# Auto Crane Company

P.O. BOX 580697 • TULSA, OKLAHOMA 74158-0697 4707 N. MINGO ROAD • TULSA, OKLAHOMA 74117 918-836-0463 • TELEX 158108 RAMSEY TUL FAX 918-438-6688

# OWNER'S MANUAL

SERIAL NO. **RV 001 - 4-88** 

## 6006H SERIES - OWNER'S MANUAL

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### **INTRODUCTION 6006H SERIES**

Auto Crane products have been engineered to provide safe, trouble-free, dependable service for many years when these products are properly used and maintained.

To assist you in obtaining the best service from your crane and to avoid untimely failure of the unit and/or the vehicle on which it is mounted, the following operating and service instructions are herein published, and 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 for your protection. The material and electrical systems were designed to minimize weight and lengthen durability. The hydraulic components are designed for a 4:1 safety factor. Holding valves are installed on the power versions to prevent the load from dropping if a hose should fail. A 10u filter is installed in the hydraulic system to remove dirt and grit that may cause premature failure. The reservoir is protected with a 15u filter in the filler cap, and a 40 mesh strainer in the suction line.

For your convenience the overall dimensions of the 6006H series are included on the General Dimension Drawing. Rotation and turning radius are also listed.

Remember that the crane adds weight to the vehicle and may change the driving and riding characteristics of the vehicle on which it is mounted unless this weight is properly provided for with appropriate overload springs. The payload of the vehicle is also reduced by the amount that the crane weighs, and as the vehicle is loaded, care should be exercised not to overload the vehicle. Exercising care in distributing the payload on the vehicle 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 material or workmanship is involved, immediate corrective action is taken. It

is therefore, understandable that Auto Crane Company cannot assume responsibility or liability when our products have obviously been abused, mis-used, overloaded or otherwise damaged by inexperienced persons trying to operate the equipment without even reading the manual. The Auto Crane is designed and built to be safe and efficient. Auto Crane will not assume responsibility or liability for any unit which has been modified, changed, or which has unauthorized or unapproved components installed.

Auto Crane maintains a strong distributor network and a knowledgeable Customer Service Department. In most cases an equipment problem can be solved through a telephone 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 necessary. 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 assures our customers of the best equipment on the market, and our Engineering Staff, as well as our knowledgeable sales people are always available to our customers in solving crane and winch-type application problems. When in doubt-call the 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 are stocked with authorized replacement parts and a service department that can solve almost any needed repair.

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

The material herein does not imply to cover all maintenance, instructions, operations, or variations pertinent to every possible situation. If additional information is required, please refer to the Auto Crane Company at the following telephone number: 918 - 438-2760. The information contained in the manual was in effect at the time of printing. Auto Crane Company reserves the right to update this material at any time without prior notice or obligation.

## -IMPORTANT-

## SAFETY TIPS AND PRECAUTIONS

- Make certain the vehicle meets minimum chassis requirements. (These requirements do not guarantee unit stability.)
- Make certain the crane is installed per factory specifications. Contact your local Distributor or the Auto Crane factory if any questions arise.
- Keep the vehicle in as level a position as possible while loading or unloading.
- ALWAYS set the vehicle emergency brake before beginning crane operations
- ALWAYS use outriggers from vehicle to the ground during crane operation. Insure that they are firmly positioned on solid footings.
- All load ratings are based on crane capacity, NOT unit stability.
- ALWAYS comply with load chart capacities (centerline of rotation to hoist hook).
- 8. NEVER OPERATE THE CRANE NEAR ELECTRICAL POWER LINES. Auto Crane Company recommends that a crane never be moved any closer to a power line (including telephone lines) than 20 feet at any point.
- Keep objects and personnel clear of crane path during operation.
- 10. Keep hoist cable pulled tight at all times.
- WARNING NEVER un-reel last wrap of cable from drum.
- 12. WARNING NEVER wrap cable around load.

- 13. REMEMBER in lifting a heavy load, the weight can create enough tipping moment to overturn the vehicle.
- 14. WARNING NEVER attempt to lift or drag a load from the side- the boom can fail far below its rated capacity.
- 15. Oil gears as required.
- 16. Periodic adjustment of hoist worm brake may be required (see automatic safety brake drawing, page4-5.0.0 ).
- WARNING NEVER weld, modify, or use unauthorized components on any Auto Crane unit. This will void any warranty or liability. Also failure of the crane may result.
- 18. An important item which an operator should consider and use properly is the hoist hook. It should be checked on a 30-day basis for distortion or cracks.
- WARNING NEVER place a chain link on the tip of the hook and try to lift a load with the hoist.
- 20. WARNING NEVER use a sling bar or anything larger than the hook throat which could prevent the hook from closing with the block, thus negating the safety feature.
- 21. WARNING In using a safety hook, 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.
- WARNING NEVER hold any pendant Select switch on that will negate safe operating conditions.
- 23. ALWAYS store outriggers before road travel.
- 24. WARNING NEVER use crane for hoisting personnel.

