged, check indicator on top of hydraulic filter assembly mounted adjacent to oil tank for condition of element. Change element as required.
 11. With the unit operating and before starting actual jobsite applications, inspect the following:
 - a. Smooth and proper operation of all crane functions including outriggers.
 - b. Check that boom and jib cable sheaves rotate freely and ensure that they are in good condition.
 - c. Inspect all control levers, switches and accelerator pedal and cable for proper installation and operation paying particular attention to the STOP and HORN switches at each operator station.

- d. Check for proper operation of all lights and reflectors.
- e. Ensure that deck, steps and operator platforms are free from oil, fuel, mud and other debris.
- f. Check anti-two block device for proper operation. The hookblock must stop when it contacts the anti-two block counterweight while winching up or telescoping out.

2-4. PERIODIC INSPECTION

Note

This machine requires periodic safety and maintenance inspections by a JLG dealer. A decal located on the pedestal affords a place to record (stamp) inspection dates. Notify dealer if inspection is overdue.

The crane must be thoroughly inspected periodically so as to detect in a timely manner the possibility of defective, damaged or improperly installed parts. Frequency of inspection will to a large extent depend upon crane activity and severity of service but under no circumstances should the interval for the below listed inspections exceed one month. These inspections should also include those listed in paragraph 2-3.

Again, the appropriate truck manual should be consulted for those inspection procedures which pertain to the carrier and the recommendations of the manufacturer must be strictly adhered to. Items modified or removed and reinstalled by or so recommended by JLG Industries during installation of the crane unit is covered in the following inspection procedures.

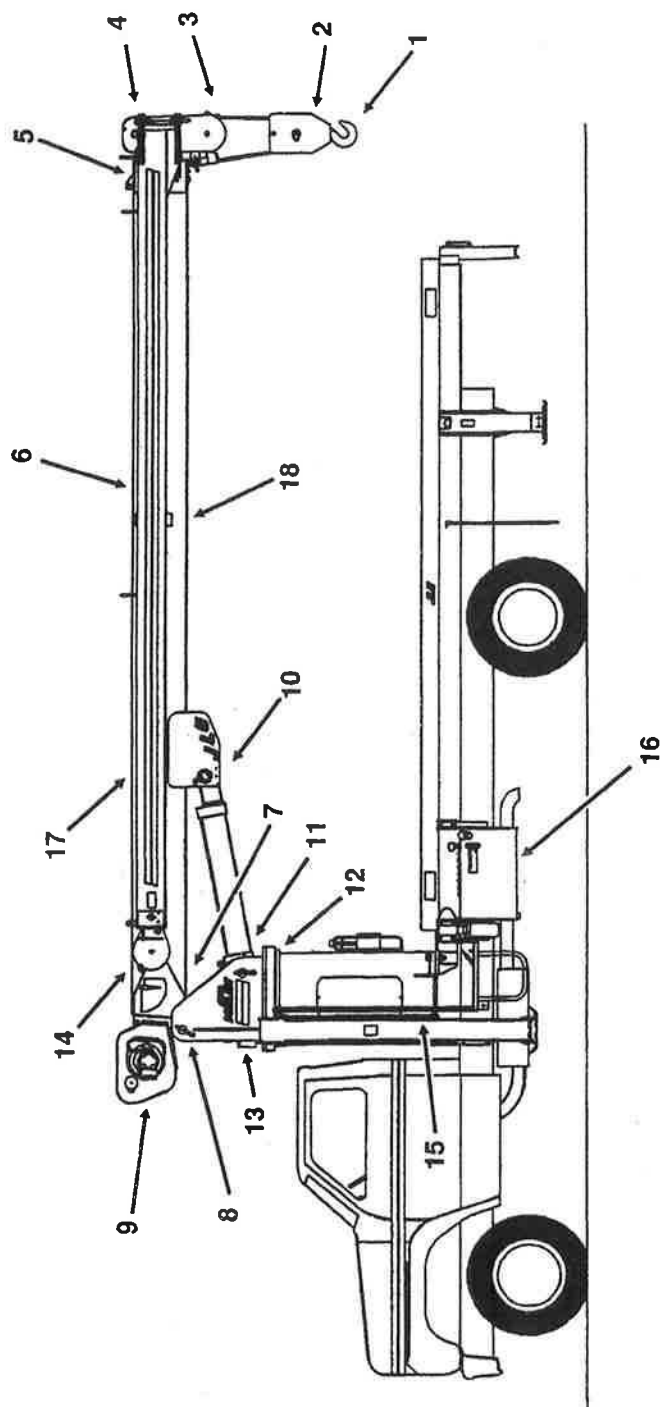
1. Inspect crane for any signs of deformation, damage and attaching hardware for security and missing items. Particular attention should be paid to areas of high potential stress such as crane frame/truck frame attach points, and outriggers.
2. Inspect outrigger assemblies for evidence of leakage and security, pressure lines for evidence of abnormal chafing.
3. Inspect power take-off assemblies for security, wear and damage.
4. Inspect main hydraulic pumps and lines for damage, evidence of leakage and security of attachment.

5. Check hydraulic fluid reservoir and lines for damage, evidence of leakage and security of attachment. Check filter indicator for element condition. Clean and/or replace elements as necessary.
6. Check control levers at both operator control stations for visible damage, loose or missing parts, and proper lubrication. Assure that levers function properly.
7. Check control switches at both operator control stations for visible damage, loose or missing parts, security, electrical connections for corrosion and tightness, and wiring for proper routing. Assure that switches function.
8. Check instruments on truck instrument panel for damage and security of installation. Also check PTO knob and cable and indicator light for damage and security.
9. Inspect load capacity charts, hook height chart, operating radii chart and corresponding lifting notes, decals, and instruction chart for legibility and security.

WARNING

DO NOT USE AN OPEN FLAME TO PROVIDE ILLUMINATION FOR BATTERY CHECKS. GASES GIVEN OFF BY THE BATTERY ARE EXPLOSIVE AND THEREFORE POTENTIALLY DANGEROUS TO PERSONNEL.

10. Check batteries for damage, loose or missing cell caps, security and condition of cable connections and holddown brackets and electrolyte for proper level. Add only clean distilled water as necessary.
11. Check integral swing gear, bearing, bolts and nuts for damage, uneven wear patterns, correct lubrication, and proper meshing of torque hub pinion gear.
12. Inspect turntable and pedestal for obvious damage such as cracked welds, loose or missing hardware.
13. Check lift cylinder and hydraulic lines for damage, evidence of leakage and security of attachment.
14. Check boom pivot bushing for evidence of correct lubrication and shaft retainers for damage and security. Lubricate as necessary.
15. Check hoist for damage, evidence of leakage and security of attachment. Check for correct lay of cable on drum. Check hydraulic lines to hoist for damage, evidence of leakage and security of attachment. Check cable attachment to hoist drum.
16. Check boom angle indicator components for damage, legibility, security of attachment and proper operation.
17. Check telescope cylinder and lines for damage, evidence of leakage and security of attachment.
18. Check boom structure for damage, missing or loose parts and hardware and security of attachment.
19. Check visible wear pads for damage, excessive wear and security of attachment.
20. Check jib extension for structural damage, security of attachment and evidence of sheave lubrication.
21. Check boom nose sheaves for damage, security of attachment, evidence of lubrication and correct cable seating in sheave grooves.
22. Check all cable guards and guides for damage and security of attachment.
23. Check jib stowage pins and extendable jib pin for security of attachment.
24. Check hookblock sheave for damage, correct routing of cable around sheave grooves and evidence of proper lubrication at sheaves and hook swivel.
25. Check hook for damage, security of attachment and correct hook latch operation.
26. Check lift cylinder boom attach pivot points for evidence of lubrication.
27. Check boom rest for damage and security.
28. Check that all components requiring lubrication are serviced as necessary. (See Figure 2-1)
29. Check that no unauthorized modifications have been made to machine.
30. Check platform (if equipped) for damage, security of attachment, loose or missing hardware, and that the brake holds securely.



Note

Truck is shown for reference purposes only.
Refer to vehicle manufacturers manual for
truck chassis lubrication requirements.

Figure 2-1. Lubrication Chart. (Sheet 1 of 2)

INDEX NO.	DESCRIPTION	LUBRICANT	INTERVAL HOURS	QUANTITY FITTINGS	NOTES
1 -	Hook, Sheave Block	MPG	50	1	
2 -	Sheave, Sheave Block	MPG	50	1	
3 -	Sheave, Boom Nose - Lower	MPG	50	1	
4 -	Sheave, Boom Nose - Upper	MPG	50	1	
5 -	Sheave, Cable Extend - Fly	MPG	50	1	Align holes in mid and fly.
6 -	Boom Assembly	MPG (Brush)	500	N/A	Wear pad travel area.
7 -	Sheave, Cable Retract - Fly	MPG	50	2	Align access hole in base boom.
8 -	Bushing, Boom Pivot	MPG	50	2	
9 -	Winch - Check oil level with boom at horizontal by using the large oil level plug located in the center of support.	API GL-2/3	100/1000	N/A	Change oil after first 100 hours, and every 1000 hrs. thereafter.
10 -	Pin, Lift Cylinder (Upper)	MPG	50	1	
11 -	Pin, Lift Cylinder (Lower)	MPG	50	1	
12 -	Bearing, Swing Teeth, Swing Gear	MPG MPG	50 500	2 N/A	Apply MPG liberally to pinion gear, rotate turntable 90° and return, reapply MPG and rotate 90° in opposite direction.
13 -	Hub, Swing Bearing, Swing Pinion Drive	EPGL MPG	250/1000 100	Plug 1	Change oil after first 250 hours and every 1000 hours thereafter - oil level to be 1 1/2" from top of hub.
14 -	Sheave, Jib (Optional)	MPG	50	1	
15 -	Outrigger Wear Pads	MPG	50	8	2 fittings front side, 2 fittings aft side, each outrigger. (See Note below)
16 -	Hydraulic Oil Reservoir Element, Hydraulic Oil Filter	HO N/A	10/2000 40/250	N/A N/A	Check level every 10 hours. Change oil annually. Change filter after first 40 hours and every 250 hours thereafter.
17 -	Wire Rope - Winch	PL (Brush)	100	N/A	
18 -	Boom Cable - (Extend/Retract)	PL	2000	N/A	
	Platform Pivot (Optional)	MPG	200	2	Not Shown
	Platform Door Hinges (Optional)	MPG	200	2	Not Shown

KEY TO LUBRICANTS:

PL - Penetrate Lube

EPGL - Extreme Pressure Gear Lube (oil), meeting API service classification GL-5 or Mil-Spec MIL-L-2105.

API GL-2/3 - Texaco Meropa 150 or equivalent.

MPG - Multipurpose Grease having a minimum dripping point of 350° F. Excellent water resistance and adhesive qualities, and being of extreme pressure type. (Timken OK 40 pounds minimum.)

HO - Hydraulic Oil, API Service Classification GL-3, SAE 20W, Viscosity Index 152, e.g. Duro AW Oil.

EO - Engine (Crankcase) Oil, SAE 30. Mil-Spec MIL-L-2104.

NOTE: Outriggers must be extended to properly lubricate wear pad fittings.

Figure 2-1. Lubrication Chart. (Sheet 2 of 2)

2-5. TRANSPORTING THE CRANE SAFELY

- **General**

Certain precautions must be taken to ensure safety of personnel and to avoid damage to equipment when moving the crane between jobsites. The safety precautions provided here are not intended to replace or take precedence over federal, state or local laws which govern the use of truck mounted cranes. In addition, insurance regulations should be recognized when applicable and the vehicle manufacturer's recommendations for driving should be followed.

- **Transport**

1. Never travel with a load on the hook.
2. Ensure that the boom is retracted and properly stowed in the boom rest.
3. Always secure the hook to the pintle at the rear of the unit.

4. Ensure that outriggers are fully retracted and that pad pins and snap rings are secure.
5. If applicable, ensure that the jib assembly is securely stowed.
6. Check that the oil tank filter is properly stalled.
7. Disengage the PTO's.
8. Secure or remove all loose items.
9. If applicable, remove and properly stow personnel platform.
10. Ensure that tires are inflated to the proper pressures.
11. Allow no one to ride on the equipment during transportation and do not exceed truck seating capacities.
12. If necessary, appoint a person to provide proper signals when maneuvering the unit in close quarters or when visibility is limited.

3-1. PERSONNEL TRAINING

WARNING

SINCE THE MANUFACTURER HAS NO DIRECT CONTROL OVER MACHINE APPLICATION AND OPERATION, CONFORMANCE WITH GOOD SAFETY PRACTICE IN THIS AREA IS THE RESPONSIBILITY OF THE USER AND HIS OPERATING PERSONNEL.

This truck mounted crane is designed as a load handling unit, to be operated only by qualified personnel who have demonstrated an understanding of proper use of the equipment. It is therefore essential that operational personnel receive a thorough training and familiarization program before being allowed to operate under normal working conditions.

The initial phase of the training program should include a complete study of this manual coupled with actual operation of all equipment functions under simulated operating conditions. These simulated conditions should include, where possible, any emergency procedures which may be encountered during actual use.

The operator must be familiar with the capacities and limitations of this equipment. For this reason, the weight of the load radius must be known at all times during operation.

WARNING

DO NOT OPERATE THE EQUIPMENT UNTIL THE NECESSARY CORRECTIVE ACTIONS HAVE BEEN TAKEN TO REMEDY ANY NOTED MALFUNCTIONS.

3-2. OPERATING CHARACTERISTICS AND LIMITATIONS

● General

A thorough knowledge of the operating characteristics and limitations of the equipment is the first requirement for an operator regardless of prior experience with similar types of equipment.

Note

Reference to right and left hand is determined from crane operator control stations with operator facing controls.

● Control Placards

Placards are installed at strategic locations on equipment to both instruct personnel on equipment use, and to alert personnel of potential hazards. Such placards must be heeded by the operating personnel at all times.

● Load Capacities and Stabilization.

