

EFFECTIVE SERIAL NO. 366000-010-BZ-01-94

# **OWNERS MANUAL**

## **6006H**

**REVISION 11/94**

**PART NO 999945**

**SERIAL NO. \_\_\_\_\_**

## **AUTO CRANE COMPANY**

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# WARNINGS



## READ THIS PAGE!

- ♦ **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 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.
- ♦ **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!** Auto Crane Company recommends that a crane never be moved any closer than 10 feet (3.05m) from power lines at any point. 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, stiff boom 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 your crane is equipped with this type of device.









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## INTRODUCTION

### 6006H 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 6006H series cranes for your protection. The choice of materials and the design of the electrical system minimizes weight and lengthens durability. The hydraulic components meet or exceed a 3.5:1 safety factor. Holding valves prevent the load from dropping if a hose should fail. A 10u filter in the return line of the hydraulic system removes dirt and grit that may cause erratic operation. The reservoir has a 15u air filter in the filler cap. The pump has a 40 mesh strainer in the suction line.

For your convenience the overall dimensions of the 6006H series crane are on the General Dimension Drawing. Maximum turning radius at both the hoist motor and the rotation motor are also 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. A minimum G.V.W. of 14,500 lbs. is recommended for mounting the 6006H series cranes.

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

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,

mis-used, 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) 438-2760. 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. 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 moment to overturn the vehicle.
10. **ALWAYS** keep load as close to ground as possible.
11. Oil gears as required.
12. Periodic adjustment of hoist worm brake may be required (see automatic safety brake drawing in this manual).
13. Hydraulic hoses need to be inspected frequently for signs of deterioration, and be replaced as required.
14. 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.
15. **ALWAYS** store outriggers before road travel.
16. **NEVER OPERATE THE CRANE NEAR ELECTRICAL POWER LINES!** Auto Crane Company recommends that a crane never be moved any closer than 10 feet (3.05m) from power lines at any point. SEE DANGER DECAL (P/N 040529) in this Owner's Manual.
17. **NEVER** un-reel last 5 wraps of cable from drum!
18. **NEVER** wrap cable around load!
19. **NEVER** attempt to lift or drag a load from the side! The boom can fail far below its' rated capacity.
20. **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.
21. **NEVER** place a chain link on the tip of the hook and try to lift a load!
22. **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!
23. 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.
24. **NEVER** hold any pendant Select Switch on that will cause unsafe operating conditions!
25. **NEVER EXCEED** load chart capacities (centerline of rotation to hoist hook).



## **--- 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 pendant control from cab or storage area. On smaller units, plug pendant into receptacle on crane. On larger units, remove pendant control from guard and unwrap cable from boom. Do not operate crane until cable is unwound completely. On all cranes, 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 pendant control on proper location (in cab or on crane).
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.
18. Spray all electrical equipment with special corrosion resistant coating. This eliminates rust or corrosion due to melting and freezing action of condensation.

## **OPERATION OF OUTRIGGERS**

**Prior to operating outriggers, detach crane hook from dead man.**

For hydraulic outriggers:

1. Shift crane/outrigger selector valve to "outrigger" position.
2. While operating the outrigger control valves (located on the outrigger cylinders), simultaneously operate the boom-up control switch. This will allow the hydraulic system to build pressure.
3. After outriggers are positioned, return crane/outrigger selector valve 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.



# 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 judgement 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.
- 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



# QUALIFICATIONS FOR AND CONDUCT OF OPERATORS AND OPERATING PRACTICES

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. The operator should avoid carrying loads over people.
  - I. 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.
  - J. 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.
  - K. In transit, the boom shall be carried in stowed position.
  - L. The crane shall not be transported with a load on the hook unless recommended by the manufacturer.
  - M. 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 un-stowing the crane.



# QUALIFICATIONS FOR AND CONDUCT OF OPERATORS AND OPERATING PRACTICES

## MISCELLANEOUS

### OPERATING NEAR ELECTRICAL POWER LINES

- 22 Except where the electrical distribution and transmission lines have been de-energized and visibly grounded at point of work or where insulating barriers not a part of, or an attachment to, the crane have been erected to prevent physical contact with the lines, cranes shall operate so that no part of the crane or load enters within 10 ft. (3m).
- A. caution shall be exercised when working near overhead lines having long spans as they tend to move laterally or vertically due to the wind which would breach the safety zone.
  - B. in transit with no load and boom lowered the clearance shall be 10 ft. (3.0m)
  - C. a qualified signal person shall be assigned to observe the 10 ft. (3.0m) clearance and give warning before approaching above.
- 23 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.
- 24 Exceptions to this procedure, if approved by the administrative or regulatory authority if the alternate procedure provides equivalent protection and set forth in writing.
- 25 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.



# 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 amage, 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. blistering, or abnormal deformation to the outer covering of the hydraulic or pneumatic hose;



- C. leakage at threaded or clamped joints that cannot be eliminated by normal tightening or recommended procedures;
- D. evidence of 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.

**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.

**MAINTENANCE**

**PREVENTIVE MAINTENANCE**



22 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.

23 Warning or "OUT OF ORDER" signs shall be placed on the crane controls.

24 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

25 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.

26 Adjustments shall be maintained to assure correct functioning of components. The following are examples:

- A. functional operating mechanism;
- B. safety devices;
- C. control systems;

27 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.

28 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

29 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.
- B. Care shall be taken when inspecting sections of rapid deterioration such as flange points, crossover points, and repetitive pickup points on drums.

30 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

- 31 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.

- 32 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.
- 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.

- 33 Rope not in regular use: all rope which has been idle for a period of a month or more due to shut-down 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.

- 34 Inspection records

- A. frequent inspection- no records required



- B. 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

- 35 Rope should be stored to prevent damage or deterioration.
- 36 Unreeling or uncoiling of rope shall be done as recommended by the rope manufacturer and with care to avoid kinking or inducing twist.
- 37 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.
- 38 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.
- 39 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.



# MOUNTING and INSTALLATION 6006H

## 1. CHECK TO MAKE SURE THE FOLLOWING ITEMS ARE WITH YOUR CRANE:

ITEM	PART NO.	DESCRIPTION
1.	366203000	Swivel Block
2.	366212000	Vented Relief Valve (Non-proportional Units Only)
3.	480525000	Control Valve Assembly (Proportional Units Only)
4.	480018000	Pump Assembly (Optional)
5.	999946000	Owners Manual
6.	015104000	Bolt system: 7/8 NF x 5", Grade 8, (4 Req'd)

## 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 8 GALLON RESERVOIR WITH RELIEF VALVE AND AUTO CRANE PROVIDED PUMP

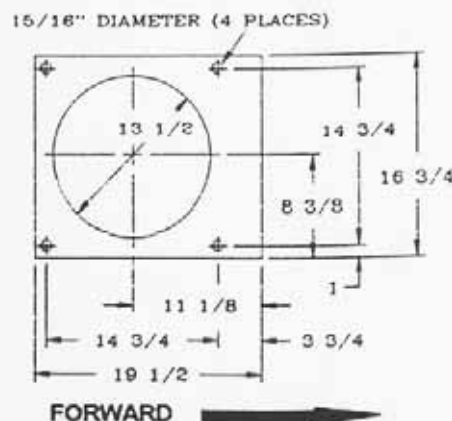
- A. RETURN LINE FROM CRANE TO RESERVOIR (IN COMPARTMENT): -8 SAE 100R2 (OR EQUIVALENT). HOSE LENGTH IS DETERMINED BY INSTALLER. RETURN LINES LONGER THAN 6 FEET SHOULD BE SIZE -12. HOSE END FITTINGS ARE -8 JIC FEMALE SWIVEL (CRANE END) AND -10 JIC FEMALE SWIVEL (RESERVOIR END).
- B. PRESSURE LINE FROM VENTED RELIEF VALVE TO CRANE: -8 SAE 100R2 (OR EQUIVALENT). HOSE LENGTH IS DETERMINED BY INSTALLER. HOSE END FITTINGS ARE BOTH -8 JIC FEMALE SWIVEL.
- NOTE: CRANE MUST USE RELIEF VALVE P/N 366212, WHICH IS PROVIDED.**
- C. SUCTION HOSE FROM PUMP TO RESERVOIR: -16 HYDRAULIC SUCTION HOSE WITH TWO (2) -16 HOSE CLAMPS ON EACH END.
- D. PRESSURE LINE FROM PUMP TO VENTED RELIEF VALVE (LOCATED ON RESERVOIR): -12 SAE 100R2 (OR EQUIVALENT). HOSE LENGTH IS DETERMINED BY INSTALLER. HOSE END FITTINGS ARE BOTH -10 JIC FEMALE SWIVEL.

### NOTE:

REFER TO OWNERS MANUAL FOR ADDITIONAL INSTALLATION INFORMATION, AND OTHER RESERVOIR AND PUMP COMBINATIONS.

### 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 2200 PSI. 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 36,000 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 BOLTS) FOR ACCESS TO LOWER RING GEAR BOLTS AND HYDRAULIC CONNECTIONS.
- 8. MAKE SURE THE MOUNTING BOLTS ARE 7/8x 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 HOOK LOOP.
- 10. ALWAYS USE CABLE LOOPS ON SIDE OF BOOM AND PENDANT GUARD ON SIDE OF PEDESTAL TO STORE PENDANT ASSEMBLY, IF THIS TYPE OF STORAGE APPLIES.





# ***MOUNTING and INSTALLATION 6006H***

(CONTINUED)

11. CHECK FOR PROPER PRESSURE AND RETURN LINE HOOK-UP TO CRANE: PRESSURE PORT IS ON RIGHT SIDE AS VIEWED FROM THE REAR OF THE CRANE.
12. USE MEDIUM PRESSURE AUTO CRANE FILTER IN THE RETURN LINE UNLESS FILTER EXIT PORT IS MOUNTED DIRECTLY TO THE RESERVOIR.
13. ELECTRICAL HOOKUP

## **NON-REMOVABLE PENDANT UNITS:**

- A. RUN THE FOLLOWING WIRES THROUGH HOLE IN BASE ASSEMBLY OF CRANE AND SEAL WITH SILICONE RUBBER TO PREVENT WIRE CHAFING AND LEAKS.
- B. CONNECT WIRE FROM DIRECTIONAL VALVE SOLENOID (P/N 480137) TO WHITE WIRE W/ TRACER AT PENDANT CABLE END.
- C. CONNECT POWER CONDUCTOR FROM STARTER SOLENOID TO BLACK WIRE AT BASE OF CRANE, PASSING THROUGH THE MAIN POWER RELAY. USE THE IN-LINE FUSE PROVIDED.

## **REMOVABLE PENDANT UNITS:**

- A. OBTAIN THE PROPER WIRING DIAGRAM.
- B. WIRE TERMINAL STRIP PER DIAGRAM AND PROTECT STRIP FROM ACCIDENTAL CONTACT.

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

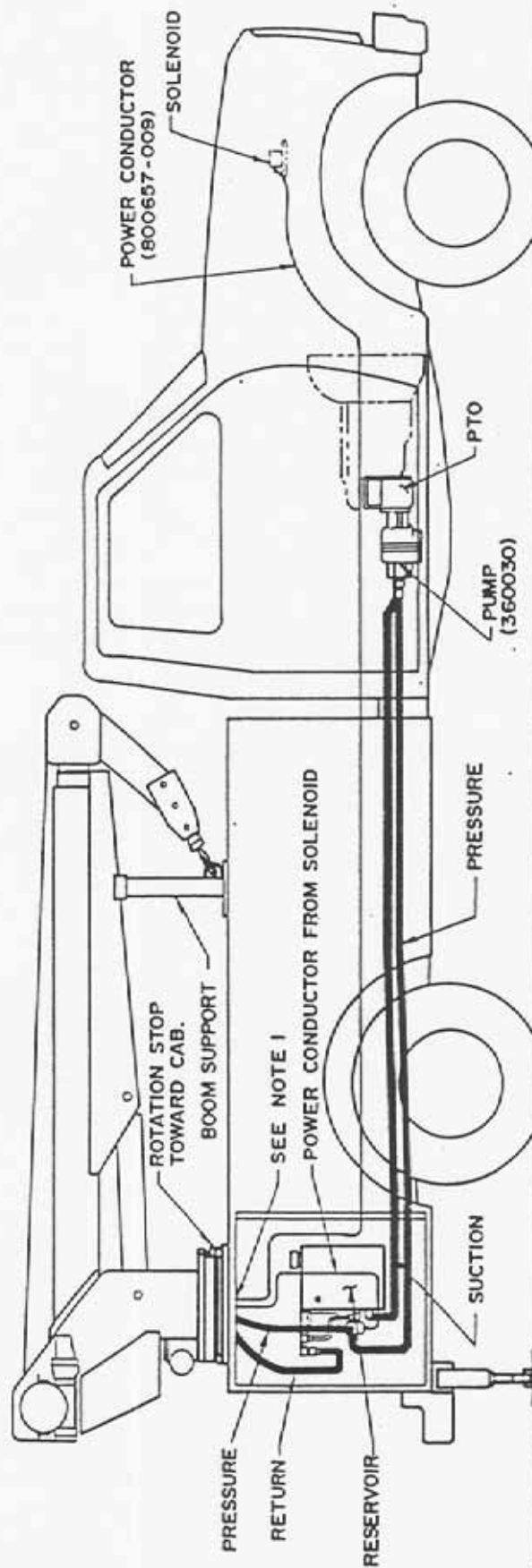
14. ONCE CRANE AND PLUMBING ARE INSTALLED ON THE TRUCK, FILL THE RESERVOIR TO TOP OF SIGHT GLASS (MOBIL DTE 13 or EQUAL). BEFORE OPERATING CRANE CONNECT TOGETHER THE PRESSURE AND RETURN HOSES GOING TO BASE OF CRANE USING -8 JIC UNION AND ENGAGE PTO WITH ENGINE RUNNING. ALLOW OIL TO CIRCULATE FOR 15 TO 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, OR CONFIRM PUMP SPEED IS CORRECT. THE PROPER SPEED FOR AUTO CRANE GEAR PUMP P/N 480018 IS 1000 RPM.
15. PROPER PRESSURE SETTING CAN BE ACHIEVED BY, WITH THE PTO DISENGAGED, REMOVING THE PIPE PLUG ON THE VENTED RELIEF VALVE OR PROPORTIONAL VALVE AND INSTALLING A 2500 PSI PRESSURE GAUGE. EXTEND THE BOOM "IN" ALL THE WAY AND CONTINUE HOLDING THE SWITCH ON. FOR PROPORTIONAL SYSTEMS, THE TRIGGER SHOULD BE PULLED COMPLETELY BACK (ON). READ THE PRESSURE GAUGE AND ADJUST RELIEF VALVE TO READ 2200 PSI. RECHECK PRESSURE SETTING TO VERIFY ADJUSTMENT.
16. LOAD TEST THE CRANE TO ENSURE PROPER FUNCTIONING AND TRUCK STABILITY.
17. MAKE CERTAIN THE OWNER'S MANUAL IS DELIVERED TO THE CUSTOMER.
18. 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 THE 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).





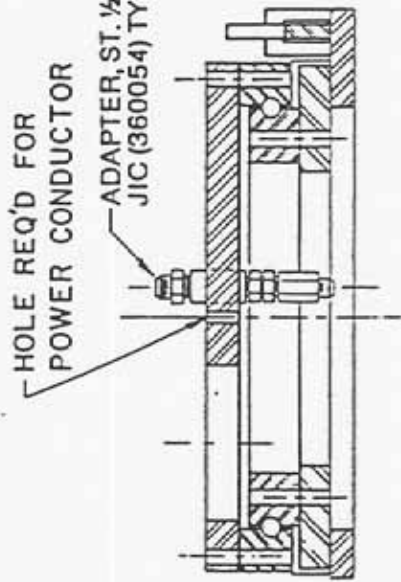
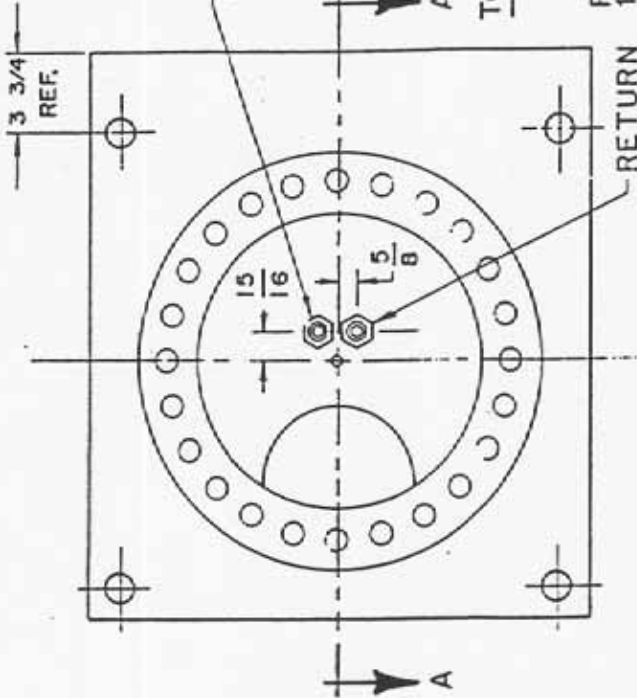
#### NOTES

1. AFTER POWER CONDUCTORS ARE INSERTED THROUGH HOLE IN BASE OF CRANE, SEAL ALL AROUND WITH SILICONE RUBBER, OR EQUAL, TO PREVENT WIRE DAMAGE.

#### MOUNTING AND INSTALLATION, 6006H

AW - 072



FIXTURE NO.	FINISH NO.	CHG LTR	REVISIONS	DESCRIPTION	DATE	APP'D
		<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>HOLE REQ'D FOR POWER CONDUCTOR</p> <p>ADAPTER, ST. 1/2 NPT. - 3/4 - 16 JIC (360054) TYP. 2 PLC'S</p> </div> <div style="text-align: center;">  <p>3 3/4 REF.</p> <p>15/16</p> <p>5/8</p> <p>PRESSURE</p> <p>RETURN</p> <p>TOWARD CAB</p> <p>REDUCER 1/4 - 14 NPT. / 3/4 - 18 NPTF. (750413) SWIVEL JOINT - 8 (750412)</p> <p>REDUCER 1/4 - 14 NPT. / 3/4 - 18 NPTF. (750413) SWIVEL JOINT - 8 (750412)</p> </div> </div>				

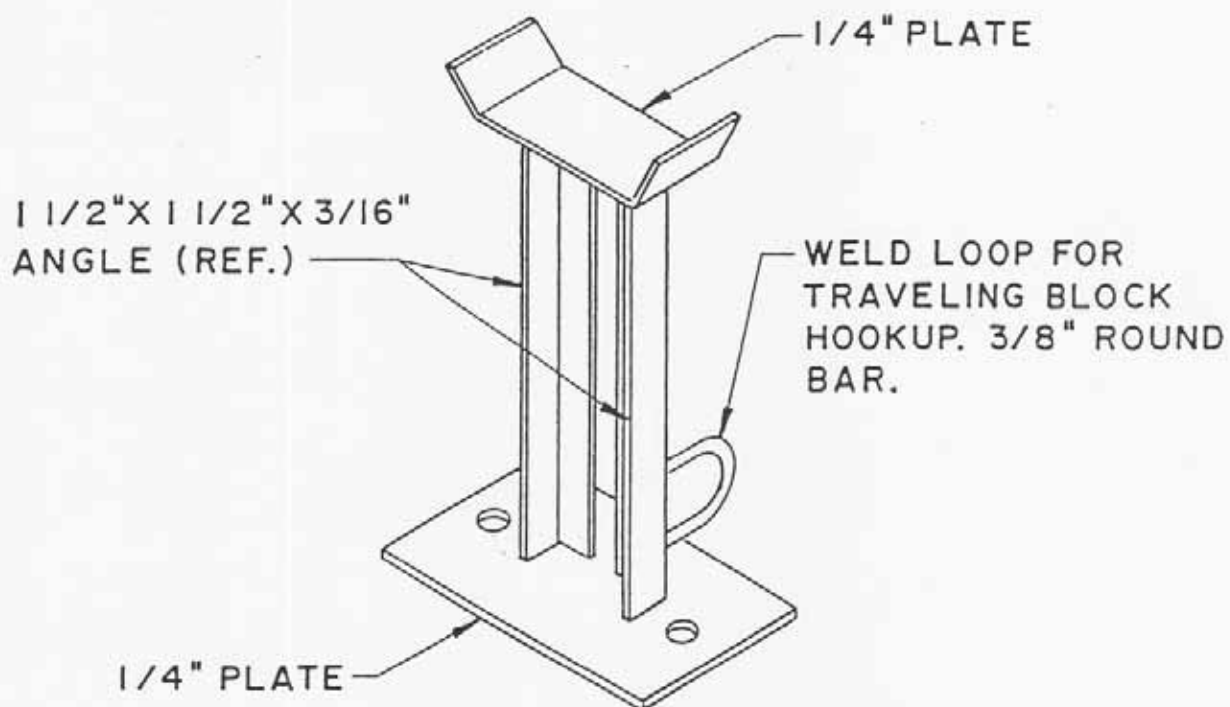
**BOTTOM VIEW**

QUANTITY	ITEM	D/S	PART NO.	DESCRIPTION
<p><b>LIST OF MATERIAL</b></p> <p><b>AUTO CRANE COMPANY</b></p> <p><b>BASE ASSEMBLY</b></p>				
<p>UNLESS OTHERWISE NOTED ALL DIMENSIONS ARE IN INCHES. TOLERANCES UNLESS OTHERWISE SPECIFIED:</p> <p>ANGLES 1/2° .XX ± .40</p> <p>FRACTIONAL 1/16 .XXX ± .010</p> <p>REMOVE ALL BURRS AND SHARP EDGES. DO NOT SCALE THIS DRAWING.</p> <p>TOLERANCES NOT SHOWN ABOVE ARE PER ANSI Y14.5 - 1973</p> <p>THIS PRINT IS THE PROPERTY OF AUTO CRANE CO. AND MUST NOT BE USED IN ANY MANNER DETRIMENTAL TO THEIR INTERESTS.</p>				
<p>DRAWN BY: <i>R. J.</i> DATE: <i>7/10/86</i> CHECKED BY: DATE: ENG. BY: DATE: NEXT ASSY: 12/86</p>				



## AUTO CRANE'S SUGGESTED BOOM SUPPORT

LEAVE 3/4" CLEARANCE ON EACH SIDE OF BOOM

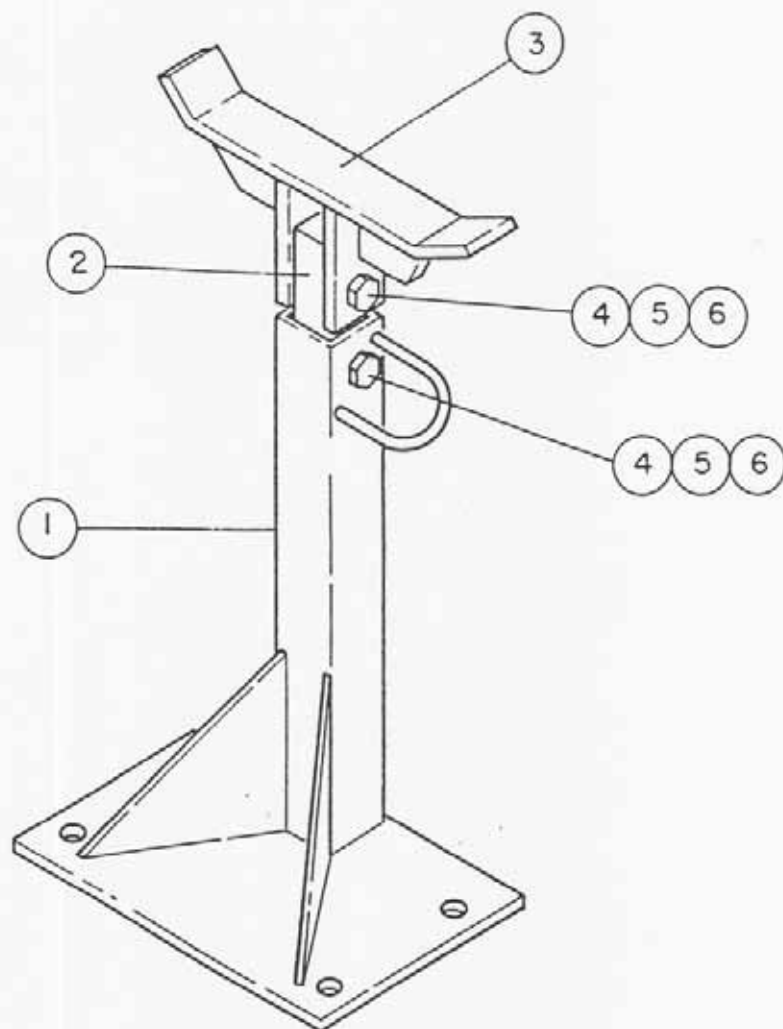


BOOM SUPPORT IS REQUIRED.

**AUTO CRANE COMPANY**

P.O. BOX 580697 TULSA OKLAHOMA 74158-0697  
4707 N. MINGO ROAD 918-836-0463

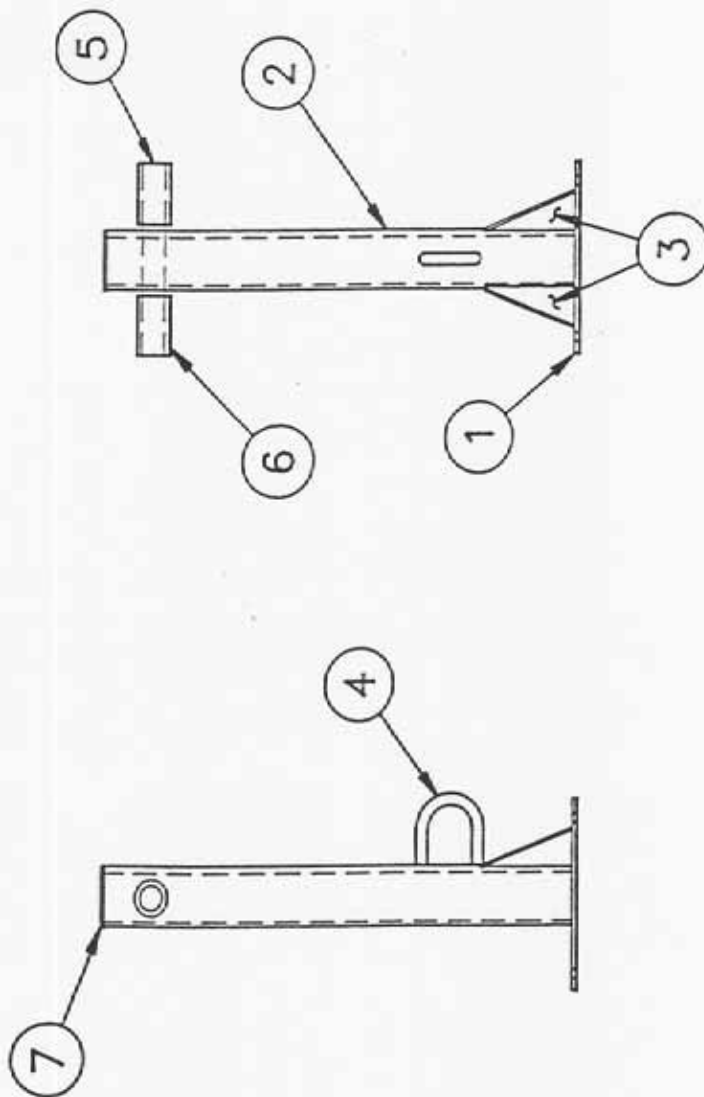
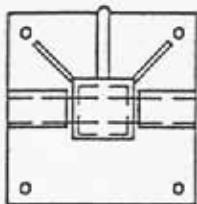




<u>ITEM</u>	<u>QTY</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	1	750586	BASE
2	1	750590	EXTENSION TUBE
3	1	750589	BOOM SUPPORT
4	2	009800	BOLT, HX. 3/8" NF
5	2	017102	NUT HX. 3/8" NF
6	2	021101	WASHER, SP. LK. 3/8"

AW-081 BOOM SUPPORT (P/N 750585)





2-2.4.0

**AUTO CRANE COMPANY**  
P.O. BOX 500697 TULSA, OKLAHOMA 74158-0697  
4707 HIRTH HINGO ROAD 918-836-0463

TITLE

**SUPPORT, BOOM  
(5005H & 6006H)**

SCALE 1/8" = 1' SHEET NO. 725222 REVISION 1  
DATE 1/8/81

SHEET 1 OF 1

ITEM	QTY	PART No.	DESCRIPTION
7	1	800224-003	BAR, RT. HR. 1/8 x 2 1/2 x 2 1/2" LG.
6	2	360275-004	HOSE, -16 x 2 1/2" LG.
5	1	800356-007	BAR, RD. CD. 1 x 8" LG.
4	1	230400	HOOK, HOIST CABLE
3	2	725224	GUSSET
2	1	725226	UPRIGHT, 5005H & 6006H
1	1	725223	BASE





Auto Crane Company  
Tulsa, Oklahoma

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## **Safety Decal Section 6006H**

Revision 11/94

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ITEM	DESCRIPTION	QTY	FIG
1	CAUTION, WORK RULES	1	5-1
2	DANGER, OPERATOR TRAINING	1	5-2
3	WARNING, TAPERING WITH OVERLOAD	1	5-3
4	DANGER, ELECTROCUTION HAZARD	2	5-4
5	DANGER, STAY CLEAR OF BOOM	2	5-5
6	DANGER, STAY CLEAR OF LOAD	2	5-6
7	CAUTION, HYD REQUIREMENTS	1	5-7
8	WARNING, LOAD SENSOR TAMPERING	1	5-8
9	DANGER, SCISSORS POINT	2	5-9

### **AUTO CRANE COMPANY**

PO BOX 580697, Tulsa, OK 74158-0697

4707 N. MINGO ROAD, Tulsa, OK 74117

Phone (918) 836-0463, Telex 158108 Ramsey Tul

Sales Fax (918) 438-6688 Service Fax (918) 834-5979





# SAFETY DECAL SECTION

## 6006H

Revision 11/94

PART NO.: 040579  
DECAL: OPERATION 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 sideplate



FIG. S-1.

PART NO.: 040580  
DECAL: OPERATOR 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 sideplate (6006H)

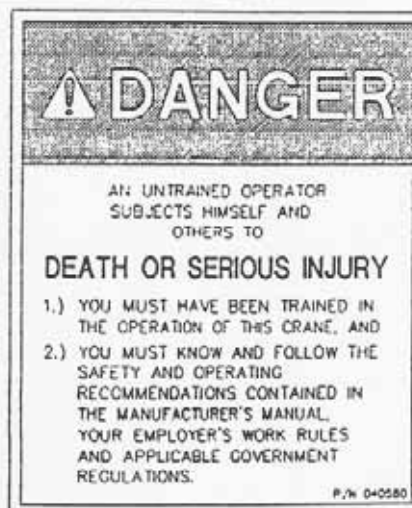


FIG. S-2.

PART NO.: 040632  
DECAL: TAMPERING WITH OVERLOAD DEVICE  
FUNCTION: To inform the operator that tampering with the overload device may cause a unit failure or possible personnel injury.  
USED ON: 6006H  
QUANTITY: 1  
PLACEMENT: Right side of valve cover



FIG. S-3.





## SAFETY DECAL SECTION 6006H

Revision 11/94

PART NO.: 040529  
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

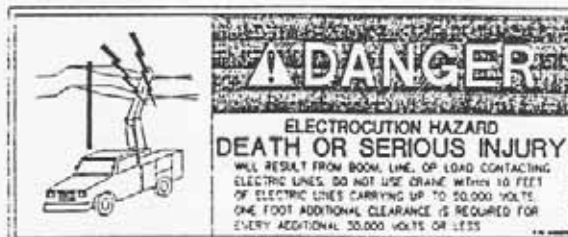
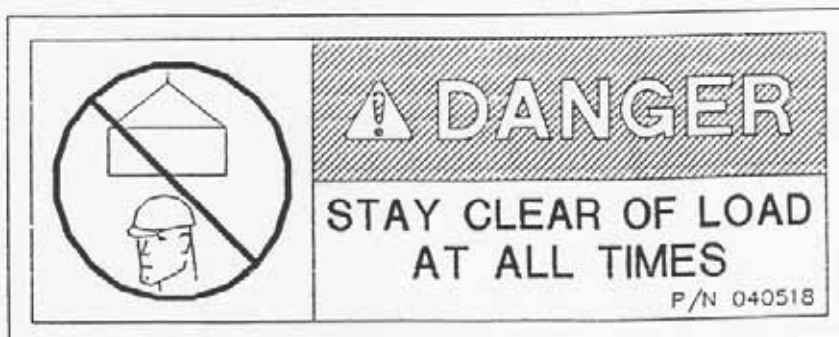


FIG. S-4.

PART NO.: 040517  
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



PART NO.: 040518  
DECAL: STAY CLEAR OF LOAD  
FUNCTION: To inform the operator of the hazard of proximity or contact with the crane load during operation.  
USED ON: All cranes  
QUANTITY: 2  
PLACEMENT: Both sides of crown plate







# SAFETY DECAL SECTION

## 6006H

Revision 11/94

PART NO.: 366209  
DECAL: HYDRAULIC REQUIREMENT  
FUNCTION: To inform the operator of the hydraulic requirements for proper crane operation.  
USED ON: 6006H  
QUANTITY: 1  
PLACEMENT: On the hydraulic reservoir

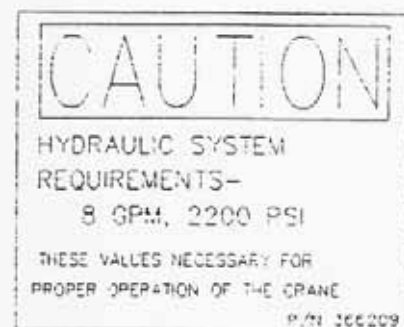


FIG. S-7.

PART NO.: 040587  
DECAL: LOAD SENSOR, DON'T TAMPER  
FUNCTION: To inform the operator that the load sensor is pre-set and that tampering with the sensor may cause potentially hazardous situation.  
USED ON: All cranes equipped with a load sensor.  
QUANTITY: 1  
PLACEMENT: On the lift cylinder near the load sensor



FIG. S-8.

PART NO.: 040519	USED ON: All cranes
DECAL: SCISSORS POINT	QUANTITY: 2
FUNCTION: To inform the operator of possible danger at scissors point on crane.	PLACEMENT: Both sides of the lift cylinder

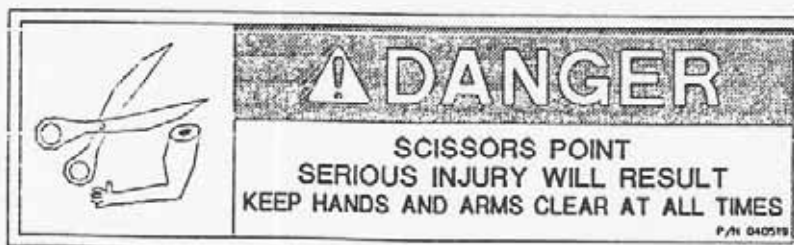
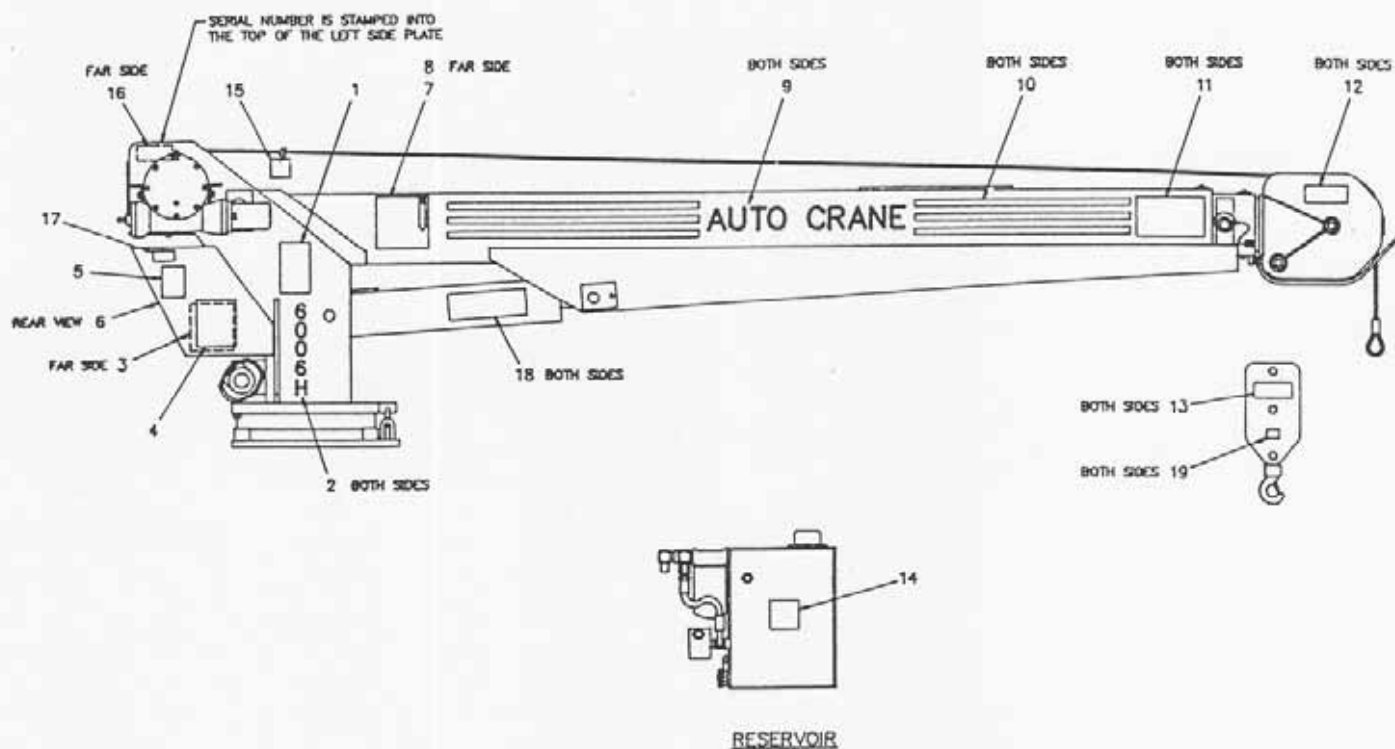


FIG. S-9.

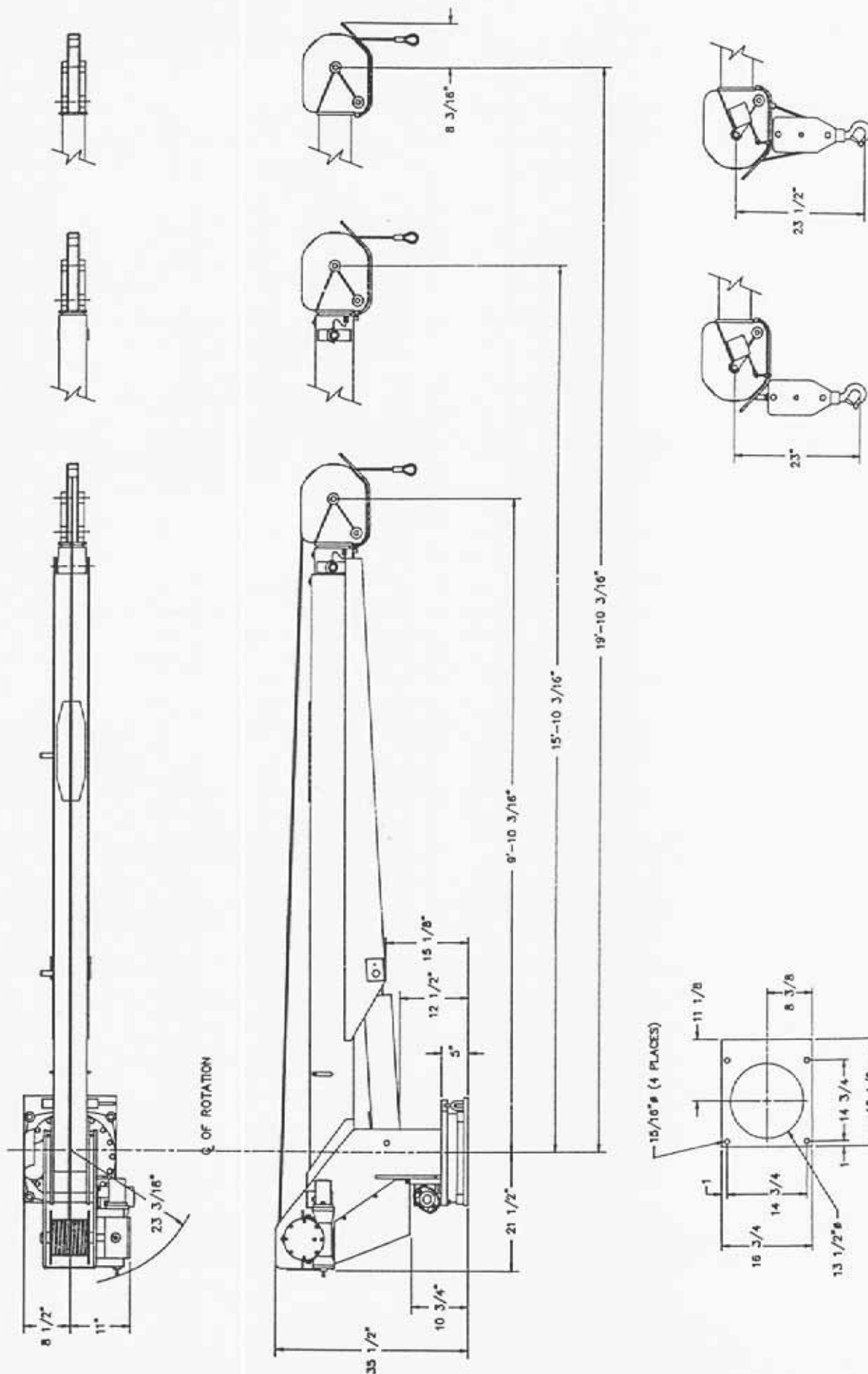




ITEM	QTY	PART NO.	DESCRIPTION	ITEM	QTY	PART NO.	DESCRIPTION
1	1	040579	DECAL, CAUTION-WORK RULES	11	2	040529	DECAL, DANGER-SHOCK
2	2	366210	DECAL, 6006H	12	2	040517	DECAL, DANGER-STAY CLEAR
3	1	366195	DECAL, LOAD CHART	13	2	040518	DECAL, DANGER-STAY CLEAR
4	1	040580	DECAL, DANGER-OPERATE	14	1	366209	CAUTION - 8 GPM
5	1	040632	DECAL, DANGER-CYL. OPERATION	15	1	999946	INSTALLATION CHECKLIST
6	1	360034	DECAL, LOGO	16	1	330622	DECAL, SERIAL NO.
7	1	360036	DECAL, ANGLE INDICATOR, RIGHT	17	1	330633	DECAL, OPTI-FLOW
8	1	360037	DECAL, ANGLE INDICATOR, LEFT	18	2	040519	DECAL, DANGER-SCISSOR POINT
9	2	040624	DECAL, AUTO CRANE	19	2	366203-100	DECAL, BLOCK WEIGHT & MAX. LOAD
10	13'	040620	STRIPING				

AW-366208  
6006H DECAL LAYOUT





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R 11/94

# AW-071 6006H GENERAL DIMENSIONS



# NOTES





## INSTALLATION AND SETUP PROCEDURE DIGITAL PULSE WIDTH AMPLIFIER

Page 1 of 2  
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### **INSTALLATION:**

1. Install amplifier at a convenient location near the proportional crane terminal strip (ref.: Owner's Manual, PROPORTIONAL CRANE WIRING DIAGRAMS) using two screws and lock nuts provided.
2. At the 12 station terminal block, disconnect all power to the system.
3. Connect the din connector plug to the proportional valve, making sure the gasket seals properly. Secure the plug to the proportional valve coil with screw. Attach wires per applicable wiring diagram.

#### ***ATTACH WIRES IN THIS ORDER: (numbers are on 22 station terminal strip)***

1. Attach the **BLACK** wire to terminal "N" (#13)
2. Attach the **RED** wire to terminal "T" (#10)
3. Attach the **WHITE** wire to terminal "M" (#12)
4. Attach the **GREEN** wire to the **BROWN** wire from the proportional din connector plug using the bullet connector supplied

#### **CAUTION: FAILURE TO DO SO MAY CAUSE PREMATURE AMPLIFIER FAILURE AND VOID WARRANTY.**

- Observe all connections for proper installation before connecting power to the terminal block. Proceed to the set-up procedure.

### **SETUP:**

1. Remove four screws on front plate of amplifier and remove front plate.
2. With power on, pull pendant trigger to full on position. Adjust potentiometer adjustment screw located next to the red light (see Figure 1) until light just turns off, then turn trim pot back until the light just comes on. The light should stay on during full trigger movement. Clockwise rotation of the trim pot will turn light off. Counter-clockwise rotation will turn the light on. This "tunes" the amplifier to the trigger potentiometer.
3. After warming the hydraulic system oil, determine which function should be used to set the low position switch (ROTATE USES THE LEAST AMOUNT OF PRESSURE). Activate that function with trigger released, and turn the lower range setting dial (REF. FIG 1: MARKED WITH "L" ON CIRCUIT BOARD) until the desired speed is reached. The "Zero" and the "F" on the dial are opposite ends of the switch. To adjust the low set point, turn **CLOCKWISE DIRECTION** for **INCREASED FLOW**, **COUNTER CLOCKWISE DIRECTION** for **DECREASED FLOW**. This adjusts the "Threshold Speed" for the trigger in the released position.





## INSTALLATION AND SETUP PROCEDURE DIGITAL PULSE WIDTH AMPLIFIER

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*Cont.*

4. Operate the boom up function with trigger pulled back to the maximum position. Turn the high range setting dial (REF. FIG 1, MARKED WITH "H" ON CIRCUIT BOARD) until there is a noticeable decrease in speed, then back up one or two notches as desired. "Zero" is the maximum speed setting and "F" is the most reduced speed setting. To set the high range dial, turn **CLOCKWISE DIRECTION** for **DECREASED FLOW**, **COUNTER CLOCKWISE DIRECTION** FOR **INCREASED FLOW**. This operation adjusts the trigger "Dead Band" at the fully pulled position.
5. Replace cover and install screws. Make sure the amplifier wiring is secured and does not interfere with rotating hoses and electrical wiring.

