



5005H OWNERS MANUAL

Manual No. 360706000

Rev. 07/26/2004

Serial No. _____

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Auto Crane Warranty Registration

Fax Transmission

To: Warranty Department Fax: (918) 834-5979
 From: _____ Date: _____
 Re: Product Registration Pages: _____

End User Information: (Required for Warranty Activation)

Name: _____ Phone: _____
 Address: _____
 City: _____ State: _____ Zip: _____
 Contact: _____ E-mail Address: _____

Distributor Information: (Required for Warranty Activation)

Name: _____
 Address: _____
 City: _____ State: _____ Zip: _____
 Contact: _____ E-mail Address: _____

Product Information: (Required for Warranty Activation)

Model No.: _____ Serial No.: _____
 Date Product Delivered: _____ Date Processed:* _____
 VIN # _____ * For Auto Crane use only

ONE REGISTRATION FORM PER UNIT (CRANE OR BODY)

Registration form must be mailed or faxed within 15 days of customer installation.

Mail to:
 Warranty Department
 Auto Crane Company
 P.O. Box 581510
 Tulsa, OK 74158-0697

5005H SERIES
OWNER'S MANUAL – REVISION RECORD

Revision Date	Section(s) Or Page(s)	Description of Change
09/02/03	Last page	New 2-year warranty policy to replace 1-year warranty policy
12/30/03	Mounting & Instl. (p. 3-2.0.0) Lub. & Maintenance (p.4-1.0.0)	Revised torque specs for mounting hardware for crane, rotation bearing and rotation gear box.
4/23/04	Pages 3-2.0.0, 5-1.0.0 & 8-9.0.0	Updated receiver & transmitter to 2 nd generation
07/26/04	Pages 10-1.0.0, 10-3.0.0, 10-5.0.0, 10-6.0.0, 10- 9.0.0 & 10.10.0.0	Added voltage relay circuit

WARNINGS

WARNING! Federal law (49 cfr part 571) requires that the Final Stage Manufacturer of a vehicle certify that the vehicle complies with all applicable federal regulations. Any modifications performed on the vehicle prior to the final state are also considered intermediate stage manufacturing and must be certified as to compliance. The installer of this crane and body is considered on of the manufacturers of the vehicle. As such a manufacturer, the installer is responsible for compliance with all applicable federal and state regulations, and is required to certify that the vehicle is in compliance.

WARNING! It is the further responsibility of the installer to comply with the OSHA Truck Crane Stability Requirements as specified by 29 CFR part 1910.180 (C) (1).

WARNING! NEVER OPERATE THE CRANE NEAR ELECTRICAL POWER LINES!

Death or serious injury will result from boom, line, or load contacting electric lines. Do not use crane within 10 feet (3.05m) of electric power lines carrying up to 50,000 volts. One foot additional clearance is required for every additional 30,000 volts or less. **SEE DANGER DECAL (P/N 040529)** in this Owner's Manual.

WARNING! NEVER.....

- ◆ **EXCEED** load chart capacities (centerline of rotation to hoist hook).
- ◆ Un-reel last 5 wraps of cable from drum!
- ◆ Wrap cable around load!
- ◆ Attempt to lift or drag a load from the side! The boom can fail far below its rated capacity.
- ◆ Weld, modify, or use unauthorized components on any Auto Crane unit! This will void any warranty or liability. Also failure of the crane may result.
- ◆ Place a chain link on the tip of the hook and try to lift a load!
- ◆ Use a sling bar or anything larger than the hook throat that could prevent the hook latch from closing, thus negating the safety feature!
- ◆ Hold on any pendant Select Switch that will cause unsafe operating conditions!

WARNING! In using a hook with latch, **ALWAYS** make sure that the hook throat is closed before lifting a load! Proper attention and common sense applied to the use of the hoist hook and various slings will prevent possible damage to material being hoisted and may prevent injury to personnel.

WARNING! Failure to correctly plumb and wire crane can cause inadvertent operation and damage to crane and/or personnel!

WARNING! Auto Crane Company remote controlled cranes are not designed or intended to be used for any applications involving the lifting or moving of personnel.

WARNING! ALWAYS operate the crane in compliance with the load capacity chart. **DO NOT USE** the overload shutdown device to determine maximum rated loads, if the crane is equipped with this type of device.

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NOTES

INTRODUCTION

5005H SERIES

Auto Crane products are designed to provide many years of safe, trouble-free, dependable service when properly used and maintained.

To assist you in obtaining the best service from your crane and to avoid untimely crane and/or vehicle failure, this manual provides the following operating and service instructions. It is **specifically recommended** that all operating and service personnel consider this manual as mandatory material for reading and study before operating or servicing Auto Crane products. It is **highly recommended** that crane owners, equipment managers and supervisors also read this manual.

Auto Crane has incorporated several safety features in the 5005H crane for your protection.

For your convenience the overall dimensions of the 5005H crane are included on the General Dimension Drawing. Rotation and turning radius are also listed on that drawing.

Remember, the crane adds weight to the vehicle. Adding weight may change the driving and riding characteristics of the vehicle unless the appropriate overload spring(s) are installed on the truck. The payload of the vehicle is reduced by the weight of the crane. The operator should exercise care when loading the vehicle. Distributing the payload on the vehicle evenly will greatly improve the driving and riding characteristics of the vehicle.

Auto Crane Company issues a limited warranty certificate with each unit sold. See last page for warranty

The 5005H cranes are attached directly to your 12 volt truck electrical system. The power cable is included with the crane. The 5005H is another highly efficient Auto Crane product. The use of a maintenance-free battery is not recommended for use on any Auto Crane product. The recommended alternator and battery that will give the longest life with the most useful duty cycle is a 75 amp alternator with a 500 cold cranking amp battery. These specifications should be considered minimum.

It has always been Auto Crane Company policy to handle all warranty claims we receive as promptly as possible. If a warranty claim involves discrepant material or workmanship, Auto Crane will take immediate corrective action. It is understandable that Auto Crane Company cannot assume responsibility of liability when it is obvious that our products

have been abused, misused, overloaded or otherwise damaged by inexperienced persons trying to operate the equipment without reading the manual.

Auto Crane will not assume responsibility or liability for any modifications or changes made to unit, or installation of component parts done without authorization.

Auto Crane maintains a strong distributor network and a knowledgeable Customer Service Department. In most cases, an equipment problem is solved via phone conversation with our customer service department. The customer service department also has the ability to bring a local distributor, a regional sales manager, or a factory serviceman into the solution of an equipment problem. If, through no fault of Auto Crane Company, it is necessary to send an experienced factory serviceman on a field service call, the rates stated in the Auto Crane Distributor's Flat Rate Manual will apply.

Auto Crane Company's extensive Research and Development Program allow our customers to use the best equipment on the market. Our Engineering Staff and our knowledgeable sales people, are always available to our customers in solving crane and winch-type application problems. When in doubt, call the Auto Crane factory.

DISTRIBUTOR ASSISTANCE:

Should you require any assistance not given in this manual, we recommend that you consult your nearest Auto Crane Distributor. Our distributors sell authorized parts and have service departments that can solve almost any needed repair.

NOTE: THIS MANUAL SHOULD REMAIN WITH THE CRANE AT ALL TIMES.

This manual does not cover all maintenance, operating, or repair instructions pertinent to all possible situations. If you require additional information, please contact the **Auto Crane Company** at the following telephone number: **(918) 836-0463**. The information contained in the manual is in effect at the time of this printing. Auto Crane Company reserves the right to update this material without notice or obligation.

--- IMPORTANT ---

SAFETY TIPS AND PRECAUTIONS

1. No unqualified or unauthorized person shall be allowed to operate the crane.
2. **WARNING:** Never weld, modify, or use unauthorized components / parts on any Auto Crane unit. This will void any warranty or liability. Also, failure of the crane may result.
3. Make certain the vehicle meets minimum chassis requirements. (These requirements do not guarantee unit stability.)
4. Make certain the crane is installed per factory specifications. Contact your local distributor or the Auto Crane factory if any questions arise.
5. Visual inspections and tests should be conducted at the beginning of each shift each day to ensure that the crane and all its operating systems are in good condition and working order before it is used.
6. Inspect hydraulic hoses frequently for signs of deterioration, and replace them as required.
7. If a hydraulic break occurs, leave the area of the break and do not attempt to stop the break by hand as the hydraulic oil may be hot and under high pressure which can cause serious injury. Shut the system down as soon as possible.
8. Check the hook at least every thirty days for distortions or cracks and replace it as required.
9. Oil gears as required.
10. Stop all operations when cleaning, adjusting or lubricating the machine.
11. Keep dirt and grit out of moving parts by keeping a crane clean. Make sure machine is free of excess oil, grease, mud and rubbish, thus reducing accidents and fire hazards.
12. When a new cable is installed, operate first with a light load to let the cable adjust itself.
13. Locate the vehicle at the work site for the best stability possible.
14. Keep the vehicle in a level position while loading or unloading.
15. Observe operating area for obstructions and/or power lines that might be a hazard
16. **WARNING: NEVER OPERATE THE CRANE NEAR ELECTRICAL POWER LINES.** Auto Crane Company recommends that the crane never be any closer to a power line (including telephone lines) than 10 feet at any point.
17. Allow the vehicle engine to warm up before operating crane.
18. Know the weight of your rigging and load to avoid overloading the crane.
19. Deduct the weight of the load handling equipment from the load rating to determine how much weight can be lifted.
20. All load ratings are based on crane capacity, NOT the vehicle stability. Remember in lifting a heavy load, the weight can create enough tipping moment to overturn the vehicle
21. Always comply with load chart capacities, (centerline of rotation to hook).
22. Secure all loads before lifting.
23. Always set the emergency brake before beginning operation.
24. Keep objects and personnel clear of crane path during operation.
25. Operate control levers slowly and smoothly in order to meter oil flow for safe operation.
26. Always use outriggers from vehicle to the ground during crane operation. Ensure that they are firmly positioned on solid footings. Stand clear of outriggers while they are being extended.
27. If any outrigger, when extended, rests on a curb or other object that prevents it from extending to its maximum distance, shorten bearing or fulcrum point and reduce the maximum load accordingly.
28. When an outrigger will not reach the ground due to holes or grades, it shall be blocked up to provide level and firm support for the truck.
29. When working in soft earth, use wide pads under outrigger feet to prevent sinking.
30. Always store outriggers before transportation.

WARNING!

Auto Crane Company cranes are not designed or intended for use in lifting or moving persons. Any such use shall be considered to be improper and the seller shall not be responsible for any claims arising there from. This sale is made with the express understanding that there is no warranty that the goods shall be fit for the purpose of lifting or moving persons or other improper use and there is no implied warranty or responsibility for such purposes.

--- IMPORTANT ---

SAFETY TIPS AND PRECAUTIONS

31. Always store the crane in its stowed position for transportation.
32. Remember the overall height of the entire unit for garage door clearance or when moving under objects with low overhead clearance
33. Disengage power takeoff (PTO) before moving the vehicle.
34. Always walk around the vehicle before moving.
35. Never drive with a load suspended from crane.
36. Do not take your eyes off a moving load. Look in the direction you are moving.
37. Never swing a load over people.
38. Do not stop the load sharply in midair so that it swings like a pendulum. Meter the control levers to avoid this situation.
39. Crane boom length should be kept as short as possible for maximum lifting capacity and greater safety. Longer booms require additional care in accelerating and decelerating the swing motion, and thus slow down the working cycle and reduce productivity.
40. Keep the load directly and vertically under the boom point at all times. Crane booms are designed primarily to handle vertical loads, not side lifts.

WARNING: Never attempt to lift, drag, tow or pull a load from the side. The boom can fail far below its rated capacity.
41. Do not push down on anything with boom extensions, lift or outer boom function.
42. Do not lift personnel with any wire rope attachment or hook. There is no implied warranty or responsibility for such purposes.
43. WARNING: In using a safety hook, ALWAYS close the hook throat before lifting a load. Proper attention and common sense applied to the use of the hook and various slings will prevent possible damage to material being hoisted and may prevent injury to personnel.
44. WARNING: Never place a chain link on the tip of the hook and try to lift a load with the hoist.
45. WARNING: Never use a sling bar or anything larger than the hook throat which could prevent the safety latch from closing, thus negating the safety feature.
46. If the crane is equipped with an optional winch:
 - do NOT allow personnel to ride on loadline, hook, load, or any other device attached to winch line.
 - do NOT extend boom without reeling off line at the same time when using winch.
 - do pull load-block up against the boom tip.
47. Do not wrap the wire rope around sharp objects when using winch.
48. WARNING: Never unreel last 5 wraps of cable from drum.

--- IMPORTANT ---

OPERATING PRACTICES AND WARNINGS

1. Make certain the vehicle meets minimum chassis requirements. (These requirements do not guarantee unit stability)
2. Make certain the crane is installed per factory specifications. Contact your local Distributor or the Auto Crane factory if any questions arise.
3. Keep the vehicle in as level a position as possible while loading or unloading.
4. **ALWAYS** set the vehicle emergency brake before beginning crane operations.
5. **ALWAYS** use outriggers from vehicle to the ground during crane operation. Make sure they are firmly positioned on solid footings.
6. All load ratings are based on crane capacity, **NOT** truck/crane stability.
7. Keep objects and personnel clear of crane path during operation.
8. Keep hoist cable pulled tight at all times.
9. **REMEMBER**, in lifting a heavy load, the weight can create enough tipping momentum to overturn the vehicle.
10. **ALWAYS** keep load as close to ground as possible.
11. Hydraulic hoses need to be inspected frequently for signs of deterioration, and be replaced as required.
12. The hoist hook is an important item that an operator should consider and use properly. It should be checked on a daily basis for distortion or cracks.
13. **ALWAYS** store outriggers before road travel.
14. **WARNING! NEVER OPERATE THE CRANE NEAR ELECTRICAL POWER LINES!** Death or serious injury will result from boom, line, or load contacting electric lines. Do not use crane within 10 feet (3.05m) of electric power lines carrying up to 50,000 volts. One foot additional clearance is required for every additional 30,000 volts or less.
15. **WARNING! NEVER EXCEED** load chart capacities (centerline of rotation to hoist hook).
16. **WARNING! NEVER** un-reel last 5 wraps of cable from drum!
17. **WARNING! NEVER** wrap cable around load!
18. **WARNING! NEVER** attempt to lift or drag a load from the side! The boom can fail far below its rated capacity.
19. **WARNING! NEVER** weld, modify, or use unauthorized components on any Auto Crane unit! This will void any warranty or liability. Also failure of the crane may result.
20. **WARNING! NEVER** place a chain link on the tip of the hook and try to lift a load!
21. **WARNING! NEVER** use a sling bar or anything larger than the hook throat that could prevent the hook latch from closing, thus negating the safety feature!
22. **WARNING!** In using a hook with latch, **ALWAYS** insure that the hook throat is closed before lifting a load! Proper attention and common sense applied to the use of the hoist hook and various slings will prevent possible damage to material being hoisted and may prevent injury to personnel. Switch on that will cause unsafe operating conditions!
WARNING! NEVER hold any Control Select Switch on that will cause unsafe operating conditions!

WARNING!

Auto Crane Company remote controlled, stiff boom cranes are not designed or intended to be used for any applications involving the lifting or moving of personnel.

--- IMPORTANT ---

OPERATION OF UNIT

1. Make sure this manual has been thoroughly read by all crane operating personnel and supervisors.
2. A routine inspection of the crane should be mandatory before each operating day. Any defects should be corrected immediately.
3. At a job site the vehicle should be positioned so that the crane can adequately reach the load within the rated capacity (centerline of rotation to hoist hook).
4. Keep the vehicle as level as possible during operation.
5. For electric cranes, **engage emergency brake** and leave ignition on with transmission in neutral (or in park for automatic transmissions). Activate any crane power switches. For Auto Crane units requiring battery and hydraulic operation, **engage emergency brake**, place gear selector in neutral, press clutch, activate PTO, release clutch and after hydraulic fluid is warm, set throttle control to proper engine speed.
6. Always use outriggers from the truck to the ground. Be sure these are firm and adequately positioned. When rotating, **keep load as low to the ground as possible**.
7. Remove the transmitter from cab or storage area. Power transmitter on. Detach hook from dead man. Crane is now ready for operation.
8. Always boom up before rotating so the boom will clear the required boom support.
9. When extending the boom, always maintain clearance between the boom crown and the traveling block or hoist hook.
10. Always observe safe and practical operation to avoid possible accidents. Refer to Safety Tips and Precautions.
11. After completing lifting operations, return the boom to stowed position on the boom support. Avoid unneeded pressure on the boom support.
12. Store transmitter in proper location (in cab or storage area).
13. Return outriggers to stowed position. Make sure they are pinned in place or jacklegs are returned to compartment.
14. Check work area for any tools or equipment not stored.
15. Release throttle control, depress clutch and disengage PTO. Deactivate any crane power switches.
16. Report any unusual occurrence during crane operation that may indicate required maintenance or repair.
17. **NEVER** use two cranes to support a load too large for either crane.

OPERATION OF

OUTRIGGERS

For hydraulic outriggers:

1. Shift crane/outrigger control valve to "outrigger" position.
2. Operate the outrigger control valves (located on the outrigger cylinders) to position the outriggers.
3. After outriggers are positioned, return crane/outrigger selector to "crane" position.
4. Crane is now ready to operate.

For manual outriggers:

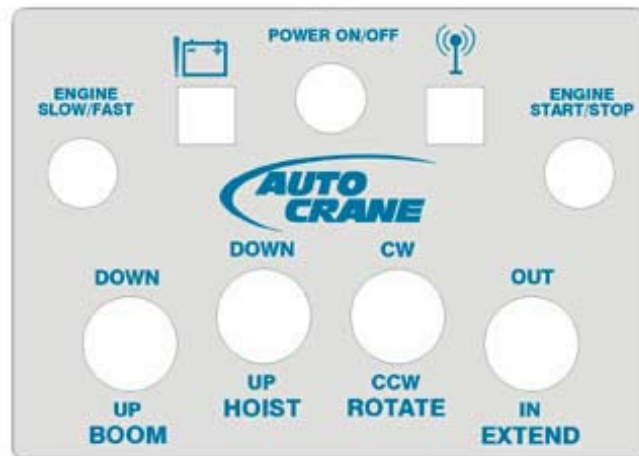
1. Pull lock pins to release jack leg or drop down outrigger and move to outermost lock position.
2. Make sure lock pins are reinstalled properly.
3. Lower outrigger pad to firm ground and adjust foot to take out slack.
4. Crane is now ready to operate.

CONTROLLER OPERATIONS

Transmitter Layout: The red light to the left of the Power On/Off button indicates low transmitter battery. As the battery runs down, the light will begin to flash. It will flash increasingly faster as the battery power decreases. (see “Charging the Transmitter”)

The green light to the right of the Power On/Off button indicates that the unit is transmitting. This light will flash when a function is activated.

In addition to the two lights mentioned above there are four function toggle switches. These functions from left to right are used to raise and lower the boom, raise and lower the hoist cable, rotate the crane and extend and retract the boom. There are also buttons for auxiliary functions such as Engine Start/Stop and Engine Fast Idle.



Power On/Off (E-Stop) Button: To turn the transmitter on, press and hold the Power On/Off button, release once the transmit light becomes solid. To turn the unit off, press and hold the power button, release once the transmit light stops flashing. When this button is pressed both the red battery low and the green transmit light will flash alternately and stop flashing once the unit is either on or off.

IMPORTANT – THE POWER ON/OFF BUTTON ALSO OPERATES AS AN E-STOP. PRESS THE BUTTON MOMENTARILY TO DISABLE CRANE FUNCTIONS. THE E-STOP WILL NOT STOP THE TRUCK ENGINE.

Function Switches: To operate a function, toggle one of the function switches with either the thumb of the hand holding the unit or the thumb or fingers of the opposite hand. Using the forefinger of the hand holding the unit, slowly pull the trigger back to start the function. The speed of the function increases as the trigger is pulled. More than one function can be activated at one time.

NOTE: A FUNCTION SWITCH MUST BE ACTIVATED BEFORE THE TRIGGER IS PULLED OR THE CRANE WILL NOT OPERATE.

CONTROLLER OPERATIONS

Auxiliary Buttons:

Functions described in this paragraph will not work if not properly connected to the vehicle at the time of installation. Press the Engine Fast/Slow button to provide a maintained voltage to a throttle control. To stop the engine, press the Engine Start/Stop button. To start the engine, press the Engine Start/Stop button a second time within five (5) seconds of releasing it. To activate the auxiliary function, press the Engine Fast/Slow and the Engine Start/Stop buttons simultaneously.

Safety Features:

For safety reasons the speed of all functions, excluding the hoist, is reduced when the lift cylinder pressure exceeds a set pressure. This will occur under load or under boom down operation. To limit slow operation of an unloaded crane, activate boom up momentarily after booming down to relieve cylinder pressure created by the counterbalance valve.

The crane is also equipped with an anti-bridging feature. The logic in the receiver will not allow the operator to rest the boom of the crane on a load supporting structure and lift a load. Doing so is dangerous and could damage the crane. When the crane is bridged, the receiver will display 'RSBM' which requires the boom to be raised. This feature is disabled when the crane is in the 'HOME' position to allow for stowing. When in the 'HOME' position, the hoist is also slowed to prevent inadvertent damage to the crane or boom support.

Operation Failure:

If the crane does not operate as expected, observe the readout through the window on the receiver and refer to the front panel for explanation. The codes are further explained in the Diagnostics section of this manual. Please note that 'NRML' is displayed when the crane is operating normally, 'HOME' is displayed when the crane is forward and in a position to be stowed and 'SLOW' is displayed when functions are slowed due to load.

Charging the Transmitter:

The transmitter can be charged using one of three methods. It can be charged with the cigarette lighter charger, the pendant cable or the optional AC adapter (P/N 366505000). To charge the transmitter with the pendant cable, the crane must have electrical power. The crane can be operated by pendant or by FM remote therefore the battery can be charged without suspending operation of the crane.

The transmitter should be fully charged after approximately 6 to 8 hours of charging. It is not recommended to leave the transmitter charging for extended periods of time (3 or 4 days). Doing so will eventually degrade the battery and it will not keep a good charge.

QUALIFICATIONS FOR AND CONDUCT OF OPERATORS AND OPERATING PRACTICES

OPERATORS

- 1. Crane operation shall be limited to personnel with the following minimum qualifications:**
 - A. Designated persons.
 - B. Trainees under the direct supervision of a designated person.
 - C. Maintenance and test personnel (when it is necessary in the performance of their duties).
 - D. Inspectors (crane).
- 2. No one other than the personnel specified above shall enter the operating area of a crane with the exception of persons such as oilers, supervisors, and those specified persons authorized by supervisors whose duties require them to do so and then only in the performance of their duties and with the knowledge of the operator or other persons.**

QUALIFICATIONS FOR OPERATORS

- 3. Operators shall be required by the employer to pass a practical operating examination. Qualifications shall be limited to the specific type of equipment for which examined.**
- 4. Operators and operator trainees shall meet the following physical qualifications:**
 - A. Vision of at least 20/30 Snellen in one eye and 20/50 in the other, with or without corrective lenses.
 - B. Ability to distinguish colors, regardless of position, if colors differentiation is required for operation.
 - C. Adequate hearing with or without hearing aid for the specific operation.
- 5. Evidence of physical defects or emotional instability which render a hazard to operator or others, which in the opinion of the examiner could interfere with the operator's performance may be sufficient cause for disqualification. In such cases, specialized clinical or medical judgment and tests may be required.**
- 6. Evidence that the operator is subject to seizures or loss of physical control shall be sufficient reason for disqualification. Specialized medical tests may be required to determine these conditions.**
- 7. Operators and operator trainees should have normal depth perception, coordination, and no**

tendencies to dizziness or similar undesirable characteristics.