All load capacity ratings for the equipment are based on the following criteria:

1. Equipment is positioned on a firm, level surface.
2. Truck brakes are properly engaged.
3. Visibility is good.
4. Equipment is in good condition and equipped as when leaving the factory.
5. There are no side loads and there is no danger of load outswing.
6. The load is within the rated design capacity for lifting on properly extended outriggers as reflected on the load capacity chart.
7. The boom is fully retracted against stops to achieve maximum lift capacity as indicated on load chart.

3-3. CONTROLS AND INDICATORS

(See Figure 3-2)

Duplicate crane controls for normal operation are located on each side of machine within easy reach of the operator. All engine controls and gauges are contained in the truck cab, with the exception of the foot throttle and engine stop switch which are located on each side of machine at operator control stations.

Note

Due to the location of the engine controls and gauges, the operator must start the engine, engage PTO and monitor all gauges from the truck cab before proceeding with any crane operation. An optional engine start (IGNITION) switch at operator control station is available. Refer to applicable vehicle manual for operating instructions. Gauges and indicators should include fuel, air pressure, oil pressure, water temperature, ammeter and tachometer. These gauges must be monitored at engine start and periodically during crane operation.

- **Outrigger Controls**

(See Figure 3-1./3-2.)

General

Stabilization of the machine is achieved by use of "A" Frame or Out and Down (1000/1250/1400JBT) type outriggers mounted on the forward side of the crane pedestal. Or "A" Frame and Drop Down (1000/1250JBT) stabilizers mounted just aft of the rear axle. On those machines equipped with a rear mounted pedestal, the outriggers are mounted on the forward side of the crane pedestal, just aft of the rear axle. The stabilizers are located just aft of the truck cab. (See Figure 3-1)

1. "A" Frame Outriggers

The front outriggers are controlled by a mechanical arrangement through two (2) manually operated hydraulic control valves. Two (2) control levers located at each operator control station provide for independent control of each outrigger leg.

The levers are labeled OUTRIGGER THIS SIDE and OUTRIGGER OTHER SIDE with arrows on the knob indicating lever direction for EXT. (extend) and RET. (retract). Speed of outrigger movement is regulated by control lever position.

2. Outriggers

The Outriggers are hydraulically operated and mechanically and electrically controlled. Two (2) manually operated hydraulic control valves operate both the (beam) and (jack) cylinders. An electrically controlled hydraulic valve stack diverts flow to operate the (beam) cylinders individually. The hydraulic valves are controlled by two (2) control levers located at each operator control station. The levers are labeled O/R BEAM with arrows on the knob indicating lever direction for OUT and IN. The beam cylinders are extended by depressing the button on the applicable O/R BEAM control lever and moving the lever in the direction indicated by the arrows or the control knobs for either OUT or IN.

3. "A" Frame or Drop Down Stabilizers

The "A" Frame or Drop Down stabilizers are controlled by a mechanical arrangement through two (2) manually operated hydraulic control valves. Two (2) control levers located at each operator control station provide for independent control of each stabilizer leg. The levers are labeled STABILIZER THIS SIDE

and STABILIZER OTHER SIDE with arrows on the knob indicating lever direction for EXT. (extend) and RET. (retract). Speed of stabilizer movement is regulated by control lever position.

4. Outrigger/Stabilizer-In-Motion Alarm

This audible warning device alerts personnel to the fact that the crane outriggers are in motion. The alarm will activate during either extension or retraction cycles. This system also includes flashing lights located adjacent to each outrigger. These flashing lights will independently illuminate to indicate which outrigger or stabilizer is in motion.

- **Crane Controls and Indicators**

(See Figure 3-2.)

Control of all crane functions is achieved by the use of control levers located at the operator's control console on either side of the pedestal. The crane controls are duplicated at both control consoles, **the position of the control groups** (i.e....crane control group (tall levers) and outrigger/stabilizer control group (short levers)) are the same at both operator control consoles, crane controls are to the outside of console, outrigger/stabilizer controls to the inside of console nearest the pedestal. The crane control group **lever order** on the left-hand side is consistent with the grouping on the right-hand side. For example, the extreme left (tall) control lever on both control consoles is the ROTATION control lever.

1. Swing Control

Clockwise and counterclockwise rotation of the turntable and boom is controlled by the ROTATION lever. Forward movement (LT) of the control provides for left-hand or counter-clockwise rotation while rearward movement (RT) of the control provides for right-hand or clockwise rotation. A rotation limit device installed within the turntable and pedestal structure restricts movement of the turntable to 375 degrees in each direction.

2. Telescope Control

Extension and retraction of the boom is controlled by the TELESCOPE lever. Forward movement (OUT) of the control provides for extension of the boom sections while rearward movement (IN) of the control provides for retraction of boom. When the lever is in the center or neutral position, a hydraulic holding valve mounted on the telescope cylinder

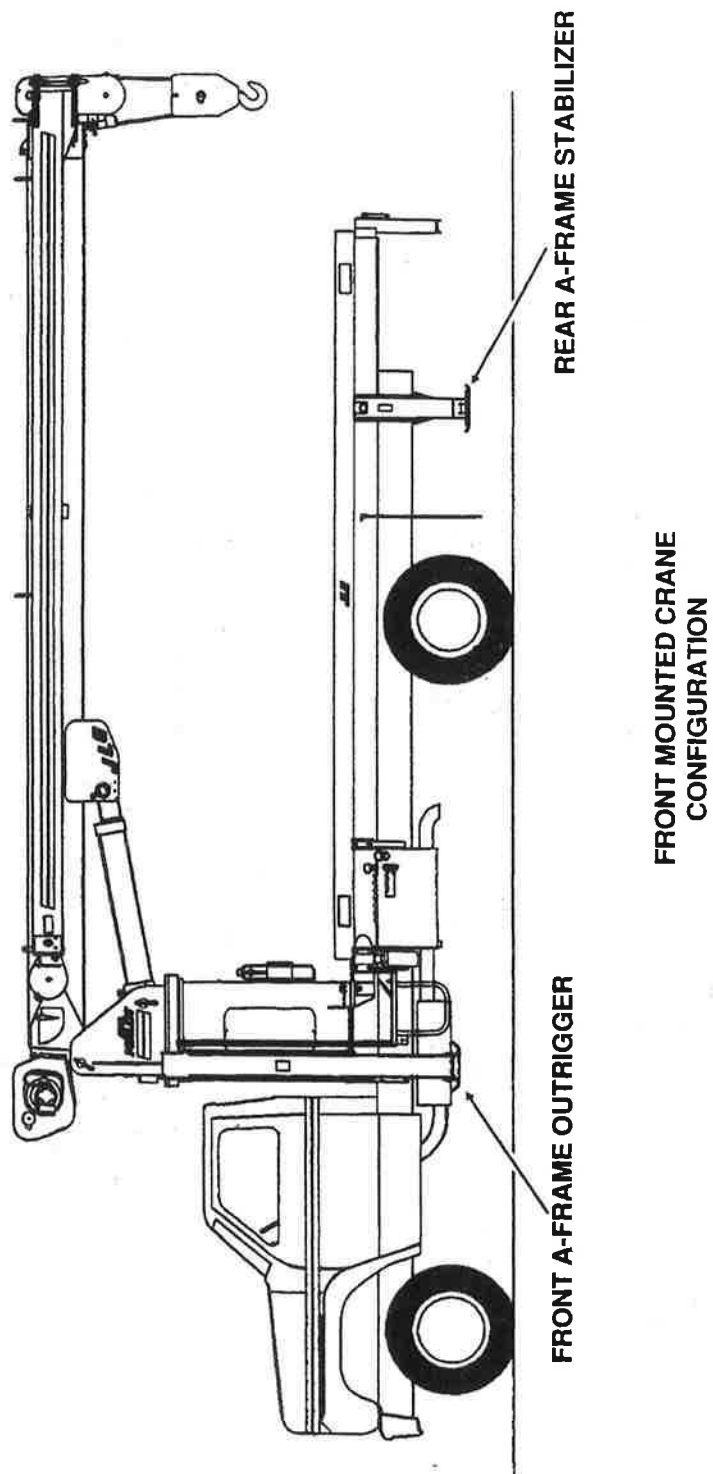


Figure 3-1. Outrigger and Stabilizer Locations.

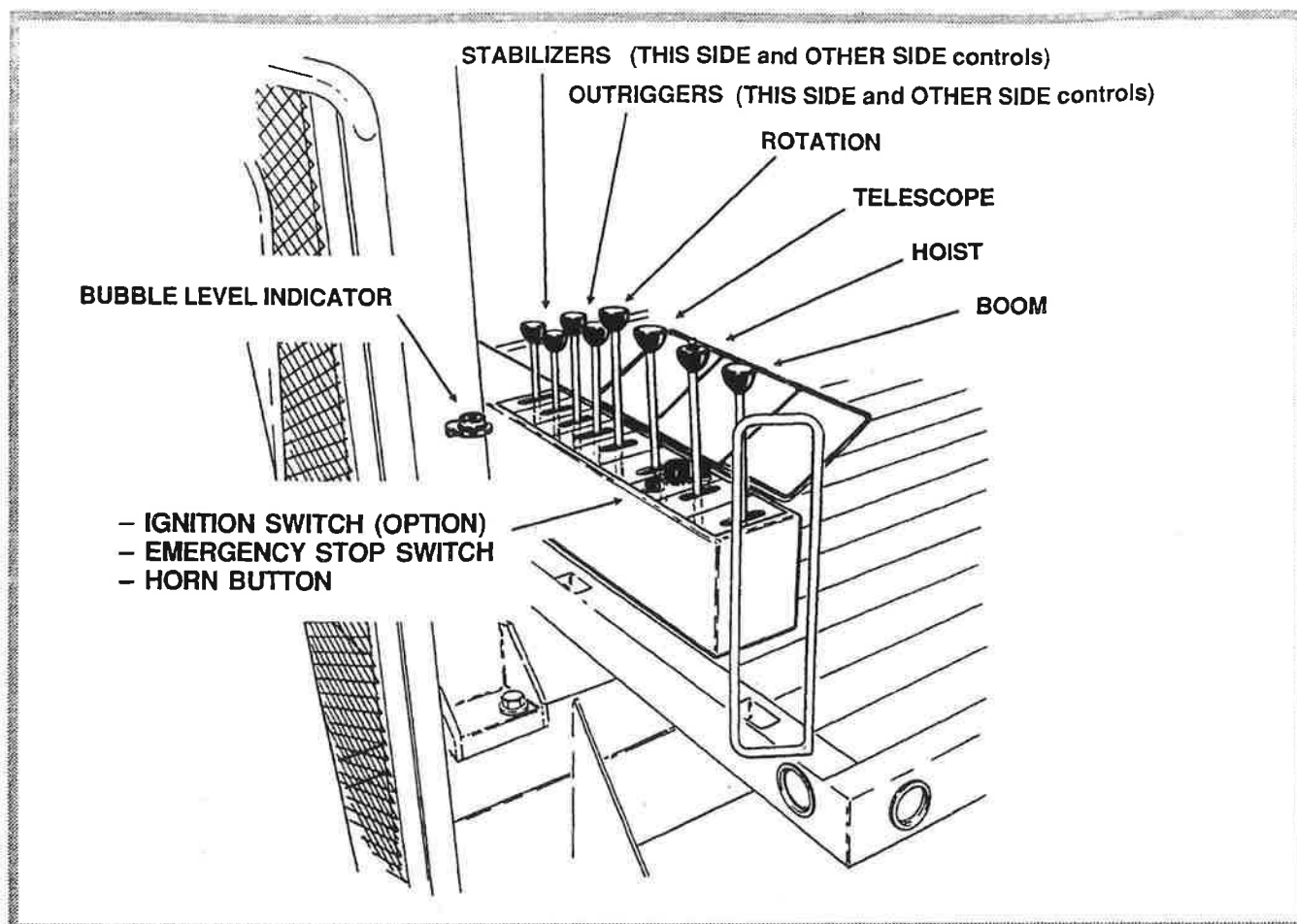


Figure 3-2. Controls and Indicators. (Standard Right Hand Control Station)

prevents inadvertent retraction of the boom in the event of hydraulic line failure.

3. Hoist Control

Progressive control of the crane hoist is achieved by means of the HOIST control lever. The lever is labeled HOIST with arrows pointing UP for hoist up and DN for hoist down. Forward movement of the control permits lowering of the cable while rearward movement raises the cable. A brake incorporated into the winch assembly functions to hold the cable in the desired position when the lever is in the center or neutral position.

The machine is equipped with a two-speed winch, the operator can select high or low winch speed with a control switch which is provided. The control switch is a button located on top of the winch control lever knob. The two-speed function is achieved by supplying additional hydraulic oil flow to the winch motor from the hydraulic system.

4. Lift Control

Raising and lowering of the boom is accomplished by means of the BOOM control lever. Forward movement (DN) of the control permits lowering of the boom while rearward movement (UP) raises the boom. A hydraulic holding valve mounted on the lift cylinder port block prevents inadvertent lowering of the boom in the event of hydraulic line failure or when the control lever is moved from the center or neutral position with the engine stopped.

5. Emergency Engine Stop Switch

An on/off emergency ENGINE STOP switch is mounted on the top panel of control station between the hoist and telescope levers at each operator station. The switch is a push/pull type switch. *Pull for engine run and Push for engine stop.* Crane functions can only be operated with this switch in the "on" position.