## OPERATION OF UNIT

- Make sure this manual has been thoroughly read by all crane operating personnel.
- A routine inspection of the crane should be mandatory before each operating day. Any defects should be corrected immediately.
- 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. Engage emergency brake, block wheels, and turn ignition off with transmission left in gear or in park (for automatic transmissions). This is for Auto Crane units requiring only battery operation. For larger Auto Crane units requiring battery and hydraulic operation, engage emergency brake and place gear select in neutral; press clutch and pull PTO knob in gear; release clutch and set throttle control to proper engine speed.
  WARNING: DO NOT EXCEED ENGINE SPEED NECESSARY TO MEET PUMP RPM REQUIREMENT (see hydraulic section) POSSIBLE DAMAGE MAY RESULT.
- 6. Always use outriggers from the truck to the ground. Be sure these are firm and adequately positioned.
- Then remove pendant control from cab (on smaller units) and plug into receptacle on crane. Crane is now ready for operation. On Auto Crane's larger units,

- remove pendant control from guard and unwrap cable from boom. Crane is now ready for operation. DO NOT OPERATE CRANE WITH CABLE WRAPPED AROUND BOOM LOOPS.
- 8. Always boom up before rotating so that the boom will clear the required boom support.
- When extending the boom always maintain clearance between the boom crown and the traveling block or hoist hook.
- 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 excess pressure on the boom support.
- 12. Store pendant control on proper location (in cab or on crane).
- 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. Press clutch and disengage PTO. Release throttle control and emergency brake.
- 16. Report any unusual occurance during crane operation that may indicate required maintenance or repair.

## **OPERATION OF HYDRAULIC OUTRIGGERS**

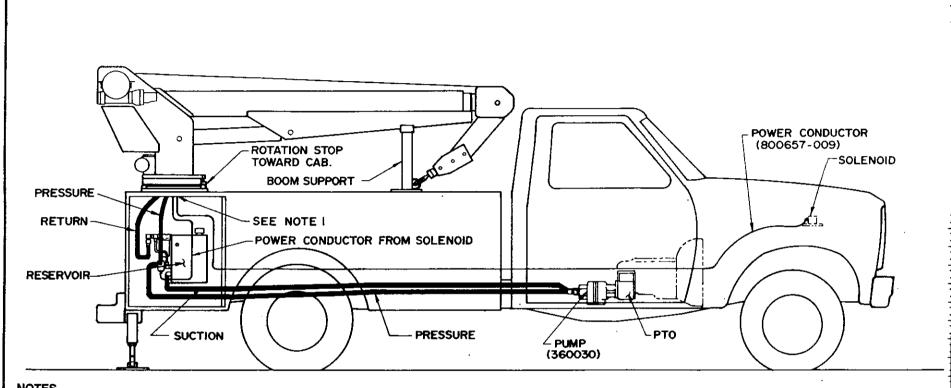
- Prior to operating outriggers, detach crane hook from dead man.
- Shift crane outrigger selector valve to "outrigger" position
- 3. While operating the outrigger control valves (located on the outrigger cylinders), simultaneously operate the boom-up control switch. This will allow hydraulic system to build pressure.
- After outriggers are positioned, return crane-outrigger selector valve to "crane" position. Crane is now ready to operate.

### **MOUNTING AND INSTALLATION 6006H**

- Vehicle should meet minimum GVW rating of 14,500
- Make sure compartment or crane mount is adequately reinforced.
- 3. A 13 1/2" Dia. hole should be cut out of mounting location (centered with mounting bolts, for access of lower ring gear bolts and hydraulic connections.
- 4. Mounting bolts (015104 Screw, Hx. 7/8 N.F. x 5" G5, 4 required) to be torqued to 440 ft. lbs. (dry).
- 5. Power conductor (Item 46, 800657-009, Drawing AW-366000 to be uncoiled from bottom of crane and routed to positive pole on starter solenoid.
- 6. Pressure and return hoses and fittings are not furnished with crane. These items are normally calculated, (length) at installation. Refer to reservoir ass'y, AW480150. NOTE: The reservoir should be thoroughly flushed out before installing the hydraulic hoses to the crane.
  - A) Return line from crane to reservoir hose size 8 (SAE 100 R2 type AT) at desired length. Fittings one 10 JIC female swivel fitting, (reservoir end). One 8 JIC female swivel fitting (crane end).
  - B) Pressure line from vented relief valve to crane
     Hose size 8 (SAE 100 R2 type AT) at desired length.
     Fittings two 8 JIC female swivel fittings.
  - C) Suction hose from pump to reservoir.
     Hose size 16 (SAE 100 R4) at desired length.
     Fittings one hose adapter 16 JIC female swivel fitting (pump end).
     One 16 straight adapter (reservoir end). Four hose clamps 16 (two each end).
  - D) Pressure line from pump to vented relief valve Hose - size 12 (SAE 100 R2 type AT) at desired length. Fittings - two - 10 JIC female swivel fittings.