- 8. In addition to the above listed requirements, the operator shall:**
 - A. Demonstrate the ability to comprehend and interpret all labels, operator's manuals, safety codes and other information pertinent to correct crane operations.
 - B. Possess knowledge of emergency procedures and implementation of same.
 - C. Demonstrate to the employer the ability to operate the specific type of equipment.
 - D. Be familiar with the applicable safety regulations.
 - E. Understand responsibility for maintenance requirements of crane.
 - F. Be thoroughly familiar with the crane and its control functions.
 - G. Understand the operating procedures as outlined by the manufacturer.

CONDUCT OF OPERATORS

- 9. The operator shall not engage in any practice, which will divert his attention while actually operating the crane.**
- 10. Each operator shall be responsible for those operations under the operator's direct control. Whenever there is any doubt as to safety, the operator shall consult with the supervisor before handling the loads.**
- 11. The operator should not leave a suspended load unattended unless specific precautions have been instituted and are in place.**
- 12. If there is a warning sign on the switch or engine starting controls, the operator shall not close the switch or start the engine until the warning sign has been removed by the appointed person.**
- 13. Before closing the switch or starting the engine, the operator shall see that all controls are in the "OFF" or neutral position and all personnel are in the clear.**
- 14. If power fails during operation, the operator shall:**
 - A. move power controls to the "OFF" or neutral position.
 - B. land the suspended load and boom, if practical.

QUALIFICATIONS FOR AND CONDUCT OF OPERATORS AND OPERATING PRACTICES

15. The operator shall be familiar with the equipment and its proper care. If adjustments or repairs are necessary, the operator shall report the same promptly to the appointed person, and shall also notify the next operator.
16. All controls shall be tested by the operator at the start of each shift. If any controls do not operate properly, they shall be adjusted or repaired before operations are begun
17. Stabilizers shall be visible to the operator while extending or setting unless operator is assisted by a signal person.

OPERATING PRACTICES

HANDLING THE LOAD

18. Size of load

- A. No crane shall be loaded beyond the rated load except for test purposes.
- B. The load to be lifted is to be within the rated load of the crane and its existing configuration.
- C. When loads which are not accurately known are to be lifted, the person responsible for the job shall ascertain that the weight of the load does not exceed the crane rated load at the radius at which the load is to be lifted.

19. Attaching the load

- A. The load shall be attached to the hook by means of slings or other devices of sufficient capacity.
- B. Hoist rope shall not be wrapped around the load.

20. Moving the load

- A. The operator shall determine that:
 - B. The crane is level and, where necessary, the vehicle/carrier is blocked properly.
 - C. The load is well secured and balanced in the sling or lifting device before it is lifted more than a few inches.
 - D. Means are provided to hold the vehicle stationary while operating the crane.
 - E. Before starting to lift, the hook shall be brought over the load in such a manner as to minimize swinging.
 - F. During lifting care shall be taken that:

1. There is no sudden acceleration or deceleration of the moving load.
2. Load, boom or other parts of the crane do not contact any obstruction.

G. Cranes shall not be used for dragging loads sideways.

H. This standard recognizes that articulating boom cranes are designed and intended for handling materials. They do not meet personnel lift or elevator requirements. Therefore, no lifting, lowering, swinging or traveling shall be done while a person is on the hook or load. Hook attached suspended work platforms (baskets) shall not be used with cranes covered by this standard. Work platforms attached to the boom must be approved by crane manufacturer.

I. The operator should avoid carrying loads over people.

J. When the crane is so equipped, the stabilizers shall be fully extended and set. Blocking under stabilizers shall meet the requirements as follows:

1. Strong enough to prevent crushing.
2. Of such thickness, width and length as to completely support the stabilizer pad.

K. Firm footing under all tires, or individual stabilizer pads should be level. Where such a footing is not otherwise supplied, it should be provided by timbers, cribbing, or other structural members to distribute the load so as to not exceed allowable bearing capacity or the underlying material.

L. In transit, the boom shall be carried in stowed position.

M. When rotating the crane, sudden starts and stops shall be avoided. rotational speed shall be such that the load does not swing out beyond the radius at which it can be controlled.

N. The crane shall not be transported with a load on the hook unless recommended by the manufacturer.

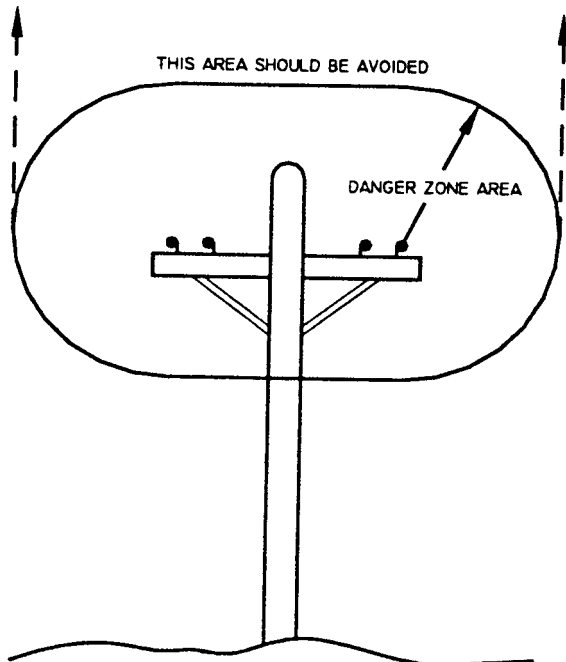
O. No person should be permitted to stand or pass under a suspended load.

21. Stowing procedure. Follow the manufacturer's procedure and sequence when stowing and unstowing the crane

QUALIFICATIONS FOR AND CONDUCT OF OPERATORS AND OPERATING PRACTICES

MISCELLANEOUS

OPERATING NEAR ELECTRICAL POWER LINES



22. Cranes shall be operated so that no part of the crane or load enters into the danger zone shown above.

EXCEPTIONS

- A. The danger zone may be entered after confirmation by an appointed person that the electrical distribution and transmission lines have been de-energized and visibly grounded at the point of work; or
- B. The danger zone may be entered if insulating barriers (not a part of nor an attachment to the crane) have been erected to prevent physical contact with the lines.

23. For lines rated 50 kV or below, minimum clearance between the lines and any part of the crane or load (including handling appendages) shall be 10-ft. (3m). For higher voltages, see Table 1.
24. Caution shall be exercised when working near overhead lines, because they can move horizontally or vertically due to wind, moving the danger zone to new positions.

25. In transit with no load and boom lowered the clearance shall be specified in Table 1.
26. A qualified signalperson shall be assigned to observe the clearance and give warning before approaching the above limits.
- A. Any overhead wire shall be considered to be an energized line unless and until the person owning such line or the electrical utility authorities verify that it is not an energized line.
- B. Exceptions to this procedure, if approved by the administrative or regulatory authority if the alternate procedure provides equivalent protection and set forth in writing.
- C. Durable signs shall be installed at the operator's station and on the outside of the crane, warning that electrocution or serious bodily injury may occur unless a minimum clearance of 10 ft. (3.0m) between the crane or the load being handled and energized power lines. Greater clearances are required because of higher voltage as stated above. These signs shall be revised but not removed when local jurisdiction requires greater clearances.

TABLE 1

normal voltage, kV (phase to phase)		minimum required clearance	
		ft	(m)
<u>when operating near high voltage power lines</u>			
over	to 50	10	(3.50)
over	50 to 200	15	(4.6)
over	200 to 350	20	(6.1)
over	350 to 500	25	(7.62)
over	500 to 750	35	(10.67)
over	750 to 1000	45	(13.72)
<u>while in transit with no load and boom lowered</u>			
over	to 0.75	4	(1.22)
over	0.75 to 50	6	(1.83)
over	50 to 345	10	(3.83)
over	345 to 750	16	(4.87)
over	750 to 1000	20	(6.1)

INSPECTION, TESTING AND MAINTENANCE GENERAL

INSPECTION CLASSIFICATION

1. **Initial inspection. Prior to initial use, all new, altered, modified or extensively repaired cranes shall be inspected by a designated person to insure compliance with provisions of this standard.**
2. **Regular inspection. Inspection procedure for cranes in regular service is divided into two general classifications based upon the intervals at which inspection should be performed. The intervals in turn are dependent upon the nature of the components of the crane and the degree of their exposure to wear, deterioration, or malfunction. The two general classifications are herein designated as "frequent" and "periodic" with respective intervals between inspections as defined below.**
 - A. frequent inspection - daily to monthly intervals
 - B. periodic inspection - one to twelve intervals or as specifically recommended by the manufacturer

FREQUENT INSPECTION

3. **Inspection shall be performed by designated personnel.**
 - A. control mechanisms for maladjustment interfering with proper operation - daily, when used
 - B. control mechanisms for excessive wear of components and contamination by lubricants or other foreign matter
 - C. safety devices for malfunction
 - D. all hydraulic hoses, particularly those which flex in normal operation of crane functions, should be visually inspected once every working day, when used
 - E. hooks and latches for deformation, chemical damage, cracks, and wear. Refer to ANSI/ASME B30.10
 - F. rope reeving for compliance with crane manufacturer's specifications, if optional winch is used

- G. electrical apparatus for malfunctioning, signs of excessive deterioration, dirt and moisture accumulation
- H. hydraulic system for proper oil level and leaks daily
- I. tires for recommended inflation pressure, cuts and loose wheel nuts
- J. connecting pins and locking device for wear and damage

PERIODIC INSPECTION

4. **Deformed, cracked or corroded members in the crane structure and carrier**
5. **Loose bolts, particularly mounting bolts.**
6. **Cracked or worn sheaves and drums.**
7. **Worn, cracked, or distorted parts such as pins, bearings, shafts, gears, rollers and devices.**
8. **Excessive wear on brake and clutch system parts and lining.**
9. **Crane hooks inspected for cracks.**
10. **Travel steering, braking, and locking devices, for malfunction.**
11. **Excessively worn or damaged tires.**
12. **Hydraulic and pneumatic hose, fittings, and tubing inspection.**
 - A. evidence of leakage at the surface of the flexible hose or its junction with metal and coupling
 - B. A. blistering, or abnormal deformation to the outer covering of the hydraulic or pneumatic hose
 - C. A. leakage at threaded or clamped joints that cannot be eliminated by normal tightening or recommended procedures
 - D. A. evidence or excessive abrasion or scrubbing on the outer surface of a hose, rigid tube, or fitting. Means shall be taken to eliminate the interference of elements in contact or otherwise protect the components

INSPECTION, TESTING AND MAINTENANCE GENERAL

13. Hydraulic and pneumatic pumps and motors inspection.

- A. loose bolts or fasteners
- B. leaks at joints between sections
- C. shaft seal leaks
- D. unusual noises or vibrations
- E. loss of operating speed
- F. excessive heating of the fluid
- G. loss of pressure

14. Hydraulic and pneumatic valves inspection

- A. cracks in valve housing
- B. improper return of spool to neutral position
- C. leaks at spools or joints
- D. sticking spools
- E. failure of relief valves to attain or maintain correct pressure setting
- F. relief valve pressure shall be checked as specified by the manufacturers

15. Hydraulic and pneumatic cylinders inspection.

- A. drifting caused by fluid leaking across piston
- B. rod seals leaking
- C. leaks at welding joints
- D. scored, nicked, or dented cylinder rods
- E. damaged case (barrel)
- F. loose or deformed rod eyes or connecting joints

16. Hydraulic filters. Evidence of rubber particles on the filter elements may indicate hose, "O" ring, or other rubber component deterioration. Metal chips or pieces on the filter may denote failure in pumps, motors, or cylinders. Further checking will be necessary to determine origin of the problem before corrective action can be taken.

17. Labels are to be in place and legible.

CRANES NOT IN REGULAR USE

18. A crane which has been idle for a period of over one month or more, but not less than six months, shall be given an inspection conforming with the initial-regular- frequent inspections

19. A crane which has been idle for a period of over six months shall be given a complete inspection conforming with the initial-regular-frequent inspection requirements.

INSPECTION RECORDS

20. Dated records for periodic inspection should be made on critical items such as brakes, crane hooks, rope, hydraulic and pneumatic cylinders, and hydraulic and pneumatic relief pressure valves. Records should be kept available to an appointed person.

OPERATIONAL TESTS

21. Prior to initial use, all new, altered, modified, or extensively repaired cranes shall be tested for compliance with the operational requirements of this section, including functions such as the following:

- A. load lifting and lowering mechanisms
- B. boom lifting and lowering mechanisms
- C. boom extension and retraction mechanisms
- D. swing mechanisms
- E. safety devices
- F. operating controls comply with appropriate function labels

Operational crane test results shall be made available to an appointed person.

RATED TEST LOAD

Prior to initial use, altered, modified, or extensively repaired cranes shall be load tested by or under the direction of an appointed person.

INSPECTION, TESTING AND MAINTENANCE

GENERAL

22. Test loads shall not exceed 110% of the manufacturer's load ratings.
23. Written reports shall be maintained showing test procedures and confirming the adequacy of repairs.

MAINTENANCE

PREVENTIVE MAINTENANCE

24. Before adjustment and repairs are started on a crane, the following precautions shall be taken as applicable:
- A. crane placed where it will cause the least interference with other equipment or operations
 - B. all controls at the "off" position
 - C. starting means rendered inoperative
 - D. boom lowered to the ground if possible or otherwise secured against dropping
 - E. relieve hydraulic oil pressure from all hydraulic circuits before loosening or removing hydraulic components
25. Warning or "OUT OF ORDER" signs shall be placed on the crane controls.
26. After adjustments and repairs have been made, the crane shall not be returned to service until all guards have been reinstalled, trapped air removed from hydraulic system (if required), safety devices reactivated, and maintenance equipment removed.

ADJUSTMENTS AND REPAIRS

27. Any hazardous conditions disclosed by the inspection requirements shall be corrected before operation of crane is resumed, Adjustments and repairs shall be done only by designated personnel.
28. Adjustments shall be maintained to assure correct functioning of components, The following are examples:
- A. functional operating mechanism
 - B. safety devices
 - C. control systems

29. Repairs or replacements shall be provided as needed for operation.

The following are examples:

- A. critical parts of functional operating mechanisms which are cracked, broken, corroded, bent, or excessively worn
 - B. critical parts of the crane structure which are cracked, bent, broken, or excessively corroded
 - C. crane hooks showing cracks, damage, or corrosion shall be taken out of service. Repairs by welding are not recommended
30. Instructions shall be provided by the manufacturer for the removal of air from hydraulic circuits.

LUBRICATION

All moving parts of the crane, for which lubrication is specified, should be regularly lubricated per the manufacturer's recommendations and procedures.

ROPE INSPECTION

31. Frequent Inspection
- A. All running ropes in service should be visually inspected once each working day. A visual inspection shall consist of observation of all rope which can be in use during the days operations. These visual observations should be considered with discovering gross damage such as listed below, which may be an immediate hazard.
 - 1. distortion of the rope such as kinking, crushing, un-stranding, birdcaging, main strand displacement, or core protrusion. Loss of rope diameter in a short length or unevenness of outer strands should be replaced
 - 2. general corrosion
 - 3. broken or cut strands;
 - 4. number, distribution and type of visible broken wires. When such damage is discovered, the rope shall either be removed from service or given as inspection.

INSPECTION, TESTING AND MAINTENANCE GENERAL

- B. Care shall be taken when inspecting sections of rapid deterioration such as flange points, crossover points, and repetitive pickup points on drums.

32. Periodic inspection

- A. The inspection frequency shall be determined by a qualified person and shall be based on such factors as
 1. expected rope life as determined by experience on the particular installation or similar installations
 2. severity of environment
 3. percentage of capacity lifts
 4. frequency rates of operation
 5. exposure to shock loads

Inspection need not be at equal calendar intervals and should be more frequent as the rope approaches the end of its service life. This inspection shall be made at least annually.

- B. Periodic inspection shall be performed by a designated person. This inspection shall cover the entire length of the rope. Only the surface wires need be inspected. No attempt should be made to open the rope. Any deterioration results in appreciable loss of original strength, such as described below, shall be noted and determination made as to whether use of the rope would constitute a hazard: points listed above reduction of rope diameter below nominal diameter due to loss of core support, internal or external corrosion, or wear of outside wires; severely corroded, cracked, bent, worn or improperly applied connections;
- C. Care shall be taken when inspecting sections subject to rapid deterioration such as the following:
 1. sections in contact with saddles, equalizer sheaves, or other sheaves where rope travel is limited
 2. sections of the rope at or near terminal ends where corroded or broken wires may protrude

ROPE REPLACEMENT

- 33. **No precise rules can be given for determination of the exact time for replacement of rope, since many variable factors are involved.**

Continued use in this respect depends upon good judgement by a designated person in evaluating remaining strength in a used rope after allowance for deterioration disclosed by inspection. Continued rope operation depends upon this remaining strength.

- 34. **Conditions such as the following shall be reason for questioning continued use of the rope or increasing the frequency of inspection:**

- A. in running ropes, six randomly distributed broken wires in one lay or three broken wires in one strand in one lay
- B. one outer wire broken at the contact point with the core of the rope structure and protrudes or loops out of the rope structure. Additional inspection of this section is required
- C. wear of one third of the original diameter of the outside individual wire
- D. kinking, crushing, birdcaging, or any other damage resulting in distortion of the rope structure
- E. evidence of any heat damage from any cause
- F. reduction from nominal diameter of more than 1/64 in. (0.4mm) for diameters up to and including 5/16 in. (8 mm), 1/32 in. (0.8 mm) for diameter 3/8 in. (9.5 mm) to and including 1/2 in. (13 mm), 3/64 in. (1.2 mm) for diameter 9/16 in. (14.5 mm) to and including 3/4 in. (19 mm), 1/16 in. (1.6 mm) for diameter 7/8 in. (22 mm) to and including 1 1/8 in. (29 mm), 3/32 in. (2.4 mm) for diameters 1 1/4 in. (32 mm) to and including 1 1/2 in. (38 mm)
- G. In standing ropes, more than two broken wires in one lay in sections beyond end connections or more than one broken wire at an end connection.


INSPECTION, TESTING AND MAINTENANCE GENERAL

- H. Replacement rope shall have a strength rating at least as great as the original rope furnished or recommended by the crane manufacturer. Any deviation from the original size, grade, or construction shall be specified by a rope manufacturer, or a qualified person.
35. **Rope not in regular use:** all rope which has been idle for a period of a month or more due to shutdown or storage of a crane on which it is installed, shall be given an inspection in accordance with above information before it is placed in service. This inspection shall be for all types of deterioration and shall be performed by a qualified person.
36. **Inspection records**
- A. A. frequent inspection- no records required
 - B. A. periodic inspections- in order to establish data as a basis for judging the proper time for replacement, a dated report condition at each periodic inspection should be kept on file. This report shall cover points of deterioration listed above.
- ROPE MAINTENANCE**
37. Rope should be stored to prevent damage or deterioration.
38. Unreeling or uncoiling of rope shall be done as recommended by the rope manufacturer and with care to avoid kinking or inducing twist.
39. Before cutting a rope, seizing shall be placed on each side of the place where the rope is to be cut to prevent unlaying of the strands. On pre-formed rope, one seizing on each side of the cut is required. On non-preformed ropes of 7/8 in. (22 mm) diameter or smaller, two seizings on each side of the cut are required, and for non-preformed rope 1 in. (25 mm) diameter or larger, three seizings on each side of the cut are required.
40. During installation care should be exercised to avoid dragging of the rope in the dirt or around objects which will scrape, nick crush or induce sharp bends in it.
41. Rope should be maintained in a well-lubricated condition. It is important that lubricant applied as a part of a maintenance program shall be compatible with the original lubricant and to this end the rope manufacturer should be consulted. Lubricant applied shall be the type which does not hinder visual inspection. Those sections of rope which are located over sheaves or otherwise hidden during inspection and maintenance procedures require special attention when lubricating rope. The object of rope lubrication is to reduce internal friction and to prevent corrosion.
42. When an operating rope shows greater wear or well defined localized areas than on the remainder of the rope, rope life can be extended in cases where a section at the worn end, and thus shifting the wear to different areas of the rope.

SAFETY DECAL SECTION

5005H SERIES


PART NO.: 40579000
DECAL: OPERATING INSTRUCTIONS
FUNCTION: To inform the operator of the proper procedure to follow for safe operation of the crane.
USED ON: All Cranes
QUANTITY: 1
PLACEMENT: Right side plate

 CAUTION

1. INSPECT VEHICLE AND CRANE INCLUDING OPERATION, PRIOR TO USE DAILY.
2. DO NOT USE THIS EQUIPMENT EXCEPT ON SOLID, LEVEL SURFACE WITH OUTRIGGERS PROPERLY EXTENDED AND CRANE MOUNTED ON FACTORY-RECOMMENDED TRUCK.
3. BEFORE OPERATING THE CRANE, REFER TO MAXIMUM LOAD (CAPACITY) CHART ON CRANE FOR OPERATING (LOAD) LIMITATIONS.
4. OPERATE ALL CONTROLS SLOWLY AND SMOOTHLY.
5. KEEP LOAD UNDER BOOM TIP. DO NOT SIDE LOAD BOOM OR DRAG LOADS. AVOID FREE SWINGING LOADS.
6. DO NOT OPERATE, WALK OR STAND BENEATH BOOM OR A SUSPENDED LOAD.
7. KEEP AT LEAST 5 WRAPS OF LOADLINE ON HOIST DRUM.
8. FOR TRAVELING, BOOM AND OUTRIGGERS MUST BE IN THE STOWED POSITION.
9. ALL REMOVABLE PENDANTS MUST BE STORED IN CAB OR TOOL COMPARTMENT WHEN CRANE IS NOT IN USE.

P/N 040579

PART NO.: 040580000
DECAL: OPERATING TRAINING
FUNCTION: To inform the operator of the need to receive proper training before using the crane.
USED ON: All Cranes
QUANTITY: 1
PLACEMENT: Right side plate

 DANGER


AN UNTRAINED OPERATOR
SUBJECTS HIMSELF AND
OTHERS TO

DEATH OR SERIOUS INJURY

- 1.) YOU MUST HAVE BEEN TRAINED IN THE OPERATION OF THIS CRANE, AND
- 2.) YOU MUST KNOW AND FOLLOW THE SAFETY AND OPERATING RECOMMENDATIONS CONTAINED IN THE MANUFACTURER'S MANUAL, YOUR EMPLOYER'S WORK RULES AND APPLICABLE GOVERNMENT REGULATIONS.

P/N 040580

PART NO.: 040632000
DECAL: TAMPERING WITH OVERLOAD DEVICE
FUNCTION: To inform the operator that tampering with the overload device may cause a unit failure or possible personal injury.
USED ON: All Cranes equipped with a load sensor
QUANTITY: 1
PLACEMENT: Right side of valve sensor.