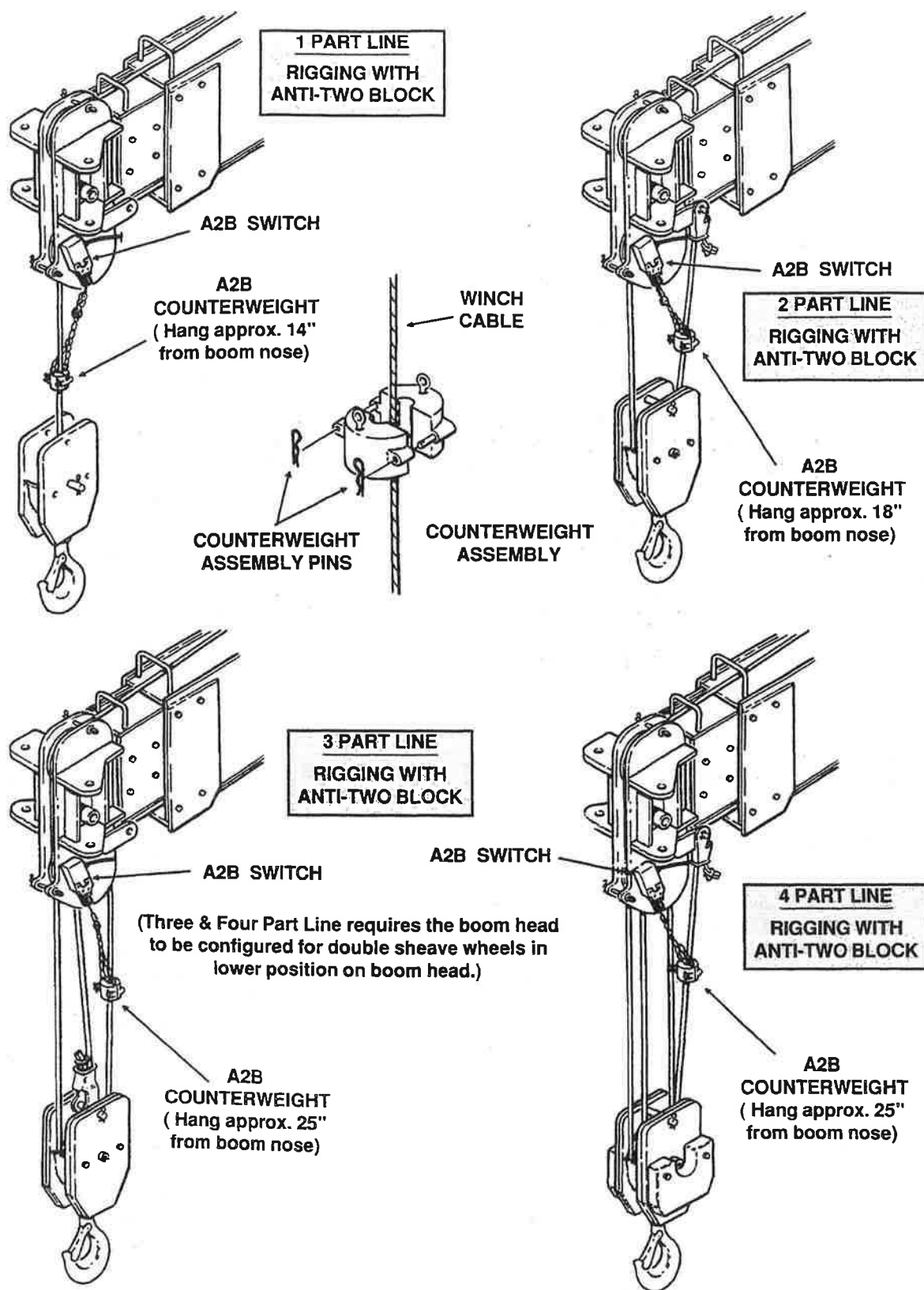


Figure 3-3. Anti-Two Block Installation.

6. Horn Switch

A push-button type HORN switch located adjacent to the emergency STOP switch provides electrical power to the truck horn when depressed.

7. Boom Angle Indicator

A pendulum type boom angle indicator is mounted on each side of the base boom and is visible from each operator station. The indicator measures the full range of boom movement from 15 degrees below horizontal to 80 degrees above horizontal in 10 degree increments in the above horizontal range.

8. Crane Level Indicator

Two circular bubble-type level indicators are located on the sides of the pedestal, where the control station and pedestal meet. These 'bulls-eye' indicators provide the operator with an indication of crane attitude when setting the outriggers so that the operator can properly level machine.

9. Throttle Control

A foot-pedal operated throttle control is mounted on the platform floor at each operator station. The pedal controls engine speed from normal idle up to a maximum of approximately 2500 rpm.

10. Anti-Two Block Device (See Figure 3-3.)

All cranes are equipped with an anti-two block device. The anti-two block device consists of a hollow weight suspended from the boom nose by a chain. The weight hangs with the winch cable running through it's center. Also an electro-mechanical switch (A2B switch) mounted on the boom nose is connected to the chain via a retractable steel cable. When contact is made with the suspended weight by the hookblock or any other lifting device nearing the boom tip, the anti-two block switch circuit is deactivated and HOIST UP and TELESCOPE OUT are prevented from operating. HOIST DOWN or TELESCOPE IN until the lifting device clears the switch, will restore these functions.

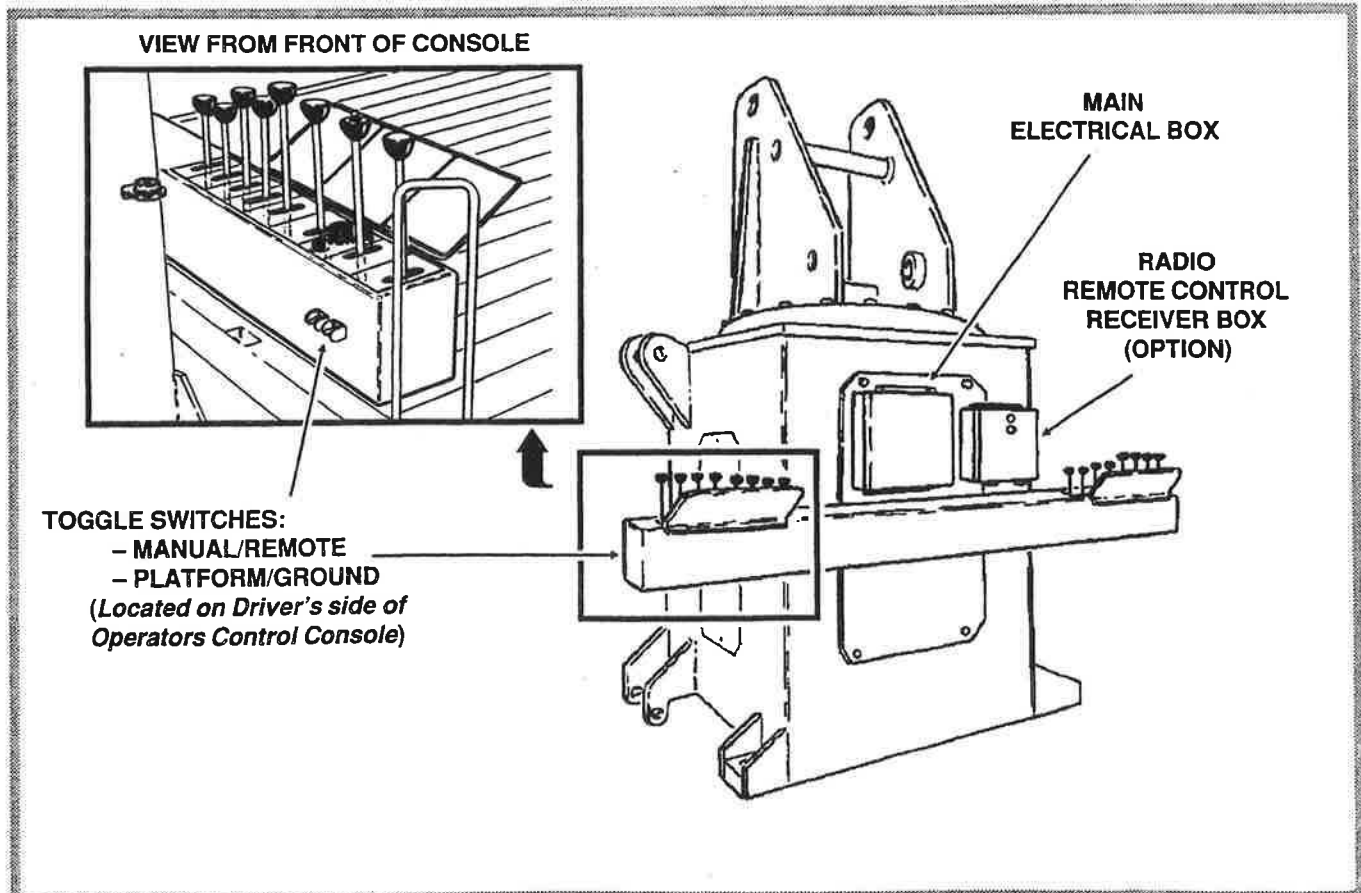


Figure 3-4. Radio Remote Control - Chassis Components.

11. Drum Rotation Indicator

All cranes are equipped with indicators on both sides of the winch mounting bracket to allow the crane operator and any nearby personnel a visual speed and direction indicator of hoist drum rotation.

12. Overload Warning System

(Optional on boom lengths 61 ft. or less)

This available system is used to alert the operator to an overload situation during crane operation. A pressure switch senses the hydraulic pressure in the lift cylinder, when the pressure exceeds a preset level, the warning system is activated. The system is available as a warning system only, or as a warning and cutout system.

a. Overload Warning Horn and Indicator Light.

This configuration provides the crane operator with an audio and visual warning when the crane reaches an overload condition. When hydraulic pressure in the lift cylinder reaches a preset level, a warning horn on the pedestal is activated and an indicator light on the control console is illuminated.

b. Overload Warning Horn, Indicator Light and Cutout.

This configuration provides the crane operator not only with an audio and visual warning of an overload condition, but it also provides a cutout of certain systems to prevent the overload condition from getting worse. When hydraulic pressure in the lift cylinder reaches a preset level, a warning horn on the pedestal is activated and an indicator light on the control console is illuminated. In addition, a relay is activated which cuts off electrical power to the solenoid valves controlling winch up, telescope out and lift down.

Note

When the boom is fully elevated and the lift up control bottomed out, hydraulic pressure in the lift cylinder can cause the overload warning and cutout system to be activated, even though an overload condition may not be present. When the cutout is included as part of the overload warning system, a boom angle switch is also included. This switch, which is normally open, is activated when the boom elevation reaches 80° and allows electrical power to

override the cutout relay to the lift down solenoid. This allows the operator to lower the boom to deactivate the warning and cutout system.

With the cutout relay activated, the operator still has the TELESCOPE IN, WINCH DOWN and LIFT UP functions operable for use in correcting the overload condition.

● Radio Remote Control (OPTION)

(See Figure 3-4.)

Upon installation of the JLG Radio Remote Control package, the user may control the crane's lift, hoist, telescope and swing functions from either a ground position away from the operator's station or from the optional personnel platform. The main components of the package consist of a radio transmitter, the main electrical/radio receiver box, an electro-hydraulic proportional control valve bank and the necessary interconnecting wiring and componentry.

1. Main Power Toggle Switch

The main power (MANUAL/REMOTE) toggle switch for the truck portion of the radio remote control is located on the operators control station console. Toggle to REMOTE for radio remote control operation.

The transmitters, both Joystick and Hand-Held are battery powered and are in a "ready state" with battery inserted.

Note

The MANUAL/REMOTE toggle switch must be set to MANUAL to set outriggers and stabilizers.

IMPORTANT

A GROUND/PLATFORM toggle switch is also installed on the operator's control console next to the MANUAL/REMOTE toggle switch. This switch must be set to PLATFORM for radio remote control operation from an installed personnel platform (optional). This prevents the winch circuit from accidental operation.

2. Main Electrical/Radio Receiver Box

Mounted on the crane pedestal, the main electrical/radio receiver box contains; the radio receiver detector, radio receiver microprocessor circuit board, a function programming board and the valve drive circuit board. The function of this box is to receive a properly addressed digitized radio signal from the radio transmitter and convert the signal into an electrical output to drive the control valves for each crane function. As mentioned above, the main electrical/radio receiver box does not become active until the MANUAL/REMOTE tog-

gle switch on the operators control console is switched to REMOTE. When the receiver box is powered on, the RED lamp on the receiver box door will light up. The GREEN lamp on the receiver box door will light up only when a properly addressed radio signal is being received from the transmitter.

3. Radio Transmitter (Not Shown)

There are two (2) types of radio transmitters available, joystick and hand-held. Both operate on rechargeable battery power. When the battery is inserted, the transmitter sits in a "ready state" and turns on when a control is activated. Both include a battery charger which is mounted in the cab of the truck.

The Joystick Transmitter is housed in a 12" x 5" enclosure with two (2), two (2) axis joysticks for proportional control of the main crane functions, and toggle switches for control of digital (on/off) functions. This transmitter is capable of three (3) function simultaneous operation and include "push-to-operate" "Enable" buttons to prevent inadvertent operation of controls. When operating crane with the optional personnel platform attached, the joystick transmitter can be temporarily attached to a mounting bracket on the personnel basket.

DANGER

DO NOT USE THE RADIO REMOTE CONTROL IF EITHER "ENABLE" BUTTON ON THE JOYSTICK TRANSMITTER FAILS TO STOP MACHINE OPERATION WHEN RELEASED.

IMPORTANT

BE CAREFUL TO MOVE LEVERS STRAIGHT ALONG THEIR CENTER AXIS OF MOVEMENT (I.E. BACK AND FORTH OR SIDE TO SIDE). MOVING LEVER OFF ITS CENTER AXIS WILL PRODUCE TWO (2) MOTIONS AT THE SAME TIME.

The Hand-Held Transmitter is smaller and more compact compared to the joystick transmitter. It uses position sensitive finger tip membrane controls (softpot segments) for proportional and digital functions. Functions are selected from a menu displayed on an LCD display. All digital functions "latch" on when selected and work simultaneously when proportional functions are activated. This transmitter is capable of two (2) function simultaneous operation. The hand-held is turned on by pressing one of the select buttons, and will shut itself off automatically if it receives no keypad input for 2 minutes.

3-4. OPERATING THE CRANE

• Work Site Selection.

Proper planning of the work to be performed involves the selection of the best possible work site. The ideal parking area is located as close as possible to the work station on firm, level, dry ground or pavement, as free from overhead wires or obstructions as possible. If possible, avoid using the crane on steep grades and if it is necessary to do so, ensure that wheels are properly chocked and that the lift is performed on the uphill side over the rear with outriggers properly set.

• Preparation for Machine Operation

No attempt should be made to operate the crane until a thorough understanding of all instructions pertaining to lifting and lifting capacities has been achieved. In particular, information contained on the following, must be completely understood.