NOTE: If no pressure received at reservoir, alternate hose connections at pump.

- When crane is not in operation, a boom support should always be used. Traveling block should be connected to hook loop.
- 8. Always use cable loops on boom and pendant guard to store pendant assembly.
- 9. Crane operation requires 8 G.P.M. at 2200 p.s.i.
- 10. THE VEHICLE MUST BE EQUIPPED WITH AN ENGINE SPEED CONTROL AND TACHOMETER.



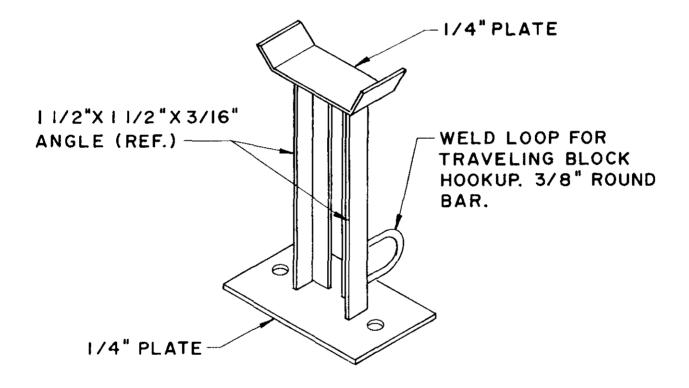
#### **NOTES**

PODGWAY'S LOWISH

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

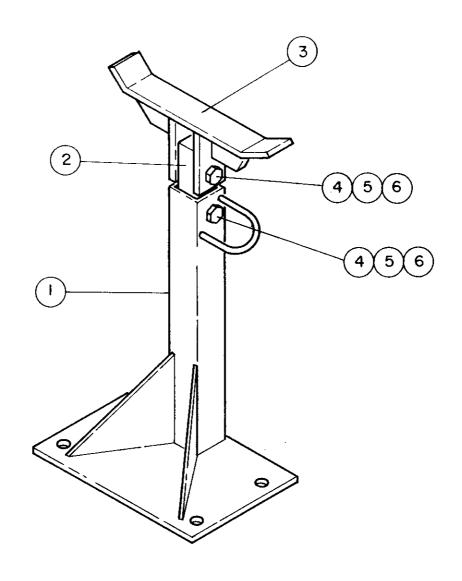
# AUTO CRANE'S SUGGESTED BOOM SUPPORT LEAVE 3/4" CLEARANCE ON EACH SIDE OF BOOM



BOOM SUPPORT IS REQUIRED.

# AUTO CRANE COMPANY

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



ITEM	QTY.	PART NO.	DESCRIPTION
1	!	750586	BASE
2	ı	750596	EXTENSION TUBE
3	1	750589	BOOM SUPPORT
4	2	009800	BOLT, HX. 3/8" X 3 1/2"
5	2	017102	NUT HX. 3/8" NF
6	2	021101	WASHER, SP. LK. 3/8"

AW-081 BOOM SUPPORT (P/N 750585)

#### 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:

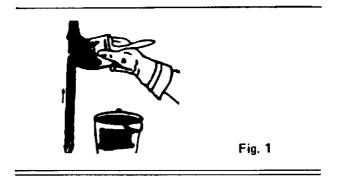
Remove rust and foreign matter with a wire brush and wipe clean. Be sure cable is dry.

#### APPLICATION:

Two methods are illustrated in figures 1 and 2. A light weight motor oil may be used, as in figrue 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.



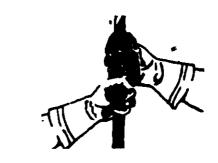


Fig. 2

### "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:

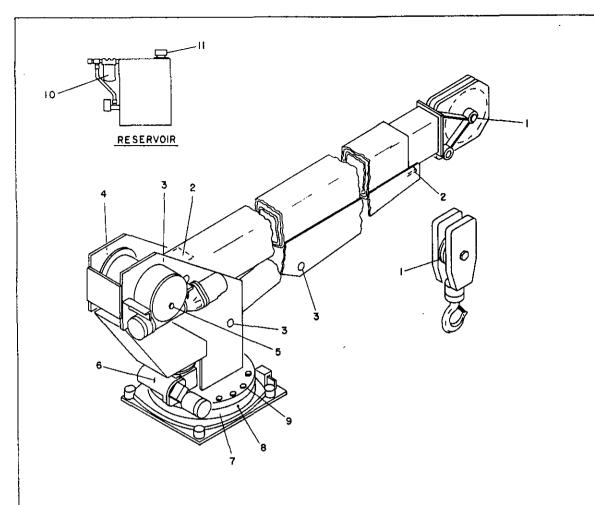
- 1. Load being handled.
- 2. Corrosive conditions.
- 3. Maintenance of the unit.
  - a. Keep the sheaves turning freely.
  - Maintain tension on cable to insure proper spooling.
  - c. Lubricate line. (See above)
  - d. Avoid kinks in cable.
  - e. Avoid abrasive action and contact with sharp corners.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