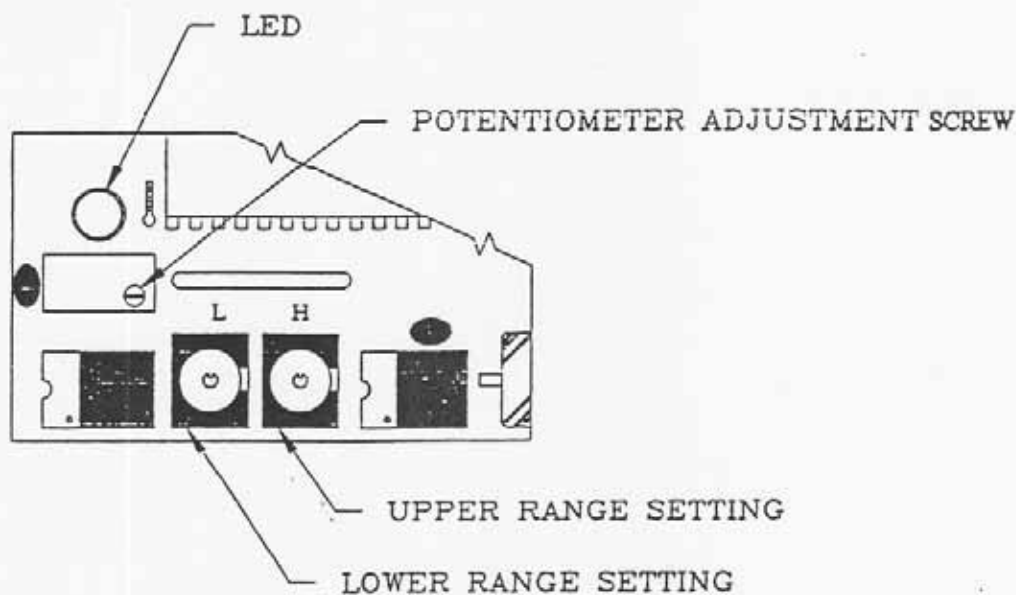


Figure 1



# OVERLOAD SYSTEM / ANTI-2-BLOCK

## TROUBLE SHOOTING GUIDE

### IF THE THREE FUNCTIONS, BOOM DOWN, HOIST UP AND EXTEND OUT, QUIT WORKING

the problem probably lies in either the Overload System or the Anti-2-block system or both. If these three functions are NOT WORKING and most other functions are, an investigation should be made as follows: (reference: Figure 1 )

#### 1 ANTI-2-BLOCK

A. Unplug the anti-2-block system from the overload system and connect A and B to bypass the anti-2-block system.

1. If the three functions work, check continuity of anti-2-block system using continuity tester at disconnected Weatherpack connectors, and investigate switch at end of boom, cable and cable reel.
2. If the three functions do not work, continue on with section #2.

#### 2 LOAD SENSOR (Pressure Switch)

A. With crane unloaded, unplug weatherpack connector on load sensor wire.

1. If the three functions work, re-check the Pressure Switch by taking a ohm reading on the two wires coming from the Switch. The switch has normally open contacts, so the reading should be the maximum. If less than maximum ohm reading is indicated (usually a dead short), replace the Switch.
2. If the three functions do not work, continue with section #3.

#### 3 RELAY BOX

A. Carefully open the black plastic box lid covering the overload system timer and relay.

Carefully remove the yellow wire terminal from tab #1.

1. If the three functions begin to work, connect the wire connector (yellow wire) to a ground to double check the operation of the relay switch. With the wire grounded the three functions should not work. With the wire ungrounded the system should work.
2. If the three functions do not work, replace the Relay and re-attach yellow wire to terminal #1.
3. If the three functions work with the new relay when it is installed but not when it is reconnected to the Time Delay Relay, re-attach yellow wire to terminal #1 and continue on with section #4.

#### 4 TIME DELAY RELAY

A. With the black plastic box still open, remove the wires connected to terminals #6 and #7. Remove any dirt, corrosion and moisture from around terminals.

1. If the relay resets after this and the load sensor has been previously checked, spray area around terminals with protective coating before replacing box lid.
2. If the three functions still do not work, continue on with Item #B.

B. With the black plastic box still open, remove the wires connected to terminals #6 and #7.



# OVERLOAD SYSTEM / ANTI-2-BLOCK

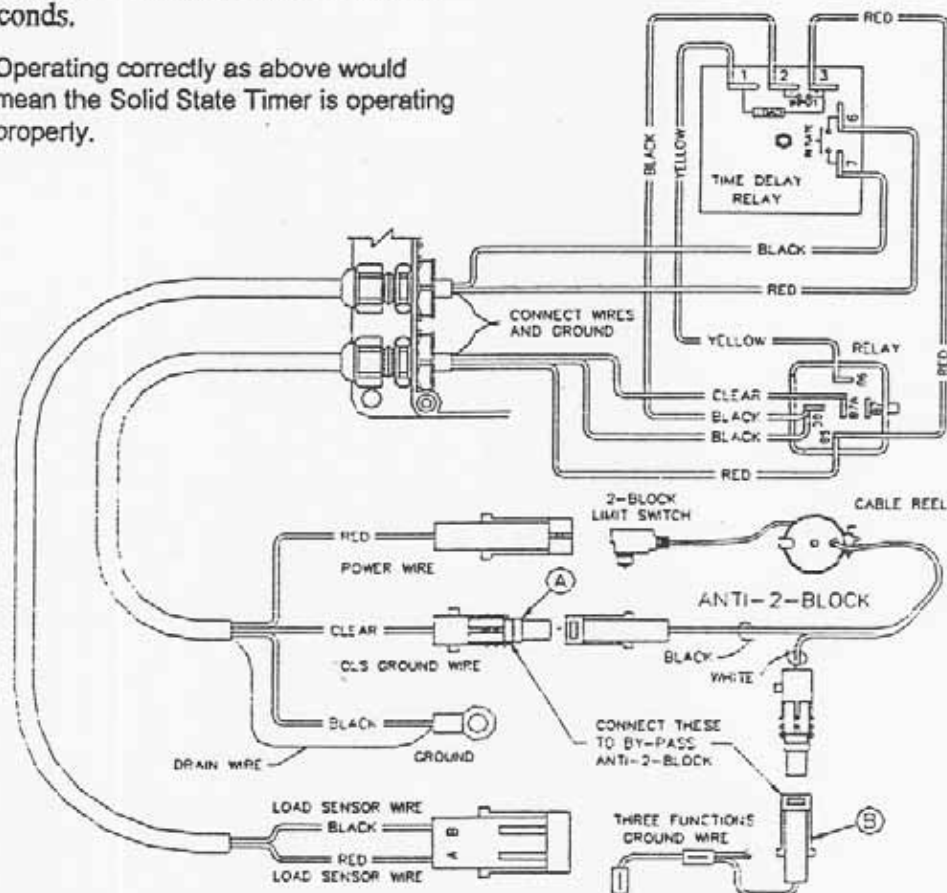
## TROUBLE SHOOTING GUIDE

1. Short between the terminals #6 and #7 with a screwdriver blade. The relay should "click" after approximately 2 seconds. When the blade is removed, the relay should reset in approximately 2 seconds.

- ii. If the SS Timer does not operate as above replace the SS Timer.

### 5 BE SURE TO RE-CONNECT ALL WIRES BEFORE FINAL TESTING!

- i. Operating correctly as above would mean the Solid State Timer is operating properly.



OVERLOAD SYSTEM, ANTI-2-BLOCK  
TROUBLE SHOOTING GUIDE

Figure 1

**OPERATING PRINCIPAL:** The three functions have their ground wires passing through the normally closed contacts on the relay. The ground of the relay coil is connected to the #1 terminal on the Solid State Relay. By connecting terminal #6 and terminal #7 the timing is initiated and the SS Timer "times out" (1 3/4 seconds) and connects terminal #1 to terminal #2. Terminal #2 is grounded, which grounds the relay coil and opens the normally closed contacts. This breaks the ground side of the circuit for the three valve functions. The SS Timer takes 1 3/4 seconds to reset after the initiation circuit is opened.







# AW-366986, RELAY BOX ASSEMBLY

ITEM	QTY.	PART NO.	DESCRIPTION
1	1	366985	ENCLOSURE, PLASTIC
2	2	366968	CONNECTOR, CORD
3	5'	366967	CORD, 3-WIRE 18 AWG WITH DRAIN
4	5'	366966	CORD, 2-WIRE 22 AWG WITH DRAIN
5	1	320351	RELAY, SOLID STATE TIMING
6	1	320355	RELAY, DROP OUT
7	1	005901	SCREW, HX HD 1/4-20NC X 1/2 LG.
8	1	020200	WASHER, SP LK 1/4
9	1	015900	NUT, HX 1/4-20NC
10	1	000602	SCREW, ROUND HD #6-32NC X 1 LG.
11	2	015400	NUT, HX #6-32NC
12	7	000405	TERMINAL FLAG
13	1	366978	CONDUCTOR ASSEMBLY (YELLOW)
14	4"	800566	WIRE, RED 18 AWG 600V
15	4"	800568	WIRE, BLACK 18 AWG 600V
16	1	366248	CONN. ASSY WEATHER PACK 1-WAY MALE 18-20
17	1	366249	CONN. ASSY WEATHER PACK 1-WAY FEMALE 18-20
18	1	366250	CONN. ASSY WEATHER PACK 2-WAY MALE 18-20
19	1	000601	TERMINAL, RING 10-3/8
20	3	750737	TIE, CABLE



# OPTIMETER TROUBLE SHOOTING GUIDE

## STIFF BOOM CRANES

### FOLLOW THE TROUBLE SHOOTING SEQUENCE

- 1 Obtain the proper wiring diagram and check wiring.
- 2 With truck running, check terminal "l" voltage.
  - A. If 12 - 13.75 volts, proceed.
  - B. If not, check for blown fuse or broken wires.
- 3 Install pendant, turn system power on (eight (8) switch pendants only), and check terminal "t" for truck voltage.
  - A. If truck voltage, proceed.
  - B. If no voltage or low voltage (less than truck voltage), make sure the power switch on the eight (8) switch pendant is in the "on" position. (Does not apply to four (4) switch pendant.)
  - C. Then, check for loose connection in the pendant or a broken wire in the pendant cable.
- 4 Disconnect bullet connector on line connecting green wire from amplifier to brown wire from proportional valve din connector. Then ground brown wire to a chassis ground. This will send maximum current thru proportional valve and should close it completely.

OR
- 5 Depress the manual operator pin on top of the valve with an allen wrench till valve closes completely.
- 6 Check for proper crane operation.
  - A. If crane operates properly, proceed.
  - B. If not, check coil resistance from pin to pin (should be 5.0 ohms) and from pin to ground ring on coil (should be infinite resistance). If resistance is much different than above, replace coil, then proceed.
  - C. Re-connect brown and green wire.
- 7 Check terminal "m" for 0.5 volts w/trigger released
  - A. Solid truck voltage at terminal "m" means a loss of ground. Search the ground wire for bad connections or breaks and repair.
  - B. If more than 0.7 volts or less than 0.2 volts w/trigger released, readjust trigger on pot shaft. (Note: care must be taken when handling the pot assembly to keep from breaking the wires at their attachment points.)
  - C. If voltage is correct w/trigger released, smoothly activate trigger looking for a smooth, gradual increase of voltage to near 5.0 volts at maximum pulled position (3.5 to 7 volts is OK).
  - D. If voltage is erratic and jumps up to truck voltage and back down during the trigger movement, replace potentiometer assembly.



# OPTIMETER TROUBLE SHOOTING GUIDE

## STIFF BOOM CRANES

- 8 Pull trigger and check for red light inside amplifier then perform the following adjustments with the trigger pulled to the maximum position:

A. Light off

- Turn small trim pot screw ccw (left) till light just gets bright, then stop. (if 10 turns do not turn light on, look for more than 9 volts at term "m")

B. Light on

- Turn small trim pot screw cw (right) till light just turns off, then turn ccw (left) till light just gets bright, then stop. (If 10 turns do not turn light off, look for less than 1 volt at term "m" )

- 9 Release trigger.

- 10 Set two adjustment switches ( hi & lo ) to number "4". (One side of the switch knob has an indicator)

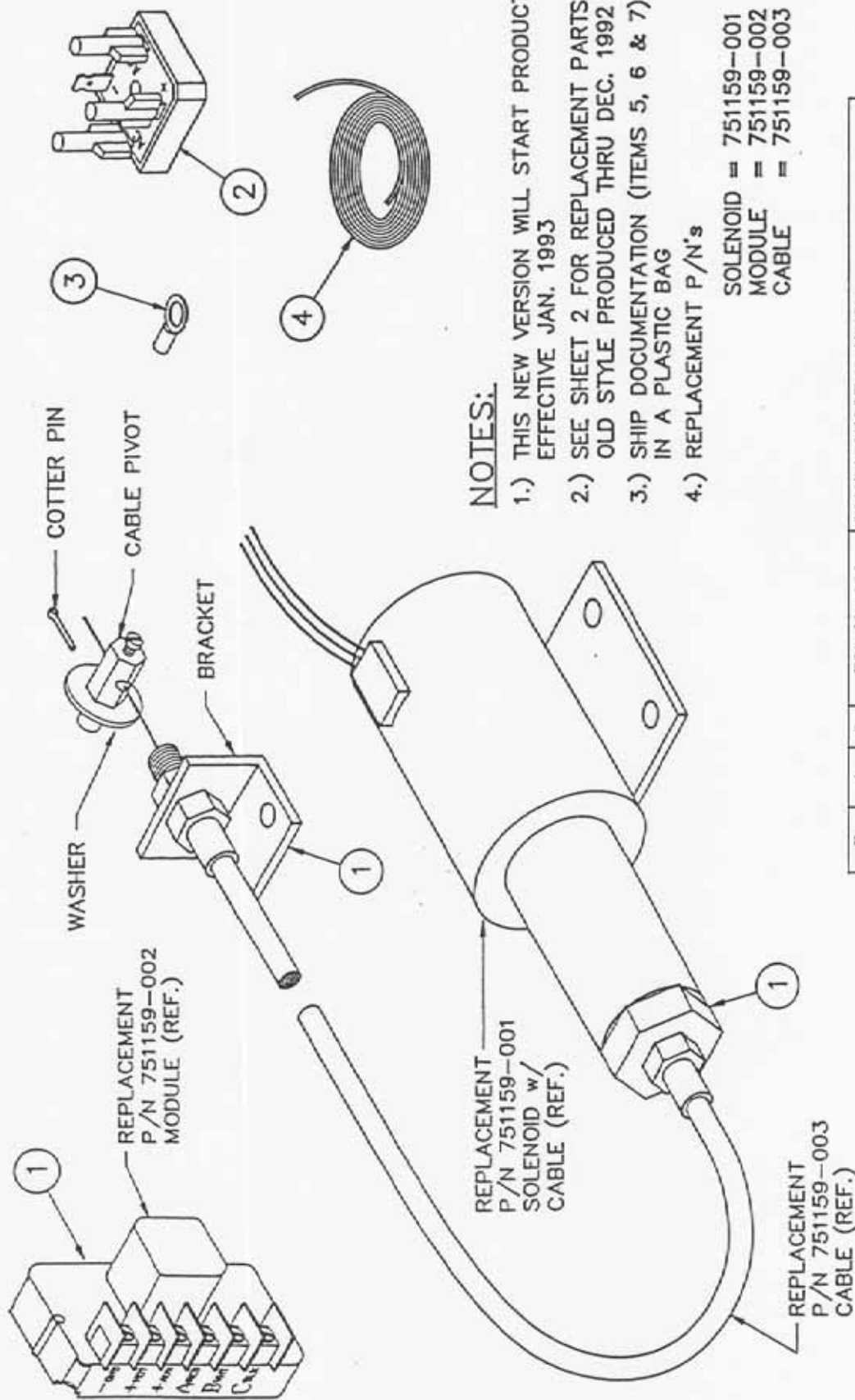
- 11 The *LO* switch takes the "dead space" out of the beginning trigger activation, and will continue to raise the low signal to give half flow with the trigger at full released position. The higher the number or letter (0 thru f), the higher the flow to the crane with the trigger in the fully released position.

- 12 The *HI* switch takes the "dead space" out of the full trigger position, and will continue to lower the high signal to half the flow at the maximum trigger pulled position. The higher the number or letter (0 thru f), the lower the flow to the crane with the trigger in the fully pulled position.

- 13 A good starting position would be to have both switches on the number "4".

**NOTE:** Both switches on "F" will limit flow to a median value and not allow any change.





# **NOTES:**

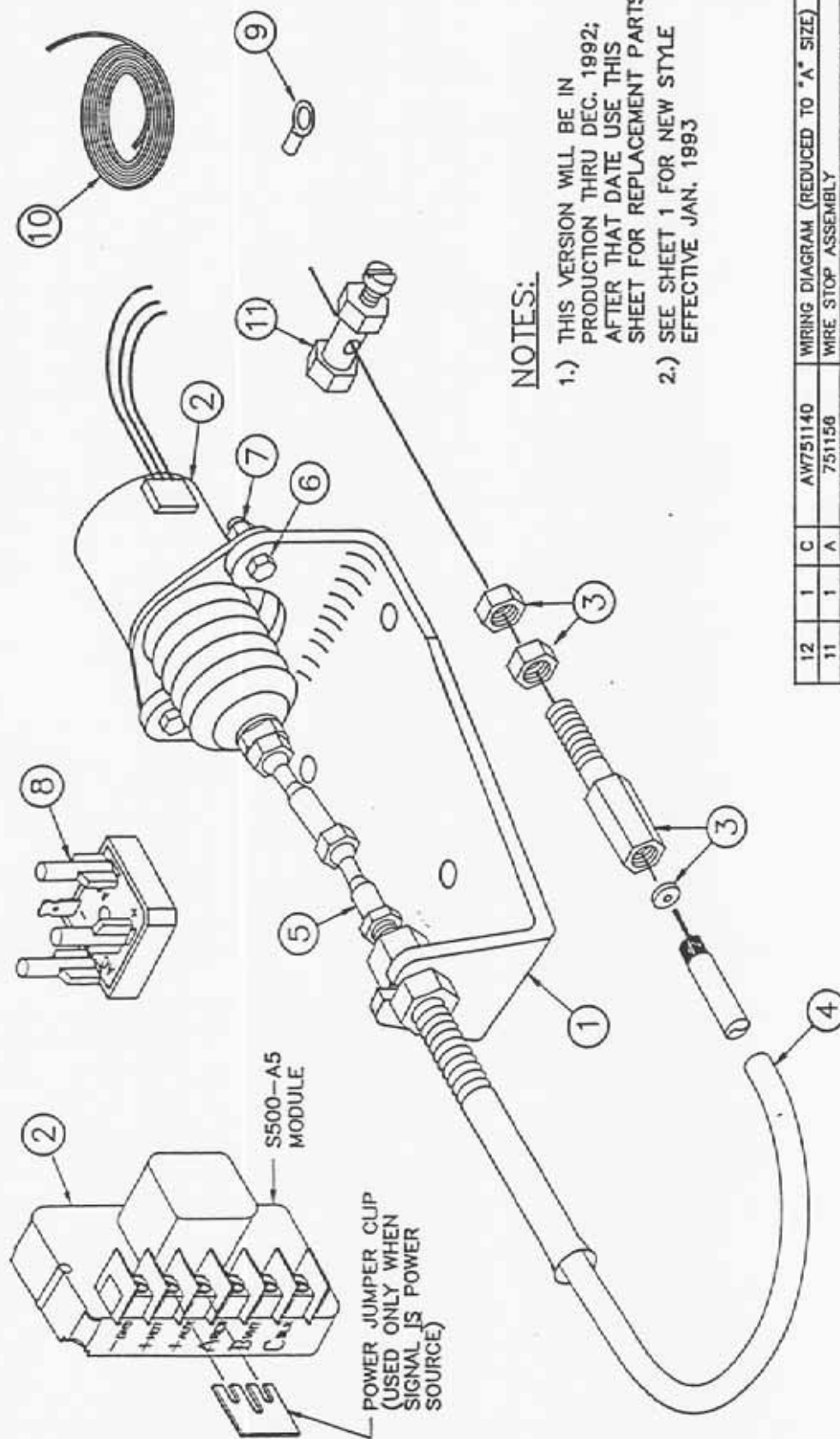
- 1.) THIS NEW VERSION WILL START PRODUCTION EFFECTIVE JAN. 1993
- 2.) SEE SHEET 2 FOR REPLACEMENT PARTS OF OLD STYLE PRODUCED THRU DEC. 1992
- 3.) SHIP DOCUMENTATION (ITEMS 5, 6 & 7) IN A PLASTIC BAG
- 4.) REPLACEMENT P/N's

SOLENOID = 751159-001  
 MODULE = 751159-002  
 CABLE = 751159-003

TROUBLESHOOTING HINTS			
7	1	D	751140-999
6	1	D	751140-999
5	1	D	751140-999
4	15'	A	800603-009
3	8	A	000101
2	1	A	751143-001
1	1	B	751159
ITEM	QTY	D/S	PART No.
DESCRIPTION			
INSTALLATION INSTRUCTIONS (2 PAGES)			
WIRING DIAGRAM (AW751140)			
WIRE, 16 GA WHT w/ BLK TRACER x 15' LG			
TERMINAL, RING #6			
ISOLATOR MODULE ASSEMBLY			
12 VDC SOLENOID w/ CONTROL MODULE			

## AW-180 THROTTLE SOLENOID ASSY





# **NOTES:**

- 1.) THIS VERSION WILL BE IN PRODUCTION THRU DEC. 1992; AFTER THAT DATE USE THIS SHEET FOR REPLACEMENT PARTS
- 2.) SEE SHEET 1 FOR NEW STYLE EFFECTIVE JAN. 1993

ITEM	QTY	D/S	PART No.	DESCRIPTION
12	1	C	AW751140	WIRING DIAGRAM (REDUCED TO "A" SIZE)
11	1	A	751156	WIRE STOP ASSEMBLY
10	15'	A	800603-009	WIRE, 16ga WHITE w/ BLACK TRACER
9	8	A	000101	TERMINAL WIRE #6
8	1	A	751143-001	ISOLATOR MODULE ASSY
7	2	A	016300	NUT, HX-LOCK 1/4-20NC
6	2	A	005500	SCREW, HX HD 1/4-20NC x 3/4 LG
5	2	A	751137	BALL JOINT, STRAIGHT
4	1	A	751148	THROTTLE CABLE
3	1	A	751149	BULKHEAD FITTING
2	1	B	751141	12 VDC SOLENOID w/ CONTROL MODULE
1	1	C	751146	BRACKET, THROTTLE SOLENOID
1				DESCRIPTION

**AW-180  
THROTTLE SOLENOID ASSY**



# THROTTLE CONTROL SOLENOID INSTALLATION

## LOCATION

Follow these simple rules to properly locate your throttle control kit:

- 1 Mount the solenoid off the engine but within 46 inches of the throttle lever, to avoid engine vibration and high temperature components (more than 257 °F [125 °C]).
- 2 Mount control module out of the engine compartment if possible. If not possible, mount the module as far away from high temperature components as possible. Maximum temperature range is 185 °F (85 °C).
- 3 Route the flexible cable away from high temperature (220° F [105° C]) components such as exhaust manifolds.
- 4 Avoid sharp bends in flexible cable. Bends should form a smooth arc (360° maximum) with a radius of 5 inches minimum.

## CONTROLLING THE SOLENOID THROTTLE KIT

The throttle kit can be controlled remotely by applying a low current 12 VDC signal to the module "AUX" terminal.

Examples of activating signals are an air compressor pressure switch or a crane "dump valve" coil.

## MOUNTING PROCEDURES

Use the following procedure to mount your throttle controller:

- 1 Mount the solenoid and control module according to the recommendations in the "LOCATION" instructions.
- 2 Electrically connect the solenoid to the control module and power source according to the wiring diagram.
- 3 Mount the cable bracket and fasten the cable sheath to the bracket using the collar nut so the sheath does not turn during idle adjustment.

## SET HIGH ENGINE IDLE SPEED NOTE:

Do not leave the aluminum adjustment nut tight against the solenoid body since this does not allow the cable to float.

- 1 Make sure the jam nut is loose and turn the aluminum adjustment nut clockwise until the high engine idle speed is reached.
- 2 Tighten the jam nut.
- 3 Check the throttle speed controller operation by rechecking the "normal" engine idle speed with the solenoid de-activated and the high engine idle speed with the solenoid activated.

## SYSTEM OPERATION

The control module allows the solenoid to operate as a continuous duty device. When the module is wired as recommended, applying 12 VDC to the "AUX" terminal applies voltage to the hold-in and pull-in coil of the solenoid. After 0.5 to 0.75 seconds, power is automatically removed from the pull-in coil. Power will remain at the hold-in coil



# THROTTLE CONTROL SOLENOID INSTALLATION

until the 12 VDC signal is removed from the "AUX" terminal.

**WARNING !!** To avoid control module damage, always disconnect the module when you jump-start the vehicle with voltages that exceed 32 VDC.

## TROUBLESHOOTING HINTS

If solenoid will not engage, check the following:

- 1 Check the stranded pull cable for damage (e.g., melted or crimped sheath)
- 2 Check the stranded pull cable for binding.
- 3 Check system voltage at the "+HOT" and "+AUX" terminals.
- 4 Check module terminals for proper voltage and operation. If the module does not meet the specifications shown below, replace it.

GND	Chassis Ground
+HOT	12 VDC at all times
+AUX	12 VDC required to activate solenoid
A RED	12 VDC when signal is present at "AUX" terminal
B WHT	12 VDC for 0.5 to 0.75 seconds after signal at "AUX" terminal is present
C BLK	Common for solenoid

CONTROL MODULE VOLTAGE MEASUREMENTS

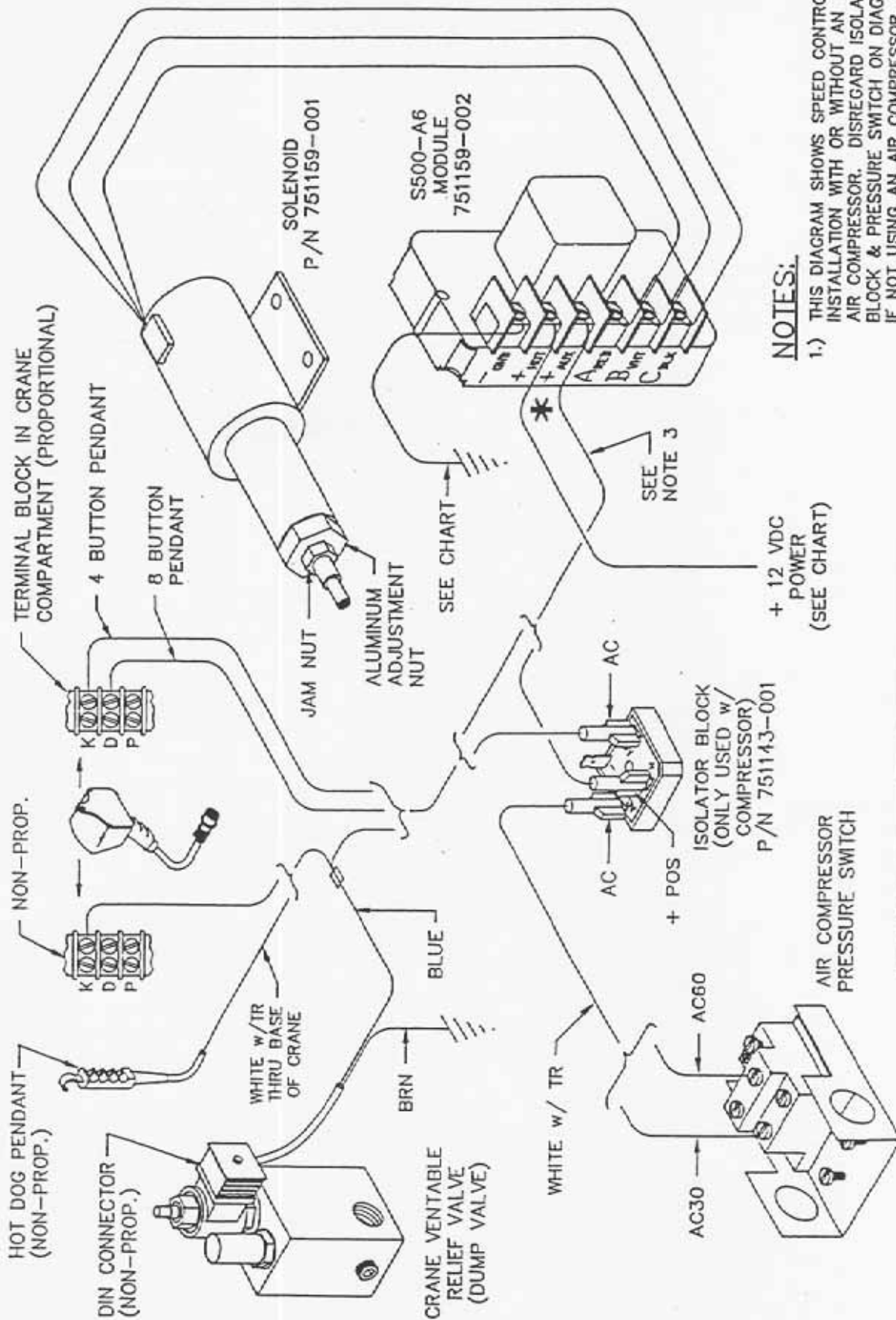
- 5 Check solenoid resistance (remove wires from module). If resistance is not within specifications listed below, replace the solenoid.

A. White to Black wire - 0.17 ohms

B. Red to Black wire - 13 ohms

- 6 Make sure you have used the recommended wire length and gage (refer to the chart on AW751140)
- 7 Be sure cable is not bent beyond guidelines.
- 8 Check for proper adjustments.
- 9 Contact Auto Crane Company if you are unable to resolve the problem.





### NOTES:

- 1.) THIS DIAGRAM SHOWS SPEED CONTROL INSTALLATION WITH OR WITHOUT AN AIR COMPRESSOR. DISREGARD ISOLATOR BLOCK & PRESSURE SWITCH ON DIAGRAM IF NOT USING AN AIR COMPRESSOR.
- 2.) REMOVE METAL JUMPER CLIP FROM CONTROL MODULE IF SO EQUIPPED (S500-A5)
- 3.) THE WIRE SIZE AND LENGTH TO "AUX" TERMINAL OF THE CONTROL MODULE IS NOT CRITICAL BECAUSE OF LOW CURRENT; 18-18 GAGE WIRE MAY BE USED.

### MAXIMUM TOTAL WIRE LENGTH (ft)

Total of "-GND" and "+HOT" wire length plus "B WHT" and "C BLK" wire length.

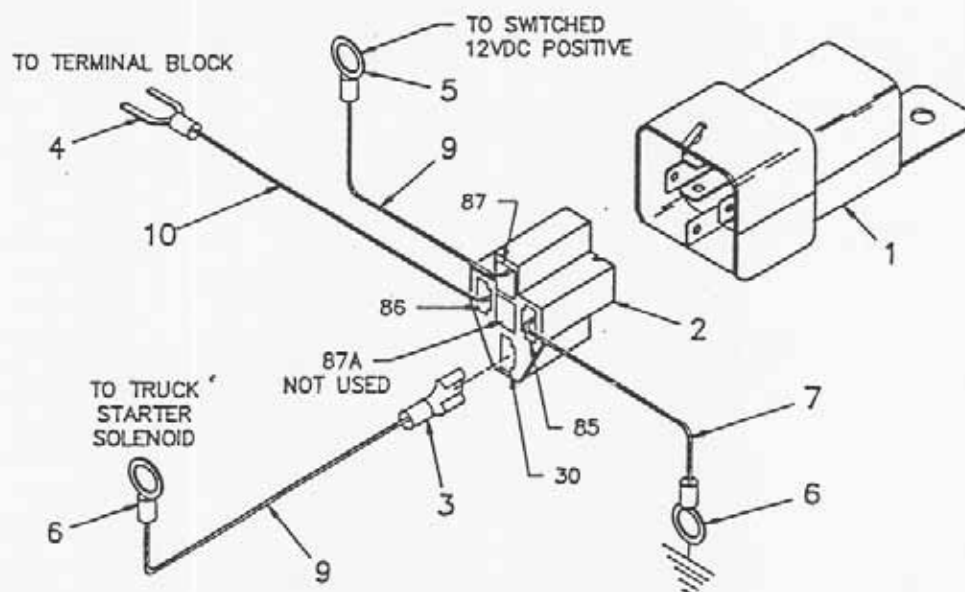
12VDC	12 Ga	10 Ga	8 Ga	6 Ga
	10 ft	16 ft	25 ft	40 ft

## AW751140 SPEED CONTROL KIT

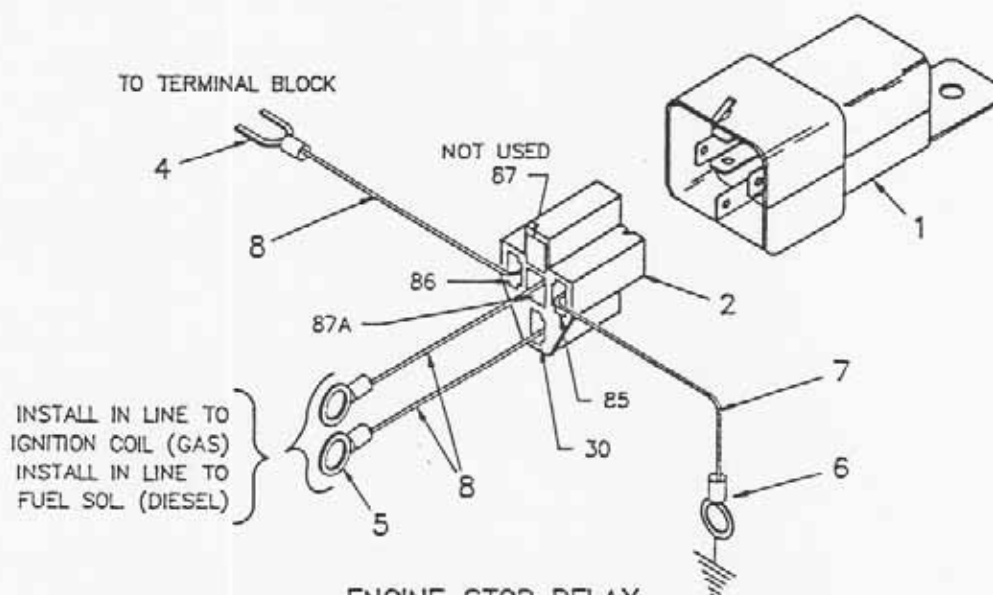


# NOTES





ENGINE START RELAY

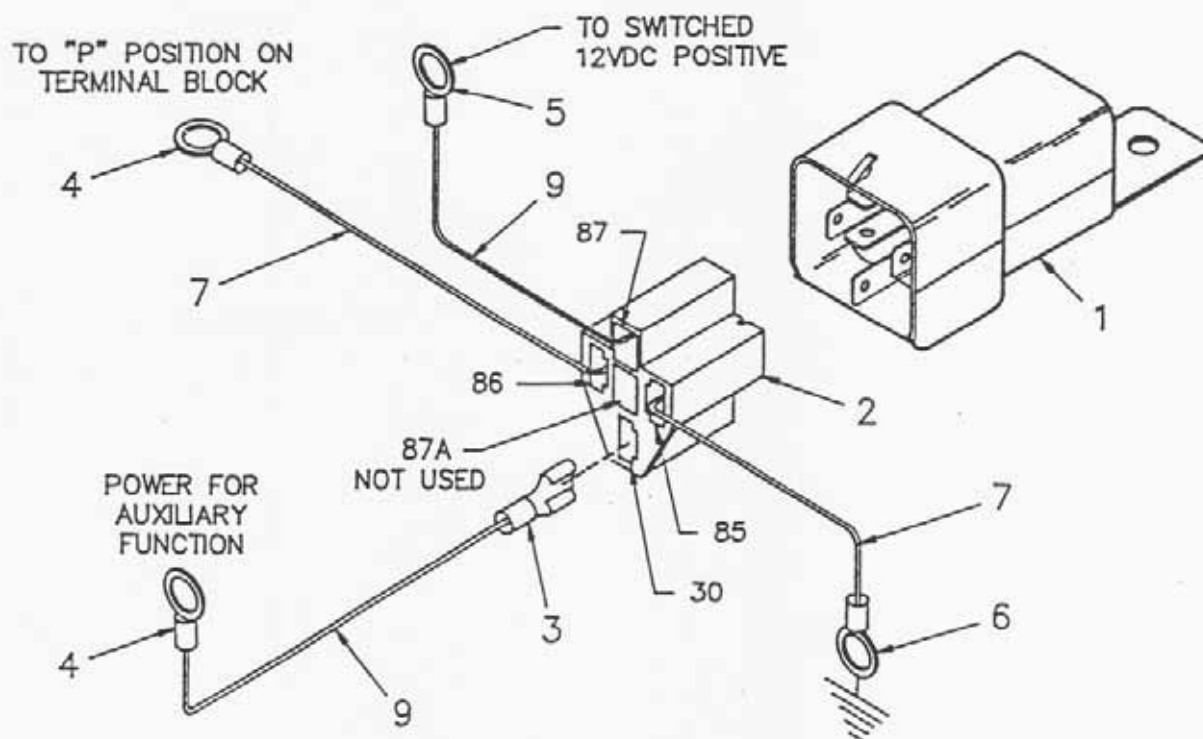


ENGINE STOP RELAY

ITEM	QTY	P/N	DESCRIPTION	ITEM	QTY	P/N	DESCRIPTION
1	2	320355	RELAY, 12V	6	3	000501	TERMINAL, RING 5/16
2	2	320363	PLUG, RELAY	7	6'	800595	WIRE, 16GA, GREEN
3	10	320357	CONN., FEM SPD LOCK	8	49'	800590	WIRE, 16GA, BLACK
4	2	480495	TERMINAL, FLG'D SPADE	9	17'	800593	WIRE, 16GA, RED
5	3	000402	TERMINAL, RING 1/4	10	35'	800594	WIRE, 16GA, BLUE

AW-480533  
RELAY KIT  
ENGINE START/STOP





### AUXILIARY RELAY

<u>ITEM</u>	<u>QTY</u>	<u>P/N</u>	<u>DESCRIPTION</u>	<u>ITEM</u>	<u>QTY</u>	<u>P/N</u>	<u>DESCRIPTION</u>
1	1	320355	RELAY, 12V	6	1	000501	TERMINAL, RING 5/16
2	1	320363	PLUG, RELAY	7	38'	800595	WIRE, 16GA, GREEN
3	5	320357	CONN., FEM SPD LOCK	8	10'	800593	WIRE, 16GA, RED
4	2	000101	TERMINAL, RING #6	9	25'	800592	WIRE, 16GA, WHITE
5	1	000402	TERMINAL, RING 1/4				

AW-480534  
RELAY KIT  
AUXILIARY



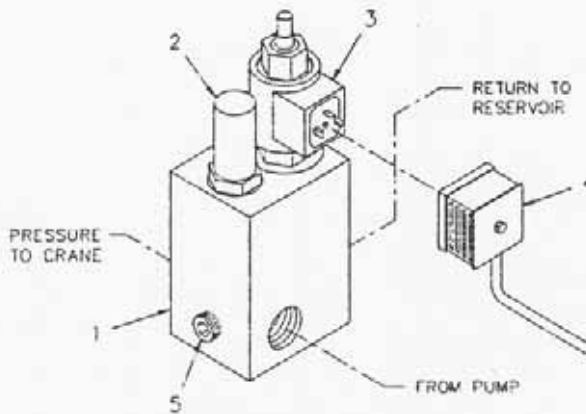
# HYDRAULICS - 6006H

Issue Date:

November, 1994

## Vented Relief Valve Setting

- ♦ The crane must receive 8 to 9 Gallons Per Minute (GPM) and 2200 psi. To assure proper flow, install an in-line flow meter between the crane and the reservoir in the return hose, or confirm correct pump speed (or engine speed w/ PTO ratio multiplied). Proper pressure setting for units without proportional control can be achieved by, with PTO disengaged, removing the plug, item 5,



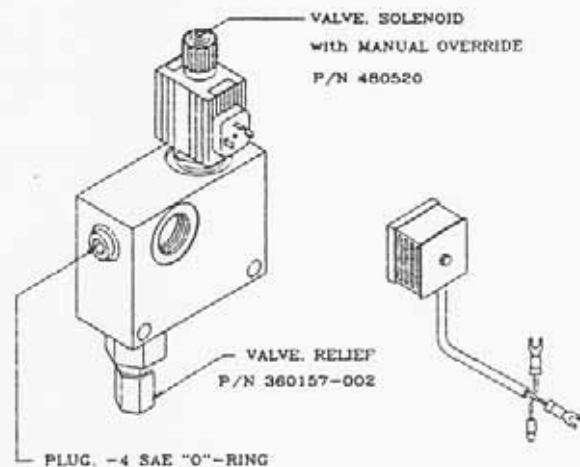
NON-PROPORTIONAL "DUMP VALVE"

and installing a 2500 psi gauge. Test the pressure by fully retracting the cylinder and holding Boom-In function while reading the gauge.

- ♦ The boom can now be retracted fully and the switch held in retract position until full pressure is reached and the pressure gauge is checked. If the gauge is not 2200 PSI, adjust the vented relief valve (item 2). Verify this setting by operating the retract switch a few times and checking the pressure setting.
- ♦ Disengage PTO. Remove gauge and re-install the pipe plug. Crane is now ready for use.

## Proportional Relief Valve Setting

- ♦ The crane must receive 8 to 9 Gallons Per Minute (GPM) and 2200 PSI. To assure proper flow, install an in-line flow meter between the crane and the reservoir in the return hose, or confirm correct pump speed (or engine speed w/PTO rotation multiplier).



HYDRAULIC MANIFOLD ASSEMBLY PROPORTIONAL

- ♦ Proper pressure setting for the proportional control relief valve can be achieved by removing the -4 SAE plug (with PTO disengaged), and installing a 2500 PSI gauge. Test the pressure by pulling the trigger all the way back towards the handle and operating the boom down switch while reading the gauge. Double check the setting by operating the manual override located on the top of the proportional valve (using an Allen wrench or something similar to press the steel button) and simultaneously operate the boom retract function. If the reading is higher, check the proportional system troubleshooting section



# HYDRAULICS - 6006H

Issue Date:

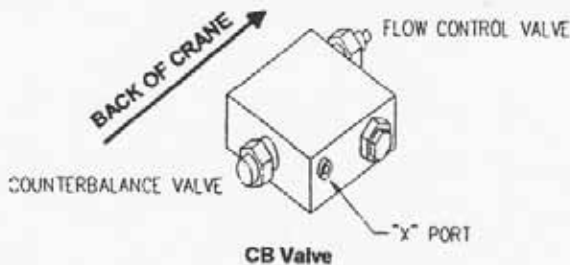
November, 1994

of this manual to find out why the valve was not fully closing.

- ♦ If it is the same, with PTO disengaged, remove the gauge and re-install the plug. The crane is now ready for use.

## Counterbalance Valve Adjustment

- ♦ With PTO disengaged, remove O-ring plug marked "X" port (see CB valve diagram). Install a pressure gauge (0-2500 psi) into the port.
- ♦ Engage PTO and insure pump flow is 8 to 9 GPM and main relief is set to 2200 psi. With no load on boom, boom up to an angle of 50 degrees.
- ♦ Loosen the 5mm lock nut on the flow control valve (see CB valve diagram). With a 4mm Allen wrench, turn the adjusting screw counterclockwise (ccw) four (4) full turns to open the valve.



- ♦ Boom up to 70 degrees and then boom down while observing pressure. If the pressure is not  $1200 \pm 50$  psi then the counterbalance valve requires adjustment as follows:
  - To increase setting, loosen the 17mm locknut and, with a 5mm Allen

wrench, turn the adjusting screw clockwise (cw).

- To decrease setting, loosen the 17mm locknut, and with a 5mm Allen wrench, turn the adjusting screw counterclockwise (ccw).
- Tighten the lock nut on the counterbalance valve and recheck the pressure setting.
- ♦ Turn the flow control valve adjusting screw clockwise (cw) four (4) turns to return it to the original position. Then adjust the flow control valve to increase the pressure gage reading to  $1300 \pm 50$  psi.
  - The boom down speed can be reduced by continuing to close the flow control valve and increasing the pressure.
  - A slight bounce on boom down will be seen when the flow control is open too far and the pressure is lower than the above recommended setting.
  - Tighten the lock nut on the flow control valve and recheck the pressure setting.
- ♦ Disengage the PTO and remove the gage from the "X" port. Replace the O-ring plug. The crane is now ready for operation.

## WARNING:

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



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# HYDRAULIC TROUBLESHOOTING 6006H

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Issue Date:

October, 1994

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**CAUTION:** Never check for hydraulic leaks by feeling around hoses, fittings, or any other components. High pressure oil can be injected through the skin causing severe injury, or death.

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The hydraulic system of the 6006H power version is electrically operated and requires a minimum of 12V for satisfactory performance. The hydraulic pump is bi-rotational with a pressure relief setting of 2200 psi. Standard pump speed is 1000 RPM (Ref. Pump P/N 480018). This pump is for direct flange mounting only. It is not to be shaft driven unless an out-board bearing is installed, Auto Crane Kit P/N 480006.

## PROBLEM

## SOLUTION

---

### FLOW PRESENT BUT FUNCTION WILL NOT WORK

Remove valve cover to gain access to the manual override on the end of the valve cartridge. If the pump is operating, operate the relief valve manual override or the proportional valve override and push and twist (CCW) the directional control valve manual override to unlock, then pull to operate the function. If the function does operate, check for loose wire, low voltage or bad ground. If the problem is traced to no voltage at the valve cartridge, remove pendant and with the switch engaged, check for an open circuit with an ohmmeter. If the circuit is open, check for broken wiring or bad switch. If the function 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 loose wire, low voltage at valve cartridge, low pump pressure, or air in the system.

---

### NO FLOW OR LIMITED FLOW TO CRANE

Check for adequate oil supply in reservoir. Check operation of bypass system by pressing manual override on solenoid valve operator on vented relief valve or proportional valve while operating crane. If crane functions, check for 12V at vented relief valve solenoid when operating a function, or follow proportional trouble shooting procedure for the proportional valve. 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:

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
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# HYDRAULIC TROUBLESHOOTING 6006H

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Issue Date:

October, 1994

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## PROBLEM

## SOLUTION

---

### 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. Check to ensure that pressure limit switch is correctly set.

---

### 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 6006H 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.



## WIRE LINE LUBRICATION

Lubrication of the wire line serves two important purposes: (1) helps to prevent corrosion; (2) lubricates the cable strands to reduce wear due to flexing and abrasion caused by contact with the sheaves, rollers and cable on the drum.

### PREPARATION:

Remove rust and foreign matter with a wire brush and wipe clean. Be sure cable is dry.

### APPLICATION:

Two methods are illustrated in figures 1 and 2. A light weight motor oil may be used, as in figure 1; or a heavier lubricant such as grease gun lubricant, as in figure 2.

Illustrated in figure 1 is one easy and effective method of applying lubrication. Dip the brush into the lubricant and apply. In some cases a rag or piece of sheepskin is dipped in the lubricant and used to swab the lubricant on to the rope.

Another simple method is shown in figure 2. Leather gloves are preferred to canvas because of greater protection and less penetration of the grease.



Fig. 1

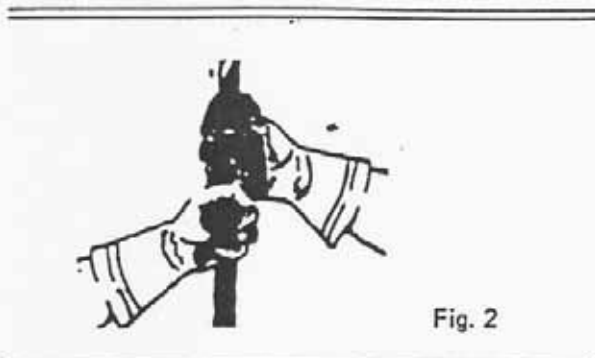


Fig. 2

## "LIFE OF WIRE LINE"

So many variable factors can cause the deterioration of wire line cable that it is not possible to determine a definite life expectancy.