- **LIFTING CAPACITIES CHART**
- **BOOM LENGTH MARKING TAPE**
- **NOTES TO LIFTING CAPACITIES**
- **HOOK HEIGHT CHART**
- **WEIGHT REDUCTION FOR LOAD HANDLING DEVICES**
- **ALL DANGER, WARNING, CAUTION AND INSTRUCTION NAMEPLATES**

1. Lifting Capacities Chart

This nameplate shows the maximum weight which can be handled by the crane at various boom lengths and load radii. In all cases, the weight of load handling devices should always be deducted from the weights shown on the nameplate in order to determine the actual payload. It must also be remembered that during a lift the load radius and boom length may change as work progresses, therefore constant reference to the load chart should be made.

2. Boom Length Marking Tape

Marking tapes are located on each side of the mid boom section(s) to indicate actual boom length. It must be remembered that during a lift the load radius and boom length may change as work progresses, therefore constant reference to the load chart should be made.

3. Notes To Lifting Capacities

This nameplate when used in conjunction with the Lifting Capacities nameplate provides clarification of the procedures normally followed during the lifting operation.

4. Hook Height Chart

This nameplate provides, in chart form, the distance from the centerline of rotation to the hook at varying boom lengths and angles. This distance will be used to determine the lifting capacity.

5. Weight Reduction For Load Handling Devices

This nameplate provides an indication of the weight of those devices which may be used either singly or in combination during the lifting operation. These weights must be taken into consideration when determining the payload.

6. Danger, Warning, Caution and Instruction Nameplates

These nameplates are located in strategic locations around the machine to inform the operator and ground personnel of possible hazards which may be encountered during operation.

● Crane Function Operation

Normal crane operation is performed using the controls described in Section 3-3. "CONTROLS AND INDICATORS", and in the manner indicated on the appropriate nameplate. The controls should always be operated slowly and smoothly so that sudden starting and stopping of a function is avoided and that excessive shock loads are not imposed on structural components. Careful use of the function control lever together with the accelerator pedal will ensure smooth and proper crane operation.

● Starting the Engine and Engaging PTO

1. At both operator stations, pull up on the ENGINE STOP switch.

WARNING

INTERNAL COMBUSTION ENGINE EXHAUST GASES CAN BE EXTREMELY DANGEROUS IF THE EQUIPMENT IS OPERATED IN AN ENCLOSED AREA. OPERATE THE EQUIPMENT ONLY IN AN ADEQUATELY VENTILATED AREA.

CAUTION

NEVER CRANK THE ENGINE FOR EXTENDED PERIODS DURING AN ATTEMPTED START. ALLOW AN INTERVAL OF AT LEAST TWO MINUTES BETWEEN CRANKING PERIODS TO PREVENT STARTER OVERHEATING. REFER TO VEHICLE MANUAL FOR SPECIFIC INSTRUCTIONS.

2. Ensure that the transmission is in neutral and start the engine in accordance with the instructions contained in the chassis manufacturers' truck manual.

CAUTION

PTO MUST BE ENGAGED WITH CLUTCH DEPRESSED AT ENGINE IDLE ONLY, AS DAMAGE WILL OCCUR TO MAIN HYDRAULIC PUMP OR PTO.

Note

Start up of hydraulic system with oil temperatures below zero degrees Fahrenheit is not recommended. If it is necessary to start the system in a sub-zero environment, it will be necessary to heat the oil with a low density, 110V ac heater to a minimum temperature of zero degrees Fahrenheit.

3. With the engine at idle speed, depress the clutch and pull out the PTO shift cable knob to engage the PTO. Slowly release the clutch pedal.
4. Before leaving the truck cab, ensure that the parking brake is firmly set.

- **Setting Outriggers and Stabilizers**

"A" Frame Outriggers**Note**

Procedures for operating the crane are identical at both stations. All controls are duplicated at each station.

Allow the hydraulic oil to warm-up for a short period before operating any functions.

1. Ensure that the areas in the vicinity of the outrigger footing on both sides of the crane are clear of personnel or other obstructions.
2. Using the foot pedal at the operator station to adjust engine speed as required, position the THIS SIDE OUTRIGGER and OTHER SIDE OUTRIGGER control levers forward to DN.

Note

Be certain the surface under the outrigger pads is capable of supporting the weight of the machine when fully extended. If the surface is not adequate, blocking must be positioned beneath the pads to provide a firm and stable supporting surface.

3. As the outrigger pads contact the ground, observe the bulls-eye bubble level indicator on the pedestal and using the control levers, level the crane.
4. Fully extend outriggers as far as possible using cribbing or blocking as necessary to level machine.

Out & Down Outriggers (1000/1250/1400JBT)**Note**

Procedures for operating the crane are identical at both stations. All controls are duplicated at each station.

Allow the hydraulic oil to warm-up for a short period before operating any functions.

1. Ensure that the areas in the vicinity of the outrigger footing on both sides of the crane are clear of personnel or other obstructions.
2. Attach outrigger pads to jack cylinders.
3. Using the foot pedal at the operator station to adjust engine speed as required. Depress and hold the button switch on top of each O/R BEAM control lever and push forward (OUT)

on levers to extend the beams. Operate levers until both beams are fully extended.

Note

Be certain the surface under the outrigger pads is capable of supporting the weight of the machine when fully extended. If the surface is not adequate, blocking must be positioned beneath the pads to provide a firm and stable supporting surface.

4. With the engine speed still adjusted as required, extend each jack cylinder by pushing each O/R BEAM control lever forward (OUT). As the outrigger jack pads contact the ground, observe the bulls-eye bubble indicator on the pedestal and using the control levers, level the crane.
5. Fully extend outrigger jacks as far as possible using cribbing or blocking as necessary to level machine.

"A" Frame or Drop Down Stabilizers (1000/ 1250JBT)**Note**

Procedures for operating the crane are identical at both stations. All controls are duplicated at each station.

Allow the hydraulic oil to warm-up for a short period before operating any functions.

1. Ensure that the areas in the vicinity of the stabilizer footing on both sides of the crane are clear of personnel or other obstructions.
2. Using the foot pedal at the operator station to adjust engine speed as required, position the THIS SIDE STABILIZER and the OTHER SIDE STABILIZER control levers forward to DN.

Note

Be certain the surface under the stabilizer pad is capable of supporting the weight of the machine when fully extended. If the surface is not adequate, blocking must be positioned beneath the pads to provide a firm and stable supporting surface.

3. As the stabilizer pads contact the ground, observe the bulls-eye bubble level indicator on the pedestal and using the control lever, level the crane from side-to-side.
4. Fully extend stabilizers as far as possible using cribbing or blocking as necessary to level machine.

**3-5. SINGLE AND TWO SECTION JIB
INSTALLATION****WARNING**

OUTRIGGERS MUST BE PROPERLY SET PRIOR TO ATTEMPTING JIB INSTALLATION.

CAUTION

JIB MAY BE USED ONLY WITH SINGLE PART LINE AND DOWNHAUL WEIGHT.

ENSURE BOOM TELESCOPE FUNCTION IS NOT USED UNTIL THE JIB HAS BEEN REMOVED FROM ITS STOWED POSITION AND PROPERLY INSTALLED OR HAS BEEN DETACHED FROM THE BOOM FLY SECTION. SEVERE DAMAGE WILL OCCUR TO BOOM AND/OR JIB AS A RESULT OF PREMATURE TELESCOPE FUNCTION USAGE.

1. Using all applicable safety precautions, operate the crane systems to raise the boom free of the boom support, swing the boom clear of support.
2. Operating the TELESCOPE lever, extend the boom three fourths (3/4) its total extended length and lower the headache ball onto the ground or suitable capacity stand.
3. Operating the TELESCOPE lever, retract boom fully allowing headache ball and cable to stay in its extended position. At same time lowering boom to allow access to anti-two block counterweight and boom head.
4. With boom lowered remove the two (2) hair pins on the anti-two block switch counterweight. Remove the counterweight from around cable, but leave counterweight on chain and attached to anti-two block switch temporarily.

Note

In step 5 the open wedge cable socket will need to be removed from cable end and cable unreeved from lower boom nose sheave wheels if your crane model is reeved for 3 or 4 part line.

5. Now remove the two (2) winch cable retaining pins from the boom head and temporarily lay the cable to left side (passengers side) of boom head, out of the way of jib attach lugs. With cable off to side, re-install lower cable retaining pin in boom head.
6. Operate crane and align jib and boom lug attachment holes on right side (drivers side) of

boom head. Install right side upper and lower tapered jib attach pins through boom jib-to-boom lug attach points. Secure with hairpins. (See Figure 3-5)

CAUTION

DO NOT ATTEMPT TO TELESCOPE BOOM AT THIS POINT IN PROCEDURE UNTIL JIB STOWAGE PIN IS REMOVED IN STEP 9. SEVERE DAMAGE WILL OCCUR TO BOOM AND/OR JIB AS A RESULT OF PREMATURE TELESCOPE FUNCTION USAGE.

7. Attach a length of rope to the jib nose before releasing jib stowage pin, to aid in swinging the jib into position.

WARNING

BEFORE PROCEEDING, INSURE THE MACHINE IS LEVEL BY REFERRING TO THE BUBBLE LEVEL INDICATOR. IF NOT, USE BLOCKING TO LEVEL YOUR MACHINE.

EXTREME CARE MUST BE TAKEN DURING REMOVAL OF THE JIB STOWAGE PIN TO AVOID INJURY TO PERSONNEL IF THE JIB SHOULD SWING AWAY FROM THE BOOM STRUCTURE.

8. MOVE BOOM TO HORIZONTAL POSITION BEFORE ATTEMPTING TO SWING JIB AWAY FROM BOOM STRUCTURE.
9. Remove the jib stowage pin, located on the ramp weldment of the jib, which secures the jib to the boom base section. (See Figure 3-6)
10. Have an assistant restrict jib movement with the rope attached to the jib nose.
11. Using all applicable safety precautions, activate the crane systems and extend the boom until both the jib hook clears the ramp weldment and the stowage pin clears the rest weldment on the end of the base boom.
12. Using the rope attached to the jib nose, carefully pull the jib around the right-hand (drivers side) attach pin pivot point until the left side (passengers side) jib and boom nose lug attachment holes are aligned.

Note

If necessary, carefully lower jib tip to ground to assist in alignment.

13. Insert the tapered end of the jib attach pins through the jib and boom nose attach holes. Secure pins using the appropriate cotter pins.

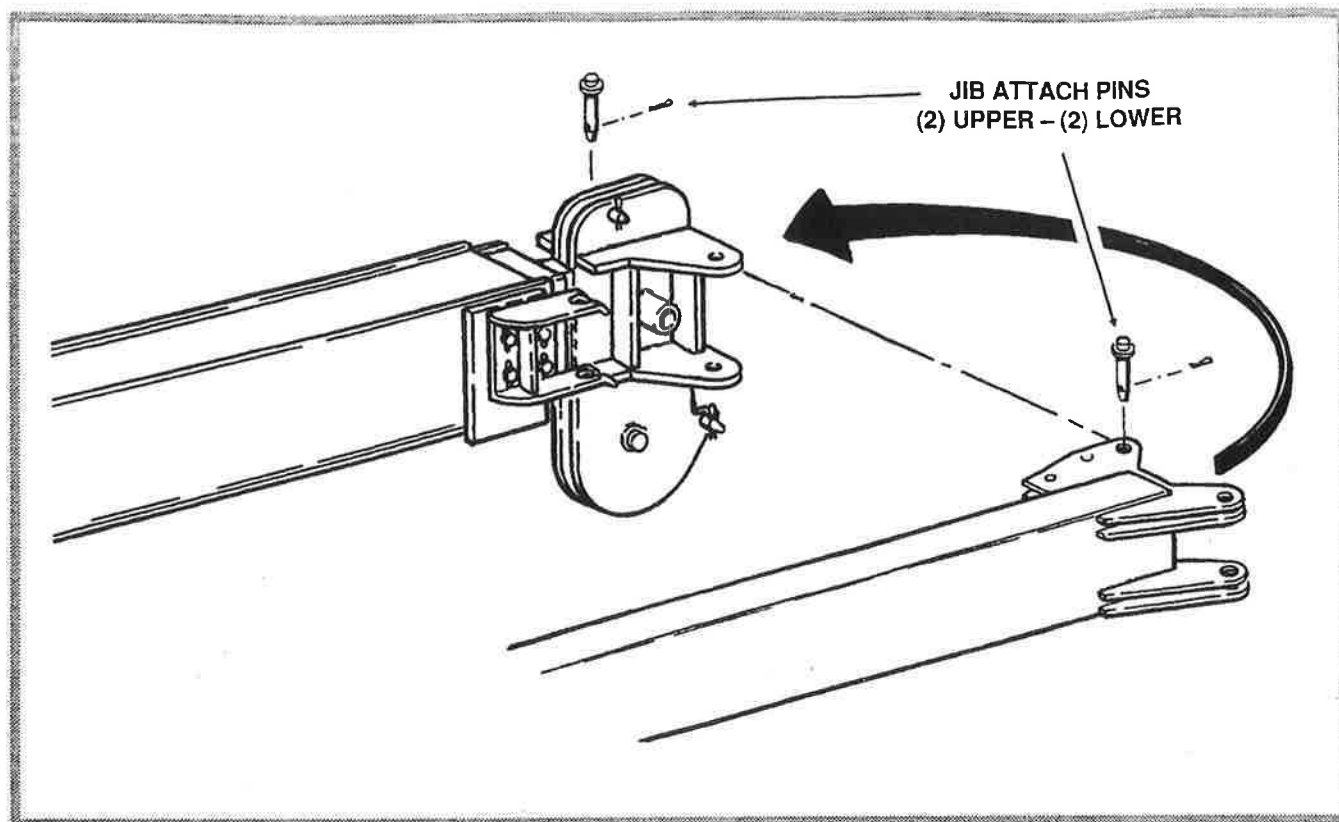


Figure 3-5. Jib Attachment Pins.