 WARNING

TAMPERING WITH OVERLOAD DEVICE VOIDS WARRANTY. OVERLOADED CRANE MAY HYDRAULICALLY RELEASE AND LET LOAD DOWN TO GROUND.

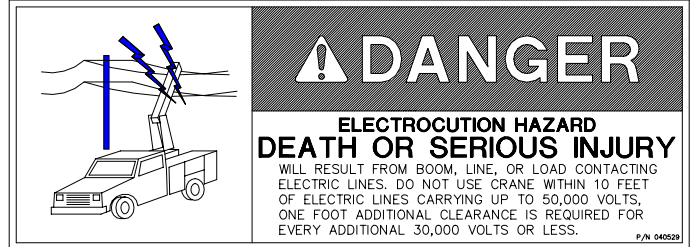
OVERLOAD PROTECTION DEVICE CANNOT FUNCTION WITH BOOM BELOW HORIZONTAL (0°). HOIST UP, BOOM DOWN, AND EXTEND OUT WILL BE INOPERATIVE WHEN CRANE IS IN OVERLOAD CONDITION.

P/N 040632

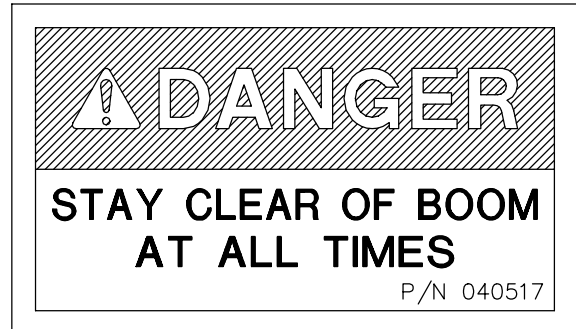
SAFETY DECAL SECTION

5005H SERIES

PART NO.: 040529000
DECAL: ELECTROCUTION HAZARD
FUNCTION: To inform the operator of the hazard involved with contacting electrical power lines with crane boom.
USED ON: Articulated & Stiff Boom Cranes
QUANTITY: 2
PLACEMENT: Both sides of end of lower boom



PART NO.: 040517000
DECAL: STAY CLEAR OF BOOM
FUNCTION: To inform the operator of the hazard of proximity or contact with the crane boom during operation.
USED ON: All Cranes
QUANTITY: 2
PLACEMENT: Both sides of crown



SAFETY DECAL SECTION

5005H SERIES

PART NO.: 040587000

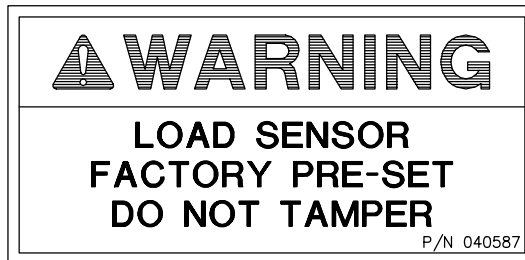
USED ON: All cranes equipped with a load sensor.

DECAL: LOAD SENSOR, DON'T TAMPER

QUANTITY: 1

FUNCTION: To inform the operator that the load sensor is pre-set and that tampering with the sensor may cause potentially hazardous situation.

PLACEMENT: On the lift cylinder near the load sensor



PART NO.: 040519000

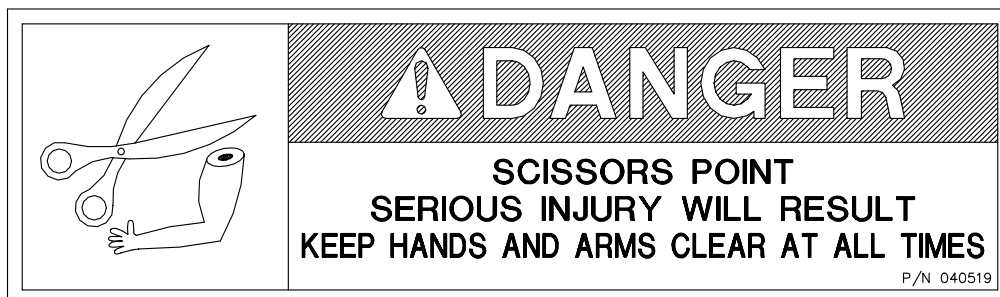
USED ON: All cranes.

DECAL: SCISSORS POINT

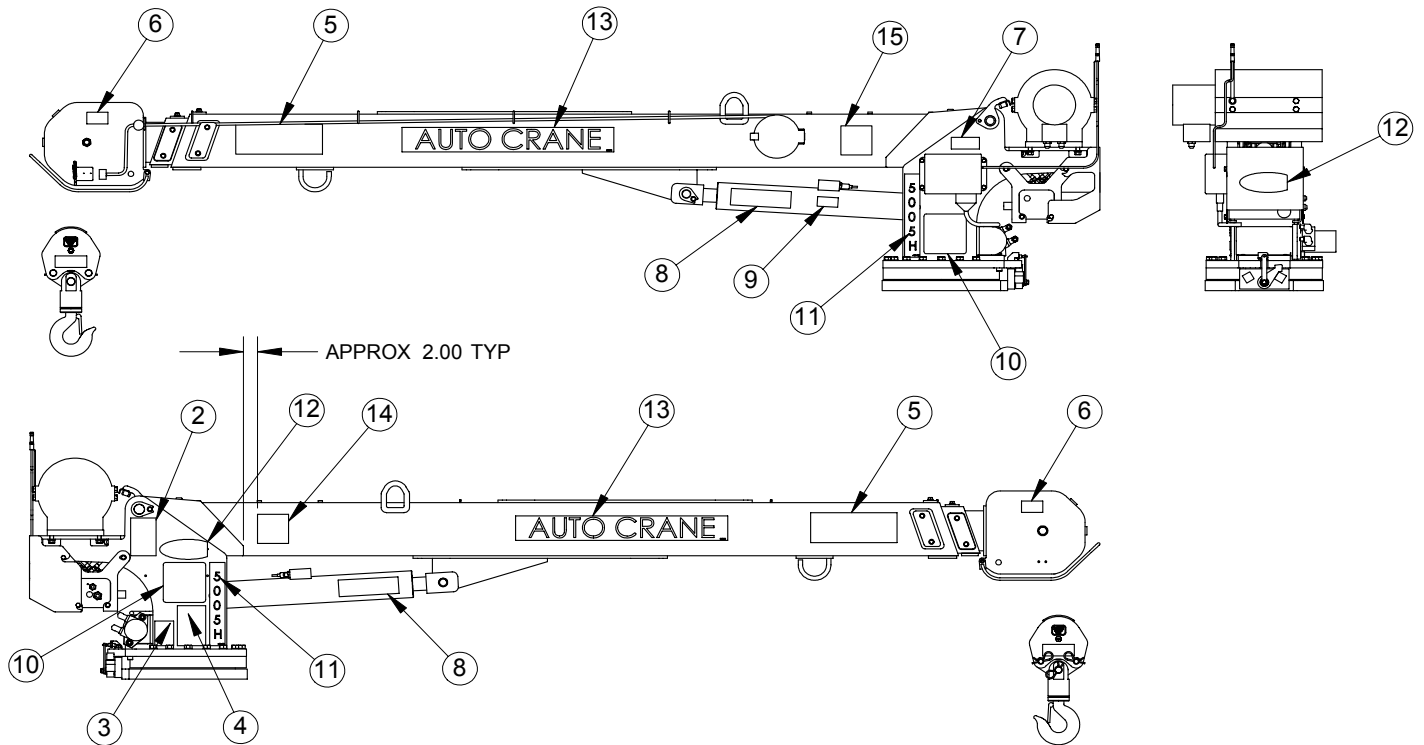
QUANTITY: 1

FUNCTION: To inform the operator of possible danger at scissors point on crane.

PLACEMENT: Both sides of the lift cylinder



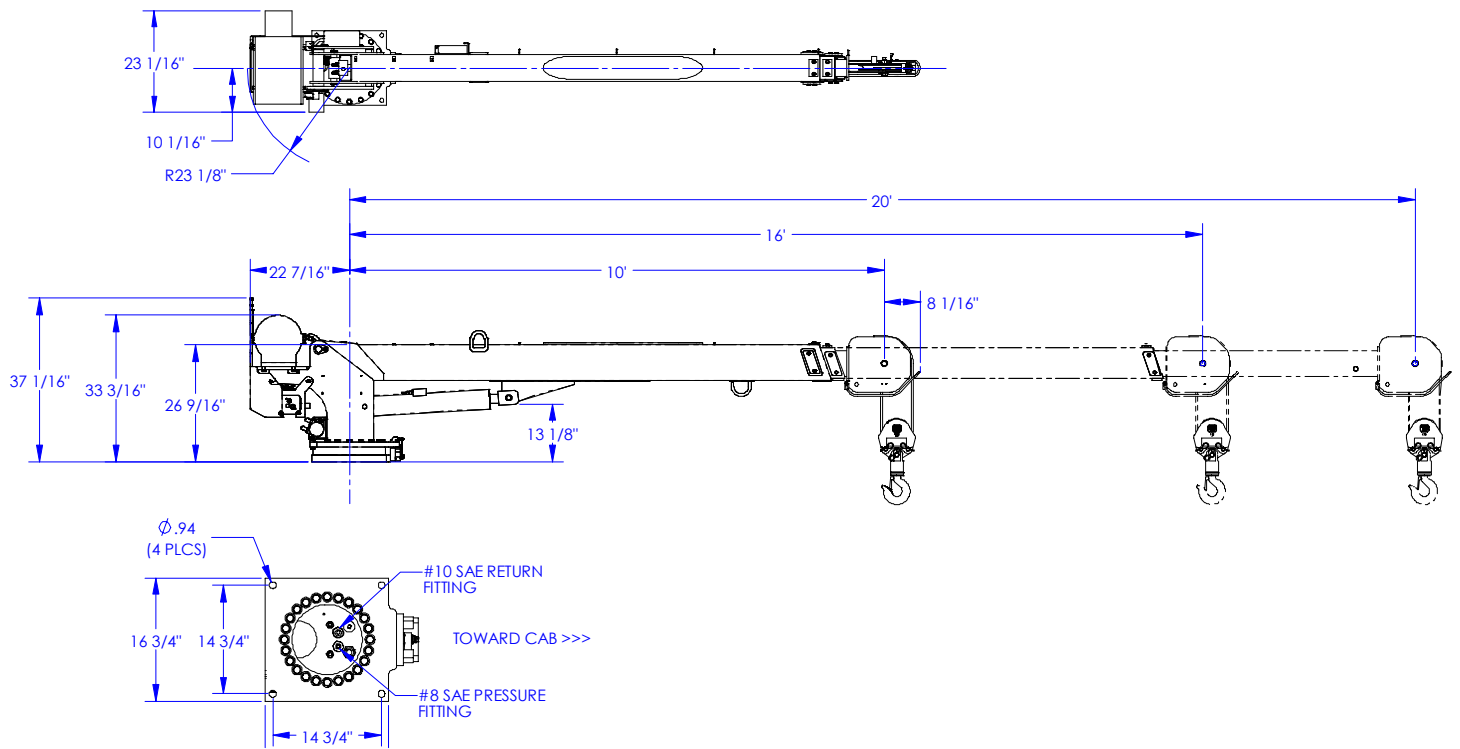
DECAL LAYOUT 5005H SERIES



ITEM	QTY	PART NO	DESCRIPTION
2	1	040579	DECAL OPERATION INSTRUCTIONS
3	1	040632	DECAL WARNING - OVERLOAD
4	1	040580	DECAL TRAINED OPERATOR
5	2	040529	DECAL POWER LINE HAZARD
6	2	040517	DECAL STAY CLEAR OF BOOM
7	1	330622	DECAL SERIAL NO
8	2	040519	DECAL DANGER SCISSOR POINT
9	1	040587	DECAL WARNING LOAD SENSOR
10	2	360705000	LOAD CHART 5005H
11	2	360033000	DECAL 5005H
12	2	360034	DECAL AUTO CRANE LOGO
13	2	366389	DECAL AUTO CRANE
14	1	320318	DECAL ANGLE IND RIGHT
15	1	320318001	DECAL ANGLE IND LEFT

NOTES

GENERAL DIMENSIONS 5005H SERIES



MOUNTING AND INSTALLATION

5005H SERIES

1. Check to make sure the following items are with your crane.

ITEM	QTY FM	QTY HW	PART NO.	DESCRIPTION
1	1	1	480689	FUSE 15 AMP TIME-DELAY
2	1	1	480688	FUSE HOLDER IN-LINE WATERPROOF
3	120"	120"	800596	WIRE 16G 600V 1C YEL
4	6	6	634401	TIE CABLE - MEDIUM
5	6	6	750738	STICK-ON
6	5	5	320357	TERMINAL NON-INS S/O W/L
7	1	1	320363	PLUG TERMINAL CONNECTOR
8	1	1	340638	CONDUCTOR POWER
9	1	1	320355	POWER RELAY
10	4	4	018900	NUT HX 7/8 NF GR8
11	4	4	022200	WASHER SP LK 7/8
12	1		460100002	TRANSMITTER KAR-TECH
13	1		366500009	CABLE PENDANT/CHARGE KAR-TECH
14	1		366504000	BATTERY CHARGER CIGARETTE LIGHTER
15	4	4	015104	7/8-14 X 5 HH GR8
16	1	1	360705000	DECAL LOAD CHART 5005H
17	1	1	360706000	MANUAL 5005H
18	1		360708000	BRACKET PENDANT PLUG
19	4		725321	NUT NYLON LOCK 8-32
20	4		001302	SCREW 8-32 X .5
21		1	366520000	JUNCTION BOX ASSY
22		1	366466000	WIRE HARNESS, TRUCK FUNCTIONS
23		1	680040	PENDANT ASSEMBLY

2. Pressure and return hoses are not furnished with this crane. The hoses must be provided by the installer and the lengths determined at installation.

REQUIREMENTS FOR INSTALLATION USING 10 GALLON RESERVOIR

- A. RETURN LINE FROM CRANE TO RESERVOIR (IN COMPARTMENT): -10 SAE 100R2 (OR EQUIVALENT). HOSE LENGTH IS DETERMINED BY INSTALLER. RETURN LINES LONGER THAN 6 FEET SHOULD BE SIZE -12. HOSE END FITTINGS ARE -10 JIC FEMALE SWIVEL (CRANE END) AND -10 JIC FEMALE SWIVEL (RESERVOIR END).
- B. PRESSURE LINE FROM PUMP TO CRANE: -8 SAE 100R2 (OR EQUIVALENT). HOSE LENGTHS IS DETERMINED BY INSTALLER. HOSE END FITTINGS ARE BOTH -8 JIC FEMALE SWIVEL.

NOTE:

REFER TO OWNERS MANUAL FOR ADDITIONAL INSTALLATION INFORMATION.

CAUTION – FAILURE TO USE CLEAN HYDRAULIC HOSES AND COMPONENTS MAY CONTAMINATE THE CRANE AND HYDRAULIC SYSTEM AND VOID WARRANTY

3. Crane must be provided with a flow of 8 gallons per minute and a pressure of 2,750PSI. Excess flow will cause erratic operation, and too little flow will cause poor crane operation.
4. Vehicle should meet minimum GVW rating of 14,500 pounds.
5. The vehicle MUST be equipped with an engine speed control and tachometer.
6. Make sure mounting surface is properly reinforced to withstand 25,000 ft-lb capacity loading of crane and that outriggers are used to provide total stability for the truck.
7. A 13 ½" dia. hole should be cut out of mounting location (centered with mounting blots) for access to lower ring gear bolts and hydraulic connections.

MOUNTING AND INSTALLATION

5005H SERIES

8. Make sure the mounting bolts are 7/8"-dia., grade 8. Torque bolts to **501** ft-lbs (dry).
9. When crane is not in operation, a boom support should always be used. Traveling block should be connected to hood loop.
10. Electrical hookup:
 - Wiring (cable from base of crane):
 - A. CONNECT THE BLACK WIRE TO THE BATTERY NEGATIVE (GROUND).
 - B. CONNECT THE RED WIRE TO FUSED 12VDC POWER. 12VDC POWER SHOULD BE SUPPLIED THROUGH A DEDICATED SWITCH THAT IS POWERED ONLY WHEN THE IGNITION SWITCH IS ON.
 - C. OPTIONALLY, USE THE WHITE WIRE FOR ENGINE FAST/SLOW.
 - D. OPTIONALLY, USE THE BLUE WIRE FOR ENGINE START.
 - E. OPTIONALLY, USE THE ORANGE WIRE FOR ENGINE STOP.
 - F. OPTIONALLY, USE THE GREEN WIRE FOR AUXILIARY.

WARNING! FAILURE TO CORRECTLY PLUMB AND WIRE CRANE CAN CAUSE INADVERTENT OPERATION AND DAMAGE TO CRANE AND/OR PERSONEL!

11. Once crane and plumbing are installed on the truck, fill the reservoir to top of sight glass (mobile DTE 13 or equal). Before operating crane, connect together the pressure and return hoses going to base of crane using 10-8 JIC union and engage PTO with engine running. Allow oil to circulate for 15 to 20 minutes. This will flush contaminants from the system back to the return line filter. Operate all cylinders to full extension and retraction a minimum of six times, to bleed air from system. Return all cylinders to the stored position and disengage PTO. Refill reservoir to top sight glass. To ensure 8 to 9 gallons per minute (GPM), install an in-line flow meter between the crane and the reservoir in the return hose.
12. Load test the crane to ensure proper functioning and truck stability
13. Make certain the owner's manual is delivered to the customer.
14. For additional help: call the service department at the Auto Crane Company. (918) 836-0463 (Tulsa, Oklahoma)

WARNING

FEDERAL LAW (49 CFR PART 571) REQUIRES THAT THE FINAL STAGE MANUFACTURER OF A VEHICLE CERTIFY THAT HE VEHICLE COMPLIES WITH ALL APPLICABLE FEDERAL REGULATIONS. ANY MODIFICATIONS PERFORMED ON THE VEHICLE PRIOR TO THE FINAL STAGE ARE ALSO CONSIDERED INTERMEDIATE STAGE MANUFACTURING AND MUST BE CERTIFIED AS TO COMPLIANCE. THE INSTALLER OF THIS CRANE AND BODY IS CONSIDERED ONE OF THE MANUFACTURERS OF THE VEHICLE. AS SUCH A MANUFACTURER, THE INSTALLER IS RESPONSIBLE FOR COMPLIANCE WITH ALL APPLICABLE FEDERAL AND STATE REGULATIONS, AND IS REQUIRED TO CERTIFY THAT THE VEHICLE IS IN COMPLIANCE.

IT IS THE FURTHER RESPONSIBILITY OF THE INSTALLER OF THE CRANE TO COMPLY WITH THE OSHA TRUCK CRANE STABILITY REQUIREMENTS AS SPECIFIED BY 29 CFR PART 1910.180 (C) (1).

LUBRICATION & MAINTENANCE SCHEDULE

5005H SERIES

SERVICE PERFORMED	DAY	WEEKLY	3 MOS	6 MOS	YEAR	NOTES
LOAD HOOK	X					INSPECT HOOK & LATCH FOR DEFORMATION, CRACKS, & CORROSION
CABLE DRUM	X					MAKE SURE CABLE IS WOUND EVENLY ON DRUM
HOIST / BOOM CABLE	X					CHECK FOR FLATTENING, KINKS, & BROKEN STRANDS. SEE MANUAL.
HYD. HOSES	X					VISUAL INSPECTION
HYD. FLUID	X					CHECK FLUID LEVEL
MOUNTING BOLTS		X				CHECK-TORQUE TO 501 FT-LBS (DRY) AS REQUIRED
ROTATION RING GEAR		X				LUBE WITH MOBILETAC LL, OR LUBRIPLATE P/N 15263, OR EQUAL
SHEAVE BEARINGS		X				SEALED BEARING, REPLACE IF ROUGH OR LOOSE
ALL OTHER BOLTS		X				CHECK-TIGHTEN AS REQUIRED
ROTATION BEARING			X			GREASE WITH MOBILEPLEX EP-2 OR EQUIVALENT @ ZERKS
ROTATION BEARING BOLTS			X			CHECK TORQUE TO 180 FT-LBS (DRY) AS REQUIRED
ROTATION GEAR BOX			X			CHECK TORQUE TO 90 FT-LBS (SOCKET HEAD) AND 55 FT-LBS (HEX HEAD) AS REQUIRED
ROTATION GEAR BOX				X		EP GEAR LUBE SAE 80-90
HYDRAULIC FLUID					X	DRAIN, FLUSH, AND REFILL WITH SUN 2105 HYD. OIL, SAE 5W-20
BOOM SLIDE PADS	PADS GREASED WHEN REPLACED					
FOR ADDITIONAL INFORMATION SEE:	1) OWNER'S MANUAL 2) OSHA SECTION 1910.180 3) ANSI B30.5-1989					

LUBRICATION & MAINTENANCE SCHEDULE

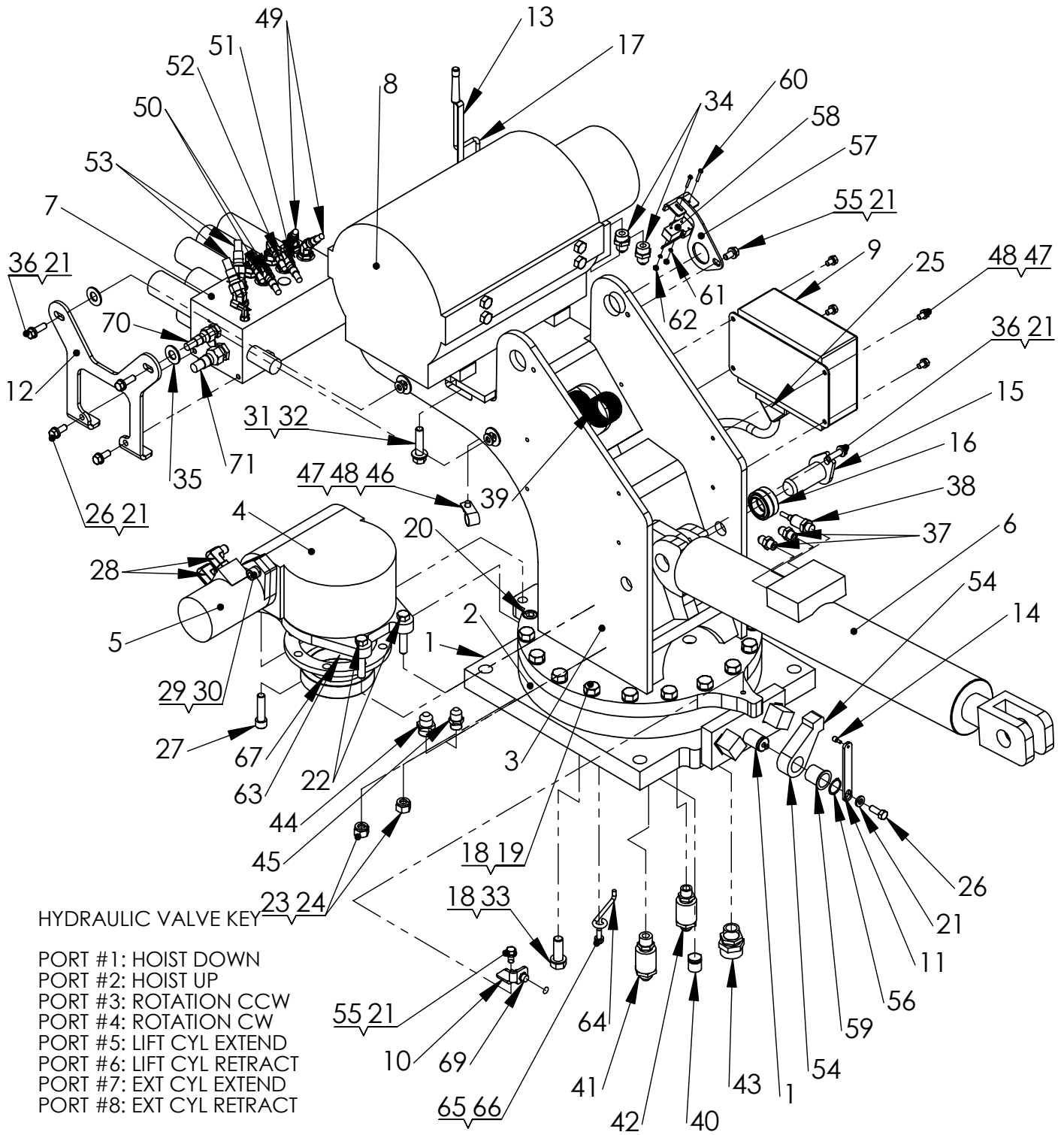
5005H SERIES

CAUTION: Routine maintenance ensures trouble-free operation and protects your investment. All warranties are void if maintenance is neglected.