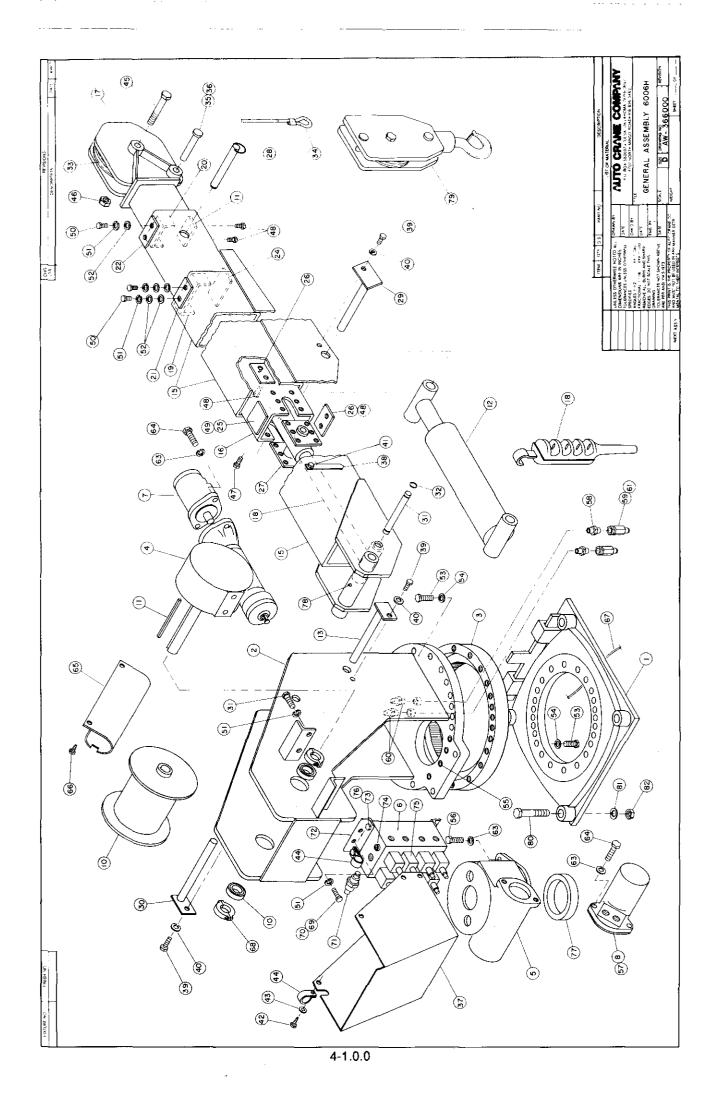
- 1. SHEAVE ROLLER BEARING SEALED TYPE, NO LUBE REQUIRED.
- 2. BOOM PADS: IF REPLACED, GREASE UPON INSTALLATION USE CHASSIS LUBRICANT.
- 3. GREASE ZERK: PIVOT POINTS, LUBE ONCE A WEEK. USE MOBILPLEX EP-2 OR EQUIVALENT.

(CYLINDER CROSSTUBE @ BOOM) (CYLINDER CROSSTUBE @ PEDESTAL) (BOOM PIVOT)

- 4. HOIST ROLLER BEARINGS: SEALED TYPE. NO LUBE REQUIRED.
- 5. HOIST ACTUATOR: MAINTAIN LUBE AT PLUG. USE EXTREME PRESSURE GEAR LUBE (E.P. 80-90). SPUR GEAR TO USE 30 WT. OIL. REPLACE LUBE EVERY SIX MONTHS.
- 6. ROTATION GEAR BOX: REQUIRES 1 3/4 PINT OF EPO-140. REPLACE EVERY SIX MONTHS.
- 7. RING GEAR: LUBE EVERY 3 MONTHS AT PINION' USE MOBILTAC LL OR EQUIVALENT.
- RING GEAR RACE: LUBE EVERY 3 MONTHS AT ZERK, USE MOBILPLEX EP-2 OR EQUIVA-LENT.
- 9. BOLTS: RING GEAR PEDESTAL BASE. REQUIRED TORQUE OF BOLTS IF REPLACED 150#LBS. HARDENED WASHERS REQUIRED.