Some of these factors are:

1. Load being handled.
2. Corrosive conditions.
3. Maintenance of the unit.
  - a. Keep the sheaves turning freely.
  - b. Maintain tension on cable to insure proper spooling.
  - c. Lubricate line. (See above)
  - d. Avoid kinks in cable.
  - e. Avoid abrasive action and contact with sharp corners.
4. Frequency of use.

Auto Crane units, with 6000 pound ratings, use 3/8 inch diameter galvanized preformed 7 x 19 aircraft cable which, when new, has minimum strength of 14,400 pounds. It is recommended when 4,000 pound loads are exceeded to use a two-part line with a traveling block. It can be seen that there is a safety factor of 3.6 to 1 when the cable is new.

Keeping the above factor of safety in mind and knowing the kind of loads that will be handled, the user can determine by inspection of the cable as to when it should be replaced.

Items to look for while inspecting the cables are:

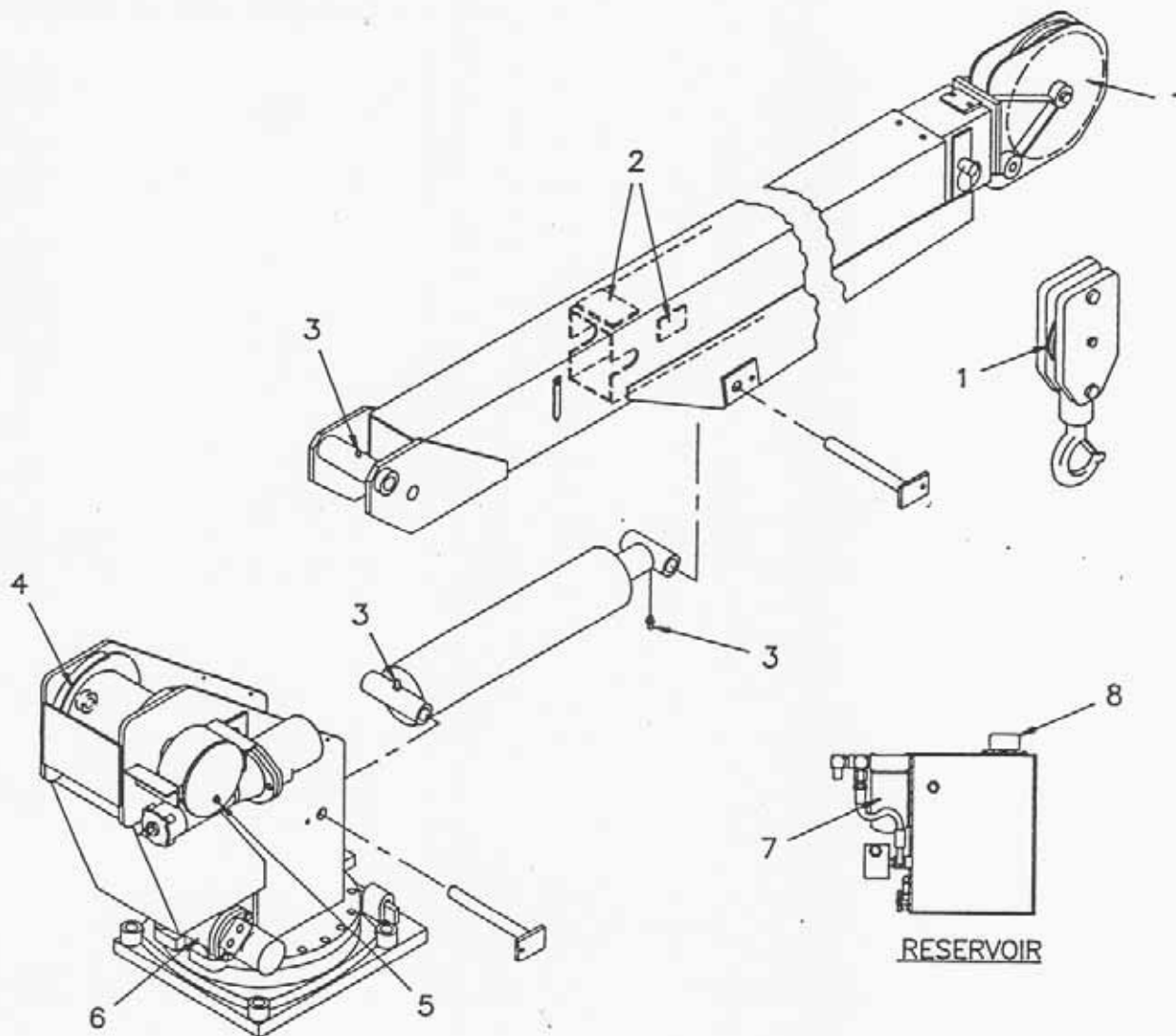
1. Broken strands.
2. Kinks and flattened sections.
3. Corrosion and abrasion.



# LUBRICATION & MAINTENANCE SCHEDULE 6006H CRANE

SERVICE PERFORMED	DAILY	WEEKLY	3 MONTHS	6 MONTHS	1 YEAR	NOTES
LOAD HOOK	X					INSPECT HOOK & LATCH FOR DEFORMATION, CRACKS, & CORROSION
CABLE DRUM	X					MAKE SURE CABLE IS WOUND EVENLY ON DRUM
HOIST CABLE	X					CHECK FOR FLATTENING, KINKS, & BROKEN STRANDS, SEE MANUAL
HYDRAULIC HOSES	X					VISUAL INSPECTION
HYDRAULIC FLUID	X					CHECK FLUID LEVEL
MOUNTING BOLTS		X				CHECK-TORQUE TO 440 FT-LBS (DRY) AS REQUIRED
ROTATION RING GEAR		X				LUBE WITH MOBILTAC LL, OR LUBRIPLATE P/N 15263, OR EQUIV.
SHEAVE BEARINGS		X				SEALED BEARING, REPLACE IF ROUGH OR LOOSE
ALL OTHER BOLTS		X				CHECK-TIGHTEN AS REQUIRED
BOOM PIVOTS		X				GREASE WITH MOBILPLEX EP-2 OR EQUIV @ ZERKS
BOOM CYLINDER		X				CHECK AROUND CYLINDER ROD FOR EXCESS FLUID LEAKAGE
BOOM CYLINDER PINS		X				GREASE WITH MOBILPLEX EP-2 OR EQUIV @ ZERKS
EXTENSION DETENT PIN		X				LUBE DETENT SPRING & BALL W/ WD-40
RETURN LINE FILTER			X			REPLACE ELEMENT
HI-PRES. FILTER			X			CLEAN AFTER FIRST WEEK, THEN EVERY 3 MONTHS (OPT EQUIP)
ROTATION BEARING			X			GREASE WITH MOBILPLEX EP-2 OR EQUIV @ ZERKS
ROTATION BRNG BOLTS			X			CHECK-TORQUE TO 150 FT-LBS AS REQUIRED
ROTATION GEAR BOX			X			CHECK-TORQUE TO 85 FT-LBS AS REQUIRED
ROTATION GEAR BOX				X		EP GEAR LUBE SAE 140
HOIST GEARBOX				X		WORM GEAR-EP GEAR LUBE SAE 80-90
HYDRAULIC FLUID					X	DRAIN, FLUSH, & REFILL WITH MOBIL DTE 13, OR EQUIV.
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	





1. SHEAVE ROLLER BEARINGS:  
SEALED TYPE, NO LUBE REQUIRED.

2. BOOM PADS:  
IF REPLACED, GREASE UPON INSTALLATION WITH  
CHASSIS LUBRICANT.

3. PIVOT POINT GREASE ZERKS:  
LUBE ONCE A WEEK WITH MOBILPLEX EP-2  
OR EQUIVALENT.

4. HOIST ROLLER BEARINGS:  
SEALED TYPE, NO LUBE REQUIRED.

5. HOIST ACTUATOR:  
MAINTAIN GEAR BOX LUBRICANT AT FILL PLUG.  
USE ONE PINT OF EP GEAR LUBE SAE 80-90.  
REPLACE EVERY SIX MONTHS.

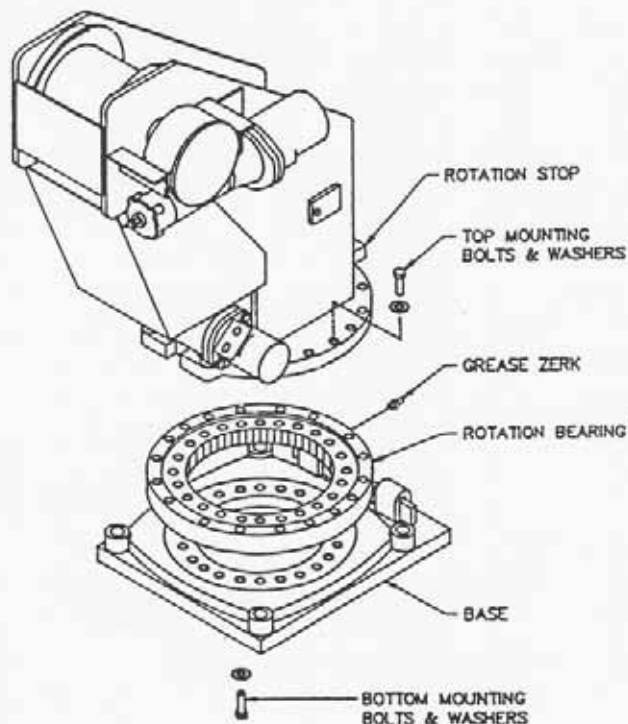
6. ROTATION ACTUATOR:  
MAINTAIN OIL LEVEL OF 1 1/2 PINTS OF  
EP GEAR LUBE, SAE 140.  
REPLACE EVERY SIX MONTHS.

7. RESERVOIR FILTER:  
10 MICRON SPIN ON FILTER REQUIRED. REPLACE  
EVERY THREE MONTHS. SEE RESERVOIR ASSEMBLY  
FOR PART NUMBER.

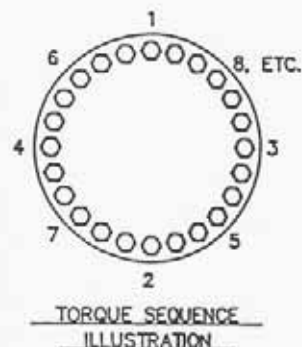
8. HYDRAULIC FLUID:  
USE DTE-13 OR EQUIVALENT. KEEP LEVEL AT  
SIGHT GAUGE. RESERVOIR SHOULD BE FLUSHED  
AND NEW FLUID ADDED ONCE A YEAR, OR IF  
A HYDRAULIC FAILURE OCCURS.

## AW-074 LUBRICATION MAINTENANCE





LUBRICATION OF ROTATION BEARING



INSTALLATION OF ROTATION BEARING

#### RACE

1. LUBRICATE BEARING RACE AT THE GREASE ZERK LOCATED ON THE OUTSIDE OF THE ROTATION BEARING DIRECTLY UNDER THE ROTATION STOP OF THE PEDESTAL.
2. LISTED IN THE CHART BELOW ARE SEVERAL LUBRICANTS WHICH ARE ACCEPTABLE FOR BOTH RUST INHIBITING AND EXTREME PRESSURE CHARACTERISTICS.
  - A. LUBRICATE THE BEARING DAILY IF THE CRANE IS USED ON A DAILY BASIS.
  - B. LUBRICATE THE BEARING EVERY 30 DAYS IF THE CRANE IS USED INTERMITTENTLY.
  - C. ROTATE THE BEARING THROUGH TWO OR MORE ROTATIONS DURING LUBRICATION PROCCESS.

#### GEAR

1. THE CHART BELOW LISTS SEVERAL LUBRICANTS FOR THE GEAR. IT IS RECOMMENDED THAT THE TEETH BE LUBRICATED WITH A SMALL AMOUNT OF GREASE EVERY 8 HOURS IF THE CRANE IS USED DAILY. THE GREASE IS PURGED FROM THE TEETH BY THE VERY NATURE OF BEING EXPOSED TO THE ELEMENTS. THEREFORE CLOSE ATTENTION TO THE GEAR LUBRICANT WILL PROVIDE A LONGER TOOTH LIFE. GREASE THE GEAR TEETH AT THE PINION LOCATION.

1. MAKE SURE MOUNTING SURFACES ARE FLAT AND CLEAR OF DEBRIS.
2. INSTALL BEARING SUCH THAT THE GREASE ZERK ON THE BEARING IS LOCATED DIRECTLY UNDER THE ROTATION STOP OF THE PEDESTAL.
3. INSTALL TOP AND BOTTOM BOLTS AND FLAT WASHERS. ALL BOLTS MUST BE GRADE 8 AND USED WITH HARDENED FLAT WASHERS. REFER TO PEDESTAL ASSEMBLY FOR PART NUMBERS.
4. SNUG ALL BOLTS , THEN TIGHTEN ACCORDING TO THE TORQUE SEQUENCE ILLUSTRATION UNTIL ALL BOLTS ARE TORQUED TO 150 FT.-LBS (NON-PLATED) OR 110 FT.-LBS (PLATED).

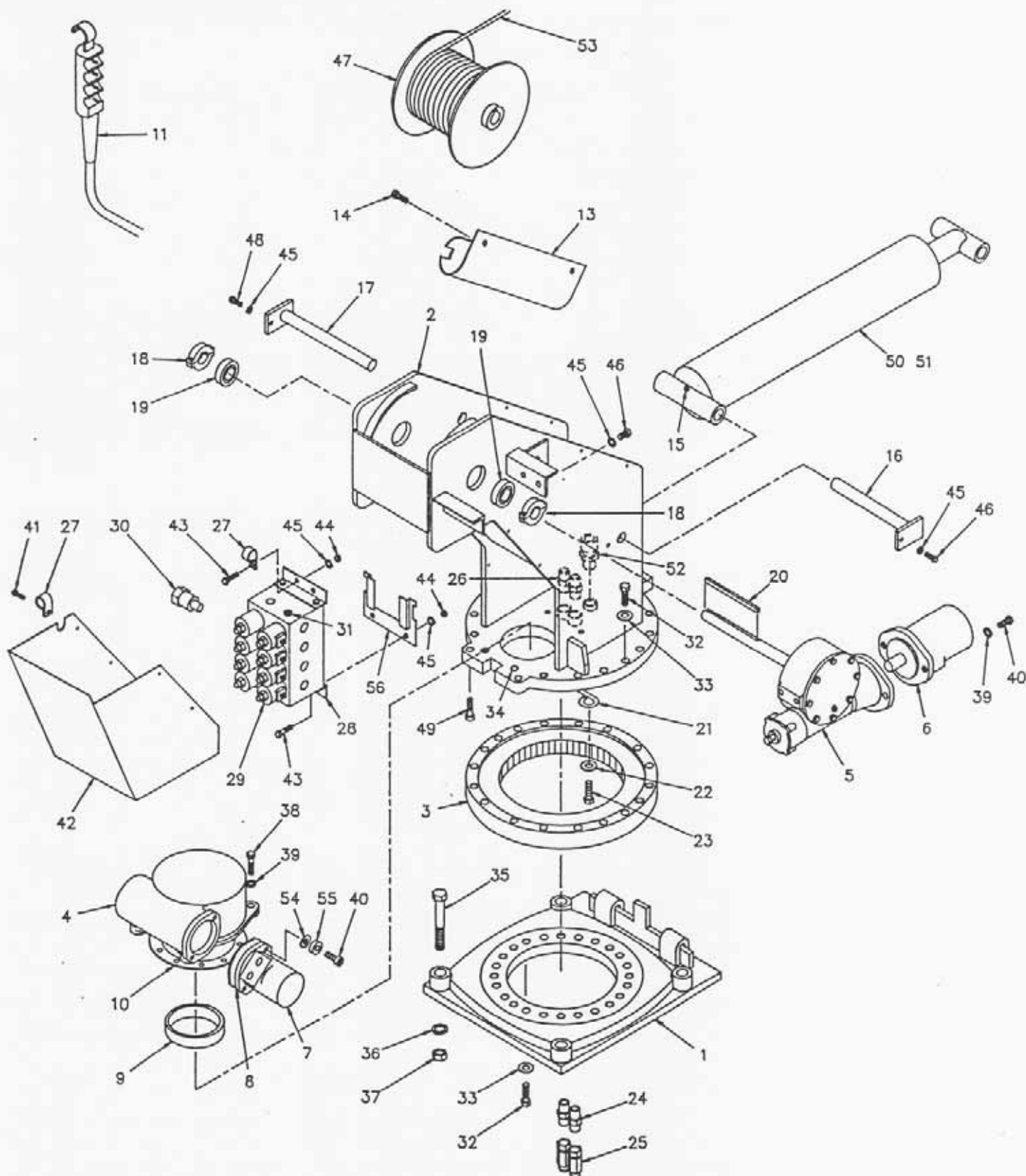
NOTE: BOLTS SHOULD BE CHECKED PERIODICALLY AND RETIGHTENED TO PROPER TORQUE.

5. GREASE THE ROTATION BEARING ACCORDING TO LUBRICATION INSTRUCTIONS AT LEFT.
6. SET BACKLASH OF THE ROTATION ACTUATOR AND THE ROTATION BEARING AT THE HIGH POINT OF THE ROTATION BEARING GEAR TEETH. IDENTIFIED BY A YELLOW PAINT MARK ON THE TEETH.

	MOBIL	TEXACO	SUNOCO	PURE	SOHIO
RACE	MOBILPLEX EP #2	MARFAC MP #2	PRESTIGE 742EP	POCO HT EP #2	SOHITRAN EP #1
GEAR	MOBILCOTE-S	CRATER COMPOUND	407 COMPOUND B	POCO GEARSHIELD	SOHITAC #1

## AW-124 ROTATION BEARING MAINTENANCE





AW-366010  
6006H PEDESTAL ASSEMBLY



**AW-366010**  
**6006H PEDESTAL ASSEMBLY**

ITEM	QTY.	PART NO.	DESCRIPTION
1	1	360536	BASE PLATE ASSEMBLY
2	1	366045	PEDESTAL WELDMENT
3	1	480023-002	ROTATION BEARING
4	1	480028	GEAR BOX, ROTATION
5	1	480075	ACTUATOR, HOIST
6	1	480076	HYD. MOTOR (HOIST)
7	1	480027	HYD. MOTOR (ROTATION)
8	1	480019	GASKET, MOTOR
9	1	360162	ECCENTRIC RING
10	1	480011	SEAL, ROTATION BOX
11	1	480093	PENDANT, 4 FUNCTION
12	-	-	-
13	1	634000	GUARD, PENDANT
14	2	002615	SCREW, 1/4-20NC x 3/8 SELF-TAPPING
15	2	239000	GREASE ZERK
16	1	366191	PIN, PEDESTAL/CYLINDER
17	1	366192	PIN, LOWER BOOM PIVOT
18	2	330468	COLLAR, SPLIT LOCK
19	2	400500	BEARING
20	1	480094	KEY, 3/8 SQ.
21	1	360207	RETAINER, ECCENTRIC RING
22	1	020600	WASHER, SP. LK. 5/16
23	1	007807	SCREW, HEX HD. 5/16 NC X 3/4 GR.5
24	2	750413	REDUCER, -8 NPT/-6 NPTF
25	2	750412	SWIVEL JOINT, -8
26	2	360054	ADAPTER, -8 NPT/-8 JIC
27	2	480024	MOUNT, PENDANT RETAINER
28	1	480182	MANIFOLD, CARTRIDGE
29	8	480184	VALVE, CARTRIDGE
30	1	480183	CARTRIDGE, FLOW REGULATOR
31	1	000109	PLUG, PIPE 3/8
32	38	012198	SCREW, HEX HD. 5/8 NC X 1 3/4 GR.8
33	38	023902	WASHER, FLAT 5/8 (HARDENED)
34	4	006205	SCREW, SOC. HD. 5/8 NC X 1 1/4 GR.8
35	4	015104	SCREW, HEX HD. 7/8 NF X 5" GR.8
36	4	022200	LOCKWASHER, 7/8
37	4	018900	NUT, HEX 7/8 NF
38	2	011608	SCREW, HEX HD. 1/2 NC X 2" GR.5
39	4	021500	WASHER, SP. LK. 1/2
40	4	012197	SCREW, SOC. HD. 1/2 NC X 1 1/2 GR.5
41	6	002608	SCREW, 1/4-20 X 3/4 S.T. TYPE F
42	1	360544	COVER, VALVE
43	4	330394	SCREW, HEX HD. 3/8 NC X 1 1/2
44	4	017100	NUT, HEX 3/8 NC
45	10	021100	WASHER, SP. LK. 3/8
46	5	330370	SCREW, HEX HD. 3/8 NC X 7/8 GR.8
47	1	366180	DRUM, HOIST
48	1	366158	SCREW, HEX HD. 3/8 NC X 3/4 GR.8



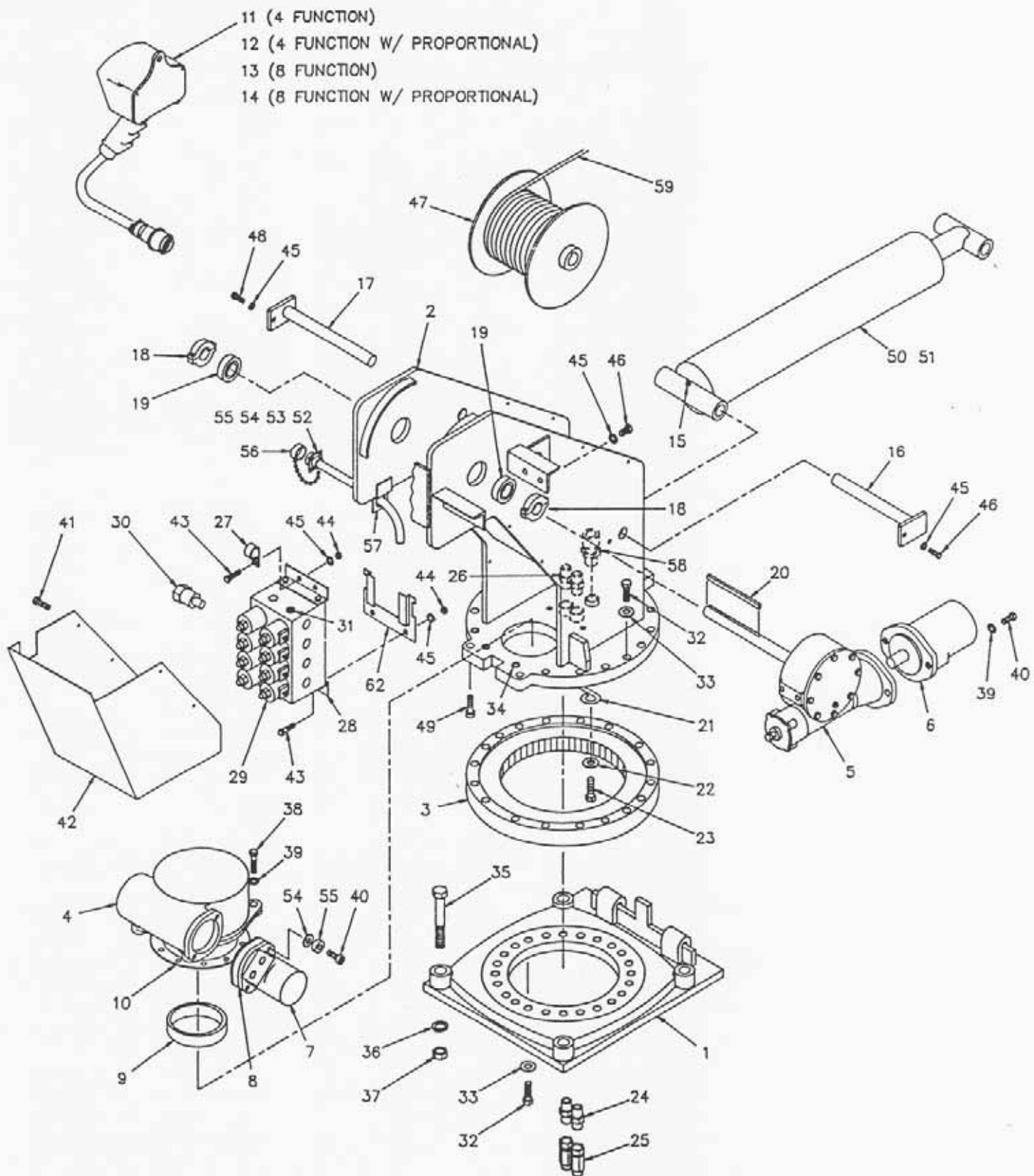
AW-366010  
6006H PEDESTAL ASSEMBLY

ITEM	QTY.	PART NO.	DESCRIPTION
49	2	009118	SCREW, SOC. HD. 1/2 NC X 2" GR.5
50	1	366161	CYLINDER, BOOM UP (COMPLETE)
	1	366161-001	CASE ASSEMBLY
	1	366161-002	SHAFT ASSEMBLY
	1	366161-003	HEAD GLAND
	1	366161-004	PISTON
51	1	366544	SEAL KIT
52	1	370433	CABLE, CONNECTOR
53	1	480031	CABLE, HOIST 3/8
54	2	021502	WASHER, SP. LK. 1/2 (HI-COLLAR)
55	2	021601	WASHER, FLAT 1/2 SAE (SPECIAL)
56	1	366987	RETAINING CLIP, RELAY BOX ASSEMBLY



# NOTES





AW-366131  
 6006H PEDESTAL ASSEMBLY



**AW-366131**  
**6006H PEDESTAL ASSEMBLY**

ITEM	QTY.	PART NO.	DESCRIPTION
1	1	360536	BASE PLATE ASSEMBLY
2	1	366045	PEDESTAL WELDMENT
3	1	480023-002	ROTATION BEARING
4	1	480028	GEAR BOX, ROTATION
5	1	480075	ACTUATOR, HOIST
6	1	480076	HYD. MOTOR (HOIST)
7	1	480027	HYD. MOTOR (ROTATION)
8	1	480019	GASKET, MOTOR
9	1	360162	ECCENTRIC RING
10	1	480011	SEAL, ROTATION BOX
11	1	480590	PENDANT, 4 FUNCTION
12	1	480591	PENDANT, 4 FUNCTION (WITH PROPORTIONAL)
13	1	480952	PENDANT, 8 FUNCTION
14	1	480593	PENDANT, 8 FUNCTION (WITH PROPORTIONAL)
15	2	239000	GREASE ZERK
16	1	366191	PIN, PEDESTAL/CYLINDER
17	1	366192	PIN, LOWER BOOM PIVOT
18	2	330468	COLLAR, SPLIT LOCK
19	2	400500	BEARING
20	1	480094	KEY, 3/8 SQ.
21	1	360207	RETAINER, ECCENTRIC RING
22	1	020600	WASHER, SP. LK. 5/16
23	1	007807	SCREW, HEX HD. 5/16 NC X 3/4 GR.5
24	2	750413	REDUCER, -8 NPT/-6 NPTF
25	2	750412	SWIVEL JOINT, -8
26	2	360054	ADAPTER, -8 NPT/-8 JIC
27	1	480024	MOUNT, PENDANT RETAINER
28	1	480182	MANIFOLD, CARTRIDGE
29	8	480184	VALVE, CARTRIDGE
30	1	480183	CARTRIDGE, FLOW REGULATOR
31	1	000109	PLUG, PIPE 3/8
32	38	012198	SCREW, HEX HD. 5/8 NC X 1 3/4 GR.8
33	38	023902	WASHER, FLAT 5/8 (HARDENED)
34	4	006205	SCREW, SOC. HD. 5/8 NC X 1 1/4 GR.8
35	4	015104	SCREW, HEX HD. 7/8 NF X 5" GR.8
36	4	022200	LOCKWASHER, 7/8
37	4	018900	NUT, HEX 7/8 NF
38	2	011608	SCREW, HEX HD. 1/2 NC X 2" GR.5
39	4	021500	WASHER, SP. LK. 1/2
40	4	012197	SCREW, SOC. HD. 1/2 NC X 1 1/2 GR.5
41	6	002608	SCREW, 1/4-20 X 3/4 S.T. TYPE F
42	1	480403	COVER, VALVE (w/ NOTCH)
43	4	330394	SCREW, HEX HD. 3/8 NC X 1 1/2
44	4	017100	NUT, HEX 3/8 NC
45	10	021100	WASHER, SP. LK. 3/8
46	5	330370	SCREW, HEX HD. 3/8 NC X 7/8 GR.8
47	1	366180	DRUM, HOIST
48	1	366158	SCREW, HEX HD. 3/8 NC X 3/4 GR.8



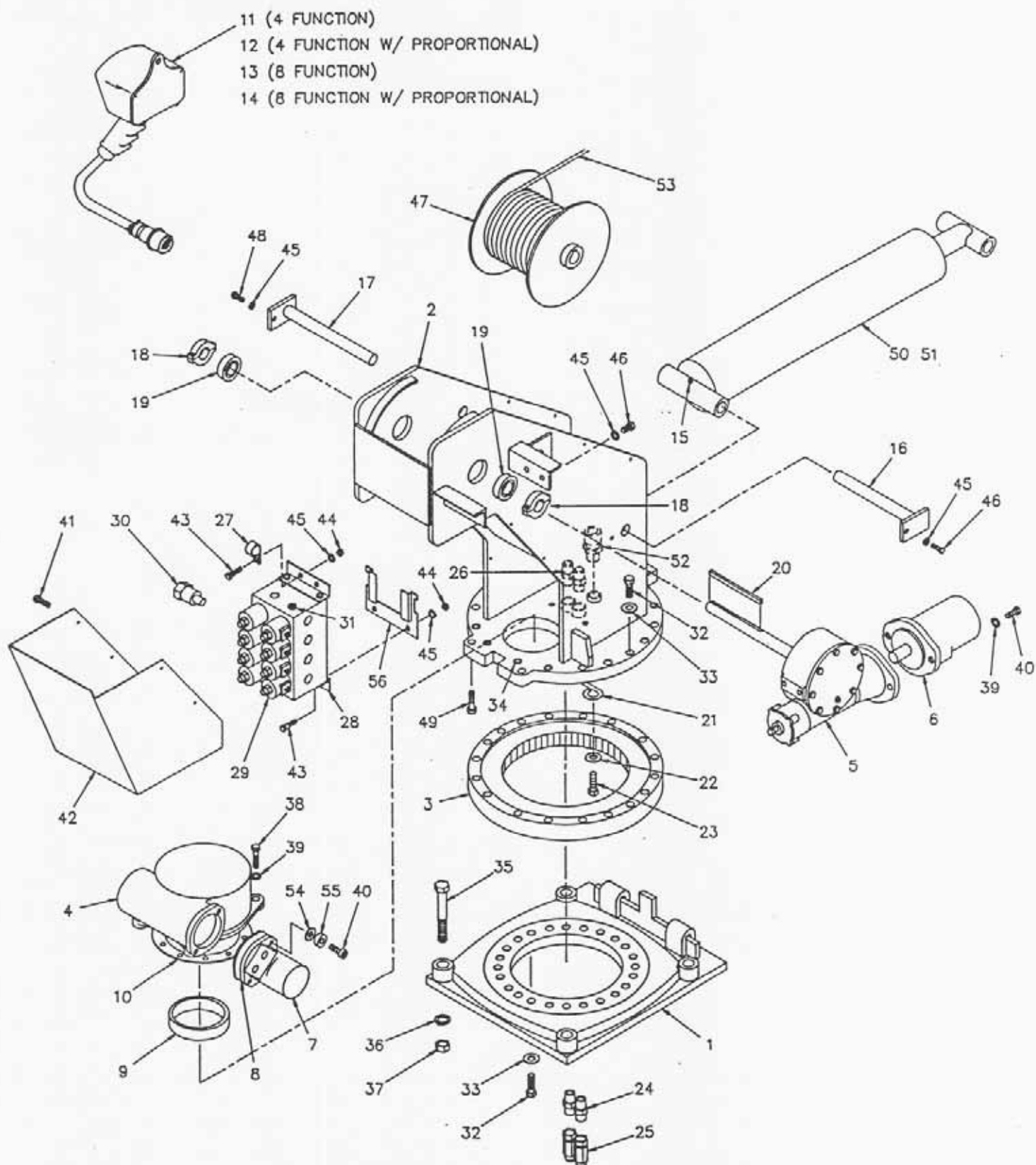
AW-366131  
6006H PEDESTAL ASSEMBLY

ITEM	QTY.	PART NO.	DESCRIPTION
49	2	009118	SCREW, SOC. HD. 1/2 NC X 2" GR.5
50	1	366161	CYLINDER, BOOM UP (COMPLETE)
	1	366161-001	CASE ASSEMBLY
	1	366161-002	SHAFT ASSEMBLY
	1	366161-003	HEAD GLAND
	1	366161-004	PISTON
51	1	366544	SEAL KIT
52	1	480597	RECEPTACLE ASSEMBLY
53	2	000404	SCREW, #6-32 X 5/8
54	2	019600	WASHER, SP. LK. #6
55	2	015400	NUT, HEX #6-32
56	1	480547	CAP, RECEPTACLE
57	1	480410	BRACKET
58	1	370433	CABLE, CONNECTOR
59	1	480031	CABLE, HOIST 3/8
60	2	021502	WASHER, SP. LK. 1/2 (HI-COLLAR)
61	2	021601	WASHER, FLAT 1/2 SAE (SPECIAL)
62	1	366987	RETAINING CLIP, RELAY BOX ASSEMBLY



# NOTES





AW-366148  
 6006H PEDESTAL ASSEMBLY  
 IN COMPARTMENT (IC) PENDANT



AW-366148  
6006H PEDESTAL ASSEMBLY (IC)

ITEM	QTY.	PART NO.	DESCRIPTION
1	1	360536	BASE PLATE ASSEMBLY
2	1	366045	PEDESTAL WELDMENT
3	1	480023-002	ROTATION BEARING
4	1	480028	GEAR BOX, ROTATION
5	1	480075	ACTUATOR, HOIST
6	1	480076	HYD. MOTOR (HOIST)
7	1	480027	HYD. MOTOR (ROTATION)
8	1	480019	GASKET, MOTOR
9	1	360162	ECCENTRIC RING
10	1	480011	SEAL, ROTATION BOX
11	1	480590	PENDANT, 4 FUNCTION
12	1	480591	PENDANT, 4 FUNCTION (WITH PROPORTIONAL)
13	1	480952	PENDANT, 8 FUNCTION
14	1	480593	PENDANT, 8 FUNCTION (WITH PROPORTIONAL)
15	2	239000	GREASE ZERK
16	1	366191	PIN, PEDESTAL/CYLINDER
17	1	366192	PIN, LOWER BOOM PIVOT
18	2	330468	COLLAR, SPLIT LOCK
19	2	400500	BEARING
20	1	480094	KEY, 3/8 SQ.
21	1	360207	RETAINER, ECCENTRIC RING
22	1	020600	WASHER, SP. LK. 5/16
23	1	007807	SCREW, HEX HD. 5/16 NC X 3/4 GR.5
24	2	750413	REDUCER, -8 NPT/-6 NPTF
25	2	750412	SWIVEL JOINT, -8
26	2	360054	ADAPTER, -8 NPT/-8 JIC
27	1	480024	MOUNT, PENDANT RETAINER
28	1	480182	MANIFOLD, CARTRIDGE
29	8	480184	VALVE, CARTRIDGE
30	1	480183	CARTRIDGE, FLOW REGULATOR
31	1	000109	PLUG, PIPE 3/8
32	38	012198	SCREW, HEX HD. 5/8 NC X 1 3/4 GR.8
33	38	023902	WASHER, FLAT 5/8 (HARDENED)
34	4	006205	SCREW, SOC. HD. 5/8 NC X 1 1/4 GR.8
35	4	015104	SCREW, HEX HD. 7/8 NF X 5" GR.8
36	4	022200	LOCKWASHER, 7/8
37	4	018900	NUT, HEX 7/8 NF
38	2	011608	SCREW, HEX HD. 1/2 NC X 2" GR.5
39	4	021500	WASHER, SP. LK. 1/2
40	4	012197	SCREW, SOC. HD. 1/2 NC X 1 1/2 GR.5
41	6	002608	SCREW, 1/4-20 X 3/4 S.T. TYPE F
42	1	360544	COVER, VALVE
43	4	330394	SCREW, HEX HD. 3/8 NC X 1 1/2
44	4	017100	NUT, HEX 3/8 NC
45	10	021100	WASHER, SP. LK. 3/8
46	5	330370	SCREW, HEX HD. 3/8 NC X 7/8 GR.8
47	1	366180	DRUM, HOIST
48	1	366158	SCREW, HEX HD. 3/8 NC X 3/4 GR.8



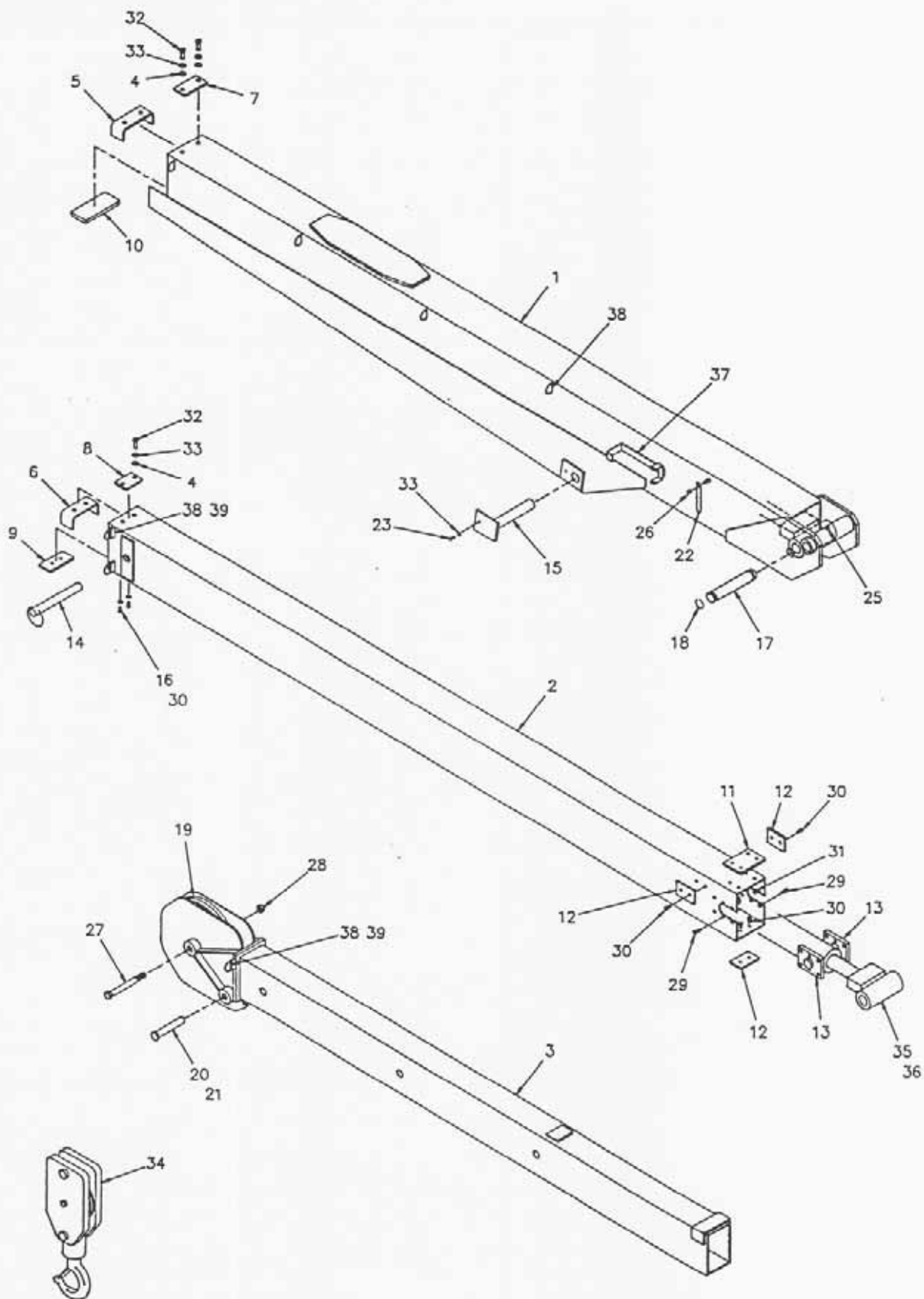
AW-366148  
6006H PEDESTAL ASSEMBLY (IC)

ITEM	QTY.	PART NO.	DESCRIPTION
49	2	009118	SCREW, SOC. HD. 1/2 NC X 2" GR.5
50	1	366161	CYLINDER, BOOM UP (COMPLETE)
	1	366161-001	CASE ASSEMBLY
	1	366161-002	SHAFT ASSEMBLY
	1	366161-003	HEAD GLAND
	1	366161-004	PISTON
51	1	366544	SEAL KIT
52	1	370433	CABLE, CONNECTOR
53	1	480031	CABLE, HOIST 3/8
54	2	021502	WASHER, SP. LK. 1/2 (HI-COLLAR)
55	2	021601	WASHER, FLAT 1/2 SAE (SPECIAL)
56	1	366987	RETAINING CLIP, RELAY BOX ASSEMBLY



# NOTES





AW-480584  
6006H BOOM ASSEMBLY



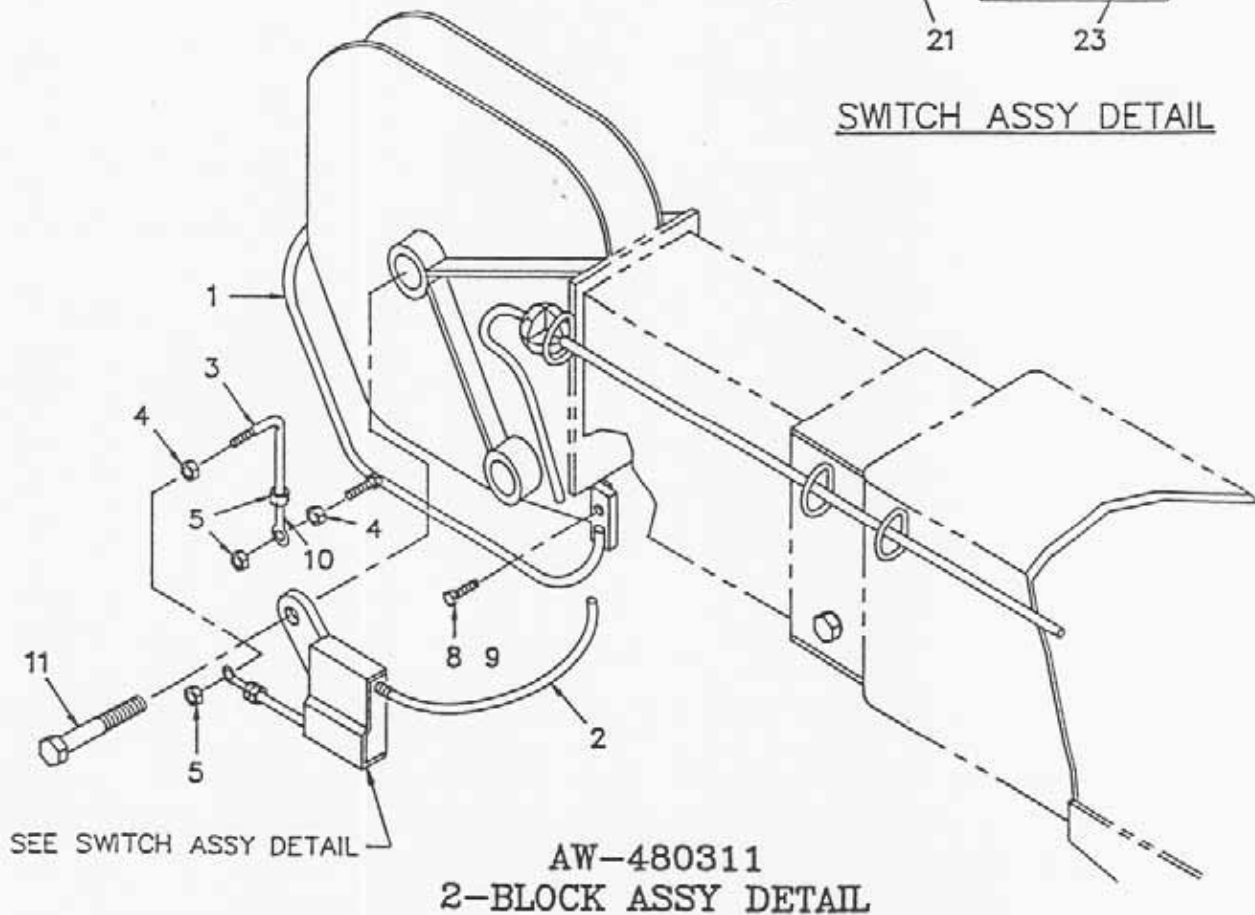
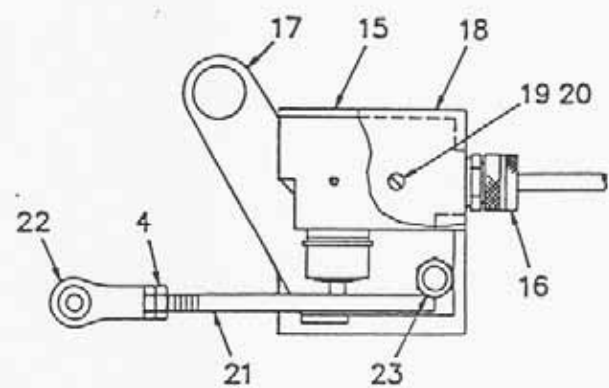
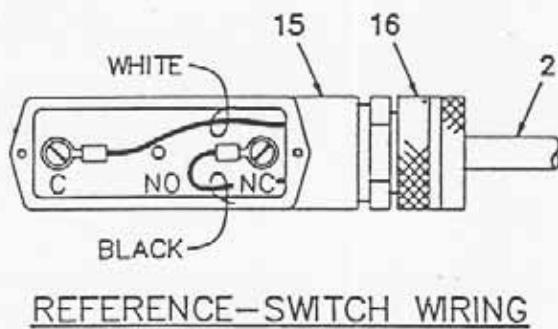
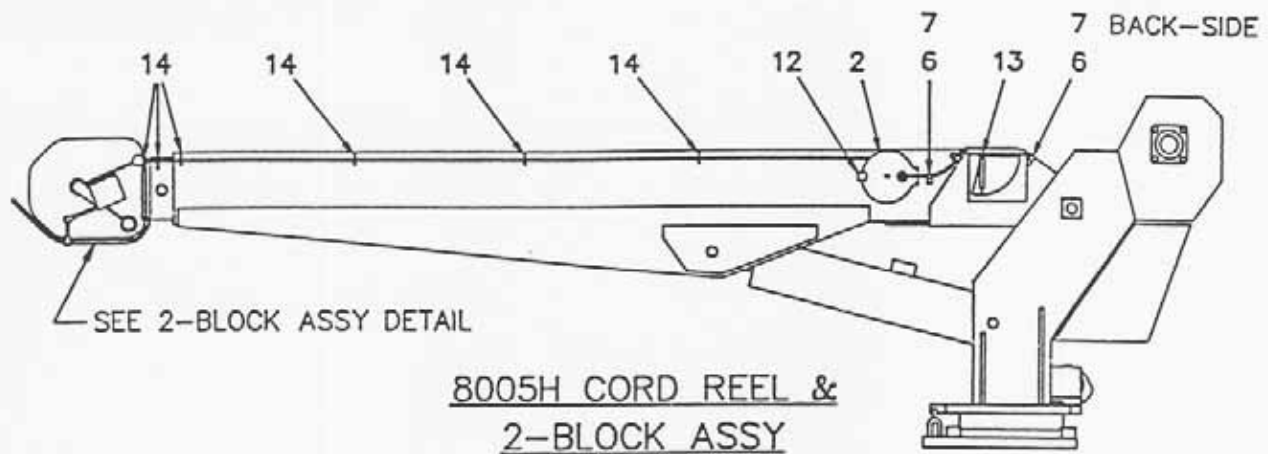
AW-480584  
6006H BOOM ASSEMBLY

ITEM	QTY.	PART NO.	DESCRIPTION
1	1	480581	BOOM, LOWER (SEE NOTE 1)
2	1	366080	BOOM, CENTER
3	1	366110	BOOM, MANUAL
4	6	021200	WASHER, FLAT 3/8
5	1	366183	STOP, CENTER
6	1	366112	STOP, UPPER BOOM
7	1	366201	PAD, BOOM TOP
8	1	366202	PAD, BOOM TOP
9	1	366199	PAD, BOOM
10	1	366187	PAD, RETAINER LOWER
11	1	366185	PAD, BOOM (CENTER BOOM)
12	3	366186	PAD, BOOM (CENTER BOOM)
13	2	366184	RETAINER, EXTENSION CYLINDER
14	1	366190	PIN, ASSEMBLY w/ LANYARD
15	1	366189	PIN, BOOM CYLINDER
16	2	020600	WASHER, SP. LK. 5/16
17	1	366193	PIN, EXTENSION CYLINDER
18	2	480029	RING, RETAINING
19	1	366198	SHEAVE ASSEMBLY 3/8 (BEARING ONLY - 366197)
20	1	360125	PIN, BLOCK
21	1	360124	PIN, HITCH
22	2	360038	ANGLE INDICATOR
23	1	366158	SCREW, HEX HD. 3/8-16NC x 3/4 LG. GR.8
24	.	.	.
25	1	239000	GREASE ZERK
26	2	016300	NUT, HEX LOCK 1/4-20NC
27	1	014304	SCREW, HEX HD. 3/4-16NF x 6" LG. GR.5
28	1	018600	NUT, HEX LOCK 3/4-16NF
29	12	008400	SCREW, HEX HD. 3/8-16NC x 3/4 LG.
30	8	007808	SCREW, HEX HD. 5/16-24NF x 1/2 LG.
31	4	005406	SCREW, HEX HD. 1/4-28NF x 1/2 LG.
32	4	008800	SCREW, HEX HD. 3/8-24NF x 1" LG.
33	6	021100	WASHER, SP. LK. 3/8
34	1	366203	TRAVELING BLOCK
35	1	366162	CYLINDER, EXTENSION (COMPLETE)
	-	366162-001	CASE ASSEMBLY
	-	366162-002	SHAFT ASSEMBLY
	-	366162-003	HEAD GLAND
	-	366162-004	PISTON
36	1	366166	SEAL KIT
37	1	REF.	CORD REEL BRACKET (320551)
38	7	REF.	D-RING (366108)
39	3	REF.	SPACER (800246-025)

NOTES:

- 1.) BOOM 366070 HAS HOOKS FOR PENDANT CABLE.  
BOOM 480581 IS EXACTLY THE SAME LESS THE HOOKS  
AND IS USED FOR PROPORTIONAL UNITS.