NOTES:

1. Use only authorized parts. Any damage or malfunction caused by the use of unauthorized parts is not covered by Warranty or Product Liability
2. Once a bolt has been torqued to its rated capacity and then removed; the bolt should be replaced with a new one.
3. Auto Crane Company recommends that this crane be serviced per "Crane Inspection Log" P/N 999978. These logs should be filled in at the intervals noted and kept as a permanent record. Additional copies are available from your local distributor.

PEDESTAL ASSEMBLY 5005H SERIES



HYDRAULIC VALVE KEY

- PORT #1: HOIST DOWN
- PORT #2: HOIST UP
- PORT #3: ROTATION CCW
- PORT #4: ROTATION CW
- PORT #5: LIFT CYL EXTEND
- PORT #6: LIFT CYL RETRACT
- PORT #7: EXT CYL EXTEND
- PORT #8: EXT CYL RETRACT

CYL SEAL KIT: 360720000
C'BAI . CART.: 480188000

PEDESTAL ASSEMBLY

5005H SERIES

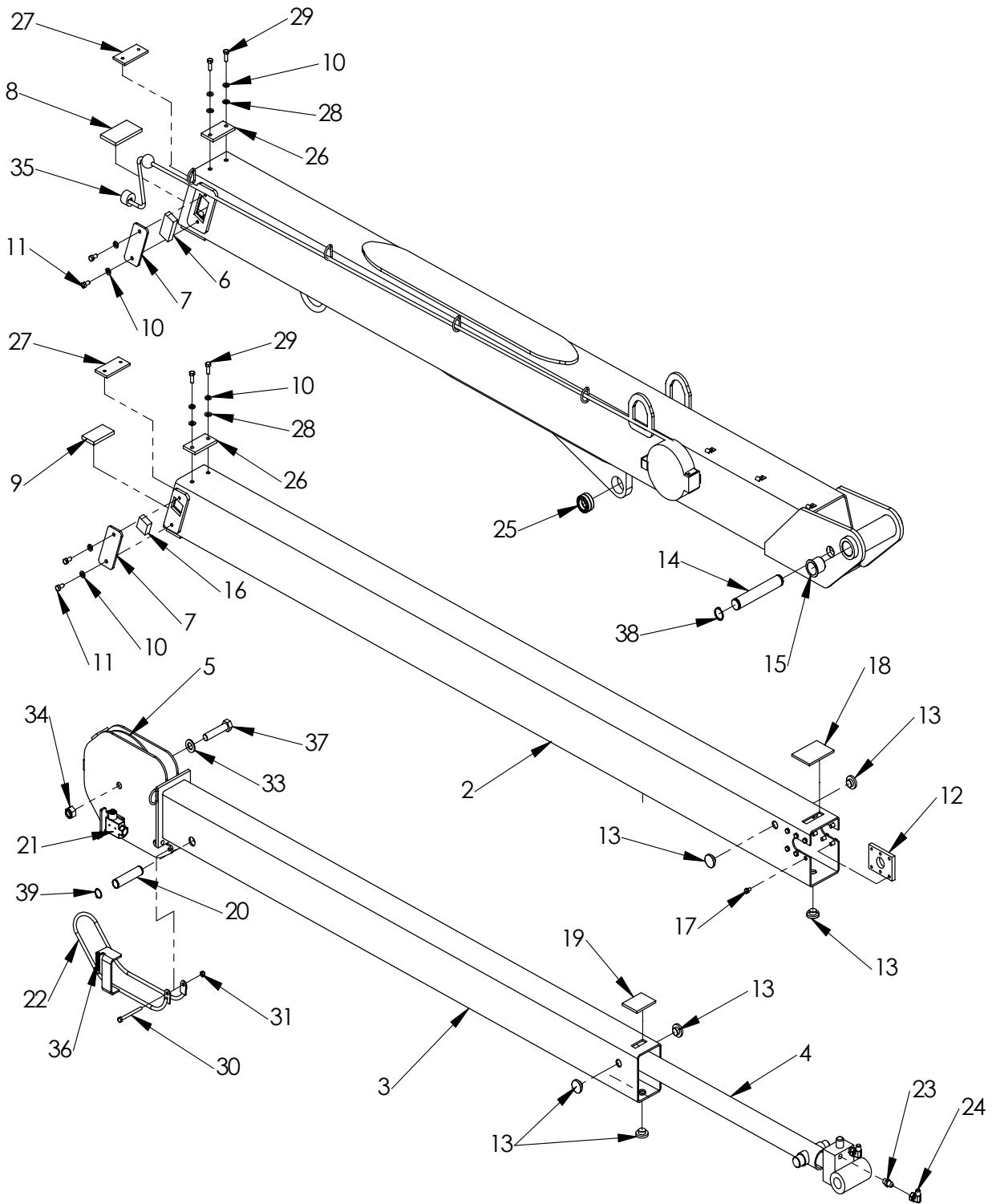
ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	360717000	BASE PLATE WELD
2	1	480023002	BEARING, ROTATION
3	1	360772000	PEDESTAL WELD
4	1	160407	GEAR BOX, ROTATION
5	1	366440	ROTATION MOTOR
6	1	360788000	CYLINDER LIFT
7	1	366370000	VALVE CONTROL ASSY
8	1	123309	HOIST RPH2500
9	1	460100003	RECEIVER, 2ND GEN W/5005H PROGRAM
10	1	360728000	BRACKET, PROX SWITCH
11	1	360729000	BRACKET MAGNET
12	2	366364	PLATE, VALVE MOUNTING
13	1	366506000	BRACKET ANTENNA
14	1	366423	MAGNET, PROX PICKUP
15	1	366492	PIN 1.25 DIA X 3.00 LG
16	1	366333	BEARING, SPHERICAL 1.25 ID
17	1	366500006	CABLE, ANTENNA EXTENSION
18	38	023902	WASHER, 5/8 FLAT HARDENED
19	14	490171	CAPSCREW 5/8-11 X 2.25 GR8
20	4	006205	SOC HD 5/8 X 1 1/4
21	12	021100	WASHER SPLK 3/8
22	2	011202	SCW HX HD 1/2-20 X 2 3/4
23	8	021500	WASHER SP LK 1/2
24	2	017704	NUT HX HVY 1/2 NF
25	1	360750000	MAIN HARNESS WIRE ASSY 5005H
26	5	330371	SCW HX 3/8 UNC X 1 GR8
27	2	009118	SOC HD 1/2 UNC X 2
28	2	490198	FITTING 10SAE(M)/6JIC ELBOW 90
29	2	021502	WASHER SP/LK 1/2 HI COLLAR
30	2	012197	SOC HD 1/2-13
31	4	320588	WASHER FL 1/2
32	4	366391	HEX HD 1/2-13 X 2 1/4
33	24	012198	CAPSCREW 5/8-11 X 1.75 GR8
34	2	372041	FITTING 8JIC/10SAE STRAIGHT 8-10 F5OX
35	8	407314000	WASHER FL 5/8 X 1 5/16 OD HARDENED
36	5	008702000	SCW HX 3/8-16 X 1 1/4 GR5
37	2	200876	FITTING 6 SAE/6 JIC STRAIGHT
38	1	366478000	PRESSURE TRANSDUCER 4000 PSI
39	48	374086	NYLON HOSE SLEEVE
40	1	642918	CORD CONNECTOR

NOTES

PEDESTAL ASSEMBLY 5005H SERIES

ITEM NO.	QTY.	PART NO.	DESCRIPTION
41	1	366358	FITTING 10SAE/JIC SWIVEL PS810503-10-10
42	1	366359	FITTING 8 SAE/JIC SWIVEL PS810503-8-8
43	1	366508000	CORD GRIP HUBBLE F-3 SHC 1036
44	1	490199	FITTING STR 10-SAE/10-JIC
45	1	367145	FITTING STR 8-SAE/8-JIC
46	1	480024	MOUNT PENDANT CABLE RETAINER
47	5	020601	WASHER 5/16 LOCK
48	5	007401	SCW 5/16-18 X 1/2 LG
49	2	812209-022	HOSE ASSY 6 STR/90
50	2	480205	HOSE ASSY 6 STR X 19.25
51	1	812203-028	HOSE ASSY 6 STR
52	1	812203-030	HOSE ASSY 6 STR
53	2	480203	HOSE ASSY 8 STR X 24.75
54	1	360724000	ARM ROTATION STOP
55	2	008400	SCW HEX HD 3/8-16 UNC X 3/4 GR 5
56	1	360122	RING RETAINING 5100-98
57	1	360709000	BRACKET BOOM SW WDMT
58	1	654100	SWITCH LIMIT BZ-2RW80-A2
59	1	360690000	BEARING, FLANGED
60	2	000602	SCW PN #6 NC X 1
61	2	019600	WASHER SP LK #6
62	2	015400	NUT HX #6-32
63	1	360162	RING, ECCENTRIC
64	1	360207	RETAINER ECCENTRIC RING
65	1	020600	WASHER 5/16 LOCK SS
66	1	007807	SCW HEX 5/16-18 3/4LG GR5
67	1	480011	SEAL ROTATION BOX
68	1	020901	WASHER FL 5/16
69	1	360703000	HOME SWITCH HARNESS
70	1	812309-024	HOSE ASSY 8 STR/90
71	1	812409-022	HOSE ASSY 10 STR/90
72	1	480875000	BOOT DEUTSCH 40-PIN CONNECTOR
73	5	320976000	WASHER, FLAT, 3/8 SAE HARDENED

BOOM ASSEMBLY 5005H SERIES



Cylinder Seal Kit - # 360719000
Counterbalance Cartridge - # 480188000

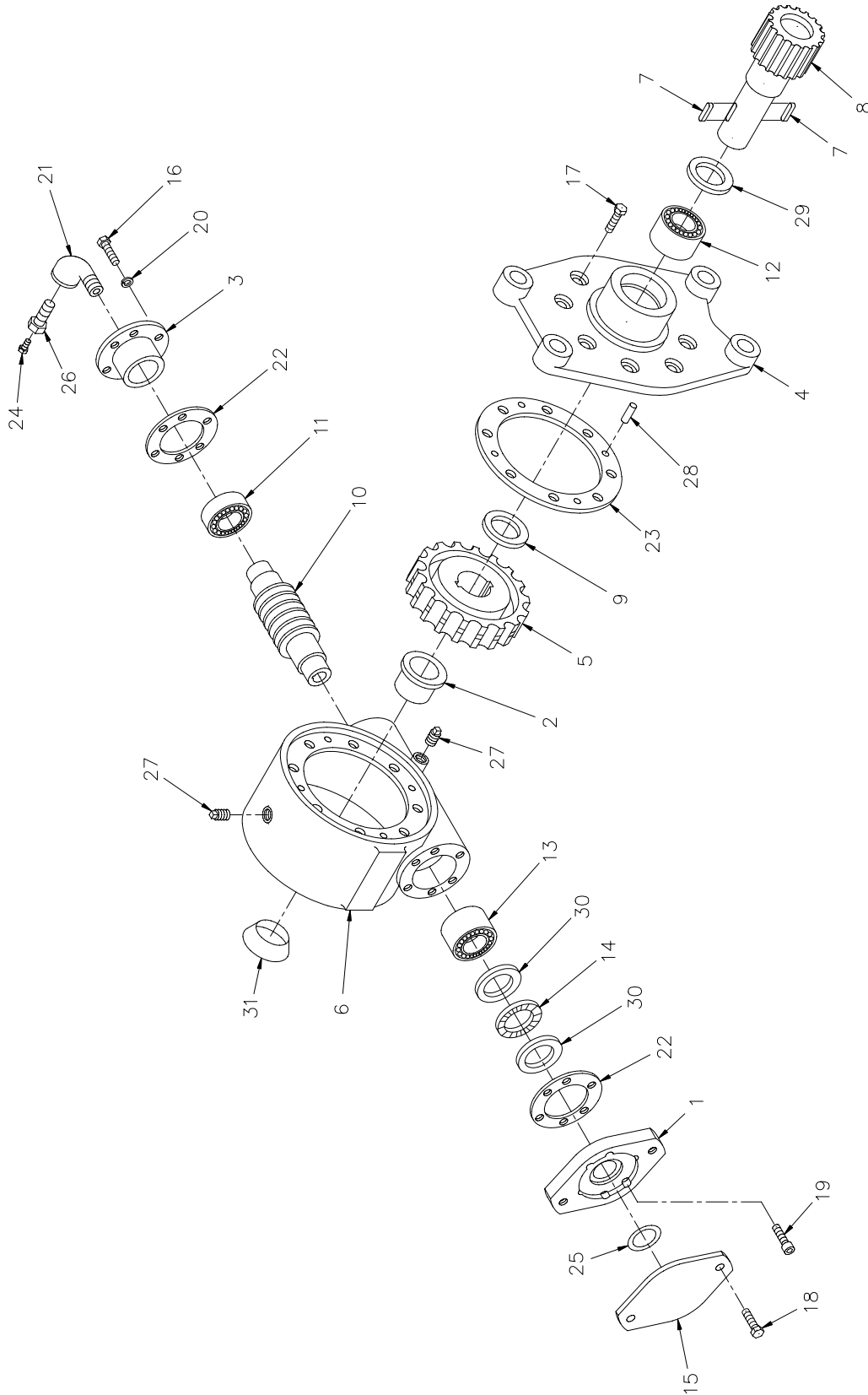
BOOM ASSEMBLY

5005H SERIES

ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	360776000	BOOM WELD LOWER 5005
2	1	360778000	BOOM WELD MID 5005
3	1	360781000	UPPER BOOM WELD
4	1	360789000	CYLINDER EXTENSION
5	1	366198	SHEAVE ASSY 3/8
6	2	366354	WEAR PAD
7	4	366385	PLATE, LOWER BOOM PAD COVER
8	1	360791000	WEAR PAD 4.5 X 2.63 X .375
9	1	360792000	WEAR PAD 2 X 3.5 X 3/8
10	12	021100	WASHER SPLK 3/8
11	14	008400	SCW HEX HD 3/8-16 UNC X 3/4 GR 5
12	1	366184	RETAINER EXTENSION CYLINDER
13	6	360767000	PAD BOOM 1.5 O.D.
14	1	366193	PIN 1 X 7.66 LG
15	2	360793000	BEARING PIVOT
16	2	366351	PAD, WEAR 1 1/2 X 1 1/2 X 3/4
17	7	007401	SCW 5/16-18 X 1/2 LG
18	1	360766000	WEAR PAD 4.25 X 3.00
19	1	360765000	WEAR PAD 2 .50 X 3 .25
20	1	360712000	PIN 1 X 4.33 LG
21	1	646900	SWITCH, LIMIT ANTI-TWO BLOCK
22	1	360718000	BAIL WELDMENT
23	2	200876	FITTING 6 SAE/6 JIC STRAIGHT 6F50X
24	2	480194	FITTING 6 SWIVEL NUT ELBOW
25	1	366333	BEARING, SPHERICAL 1.25 ID
26	2	366201	WEAR PAD 3 .75 X 2.00 X .313
27	2	366483	PLATE, WEAR PAD .25 X 2 X 4
28	4	021200	WASHER FL 3/8
29	4	008800	SCW HEX 3/8-24 X 1
30	1	007803	SCW 5/16 NC 3 1/2 LG
31	1	016801	NUT HEX-LOCK 5/16 NC
32	1	360759000	CORD REEL ASSY
33	1	022102	WASHER FL 3/4
34	1	360756000	NUT, NYLON LOCK .75-10 NC
35	1	642908	CORD CONNECTOR
36	1	320554	SPRING RETURN
37	1	367366	CAPSCREW, .75-10 NC X 3-1/2
38	2	480029	RING RETAINING
39	2	360122	RING RETAINING 5100-98

ROTATION GEAR BOX

P/N: 160407

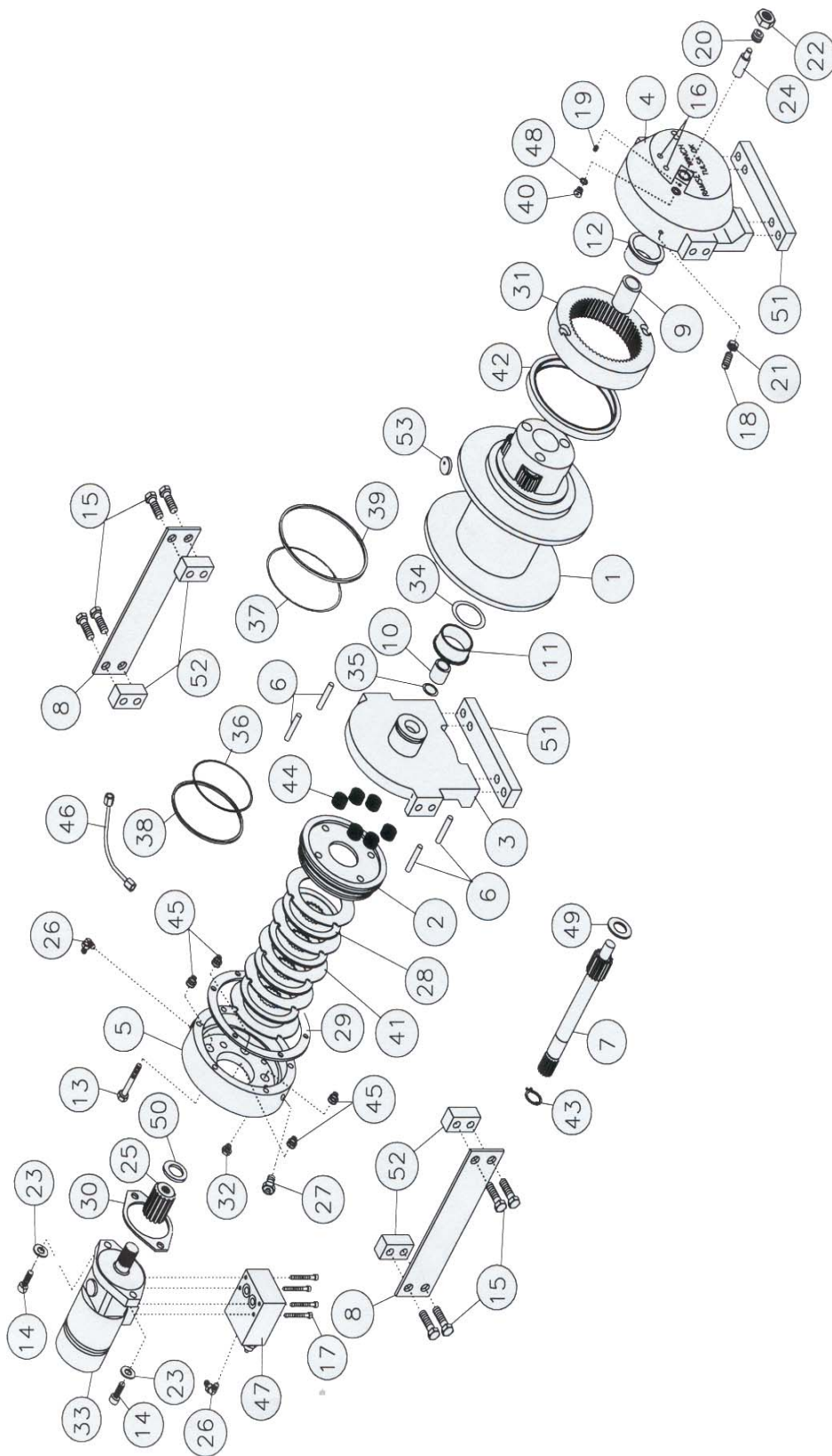


ROTATION GEAR BOX

P/N: 160407

ITEM	QTY	PART NO.	DESCRIPTION
1	1	480240000	ADAPTER
2	1	480241000	BUSHING
3	1	480242000	CAP BEARING
4	1	480243000	COVER
5	1	480244000	GEAR R.H.
6	1	480237000	HOUSING GEAR
7	2	480246000	KEY
8	1	480247000	SHAFT OUTPUT
9	1	480248000	WASHER THRUST
10	1	480249000	WORM R.H.
11	1	480251000	BEARING BALL
12	1	480252000	BEARING NEEDLE
13	1	480253000	BEARING NEEDLE
14	1	480254000	BEARING THRUST
15	1	480255000	COVER
16	6	007400000	SCREW HX HD 5/16 NC X 1
17	8	480238000	SCREW HX HD 5/16 NC X 1 1/4 (NYLON HEAVY PATCH)
18	2	011508000	SCREW HX HD 1/2 NC X 3/4
19	6	480256000	SCREW SOC HD 5/16 NC X 1
20	6	480258000	WASHER LK 5/16 MED SECT
21	1	480259000	ELL 90 DEG
22	2	480260000	GASKET
23	1	480250000	GASKET
24	1	480262000	FITTING RELIEF
25	1	480239000	O-RING
26	1	480263000	REDUCER
27	2	480264000	PLUG PIPE
28	4	480265000	PIN DOWEL
29	1	480266000	SEAL OIL
30	2	480268000	WASER THRUST