  NOTE: BOLTS SHOULD BE CHECKED PERIODICALLY AND RETIGHTENED TO PROPER TORQUE. THE POSSIBILITY EXISTS THAT DUE TO THE STRESSES APPLIED TO THE ROTATION SYSTEM, THE BOLTS COULD WORK LOOSE.
- RESERVOIR FILTER: 10 MICRON SPIN ON FILTER REQUIRED. REPLACE EVERY 3 MONTHS.
- 11. HYDRAULIC FLUID: USE DTE-13 OR EQUAL TO KEEP LEVEL AT SIGHT GAUGE. RESERVOIR SHOULD BE FLUSHED AND NEW FLUID ADDED EVERY 2 YEARS OR IF A HYDRAULIC FAILURE OCCURS.

AW-074, LUBRICATION MAINTENANCE



## GENERAL ASSEMBLY - 6006H, AW-366000

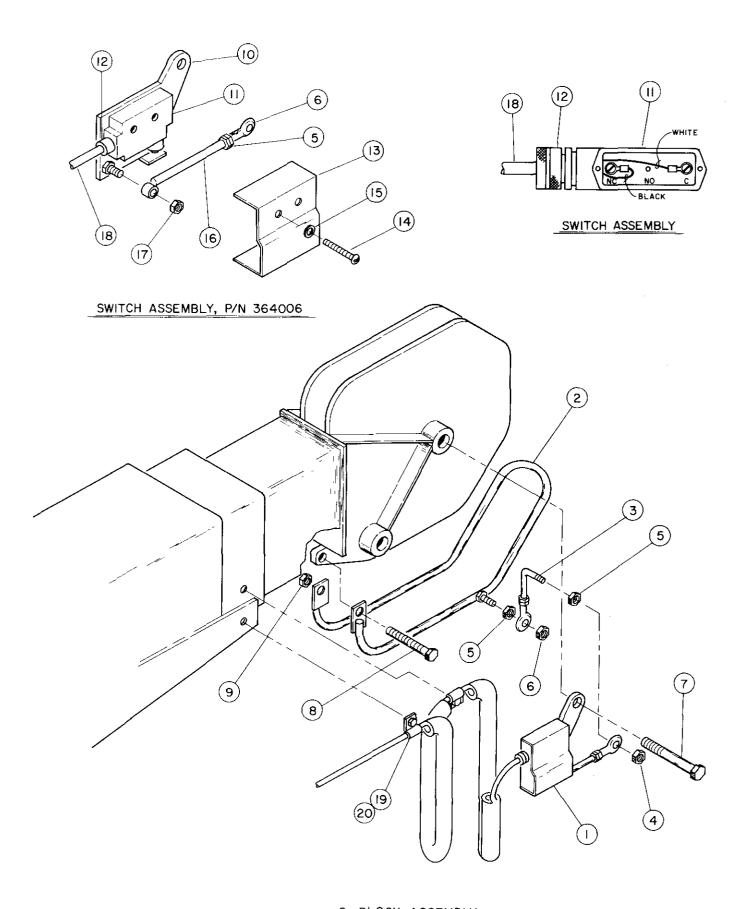
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ITEM	QTY.	PART NO.	DESCRIPTION
	<u> </u>	<u>+</u>	
1	1	360536	BASE PLATE ASSEMBLY
	1	366045	PEDESTAL WELDMENT ASSEMBLY
2	1	480023	BEARING, ROTATION
4	1	480075	ACTUATOR, HOIST
5	1	480028	ACTUATOR, ROTATION
5 6	1	480182	VALVE BANK (SEE NOTE 1.)
7	1	480076	MOTOR, HYD. (HOIST)
8	1	480027	MOTOR, HYD. (ROTATION)
9	2	400500	BEARING
10	1	366180	DRUM, HOIST
11	1	480094	KEYSTOCK 3/8" SQ.
12	1	366161	CYLINDER, BOOM UP
13	1	366191	PIN, PEDESTAL/CYLINDER
14	1	480093	PENDANT, ASS'Y
15	1	366070	LOWER BOOM
16	1	366080	CENTER BOOM
17	1	366110	MANUAL BOOM
18	1	366162	CYLINDER, BOOM EXTENSION
19	1	366183	STOP, CENTER BOOM
20	1	366112	STOP, UPPER BOOM
21	1	366201	PAD, BOOM TOP
22	1	366202	PAD, BOOM TOP
23	1	366199	PAD, BOOM
24	1	366187	PAD, RETAINER LOWER
25	1	366185	PAD, BOOM TOP (CENTER BOOM)
26	3	366186	PAD, BOOM (CENTER BOOM)
27	2	366184	RETAINER, EXT. CYL.
28	1	366190	PIN ASS'Y, WITH LANYARD
29	1	366189	PIN, BOOM CYLINDER
30	1	366192	PIN, LOWER BOOM PIVOT
31	1	366193	PIN, EXTENSION CYLINDER
32	2	480029	RETAINING RING
33	1	366198	SHEAVE ASS'Y 3/8 (366197 BEARING ONLY)
34	1	480031	ROPE ASS'Y 3/8"
35	1	360125	PIN, BLOCK
36	1	360124	PIN, HITCH
37	1	360544	COVER, VALVE
38	2 3	360038	ANGLE INDICATOR
39	3	005500	SCREW, HX. HD. 1/4" - 20 NC X 3/4" LG.
40	3	020200	WASHER, SP. LK. 1/4"
41	2	016300	NUT HX. LK. 1/4 - 20 NC
42	6	002608	SCREW 1/4 - NC X 3/4 SELF TAP
43	1	020901	WASHER FLAT 5/16 SAE
44	2	480024	MOUNT, PENDANT RETAINER
45	1	014304	SCREW, HX. HD. 3/4 X 6" NF GR.5
			İ