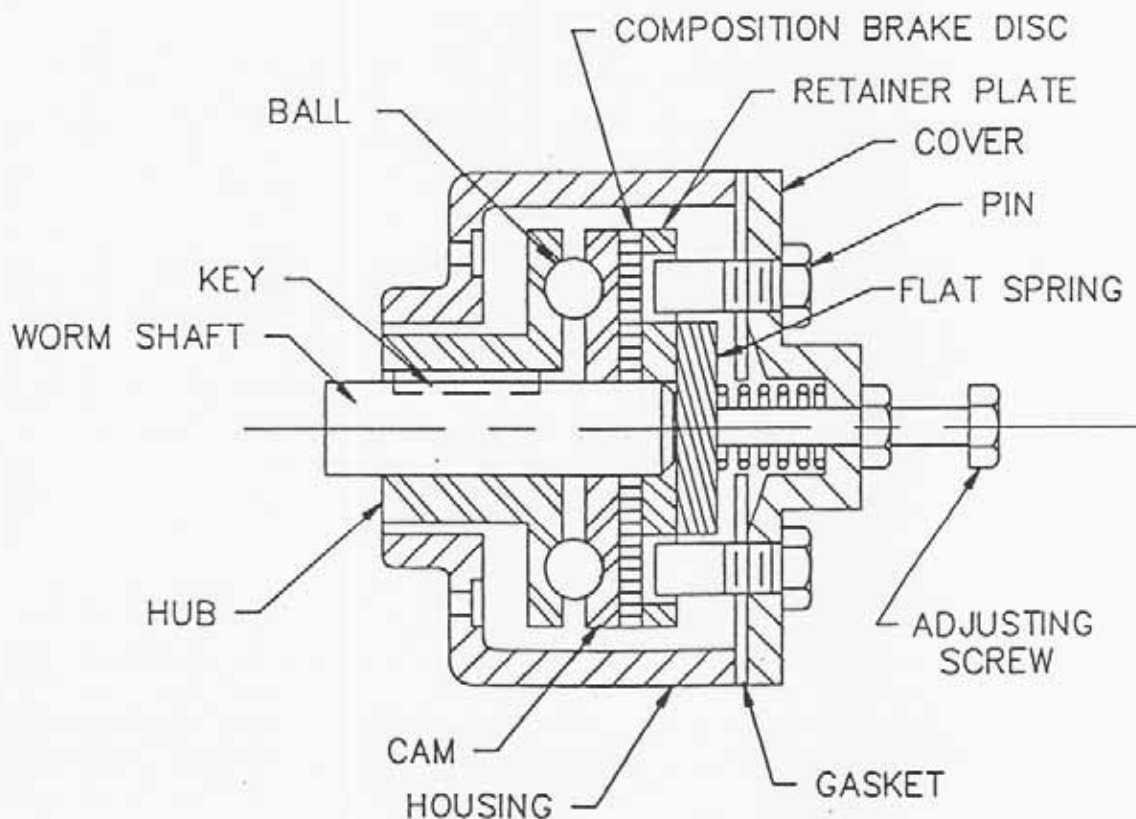
# 2-BLOCK ASSEMBLY AW-480311

ITEM	QTY.	PART NO.	DESCRIPTION
1	1	366116-001	BAIL, 2-BLOCK CROWN BRACKET
2	1	366973-001	CORD REEL ASSY
3	1	366196	2-BLOCK ARM
4	4	016100	NUT, HEX HD. 1/4-28 NF
5	3	016200	NUT, HEX LOCK 1/4-28 NF
6	3	002608	SCREW, HEX HD. SELF TAPPING 1/4-20 NC x 3/4 LG.
7	3	000115	CLIP, #15
8	1	007803	SCREW, HEX HD. 5/16-18 NC x 3 1/2 LG.
9	1	016801	NUT, HEX LOCK 5/16-18 NC
10	1	363006	BEARING, ROD END
11	1	REF.	SCREW, HEX HD. 3/4-16 NF x 6" LG.
12	1	320551	BRACKET, REEL MOUNT
13	2	005901	SCREW, 1/4-20 NC x 1/2 LG.
14	6	366108	D-RING
15	1	646900	SWITCH
16	1	642908	CORD CONNECTOR
17	1	363013-001	MOUNTING PLATE ASSY
18	1	363004	COVER, SWITCH
19	2	002602	SCREW, RD. HD. #6-32 NC x 1 1/4 LG.
20	2	019600	WASHER, SP. LK. #6
21	1	363005	LINKAGE, WELDMENT ROD
22	1	363006	BEARING, ROD END
23	1	017301	NUT, HEX LOCK 3/8-16 NC



## AUTOMATIC SAFETY BRAKE ASSEMBLY (OIL COOLED) HOIST

1. Winch has right hand worm and gear and spools over drum; use number one slots for brake balls.
2. Install brake hub on winch worm with key.
3. Assemble balls in cam using hard grease to hold balls in place.
4. Install cam and balls, fitting balls in slots on hub.
5. Install brake disc.
6. Install retainer.
7. Install flat spring in brake housing cover (arch down).
8. Install brake housing cover, fitting pins in slots on spring and holes in retainer.
9. Test brake by shifting winch to UP then DOWN to see if brake is working in proper rotation. If not, remove brake and locate brake balls in opposite set of slots.
10. Adjust to suit by tightening or loosening screw on outside of cover. When proper adjustment is obtained, secure screw with jam nut.





# NOTES



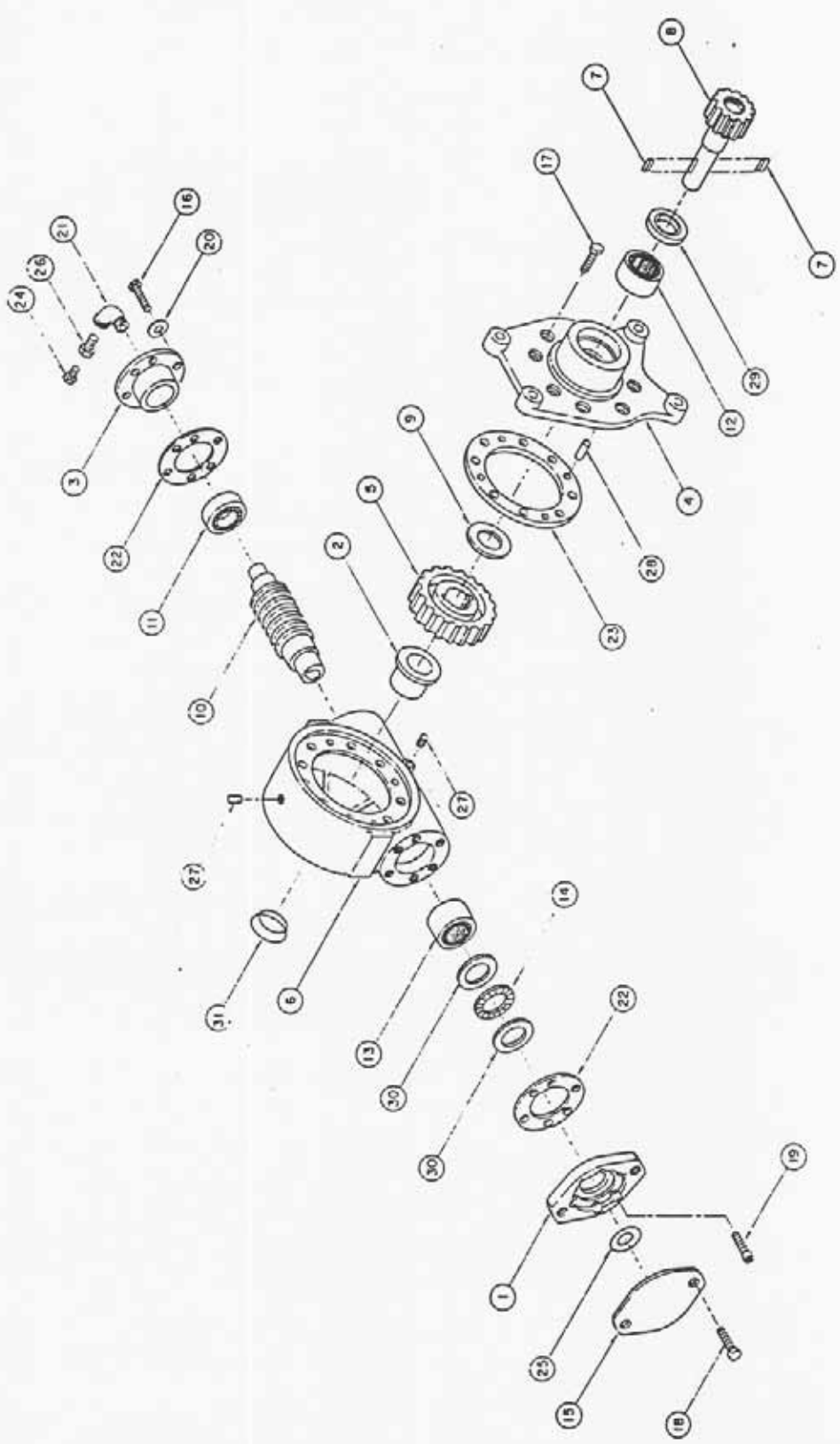


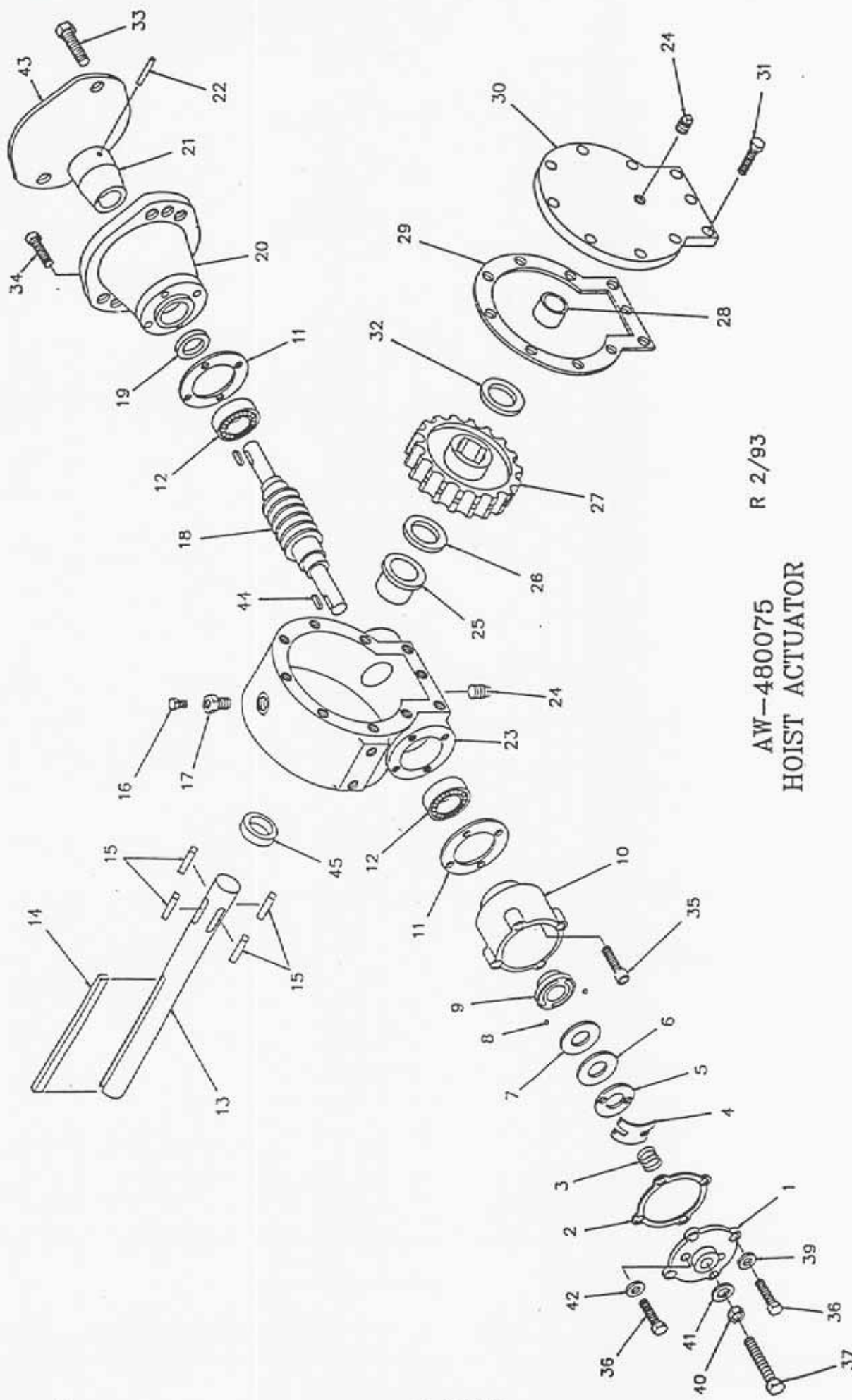
FIG. NO.	REV.	DATE	BY	CHKD.	APP'D.	DESCRIPTION
480.002	1					GEAR BOX, ROTATION
AUTO CRANE COMPANY 1711 1/2 W. 17th St. Chicago, Ill. 60604 TEL. 312-442-1111 FAX 312-442-1111						
PART NO. 480.002 QTY. 1 UNIT PRICE \$ 1.00 TOTAL \$ 1.00 TAX \$ 0.00 NET \$ 1.00 PAY TO THE ORDER OF AUTO CRANE COMPANY 1711 1/2 W. 17th St. Chicago, Ill. 60604 TEL. 312-442-1111 FAX 312-442-1111						



AW-480028  
GEAR BOX, ROTATION

ITEM	QTY.	PART NO.	DESCRIPTION
1	1	480240	ADAPTER
2	1	480241	BUSHING
3	1	480242	CAP. BEARING
4	1	480243	COVER
5	1	480244	GEAR, R.H.
6	1	480237	HOUSING, GEAR
7	2	480246	KEY 342120
8	1	480247	SHAFT, OUTPUT 357139
9	1	480248	WASHER, THRUST
10	1	480249	WORM, R.H.
11	1	480251	BEARING, BALL
12	1	480252	BEARING, NEEDLE
13	1	480253	BEARING, NEEDLE
14	1	480254	BEARING, THRUST
15	1	480255	COVER
16	6	007400	CAPSCREW, 5/16-18 NC X 1" LG. HX. HD.
17	8	480238	CAPSCREW, 5/16-18 NC X 1 1/4 LG. HX. NYLOC HVY PATCH
18	2	011508	CAPSCREW, 1/2-13 NC X 3/4 LG. HX. HD.
19	6	480256	CAPSCREW, 5/16-18 NC X 1" LG. SOC. HD. LOC.-WEL
20	6	480258	LOCKWASHER, 5/16 MED. SECT. C.P.
21	1	480259	ELBOW, 90°
22	2	480260	GASKET
23	1	480250	GASKET
24	1	480262	FITTING, RELIEF
25	1	480239	O-RING
26	1	480263	REDUCER
27	2	480264	PLUG, PIPE
28	4	480265	PIN, DOWEL
29	1	480266	SEAL, OIL A86071
30	2	480268	WASHER, THRUST
31	1	480269	PLUG, EXPANSION





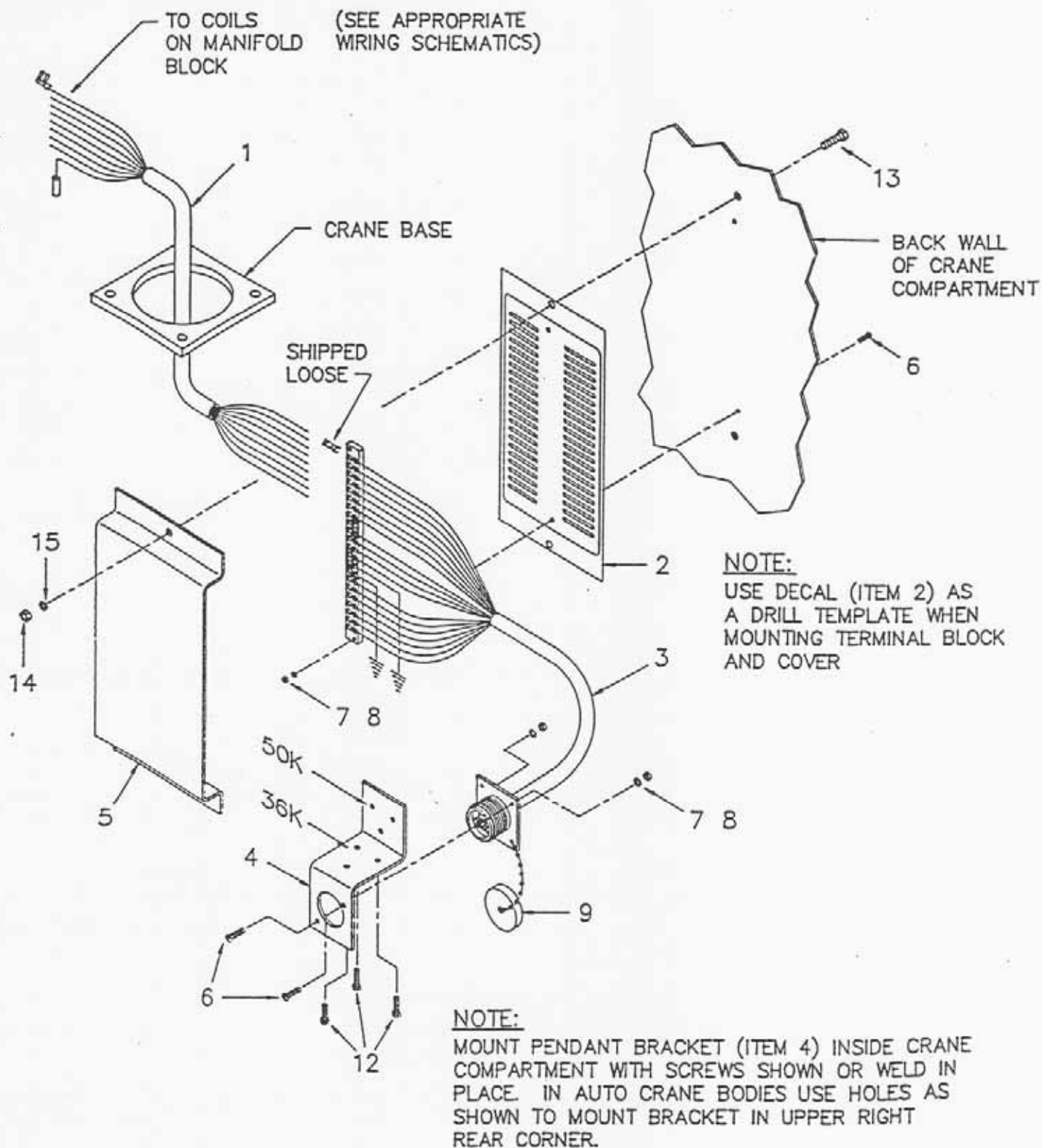
R 2/93

# AW-480075 HOIST ACTUATOR



ITEM	QTY.	PART NO.	DESCRIPTION
1	1	360450	COVER, WORM BRAKE
2	1	360359	GASKET
3	1	360368	SPRING
4	1	360367	SPRING, FLAT
5	1	360342	PLATE, RETAINER
6	1	360364	PLATE, THRUST
7	1	360331	CAM, PLATE
8	2	360345	BALL, BRAKE
9	1	360339	HUB-BRAKE
10	1	360336	HOUSING-BRAKE
11	2	360358	GASKET
12	2	360346	BEARING
13	1	480078	SHAFT-OUTPUT
14	1	480094	KEY, 3/8 SQ.
15	4	360464	KEY, BARTH
16	1	360360	FITTING-RELIEF
17	1	360361	REDUCER
18	1	360344	WORM-R.H.
19	1	360365	OIL SEAL
20	1	360330	ADAPTER
21	1	360332	COUPLING
22	1	360363	SPIROL PIN
23	1	360461	HOUSING-GEAR (EFFECTIVE ON SERIAL NO. 636238)
24	2	360362	PIPE PLUG
25	1	360348	BUSHING
26	1	360369	THRUST WASHER
27	1	360460	GEAR-R.H. (EFFECTIVE ON SERIAL NO. 601090)
28	1	360462	BUSHING
29	1	360459	GASKET
30	1	360458	COVER
31	10	360350	CAPSCREW, 1/4-20NC x 3/4 LG. HX HD GR5
32	1	360466	THRUST WASHER
33	2	010202	CAPSCREW, 1/2-13NC x 1" LG. HX HD
34	4	360352	CAPSCREW, 1/4-20NC x 1 3/4 LG. SOC HD LOC-WEL
35	4	360463	CAPSCREW, 1/4-20NC x 7/8 SOC HD
36	6	360453	CAPSCREW, 1/4-20NC x 1" HX HD ALL THRD GR5 NYLOC H.P.
37	1	360456	CAPSCREW, 3/8-16NC x 1 1/2 LG HX HD ALL THRD GR5
38	-	-	-
39	4	360465	THREAD SEAL
40	1	360353	NUT, 3/8-16NC HX JAM
41	1	360371	THREAD SEAL
42	2	360455	WASHER, FLAT 1/4 ALUM.
43	1	360349	COVER-HYD. ADAPTER
44	2	360341	KEY
45	1	360366	OIL SEAL
46	1	480306	SEAL AND GASKET KIT





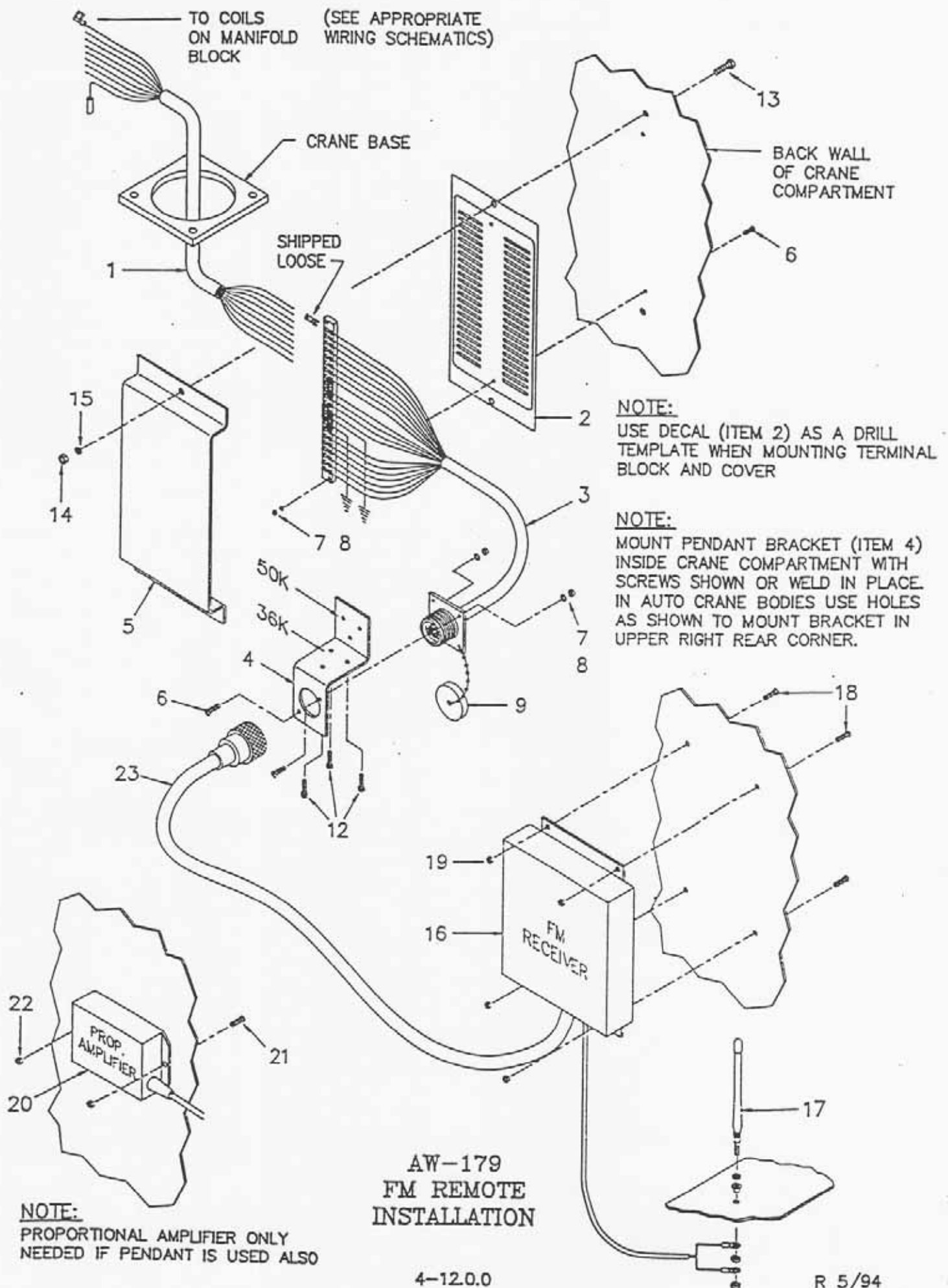
AW-178  
INSTALLATION DRAWING  
IN-COMPARTMENT (IC) PENDANT



## IN-COMPARTMENT PENDANT INSTALLATION AW-178

ITEM	QTY.	PART NO.	DESCRIPTION
1	1	480492	HARNESS, CRANE PIGTAIL
2	1	480490	DECAL, 22 STATION TERMINAL BLOCK
3	1	480491	HARNESS, 22 STATION/19 PIN SOCKET
4	1	480626	BRACKET, PENDANT
5	1	480493	COVER, 22 STATION TERMINAL BLOCK
6	4	000404	SCREW, ROUND HD. #6-32NC x 5/8 LG.
7	4	015400	NUT, HEX #6-32NC
8	4	019600	WASHER, SP. LK. #6
9	1	480547	CAP, RECEPTACLE (19 PIN)
10	6	750738	WIRE TIE STICK ON RETAINER
11	6	634401	WIRE TIE (7" LG.)
12	3	330038	SCREW, HEX HD. #10-24NC x 3/4 LG. SELF TAPPING
13	2	005500	SCREW, HEX HD. 1/4-20NC x 3/4 LG. G5
14	2	015900	NUT, HEX 1/4-20NC
15	2	020200	WASHER, SP. LK. 1/4







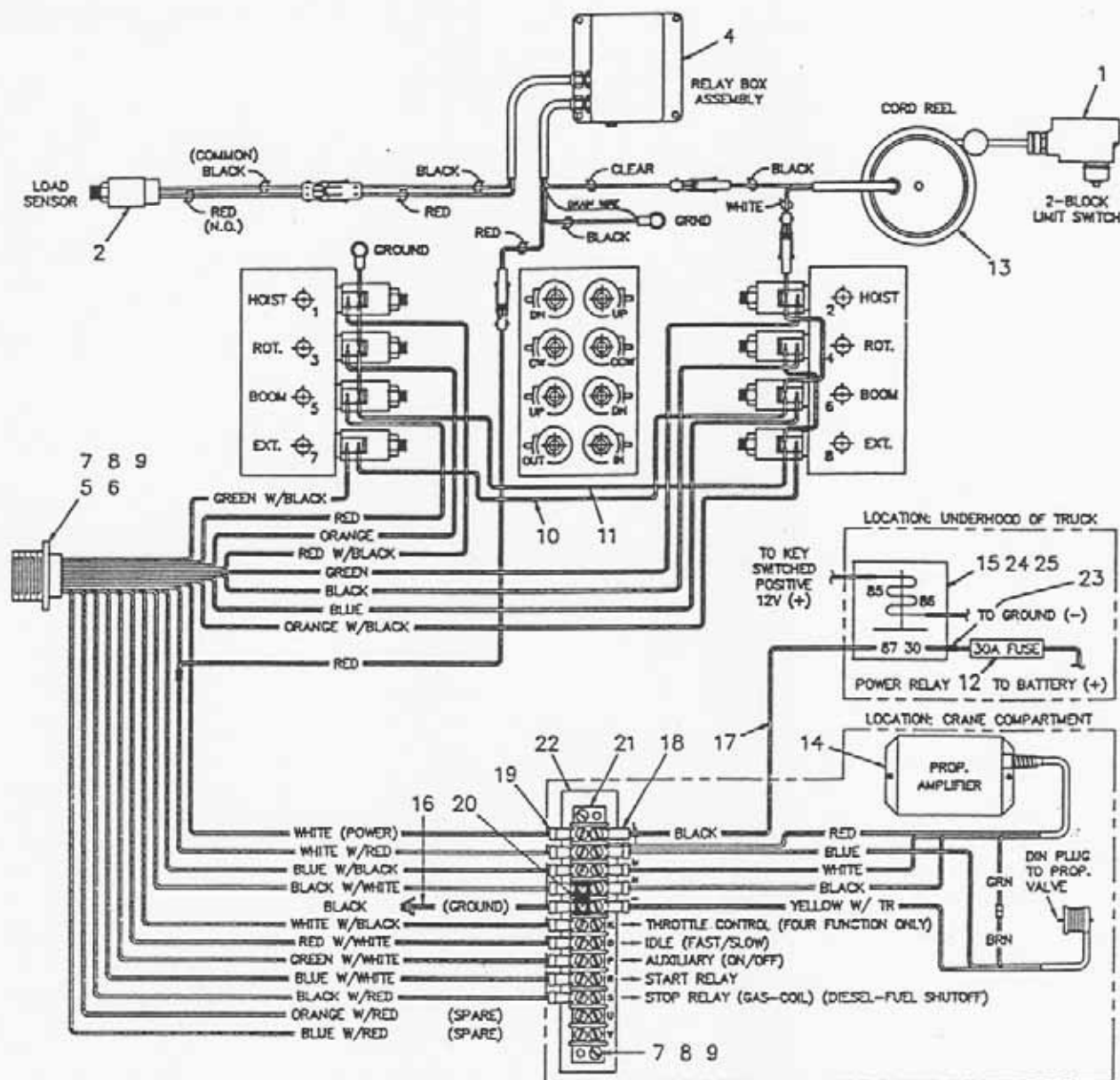
## FM REMOTE INSTALLATION AW-179

ITEM	QTY.	PART NO.	DESCRIPTION
1	1	480492	HARNESS, CRANE PIGTAIL
2	1	480490	DECAL, 22 STATION TERMINAL BLOCK
3	1	480491	HARNESS, 22 STATION/19 PIN SOCKET
4	1	480626	BRACKET, PENDANT
5	1	480493	COVER, 22 STATION TERMINAL BLOCK
6	4	000404	SCREW, ROUND HD. #6-32NC x 5/8 LG.
7	4	015400	NUT, HEX #6-32NC
8	4	019600	WASHER, SP. LK. #6
9	1	480547	CAP, RECEPTACLE (19 PIN)
10	6	750738	WIRE TIE STICK ON RETAINER
11	6	634401	WIRE TIE (7" LG.)
12	3	330038	SCREW, HEX HD. #10-24NC x 3/4 LG. SELF TAPPING
13	2	005500	SCREW, HEX HD. 1/4-20NC x 3/4 LG. G5
14	2	015900	NUT, HEX 1/4-20NC
15	2	020200	WASHER, SP. LK. 1/4
16	1	480629	FM REMOTE TRANSMITTER/RECEIVER ASSEMBLY
17	1	(SEE NOTE)	ANTENNA (STD.)
18	4	002607	SCREW, ROUND HD. #10-24NC x 3/4 LG.
19	4	015801	NUT, HEX LOCK #10-24NC
20	1	480537	AMPLIFIER, PROPORTIONAL
21	2	002200	SCREW, ROUND HD. #10-32NF x 3/4 LG.
22	2	015800	NUT, HEX LOCK #10-32NF
23	1	480625	CONTROL CABLE

NOTE:

STANDARD ANTENNA COMES WITH TRANSMITTER/RECEIVER ASSEMBLY;  
 - ANTENNA w/ MAGNETIC BASE (P/N 480608) CAN BE ORDERED AS  
 AN EXTRA COST OPTION



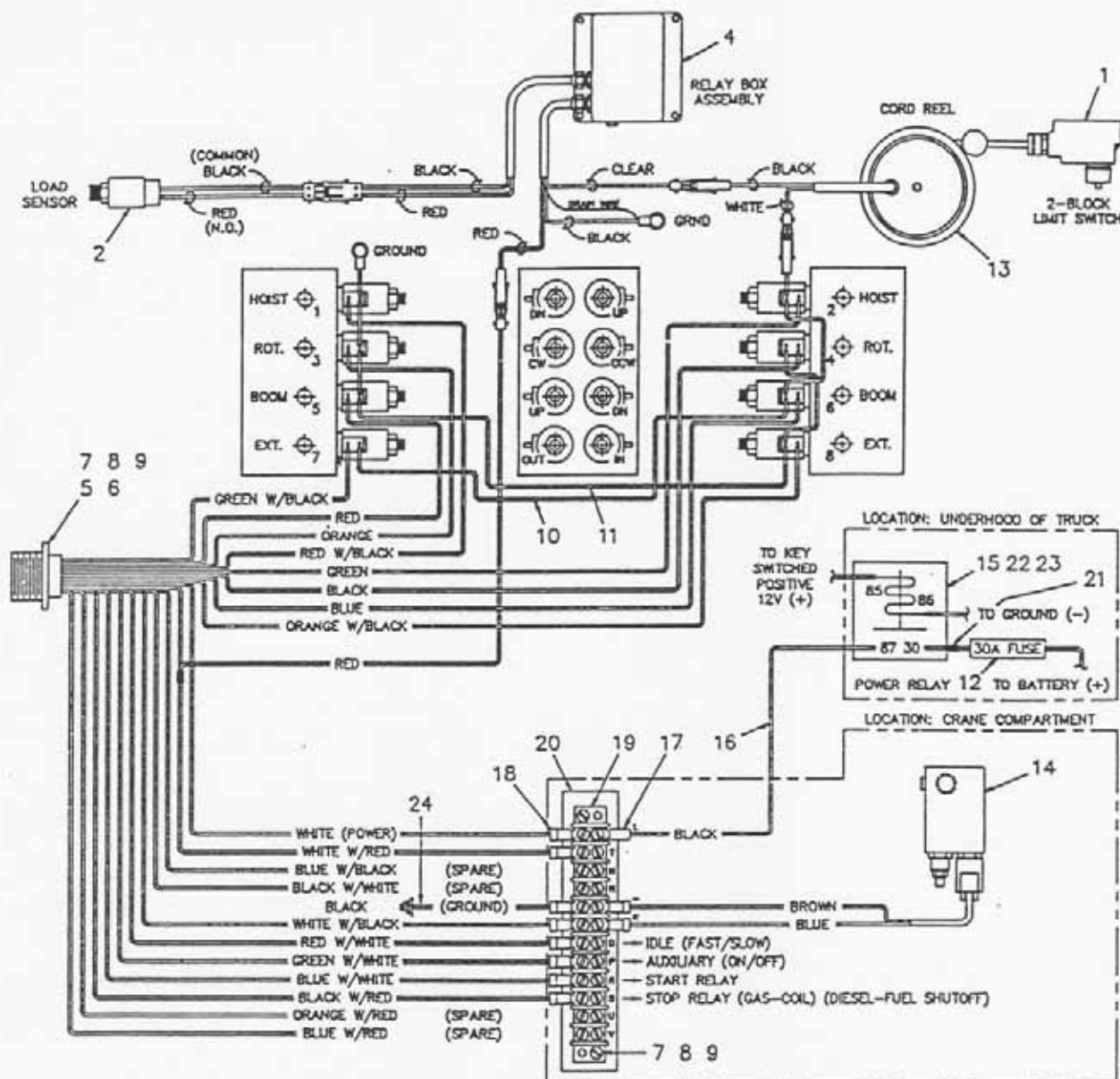


ITEM	QTY	PART NO.	DESCRIPTION
1	1	646900	SWITCH
2	1	320543	LOAD SENSOR ASSY
3	-	-	-
4	1	366986	RELAY BOX ASSY
5	1	480597	RECEPTACLE ASSY
6	1	480547	CAP, PENDANT RECEPTACLE
7	4	000404	SCREW, RD HD #6-32 x 5/8" LG.
8	4	019600	WASHER, SP LK #6
9	4	015400	NUT, HX #6-32
10	1	480384	CONDUCTOR ASSY
11	1	360549	CONDUCTOR ASSY (POWER EXT.)
12	1	750167	FUSE, IN-LINE 30 AMP
13	1	366973-001	CORD REEL ASSY

ITEM	QTY	PART NO.	DESCRIPTION
14	1	480522	AMPLIFIER ASSY, PROPORTIONAL
15	1	320355	POWER RELAY
16	1	480549	CONDUCTOR, 16 GA BLACK
17	1	800657-009	CONDUCTOR, POWER
18	1	001002	TERMINAL RING
19	15	480495	TERMINAL, FLG'D SPADE (16-14 WIRE)
20	1	636600	JUMPER
21	1	635200	TERMINAL BLOCK
22	1	360610	DECAL, TERMINAL I.D.
23	2	001102	TERMINAL WR 2RC-10
24	1	320363	PLUG, RELAY
25	5	320357	CONNECTOR, SPD LOCKING, NON-INS

AW-353  
CRANE WIRING, 5005H & 6006H  
w/ 4 & 8 FUNCTION PENDANTS, PROPORTIONAL (-200,-400)



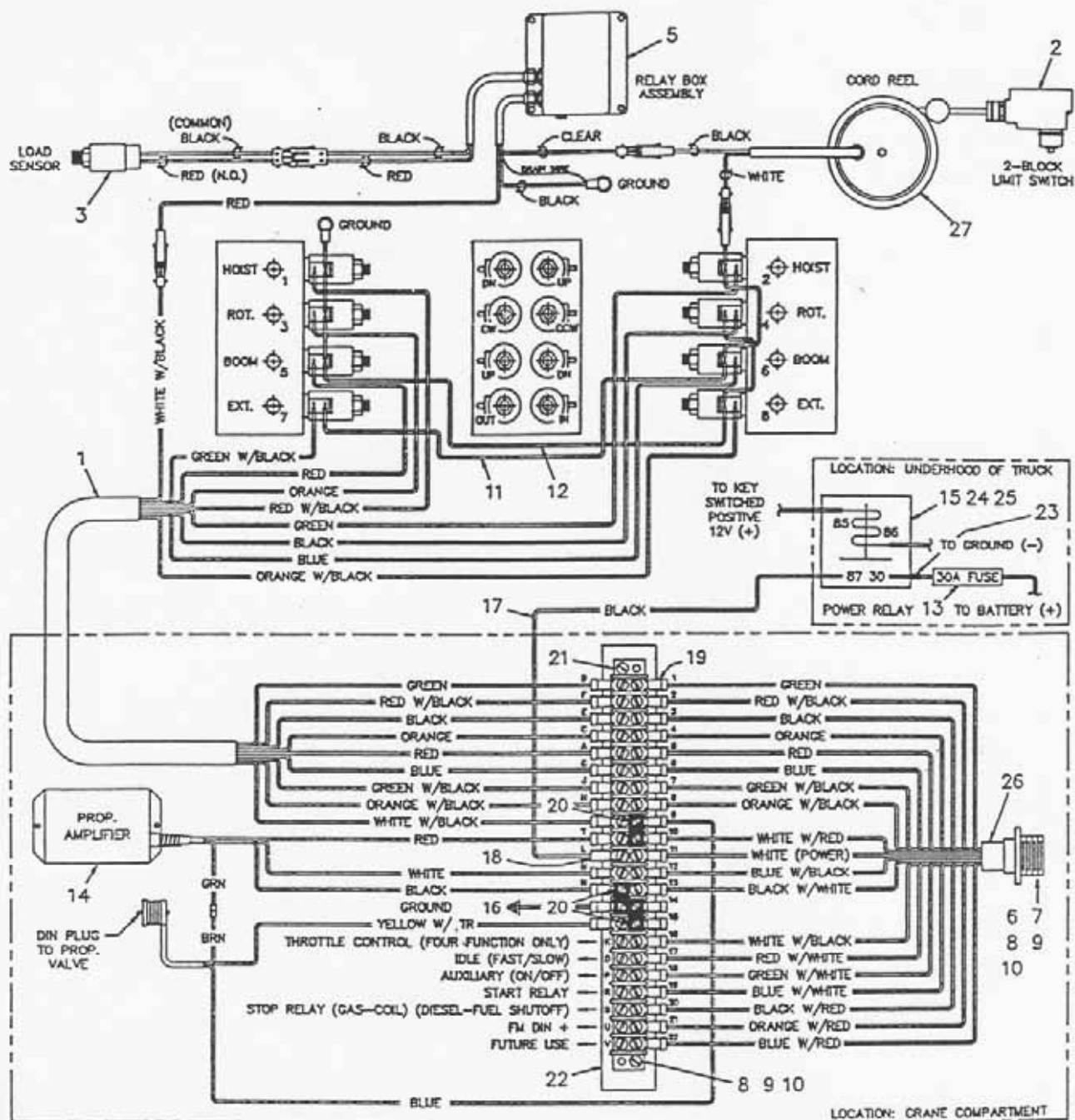


ITEM	QTY	PART NO.	DESCRIPTION
1	1	648900	SWITCH
2	1	320543	LOAD SENSOR ASSY
3	-	-	-
4	1	366986	RELAY BOX ASSY
5	1	480597	RECEPTACLE ASSY
6	1	480547	CAP. PENDANT RECEPTACLE
7	4	000404	SCREW, RD HD #6-32 x 5/8" LG.
8	4	019600	WASHER, SP LK #6
9	4	015400	NUT, HX #6-32
10	1	480384	CONDUCTOR ASSY
11	1	360549	CONDUCTOR ASSY (POWER EXT.)
12	1	750167	FUSE, IN-LINE 30 AMP

ITEM	QTY	PART NO.	DESCRIPTION
13	1	366973-001	CORD REEL ASSY
14	1	366212	RELIEF VALVE ASSY w/ SOLENOID
15	1	320355	POWER RELAY
16	1	800657-009	CONDUCTOR, POWER
17	1	001002	TERMINAL, RING
18	10	480495	TERMINAL, FLG'D SPADE (16-14 WIRE)
19	1	635200	TERMINAL, BLOCK
20	1	360610	DECAL, TERMINAL I.D.
21	1	001102	TERMINAL, WR 2RC-10
22	1	320363	PLUG, RELAY
23	5	320357	CONNECTOR, SPD LOCKING, NON-INS
24	1	480549	CONDUCTOR, 16 Ga BLACK

AW-354  
CRANE WIRING, 5005H & 6006H  
w/ 4 & 8 FUNCTION PENDANTS, LESS PROPORTIONAL (-100,-300)





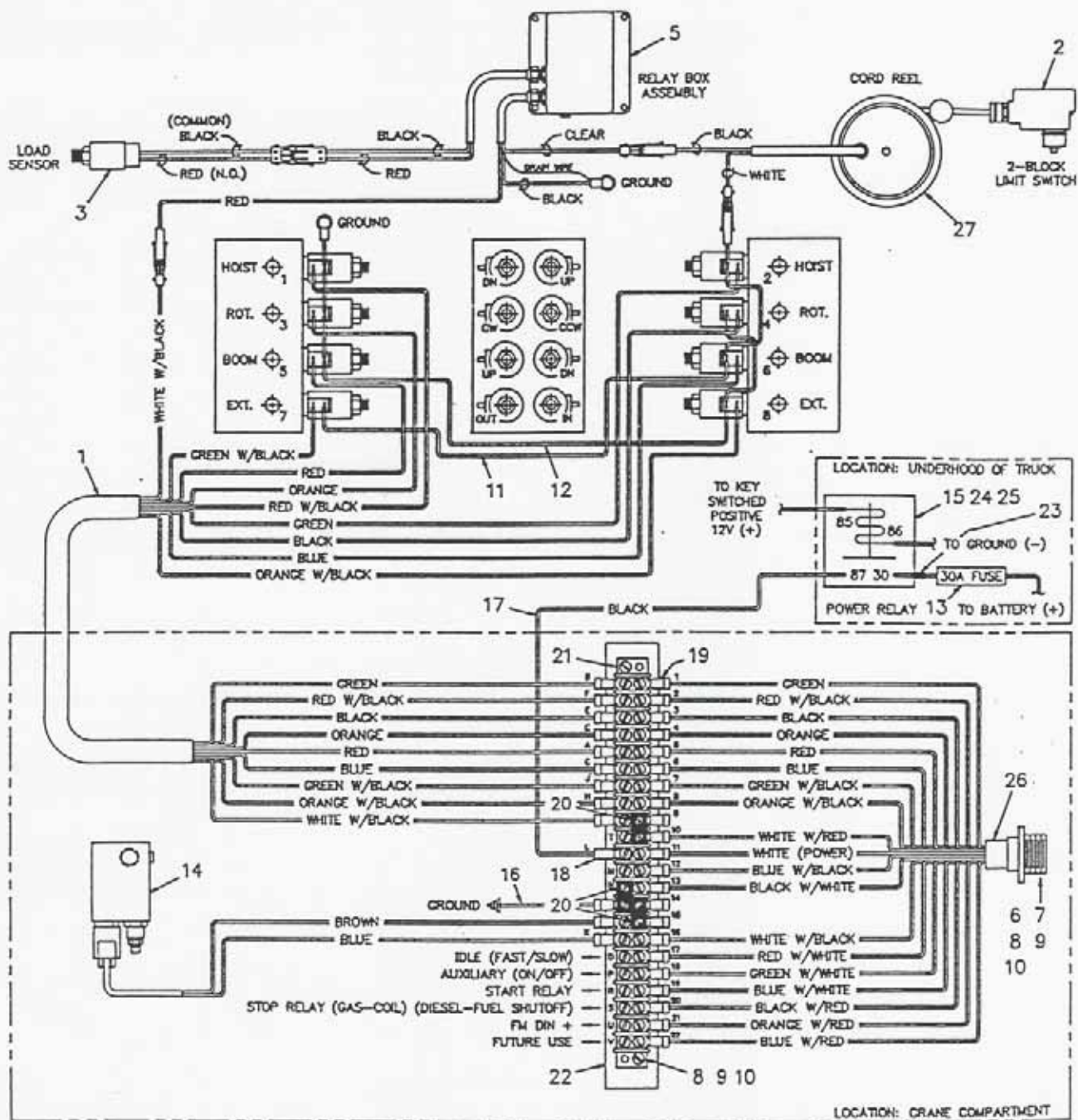
ITEM	QTY	PART NO.	DESCRIPTION
1	1	480386	HARNES, CRANE PIGTAIL
2	1	646900	SWITCH
3	1	320543	LOAD SENSOR ASSY
4	-	-	-
5	1	366986	RELAY BOX ASSY
6	1	480626	BRACKET, PENDANT RECEPTACLE
7	1	480547	CAP, PENDANT RECEPTACLE
8	4	000404	SCREW, RD HD #6-32 x 5/8" LG.
9	4	019600	WASHER, SP LK #6
10	4	015400	NUT, HX #6-32
11	1	480384	CONDUCTOR ASSY
12	1	360549	CONDUCTOR ASSY (POWER EXT.)
13	1	750167	FUSE, IN-LINE 30 AMP
14	1	480522	AMPLIFIER ASSY, PROP.