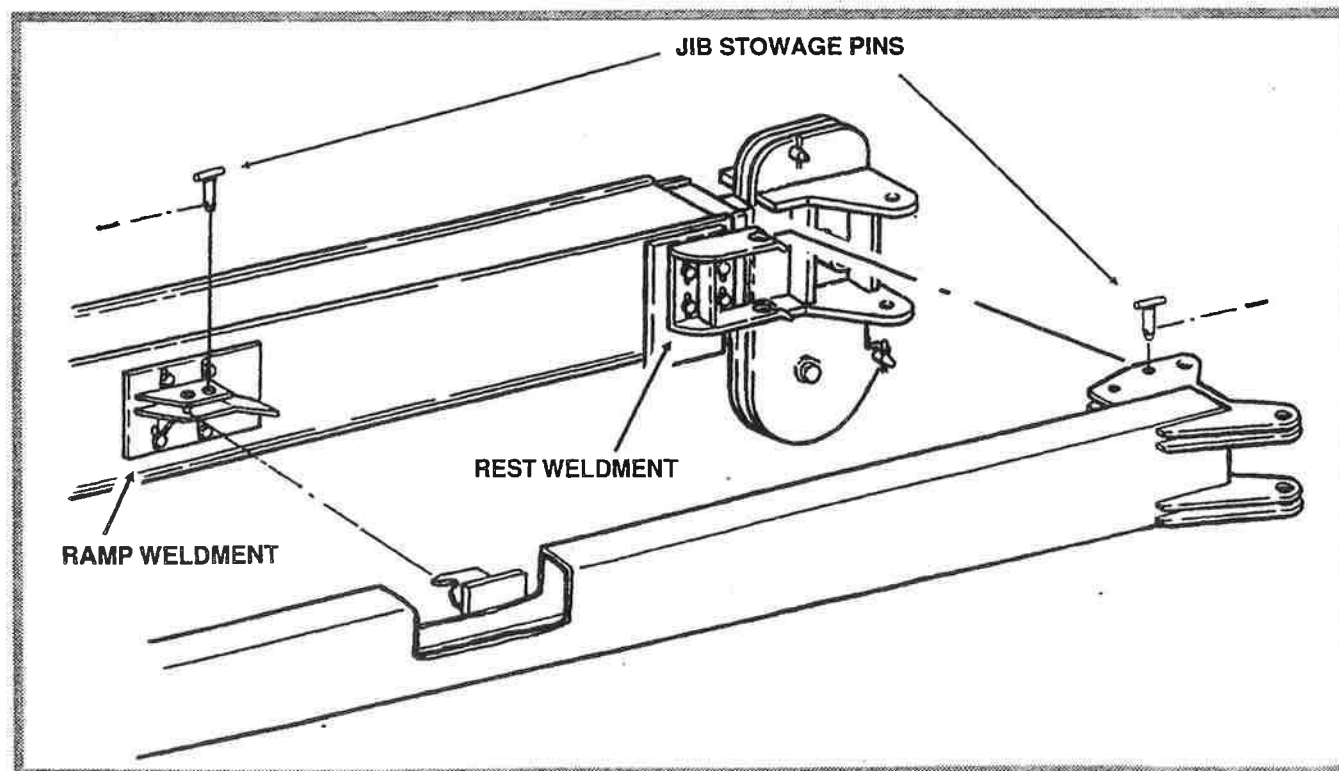


Figure 3-6. Jib Stowage Pins.

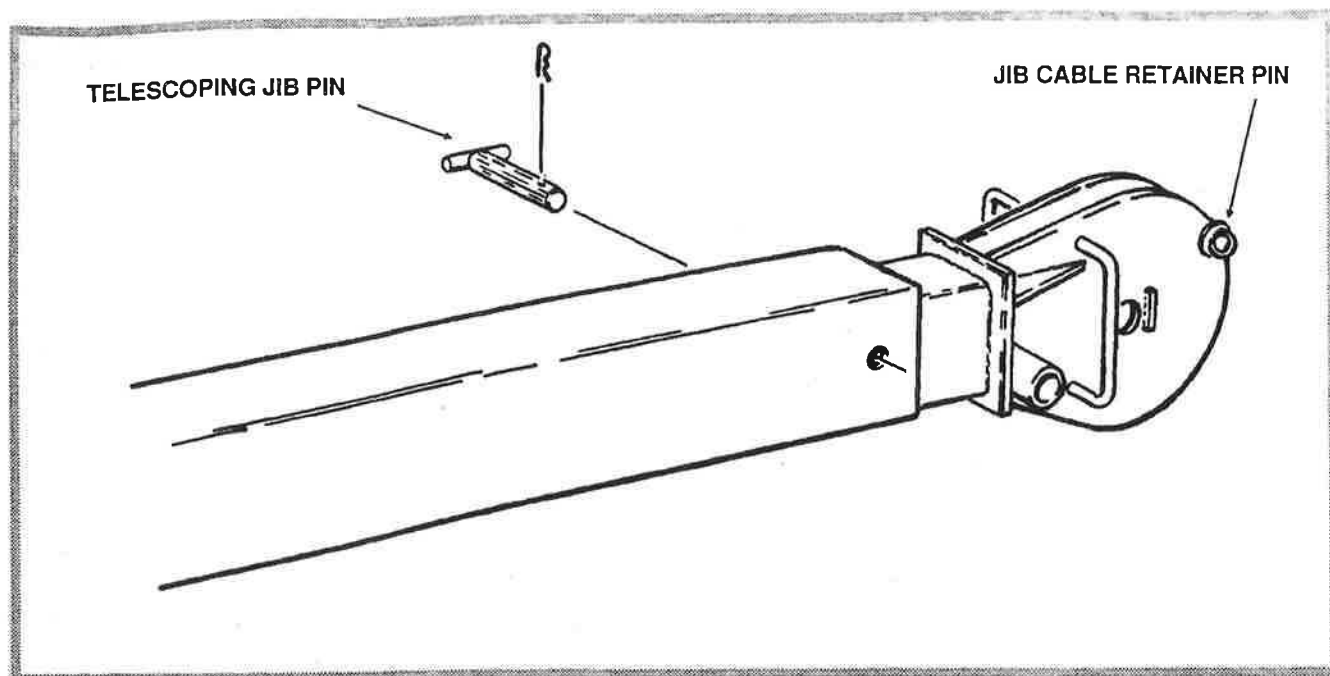


Figure 3-7. Telescoping Jib Pin Installation.

14. Disconnect electrical system from main boom anti-two block switch and connect jib anti-two block wiring connector to electrical system on main boom head.

15. Transfer anti-two block counterweight with chain from main boom head to jib boom head. Attach chain to jib nose and to anti-two block switch cable, let hang for now.

Note

Steps 16 thru 19 are applicable for telescoping jib only.

16. Remove wing nut from clamp on side of jib and remove anti-two block electrical wiring from clamp, allow wiring to hang unrestricted. Re-install wiring clamp securely on side of jib.
17. With boom slightly below horizontal and jib securely attached remove hair pin which retains the telescoping jib attach pin.
18. Carefully slide fly section from jib base section. Continue sliding fly section out of base until hole in fly section aligns with hole in jib base.
19. Re-install telescoping jib attach pin and secure with hair pin. (See Figure 3-7)
20. Feed the cable along the jib, through the jib cable guide. Remove jib cable retainer pin and feed cable around the jib nose sheave, re-install jib cable retainer pin.

Note

Main boom nose sheave is not used in cable routing when fixed or extendable jib is installed.

21. If open wedge socket was removed in step 5 due to 3 or 4 part line, cable reeving, re-install open wedge cable socket onto end of wire rope. See guidelines in Figure 3-8.
22. Install anti-two block counterweight around wire rope and adjust counterweight chain length to activate cutoff switch before two-blocking occurs.
23. Operate crane systems to elevate and extend boom to take up any slack in cable. *Do not operate winch until all slack is removed from cable.*
24. Shut down crane systems.

● **Jib Stowage**

WARNING

OUTRIGGERS MUST BE PROPERLY SET BEFORE ATTEMPTING JIB REMOVAL AND STOWAGE.

1. Using all applicable safety precautions, activate the crane functions and position the boom in an area over the rear of the truck so as to allow easy access to the boom and jib components.

2. Using all applicable safety precautions, retract the boom to within one (1) foot of its fully retracted position.
3. Using the crane systems, lower the headache ball onto the ground or suitable capacity stand.
4. Remove the two (2) hair pins from jib anti-two block switch counterweight. Remove the counterweight from around cable, but leave counterweight on chain and attached to jib nose temporarily.
5. Remove hair pin and cable retainer pin from jib nose. Now remove cable from jib sheave and jib cable guide and lay cable to left side (passengers side) of boom. Re-install cable retainer pin on jib nose.
6. Remove the anti-two block counterweight and chain from the jib nose and attach counterweight and chain to main boom head and anti-two block switch.
7. On main boom head, disconnect jib anti-two block electrical wiring from main boom electrical system connector. Reconnect main boom anti-two block switch wiring connector to main boom electrical system connector.
14. Using the rope attached to the jib nose, carefully pivot the jib around on the upper and lower right-hand (drivers side) attach pin pivot points until the jib is parallel with the base boom.
15. Using all applicable safety precautions activate the crane systems and slowly retract the boom. Ensure that the jib stowage hook on jib engages with the ramp weldment dowel properly, and the stowage pin on the jib mounting lug properly engages with the rest weldment on the side of the base boom section as the boom is retracted.
16. Install the a jib stowage pin at the ramp weldment on the side of the base boom. Secure the pin with the cotter pin.

CAUTION

ALWAYS REMOVE THE RIGHT (DRIVERS SIDE) ATTACH PINS FROM THE BOOM NOSE PRIOR TO ATTEMPTING TELESCOPE FUNCTION, OR SERIOUS DAMAGE WILL OCCUR TO JIB AND RELATED COMPONENTS.

Note
Steps 8 thru 11 apply to telescoping jib only.

CAUTION

MACHINE MUST BE LEVEL AND BOOM HORIZONTAL BEFORE STARTING STEP 8 AND STEP 12.

8. Remove hair pin which secures the telescoping jib retaining pin and remove pin.
9. Carefully slide jib fly section into jib base section. Continue sliding jib fly section into jib base until hole in fly section aligns with hole in jib base.
10. Install retaining pin and secure with hair pin.
11. Reattach anti-two block wiring to side of jib with wing nut and clamp securely.
12. Attach a length of rope to the jib nose to aid in swinging the jib to its stowed position.
13. While slightly restraining the jib, carefully remove the left-hand (passengers side) upper and lower attach pins from the main boom nose and jib lugs.
17. With jib stowed, remove the remaining right-hand (drivers side) upper and lower attach pins from the boom nose jib lugs, and move them to the opposite (outboard) jib lug holes. Stow the left-hand (passengers side) upper and lower jib attach pins (already removed), on the left-hand (passengers side) main boom jib-to-boom lugs.
18. Using all applicable safety precautions, operate crane systems and position the TELESCOPE CONTROL lever to EXTEND boom until all slack is removed from winch cable. *Do not operate winch until all slack is removed from cable.*
19. Remove the upper and lower main boom head cable retainer pins if re-installed. Reeve cable over sheave wheels for configuration required i.e... 1 part line, 2 part line, etc., then re-install cable retainer pins in boom head.
20. Install anti-two block counterweight around winch cable and adjust counterweight chain length to activate cutoff switch before two-blocking occurs.
21. Operate crane systems to elevate boom to take up any slack in the cable. *Do not operate winch until all slack is removed from cable.*

3-6. WIRE ROPE BREAK-IN

A new wire rope requires careful installation and proper break in. After the rope has been installed and the ends secured in the correct manner (See Figure 3-8.) the winch should be started carefully and then run through a cycle of operation at very slow speed. During this trial operation, a very close watch should be kept on all working parts - sheaves, drums, rollers - to make certain that the wire rope runs freely and spools on drum evenly and without any obstructions. If no problems appear in running the rope, the next step should include several run throughs of the normal operational cycle under light load and at reduced speed. This procedure allows the component parts of the new rope to make a gradual adjustment to the actual operating conditions.

3-7. CABLE REEVING

• Single Part Line Reeving

(See Figure 3-9.)

Note

The following procedure must be followed and used before lifting the maximum permissible load allowed with a single part load line.

1. Lower boom to allow access to boom nose upper and lower sheave wheels, and winch cable retaining pins.
2. Pay out enough winch cable so end of cable extends beyond boom nose.
3. If not already done, reeve winch cable through base and mid-boom cable guides on top of boom.
4. Remove the upper and lower winch cable retaining pins on boom nose.
5. Reeve the winch cable through the boom nose over the upper sheave wheel and lower sheave wheel (lower right sheave wheel (drivers side) if configured with double lower sheave wheels). Replace the upper and lower winch cable retaining pins on boom nose.
6. If not already done, install the cable socket onto the end of the winch cable as described in Figure 3-8.

7. Attach the cable socket to the headache ball assembly using the 1 1/4" diameter straight pin and secure with clip pins provided. Use the center (lower) pin hole of headache ball/hookblock combination in headache ball configuration.
8. Re-install the anti-two block counterweight around the winch cable (as shown in Figure 3-3.) and adjust counterweight chain length to activate cut-off switch before two-blocking occurs.

• Two Part Line Reeving

(See Figure 3-9.)

Note

The following procedure must be followed and used before lifting the maximum permissible load allowed with a two part load line.

1. Lower boom to allow access to boom nose.
2. If the headache ball is installed, lower onto ground or suitable capacity stand. Remove the hair pins and straight pin securing the cable socket to the headache ball.
3. Remove the anti-two block counterweight from around the winch cable, let hang.
4. Configure headache ball/hookblock assembly as a single sheave hookblock assembly.