## CONTINUED GENERAL ASSEMBLY - 6006H, AW-366000

ITEM	QTY.	PART NO.	DESCRIPTION
40	4	100000	NUT LIVEL OF CORP.
46	1	108600	NUT HX. LK. 3/4" NFCP
47	12	008400	SCREW, HX. HD. 3/8 NC X 3/4" LG.
48	8 4	007808	SCREW, HX. HD. 5/16 - NF X 1/2" LG.
49 50	4	005406	SCREW, HX. HD. 1/4 - NF X 1/2 LG.
51	4 12	008800	SCREW HX. HD. 3/8 - NF X 1" LG.
52	6	021100 021200	WASHER, SP. LK. 3/8" WASHER, FLAT 3/8"
53	38	012198	SCREW HX. HD. 5/8 - NC X 1 3/4" GR5
54	38	023902	WASHER, FLAT 5/8", HARDENED
55	4	006205	SCREW, SOC. HD. 5/8 - NC X 1 1/4 GR.8
56	4	011608	SCREW, HX. HD. 1/2 - NC X 2" GR.5
57	1	480019	GASKET, MOTOR
58	2	750413	REDUCER, 1/2 - 14 NPT/ 3/8 - 18 NPTF
59	2	750412	SWIVEL JOINT
60	2	360054	ADAPTER, ST. 1/2 - NPT / 3/4-JIC
61	2	360276	DUST CAP
62	4	008601	SCREW HX. HD. 3/8 - NC X 7/8" GR.5
63	8	021500	WASHER, SP. LK. 1/2
64	4	012197	SCREW, HX. HD. 1/2 - NC X 1 1/2" GR.5
65	1	634000	GUARD, PENDANT
66	2	002615	SCREW, 1/4 - 20 X 3/8 S.T. TYPE F
67	1	800657-009	CONDUCTOR, POWER
68	2	330468	COLLAR, SPLIT-LOCK
69	4	330394	SCREW, HX. HD. 3/8 - NC X 1 1/2"
70	4	017100	NUT, HX. 3/8 - NC CP
71	1	480183	CARTRIDGE, FLOW REGULATOR (SEE NOTE 1)
72	2	REF.	ANGLE, BRACKET, (SEE NOTE 1)
73	4	REF.	SCREW, HX. HD. 3/8 - NC X 7/8" LG. (SEE NOTE 1)
74	1	000109	PLUG, PIPE 3/8 (SEE NOTE 1)
75	8	480184	VALVE, CARTRIDGE (SEE NOTE 1)
76	4	REF.	WASHER FLAT 3/8 (SEE NOTE 1)
77	1	360162	RING, ECCENTRIC
78	1	239000	GREASE ZERK
79	1	366203	TRAVELING BLOCK
80	4	015104	SCREW, HX. HD. 7/8 - NF X 5" LG. GR.5
81	4 4	022200	LOCKWASHER, 7/8"
82	4	018900	NUT, HX. 7/8 - NF