ITEM	QTY	PART NO.	DESCRIPTION
15	1	320355	POWER RELAY
16	1	480549	CONDUCTOR, 16 Gg BLACK
17	1	800657-009	CONDUCTOR, POWER
18	1	001002	TERMINAL RING
19	36	480495	TERMINAL, FLG'D SPADE (16-14 WIRE)
20	3	636600	JUMPER
21	1	480494	TERMINAL BLOCK, 22 STA
22	1	480490	DECAL, 22 STA TERMINAL BLOCK
23	1	001102	TERMINAL, WR 2RC-10
24	1	320363	PLUG, RELAY
25	5	320357	CONNECTOR, SPD LOCKING, NON-INS
* 26	1	480491	HARNES ASSY
27	1	366973-001	CORD REEL ASSY

\* NOTE: ITEM 26 INCLUDES ITEMS 19, 20 & 21

AW-355  
CRANE WIRING, 5005H & 6006H  
w/ 4 & 8 FUNCTION PENDANTS, PROP. IC (-210,-410,-411,-412)





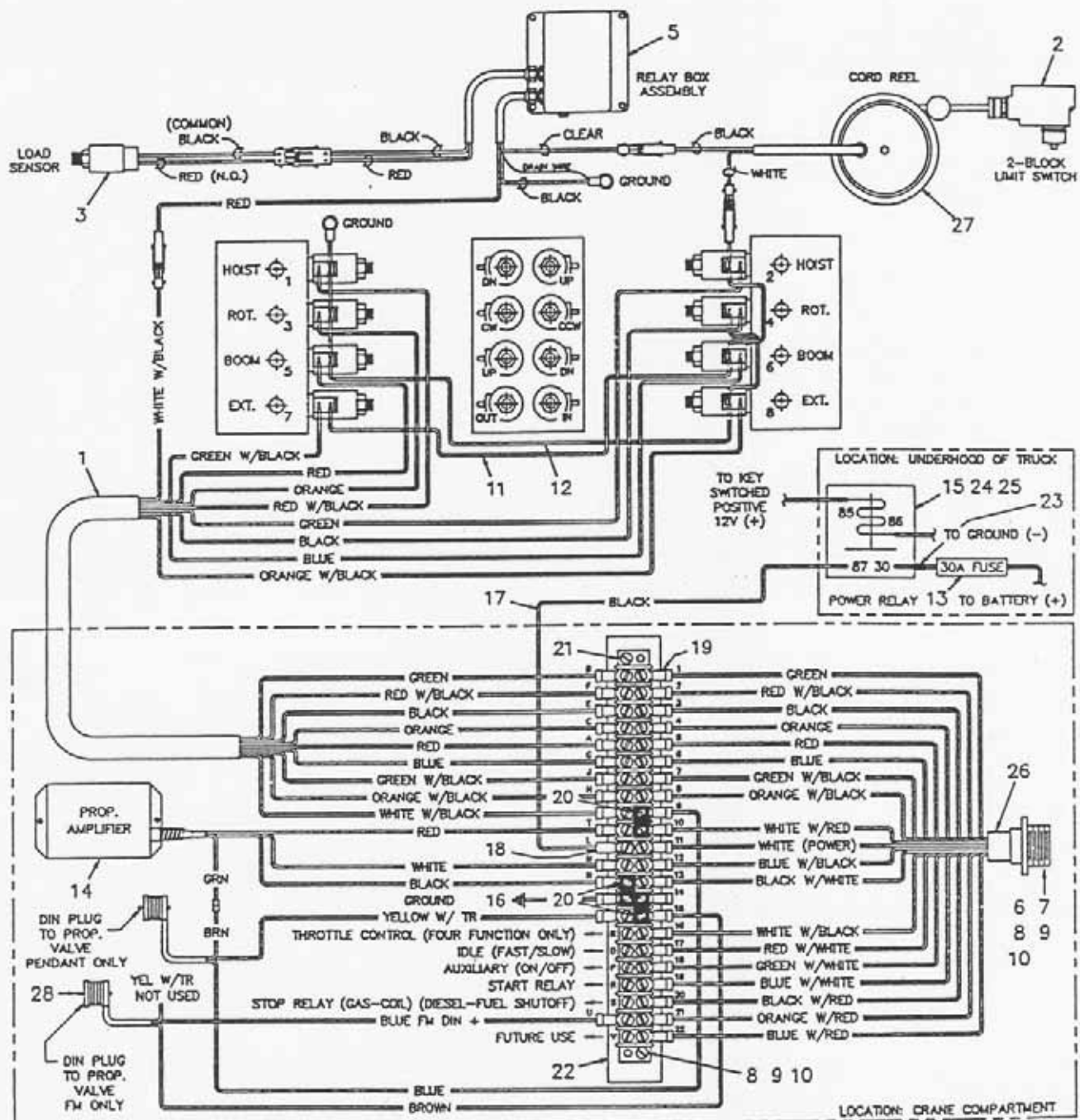
ITEM	QTY	PART NO.	DESCRIPTION
1	1	480386	HARNESS, CRANE PIGTAIL
2	1	646900	SWITCH
3	1	320543	LOAD SENSOR ASSY
4	-	-	-
5	1	366986	RELAY BOX ASSY
6	1	480626	BRACKET, PENDANT RECEPTACLE
7	1	480547	CAP, PENDANT RECEPTACLE
8	4	000404	SCREW, RD HD #6-32 x 5/8" LG.
9	4	019600	WASHER, SP LK #6
10	4	015400	NUT, HX #6-32
11	1	480384	CONDUCTOR ASSY
12	1	360549	CONDUCTOR ASSY (POWER EXT.)
13	1	750167	FUSE, IN-LINE 30 AMP
14	1	366212	RELIEF VALVE ASSY w/ SOLENOID

ITEM	QTY	PART NO.	DESCRIPTION
15	1	320355	POWER RELAY
16	1	480548	CONDUCTOR, 16 Ga BLACK
17	1	800657-009	CONDUCTOR, POWER
18	1	001002	TERMINAL, RING
19	34	480495	TERMINAL, FLG'D SPADE (16-14 WIRE)
20	3	636600	JUMPER
21	1	480494	TERMINAL BLOCK, 22 STA
22	1	480490	DECAL, 22 STA TERMINAL BLOCK
23	1	001102	TERMINAL, WR 2RC-10
24	1	320363	PLUG, RELAY
25	5	320357	CONNECTOR, SPD LOCKING, NON-INS
* 26	1	480491	HARNESS ASSY
27	1	366973-001	CORD REEL ASSY

\* NOTE: ITEM 26 INCLUDES  
ITEMS 19, 20 & 21

**AW-356**  
**CRANE WIRING, 5005H & 6006H**  
**w/ 4 & 8 FUNCTION PENDANTS, LESS PROP. IC (-110,-310)**





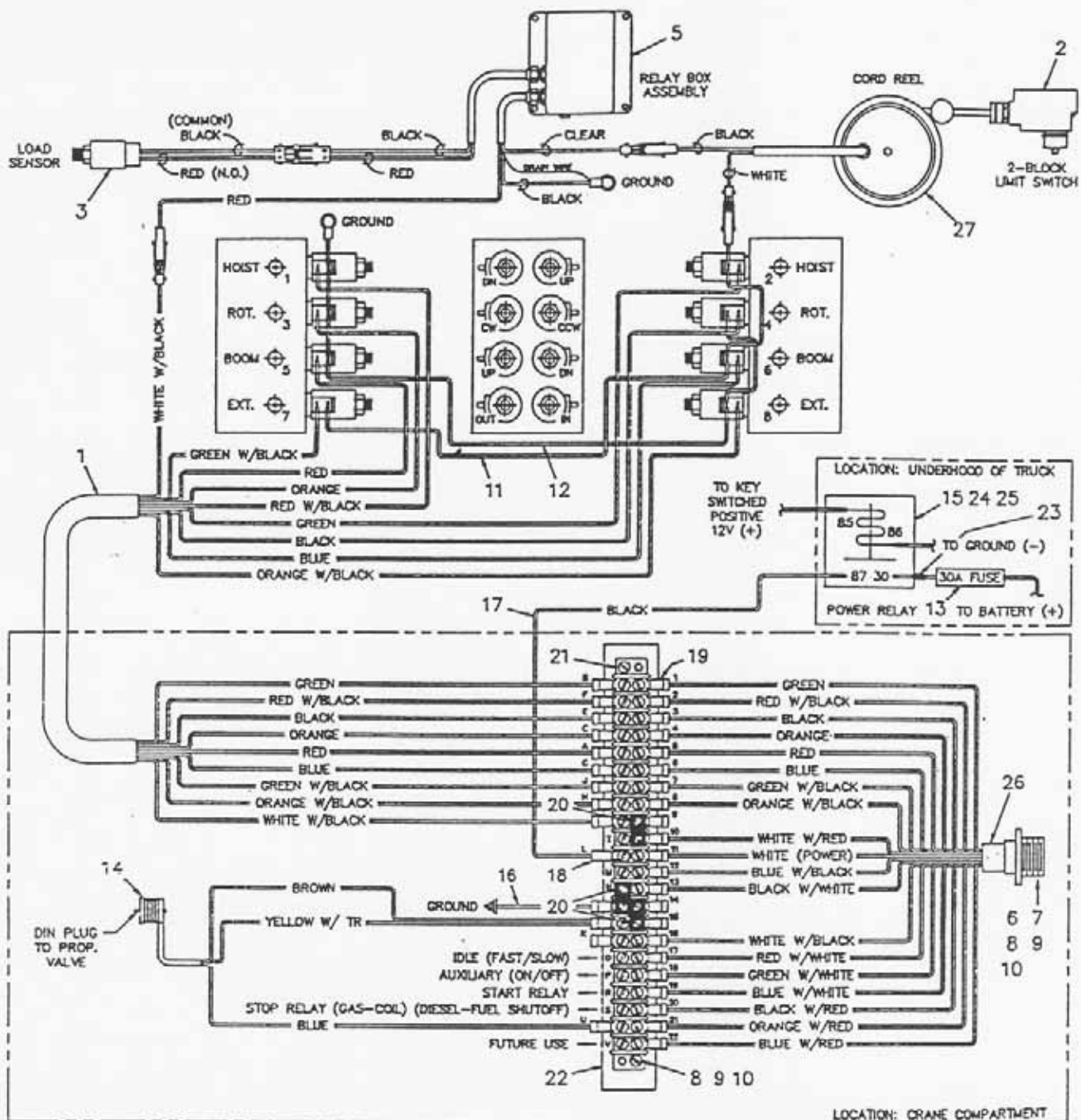
ITEM	QTY	PART NO.	DESCRIPTION
1	1	480386	HARNES, CRANE PIGTAIL
2	1	646900	SWITCH
3	1	320543	LOAD SENSOR ASSY
4	-	-	-
5	1	366986	RELAY BOX ASSY
6	1	480626	BRACKET, PENDANT RECEPTACLE
7	1	480547	CAP, PENDANT RECEPTACLE
8	4	000404	SCREW, RD HD #6-32 x 5/8" LG.
9	4	019600	WASHER, SP LX #6
10	4	015400	NUT, HX #6-32
11	1	480384	CONDUCTOR ASSY
12	1	360549	CONDUCTOR ASSY (POWER EXT.)
13	1	750167	FUSE, IN-LINE 30 AMP
14	1	480522	AMPLIFIER ASSY, PROP.

ITEM	QTY	PART NO.	DESCRIPTION
15	1	320355	POWER RELAY
16	1	480549	CONDUCTOR, 16 GA BLACK
17	1	800657-009	CONDUCTOR, POWER
18	1	001002	TERMINAL, RING
19	37	480495	TERMINAL FLG'D SPADE (16-14 WRE)
20	3	636600	JUMPER
21	1	480494	TERMINAL BLOCK, 22 STA
22	1	480490	DECAL 22 STA TERMINAL BLOCK
23	1	001102	TERMINAL, WR 2RC-10
24	1	320363	PLUG, RELAY
25	5	320357	CONNECTOR, SPD LOCKING, NON-INS
* 26	1	480491	HARNES ASSY
27	1	366973-001	CORD REEL ASSY
28	1	480613	DIN CONNECTOR w/ CORD

\* NOTE: ITEM 26 INCLUDES ITEMS 19, 20 & 21

**AW-357**  
**CRANE WIRING, 5005H & 6006H**  
**8 FUNCTION PENDANT PROP. IC & 12 FUNCTION FM REMOTE (-510,-530)**



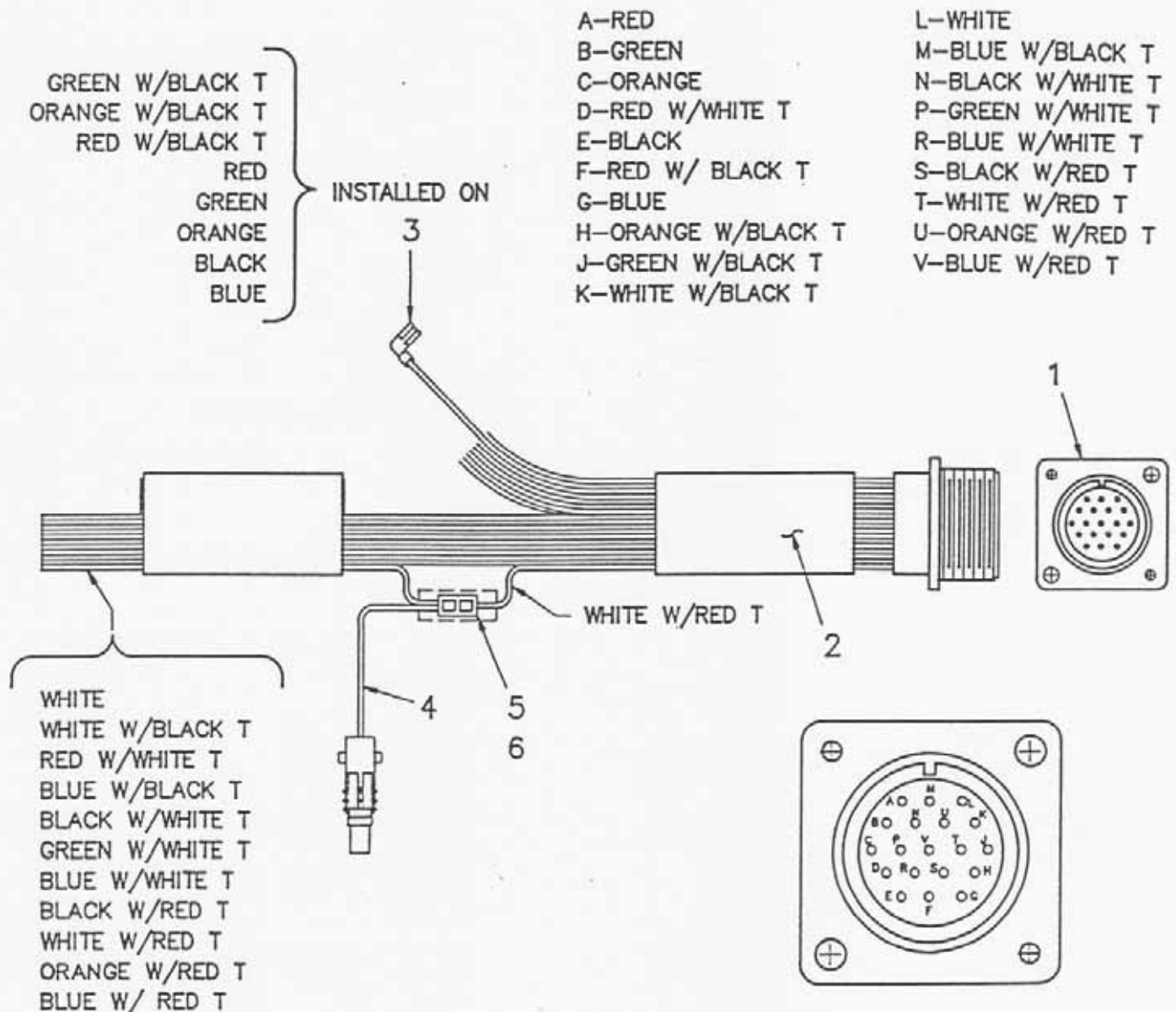


AW-358  
 CRANE WIRING, 5005H & 6006H  
 w/ FM REMOTE, PROPORTIONAL (-500,-520)

\* NOTE: ITEM 26 INCLUDES  
 ITEMS 19, 20 & 21



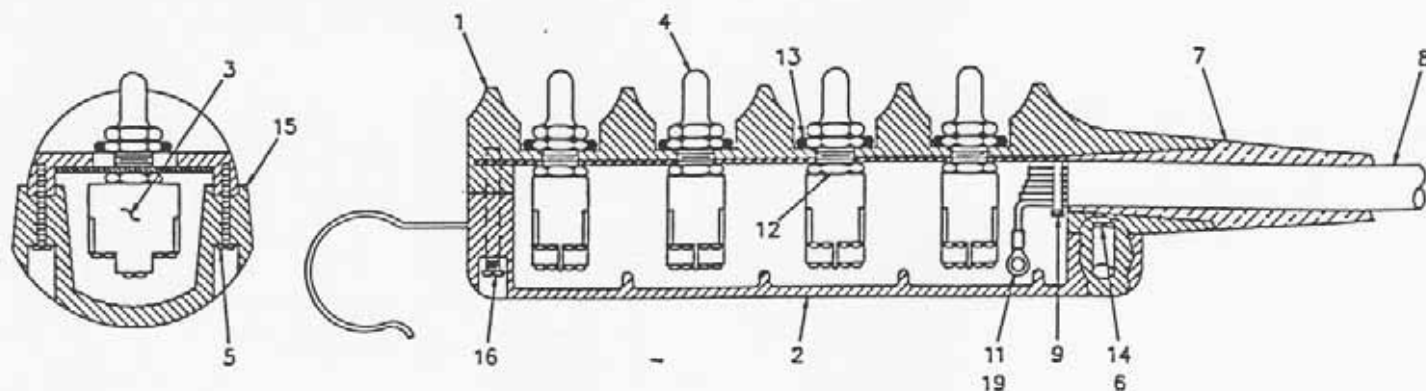
# WIRING GUIDE



ITEM	QTY	P/N	DESCRIPTION
1	1	480542	RECEPTACLE (19 PIN)
2	1	480594-002	CONDUCTOR 16 Ga/19 CON. x 8'-0" LG.
3	8	000405	TERMINAL, FLAG
4	1	480385	CONDUCTOR ASSEMBLY, WEATHER PACK
5	1	001105	TERMINAL, BUTT CONNECTOR NON-INS
6	3"	366995	1/4" SHRINK TUBING

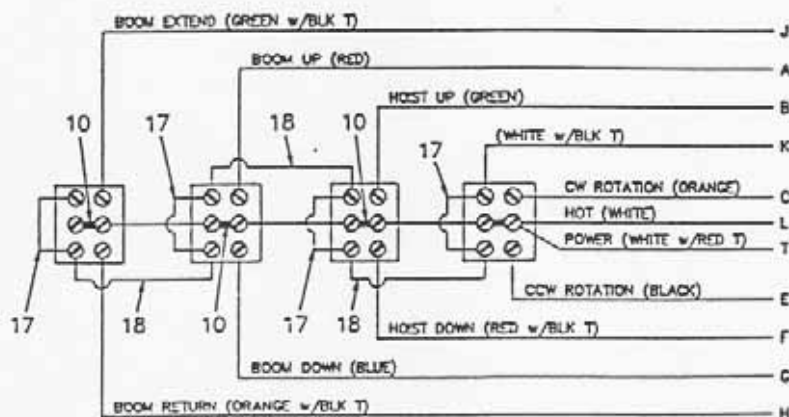
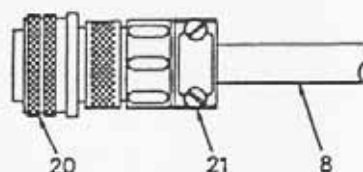
## AW-480597 PENDANT RECEPTACLE ASSEMBLY





## WIRING GUIDE

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

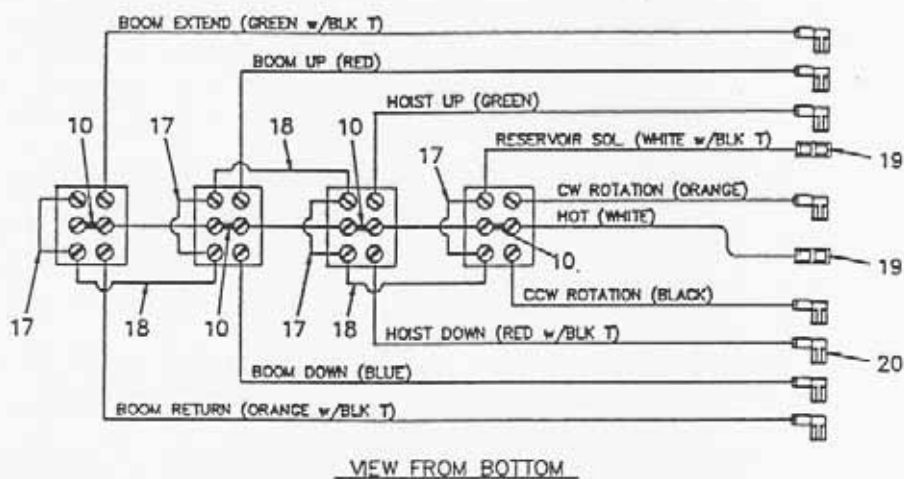
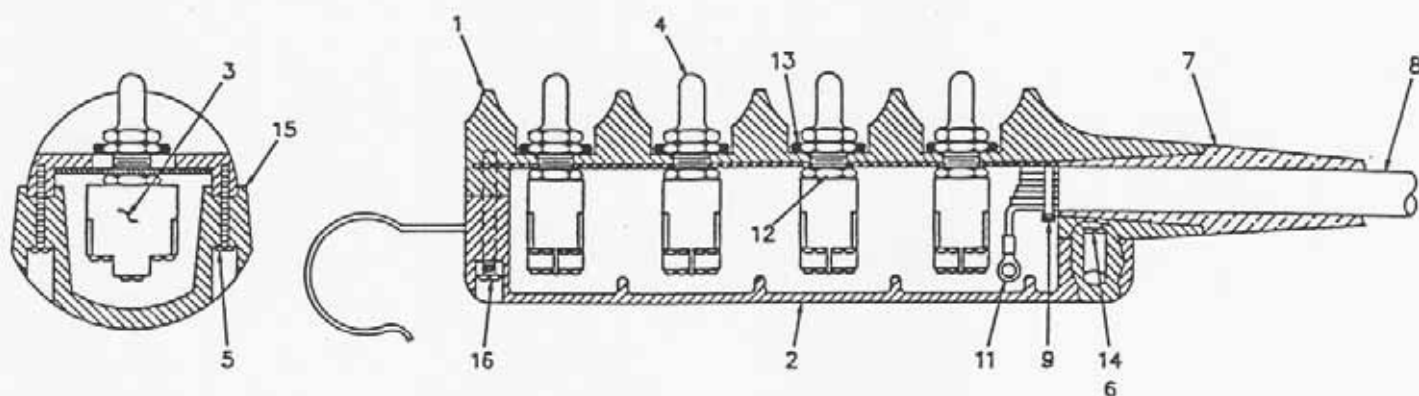


VIEW FROM BOTTOM

ITEM	QTY	P/N	DESCRIPTION	ITEM	QTY	P/N	DESCRIPTION
1	1	631601	PENDANT HOUSING	11	2	000101	TERMINAL, RING #6/14-16 Ga.
2	1	631700	COVER, BOTTOM	12	4	675271	NUT, HEX
3	4	634200	SWITCH, TOGGLE	13	4	642100	"O"-RING
4	4	640302	BOOT, TOGGLE SWITCH	14	4	019700	WASHER, SP. LK. #8
5	10	005001	SCREW, PAN HD. #8 x 3/4	15	21"	800580	3/4" OKONITE RUBBER TAPE
6	2	005101	SCREW, PAN HD. #8 x 1 1/4	16	1	004700	SCREW, PAN HD. #8 x 1 1/2
7	1	633801	ADAPTER, CABLE	17	4	622346	CONDUCTOR ASSY 2 1/8" LG.
8	1	480594-001	CONDUCTOR CABLE (19 COND.)	18	3	622347	CONDUCTOR ASSY 3 1/8" LG.
9	2	634401	CABLE TIE	19	1	002012	TERMINAL, RING #6/18-22 Ga.
10	4	636600	JUMPER	20	1	480514	PLUG, CONNECTOR
				21	1	480515	CLAMP, CABLE

AW-480540  
 PENDANT ASSEMBLY, 4 FUNCTION  
 REMOVABLE w/ 19 PIN CONNECTOR





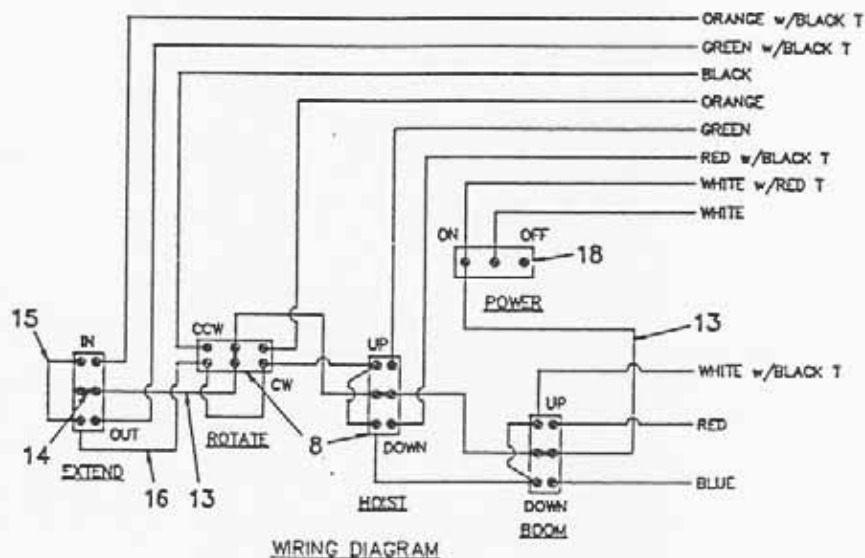
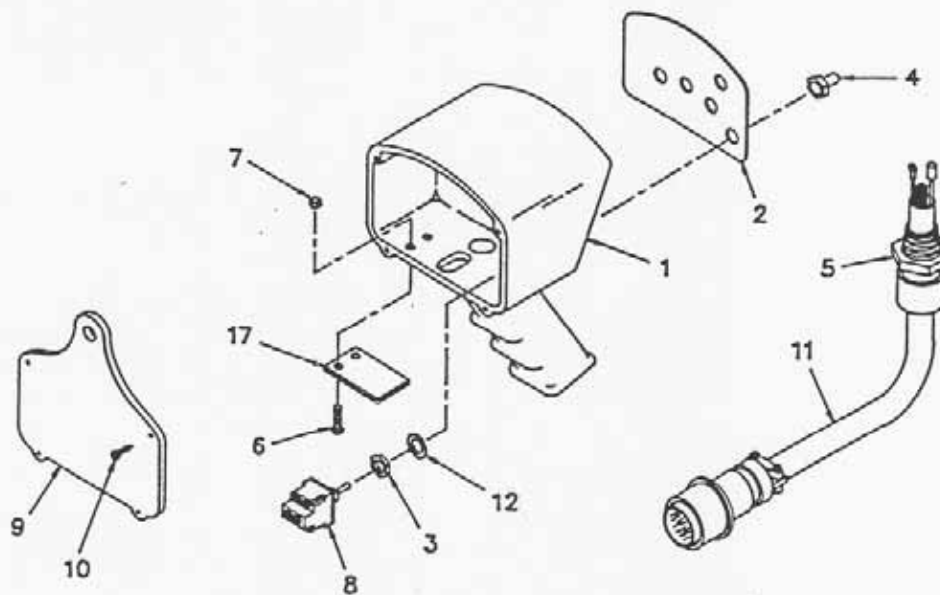
ITEM	QTY	P/N	DESCRIPTION	ITEM	QTY	P/N	DESCRIPTION
1	1	631601	PENDANT HOUSING	11	10	000101	TERMINAL, RING
2	1	631700	COVER, BOTTOM	12	4	675271	NUT, HEX
3	4	634200	SWITCH, TOGGLE	13	4	642100	"O"-RING
4	4	640302	BOOT, TOGGLE SWITCH	14	4	019700	WASHER, SP. LK. #8
5	10	005001	SCREW, PAN HD. #8 x 3/4	15	21"	800580	3/4" OKONITE RUBBER TAPE
6	2	005101	SCREW, PAN HD. #8 x 1 1/4	16	1	004700	SCREW, PAN HD. #8 x 1 1/2
7	1	633801	ADAPTER, CABLE	17	4	622346	CONDUCTOR ASSY 2 1/8" LG.
8	1	800632-004	CONDUCTOR CABLE (27')	18	3	622347	CONDUCTOR ASSY 3 1/8" LG.
9	2	634401	CABLE TIE	19	2	001102	SPLICE, BUTT (REF.)
10	4	636600	JUMPER	20	8	000405	TERMINAL, FLAG (REF.)

**NOTE:**

ITEMS 19 & 20 ARE  
INCLUDED WITH ITEM 8

**AW-480093  
PENDANT ASSEMBLY  
4 FUNCTION, NONREMOVABLE**





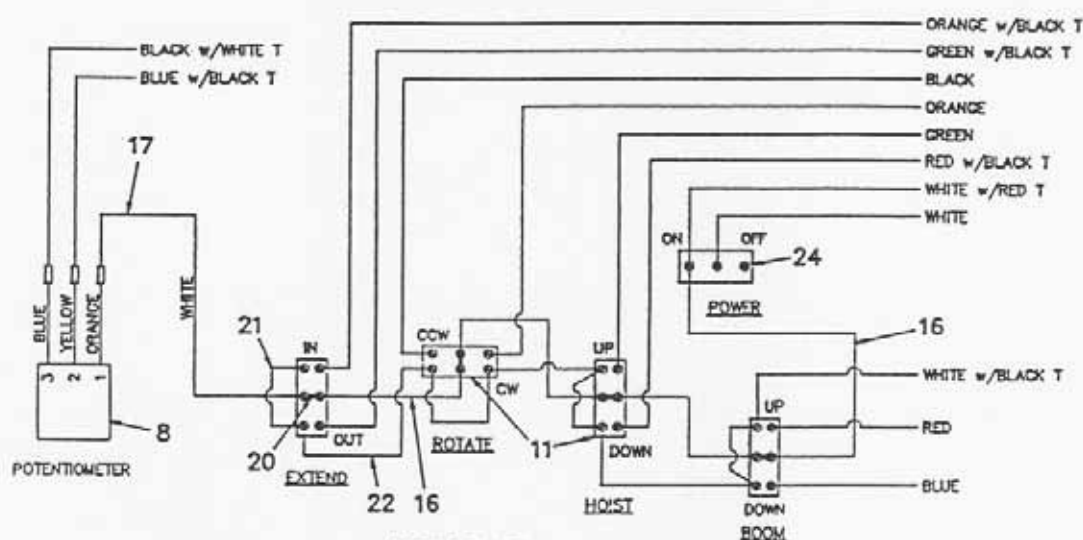
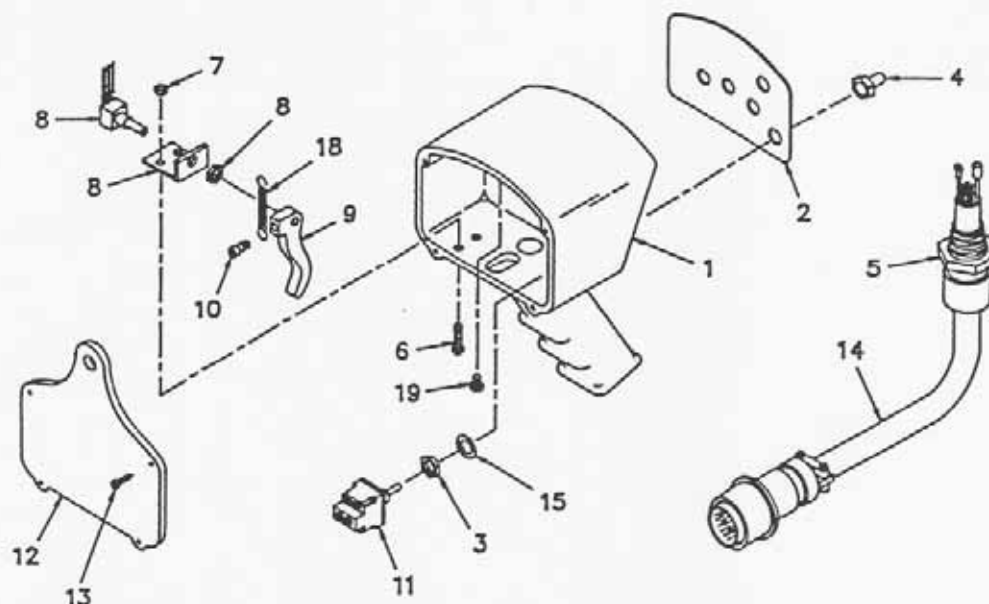
ITEM	QTY.	PART NO.	DESCRIPTION
1	1	480501	PENDANT HOUSING
2	1	480513	DECAL, COVER PLATE
3	5	REF.*	NUT
4	5	640300	BOOT, TOGGLE SWITCH
5	1	370433	CONNECTOR, HUBBEL F3
6	2	002607	SCREW, #10-24NC x 3/4
7	2	015801	NUT, HX. LK. #10-24NC
8	4	634200	SWITCH, TOGGLE DPDT
9	1	480504	BACK PLATE
10	4	480516	SCREW, S.T. RD. HD. #6 x 3/4

ITEM	QTY.	PART NO.	DESCRIPTION
11	1	480595	CABLE ASSEMBLY
12	5	REF.*	WASHER, LOCK
13	4	660302	CONDUCTOR ASSEMBLY
14	4	636600	JUMPER
15	4	622346	CONDUCTOR ASSEMBLY 2 1/8"
16	3	622347	CONDUCTOR ASSEMBLY 3 1/8"
17	1	480598	COVER, TRIGGER OPENING
18	1	750090	SWITCH, TOGGLE ON/OFF
19	2	750737	TIE, CABLE

\* COMES WITH ITEM 8

# AW-480590 PENDANT ASSEMBLY FOUR (4) FUNCTION, STANDARD





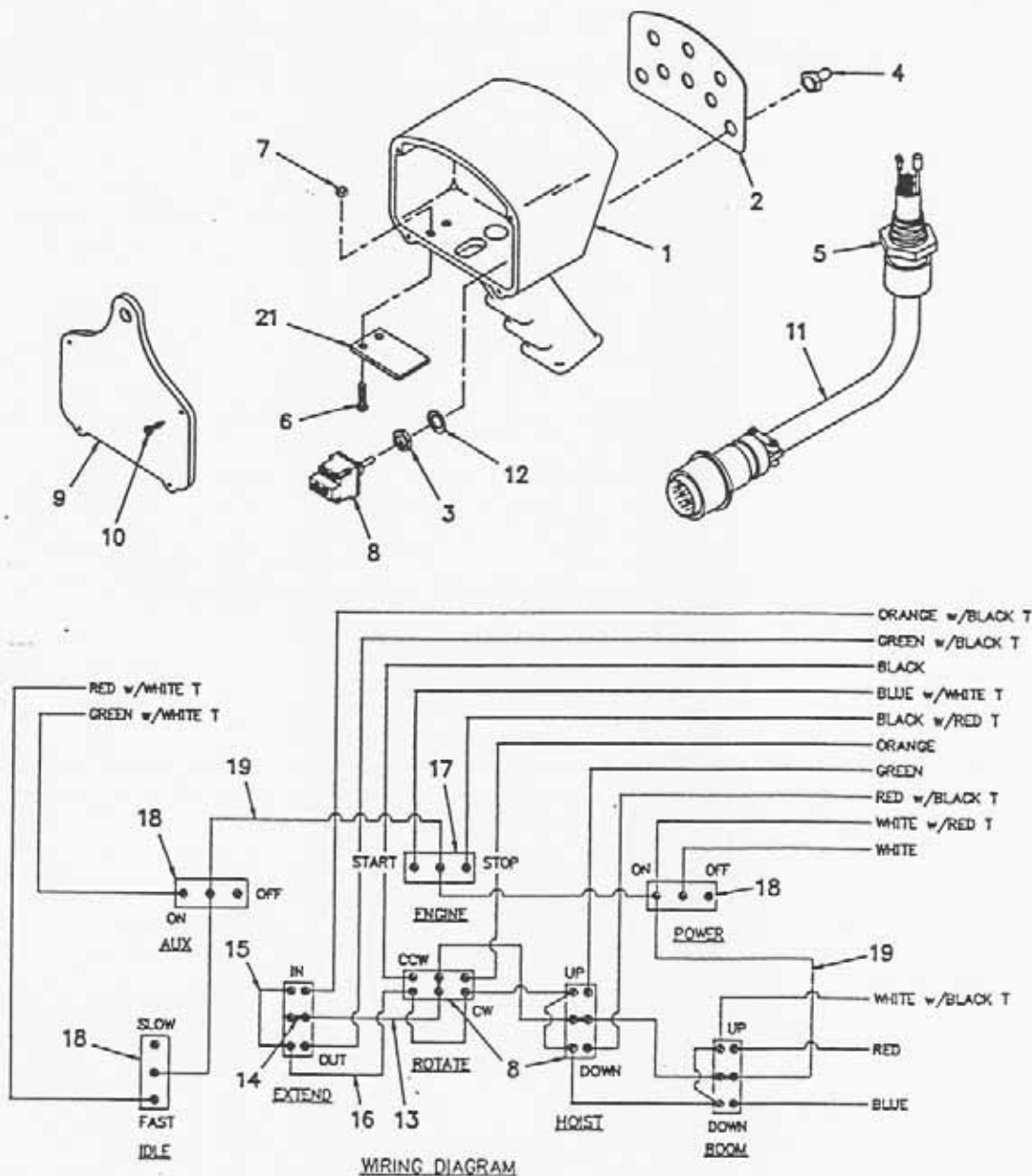
WIRING DIAGRAM

ITEM	QTY.	PART NO.	DESCRIPTION	ITEM	QTY.	PART NO.	DESCRIPTION
1	1	480501	PENDANT HOUSING	13	4	480516	SCREW, S.T. RD. HD. #6 x 3/4
2	1	480513	DECAL, COVER PLATE	14	1	480596	CABLE ASSEMBLY
3	4	REF.*	NUT	15	4	REF.*	WASHER, LOCK
4	4	640300	BOOT, TOGGLE SWITCH	16	4	660302	CONDUCTOR ASSEMBLY
5	1	370433	CONNECTOR, HUBBEL F3	17	1	480524	CONDUCTOR ASSEMBLY
6	2	002607	SCREW, #10-24NC x 3/4	18	1	480523	SPRING, TRIGGER RETURN
7	2	015801	NUT, HX. LK. #10-24NC	19	1	005003	SCREW, PAN HD. S.T. #6 x 3/8
8	1	480507	POTENTIOMETER ASSEMBLY	20	4	636600	JUMPER
9	1	480506	TRIGGER	21	4	622346	CONDUCTOR ASSEMBLY 2 1/8"
10	1	480517	SCREW, SOC. HD. #10-32NF x 5/8	22	3	622347	CONDUCTOR ASSEMBLY 3 1/8"
11	4	634200	SWITCH, TOGGLE DPDT	23	2	750737	TIE, CABLE
12	1	480504	BACK PLATE	24	1	750090	SWITCH, TOGGLE ON/OFF

\* COMES WITH ITEM 11

# AW-480591 PROPORTIONAL PENDANT ASSEMBLY FOUR (4) FUNCTION





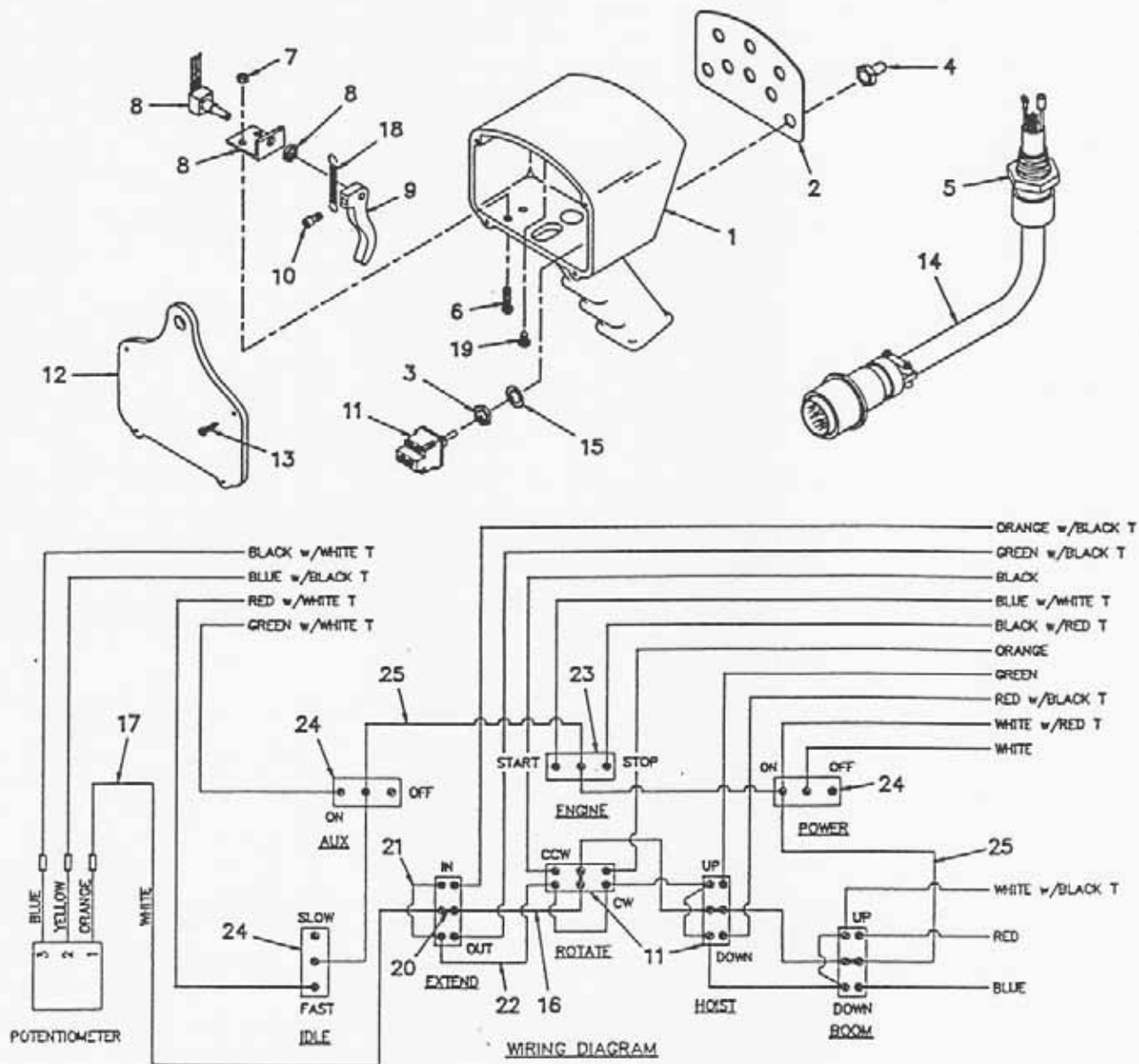
ITEM	QTY.	PART NO.	DESCRIPTION
1	1	480501	PENDANT HOUSING
2	1	480518	DECAL, COVER PLATE
3	8	REF.*	NUT
4	8	640300	BOOT, TOGGLE SWITCH
5	1	370433	CONNECTOR, HUBBEL F3
6	2	002607	SCREW, #10-24NC x 3/4
7	2	015801	NUT, HX. LK. #10-24NC
8	4	634200	SWITCH, TOGGLE DPDT
9	1	480504	BACK PLATE
10	4	480516	SCREW, S.T. RD. HD. #6 x 3/4
11	1	480588	CABLE ASSEMBLY