HOIST ASSEMBLY 5005H SERIES



HOIST ASSEMBLY

5005H SERIES

ITEM	QTY	PART NO.	DESCRIPTION
1	1	234189	DRUM ASSEMBLY
2	1	306042	PISTON BRAKE
3	1	338300	END BEARING MOTOR
4	1	338301	END BEARING GEAR HOUSING
5	1	338302	HOUSING BRAKE
6	4	346045	PIN BRAKE
7	1	357513	INPUT SHAFT SUN GEAR
8	2	474065	PLATE TIE
9	1	402120	BEARING GEAR HOUSING
10	1	402121	BEARING MOTOR
11	1	412084	BUSHING DRUM (MOTOR END)
12	1	412085	BUSHING DRUM (GEAR HOUSING END)
13	6	414303	SCREW HX HD 3/8NC X 2 1/2 LG
14	2	414948	SCREW SOC HD 1/2NC X 1 1/4 LG
15	8	414548	SCREW HX HD 1/2NC X 1 1/2 LG
16	2	414854	SCREW RD HD 1/4NC X 1/2 LG
17	4	414129	SCREW SOC HD 5/16NC X 3 LG
18	1	414926	SCREW SET 3/8NC X 1 LG SOC NYLON
19	1	416016	SCREW SET 1/4NC X 1/4 LG SOC HD CUP
20	1	416080	SCREW SET 5/8NF X 1 LG SOC HD CUP
21	1	418036	NUT JAM 3/8NC
22	1	418088	NUT JAM 5/16NC
23	2	418218	WASHER LK 1/2 ID
24	1	426048	PLUNGER
25	1	431015	COUPLER MOTOR
26	2	432018	FITTING 7/16 ELBOW 90 DEG
27	1	432026	FITTING BLEEDER
28	4	438022	DISC BRAKE
29	1	442220	GASKET BRAKE
30	1	442223	GASKET MOTOR
31	1	444085	GEAR RING
32	1	456038	FITTING VENT
33	1	458124	MOTOR HYDRAULIC
34	1	462046	O-RING DRUM
35	1	462056	O-RING
36	1	462057	O-RING
37	1	462058	O-RING
38	1	462059	O-RING BACKUP
39	1	462060	O-RING BACKUP
40	1	472052	PLUG

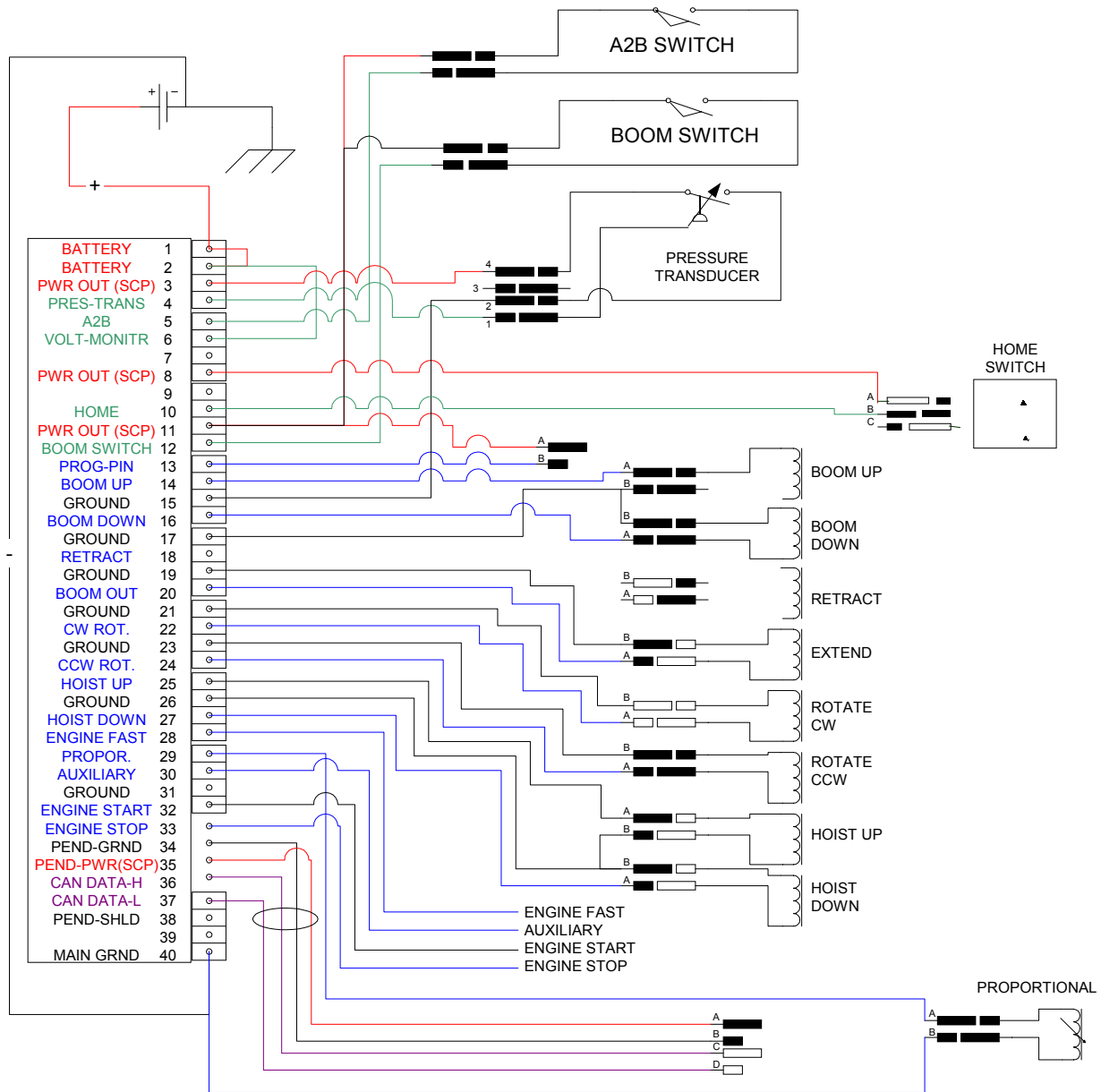
NOTES

HOIST ASSEMBLY 5005H SERIES

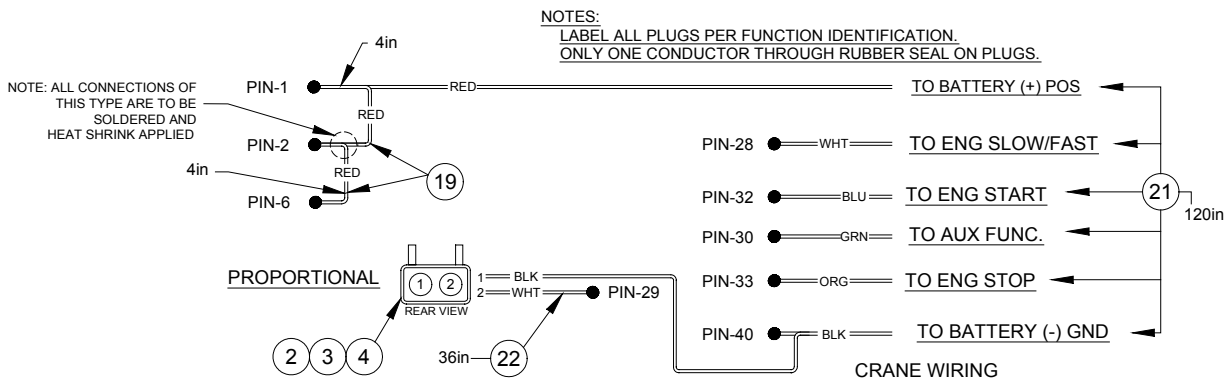
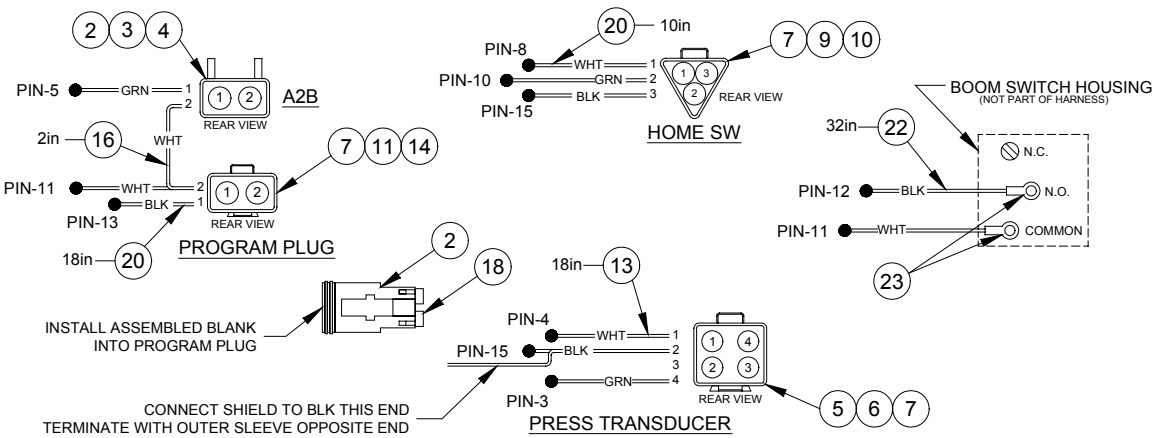
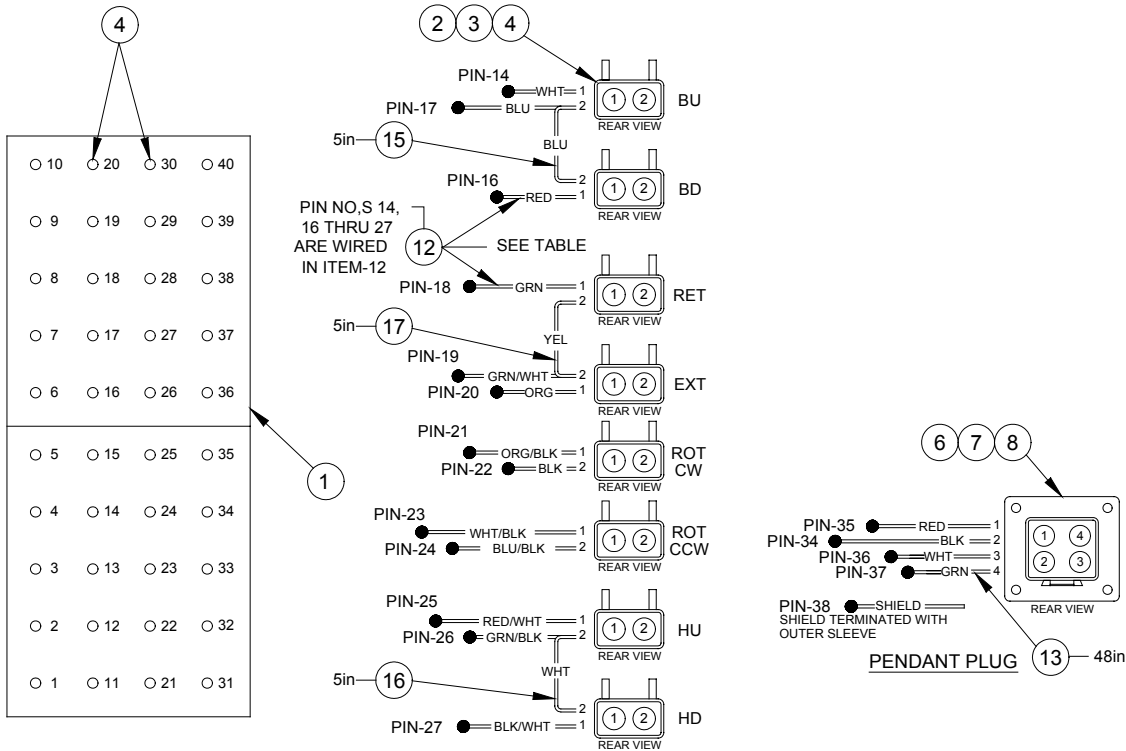
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ITEM	QTY	PART NO.	DESCRIPTION
41	5	474111	PLATE SEPERATOR
42	1	486080	SEAL GEAR HOUSING
43	1	490037	SNAP RING
44	6	494110	SPRING BRAKE
45	4	494112	SPEING
46	1	509019	TUBE ASSEMBLY
47	1	516028	VALVE MOTOR CONTROL
48	1	518037	THRUST WASHER
49	1	518047	THRUST WASHER
50	1	518052	THRUST WASHER
51	2	362283	SPACER FOOT MOUNTING
52	4	362284	SPACER TIE PLATE
53	1	315004	CABLE ANCHOR

ELECTRICAL SCHEMATIC



MAIN WIRING HARNESS

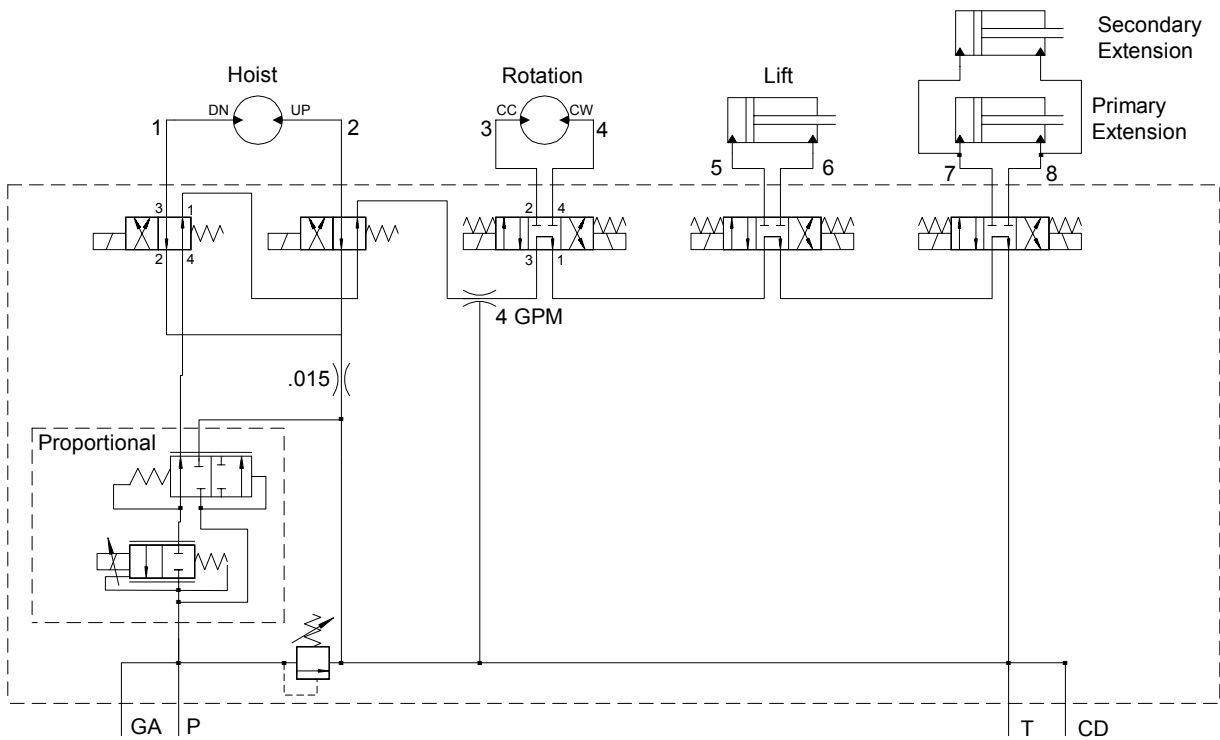


NOTES

MAIN WIRING HARNESS

ITEM	QTY	PART No.	DESCRIPTION
1	1	366377001	HOUSING DEUTSCH 40-PIN
2	10	366367001	HOUSING DEUTSCH PLUG 2-PIN
3	10	366367002	WEDGE DEUTSCH PLUG 2-PIN
4	58	366367003	CONTACT DEUTSCH CONNECTOR (SOCKET)
5	1	366376001	HOUSING DEUTSCH RECEPTACLE 4-PIN
6	2	366376002	WEDGE DEUTSCH 4-PIN
7	13	366376003	CONTACT DEUTSCH CONNECTOR (PIN)
8	1	360768001	HOUSING DEUTSCH 4-PIN BULKHEAD RECEPTACLE
9	1	360764001	HOUSING DEUTSCH 3-PIN RECEPTACLE
10	1	360764002	WEDGE DEUTSCH 3-PIN
11	1	360769001	HOUSING DEUTSCH 2-PIN RECEPTACLE
12	36 in	800633	CABLE 16 GA 14 COND
13	66 in	750038	CABLE 18 GA 4 COND SHIELDED
14	1	360769002	WEDGE DEUTSCH 2-PIN
15	10 in	800594	WIRE 16 GA 1 COND BLU
16	15 in	800592	WIRE 16 GA 1 COND WHT
17	5 in	800596	WIRE 16 GA 1 COND YEL
18	2	360755000	CAVITY PLUG DEUTSCH
19	4 in	800593	WIRE 16 GA 1 COND RED
20	54 in	800628	CABLE 16 GA 3 COND
21	120 in	800629	CABLE 16 GA 6 COND
22	68 in	800626	CABLE 16 GA 2 COND
23	2	000101	TERMINAL, RING

HYDRAULIC SCHEMATIC



HYDRAULIC SCHEMATIC

Counterbalance Valve Adjustment

- ◆ With PTO disengaged and boom properly supported, remove the plug on the counterbalance valve. Install a pressure gauge (0-3000 PSI) into the port.
- ◆ Engage PTO and insure pump flow is 8 to 9 GPM. With no load on boom, boom up to an angle of 70 degrees. Boom down and note pressure. If pressure reading is not approximately 1300 PSI, the counterbalance valve requires adjustment.
 - To increase the CB valve setting, loosen nut and turn Allen head screw counter clockwise.
 - To reduce the CB valve setting, loosen nut and turn Allen head screw clockwise.
- ◆ Tighten nut on adjustment screw and repeat procedure if needed to obtain the proper pressure setting.
- ◆ Disengage PTO, remove the pressure gauge and install plug. Crane is now ready for operation.

Notice:

- ◆ In an EMERGENCY situation when it becomes necessary to lower the boom without flow present, the CB valve adjustment can be turned in until the boom begins to descend. Make sure the boom will lower onto a proper support. Loosen the lock nut and carefully turn adjustment screw clockwise! Count the number of turns. *Turn slowly until the boom just begins to lower, and remove hand/arm/fingers from cranes while boom is lowering.*
- ◆ Turning adjustment screw too far will cause valve to come apart on the inside. This condition is not repairable
- ◆ After boom is lowered, turn adjustment screw counter clockwise the approximate number of turns made during lowering procedure. After the problem is corrected, readjust the counterbalance valve using the procedure in this manual.

WARNING:

**DO NOT TRY TO ADJUST VALVES WHILE BOOM IS MOVING.
Failure to do so may result in personal injury!**

HYDRAULIC CONTROL VALVE

5005H SERIES

ITEM	A/C P/N	QTY	DESCRIPTION
CL2	366365001	6	COIL
PV1	366365002	1	PROP VALVE
CL1	366365006	1	COIL
FR1	366365003	1	FLOW CONTROL
RV1	366365004	1	RELIEF VALVE
SV1,SV2	366365005	2	CART VALVE
SV3,SV4,SV5	320725001	3	CART VALVE
ORF1			ORIFICE PLUG
PLG4			PORT PLUG
NOT SHOWN			PLUG
BLK			BLOCK

FITTING TABLE			
PORT #'S	A/C P/N	QTY	DESCRIPTION
1,2	374017000	2	FITTING 45 8-SAE/8-JIC
3,5	241175000	2	FITTING 90 6-SAE/6-JIC
4,6	330645000	2	FITTING 90 6-SAE/6-JIC LONG
P	369145000	1	FITTING STR 8-SAE/8-JIC
T	490199000	1	FITTING STR 10-SAE/10-JIC
7,8	480195000	2	FITTING 45 6-SAE/6-JIC
GA	369127	1	FITTING 90 4-SAE/4-JIC
GA	330348	1	FITTING CAP 4-JIC

NOTES

DIAGNOSTICS

SITUATION	POSSIBLE SOLUTION
FLOW PRESENT BUT FUNCTION WILL NOT WORK	Check receiver for error code, if error code is present while function is being activated, refer to the error code section on the following page. If “NRML” appears in the code display on the receiver while the function is being activated, operate the proportional override and push or pull the override on the directional control valve to operate the function. If the function still does not operate, see the “NO FLOW” paragraph in this section.
HYDRAULIC “CHATTER”	When a hydraulic function is engaged and causes the crane to “chatter”, check for error code on receiver display, low pump pressure or air in the system.
NO FLOW OR LIMITED FLOW TO CRANE	Check for error code on receiver display (see error code section). Check for adequate oil supply in reservoir. Check operation of bypass system by operating the override on the proportional valve while operating crane. If low flow condition continues to exist when the manual override is operated, remove relief valve cartridge and check for dirt. Other possible causes for a low flow condition are: <ol style="list-style-type: none"> 1. Engine speed is too slow. 2. A blocked pressure hose from pump. This condition can be identified by excessive lugging of engine and rapid overheating of oil. 3. Collapsed or blocked suction hose to pump. This condition is usually identified by pump cavitation noise. 4. Bad pumps: a bad pump will usually have some flow but the flow will drop off rapidly as pressure increases. This condition will cause overheating of the system. A drop of four (4) or more GPM from Zero (0) PSI to Two Thousand (2000) PSI is cause for pump investigation
NO PRESSURE OR TOO LOW PRESSURE	Check the sight gauge and maintain an adequate oil level in reservoir. Make sure pressure gauge is functioning correctly. Possible relief valve stuck open. Check for excessive leakage and correct.
TOO HIGH FLOW	Make sure pump size is correct and pump speed is not too fast (Consult manufacturer's data sheet). Check or replace flow control. Check components for flow displacements. High flow may cause erratic valve operation.
TOO HIGH PRESSURE	Make sure pressure relief valve is correctly set.

CAUTION

The Auto Crane 5005H series cranes are manufactured with a standard overload protection system to prevent structural damage to the crane. When the crane load rating is exceeded, main boom down, extend out, and hoist up will not function. These operations cannot be used again until the load on the crane is reduced. Also, the main boom elevation will be limited in its operation as the crane becomes overloaded. Attempting to raise the main boom with a load greatly exceeding the crane rating will open the main relief valve resulting in no boom movement. This problem can be resolved by moving the load closer to the crane pedestal, or reducing the load.

CONTROLLER DIAGNOSTICS

CODE: EC01

DESCRIPTION: Signal problem

POSSIBLE CAUSE(S): No signal from transmitter/pendant or transmitter power off.

POSSIBLE SOLUTION(S): Check transmit light on transmitter, light should flash when function is activated. If light does not flash, make sure transmitter is on. If light flashes and red low battery light is flashes, charge unit. If transmitter is plugged in as a pendant and transmit light comes on but code remains, check cable connections and cable.

CODE: EC02

DESCRIPTION: Boom up

POSSIBLE CAUSE(S): Short or open connection on boom up output.

POSSIBLE SOLUTION(S): Check plug in boom up solenoid on hydraulic control valve. Check wires for damage that could cause break or short.

CODE: EC03

DESCRIPTION: Boom down

POSSIBLE CAUSE(S): Short or open connection on boom down output.

POSSIBLE SOLUTION(S): Check plug in boom down solenoid on hydraulic control valve. Check wires for damage that could cause break or short.

CODE: EC04

DESCRIPTION: Boom in (retract)

POSSIBLE CAUSE(S): Short or open connection on boom in output.

POSSIBLE SOLUTION(S): Check plug in boom in solenoid on hydraulic control valve. Check wires for damage that could cause break or short.

CONTROLLER DIAGNOSTICS

CODE: EC05

DESCRIPTION: Boom out (extend)

POSSIBLE CAUSE(S): Short or open connection on boom out output.

POSSIBLE SOLUTION(S): Check plug in boom out solenoid on hydraulic control valve. Check wires for damage that could cause break or short.

CODE: EC06

DESCRIPTION: Rotate CW

POSSIBLE CAUSE(S): Short or open connection on rotate CW output.

POSSIBLE SOLUTION(S): Check plug in rotate CW solenoid on hydraulic control valve. Check wire for damage that could cause break or short.