Note

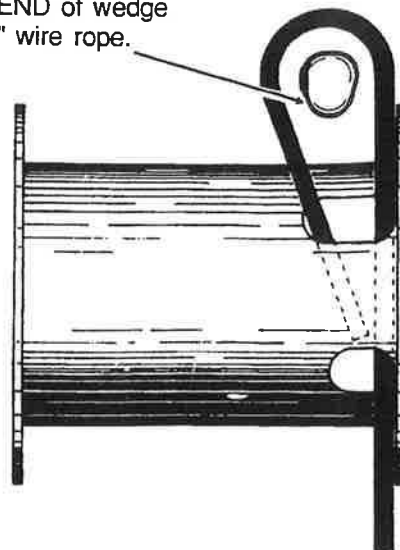
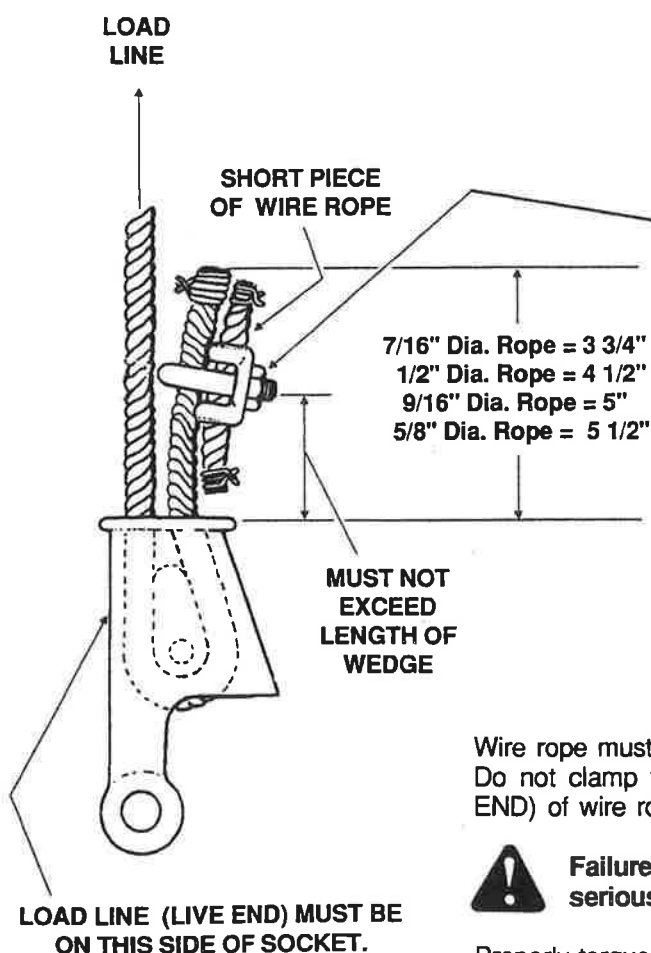
Cable socket does not need to be removed, lay winch cable into hookblock single sheave wheel groove before installing sheave wheel into headache ball/hookblock assembly body.

5. Attach the cable socket to the lug behind the lower sheave wheel on the boom nose using the pin and pin clip provided.
6. Re-install the anti-two block counterweight around the winch cable (as shown in Figure 3-3.) and adjust counterweight chain length to activate cut-off switch before two-blocking occurs.

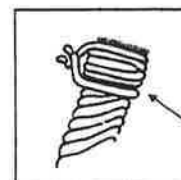
ANCHORING WIRE ROPE

Take the free end of the wire rope and insert it through the small opening of the anchor pocket. Loop the wire rope and push the free end about 3/4 of the way through the pocket. Install the wedge, then pull the slack out of the wire rope. The wedge will slip into the pocket and secure the wire rope into the drum.

Insert **LARGE END** of wedge first for 7/16" and 1/2" wire rope. Insert **SMALL END** of wedge first for 9/16" and 5/8" wire rope.

**CABLE SOCKET INSTALLATION**

Clamp Torque	
Rope Size	Torque Ft. Lbs.
7/16"	65
1/2"	
9/16"	95
5/8"	



SEIZING ON FREE END OF ROPE

Wire rope must be used with all open wedge socket fittings. Do not clamp free end of wire rope to **LOAD LINE (LIVE END)** of wire rope.



Failure to use wire rope clip may result in serious personal injury and/or property damage.

Properly torque wire rope clip after first hour of operation and every 50 hours thereafter.

Figure 3-8. Cable Socket and Wedge Installation.

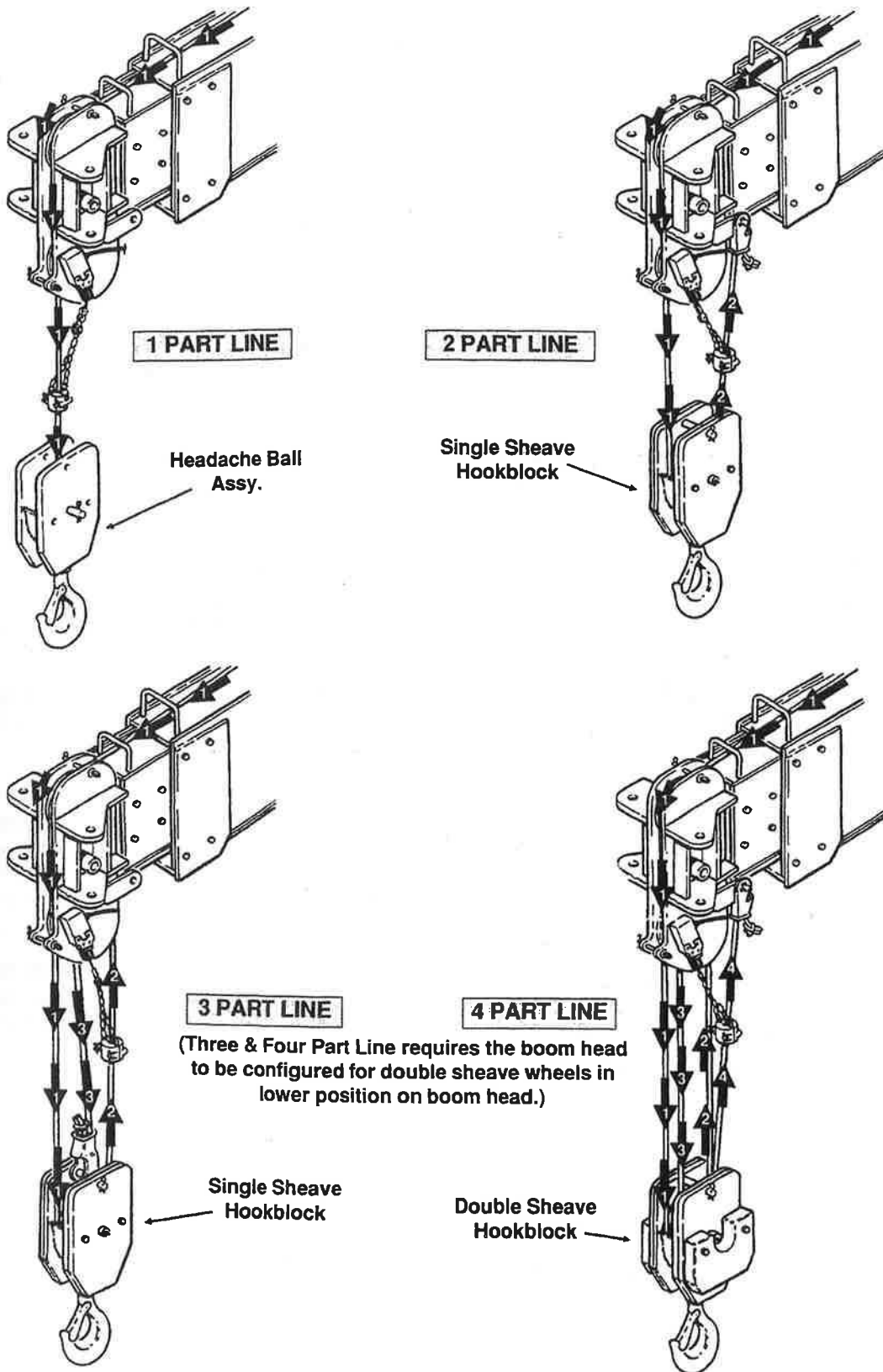


Figure 3-9. Cable Reeving Guide.

● Three Part Line Reeving

(See Figure 3-9.)

Note

Reference to the **RIGHT** and **LEFT** is made with the operator standing at either operator's station facing the console with boom extended over rear of machine.

The following procedure must be followed and used before lifting the maximum permissible load allowed for a three part load line.

1. Lower boom to allow access to boom nose.
2. Remove the anti-two block counterweight from around the winch cable, let hang.
3. If the headache ball/hookblock combination is installed, lower it onto the ground and pay out approximately 25 ft. of cable.

Note

The three part load line set-up requires the boom head lower sheave wheel position to be configured for double sheave wheel operation. (See Illustrated Parts or Service and Specification manuals for your model crane.)

4. Remove the hair pin from the wedge socket pin securing the wedge socket to the boom nose lug or hookblock/headache ball assembly.
5. Remove the lower winch cable retaining pin from the boom nose.
6. The headache ball/hookblock assembly must be configured as a single sheave hookblock assembly, so the winch cable can either be reeved through the headache ball/hookblock assembly after removing the open wedge cable socket in Step 7, or sheave wheel can be removed from the headache ball/hookblock assembly by removing center sheave wheel pin, spacers and sheave wheel.
7. Remove open wedge cable socket from end of winch cable, if attached, and reeve winch cable through boom nose left (passengers side), lower sheave wheel. (See Figure 3-9.)
8. After reeving cable through boom nose sheave reattach the cable socket to the winch cable, see Figure 3-8. Attach cable socket to headache ball/hookblock assembly's wedge socket pin hole (at the top center of the block), using the wedge socket pin and hair pin provided.

9. Re-install lower winch cable retaining pin in boom nose.

10. Re-install the anti-two block counterweight around the winch cable (as shown in Figure 3-3.) and adjust counterweight chain length to activate cut-off switch before two-blocking occurs.

● Four Part Line Reeving

(See Figure 3-9.)

Note

Reference to the **RIGHT** and **LEFT** is made with the operator standing at either operator's station facing the console with boom extended over rear of machine.

Note

The following procedure must be followed and used before lifting the maximum permissible load allowed for a three part load line.

1. Lower boom to allow access to boom nose.
2. Remove the anti-two block counterweight from around the winch cable, let hang.
3. If the headache ball/hookblock combination is installed, lower it onto the ground and pay out approximately 25 ft. of cable.

Note

The four part load line set-up requires the boom head lower sheave wheel position to be configured for double sheave wheel operation. (See Illustrated Parts or Service and Specification manuals for your model crane.)

4. Remove the hair pin from the wedge socket pin securing the wedge socket to the boom nose lug or hookblock/headache ball assembly.
5. Remove the lower winch cable retaining pin from the boom nose.
6. The headache ball/hookblock assembly must be configured as a double sheave hookblock assembly, so the winch cable can either be reeved through the headache ball/hookblock assembly after removing the open wedge cable socket in Step 7, or sheave wheels can be removed from the headache ball/hookblock assembly by removing center sheave wheel pin, spacers and sheave wheels.
7. Remove open wedge cable socket from end of winch cable, if attached, and reeve winch cable

through boom nose left (passengers side), lower sheave wheel. (See Figure 3-9.)

8. After reeving cable through boom nose sheave and headache ball/hookblock assembly sheaves, reattach the cable socket to the winch cable, see Figure 3-8. Attach cable socket to boom nose lug wedge socket hole, using the wedge socket pin and hair pin provided.
9. Re-install lower winch cable retaining pin in boom nose.
10. Re-install the anti-two block counterweight around the winch cable (as shown in Figure 3-3.) and adjust counterweight chain length to activate cut-off switch before two-blocking occurs.

3-8. PERSONNEL PLATFORM

(OPTION) (See Figure 3-10.)

WARNING

DO NOT INSTALL PERSONNEL PLATFORM ON A CRANE WHICH HAS NOT BEEN APPROVED FOR PLATFORM USE. CHECK CRANE PEDESTAL FOR A TAG STATING WHETHER OR NOT CRANE IS APPROVED FOR PLATFORM USE. USE ONLY JLG PLATFORMS OR JLG APPROVED PLATFORMS.

DO NOT ATTEMPT ANY LIFTING OPERATIONS WITH HOOK WHEN PLATFORM IS INSTALLED.

• General

A personnel platform may be installed at the crane boom nose by using the special platform support. With the 500 lb. (227 Kg) capacity (*combined weight of load and personnel*) platform installed the crane user has the capability of maneuvering work personnel into areas where high reach maintenance is necessary. Positioning of the platform may be controlled by an authorized crane operator from either of the ground control stations or, pending installation of the optional remote control unit, by the personnel in the platform.

WARNING

USE OF CABLE SUSPENDED PLATFORM IS PROHIBITED.

Note

On a front mount configuration, platform operation is limited to 180° over the rear of the truck, unless equipped with an optional front stabilizer, which permits 360° platform operation. (See Figure 3-12.)

Full 360° platform operation is permitted on a rear mount configuration. (See Figure 3-13.)

The following paragraphs provide procedures for platform installation and removal along with guidelines for proper crane operation following platform installation. Crane users must read and thoroughly understand these procedures along with the danger, caution and instruction placards installed on the unit prior to attempting the use of the crane as a personnel handling device.

• Platform Installation

(See Figure 3-10)

WARNING

OUTRIGGERS MUST BE PROPERLY SET PRIOR TO ATTEMPTING PLATFORM INSTALLATION.

IF EQUIPPED WITH THE OPTIONAL FRONT STABILIZER, CYLINDER MUST BE PROPERLY SET PRIOR TO PLATFORM OPERATION.

1. Using all applicable safety precautions, operate the crane systems to raise the boom free of the boom support, swing the boom clear of support and lower boom to allow access to boom nose.
2. Using the crane systems, lower the headache ball/hookblock onto the ground or a suitable capacity stand.
3. Remove retaining pins and hair/cotter pins as necessary and remove cable socket assembly from headache ball/hookblock or boom nose lug.

Note

If crane is configured for 3 or 4 part line, open wedge cable socket will have to be removed to unreeve winch cable from boom head and hookblock sheaves. Re-install cable socket temporarily then proceed to next step.

4. Attach cable socket assembly to lug on top of base boom and secure with clevis pin. (See Figure 3-10.)
5. Activate winch and take up all slack from cable.
6. Using suitable lifting equipment, lift platform and support mount assembly and align mounting pin hole, with hole in fly boom and secure with pin and snapper pin.
7. Align nose guard plate mounting holes and fly boom cable retaining pin holes and secure plate with pins and hardware provided. (See Figure 3-10.)