ITEM	QTY.	PART NO.	DESCRIPTION
12	8	REF.*	WASHER, LOCK
13	3	660302	CONDUCTOR ASSEMBLY
14	4	636600	JUMPER
15	4	622346	CONDUCTOR ASSEMBLY 2 1/8"
16	3	622347	CONDUCTOR ASSEMBLY 3 1/8"
17	1	622000	SWITCH, TOGGLE SPDT
18	3	750090	SWITCH, TOGGLE ON/OFF
19	1	480526	CONDUCTOR ASSEMBLY
20	2	750737	TIE, CABLE
21	1	480598	COVER, TRIGGER OPENING

\* COMES WITH ITEM 8

AW-480592  
PENDANT ASSEMBLY  
EIGHT (8) FUNCTION, STANDARD





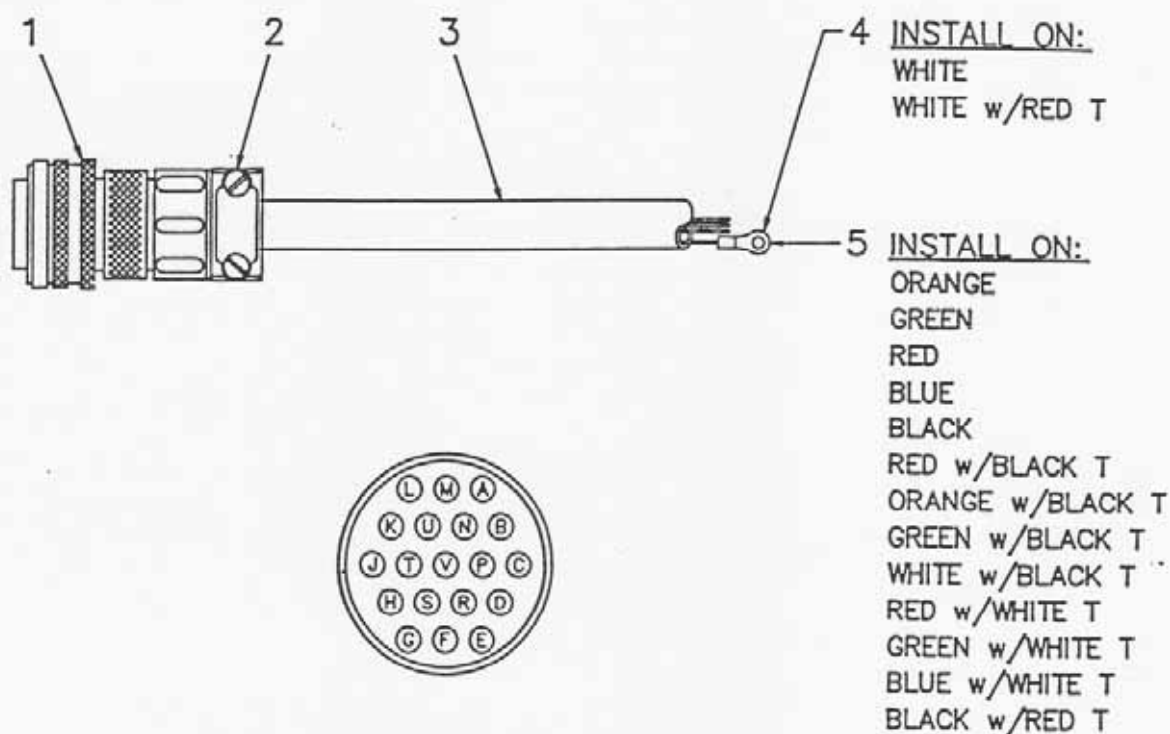
ITEM	QTY.	PART NO.	DESCRIPTION
1	1	480501	PENDANT HOUSING
2	1	480518	DECAL COVER PLATE
3	8	REF.*	NUT
4	8	640300	BOOT, TOGGLE SWITCH
5	1	370433	CONNECTOR, HUBBEL F3
6	2	002607	SCREW, #10-24NC x 3/4
7	2	015801	NUT, HX. LK. #10-24NC
8	1	480507	POTENTIOMETER ASSEMBLY
9	1	480506	TRIGGER
10	1	480517	SCREW, SOC. HD. #10-32NF x 5/8
11	4	634200	SWITCH, TOGGLE DPDT
12	1	480504	BACK PLATE
13	4	480516	SCREW, S.T. RD. HD. #6 x 3/4

ITEM	QTY.	PART NO.	DESCRIPTION
14	1	480589	CABLE ASSEMBLY
15	8	REF.*	WASHER, LOCK
16	3	660302	CONDUCTOR ASSEMBLY
17	1	480524	CONDUCTOR ASSEMBLY
18	1	480523	SPRING, TRIGGER RETURN
19	1	005003	SCREW, PAN HD. S.T. #6 x 3/8
20	4	636600	JUMPER
21	4	622346	CONDUCTOR ASSEMBLY 2 1/8"
22	3	622347	CONDUCTOR ASSEMBLY 3 1/8"
23	1	622000	SWITCH, TOGGLE SPDT
24	3	750090	SWITCH, TOGGLE ON/OFF
25	1	480526	CONDUCTOR ASSEMBLY
26	2	750737	TIE, CABLE

\* COMES WITH ITEM 11

# AW-480593 PROPORTIONAL PENDANT ASSEMBLY EIGHT (8) FUNCTION





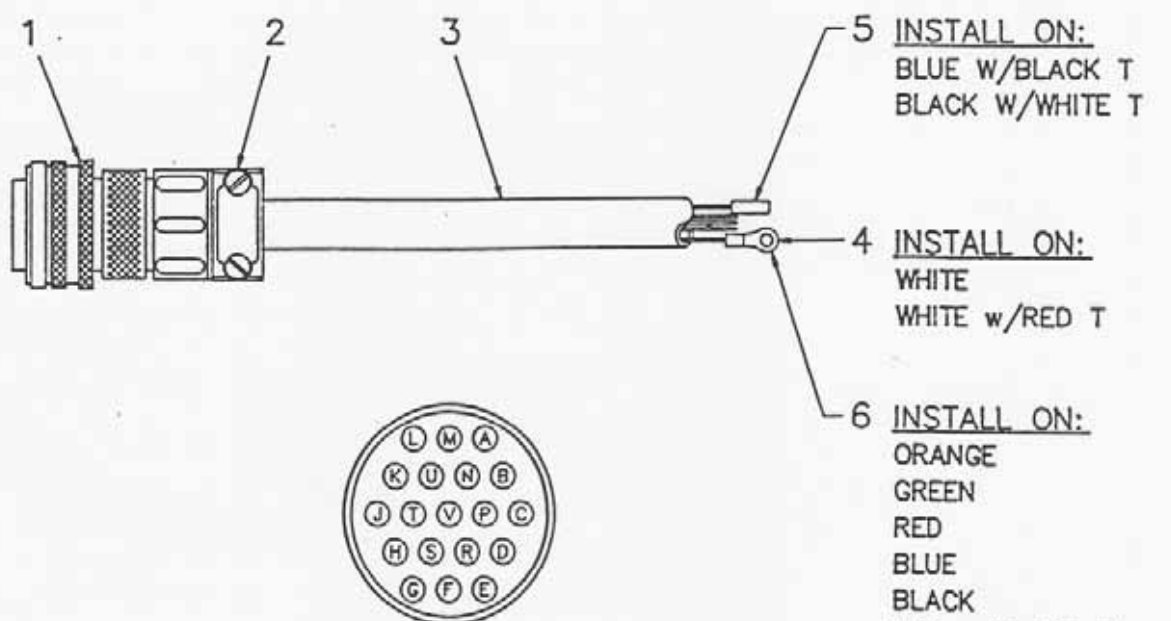
A-RED  
B-GREEN  
C-ORANGE  
D-RED W/WHITE T  
E-BLACK  
F-RED W/BLACK T  
G-BLUE  
H-ORANGE W/BLACK T  
J-GREEN W/BLACK T  
K-WHITE W/BLACK T

L-WHITE  
M-BLUE W/BLACK T  
N-BLACK W/WHITE T  
P-GREEN W/WHITE T  
R-BLUE W/WHITE T  
S-BLACK W/RED T  
T-WHITE W/RED T  
U-ORANGE W/RED T  
V-BLUE W/RED T

ITEM	QTY	P/N	DESCRIPTION
1	1	480514	PLUG, CONNECTOR
2	1	480515	CLAMP, CABLE
3	30'	480594-001	CABLE, CONDUCTOR (19 COND.)
4	2	000101	TERMINAL, RING #6 / 14-16 Ga
5	13	002012	TERMINAL, RING #6 / 18-22 Ga

AW-480588  
PENDANT CABLE ASSEMBLY





### WIRING GUIDE

A-RED  
B-GREEN  
C-ORANGE  
D-RED W/WHITE T  
E-BLACK  
F-RED W/BLACK T  
G-BLUE  
H-ORANGE W/BLACK T  
J-GREEN W/BLACK T  
K-WHITE W/BLACK T

L-WHITE  
M-BLUE W/BLACK T  
N-BLACK W/WHITE T  
P-GREEN W/WHITE T  
R-BLUE W/WHITE T  
S-BLACK W/RED T  
T-WHITE W/RED T  
U-ORANGE W/RED T  
V-BLUE W/RED T

5 INSTALL ON:  
BLUE W/BLACK T  
BLACK W/WHITE T

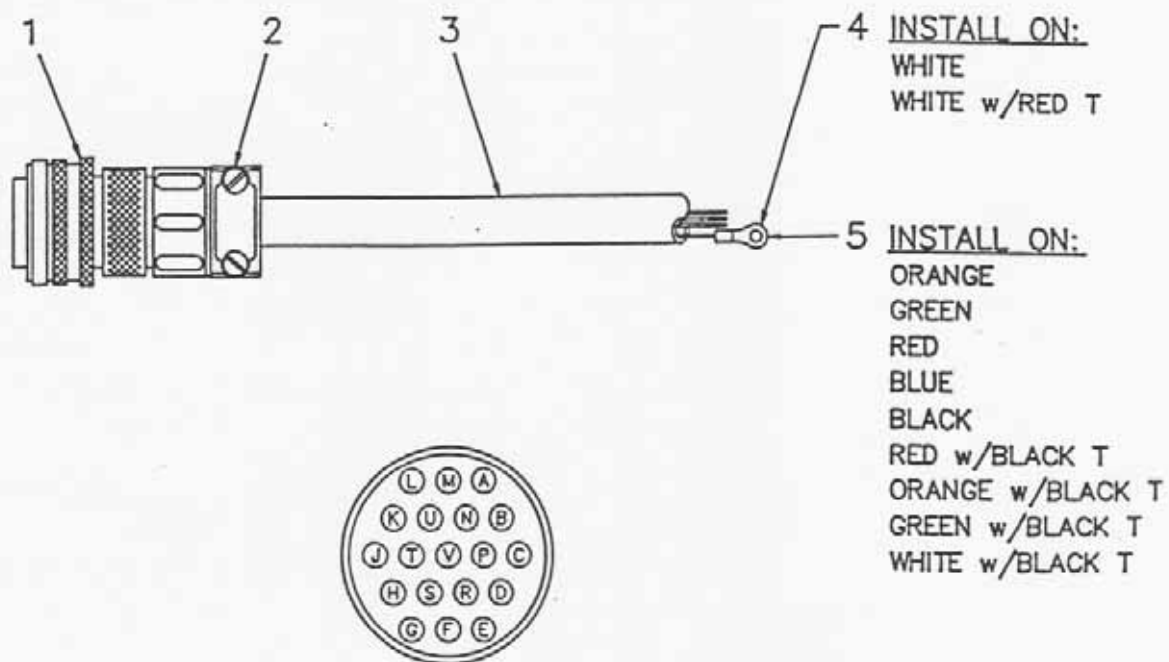
4 INSTALL ON:  
WHITE  
WHITE w/RED T

6 INSTALL ON:  
ORANGE  
GREEN  
RED  
BLUE  
BLACK  
RED w/BLACK T  
ORANGE w/BLACK T  
GREEN w/BLACK T  
WHITE w/BLACK T  
RED w/WHITE T  
GREEN w/WHITE T  
BLUE w/WHITE T  
BLACK w/RED T

<u>ITEM</u>	<u>QTY</u>	<u>P/N</u>	<u>DESCRIPTION</u>
1	1	480514	PLUG, CONNECTOR
2	1	480515	CLAMP, CABLE
3	30'	480594-001	CABLE, CONDUCTOR (19 COND.)
4	2	000101	TERMINAL, RING #6 / 14-16 Ga
5	2	480510	BULLET CONNECTOR, FEMALE
6	13	002012	TERMINAL, RING #6 / 18-22 Ga

AW-480589  
PENDANT CABLE ASSEMBLY





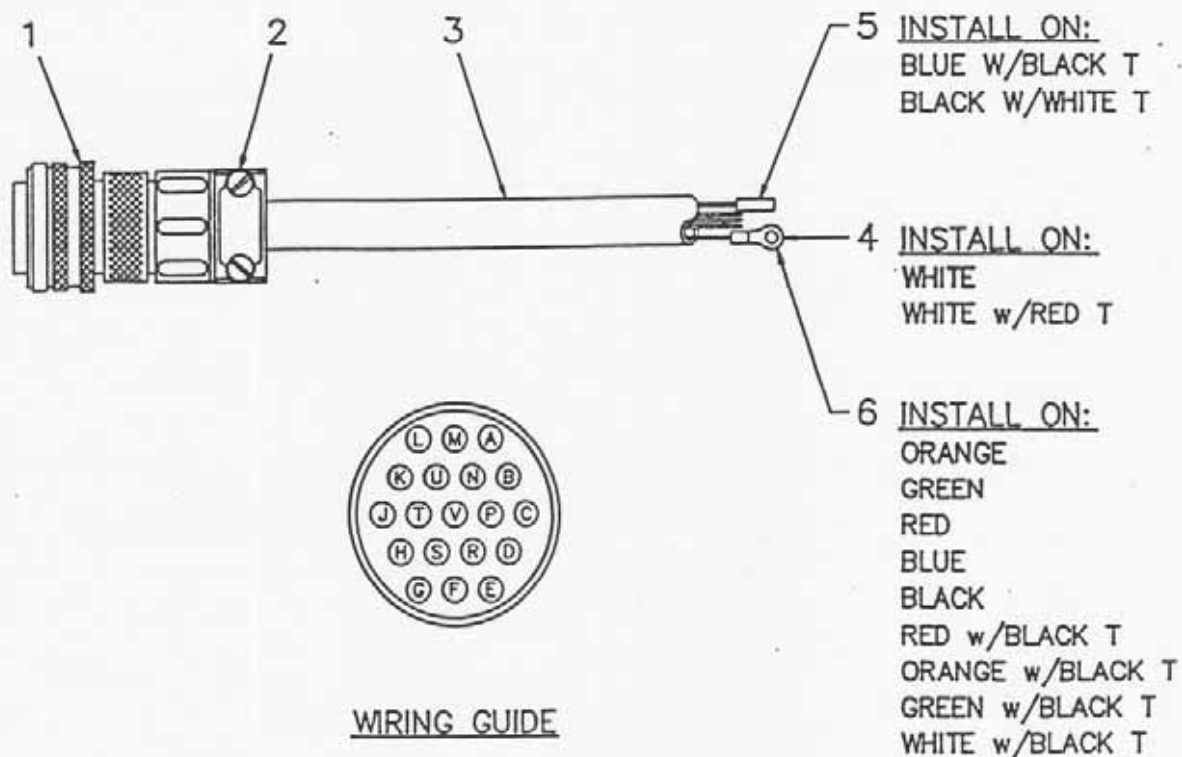
### WIRING GUIDE

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	

<u>ITEM</u>	<u>QTY</u>	<u>P/N</u>	<u>DESCRIPTION</u>
1	1	480514	PLUG, CONNECTOR
2	1	480515	CLAMP, CABLE
3	30'	480594-001	CABLE, CONDUCTOR (19 COND.)
4	2	000101	TERMINAL, RING #6 / 14-16 Ga
5	9	002012	TERMINAL, RING #6 / 18-22 Ga

AW-480595  
PENDANT CABLE ASSEMBLY



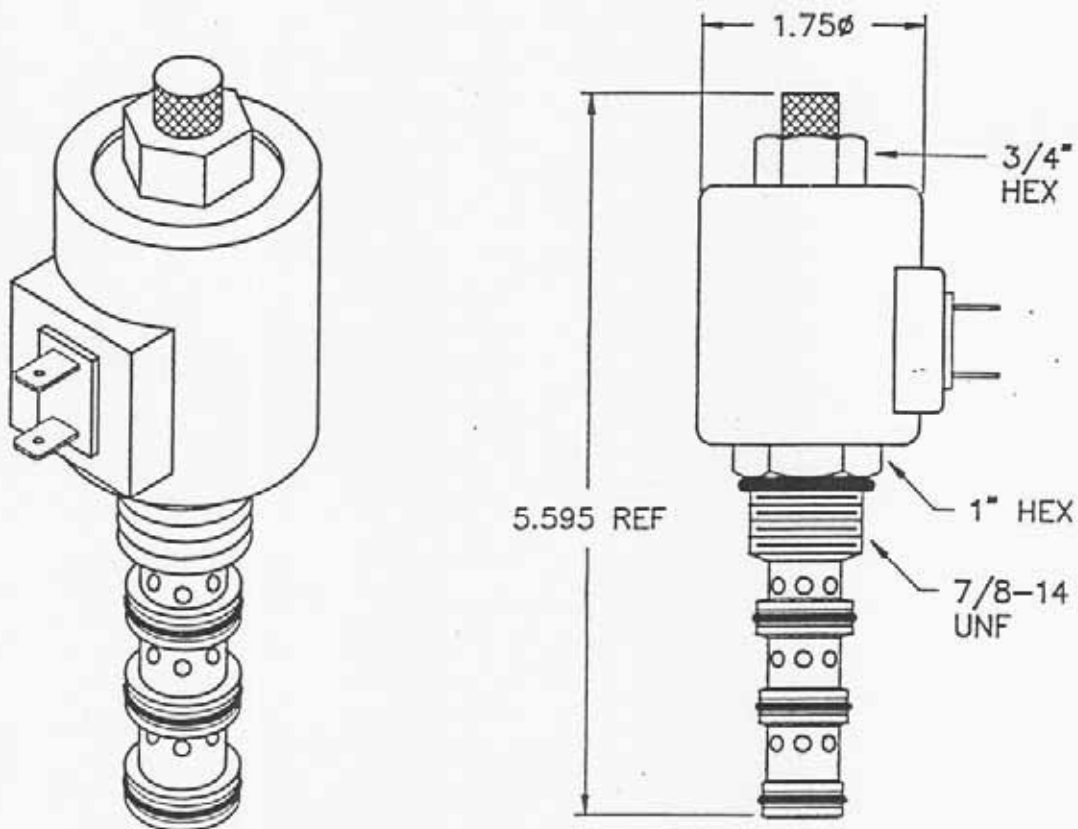


A-RED	L-WHITE
B-GREEN	M-BLUE W/BLACK T
C-ORANGE	N-BLACK W/WHITE T
D-RED W/WHITE T	P-GREEN W/WHITE T
E-BLACK	R-BLUE W/WHITE T
F-RED W/BLACK T	S-BLACK W/RED T
G-BLUE	T-WHITE W/RED T
H-ORANGE W/BLACK T	U-ORANGE W/RED T
J-GREEN W/BLACK T	V-BLUE W/RED T
K-WHITE W/BLACK T	

ITEM	QTY	P/N	DESCRIPTION
1	1	480514	PLUG, CONNECTOR
2	1	480515	CLAMP, CABLE
3	30'	480594-001	CABLE, CONDUCTOR (19 COND.)
4	2	000101	TERMINAL, RING #6 / 14-16 Ga
5	2	480510	BULLET CONNECTOR, FEMALE
6	9	002012	TERMINAL, RING #6 / 18-22 Ga

AW-480596  
PENDANT CABLE ASSEMBLY



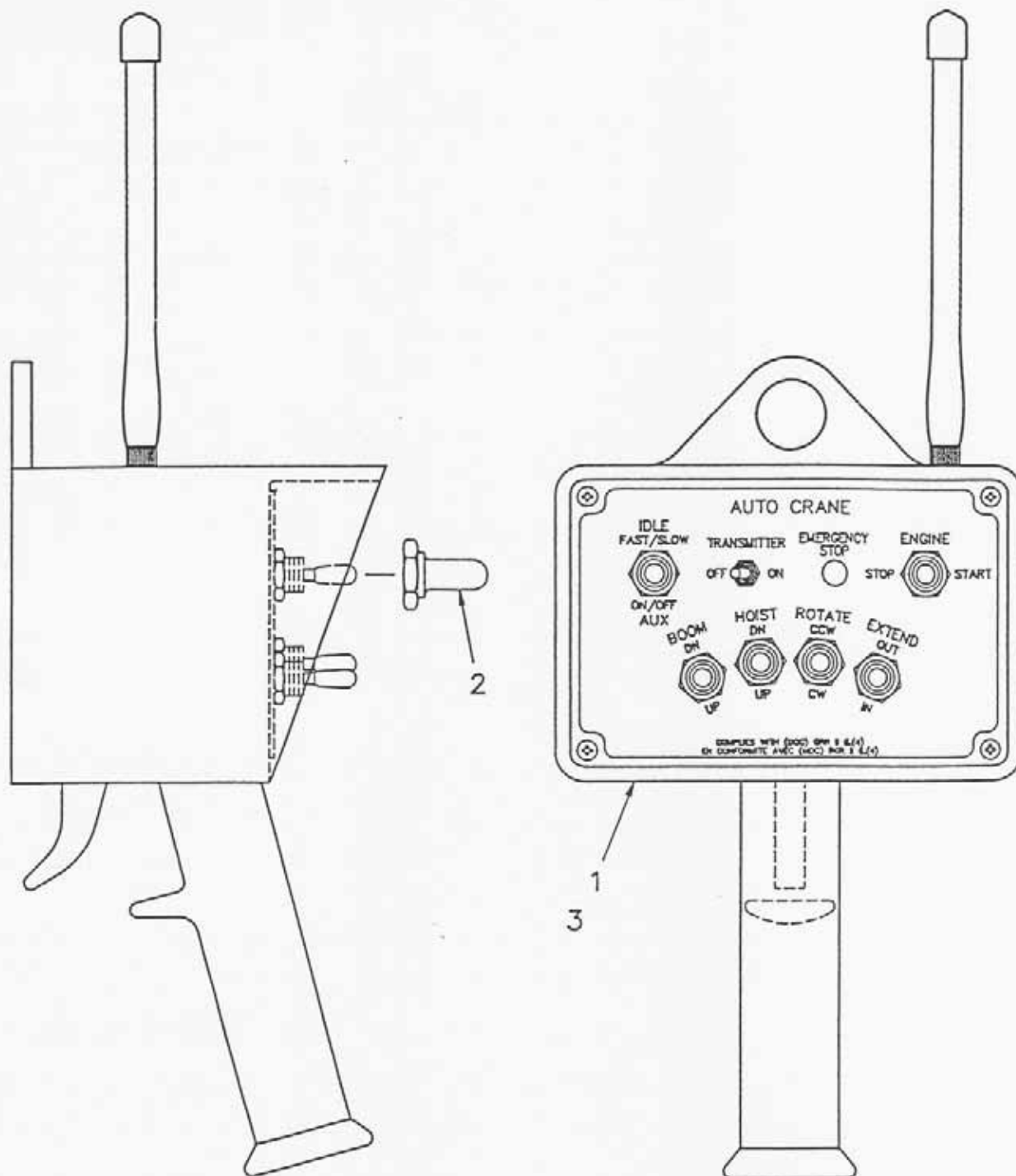


NOTES:

- 1.) FOR SEAL KIT, ORDER PART NO. 480184-002
- 2.) FOR REPLACEMENT COIL, ORDER PART NO. 480184-003

AW-480184  
CARTRIDGE VALVE

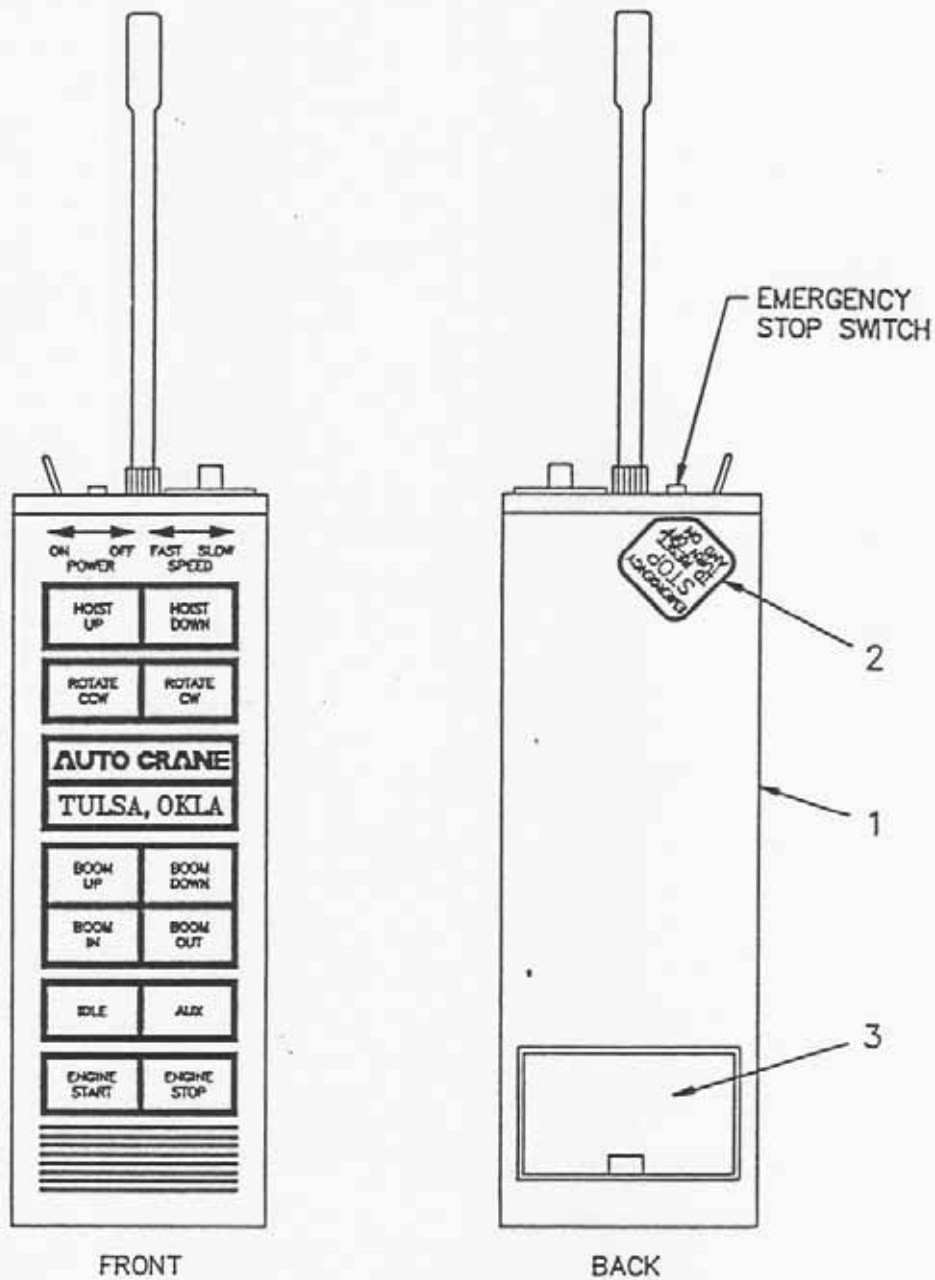




ITEM	QTY	P/N	DESCRIPTION
1	1	480621-002	FM REMOTE TRANSMITTER (TOGGLE)
2	6	640300	BOOT, TOGGLE
3	1	480605	BATTERY, 9V

AW-480623  
FM REMOTE TRANSMITTER  
TOGGLE SWITCH

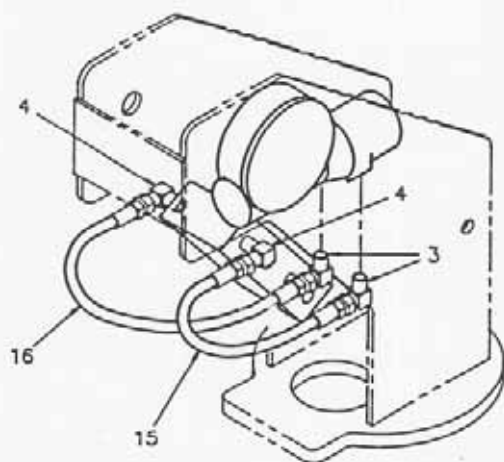




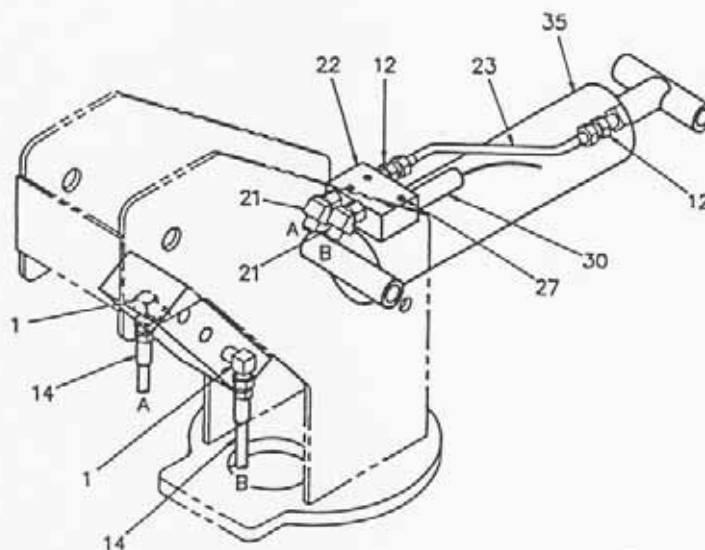
ITEM	QTY	P/N	DESCRIPTION
1	1	480622-001	FM REMOTE TRANSMITTER (MEMBRANE)
2	1	480632	DECAL, EMERGENCY STOP
3	1	480605	BATTERY, 9V

AW-480633  
FM REMOTE TRANSMITTER  
MEMBRANE SWITCH

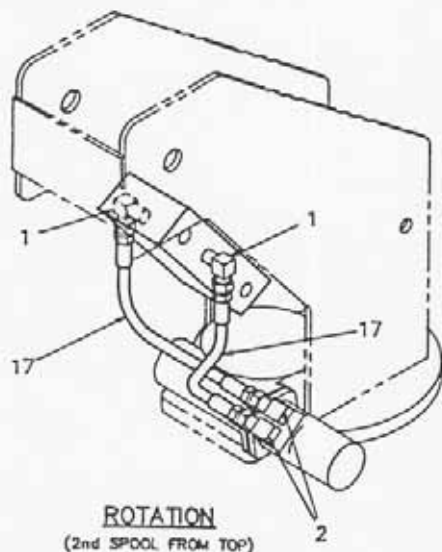




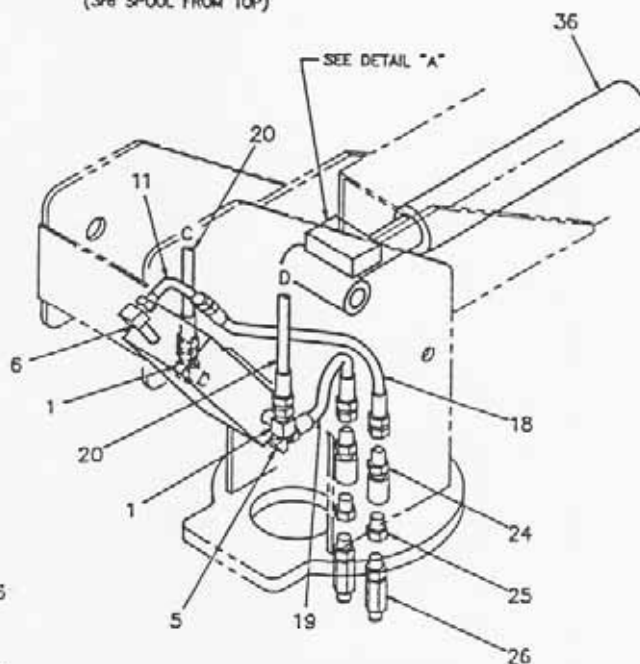
**HOIST**  
(TOP SPOOL)



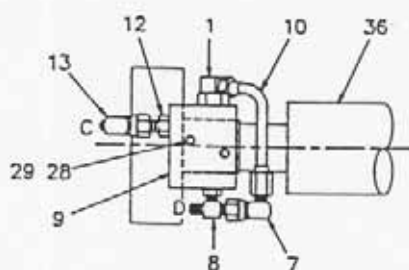
**BOOM UP**  
(3rd SPOOL FROM TOP)



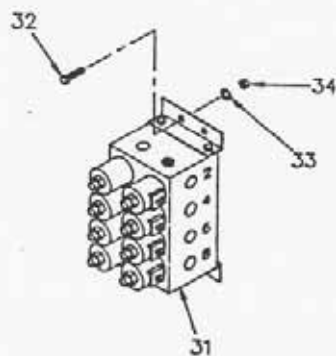
**ROTATION**  
(2nd SPOOL FROM TOP)



**PRESSURE RETURN  
EXTENSION**  
(BOTTOM SPOOL)



**DETAIL "A"**



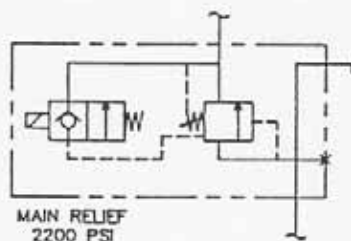
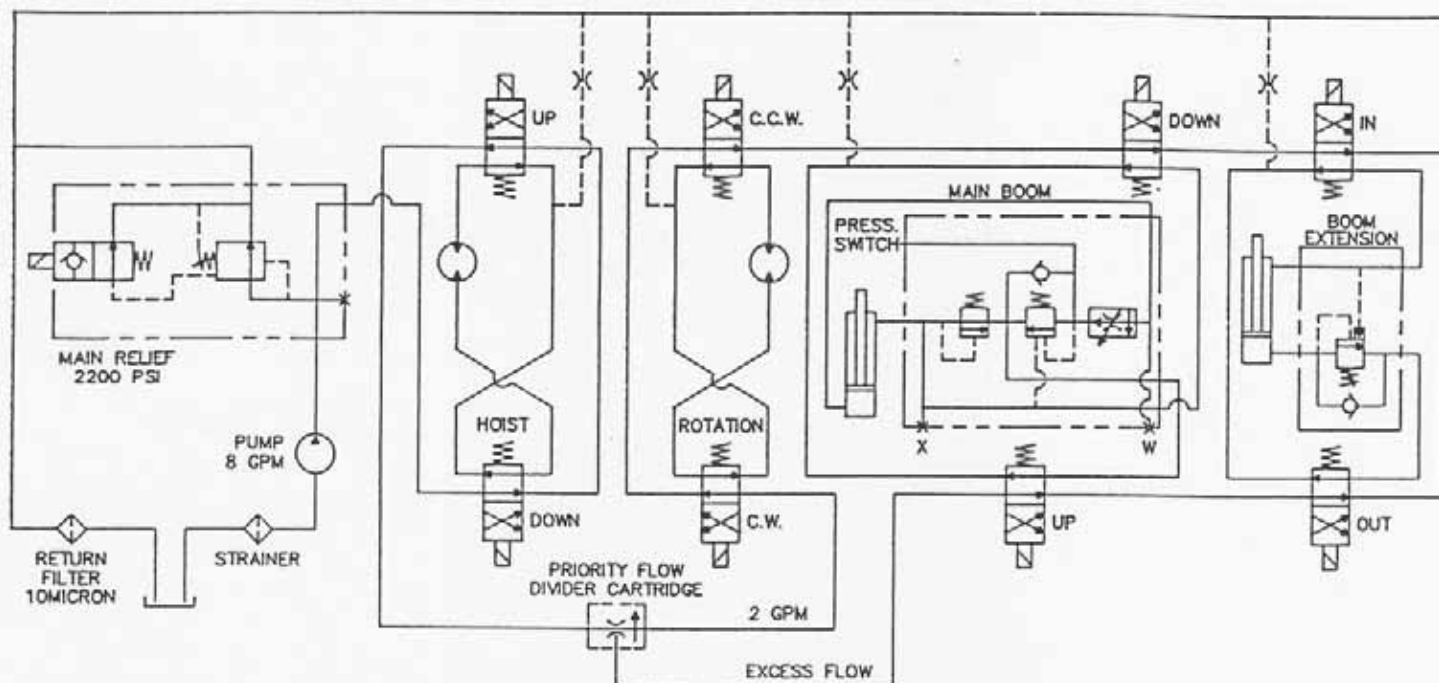
**AW-366160  
6006H HYDRAULIC ASSEMBLY**



AW-366160  
6006H HYDRAULIC ASSEMBLY

ITEM	QTY.	PART NO.	DESCRIPTION
1	7	200892	ELL, 90° -6 NPT/-6 JIC
2	2	202759	ELL, 90° -8 NPT/-6 JIC
3	2	360043	ELL, 90° -8 NPT/-8 JIC
4	2	360044	ELL, 90° -6 NPT/-8 JIC
5	1	480190	ELL, 90° -6 NPT/-8 JIC (LONG)
6	1	480213	ELL, 90° -6 NPT/-8 JIC (MED. LG.)
7	1	480194	ELL, 90° -6 JIC SWIVEL/-6 JIC
8	1	241168	TEE, -6 O-RING/-6 JIC RUN
9	1	330412	COUNTER BALANCE VALVE
10	1	480212	TUBE ASSEMBLY (EXT. CYL.)
11	1	480211	TUBE ASSEMBLY (PRESSURE)
12	3	200876	ADAPTER, -6 O-RING/-6 JIC
13	1	330647	ELL 45°, SWIVEL -6 JIC
14	2	360573	HOSE ASSEMBLY
15	1	480202	HOSE ASSEMBLY
16	1	480203	HOSE ASSEMBLY
17	2	480204	HOSE ASSEMBLY
18	1	360578	HOSE ASSEMBLY
19	1	360579	HOSE ASSEMBLY
20	2	480208	HOSE ASSEMBLY
21	2	480195	ELL, 45° -6 O-RING/-6 JIC
22	1	366164	COUNTER BALANCE VALVE
23	1	366167	TUBE ASSEMBLY
24	2	360054	ADAPTER, -8 NPT/-8 JIC
25	2	750413	REDUCER, -8 NPT/-6 NPTF
26	2	750412	SWIVEL JOINT
27	4	005612	SCREW, 1/4-20 X 3/4 SC. HD.
28	2	020200	1/4" LK. WASHER
29	2	005810	SCREW, 1/4 NC X 1 3/4 HX. HD.
30	1	320543	LOAD SENSOR
31	1	360620	VALVE BANK ASSEMBLY
32	4	008701	SCREW, HEX HD 3/8-16NC x 1" LG.
33	4	021100	WASHER, SP LK 3/8
34	4	017100	NUT, HEX 3/8-16NC
35	1	366161	CYLINDER, BOOM UP
36	1	366162	CYLINDER, EXTENSION

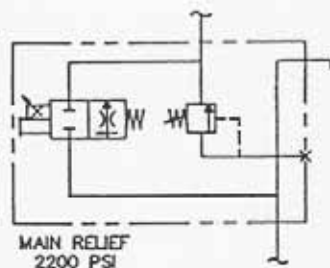
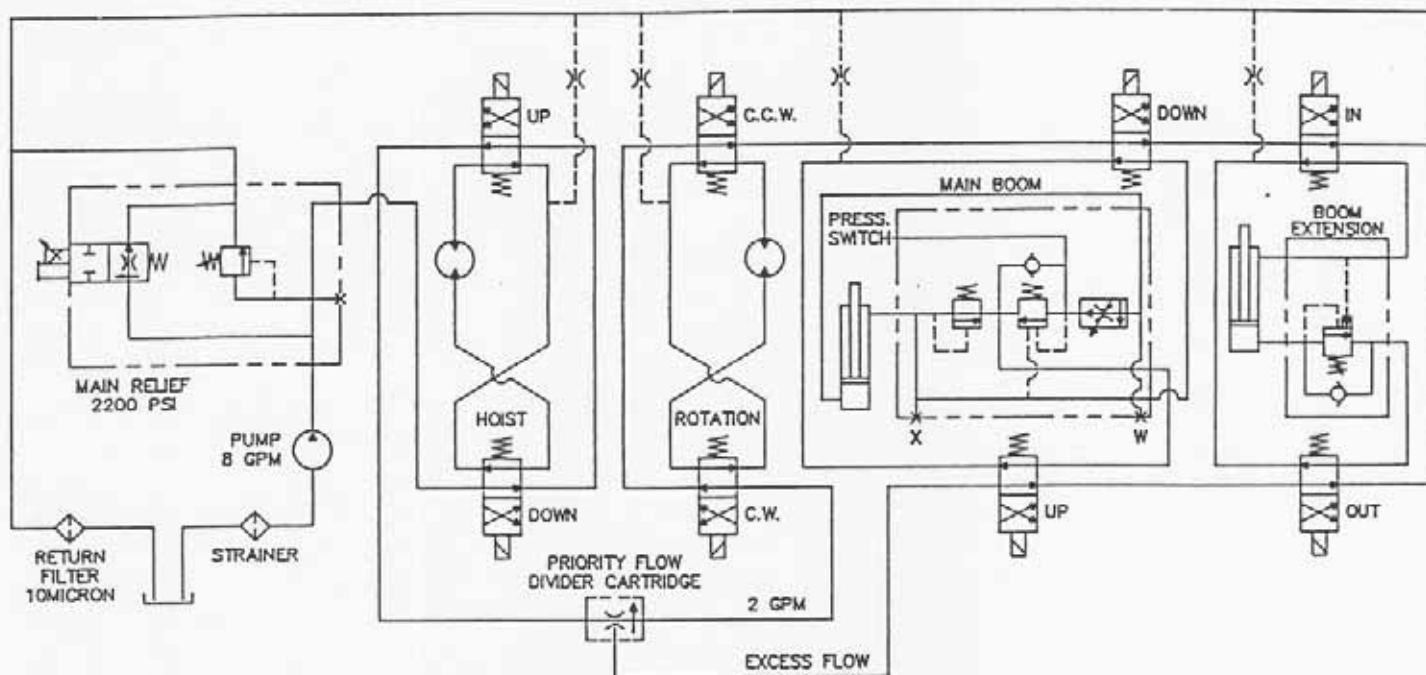




RELIEF VALVE SHOWN  
WITH SOLENOID ENERGIZED

# AW-070 6006H HYDRAULIC SCHEMATIC





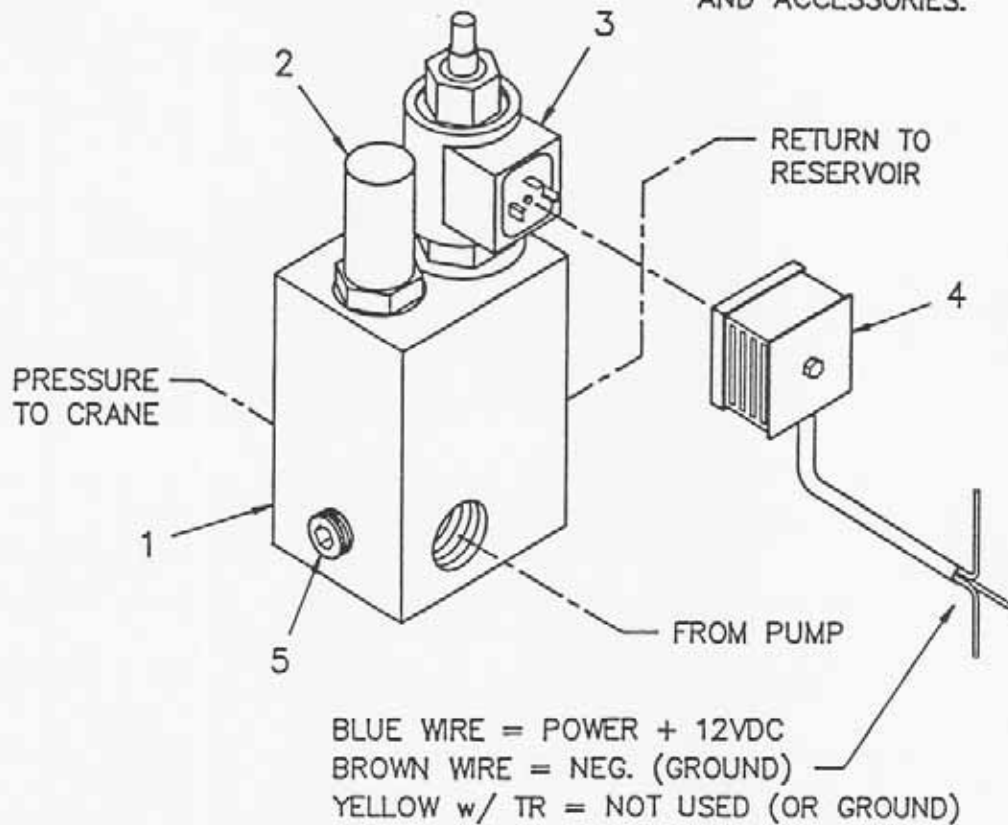
RELIEF VALVE SHOWN  
WITH SOLENOID ENERGIZED

AW-070P  
6006H HYDRAULIC SCHEMATIC  
PROPORTIONAL



NOTE:

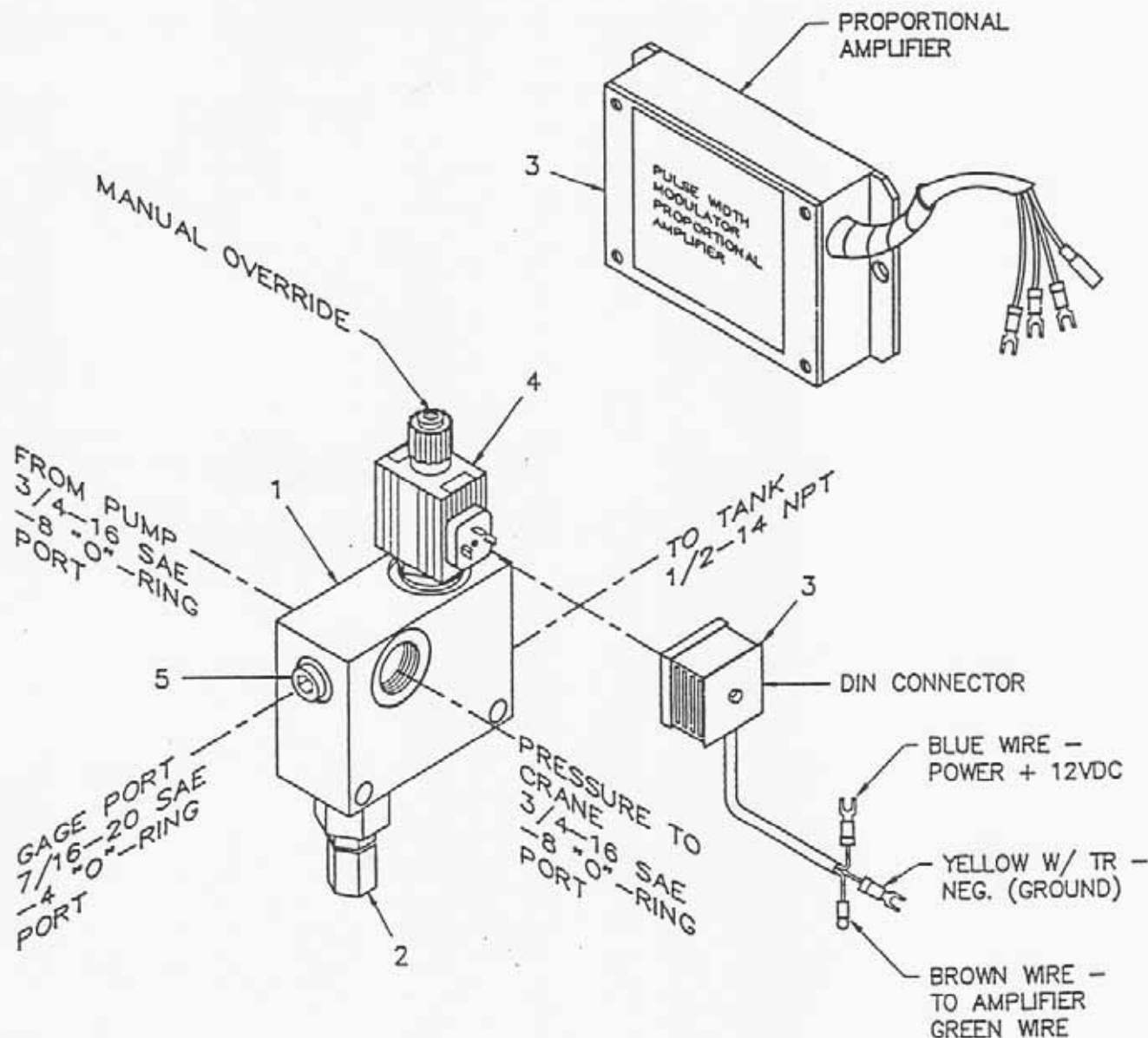
RELIEF VALVE MUST BE  
LOCATED BETWEEN PUMP  
AND ANY OTHER VALVES  
AND ACCESSORIES.