## NOTES:

1. ITEMS 6, 71, 72, 73, 74, 75, 76 CAN BE PURCHASED AS AN ASSEMBLY WITH PART NUMBER 480181



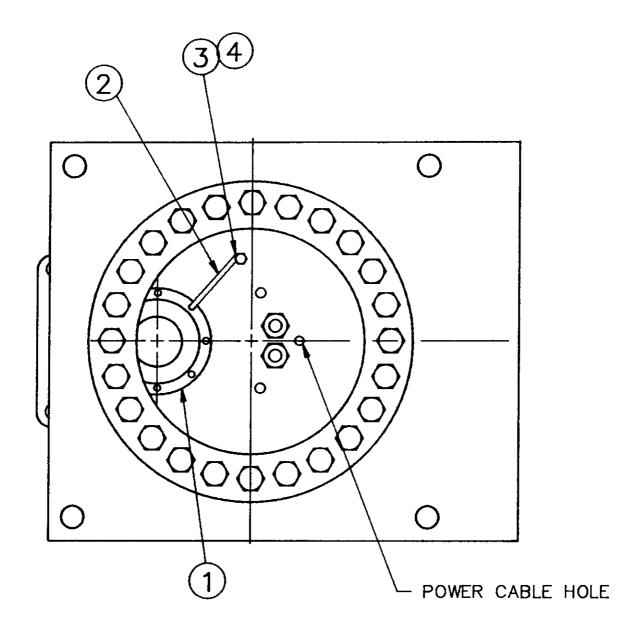
2-BLOCK ASSEMBLY

## 2 - BLOCK ASSEMBLY, AW-069

ITEM	QTY.	PART NO.	DESCRIPTION
4	_	264006	O DE OOK CWITCH ACCEMBLY
	1	364006	2 - BLOCK SWITCH ASSEMBLY
2 3 4 5 6 7	 	366116	2 - BLOCK ASSEMBLY
3	1	366196	PIVOT ARM
4	2	016200	NUT, HX. LK. 1/4 NFCP
5	6	016100	NUT, HX. 1/4 NFCP
6	2	363006	BEARING, ROD END
	1	REF.	SCREW, HX. 3/4 X 6" NF
8	1	007803	SCREW, HX. HD. 5/16 - NC X 3 1/2" LG
8 9	1	016801	NUT, HX. LK. 5/16 - NC
10	1	363003	MOUNTING PLATE ASS'Y
11	1	646900	SWITCH
12	1	642908	CORD CONNECTOR
13	1	363004	COVER, SWITCH
14	2	002602	SCREW RD. HD. #6 X 1 1/4 NC
15	2	019600	WASHER, SP. LK. #6
16	1	363005	ROD
17	1	017301	NUT, HX. LK. 3/8 NC
18	1	363018	CORD ASSEMBLY
19	7	000115	CLIP
20	7	002608	SCREW HX. HD. 1/4 X 3/4

## NOTE:

1. ITEMS 11,12,18 MAY BE PURCHASED AS AN ASSEMBLY WITH PART NO. 363015.

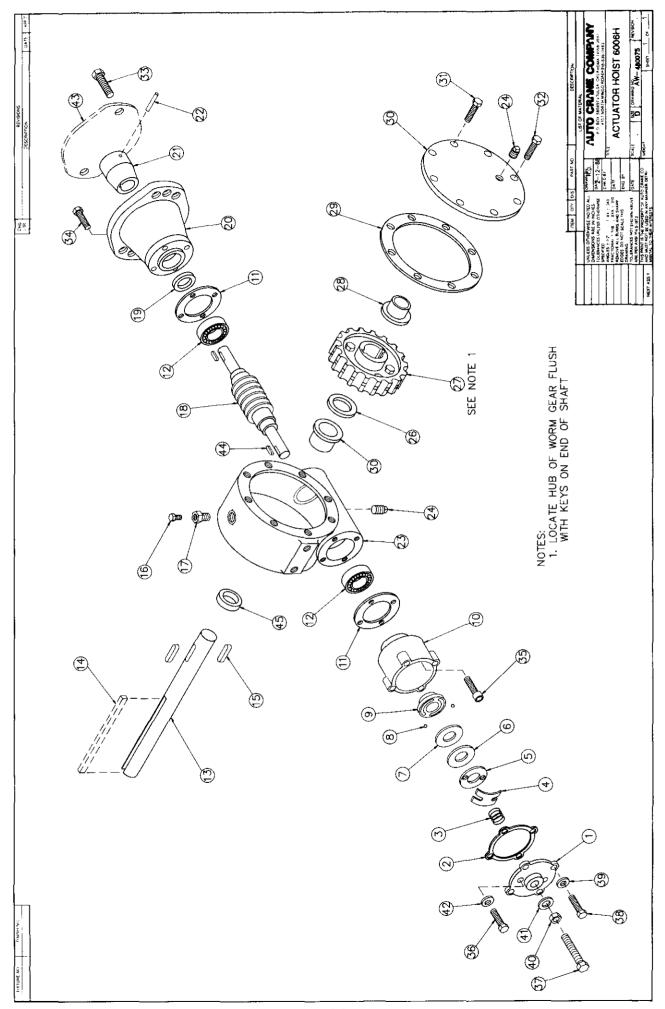


BOTTOM VIEW OF PEDESTAL

AW-067

## **BOTTOM VIEW OF PEDESTAL, AW-067**

ITEM	QTY.	PART NO.	DESCRIPTION
1 2 3 4	1 1 1	360162 360207 007402 020600	RING, ECCENTRIC RETAINER, ECCENTRIC RING SCREW HX. HD. 5/16" - NC X 5/8 GR.5 WASHER, SP. LK. 5/16"