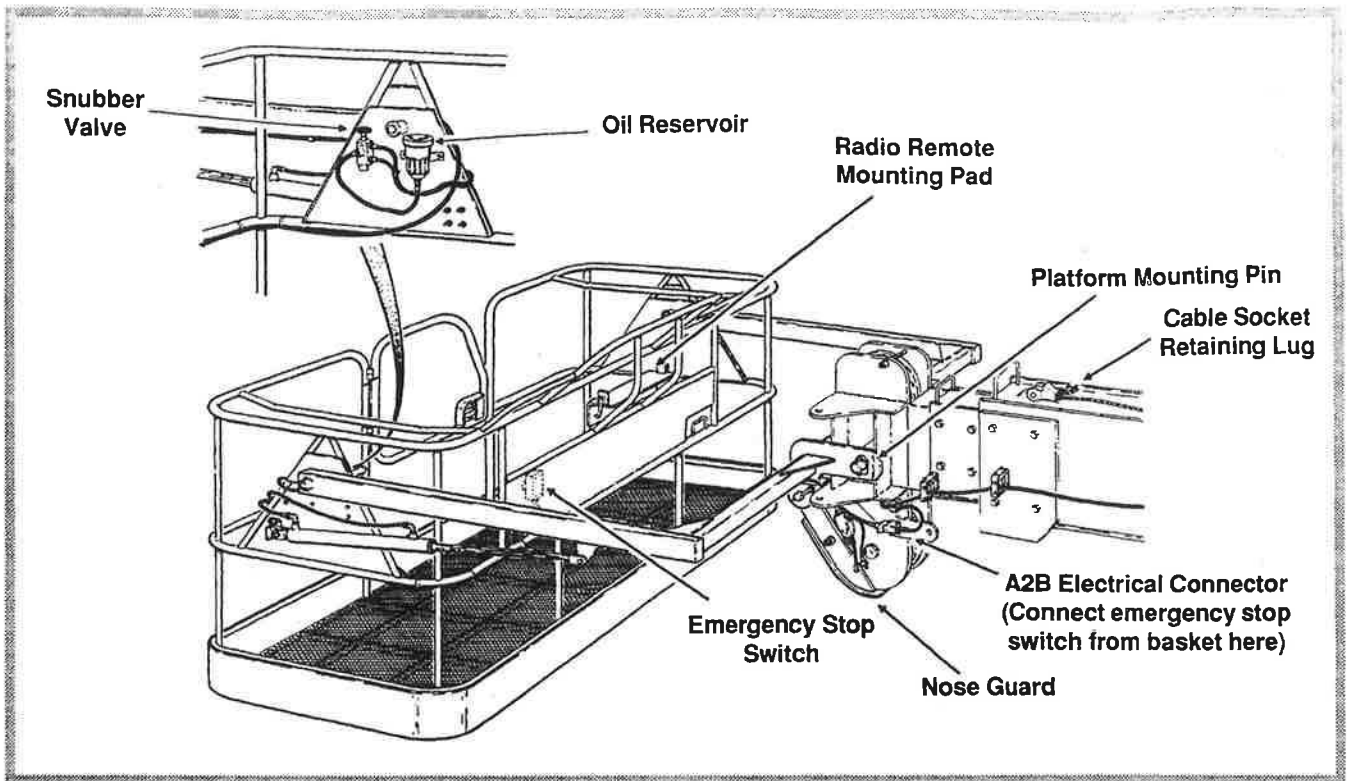


Figure 3-10. Personnel Platform and Support Installation. (Gravity Basket)

8. Remove anti-two block weight and unplug cable from anti-two block switch.
9. Plug engine stop switch from platform into anti-two block connector previously occupied by anti-two block switch connector.
10. Before placing the unit into operation, ensure the brake/snubber assembly functions properly and check the following;
 - a. Check oil level in platform reservoir with cylinder fully retracted, to avoid overfilling. Fill system with hydraulic oil and cycle by hand to purge all air from system, recheck oil level.
 - b. Pull knob up while platform is elevating or lowering. This will allow restricted oil flow between rod side and piston of cylinder, which affords for controlled gravity leveling of platform.
 - c. Push knob down to lock platform in the work position.
11. Test engine stop switch before beginning platform operating, press to stop engine. Engine must be restarted from truck cab or operators control station.

12. If using Radio Remote Control Unit, be sure that all controls return to neutral and that emergency stop shuts down power to all of the controllers BEFORE attempting to operate the crane from personnel basket.

DANGER

OPERATION OF THE CRANE AS A PERSONNEL HANDLING DEVICE SHALL BE ONLY BY THOSE PERSONS WHO HAVE BEEN THOROUGHLY TRAINED IN CRANE AND PERSONNEL PLATFORM USAGE AND WHO HAVE PROVEN COMPETENT IN SAFE CRANE AND PLATFORM OPERATION. NOTE: SEE OPERATORS AND SAFETY "HANDBOOK" (P/N-3120313) FOR PERSONNEL PLATFORM BEFORE OPERATING THE MACHINE WITH PLATFORM INSTALLED.

Extreme care must be exercised whether the platform is being moved using the controls at one of the operators stations or whether it is being controlled via Radio Remote Control unit either from the ground or from the platform.

The operator shall be familiar with the restrictions as they apply to platform capacity and operating area as indicated by the applicable placards mounted on the platform and/or unit pedestal. Strict observance of these instructions is a must to ensure safe operation.

The operator shall, at all times, avoid quick or jerky function usage by applying smooth and even pressure to the machine controls. **A safety belt shall be worn and properly secured to the platform attach point by all personnel any time they are riding in or working from the platform.** When the platform is being controlled from the ground station, it is the responsibility of both ground and platform personnel to know and use the proper hand signals as a guide to platform positioning. (See Section 1 – Safety Precautions, Figure 1-3) If the platform is being positioned using the Radio Remote Control unit (OPTION), operation should be performed as described in the *JLG CRANE, RADIO REMOTE CONTROL OPERATING/SERVICE/TROUBLE-SHOOTING/PARTS MANUAL (P/N-3120353)* supplied with the radio remote control unit.

● Platform Removal

1. Using all applicable safety precautions, activate the hydraulic system and position the boom so as to allow access to the platform support attach pins.
2. If applicable, unclamp and remove the radio remote control transmitter unit from its platform mounting.

Note

Perform steps 3 and 4 only if it is necessary to remove the platform from the support assembly.

3. Adequately support platform assembly; remove flatwashers and cotter pins used to secure the platform-to-support attach pins.
4. Ensure platform brake has been released; remove the platform-to-support attach pins. Move platform clear of the support.
5. Using suitable lifting equipment to support the platform support, remove the locking pin and the mounting pin used to secure the platform support to the crane boom nose. Move support clear of crane.
6. Remove the clevis pin retaining the cable socket to the cable socket retaining lug on base boom. Using all applicable safety precautions, operate the crane and place the hoist control in the lowering mode to pay out approximately 25 ft of winch cable.
7. Reeve cable through boom nose over upper and lower sheave wheels.

8. Continue to reeve cable per instructions i.e... one part line, two part line, etc... in Section 3-7., "CABLE REEVING" to the configuration you require.
9. When winding winch cable back on to winch drum, operate crane systems to elevate boom so as to take up any slack in the cable. Do not operate winch until all slack is removed from cable.

3-9. SELF-LEVELING PLATFORM

(OPTION) (See Figure 3-11.)

WARNING

DO NOT INSTALL SELF-LEVELING PLATFORM ON A CRANE WHICH HAS NOT BEEN APPROVED FOR PLATFORM USE. CHECK CRANE PEDESTAL FOR A TAG STATING WHETHER OR NOT CRANE IS APPROVED FOR PLATFORM USE. USE ONLY JLG PLATFORMS OR JLG APPROVED PLATFORMS.

DO NOT ATTEMPT ANY LIFTING OPERATIONS WITH HOOK WHEN PLATFORM IS INSTALLED.

● General

A self-leveling platform may be installed at the crane boom nose by using the special platform support. With the platform installed the crane user has the capability of maneuvering work personnel into areas where high reach maintenance is necessary. Positioning of the platform may be controlled by an authorized crane operator from either of the ground control stations or, pending installation of the optional remote control unit, by the personnel in the platform.

Note

On a front mount configuration, platform operation is limited to 180° over the rear of the truck, unless equipped with an optional front stabilizer, which permits 360° platform operation. (See Figure 3-12.)

Full 360° platform operation is permitted on a rear mount configuration. (See Figure 3-13.)

The following paragraphs provide procedures for platform installation and removal along with guidelines for proper crane operation following platform installation. Crane users must read and thoroughly understand these procedures along with the danger, caution and instruction placards installed on the unit prior to attempting the use of the crane as a personnel handling device.

● Platform Installation

WARNING

OUTRIGGERS MUST BE PROPERLY SET PRIOR TO ATTEMPTING PLATFORM INSTALLATION.

IF EQUIPPED WITH THE OPTIONAL FRONT STABILIZER, CYLINDER MUST BE POSITIONED VERTICALLY, PINNED, AND PROPERLY SET PRIOR TO PLATFORM OPERATION.

1. Using all applicable safety precautions, operate the crane systems to raise the boom free of the boom support. Swing the boom clear of support and lower boom to allow access to boom nose.
2. Using the crane systems, lower the headache ball or hookblock onto the ground or a suitable capacity stand.
3. If headache ball is attached, remove cotter pin and pin securing the wedge socket to the headache ball.

Note

If crane is configured for 3 or 4 part line, open wedge cable socket will have to be removed to unreeve winch cable from boom head and hookblock sheaves. Re-install cable socket temporarily then proceed to next step.

4. If hookblock is attached, remove hookblock by reversing cable reeving instructions in Section 3-7. CABLE REEVING, per number of part lines.
5. Remove winch cable upper and lower retaining pins from main boom nose.
6. Using all applicable safety precautions, operate the hoist to wind the cable end above the boom nose. Attach the cable socket to the base boom cable socket retaining lug and secure with clevis pin.
7. Using suitable lifting equipment, position platform assembly to align the hole in platform attach weldment with the attachment hole in

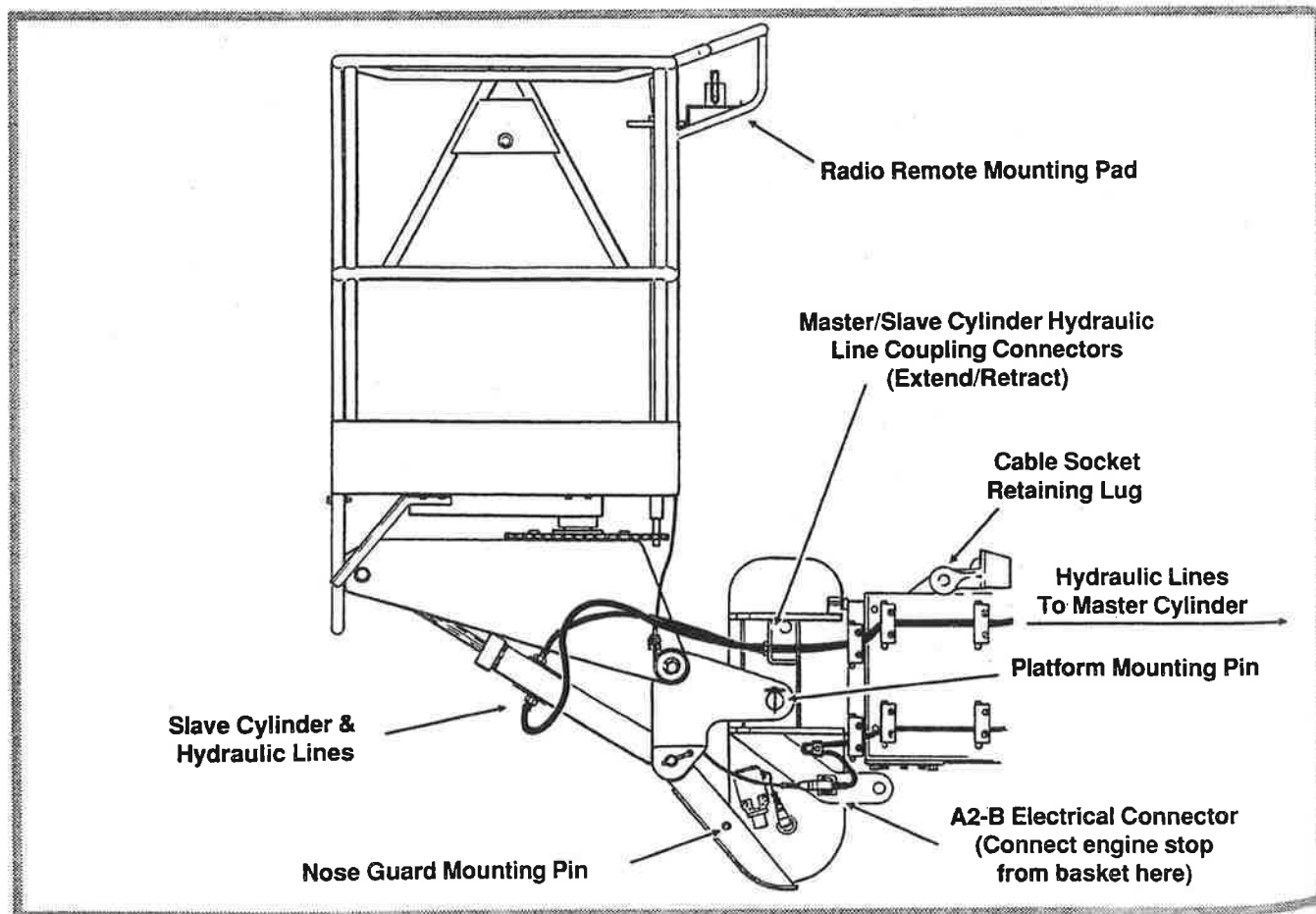


Figure 3-11. Personnel Platform and Support Installation. (Self-Leveling)

center of boom nose. Install platform mounting pin through attach weldment hole and boom nose and secure with quick release pin and keeper pin.