<u>ITEM</u>	<u>QTY</u>	<u>P/N</u>	<u>DESCRIPTION</u>
1	1	366211	VALVE, VENTED RELIEF 2200 PSI
2		366211-001	REPLACEMENT CARTRIDGE
3	1	480137	VALVE, DIRECTIONAL SOLENOID
4	1	480613	DIN CONNECTOR
5	1	000209	PLUG, PIPE - SOC. 1/4"

AW-366212  
VENTED RELIEF VALVE  
ASSEMBLY w/ SOLENOID (2200 PSI)





ITEM	QTY	P/N	DESCRIPTION
1	1	480521	MANIFOLD, BLOCK
2	1	360157-002	VALVE, RELIEF
3	1	480522	AMPLIFIER, PROP. (IN SHIP KIT)
4	1	480520	VALVE, SOLENOID
5	1	000211	PLUG, -4 SAE "O"-RING

AW-480525  
HYDRAULIC MANIFOLD ASSEMBLY  
PROPORTIONAL

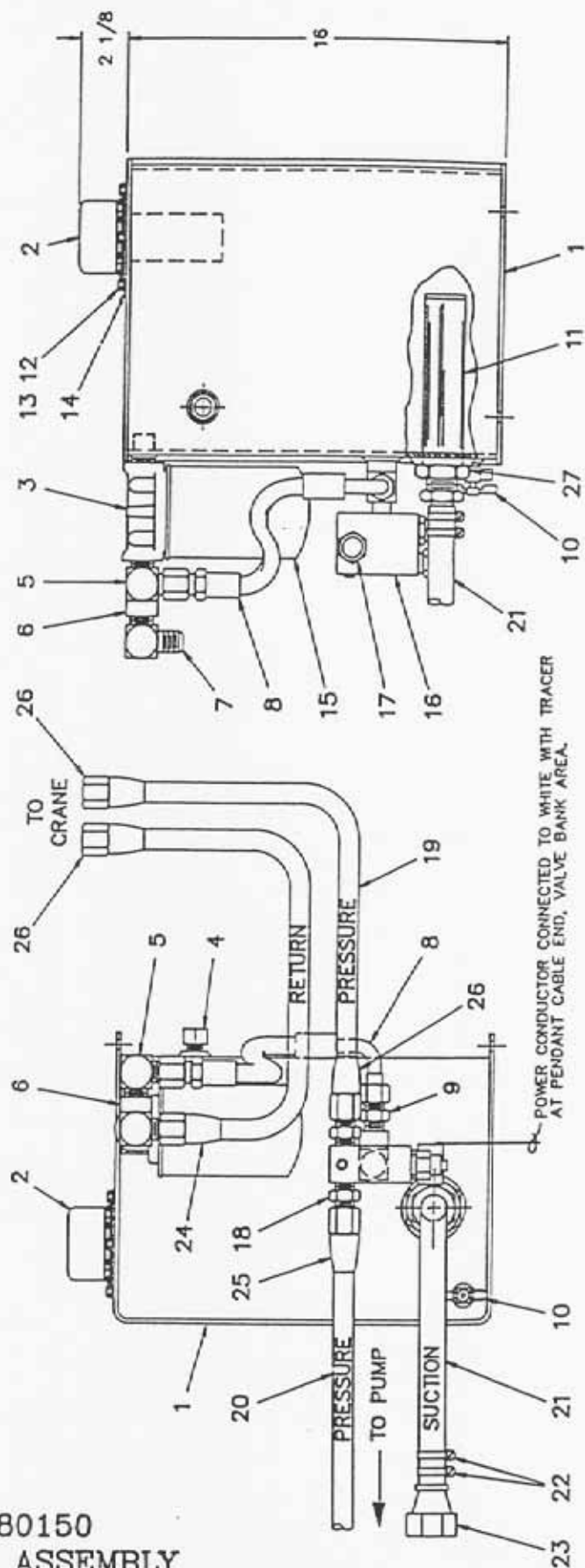


FIGURE NO.	FINISH NO.	CHG LTR	DESCRIPTION	REVISIONS	DATE	APPD
			ADAPTER: SAE "A" 2-BOLT FLANGE (DIRECT MOUNT) SHAFT: STRAIGHT, 3/4" DIA. X 2 3/4" LONG KEY: 3/16" SQ. X 1 5/8" LONG			
		<p>3/4-14 NPT. 2 PLACES</p> <p>5.28"</p> <p>6.06"</p> <p>.438" DIA. THRU. 2 HOLES</p>				
<p>8 G.P.M. AT 1000 R.P.M.</p>						
<p>NOTES:</p> <p>1. FOR HYD. PUMP ASSEMBLY USE PART NO. 480022, WHICH CONSISTS OF HYD. PUMP (480018), ADAPTER SUCTION (360055) 3/4-14 NPT / 1 5/16-12 JIC. ADAPTER PRESSURE (750399) 3/4-14 NPT / 1 1/16-12 JIC</p> <p>2. FOR SEAL KIT, USE PART NO. 480018-001</p> <p>3. FOR SERVICE KIT, USE PART NO. 480018-002</p>						
ITEM		QTY	D/S	PART NO	DESCRIPTION	
					LIST OF MATERIAL	
					AUTO CRANE COMPANY	
					PUMP, HYDRAULIC - DIRECT MOUNT	
					TITLE	
					SCALE	
					SIZE	
					DRAWING NO	
					AW-480018	
					REVISION	
					SHEET	
					OF	
					WEIGHT	
					DATE	
					ENG. BY	
					DATE	
					CHK'D BY	
					DATE	
					DRAWN BY	
					DATE	
					UNLESS OTHERWISE NOTED ALL DIMENSIONS ARE IN INCHES. TOLERANCES UNLESS OTHERWISE SPECIFIED:	
					FRACTIONAL ± 1/16 XXX ± .010	
					ANGLES ± 1/2° XX ± .040	
					REMOVE ALL BURRS AND SHARP EDGES. DO NOT SCALE THIS DRAWING.	
					TOLERANCES NOT SHOWN ABOVE ARE PER ANSI Y14.5-1973	
					THIS PRINT IS THE PROPERTY OF AUTO CRANE CO AND MUST NOT BE USED IN ANY MANNER DETRIMENTAL TO THEIR INTERESTS.	
					NEXT ASSY	



## NOTES





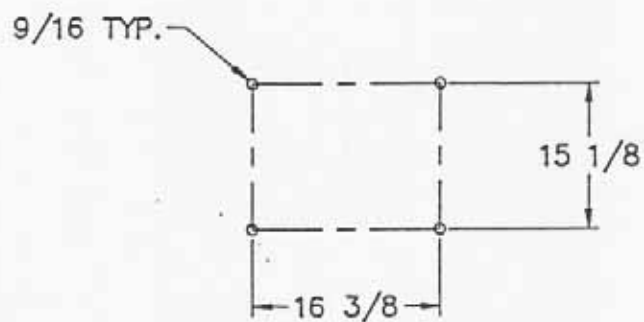
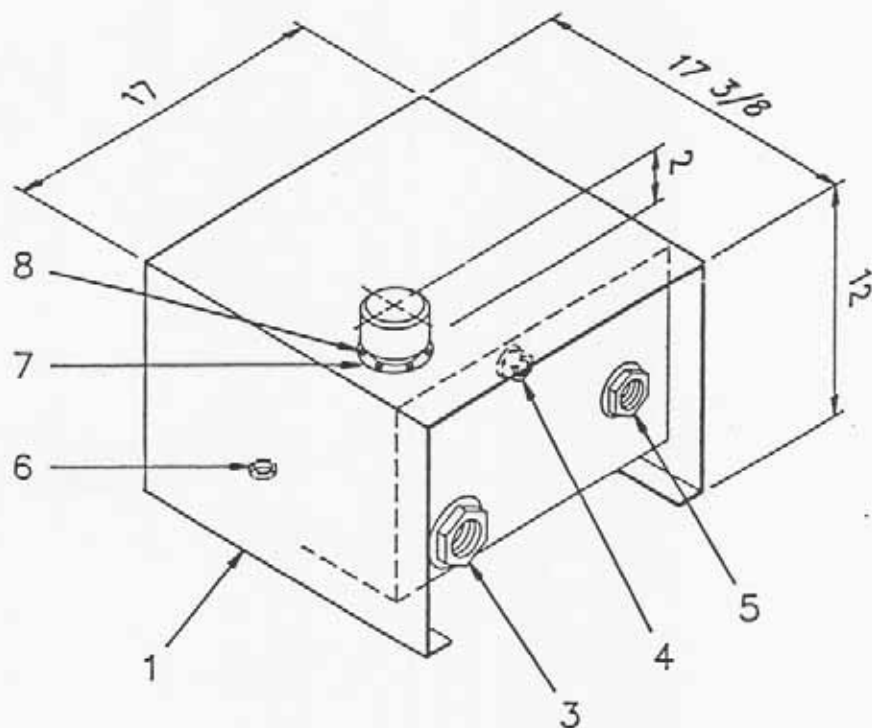
R 10/94



AW-480150  
RESERVOIR ASSEMBLY, 8 GALLON

ITEM	QTY.	PART NO.	DESCRIPTION
1	1	480151	RESERVOIR, WELDMENT
2	1	360151	FILLER ASSEMBLY
3	1	360156	FILTER ASSEMBLY
4	1	360150	SIGHT PLUG
5	1	551222	ELL
6	1	360262	TEE
7	1	360263	ELL
8	1	360284	HOSE ASSEMBLY
9	1	360054	ADAPTER, STRAIGHT
10	1	750715	DRAIN
11	1	360282	STRAINER, SUCTION LINE
12	4	005500	SCREW, HEX HD 1/4-20NC x 3/4
13	4	020200	WASHER, SP LK 1/4
14	1	360249	COVER, CLEAN OUT
15	1	360277	FILTER, SPIN ON (FOR REPLACEMENT)
16	1	REF.	VENTED RELIEF VALVE ASSEMBLY
17	1	REF.	ADAPTER, STRAIGHT (360054)
18	1	REF.	ADAPTER, STRAIGHT (551215)
19	1	REF.	HOSE, -8 (551228-001)
20	1	REF.	HOSE, -12 (360274-001)
21	1	REF.	HOSE, -16 (360275-001)
22	4	REF.	HOSE CLAMP, -16 (360268)
23	1	REF.	HOSE ADAPTER (360273)
24	1	REF.	FITTING, REUSABLE -10/-8 (551227)
25	2	REF.	FITTING, REUSABLE -10/-12 (360269)
26	3	REF.	FITTING, REUSABLE -8/-8 (360266)
27	1	REF.	ADAPTER, STRAIGHT (360270)



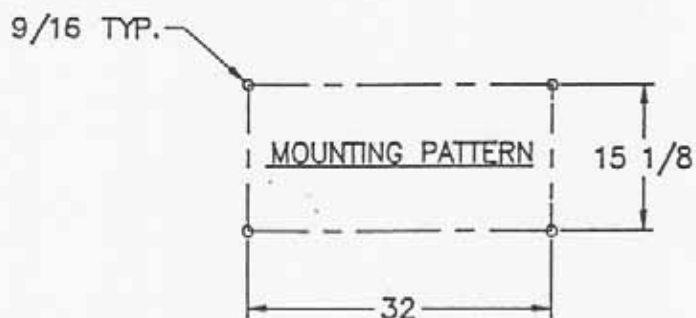
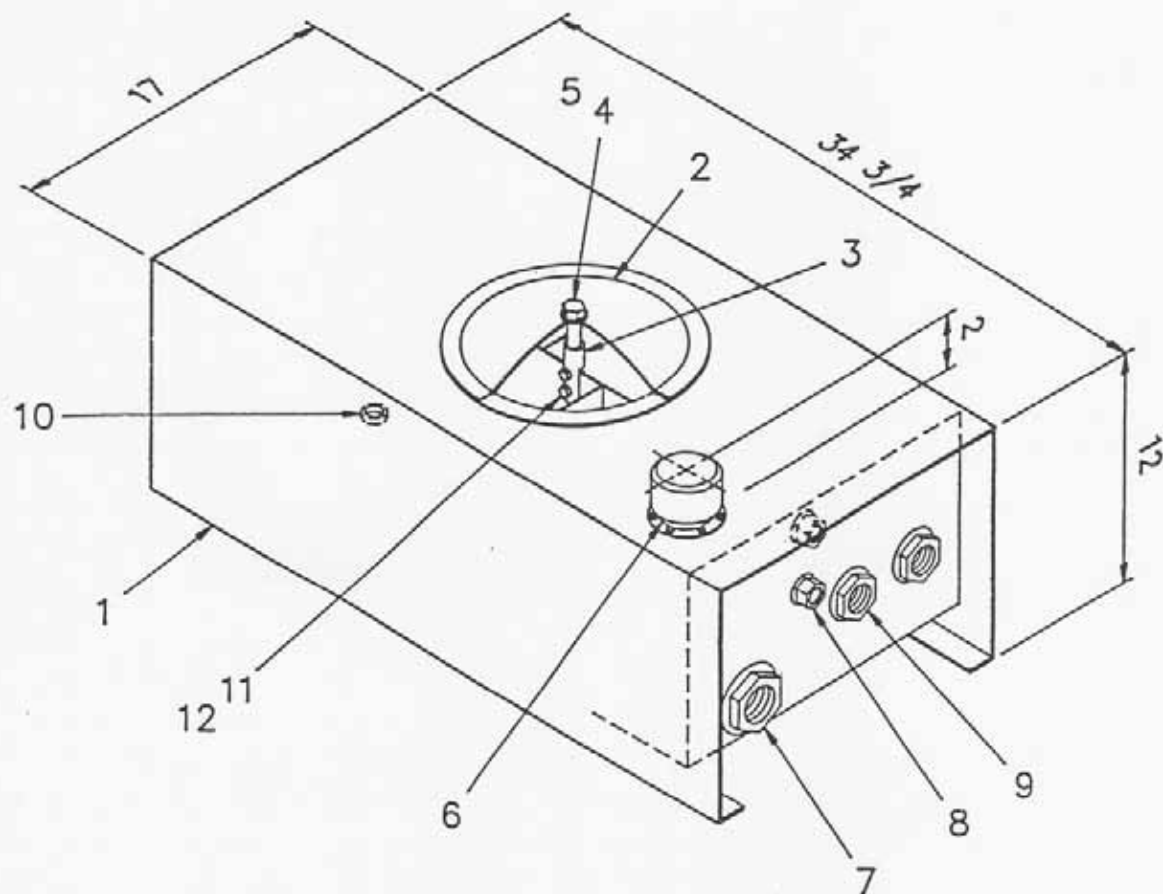


MOUNTING PATTERN

<u>ITEM</u>	<u>QTY</u>	<u>P/N</u>	<u>DESCRIPTION</u>	<u>ITEM</u>	<u>QTY</u>	<u>P/N</u>	<u>DESCRIPTION</u>
1	1	750501	RESERVOIR WELDMENT	6	1	750477	PLUG, PIPE -8
2	1	360151	FILLER ASSEMBLY	7	1	360249	COVER, CLEAN OUT
3	1	360282	STRAINER, SUCTION	8	4	005500	SCW, HX HD 1/4NC x 3/4
4	1	360150	SIGHT GLASS	9	4	020200	WASHER, SP LK 1/4
5	1	750708	STRAINER, DIFFUSER				

AW-750500  
9 GALLON RESERVOIR





ITEM	QTY	P/N	DESCRIPTION	ITEM	QTY	P/N	DESCRIPTION
1	1	750691	RESERVOIR WELDMENT	7	1	750707	STRAINER, SUCTION
2	1	750712	COVER	8	2	360150	SIGHT PLUG
3	1	750709	ADAPTER, BAFFLE	9	2	750708	STRAINER, DIFFUSER
4	1	750716	WASHER, CRUSH	10	1	750477	PLUG, PIPE -8
5	1	750711	BOLT, END COVER	11	2	009108	SCW, HX HD 3/8NC x 1 1/4
6	1	360151	FILLER ASSEMBLY	12	2	017400	NUT, HX LK 3/8NC

**AW-750690**  
**18 GALLON RESERVOIR**

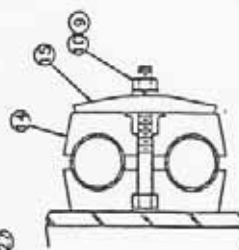






# NOTES





SECTION A-A

DATE	10-17-98	TIME	10:00 AM
BY	J. L. HARRIS	FOR	JOHN F. HARRIS
TO	JOHN F. HARRIS	FROM	J. L. HARRIS
SUBJECT	JOHN F. HARRIS		



# HYD. OUTRIGGER ASS'Y, AW-480300

ITEM	QTY.	PART NO.	DESCRIPTION
1	1	759035	MAIN CROSS TUBE
2	1	750893	SLIDE, STREET SIDE
3	1	750894	SLIDE, CURB SIDE
4	2	480017	CYLINDER, VERTICAL
5	4	012203	SCREW, HX. HD. 5/8 - NF X 1 1/4
6	8	013506	SCREW, HX. HD. 5/8 - NF X 2 1/4
7	8	023800	WASHER, SP. LK. 5/8
8	4	018302	NUT, HX. 5/8 - NF
9	5	016500	NUT, HX. 5/16 - NC
10	5	020600	WASHER, SP. LK. 5/16
11	4	003906	SCREW SOC. HD. 5/16 - 18 NC X 3 1/4
12	2	480230	VALVE MANUAL, OUTRIGGER (VERTICAL)
13	2	480231	MANIFOLD, OUTRIGGER
14	5	480232	CLAMP, HALVES
15	5	480233	PLATE, TWIN COVER
16	2	480220	TUBE ASS'Y (LEG)
17	2	480221	TUBE ASS'Y (LEG)
18	1	480222	TUBE ASS'Y
19	1	480223	TUBE ASS'Y
20	1	480224	TUBE ASS'Y
21	2	480225	HOSE ASS'Y O.R. (CURB SIDE)
22	2	480226	HOSE ASS'Y O.R. (STREET SIDE)
23	2	480227	HANDLE ASS'Y
24	1	480235	KIT, OUTRIGGER INSTALLATION
25	6	241175	ELL, 90°, -6 ORB/ -6 JIC
26	2	480195	ELL, 45°, -6 ORB/ -6 JIC
27	4	200892	ELL, 90°, 3/8 NP/ -6 JIC
28	2	360048	ELL, 90°, -6 NPT/ -6 NPTF
29	1	480014	SEAL KIT (FOR CYL. 480017)

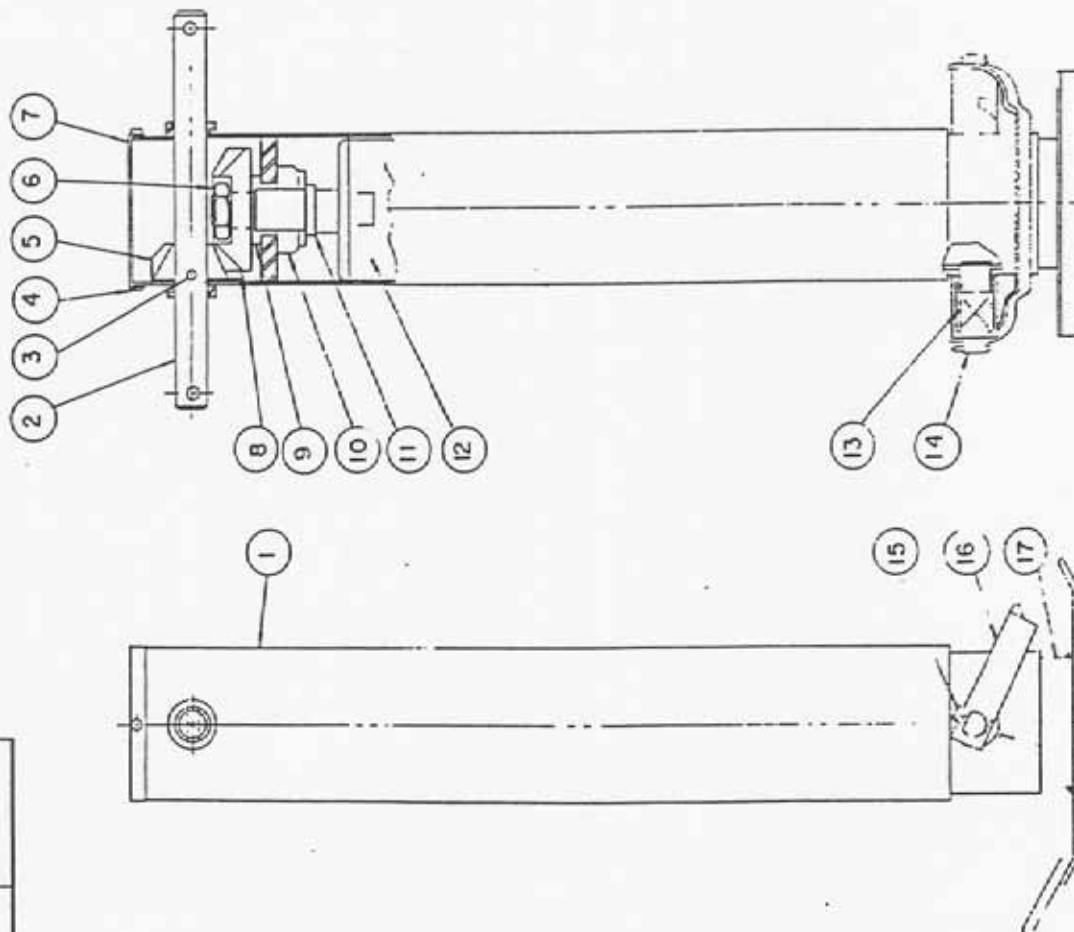






CHG	REVISIONS	DATE	APPD
LTR	DESCRIPTION		

FIXTURE NO.	FINISH NO.
-------------	------------



ITEM	QTY	ITEM	QTY	DESCRIPTION
2	18	A	480287	ROLL PIN
1	17	A	480286	DROP LEG S/A
1	16	A	480285	SHOT PIN HANDLE
2	15	A	480284	COTTER PIN
2	14	A	480283	SHOT PIN
2	13	A	480282	COMP SPRING
1	12	A	480281	INNER LEG S/A
1	11	A	480280	SPECIAL WASHER
1	10	A	480279	THRUST BEARING
1	9	A	480278	BUSHING
1	8	A	480277	BEVEL GEAR
1	7	A	480276	COVER
1	6	A	480275	JAM NUT
1	5	A	480274	BEVEL PINION GEAR
2	4	A	480273	SELF TAPPING SCR.
1	3	A	480272	SPIRAL PIN
1	2	A	480271	CRANK SHAFT
1	1	A	480270	OUTER LEG S/A

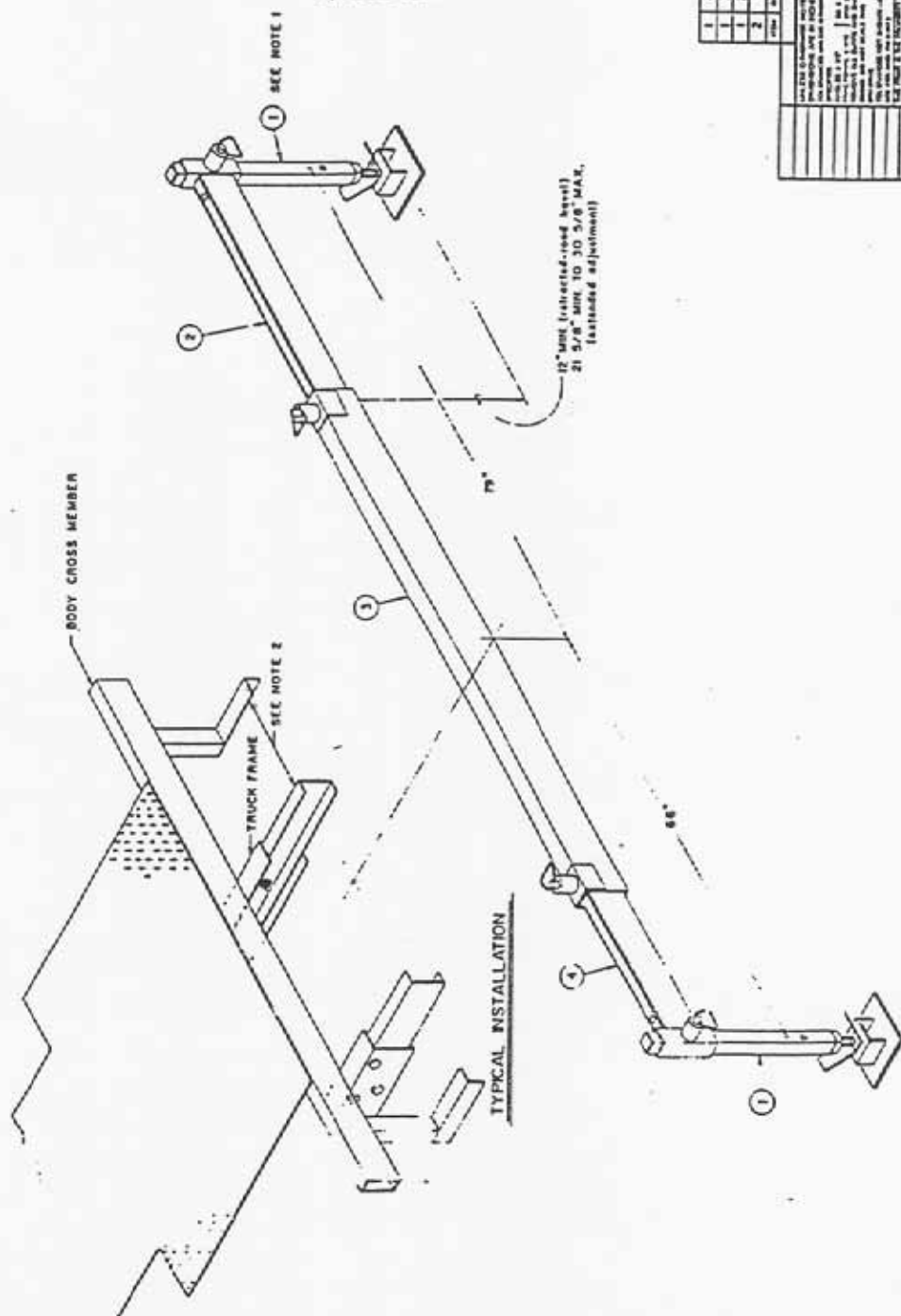
QUANTITY	ITEM	QTY	DESCRIPTION
1	18	A	480287
1	17	A	480286
1	16	A	480285
2	15	A	480284
2	14	A	480283
2	13	A	480282
1	12	A	480281
1	11	A	480280
1	10	A	480279
1	9	A	480278
1	8	A	480277
1	7	A	480276
1	6	A	480275
1	5	A	480274
2	4	A	480273
1	3	A	480272
1	2	A	480271
1	1	A	480270

LIST OF MATERIAL
<b>AUTO CRANE COMPANY</b>
P.O. BOX 808 • HUNTSVILLE, ALA. 35894
200 BENDER ARROW LANE • SHELBY, ALA. 36281
<b>TITLE</b>
OUTRIGGER, MANUAL
<b>SCALE</b>
1/2" = 1'-0"
<b>DATE</b>
10/1/66
<b>BY</b>
C
<b>CHKD BY</b>
<b>DATE</b>
<b>WEIGHT</b>
2.0
<b>SHFT</b>
2



REV	DATE	DESCRIPTION	BY	CHKD
1				

7-5.0.0	
---------	--



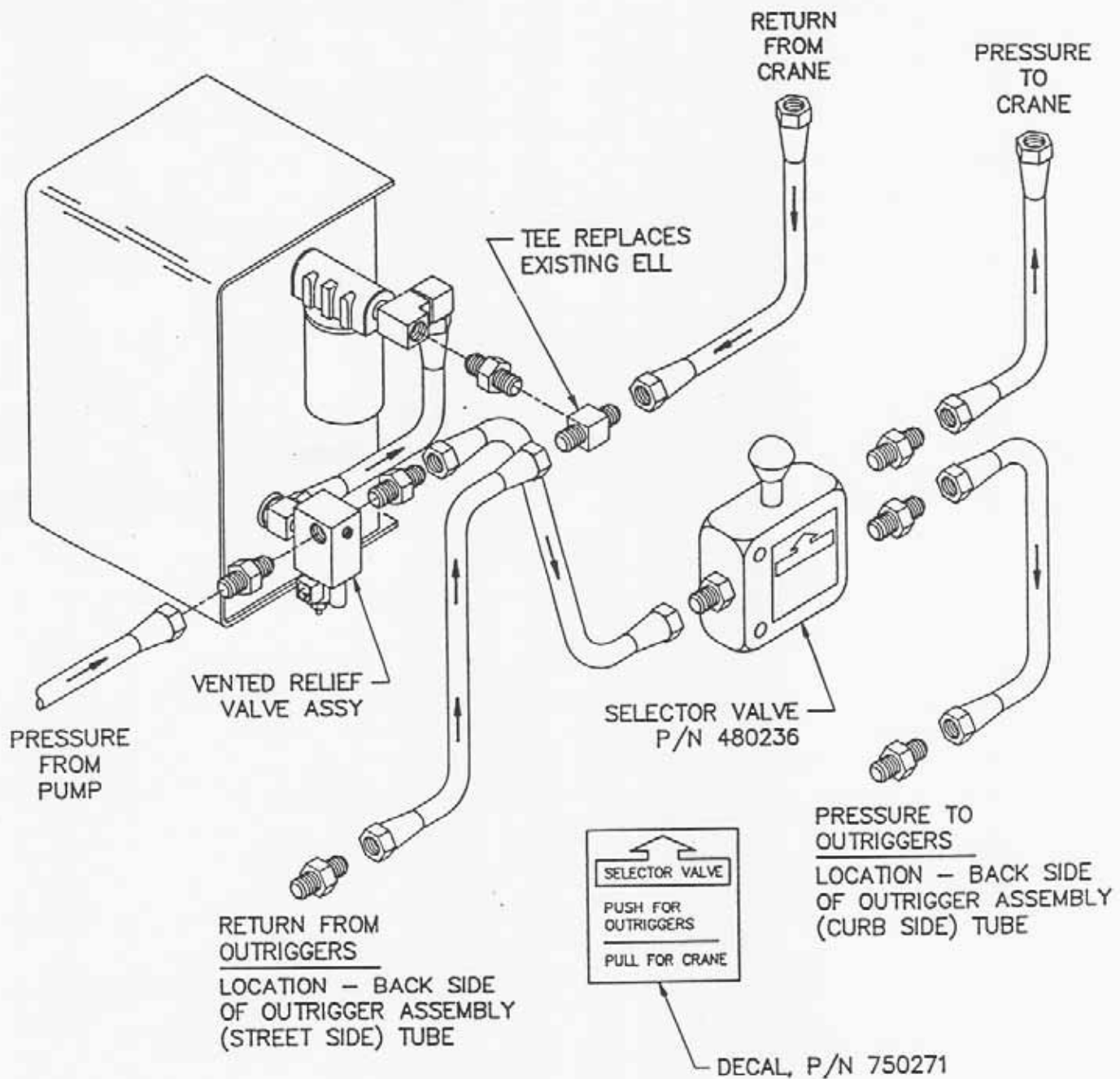
**NOTES:**

1. ADDITIONAL 3/4" HOLES MAY BE DRILLED IN THE LEG ASSEMBLIES FOR PROPER HEIGHTS (DEPENDING ON INDIVIDUAL APPLICATIONS).
2. WELD ITEM 3 TO FRAME EXTENSIONS AND CROSS MEMBER EXTENSIONS.

ITEM	QTY	DESC	UNIT
1	4	C 360325	SOCKET / PULL PIN ASSY
2	1	C 360301	O.R. SOCKET / PULL PIN ASSY
3	1	C 360302	SOCKET / PULL PIN ASSY
4	2	C 360301	LEG ASSY

LIST OF MATERIALS	
ITEM	DESCRIPTION
1	SOCKET / PULL PIN ASSY
2	O.R. SOCKET / PULL PIN ASSY
3	SOCKET / PULL PIN ASSY
4	LEG ASSY
<b>AUTO CRANE COMPANY</b> STABILIZER ASSEMBLY PART NO. 7-5.0.0 REV. 1	



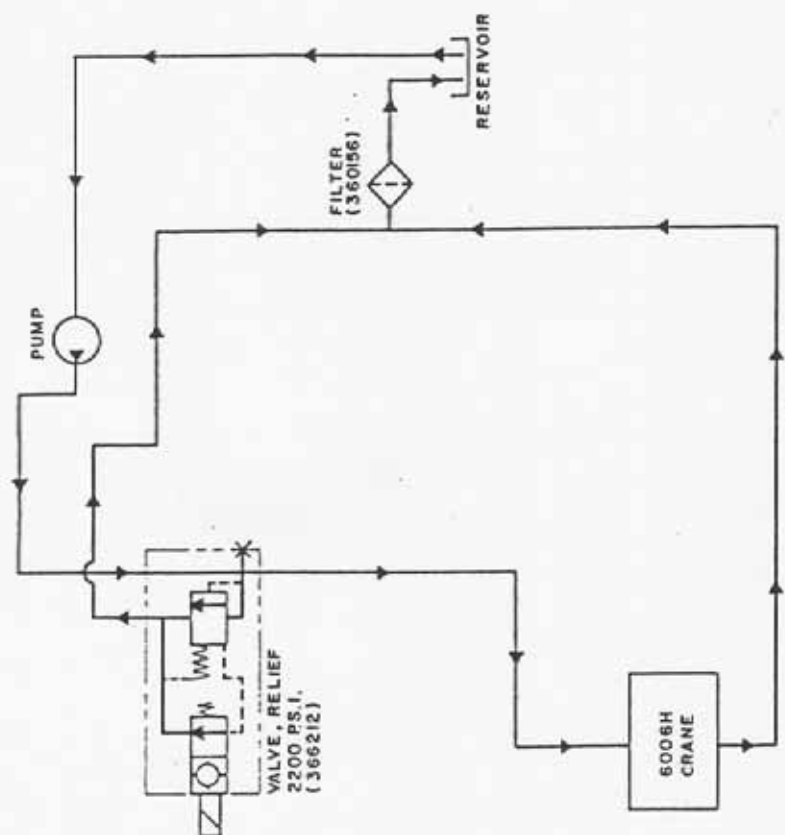
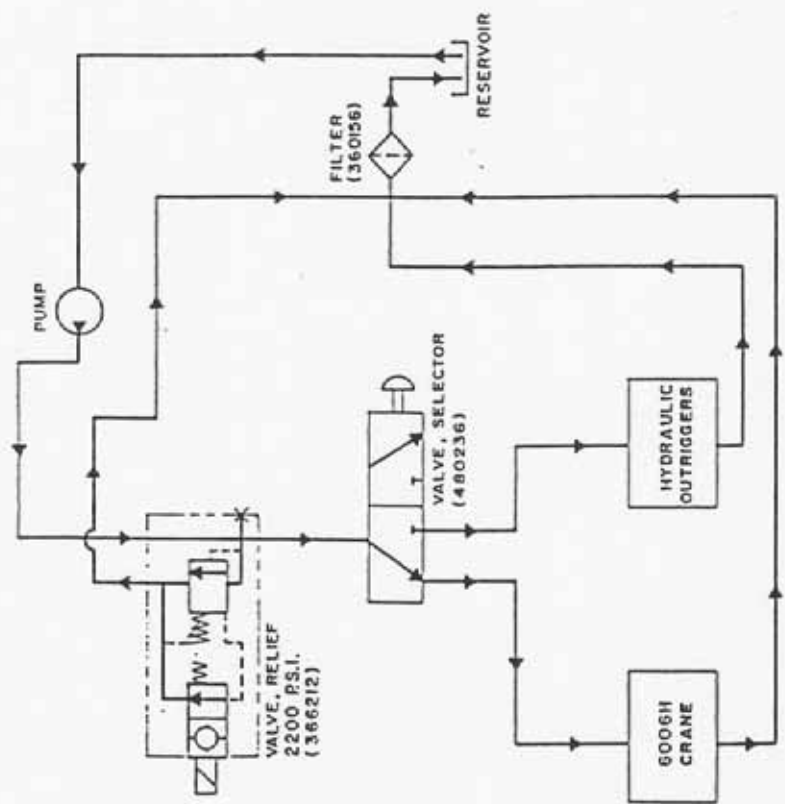


### **CAUTION:**

A RELIEF VALVE MUST BE LOCATED IN THE OUTRIGGER PRESSURE LINE OR DAMAGE MAY OCCUR TO HYDRAULIC COMPONENTS. PLACEMENT OF THE RELIEF VALVE UPSTREAM OF THE SELECTOR VALVE IS PREFERRED.

AW-480235  
OUTRIGGER INSTALLATION KIT





QUANTITY		ITEM	DPS	PART NO.	LIST OF MATERIAL	
		DRAWN BY				DESCRIPTION
		DATE				
		CHECK BY				
		DATE				
		THE BY				
		DATE				
		SCALE				
		SIZE				
		WEIGHT				
		DRAWING NO.				
		AW-068				
		REVISION				
		SHEET				OF

# **AUTO CRANE COMPANY**

TITLE  
HYDRAULIC SCHEMATIC  
6006H

WITH / WITHOUT HYDRAULIC OUTRIGGERS

SCALE  
C

WEIGHT  
AW-068

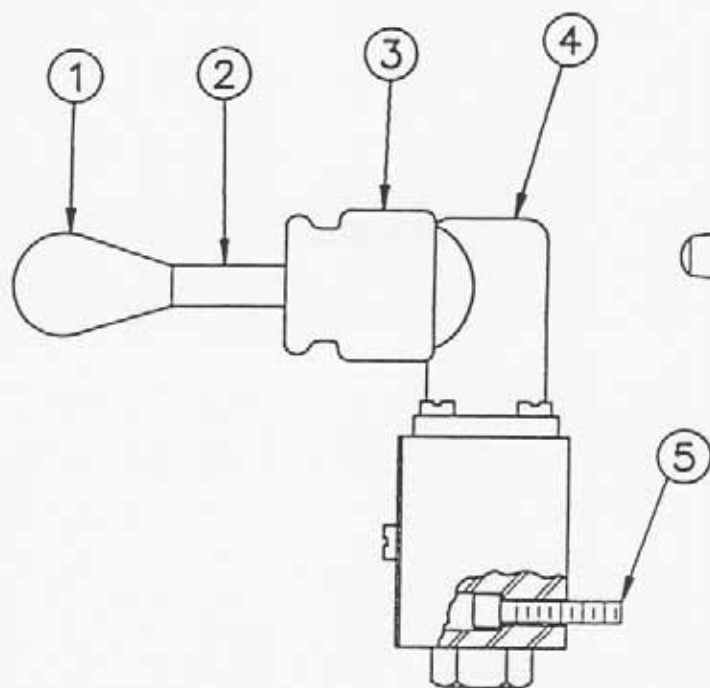
REVISION

SHEET OF



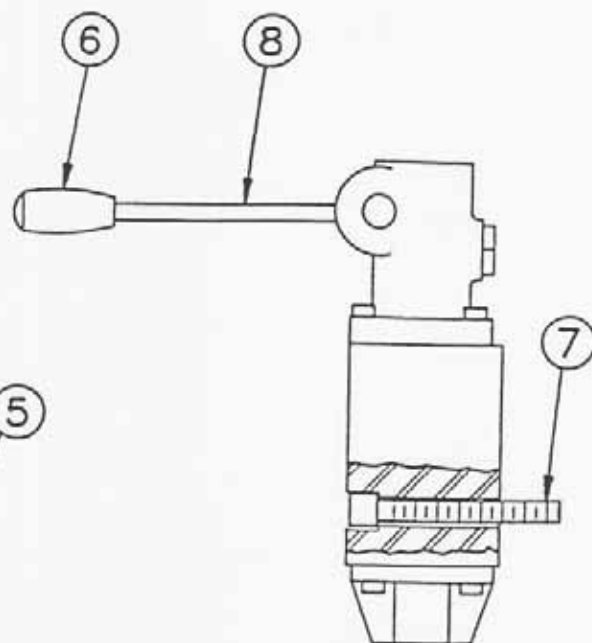
# NOTES





CONTINENTAL

SEAL KIT (CONTINENTAL)  
480230-009



REXROTH

SEAL KITS (REXROTH)  
480230-010, BUNA (LOW TEMP)  
480230-011, VITA (HIGH TEMP.)

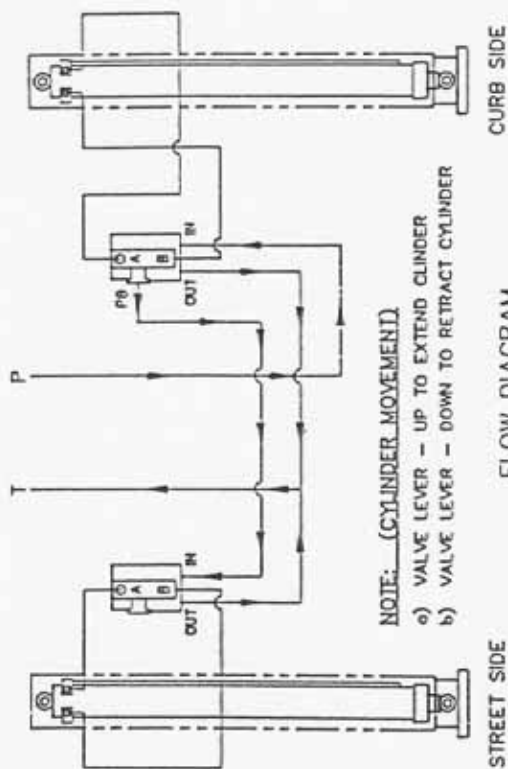
AW-073. OUTRIGGER VALVE (PART NO. 480230)



# OUTRIGGER VALVE, AW-073

ITEM	QTY.	PART NO.	DESCRIPTION
1	1	480230-001	KNOB
2	1	480230-002	LEVER ASS'Y
3	1	480230-003	BOOT
4	1	480230-004	HOUSING, ASS'Y
5	1	480230-005	BOLT KIT (4 SOC. HD. SCREWS #10 - 24 X 7/8)
6	1	480230-006	KNOB
7	1	480230-007	BOLT KIT(4, SOC. HD. SCREWS #10 - 24 X 2" LG)
8	1	480230-008	LEVER ASS'Y



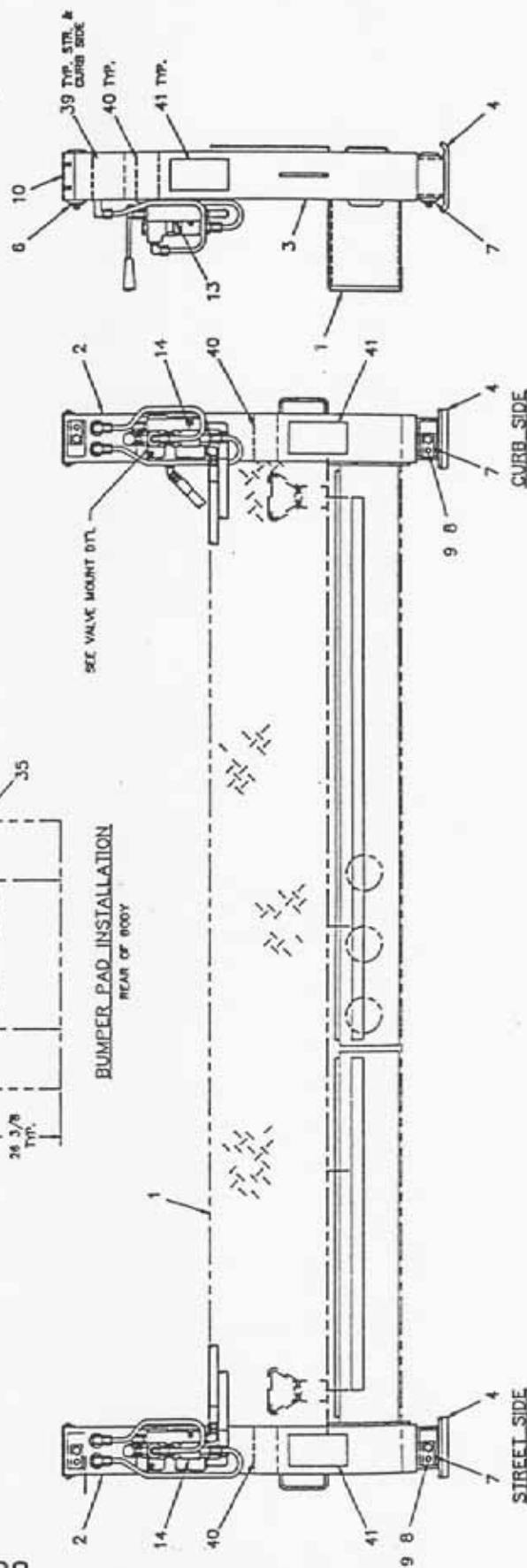
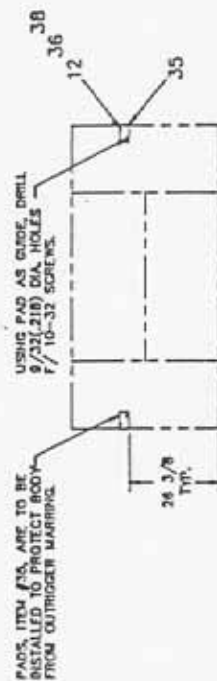
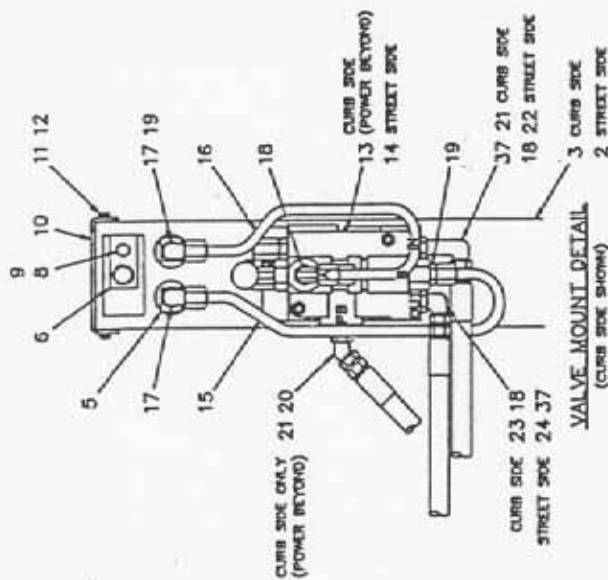


NOTE: (CYLINDER MOVEMENT)

- VALVE LEVER - UP TO EXTEND CYLINDER
- VALVE LEVER - DOWN TO RETRACT CYLINDER

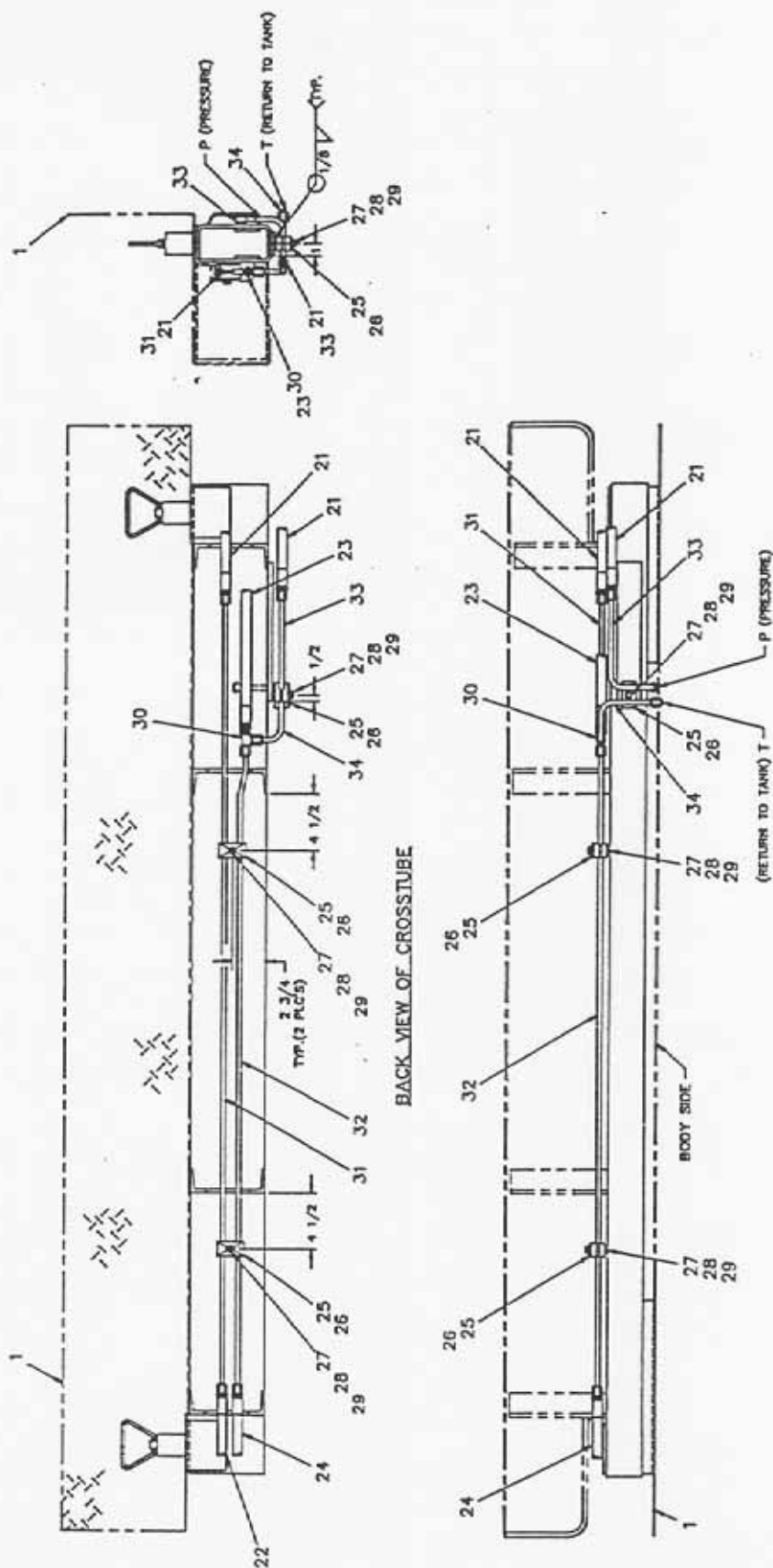
NOTE:

- ALL OPEN PORTS TO BE CAPPED OR PLUGGED.
- CYLINDERS TO BE PRESSURE CHECKED @ 2350 P.S.I.
- SEE SH1. 2 FOR HOSE & TUBE INSTALLATION.