CODE: EC07

DESCRIPTION: Rotate CCW

POSSIBLE CAUSE(S): Short or open connection on rotate CCW output.

POSSIBLE SOLUTION(S): Check plug in rotate CCW solenoid on hydraulic control valve. Check wire for damage that could cause break or short.

CODE: EC08

DESCRIPTION: Hoist up

POSSIBLE CAUSE(S): Short or open connection on hoist up output.

POSSIBLE SOLUTION(S): Check plug in hoist up solenoid on hydraulic control valve. Check wire for damage that could cause break or short.

CODE: EC09

DESCRIPTION: Hoist down

POSSIBLE CAUSE(S): Short or open connection on hoist down output.

POSSIBLE SOLUTION(S): Check plug in hoist down solenoid on hydraulic control valve. Check wire for damage that could cause break or short.

CONTROLLER DIAGNOSTICS

CODE: EC10

DESCRIPTION: Incorrect ID

POSSIBLE CAUSE(S): Signal received from transmitter with incorrect ID code.

POSSIBLE SOLUTION(S): Confirm that transmitter being used is for use with this unit. Follow 'New Transmitter' procedure in the transmitter operation section of this manual.

CODE: EC11

DESCRIPTION: Ground missing

POSSIBLE CAUSE(S): Fuse in receiver may be blown.

POSSIBLE SOLUTION(S): Check the fuse in the receiver, fuse is on the ground circuit do not check for voltage.

CODE: EC12

DESCRIPTION: Short circuit in power circuit

POSSIBLE CAUSE(S): Power provided to the switches etc. is shorted to ground.

POSSIBLE SOLUTION(S): Check the wiring on the pendant cable, the anti-two block, the pressure sensor, the boom limit switch, the home switch and the rotation stop for a short to ground.

CODE: EC13

DESCRIPTION: Auxiliary not wired

POSSIBLE CAUSE(S): Short or open connection on auxiliary.

POSSIBLE SOLUTION(S): This error should only be seen on a Palm unit and should only occur when the auxiliary function is not connected.

CODE: EC15

DESCRIPTION: Pressure sensor

POSSIBLE CAUSE(S): Pressure sensor problem.

POSSIBLE SOLUTION(S): Check plugs and wires coming from pressure sensor mounted in the lift cylinder counterbalance valve.

CONTROLLER DIAGNOSTICS

CODE: EC16

DESCRIPTION: Trigger

POSSIBLE CAUSE(S): Transmitter trigger problem.

POSSIBLE SOLUTION(S): Check trigger for damage, contamination or incorrect adjustment.

CODE: EC17

DESCRIPTION: Trigger logic error

POSSIBLE CAUSE(S): Trigger was activated before function switch was activated.

POSSIBLE SOLUTION(S): Confirm that trigger is released and returned to full off position, activate function and reactivate trigger.

CODE: LBV

DESCRIPTION: Low battery

POSSIBLE CAUSE(S): Low battery power to receiver.

POSSIBLE SOLUTION(S): Check connections to the battery. Charge battery. NOTE: It is recommended that the crane be powered off if battery is charged with battery charger.

CODE: OVL

DESCRIPTION: Overload

POSSIBLE CAUSE(S): Pressure overload.

POSSIBLE SOLUTION(S): Retract boom, hoist down or otherwise alleviate overload condition. Refer to load chart for rated load. If the error persists with seemingly light loads, install pressure gage in plugged port of lift cylinder counterbalance valve to confirm pressures in excess of 2,500 psi. Pressure sensor can give false readings if not properly grounded.

CONTROLLER DIAGNOSTICS

CODE:	RS1
DESCRIPTION:	Rotation switch tripped.
POSSIBLE CAUSE(S):	Rotation stop reached in clockwise direction.
POSSIBLE SOLUTION(S):	This is not an error. Rotate in opposite direction or check switch for interference.
CODE:	RS2
DESCRIPTION:	Rotation switch tripped.
POSSIBLE CAUSE(S):	Rotation stop reached in counter-clockwise direction.
POSSIBLE SOLUTION(S):	This is not an error. Rotate in opposite direction or check switch for interference.
CODE:	A2B
DESCRIPTION:	Anti-two block
POSSIBLE CAUSE(S):	Anti-two block switch tripped.
POSSIBLE SOLUTION(S):	Check switch, if not mechanically tripped, check continuity cross switch at plug. If switch has continuity check voltage across transmitter side of A2B plug. If low voltage is read, power to the A2B switch, the rotation switches or the pressure sensor may have a short.
CODE:	RSBM
DESCRIPTION:	Raise boom
POSSIBLE CAUSE(S):	Pressure sensor is reading less than 80 psi.
POSSIBLE SOLUTION(S):	Raise boom to ensure it is not resting on other structure and the lift cylinder is not bottomed out.

CONTROLLER DIAGNOSTICS

CODE:	HOME
DESCRIPTION:	Home position
POSSIBLE CAUSE(S):	Crane is pointed forward ready to be stowed.
POSSIBLE SOLUTION(S):	This is not an error. It is a built-in override of the above RSBM condition that will allow you to stow the crane on a boom support.
CODE:	NRML
DESCRIPTION:	Normal operating mode
POSSIBLE CAUSE(S):	Crane is functioning properly.
POSSIBLE SOLUTION(S):	This is not an error. It is a standard normal operation readout.
CODE:	SLOW
DESCRIPTION:	Slow operating mode
POSSIBLE CAUSE(S):	Crane is functioning properly if loaded or boom down activated.
POSSIBLE SOLUTION(S):	This is not an error. It is a standard slow operation readout. If the crane is not loaded booming up should clear this code.
CODE:	BLMT
DESCRIPTION:	Boom limit
POSSIBLE CAUSE(S):	Boom has reached maximum elevation.
POSSIBLE SOLUTION(S):	This is not an error. It only indicates boom position. Lower the boom to deactivate the switch.

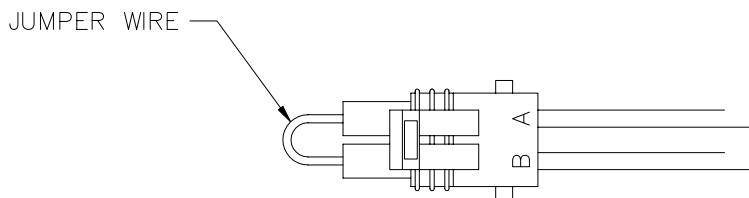
TRANSMITTER / RECEIVER SYNCHRONIZATION

1. Power on the transmitter and receiver.
2. Locate the program plug on the crane. This will be the unused plug near where the cord reel plugs into the wire harness.
3. Using a jumper wire, as shown below, connect the two contacts in the plug.
4. With the jumper is installed and the transmitter is unplugged from the pendant cable, activate a function on the transmitter.

Note: The crane must be electrically powered but it is not necessary to supply hydraulic power to complete synchronization.

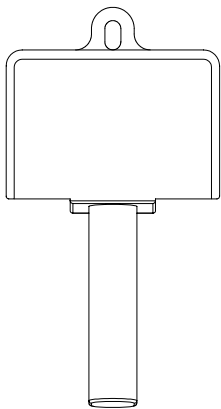
5. Remove the jumper wire.

Important: The jumper wire should not be left installed. Doing so could cause the crane to be operated by another transmitter.

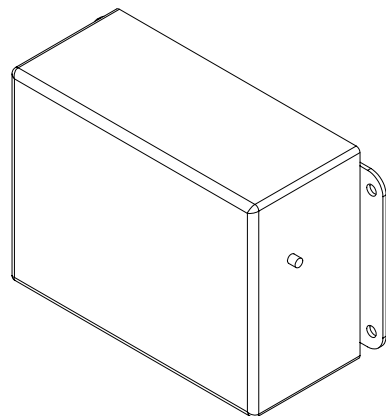
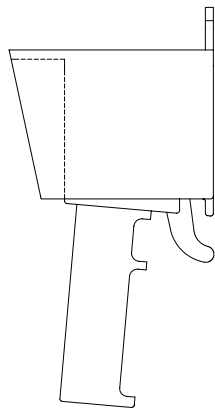


REMOTE / PENDANT PARTS AND ACCESSORIES

<u>Component</u>	<u>Part Number</u>
Receiver	460100003
Transmitter	460100002
Pendant Cable	366500009
Antenna	366500005
Antenna Extension Cable	366500006
Cigarette Lighter Charger	366504000
A/C Charger	366505000
Palm Diagnostic Unit	366510000
Replacement Toggle Switch (Transmitter)	366500010
Replacement Batteries (Transmitter)	366500007



Transmitter



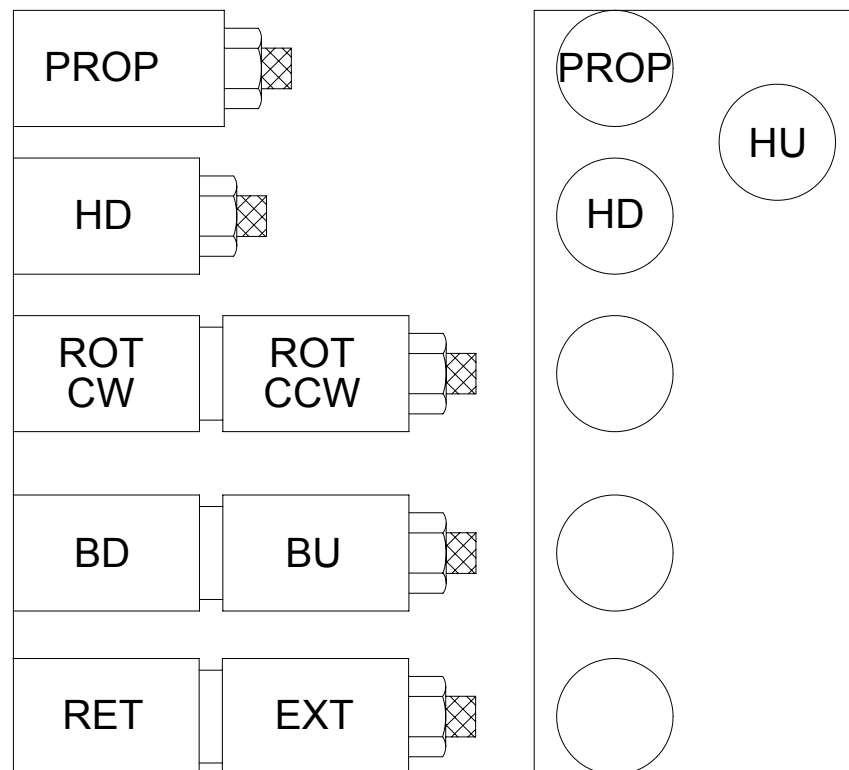
Receiver

VALVE OVERRIDE OPERATION

In the event that the electrical control system fails the crane can be operated using the manual overrides on the hydraulic control valve.

The overrides operate as follows:

1. Proportional – increase flow by turning clockwise.
2. Extend/Retract, Boom Up/Down, Rotate CW/CCW – Push to operate boom down, pull to operate boom up etc. See graphics below.
3. Hoist Up/Down – Push in, rotate counterclockwise, release.

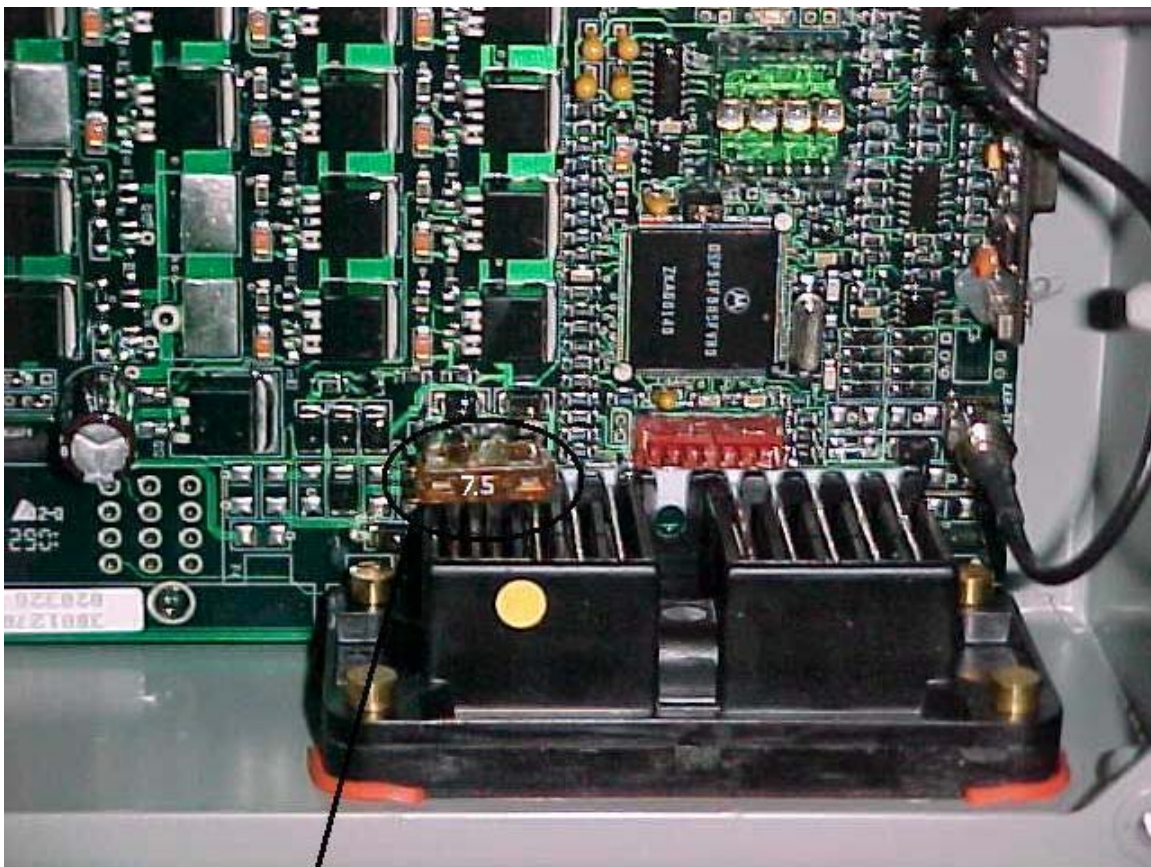


DIRECTIONAL CONTROL VALVE IDENTIFICATION

FUSE INFORMATION 5005H SERIES

NOTE: Always turn the power to crane off before removing fuse.

Fuse is on the ground circuit. The fuse can be replaced with a 7.5 amp fuse.

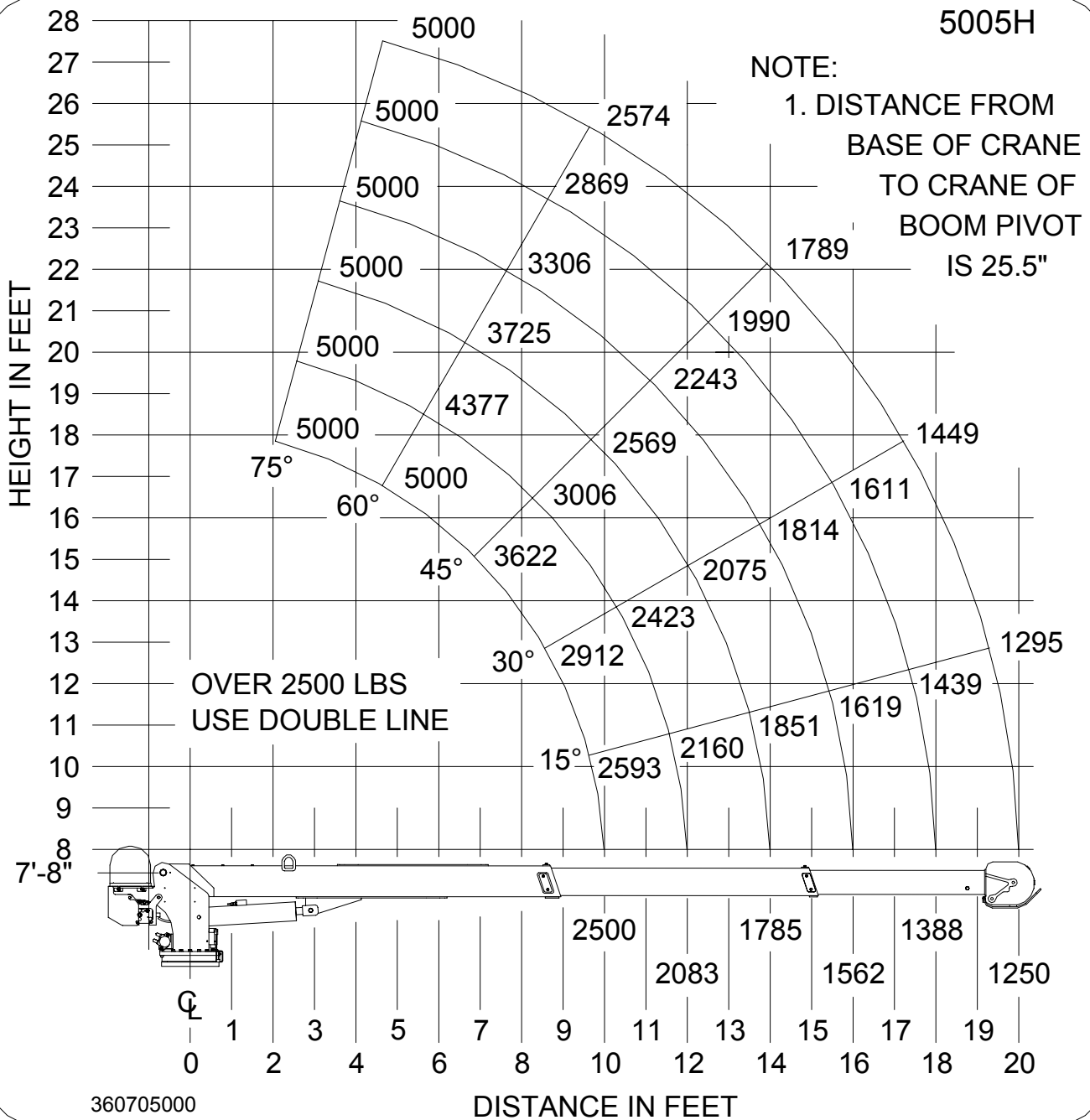


FUSE

NOTES

LOAD CHART

5005H SERIES



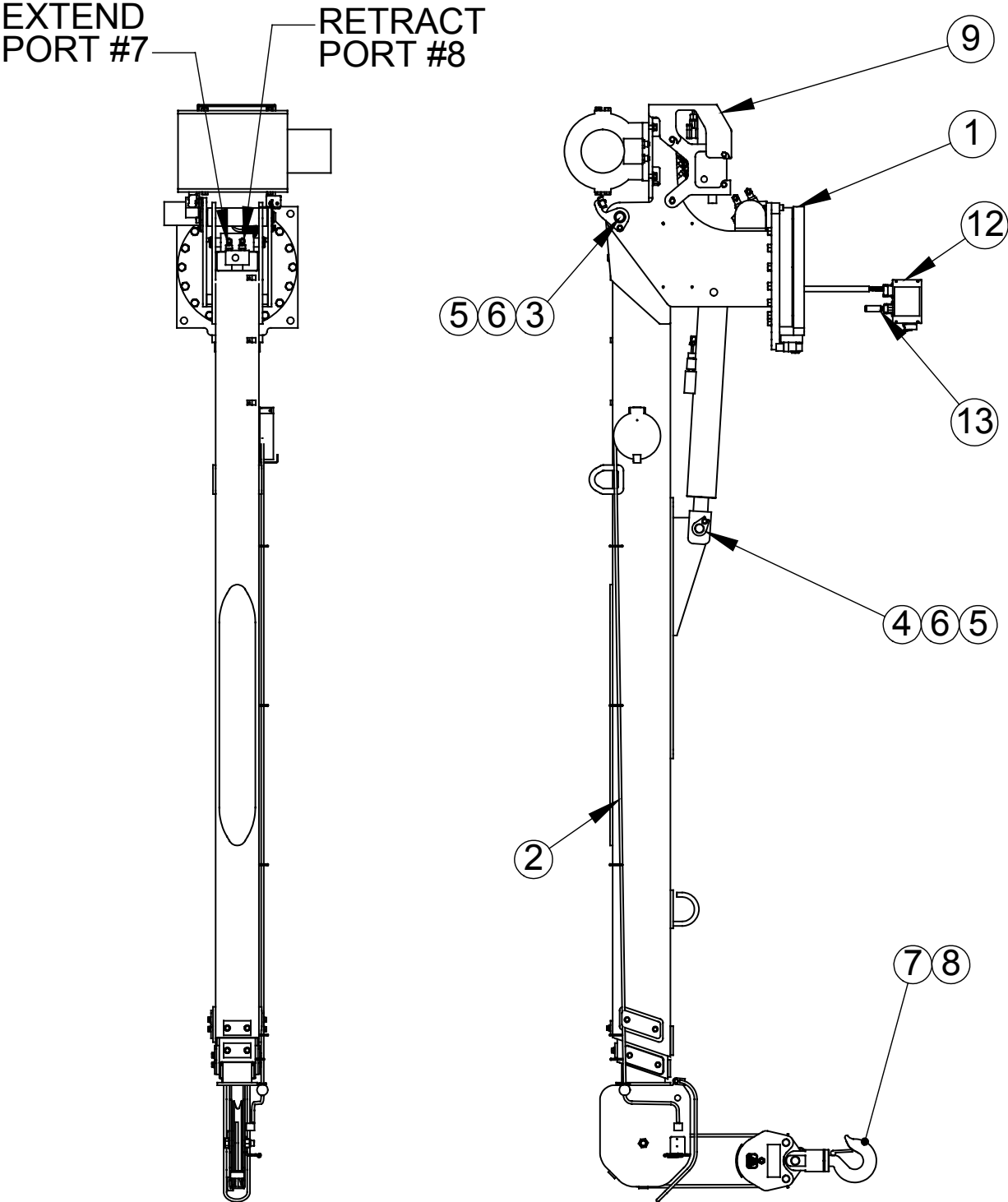
NOTES

SUPPLIMENTAL INFORMATION

HARD WIRED SERIES

The following section refers to hardwire specific information only. Refer to the previous sections for information common to both crane versions.