8. Align holes in boom nose guard weldment and boom nose and attach boom nose guard weldment to boom nose using the lower cable retainer pin. Secure with hair pin.
9. Connect the hydraulic lines from the slave cylinder on basket assembly to "quick-disconnects" located on boom nose. Be sure "E" – Extend and "R" – Retract hoses are connected to their correct couplings.
10. Unplug the anti-two block electrical connector from the anti-two block receptacle. Plug engine stop switch wire from basket assembly securely into the anti-two block receptacle.
11. Using all applicable safety precautions, start crane systems and cycle platform level by using platform level switch, (located on the radio remote control transmitter), until all air is removed from leveling circuit.

DANGER

OPERATION OF THE CRANE AS A PERSONNEL HANDLING DEVICE SHALL BE ONLY BY THOSE PERSONS WHO HAVE BEEN THOROUGHLY TRAINED IN CRANE AND PERSONNEL PLATFORM USAGE AND WHO HAVE PROVEN COMPETENT IN SAFE CRANE AND PLATFORM OPERATION. NOTE: SEE OPERATORS AND SAFETY "HANDBOOK" (P/N-3120313) FOR PERSONNEL PLATFORM BEFORE OPERATING THE MACHINE WITH PLATFORM INSTALLED.

Extreme care must be exercised whether the platform is being moved using the controls at one of the operators stations or whether it is being controlled via Radio Remote Control unit either from the ground or from the platform.

The operator shall be familiar with the restrictions as they apply to platform capacity and operating area as indicated by the applicable placards mounted on the platform and/or unit pedestal. Strict observance of these instructions is a must to ensure safe operation.

The operator shall, at all times, avoid quick or jerky function usage by applying smooth and even pressure to the machine controls. **A safety belt shall be worn and properly secured to the platform attach point by all personnel any time they are riding in or working from the platform.** When the platform is being controlled from the ground station, it is the responsibility of both ground and platform personnel

to know and use the proper hand signals as a guide to platform positioning. (See Section 1 – Safety Precautions, Figure 1-3.) If the platform is being positioned using the Radio Remote Control unit (OPTION), operation should be performed as described in the *JLG CRANE RADIO REMOTE CONTROL OPERATING/SERVICE/TROUBLE-SHOOTING/ PARTS MANUAL (P/N-3120353) supplied with the radio remote control unit.*

● **Platform Removal**

1. Using all applicable safety precautions, activate the hydraulic system and position the boom to allow access to the platform support attach pins.
2. If applicable, unclamp and remove the radio remote control transmitter unit from its platform mounting.
3. Unplug engine stop switch wire, from the anti-two block receptacle. Re-connect the anti-two block electrical connector to the receptacle.
4. Disconnect the slave cylinder extend and retract hydraulic lines from the "quick disconnect" couplings on boom nose.
5. Using suitable lifting equipment to support the platform, remove hair pin securing the lower cable retainer pin and remove pin from boom nose and nose guard weldment.
6. Remove platform mounting pin used to secure the platform mounting weldment by releasing the keeper pin and removing the quick release pin from the mounting pin. Remove mounting pin from mounting weldment and boom nose. Move platform assembly clear of crane.
7. Remove the clevis pin retaining the cable socket to the lug on base boom. Using all applicable safety precautions, operate the crane and place the hoist control in the lowering mode to reeve cable through boom nose over upper and lower sheave wheels. Install boom nose cable retaining pins.
8. Continue to reeve cable per instructions in Section 3-7., "CABLE REEVING" to the configure your crane for one part line, two part line, etc.
9. Operate crane systems to elevate boom so as to take up any slack in the cable. Do not operate winch until all slack is removed from cable.

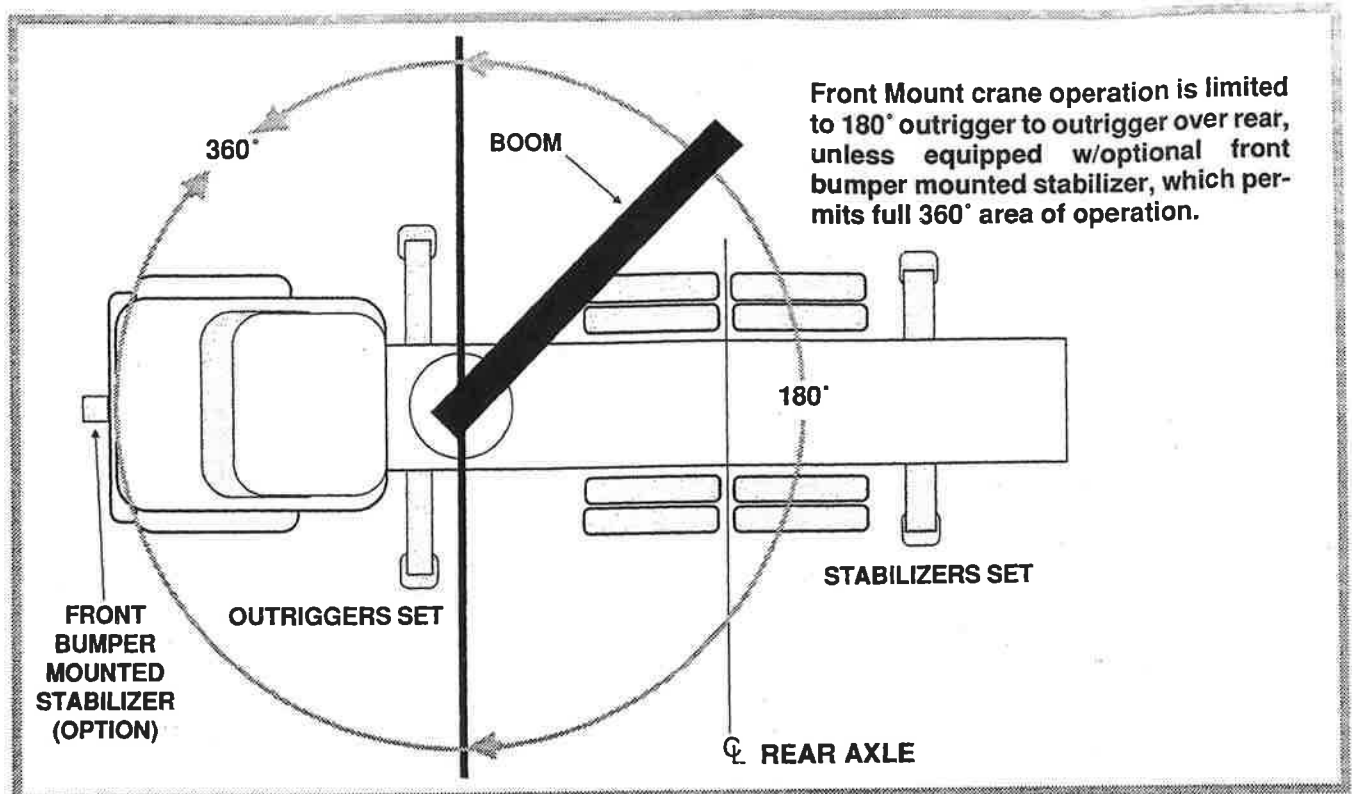


Figure 3-12. Areas of Operation – Front Mounted Pedestal.

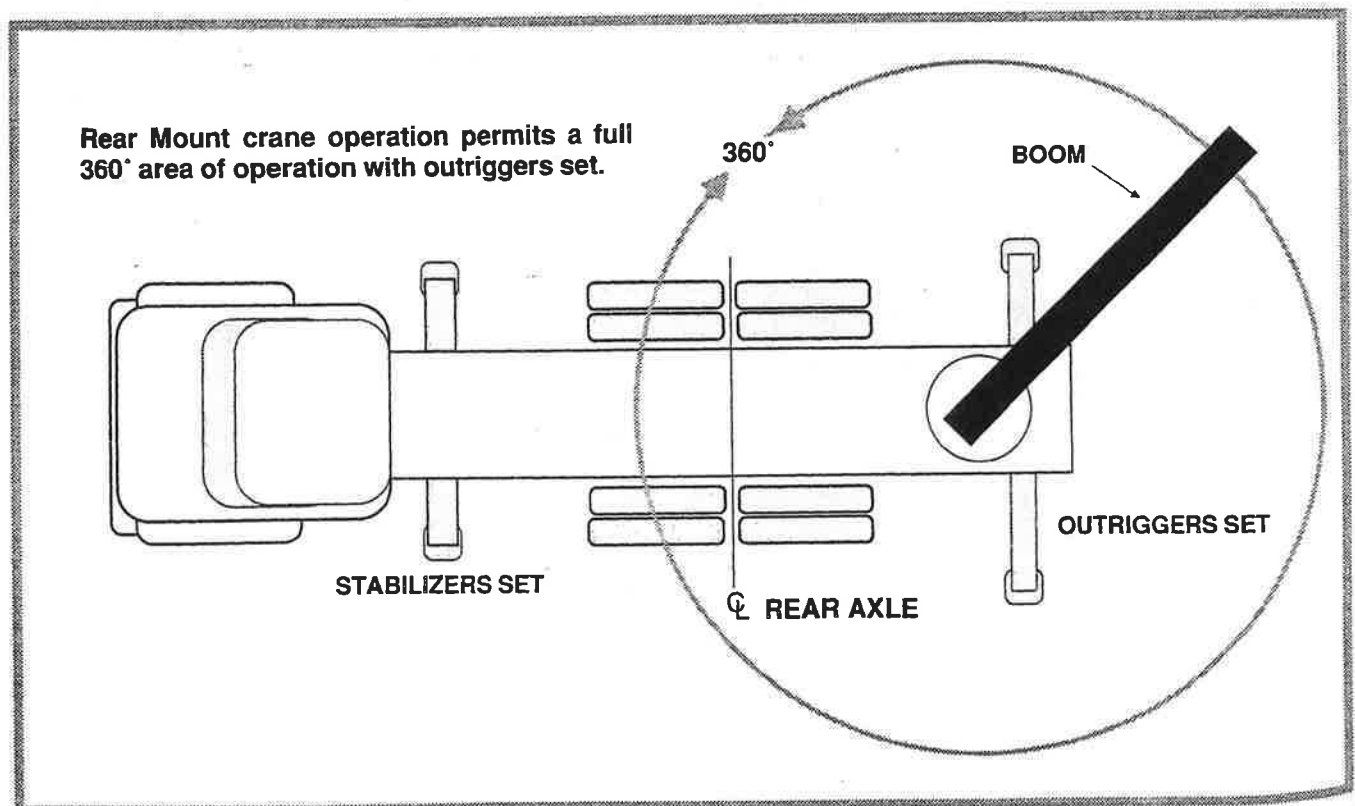


Figure 3-13. Areas of Operation – Rear Mounted Pedestal.



CRANE WARRANTY

1. WARRANTY. USTC, Inc., ("Manufacturer") warrants each new product made by it to be free from defects in material or workmanship for TWELVE months from the date of initial sale, lease, rental or other disposition of such product. Manufacturer agrees only to repair or replace at its own expense, F.O.B. the place or places of manufacture, any part or parts of the product found to be defective in material or workmanship, provided Manufacturer is notified of such defect or defects within the applicable warranty period and given a reasonable time to correct the defect. In no case shall any warranty extend to defects in materials, components, or services furnished by third parties or to the erection of installation of the product performed by third parties. Defects caused by chemical action or the presence of abrasive materials and defects arising following the operation beyond rated capacity or the improper use or application of any products shall not be considered defects within the scope of the above mentioned warranty. If any repairs or alterations are made or any parts are replaced during the periods covered by any warranty above mentioned by other than an authorized Manufacturer's Distributor in accordance with authorized Manufacturer's service manuals or with other than parts, accessories, or attachments authorized by Manufacturer for use in its products, customer shall pay for such repairs or parts without recourse against Manufacturer, and Manufacturer shall be relieved of responsibility for fulfillment of the above mentioned warranty with respect to parts or components for all repairs, alterations, or replacements so made. Manufacturer's obligations under this warranty shall at all times be subject to its then current warranty policies and procedures. The above mentioned warranty shall not apply to replacement or service parts made by and sold by Manufacturer, with any obligation of the Manufacturer to such parts governed solely by Manufacturer's then current warranty policies and procedures.

2. DISCLAIMER AS TO CONSEQUENTIAL OR SPECIAL DAMAGES. Under no circumstances shall the Manufacturer be liable for any consequential or special damages which any person, firm, corporation, or other entity may suffer or claim to suffer or incur or claim to incur as a result of any defect in the product or in any correction or alteration thereof made or furnished by Manufacturer or others. "Consequential" or "special damages" as used herein includes but is not limited to costs of transportation, lost sales, lost orders, lost profits, lost income, increased overhead, labor and material costs, and costs of manufacturing variances and operational inefficiencies.

3. MAXIMUM LIABILITY. The maximum liability of Manufacturer under the exclusive warranty set forth herein shall be the amount paid to Manufacturer with respect to the product to which such warranty applies.

4. EXCLUSIVE AND ENTIRE WARRANTY. This warranty constitutes Manufacturer's entire warranty as to the product and it is agreed that the remedies of customer and those claiming under customer as stated in this warranty are exclusive. Manufacturer does not assume (and has not authorized any other person to assume on its behalf) any other warranty or liability in connection with any product covered by this warranty. MANUFACTURER EXPRESSLY DISCLAIMS ANY AND ALL OTHER WARRANTIES OF ANY KIND WHATSOEVER AS TO THE PRODUCT FURNISHED HEREUNDER, INCLUDING BUT NOT LIMITED TO EXPRESS OR IMPLIED WARRANTIES AS TO MERCHANTABILITY, FITNESS FOR PARTICULAR PURPOSES SOLD, DESCRIPTION OR QUALITY OF THE PRODUCT FURNISHED HEREUNDER.

5. NOTICE OF OCCURRENCE. This warranty shall be void if, upon the occurrence of any incident involving any product made by Manufacturer and resulting in any personal injury or property damage, customer shall fail to notify Manufacturer within 48 hours of such occurrence or permit Manufacturer and its representatives to have immediate access to such product and to all records of or within the control of customer relating to the product and occurrence.

6. LIMITATION OF LIABILITY. The limitation of liability provisions herein shall apply to any and all claims or suits brought against Manufacturer including any claim based upon negligence, breach of contract, breach of warranty, strict liability, or any other legal theories upon which liability may be asserted against Manufacturer.

Manufacturer may at any time amend the foregoing form of warranty without prior notice.