AW-725933  
OUTRIGGER, 36K (MAN. OUT/HYD. DOWN)





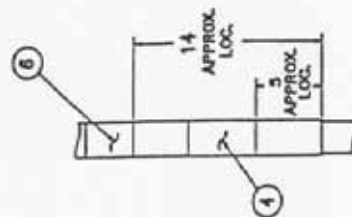
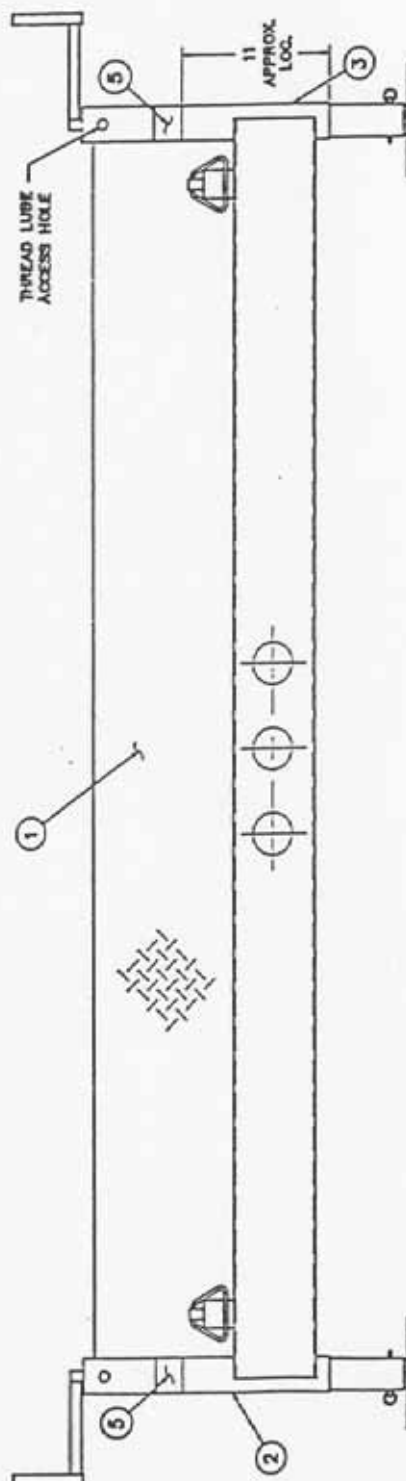
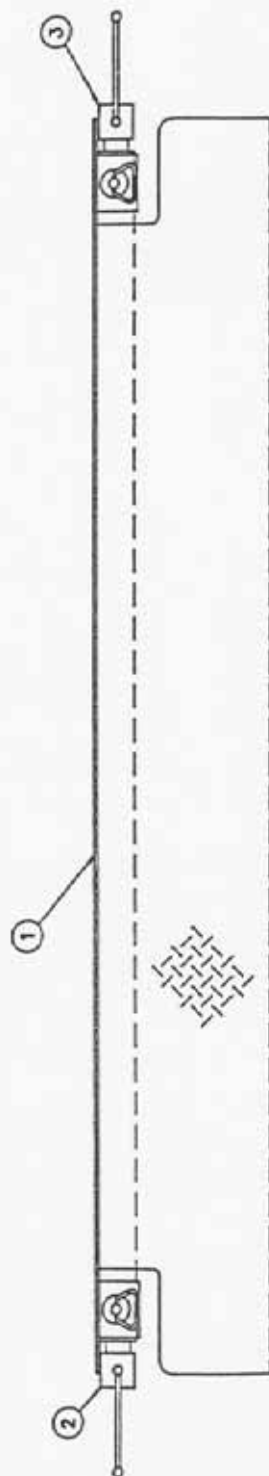
AW-725933  
OUTRIGGER, 36K (MAN. OUT/HYD. DOWN)



AW-725933  
OUTRIGGER, 36K (MAN. OUT/HYD. DOWN)

ITEM	QTY.	PART NO.	DESCRIPTION
1	1	725920	BUMPER (WELDMENT)
2	1	725941	TUBE, OUTER W/ SLIDE (STREET SIDE)
3	1	725944	TUBE, OUTER W/ SLIDE (CURB SIDE)
4	2	725935	TUBE, INNER (WELDMENT)
5	2	725949	CYLINDER, 36K HYD. O.R.
6	2	725946	PIN, UPPER CYL (WELDMENT)
7	2	725948	PIN, LOWER CYL (WELDMENT)
8	4	005901	SCREW, HEX HD 1/4-20NC X 1/2" LG.
9	4	020200	WASHER, SP LK 1/4
10	2	725945	CAP, TUBE TOP
11	8	370470	SCREW, THRD. CUT #10NC X 1/2" LG.
12	12	019800	WASHER, SP LK #10
13	1	752480	VALVE, DUKES 1618AS (W/ POWER BEYOND)
14	1	752477	VALVE, MODIF. (W/O POWER BEYOND)
15	2	725950	TUBE ASSEMBLY
16	2	725951	TUBE ASSEMBLY
17	4	480194	ELL 90 -6 SWIVEL
18	4	241175	ELL 90, O-RING -6 JIC
19	6	200876	ADAPTER, STR. O-RING -6 JIC
20	1	480195	ELL 45, O-RING -6 JIC
21	2	480225	HOSE ASSEMBLY
22	1	812204-035	HOSE ASSEMBLY
23	1	812203-062	HOSE ASSEMBLY
24	1	812204-039	HOSE ASSEMBLY
25	3	480232	CLAMP HALVES
26	3	480233	PLATE, TWIN COVER
27	3	007805	SCREW, HEX HD 5/16NC X 1 1/2" LG.
28	3	020600	WASHER, SP LK 5/16
29	3	016500	NUT, HEX 5/16NC
30	1	367134	TEE, UNION -6 JIC
31	1	725952	TUBE ASSEMBLY
32	1	725953	TUBE ASSEMBLY
33	1	725954	TUBE ASSEMBLY
34	1	725955	TUBE ASSEMBLY
35	2	725931	PAD, OUTRIGGER BUMPER
36	4	750657	SCREW, FL HD SOC 10-32 X 5/8" LG.
37	2	330645	ELL 90°, O-RING LONG
38	4	015600	NUT, HEX #10NF
39	2	725961	DECAL, DANGER
40	4	759017	DECAL, CAUTION
41	4	040581	DECAL, DANGER





(TYP. STREET &  
CURB SIDE)

STREET SIDE

CURB SIDE

7-10.0.0

# **AUTO CRANE COMPANY**

P.O. BOX 306637 TULSA, OKLAHOMA 74158-6637  
4707 NORTH HINGED ROAD TULSA, OKLAHOMA 74158-6637

TITLE

## **MANUAL OUTRIGGER WITH CRANKDOWN LEG ASSEMBLY (36K BODY)**

SCALE

1/8

A

REVISION

AW-725562

REVISED

DESIGN

1

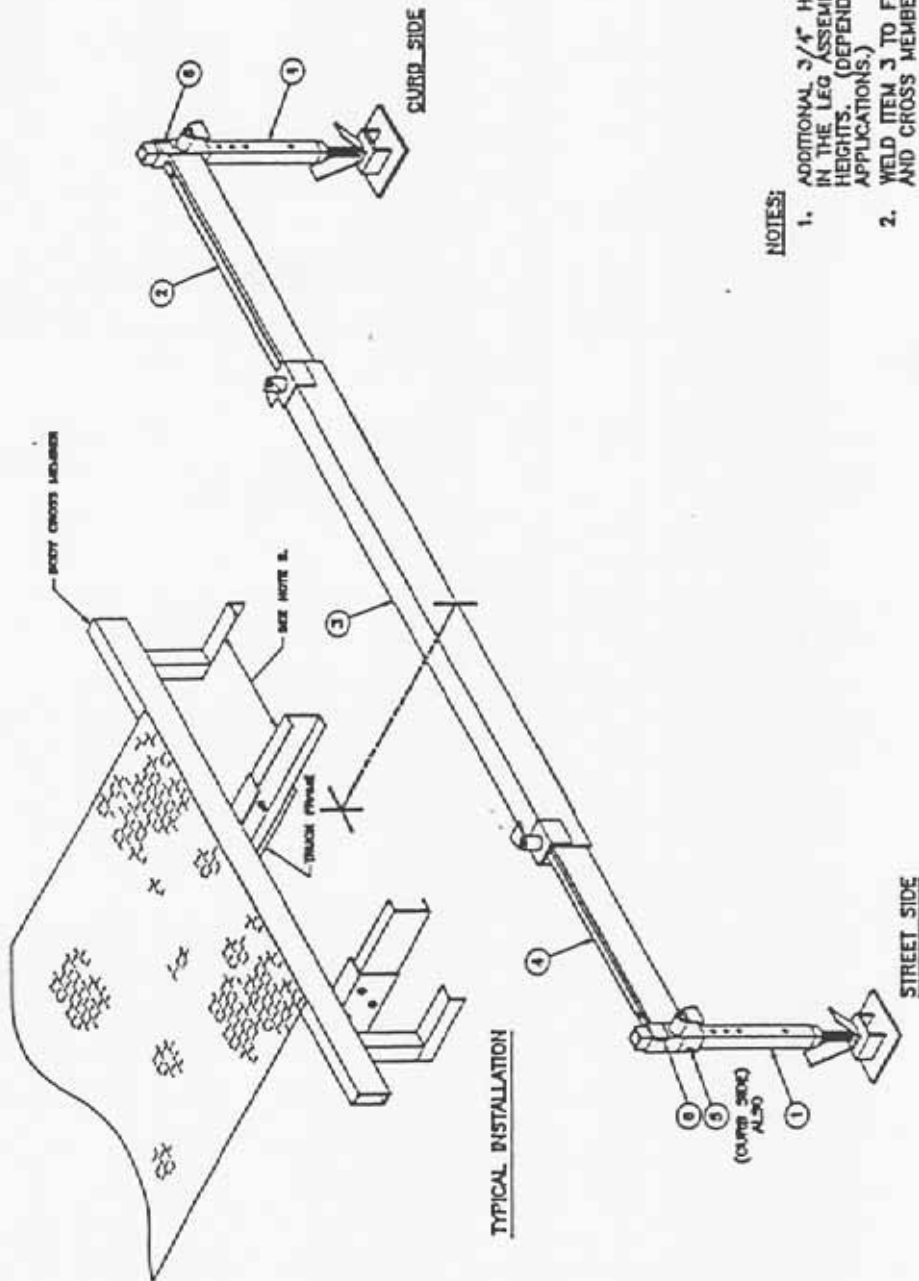
or

1

REVISED

ITEM	QTY	PART No.	DESCRIPTION
6	2	725962	DECAL, DANGER
5	2	759017	DECAL, CAUTION
4	2	040581	DECAL, DANGER CRUSHING
3	1	725592	SLIDE, WITH CRANKDOWN LEG (CURB SIDE)
2	1	725593	SLIDE, WITH CRANKDOWN LEG (STREET SIDE)
1	1	725200	BUMPER, WELDMENT





TYPICAL INSTALLATION

NOTES:

1. ADDITIONAL 3/4" HOLES MAY BE DRILLED IN THE LEG ASSEMBLIES FOR PROPER HEIGHTS. (DEPENDENT ON INDIVIDUAL APPLICATIONS.)
2. WELD ITEM 3 TO FRAME EXTENSIONS AND CROSS MEMBER EXTENSIONS.

**AUTO CRANE COMPANY**

P.O. BOX 500697 TULSA, OKLAHOMA 74120-0697  
4707 NORTH HINGO ROAD TULSA, OKLAHOMA 74120-0697

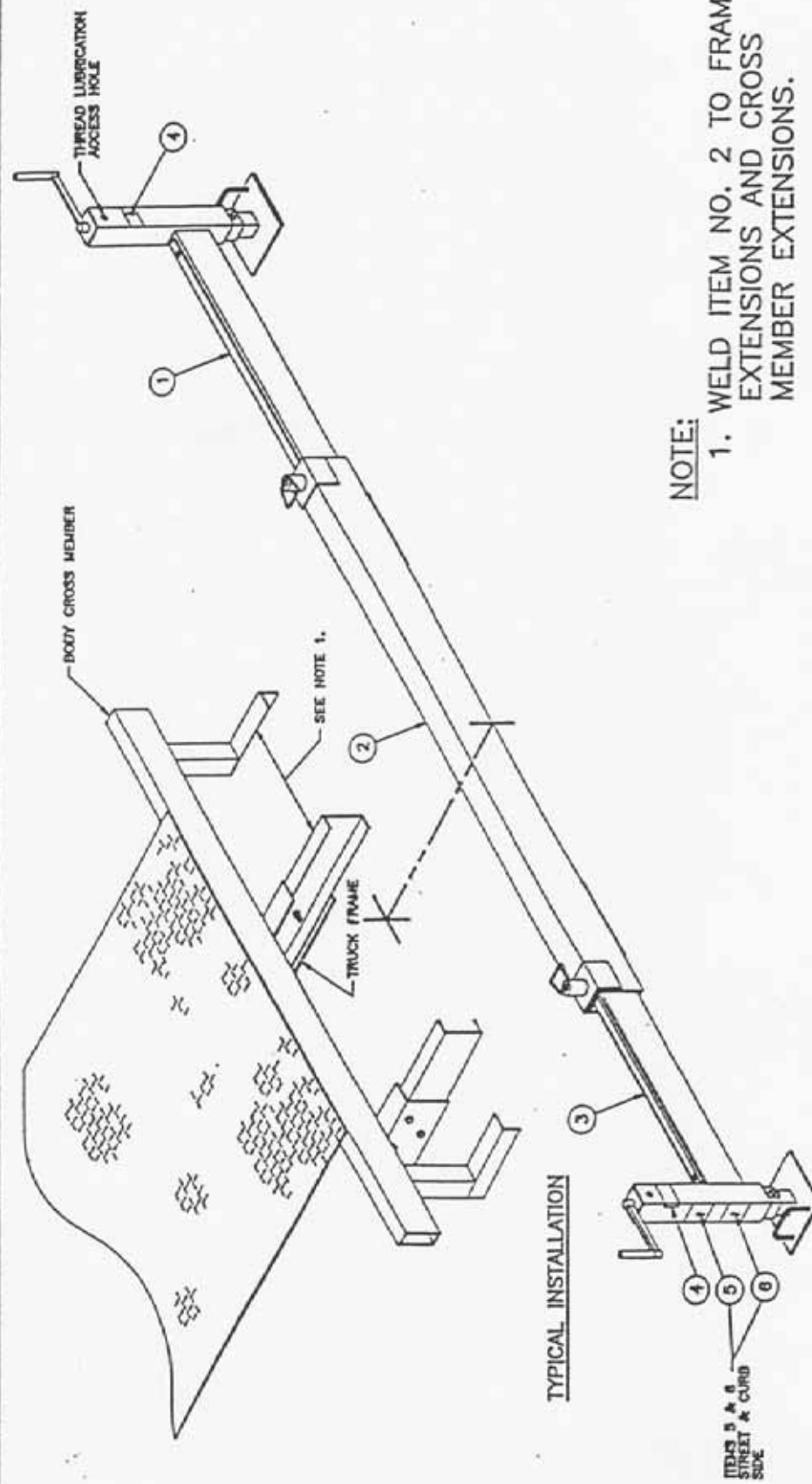
PRICE

**STABILIZER ASSEMBLY**

SCALE 1/8" = 1' TITLE DRAWING NO. AW-725570 REVISION 1  
SHEET 1 OF 1

ITEM	QTY	PART No.	DESCRIPTION
6	2	759017	DECAL, CAUTION
5	2	040581	DECAL, DANGER CRUSHING
4	1	725589	SOCKET/ PULL PIN ASSEMBLY (STREET SIDE)
3	1	360303-001	O.R. SOCKET/ PULL PIN ASSEMBLY
2	1	725588	SOCKET/ PULL PIN ASSEMBLY (CURB SIDE)
1	2	360301	LEG ASSEMBLY





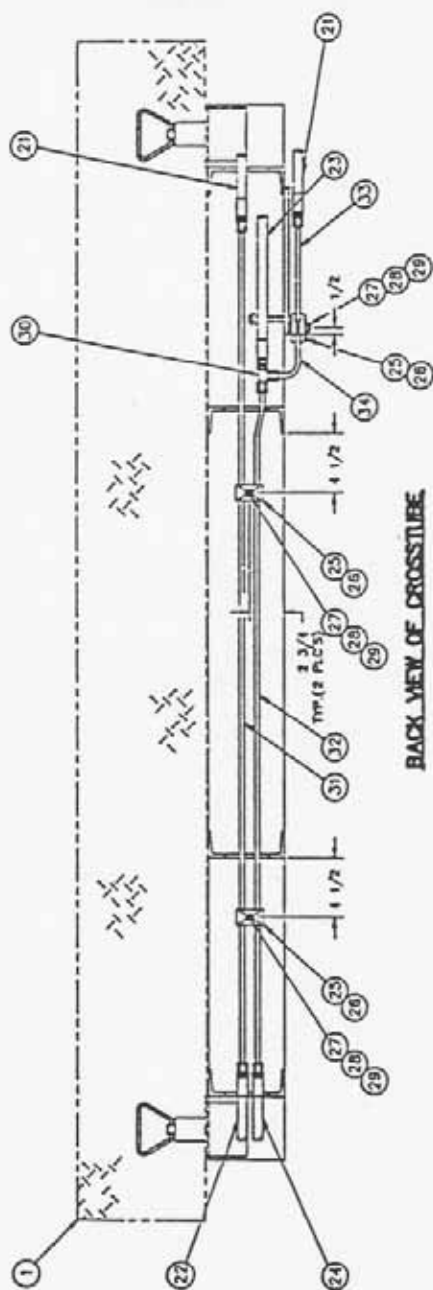
**NOTE:**

1. WELD ITEM NO. 2 TO FRAME EXTENSIONS AND CROSS MEMBER EXTENSIONS.

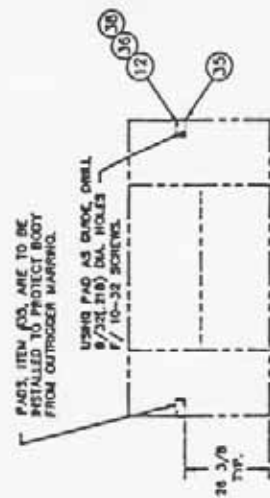
<b>AUTO CRANE COMPANY</b>	
P.O. BOX 590697 TULSA, OKLAHOMA 74159-0697	
4707 NORTH HINGED ROAD 918-826-0463	
TITLE	
STABILIZER ASSEMBLY WITH CRANKDOWN LEGS	
SCALE 1/8"	REVISED
DATE 1/8	AW-725572
SHEET 1 OF 1	

ITEM	QTY	PART No.	DESCRIPTION
6	2	040581	DECAL, DANGER CRUSHING
5	2	725962	DECAL, DANGER
4	2	759017	DECAL, CAUTION
3	1	725593	LEG ASSEMBLY (STREET SIDE)
2	1	360303-001	O.R. SOCKET/ PULL PIN ASSEMBLY
1	1	725592	LEG ASSEMBLY (CURB SIDE)

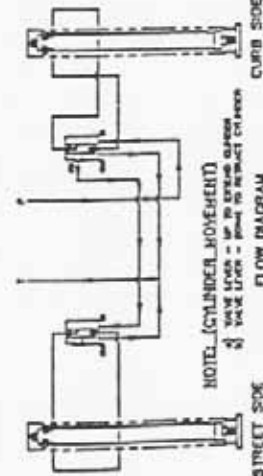
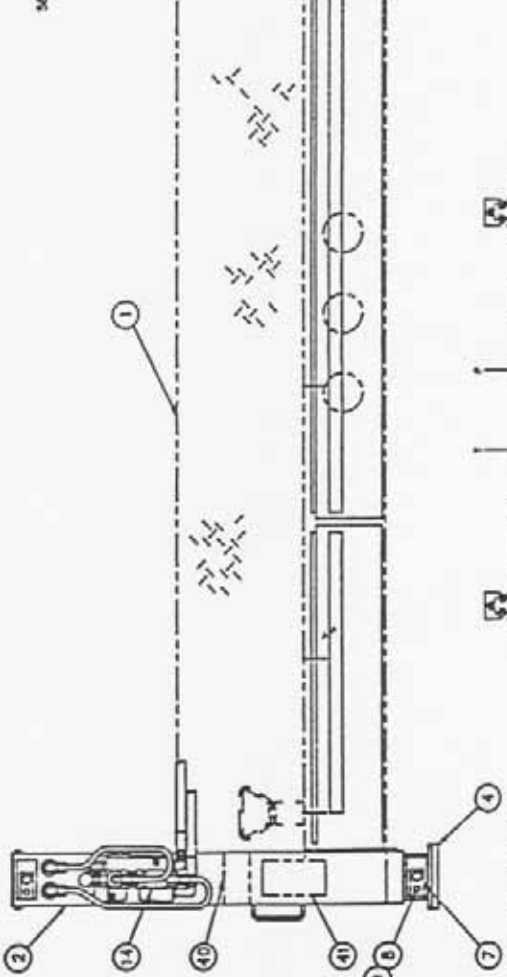
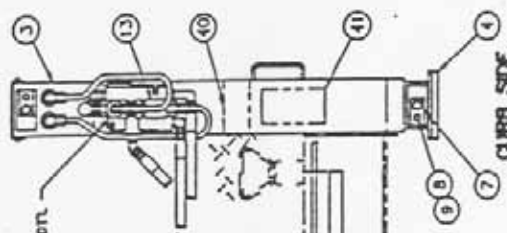
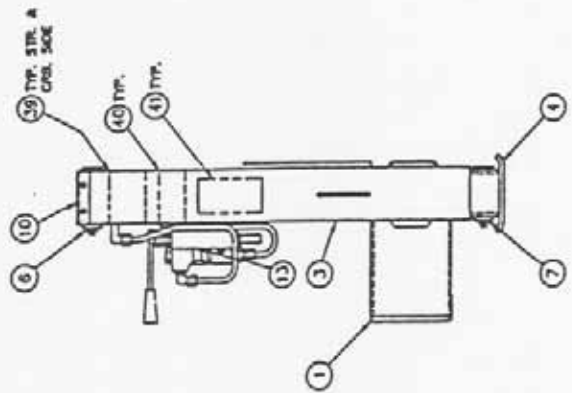




BACK VIEW OF CROSS-TUBE



REAR OF BODY



NOTE:  
1. ALL OPEN PORTS TO BE CAPPED OR PLUGGED.  
2. CYLINDERS TO BE PRESSURE CHECKED @ 1000 P.S.I.  
3. SEE INT. 2 FOR HOSE & TUBE INSTALLATION.

NOTE: (CYLINDER MOVEMENT)  
1. MAKE SURE - HOSE IS NOT STRETCHED  
2. MAKE SURE - HOSE IS NOT STRETCHED  
3. MAKE SURE - HOSE IS NOT STRETCHED

AUTO CRANE COMPANY  
1410 W. 10TH AVE. S.W.  
MINNEAPOLIS, MN 55408  
(MAN. OUT / HYD. DOWN)  
88-2720001



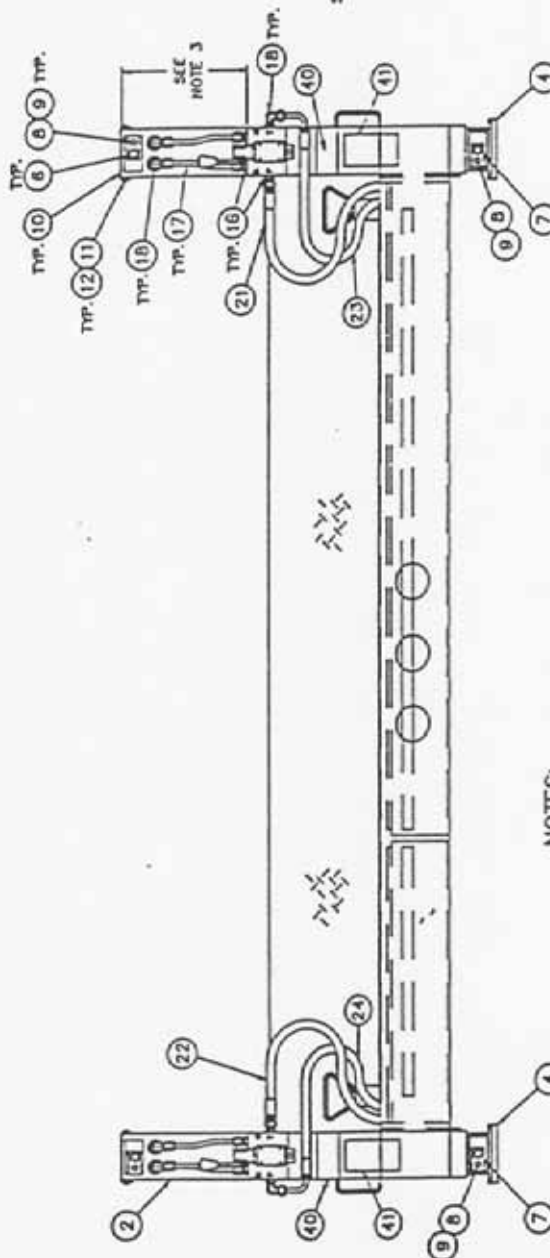
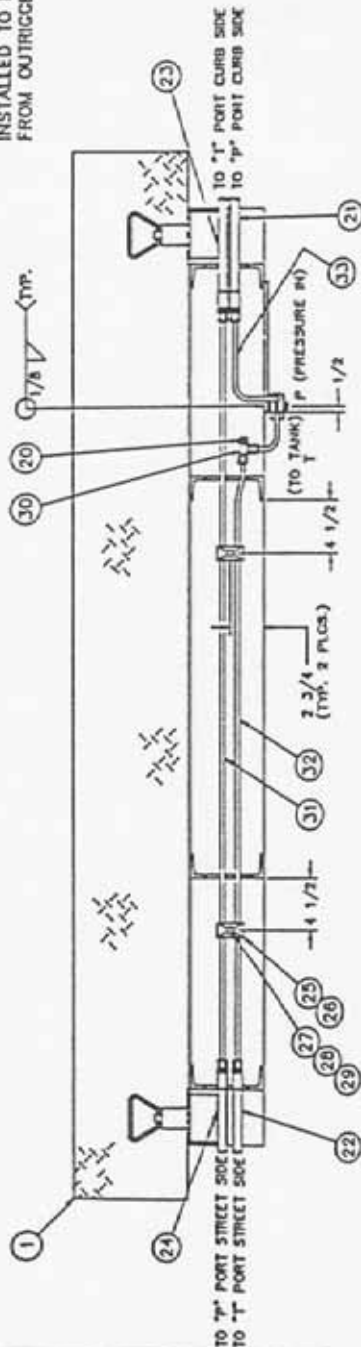
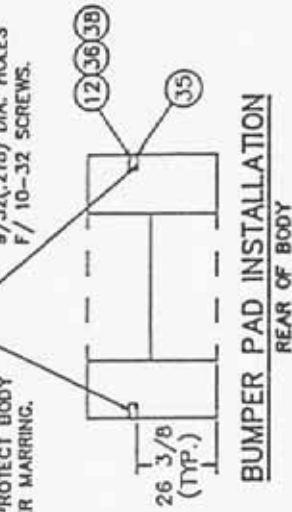
OUTRIGGER, 36K  
(MAN. OUT/ HYD. DOWN)

ITEM	QTY.	PART NO.	DESCRIPTION
1	1	725920	BUMPER (WELDMENT)
2	1	725581	TUBE, OUTER WITH SLIDE (STREET SIDE)
3	1	725580	TUBE, OUTER WITH SLIDE (CURB SIDE)
4	2	725935	TUBE, INNER (WELDMENT)
5	2	725949	CYLINDER, 36K HYD. O.R.
6	2	725946	PIN, UPPER CYLINDER (WELDMENT)
7	2	725948	PIN, LOWER CYLINDER (WELDMENT)
8	4	005901	SCREW, HEX HEAD 1/4-20 NC x 1/2" LG.
9	4	020200	WASHER, SP. LK. 1/4
10	2	725945	CAP, TUBE TOP
11	8	370470	SCREW, THREAD CUT #10 NC x 1/2" LG.
12	12	019800	WASHER, SP. LK. #10
13	1	752480	VALVE, DUKES 1618AS (W/POWER BEYOND)
14	1	725477	VALVE, MODIF. (W.O./POWER BEYOND)
15	2	725950	TUBE, ASSEMBLY
16	2	725951	TUBE, ASSEMBLY
17	4	780194	ELL 90° #6 SWIVEL
18	4	241175	ELL 90°, O-RING #6 JIC
19	6	200876	ADAPTER, STR. O-RING #6 JIC
20	1	480195	ELL 45°, O-RING #6JIC
21	2	480225	HOSE ASSEMBLY
22	1	812204-035	HOSE ASSEMBLY
23	1	812203-062	HOSE ASSEMBLY
24	1	812204-039	HOSE ASSEMBLY
25	3	480232	CLAMP HALVES
26	3	480233	PLATE, TWIN COVER
27	3	007805	SCREW, HEX HEAD 5/16 NC x 1 1/2" LG.
28	3	020600	WASHER, SP. LK. 5/16
29	3	016500	NUT, HEX 5/16 NC
30	1	367134	TEE, UNION #6 JIC
31	1	725952	TUBE ASSEMBLY
32	1	725953	TUBE ASSEMBLY
33	1	725954	TUBE ASSEMBLY
34	1	725955	TUBE ASSEMBLY
35	2	725931	PAD, OUTRIGGER BUMPER
36	4	750657	SCREW, FLAT HEAD SOCKET 10-32 x 5/8" LG.
37	2	330645	ELL 90°, O-RING LONG
38	4	015600	NUT, HEX #10 NF
39	2	725961	DECAL, DANGER
40	4	759017	DECAL, CAUTION
41	4	040581	DECAL, DANGER



PADS, ITEM #35, ARE TO BE INSTALLED TO PROTECT BODY FROM OUTRIGGER MARRING.

USING PAD AS GUIDE, DRILL 9/32(.218) DIA. HOLES F/ 10-32 SCREWS.



# NOTES:

1. ALL OPEN PORTS TO BE CAPPED OR PLUGGED.
2. CYLINDERS TO BE PRESSURE CHECKED @ 2350 P.S.I.
3. LOCATE AND WELD ITEM 37 TO LEG AFTER ASSEMBLING MANIFOLD, TUBING AND FITTINGS.
4. BEND HANDLE UP 90°

STREET SIDE

CURB SIDE

**AUTO CRANE COMPANY**

P.O. BOX 580497 TULSA, OKLAHOMA 74158-0497  
4707 NORTH HINGO ROAD 918-826-0463

TITLE

OUTRIGGER, 36K

(MAN. OUT/ HYD. DOWN)

SCALE 1/8" = 1'-0" DRAWING NO. AW-725567 REVISION

SHEET 1 OF 1



OUTRIGGER, 36K  
(MAN. OUT/ HYD. DOWN)

ITEM	QTY.	PART NO.	DESCRIPTION
1	1	725920	BUMPER (WELDMENT)
2	1	725587	TUBE, OUTER WITH SLIDE (STREET SIDE)
3	1	725586	TUBE, OUTER WITH SLIDE (CURB SIDE)
4	2	725935	TUBE, INNER (WELDMENT)
5	2	725949	CYLINDER, 36K HYD. O.R.
6	2	725946	PIN, UPPER CYLINDER (WELDMENT)
7	2	725948	PIN, LOWER CYLINDER (WELDMENT)
8	4	005901	SCREW, HEX HEAD 1/4-20 NC x 1/2" LG.
9	4	020200	WASHER, SP. LK. 1/4
10	2	725945	CAP, TUBE TOP
11	8	370470	SCREW, THREAD CUT #10 NC x 1/2" LG.
12	12	019800	WASHER, SP. LK. #10
13	2	480231	MANIFOLD, OUTRIGGERS
14	2	480230	VALVE, MANUAL OUTRIGGER
15	4	003906	SCREW, SOCKET HEAD 5/16-18 x 3 1/4" LG.
16	6	200876	ADAPTOR, STR. -6 ORM/ -6 JIC
17	4	725918	TUBE, ASSEMBLY
18	6	241175	ELL 90°, O-RING #6 JIC
19	-	-	-
20	1	360446	CAP, -6 JIC
21	2	480225	HOSE ASSEMBLY
22	1	812204-035	HOSE ASSEMBLY
23	1	812212-058	HOSE ASSEMBLY
24	1	812212-039	HOSE ASSEMBLY
25	3	480232	CLAMP HALVES
26	3	480233	PLATE, TWIN COVER
27	3	007805	SCREW, HEX HEAD 5/16 NC x 1 1/2" LG.
28	3	020600	WASHER, SP. LK. 5/16
29	3	016500	NUT, HEX 5/16 NC
30	1	367134	TEE, UNION #6 JIC
31	1	725952	TUBE ASSEMBLY
32	1	725953	TUBE ASSEMBLY
33	1	725954	TUBE ASSEMBLY
34	1	725955	TUBE ASSEMBLY
35	2	725931	PAD, OUTRIGGER BUMPER
36	4	750657	SCREW, FLAT HEAD SOCKET 10-32 x 5/8" LG.
37	2	725919	PLATE, OUTRIGGER
38	4	015600	NUT, HEX #10 NF
39	2	725961	DECAL, DANGER
40	4	759017	DECAL, CAUTION
41	4	040581	DECAL, DANGER







OUTRIGGER, 36K W.O. BUMPER  
(MAN. OUT/ HYD. DOWN)

ITEM	QTY.	PART NO.	DESCRIPTION
1	1	725921	O.R. SOCKET PULL PIN ASSEMBLY
2	1	725587	TUBE, OUTER WITH SLIDE (STREET SIDE)
3	1	725586	TUBE, OUTER WITH SLIDE (CURB SIDE)
4	2	725935	TUBE, INNER (WELDMENT)
5	2	725949	CYLINDER, 36K HYD. O.R.
6	2	725946	PIN, UPPER CYLINDER (WELDMENT)
7	2	725948	PIN, LOWER CYLINDER (WELDMENT)
8	4	005901	SCREW, HEX HEAD 1/4-20 NC x 1/2" LG.
9	4	020200	WASHER, SP. LK. 1/4
10	2	725945	CAP, TUBE TOP
11	8	370470	SCREW, THREAD CUT #10 NC x 1/2" LG.
12	12	019800	WASHER, SP. LK. #10
13	2	480231	MANIFOLD, OUTRIGGERS
14	2	480230	VALVE, MANUAL OUTRIGGER
15	4	003906	SCREW, SOCKET HEAD 5/16-18 x 3 1/4" LG.
16	6	200876	ADAPTOR, STR. -6 ORM/ -6 JIC
17	4	725918	TUBE, ASSEMBLY
18	6	241175	ELL 90°, O-RING #6 JIC
19	-	-	-
20	1	360446	CAP, -6 JIC
21	2	480225	HOSE ASSEMBLY
22	1	812204-035	HOSE ASSEMBLY
23	1	812212-058	HOSE ASSEMBLY
24	1	812212-039	HOSE ASSEMBLY
25	3	480232	CLAMP HALVES
26	3	480233	PLATE, TWIN COVER
27	3	007805	SCREW, HEX HEAD 5/16 NC x 1 1/2" LG.
28	3	020600	WASHER, SP. LK. 5/16
29	3	016500	NUT, HEX 5/16 NC
30	1	367134	TEE, UNION #6 JIC
31	1	725952	TUBE ASSEMBLY
32	1	725953	TUBE ASSEMBLY
33	1	725954	TUBE ASSEMBLY
34	1	725955	TUBE ASSEMBLY
35	2	725931	PAD, OUTRIGGER BUMPER
36	4	750657	SCREW, FLAT HEAD SOCKET 10-32 x 5/8" LG.
37	2	725919	PLATE, OUTRIGGER
38	4	015600	NUT, HEX #10 NF
39	2	725961	DECAL, DANGER
40	4	759017	DECAL, CAUTION
41	4	040581	DECAL, DANGER



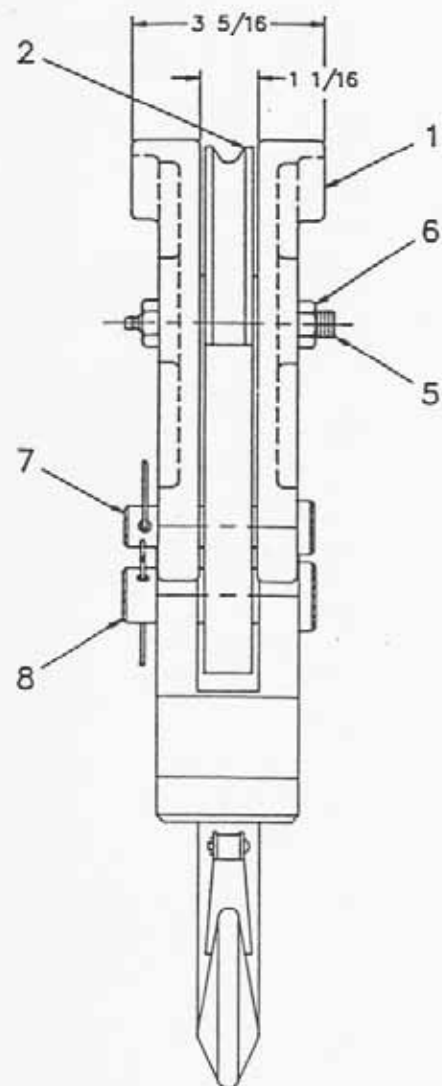
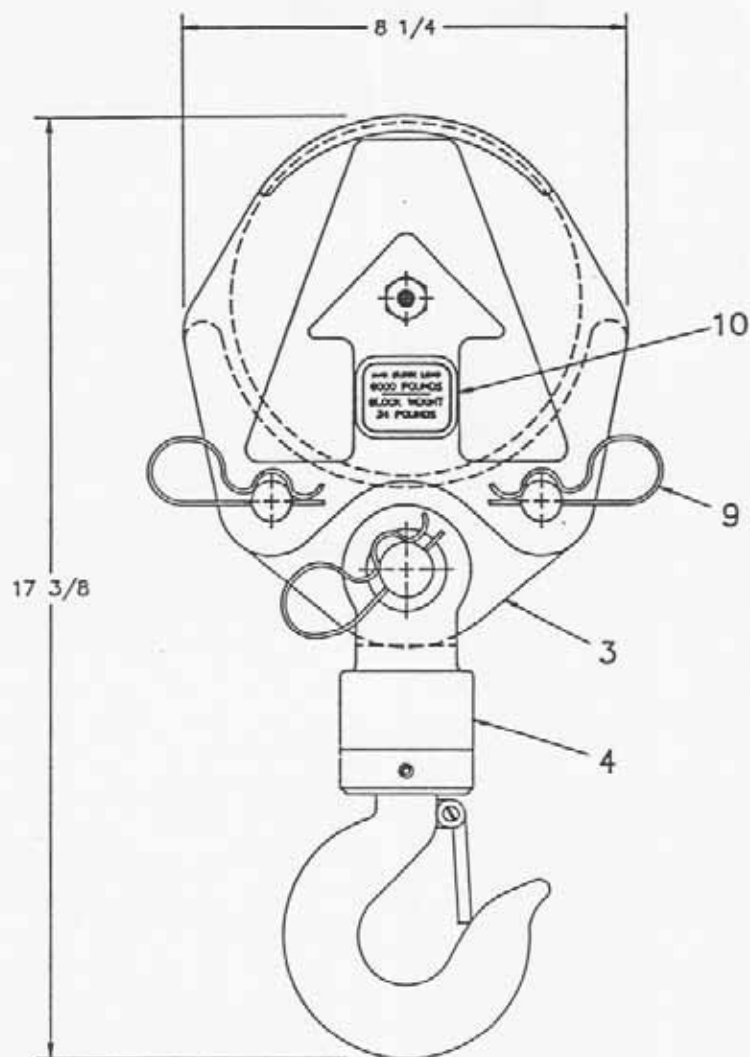




# TRAVELING BLOCK ASSEMBLY - AW-366203

ITEM	QTY.	PART NO.	DESCRIPTION
1	1	480130	SHEAVE ASSEMBLY
2	1	200197	HOOK, SWIVEL
3	2	360601	BLOCK, SIDE PLATE
4	1	240237	SPACER, BUSHING 1" O.D.
5	1	006801	SCREW, HX. HD. 1/2 - 20 X 4" LG.
6	1	017800	NUT, HX. LK. 1/2 - 20
7	2	360124	PIN, HITCH
8	2	360605	PIN, BLOCK





ITEM	QTY	P/N	DESCRIPTION
1	2	480362	SIDE PLATE (MACH.)
2	1	480130	SHEAVE ASSEMBLY
3	1	480364	TACKLE, LOWER
4	1	480371	HOOK, SWIVEL - 3 TON
5	1	480372	BOLT, SHEAVE w/ ZERK

ITEM	QTY	P/N	DESCRIPTION
6	1	017800	NUT, HX LK 1/2-20NF
7	2	480367	PIN, BLOCK
8	1	480368	PIN, SWIVEL HOOK
9	3	360124	PIN, HITCH (HAIR PIN)
10	2	366063-100	DECAL, MAX. LOAD

AW-366063  
TRAVELING BLOCK ASSEMBLY  
6006H (SHORT)













## AUTO CRANE COMPANY

P. O. BOX 581510 • TULSA, OKLAHOMA 74158

# Limited Warranty

Auto Crane will warranty to consumer for a period of twelve months from date of purchase that each new Auto Crane product it sells will be free under normal use and service, from defects in material and workmanship. Date of purchase will be honored as either date of purchase by distributor or his date of sale of the product as substantiated by Distributor Delivery Report.

Obligation of Auto Crane under this warranty is limited to replacement or repair of parts that appear to manufacturer after review and/ or inspection to be defective. This warranty does not obligate Auto Crane to bear the cost of labor or transportation 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 the 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, same being subject to the warranties of their respective manufacturers.

If field service, at the request of buyer, is rendered and fault is found not to be with Auto Crane's product, the buyer shall pay the time and expense of the field representative. Claims for service labor or other expenses that have been incurred by the buyer without approval or authorization of Auto Crane will not be accepted.

AUTO CRANE COMPANY IS UNDER NO OBLIGATION TO EXTEND THIS WARRANTY TO ANY CUSTOMER FOR WHICH AN AUTO CRANE WARRANTY REGISTRATION CARD HAS NOT BEEN COMPLETED AND MAILED TO AUTO CRANE COMPANY WITHIN FIFTEEN (15) DAYS AFTER DATE OF PURCHASE.