GENERAL ASSEMBLY
5005H HARD WIRED SERIES



***GENERAL ASSEMBLY
5005H HARD WIRED SERIES***

ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	360693000	PEDESTAL ASSEMBLY
2	1	360775000	BOOM ASSEMBLY
3	1	360715000	PIVOT PIN
4	1	366492	PIN 1.25 DIA X 3.00 LG
5	3	021100	WASHER SPLK 3/8
6	3	008400	SCW HEX HD 3/8-16 UNC X 3/4 GR 5
7	1	*366398000	TRAVELING BLOCK ASSY 6406H
8	1	360758000	ROPE ASSY
9	1	360747000	COVER 5005
10	1	360713000	SHIP KIT 5005H
11	1	360714000	DECAL LAYOUT
12	1	*366520001	JUNCTION BOX ASSEMBLY
13	1	*366466000	WIRE HARNESS, TRUCK FUNCTIONS

* included in crane ship kit, ref P/N: 360694000

MOUNTING AND INSTALLATION

5005H HARD WIRED SERIES

1. Check to make sure the following items are with your crane.

ITEM	QTY	PART NO.	DESCRIPTION
1	1	366398000	TRAVELING BLOCK, 6406H
2	1	360706000	OWNERS MANUAL
3	4	015104000	BOLT 7/8 NF x 5" GRADE 8 (4 REQ'D)
4	4	022200000	WASHER SPLIT LOCK 7/8 (4 REQ'D)
5	1	680040000	PENDANT ASSEMBLY
6	1	366466000	WIRE HARNESS, TRUCK FUNCTIONS
7	1	366520001	JUNCTION BOX ASSEMBLY
8	4	018900	NUT, HEX 7/8 NF
9	1	320355	POWER RELAY
10	1	480689	FUSE 15 AMP TIME DELAY
11	1	480688	FUSE HOLDER WATERPROOF
12	120"	800596	CONDUCTOR 16GA YELLOW X 120 INCHES LONG
13	6	634401	WIRE TIE 7 INCHES LONG
14	6	750738	WIRE TIE STICK ON RETAINER
15	5	320357	CONNECTOR FEM SPD
16	1	320363	PLUG RELAY
17	1	360705	LOAD CHART DECAL, 5005H
18	1	340638	CONDUCTOR POWER

2. Pressure and return hoses are not furnished with this crane. The hoses must be provided by the installer and the lengths determined at installation.

REQUIREMENTS FOR INSTALLATION USING 10 GALLON RESERVOIR

- A. RETURN LINE FROM CRANE TO RESERVOIR (IN COMPARTMENT): -10 SAE 100R2 (OR EQUIVALENT). HOSE LENGTH IS DETERMINED BY INSTALLER. RETURN LINES LONGER THAN 6 FEET SHOULD BE SIZE -12. HOSE END FITTINGS ARE -10 JIC FEMALE SWIVEL (CRANE END) AND -10 JIC FEMALE SWIVEL (RESERVOIR END).
- B. PRESSURE LINE FROM PUMP TO CRANE: -8 SAE 100R2 (OR EQUIVALENT). HOSE LENGTHS IS DETERMINED BY INSTALLER. HOSE END FITTINGS ARE BOTH -8 JIC FEMALE SWIVEL.

NOTE:

REFER TO OWNERS MANUAL FOR ADDITIONAL INSTALLATION INFORMATION.

**CAUTION – FAILURE TO USE CLEAN HYDRAULIC HOSES AND COMPONENTS
MAY CONTAMINATE THE CRANE AND HYDRAULIC SYSTEM AND VOID WARRANT**

3. Crane must be provided with a flow of 8 gallons per minute and a pressure of 2,750PSI. Excess flow will cause erratic operation, and too little flow will cause poor crane operation.
4. Vehicle should meet minimum GVW rating of 14,500 pounds.
5. The vehicle MUST be equipped with an engine speed control and tachometer.
6. Make sure mounting surface is properly reinforced to withstand 25,000 ft-lb capacity loading of crane and that outriggers are used to provide total stability for the truck.
7. A 13 1/2" dia. Hole should be cut out of mounting location (centered with mounting blots) for access to lower ring gear bolts and hydraulic connections.
8. Make sure the mounting blots are 7/8" dia, grade 8. Torque bolts to 440 ft-lbs (dry).
9. When crane is not in operation, a boom support should always be used. Traveling block should be connected to hood loop.
10. Install junction box inside compartment safe from weather and contamination.

MOUNTING AND INSTALLATION

5005H HARD WIRED SERIES

11. Electrical hookup:

Wiring (cable from junction box):

- A. CONNECT THE BLACK WIRE TO THE BATTERY NEGATIVE (GROUND).
- B. CONNECT THE RED WIRE TO FUSED 12VDC POWER. 12VDC POWER SHOULD BE SUPPLIED THROUGH A DEDICATED SWITCH THAT IS POWERED ONLY WHEN THE IGNITION SWITCH IS ON. A RELAY IS PROVIDED TO SEPARATE POWER SOURCES.
- C. OPTIONALLY, USE THE WHITE WIRE FOR ENGINE FAST/SLOW.
- D. OPTIONALLY, USE THE BLUE WIRE FOR ENGINE START.
- E. OPTIONALLY, USE THE ORANGE WIRE FOR ENGINE STOP.
- F. OPTIONALLY, USE THE GREEN WIRE FOR AUXILIARY.

WARNING! FAILURE TO CORRECTLY PLUMB AND WIRE CRANE CAN CAUSE INADVERTENT OPERATION AND DAMAGE TO CRANE AND/OR PERSONEL!

- 12. Once crane and plumbing are installed on the truck, fill the reservoir to top of sight glass (mobile DTE 13 or equal). Before operating crane, connect together the pressure and return hoses going to base of crane using 10-8 JIC union and engage PTO with engine running. Allow oil to circulate for 15 to 20 minutes. This will flush contaminants from the system back to the return line filter. Operate all cylinders to full extension and retraction a minimum of six times, to bleed air from system. Return all cylinders to the stored position and disengage PTO. Refill reservoir to top sight glass. To ensure 8 gallons per minute (GPM), install an in-line flow meter between the crane and the reservoir in the return hose.
- 13. Load test the crane to ensure proper functioning and truck stability
- 14. Make certain the owner's manual is delivered to the customer.
- 15. For additional help: call the service department at the Auto Crane Company. (918) 836-0463 (Tulsa, Oklahoma)

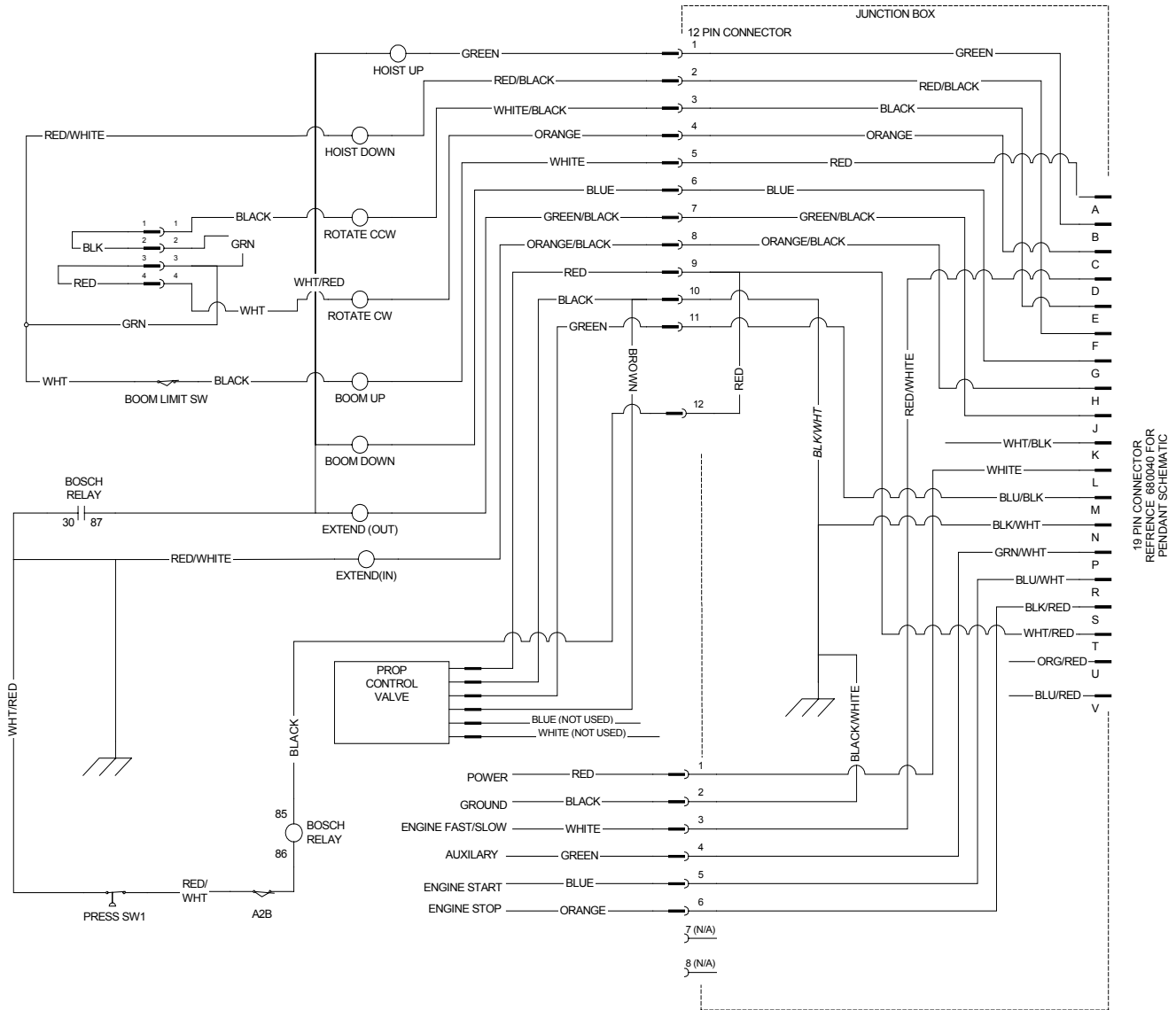
WARNING

FEDERAL LAW (49 CFR PART 571) REQUIRES THAT THE FINAL STAGE MANUFACTURER OF A VEHICLE CERTIFY THAT HE VEHICLE COMPLIES WITH ALL APPLICABLE FEDERAL REGULATIONS. ANY MODIFICATIONS PERFORMED ON THE VEHICLE PRIOR TO THE FINAL STAGE ARE ALSO CONSIDERED INTERMEDIATE STAGE MANUFACTURING AND MUST BE CERTIFIED AS TO COMPLIANCE. THE INSTALLER OF THIS CRANE AND BODY IS CONSIDERED ONE OF THE MANUFACTURERS OF THE VEHICLE. AS SUCH A MANUFACTURER, THE INSTALLER IS RESPONSIBLE FOR COMPLIANCE WITH ALL APPLICABLE FEDERAL AND STATE REGULATIONS, AND IS REQUIRED TO CERTIFY THAT THE VEHICLE IS IN COMPLIANCE.

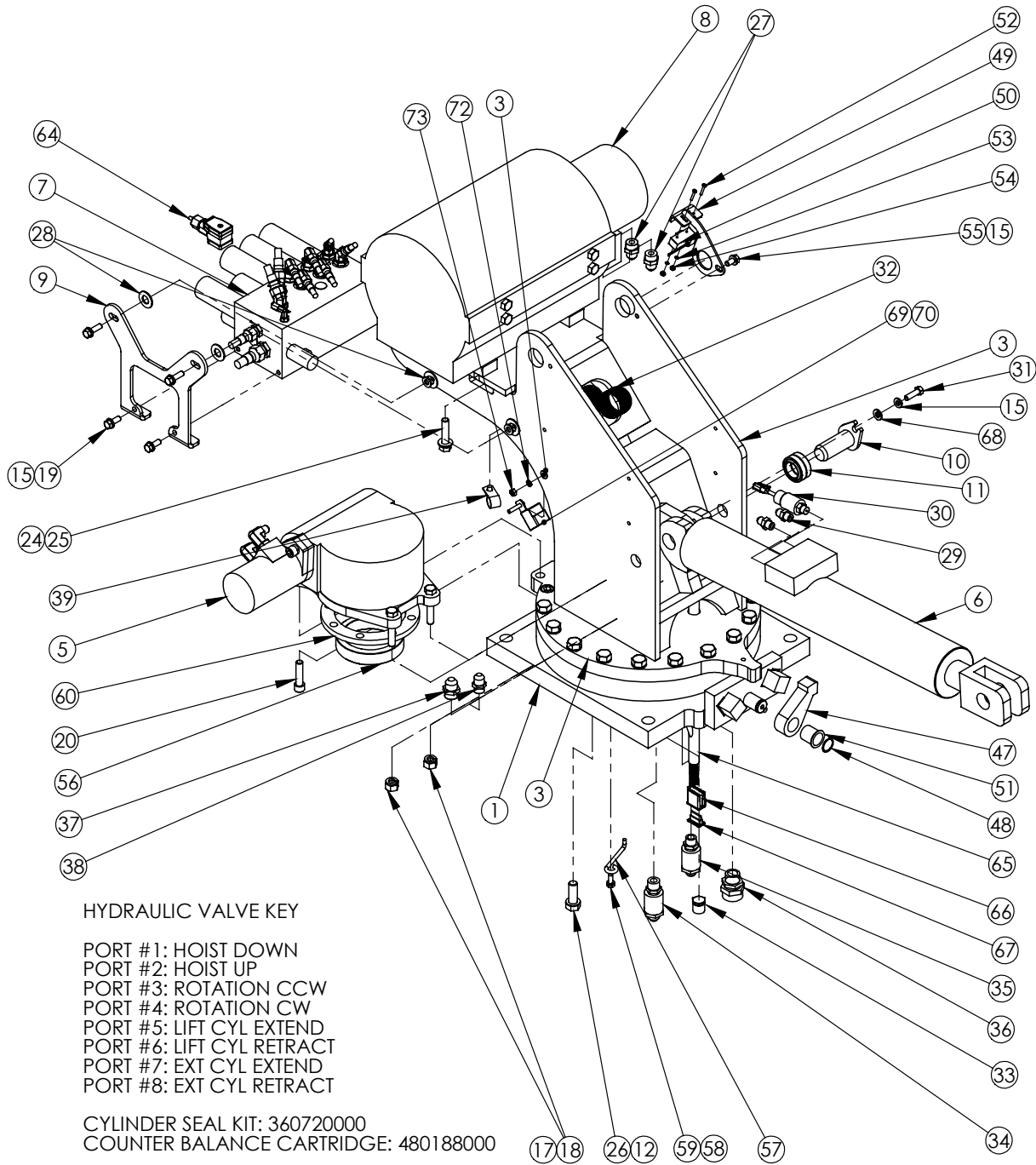
IT IS THE FURTHER RESPONSIBILITY OF THE INSTALLER OF THE CRANE TO COMPLY WITH THE OSHA TRUCK CRANE STABILITY REQUIREMENTS AS SPECIFIED BY 29 CFR PART 1910.180 (C) (1).

NOTES

ELECTRICAL SCHEMATIC 5005H HARD WIRED CRANE



PEDESTAL ASSEMBLY 5005H HARD WIRED SERIES



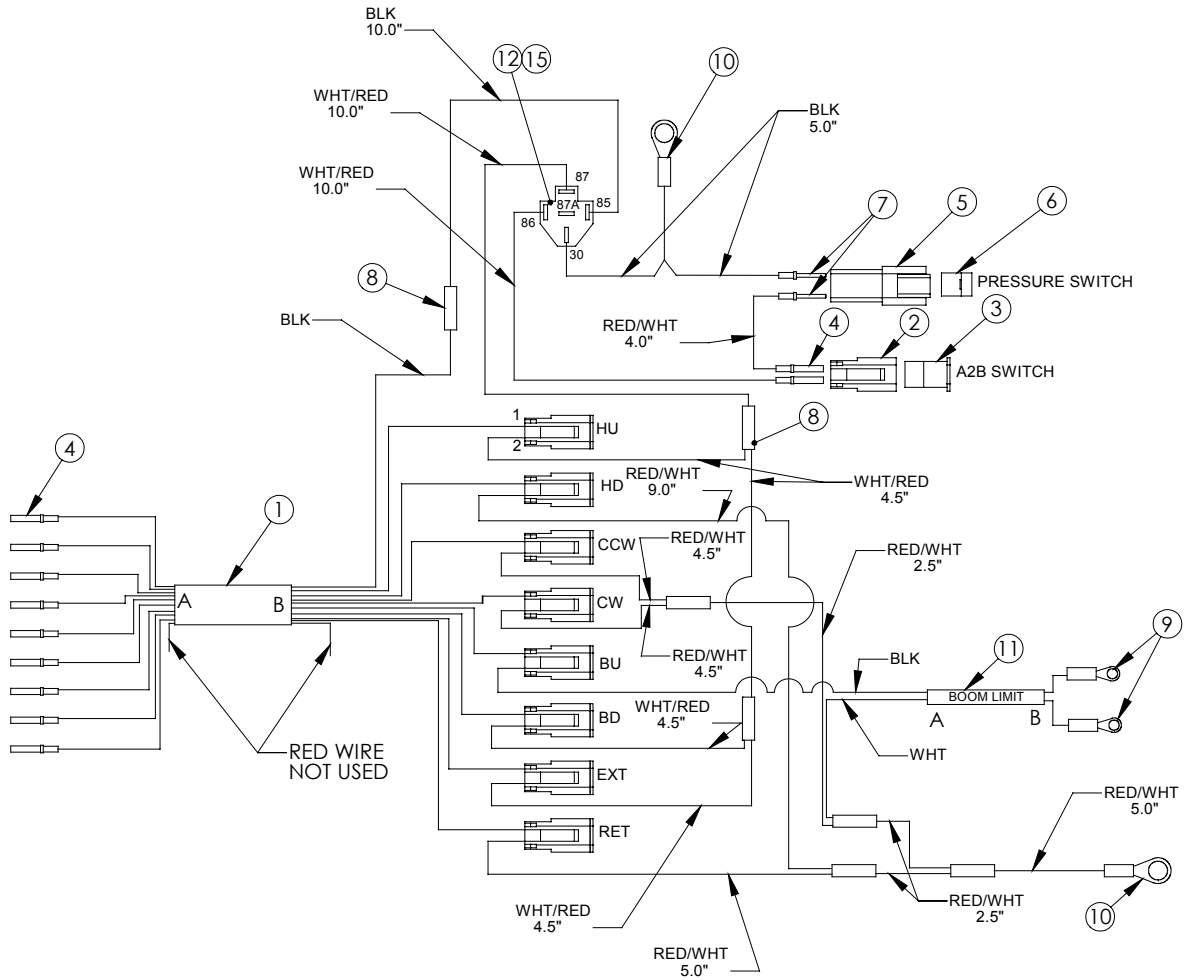
PEDESTAL ASSEMBLY 5005H HARD WIRED SERIES

ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	360717000	BASE PLATE WELD
2	1	480023002	BEARING, ROTATION
3	1	360772000	PEDESTAL WELD
4	1	160407	GEAR BOX, ROTATION
5	1	366440	ROTATION MOTOR
6	1	360788000	CYLINDER LIFT
7	1	366365000	VALVE CONTROL ASSY
8	1	123309	HOIST RPH2500
9	2	366364	PLATE, VALVE MOUNTING
10	1	366492	PIN 1.25 DIA X 3.00 LG
11	1	366333	BEARING, SPHERICAL 1.25 ID
12	38	023902	WASHER, 5/8 FLAT HARDENED
13	14	490171	CAPSCREW 5/8-11 X 2.25 GR8
14	4	006205	SOC HD 5/8 X 1 1/4
15	10	021100	WASHER SPLK 3/8
16	2	011202	SCW HX HD 1/2-20 X 2 3/4
17	8	021500	WASHER SP LK 1/2
18	2	017704	NUT HX HVY 1/2 NF
19	4	330371	SCW HEX HD 3/8-16 UNC X 1 GR 8
20	2	009118	SOC HD 1/2 UNC X 2
21	2	490198	FITTING 10SAE(M)/6JIC ELBOW 90
22	2	021502	WASHER 1k 1/2
23	2	012197	SOC HD 1/2-13
24	4	320588	WASHER FL 1/2
25	4	366391	HEX HD 1/2-13 X 2 1/4
26	24	012198	CAPSCREW 5/8-11 X 1.75 GR8
27	2	372041	FITTING 8JIC/10SAE STRAIGHT 8-10 F5OX
28	8	407314000	WASHER FL 5/8 X 1 5/16 OD HARDENED
29	2	200876	FITTING 6 SAE/6 JIC STRAIGHT 6F5OX
30	1	360692000	LOAD SENSOR SWITCH, 2200 PSI
31	5	008702	SCW HX 3/8 UNC X 1 1/4
32	48	374086	NYLON HOSE SLEEVE
33	1	642918	CORD CONNECTOR
34	1	366358	FITTING 10SAE/JIC SWIVEL PS810503-10-10
35	1	366359	FITTING 8 SAE/JIC SWIVEL PS810503-8-8
36	1	366508000	CORD GRIP HUBBLE F-3 SHC 1036
37	1	490199	FITTING STR 10-SAE/10-JIC
38	1	367145	FITTING STR 8-SAE/8-JIC
39	1	480024	MOUNT PENDANT CABLE RETAINER
40	1	020601	WASHER 5/16 LOCK
41	1	007401	SCW 5/16-18 X 1/2 LG
42	2	812209-022	HOSE ASSY 6 STR/90
43	2	480205	HOSE ASSY 6 STR X 19.25
44	1	812203-028	HOSE ASSY 6 STR
45	1	812203-030	HOSE ASSY 6 STR
46	2	480203	HOSE ASSY 8 STR X 24.75

PEDESTAL ASSEMBLY 5005H HARD WIRED SERIES

ITEM NO.	QTY.	PART NO.	DESCRIPTION
47	1	812309-024	HOSE ASSY 8 STR/90
48	1	812409-022	HOSE ASSY 8 STR/90
49	1	360724000	ARMORATION STOP
50	1	360122	RING, ECCENTRIC
51	1	360709000	BRACKET BOOM SW WDMT
52	1	654100	SWITCH LIMIT BZ-2RW80-A2
53	1	360690000	BEARING FLANGE
54	2	000602	SCWPN #6 NC x 1
55	2	019600	WASHER SP LK #6
56	2	015400	NUT HX #6-32
57	1	008400	SCW HX HD 3/8-16UNC x 3/4
58	1	360162	RING, ECCENTRIC
59	1	360207	RETAINER ECCENTRIC RING
60	1	020600	WASHER FL 5/16
61	1	007807	SCW HEX HD 5/16-18 x 34 LG GR 5
62	1	480011	SEAL ROTATION BOX
63	1	020901	WASHER FL 5/16
64	1	366363001	AMP MODIFICATION, CONNECTORS
65	1	366522001	HOUSING, PLUG, DEUTSCH 12-PIN
66	1	366522002	WEDGE, DEUTSCH PLUG, 12 SOCKET
67	5	320976000	WASHER, FLAT, 3/8 SAE HARDENED
68	1	320355	RELAY, BOSCH
69	1	006200	SCW HEX HD 1/4 x 1-1/4
70	1	020300	WASHER FL SAE 1/4
71	1	020200	WASHER SPLIT LOCK 1.4
72	1	015900	NUT 1/4NC
73	1	360391001	MAIN HARNESS ASSEMBLY, HARD WIRED

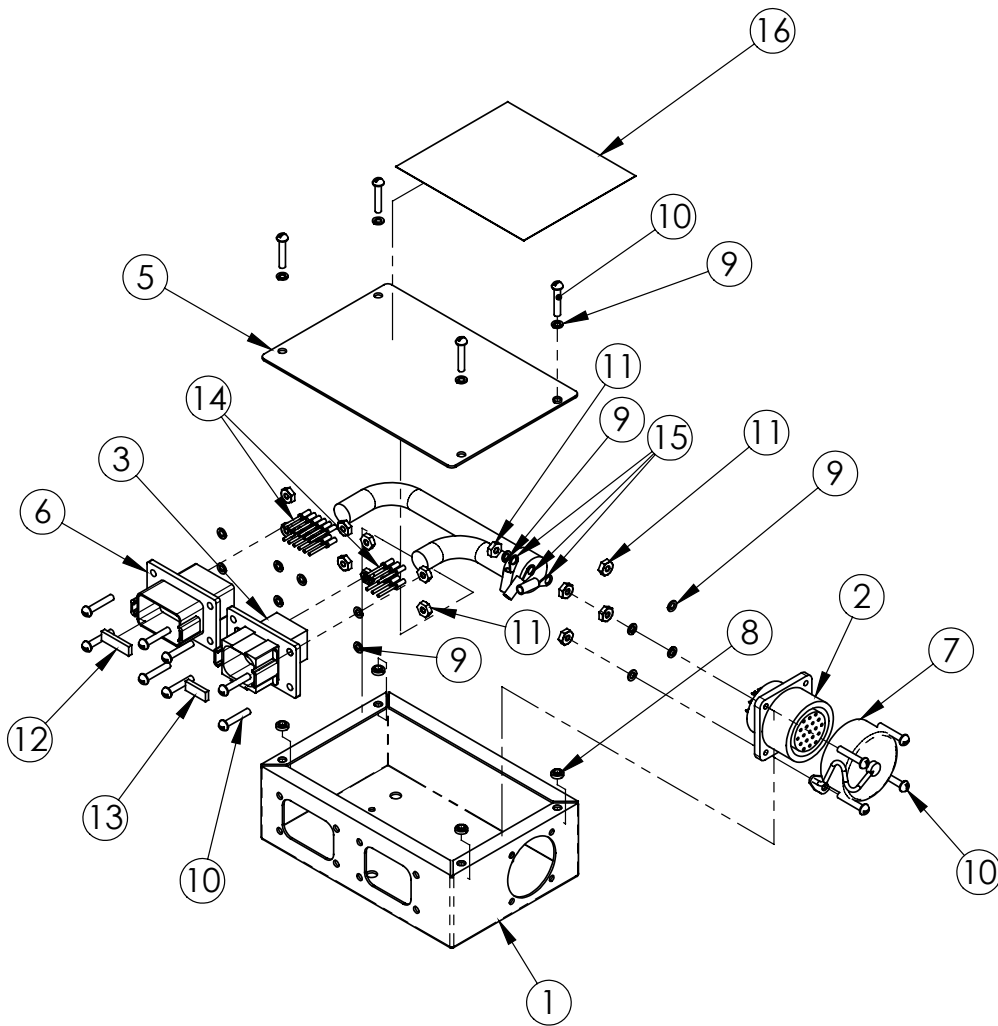
MAIN WIRING HARNESS 5005H HARD WIRED SERIES



FUNCTION	PIN	WIRE COLOR	NOTES
HOIST UP	1	GREEN	POWER
	2	WHITE/RED	TO A2B GROUND
HOIST DN	1	RED/BLACK	POWER
	2	RED/WHITE	GROUND
ROTATE CCW	1	WHITE/BLACK	POWER
	2	RED/WHITE	GROUND
ROTATE CW	1	ORANGE	POWER
	2	RED/WHITE	GROUND
BOOM UP	1	WHITE	POWER
	2	BLACK	BOOM SWITCH CABLE
BOOM DN	1	BLUE	POWER
	2	WHITE/RED	TO A2B GROUND
EXTEND	1	GREEN/BLACK	POWER
	2	WHITE/RED	TO A2B GROUND
RETRACT	1	ORANGE/BLACK	POWER
	2	RED/WHITE	GROUND
A2B SWITCH	1	WHITE/RED	TO PIN 1, PRESSURE SWITCH
	2	RED/WHITE	FROM HU, BD, EXT GND
PRESSURE SWITCH	1	RED/WHITE	GROUND
	2	WHITE/RED	FROM A2B PIN 2
BOOM LIMIT 2 COND CABLE	***	BLACK	***PIN 2 ON BOOM UP PLUG
	NA	WHITE	

ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	800632000	CABLE, 16/10 SO BLACK
2	9	366367001	HOUSING, DEUTSCH 2-PIN PLUG
3	9	366367002	WEDGE, DEUTSCH PLUG, 2 PIN
4	27	366367003	CONTACT, DEUTSCH SOCKET
5	1	360769001	HOUSING, DEUTSCH 2-PIN RECEPTACLE
6	1	360769002	WEDGE, DEUTCH 2-PIN RECEPTACLE
7	2	366367003	CONTACT, DEUTSCH
8	6	001104000	TERMINAL SPLICE 14-16 GA
9	2	000101000	TERMINAL RING, 5/32, 14-16 GA
10	2	000501000	TERMINAL RING, 5/16, 14-16 GA
11	1	800626000	WIRE, 2 CONDUCTOR
12	1	320363000	PLUG TERMINAL CONNECTOR
13	26"	800617000	WIRE, 16GA, RED/WHITE
14	31"	800618000	WIRE, 16GA, WHITE/RED
15	4	320357000	FEMALE SPADE, NON-INSULATED

JUNCTION BOX ASSEMBLY HARD WIRED SERIES



FUNCTION	19 PIN	8 PIN	12 PIN	GND	WIRE COLOR
BOOM UP	A		5		RED
HOIST UP	B		1		GREEN
ROTATE CW	C		4		ORANGE
ENGINE FAST	D	3			RED/WHITE
ROTATE CCW	E		3		BLACK
HOIST DN	F		2		RED/BLACK
BOOM DN	G		6		BLUE
RETRACT	H		8		ORANGE/BLACK
EXTEND	J		7		GREEN/BLACK
NOT USED	K	-	-		WHITE/BLACK
POWER	L	1			WHITE
PROP +0 TO 5V	M		11		BLUE/BLACK
GROUND	N			GND	BLACK/WHITE
AUXILARY	P	4			GREEN/WHITE
ENGINE START	R	5			BLUE/WHITE
ENGINE STOP	S	6			BLACK/RED
PROP POWER	T		9		WHITE/RED
NOT USED	U	-	-		ORANGE/RED
NOT USED	V	-	-		BLUE/RED
GROUND			10	GND	BLACK/WHITE
GROUND		2		GND	BLACK/WHITE
GROUND			12		RED

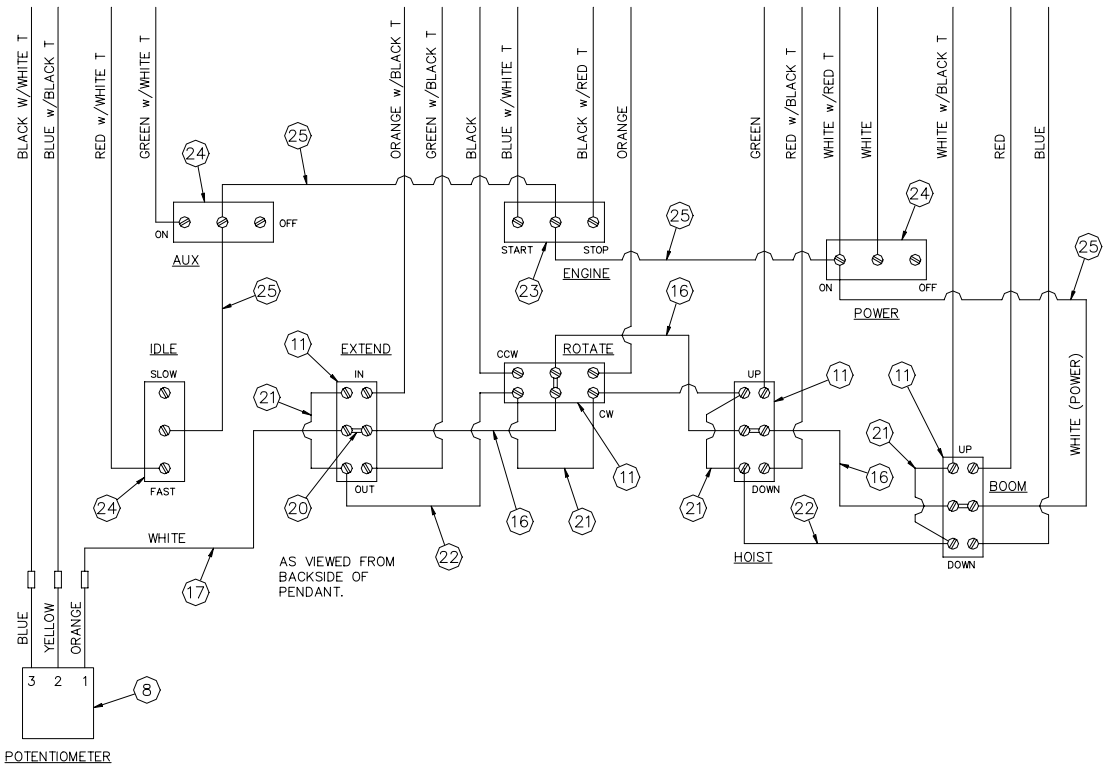
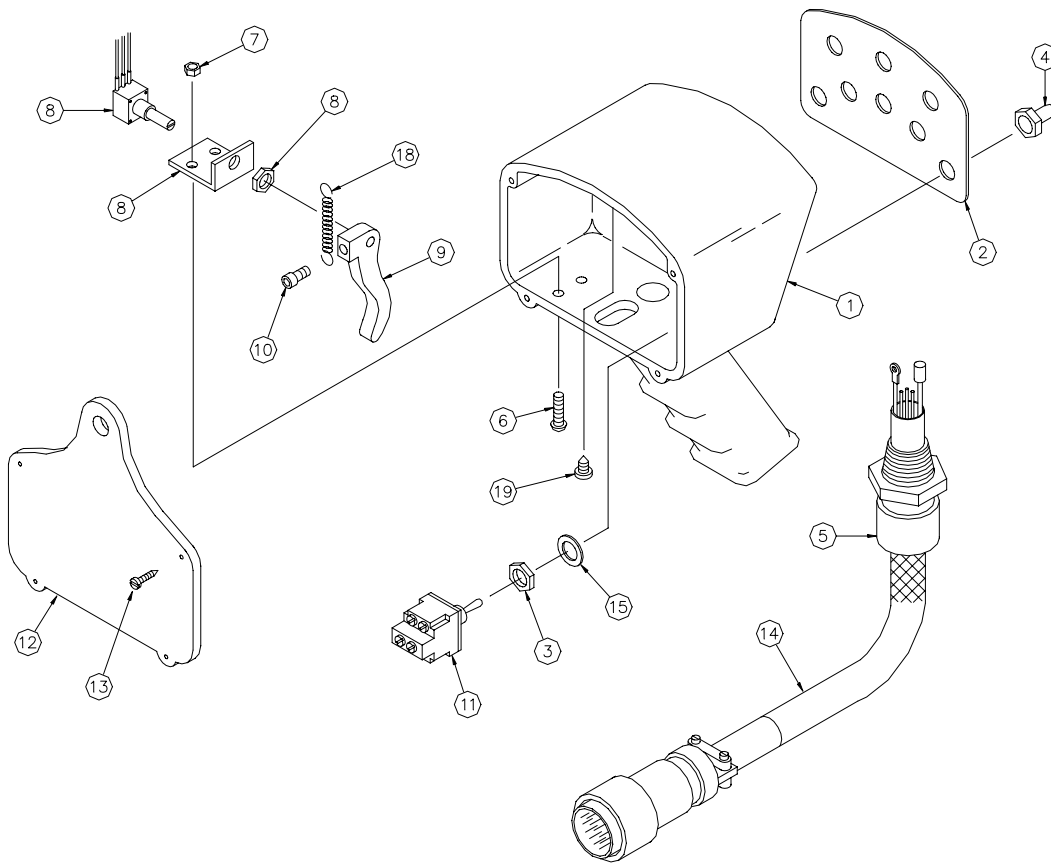
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***JUNCTION BOX ASSEMBLY
HARD WIRED SERIES***

ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	366470000	JUNCTION BOX
2	1	366095	RECEPTACLE, 19 PIN
3	1	366523001	HOUSING, DEUTSCH 8-PIN RECEPTACLE
4	1	480594001	CABLE, PENDANT, 16/10 SO BLACK
5	1	366471000	COVER, JUNCTION BOX
6	1	366524001	HOUSING, DEUTSCH 12-PIN RECEPTACLE
7	1	366097000	CAP W/CHAIN (FOR RECEPTACLE)
8	4	366519000	NUT, SELF CLINCHING
9	17	019600	WASHER SP LK #6
10	16	001004000	SCW PN HD #6 X 3/4 LG
11	13	015400	NUT HX #6-32
12	1	366524002	WEDGE, DEUTSCH RECEPTACLE, 12 PIN
13	1	366523002	WEDGE, DEUTSCH RECEPTACLE, 8 PIN
14	18	366376003	CONTACT, DEUTSCH
15	3	000101000	TERMINAL RING, 5/32, 14-16 GA
16	1	366469000	DECAL, JUNCTION BOX WIRING

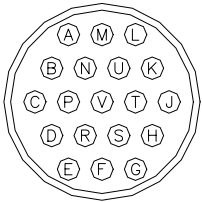
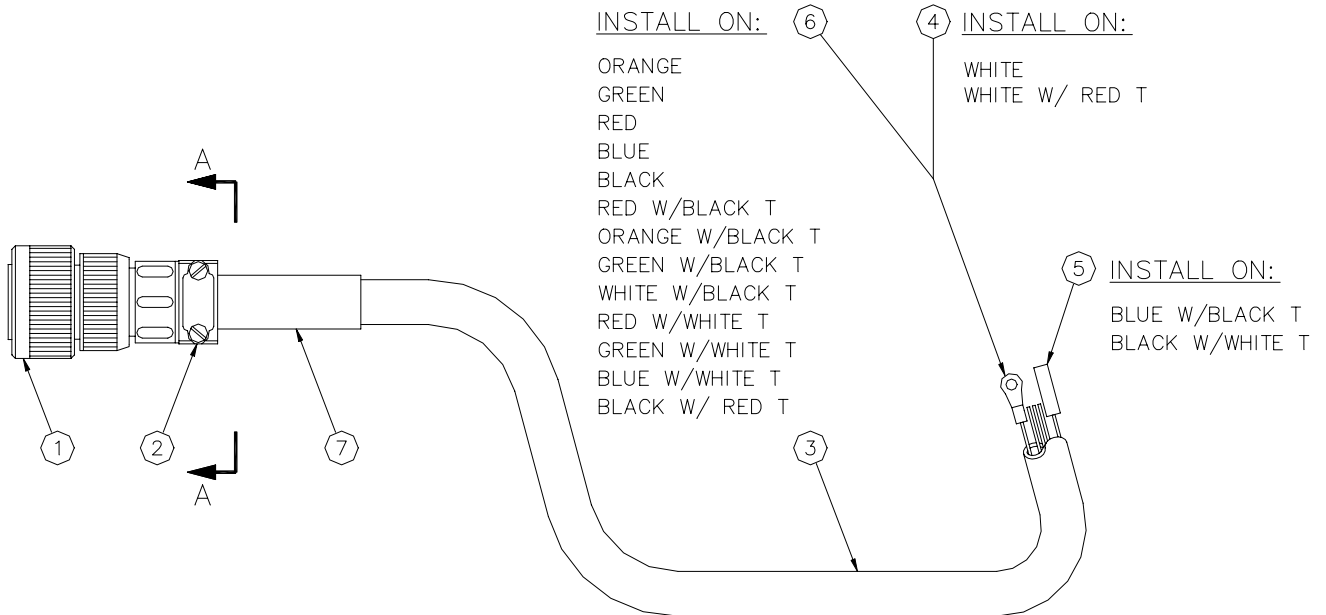
PENDANT ASSEMBLY, 8 FUNCTION HARD WIRED SERIES



***PENDANT ASSEMBLY, 8 FUNCTION
HARD WIRED SERIES***

ITEM	QTY	PART NO.	DESCRIPTION
1	1	480501	HOUSING, PROP. PENDANT MACHINED
2	1	480518	DECAL/COVER PLATE
3	8	REF	NUT (INCLUDED WITH SWITCH)
4	8	640300	BOOT, TOGGLE
5	1	480567	CORD GRIP, HUBBELL CONNECTOR
6	2	002607	SCREW, HX HD #10-24 NC X 3/4 LG
7	2	015801	NUT, HEX, LOCKING, #10-24 NC
8	1	480507	POTENTIOMETER ASSEMBLY
9	1	480506	TRIGGER
10	1	480517	SCREW, SOC HD, #10-32 NF X 5/8 LG
11	4	634200	SWITCH, TOGGLE DPDT
12	1	480504	BACK PLATE, HOUSING
13	4	001004	SCREW, PAN HD, #6-32 X 3/4 LG
14	1	680113	CABLE ASSEMBLY, BAYONET
15	8	REF	WASHER, LOCK (INCLUDED WITH SWITCH)
16	3	660302	CONDUCTOR ASSEMBLY
17	1	480524	CONDUCTOR ASSEMBLY
18	1	480523	SPRING, TRIGGER RETURN
19	1	005003	SCREW, S.T. PAN HD, #6-32 X 3/8 LG
20	4	636600	JUMPER
21	4	622346	CONDUCTOR ASSEMBLY
22	3	622347	CONDUCTOR ASSEMBLY
23	1	622000	SWITCH, TOGGLE SPDT
24	3	750090	SWITCH, TOGGLE ON/OFF
25	1	480526	CONDUCTOR ASSEMBLY
26	2	750737	TIE, CABLE

PENDANT CABLE ASSEMBLY HARD WIRED SERIES



VIEW A-A

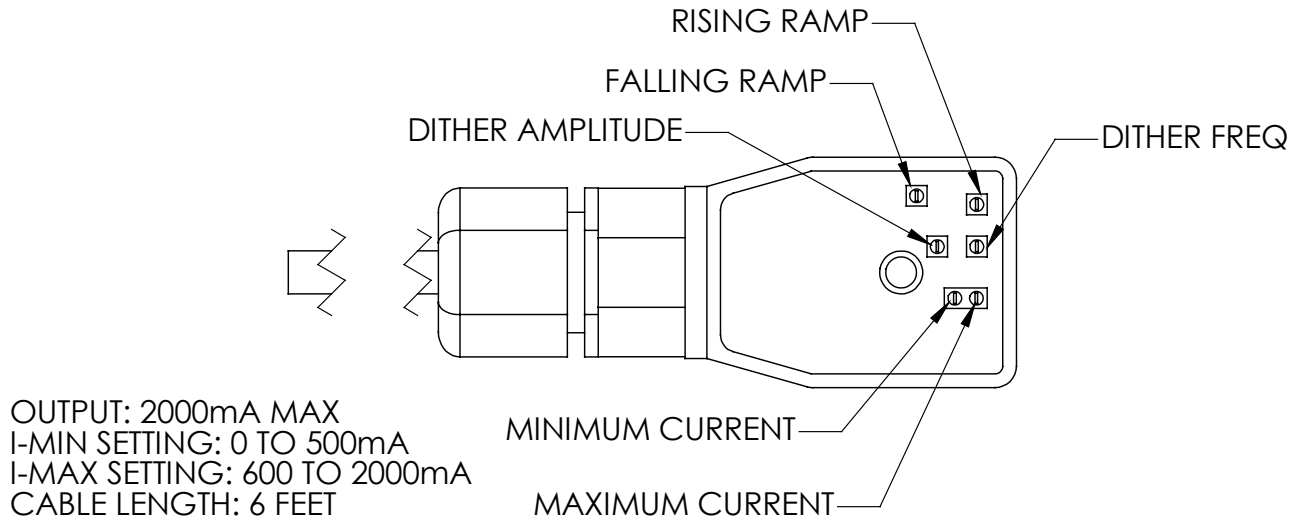
WIRING GUIDE

- | | |
|--------------------|-------------------|
| A-RED | L-WHITE |
| B-GREEN | M-BLUE W/BLACK T |
| C-ORANGE | N-BLACK W/WHITE T |
| D-RED W/WHITE T | P-GREEN W/WHITE T |
| E-BLACK | R-BLUE W/WHITE T |
| F-RED W/BLACK T | S-BLACK W/RED T |
| G-BLUE | T-WHITE W/RED T |
| H-ORANGE W/BLACK T | U-ORANGE W/RED T |
| J-GREEN W/BLACK T | V-BLUE W/RED T |
| K-WHITE W/BLACK T | |

ITEM	QTY	PART NO.	DESCRIPTION
1	1	366098	PLUG, CONNECTOR
2	1	480515	CLAMP, CABLE
3	30'	480594	CABLE, CONDUCTOR (19 COND)
4	2	000101	TERMINAL RING #6 / 14-16 GA
5	2	480510	CONNECTOR, BULLET, FEMALE
6	13	002012	TERMINAL RING #6 / 18-22 GA
7	6"	490243	TUBING, HEAT SHRINK

PROPORTIONAL VALVE CONTROLLER/AMP HARD WIRED SERIES

REFERENCE AUTO CRANE P/N 366363001



Minimum current adjustment:

Current is factory set at 150 mA, no adjustment required at installation. If adjustment is required, set the minimum current before setting the maximum current. Apply minimum input (0 VDC). If the desired minimum current is greater, adjust the trim pot CW until the desired current is achieved.

Maximum current:

Current is factory set at 1600 mA, no adjustment required at installation. If adjustment is required, apply maximum control (5 VDC). Turn the trim pot CCW to adjust the current setting downwards to the desired minimum.

Ramp and Dither

Ramp and dither is adjusted at the factory and does not require any further adjustment.

NOTES



P.O. Box 580697 * Tulsa, OK 74158-0697
4707 N. Mingo Rd. * Phone (918) 836-0463

LIMITED WARRANTY 2 YEAR PARTS AND LABOR

Auto Crane will warranty to the consumer for a period of (2) years parts and labor from the date of purchase. Each new Auto Crane unit they sell will be free under normal use and service from defects in material and workmanship. Date of purchase will be honored as the date indicated on the Bill of Sale, which must accompany the Warranty Registration and be on file with Auto Crane. Absent a valid Warranty Registration and appropriate documentation, the original date of manufacture, as indicated by the serial number on the product, will be used to determine the effective date of the 2 year warranty.

The obligation of Auto Crane under this warranty is limited to the replacement or repair of parts that appear to the manufacturer after review and/or inspection to be defective and paid flat rate labor for replacing defective parts. This warranty does not obligate Auto Crane to bear the travel time charges in connection with the replacement or repair of defective parts. Responsibility for customer's claims arising from misapplication, abuse, misuse or alteration of equipment or parts lies with the distributor or user and no warranty obligation is assumed in these circumstances by Auto Crane.

Auto Crane will in no event be liable for any consequential damages or contingent liabilities arising out of the failure of any Auto Crane Product or parts to operate properly.

Auto Crane makes no warranty in respect to component accessories, it being subject to the warranties of their respective manufacturers.

If field service, at the request of the distributor, is rendered and fault is found not to be with Auto Crane's product, the distributor shall pay the time and expense of the field representative.

Claims for service labor or other expenses that have incurred by the buyer without approval or authorization or Auto Crane will not be accepted.

When applying for warranty, claims may be handled by contacting your nearest authorized Auto Crane Distributor. All claims are to be filed in writing on an Auto Crane Warranty Claim Form.

AUTO CRANE COMPANY IS UNDER NO OLIGATION TO EXTEND THIS WARRANTY TO ANY CUSTOMER FOR WHICH AN AUTO CRANE DELIVERY REPORT FORM HAS NOT BEEN COMPLETED AND ON FILE WITH AUTO CRANE COMPANY