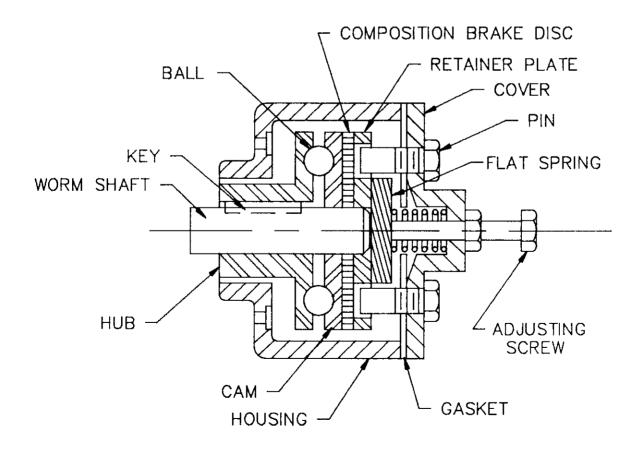


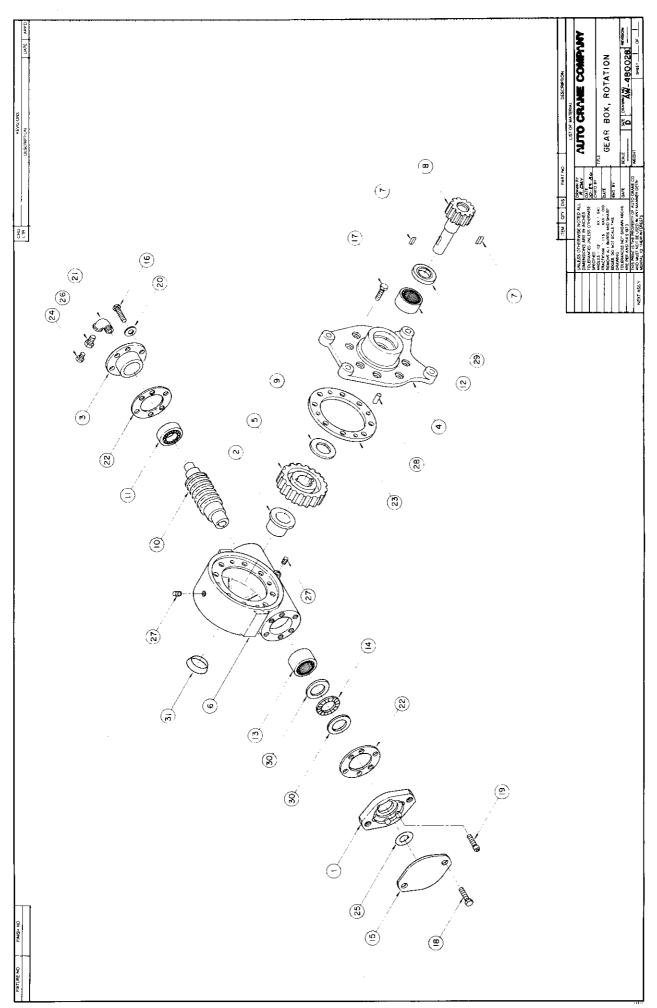
## **HOIST ACTUATOR - AW-480075**

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 6	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 5/16 (REF. FOR DRUM)
15 16	2 1	360340	KEY
		360360	FITTING-RELIEF
17 18	1 1	360361	REDUCER
1	1	360344	WORM-R.H.
19 20	1	360365 360330	OIL SEAL ADAPTER
21	1	360332	COUPLING
22	1	360363	SPIROL PIN
23	1	360451	HOUSING - GEAR
24	2	360362	PIPE PLUG
25	1	360348	BUSHING
26	1	360348	THRUST WASHER
27	i	360457	GEAR/HUB ASSEMBLY R.H. 46:1
28	i	360347	BUSHING
29	i	360357	GASKET
30	i	360333	COVER
31	7	360350	CAPSCREW 1/4 - 20 NC X 3/4 HX. HD. GR.5
32	1	360452	CAPSCREW 1/4 - 20 NC X 3/4 HX. HD.
J.		000.02	NYLOK HVY PATCH GR.5
33	2	010202	CAPSCREW 1/2 - 13 NC X 1 HX. HD.
34	4	360352	CAPSCREW 1/4 - 20 NC X 1 3/4 SOC. HD. LOCWEL
35	4	360454	CAPSCREW 1/4 - 20 NC X 7/8 SOC. HD. BUTTON GR.5
36	2	360453	CAPSCREW 1/4 - 20 NC X 1 HX. HD. GR.5 ALL THRD.
	•	<del></del>	NYLOC HVY. PATCH
37	1	360456	CAPSCREW 3/8 - 16 NC X 1 1/2 HX. HD. ALL THRD. GR.5
38	4	005604	CAPSCREW 1/4 - 20 NC X 1 HX. HD. GR.5
39	4	360354	LOCKWASHER 1/4 MED. SECT. C.P.
40	1	360353	NUT 3/8 - 16 NC HX. JAM
41	1	360371	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	480289	SEAL AND GASKET KIT
			1

# AUTOMATIC SAFETY BRAKE ASSEMBLY (OIL COOLED) HOIST

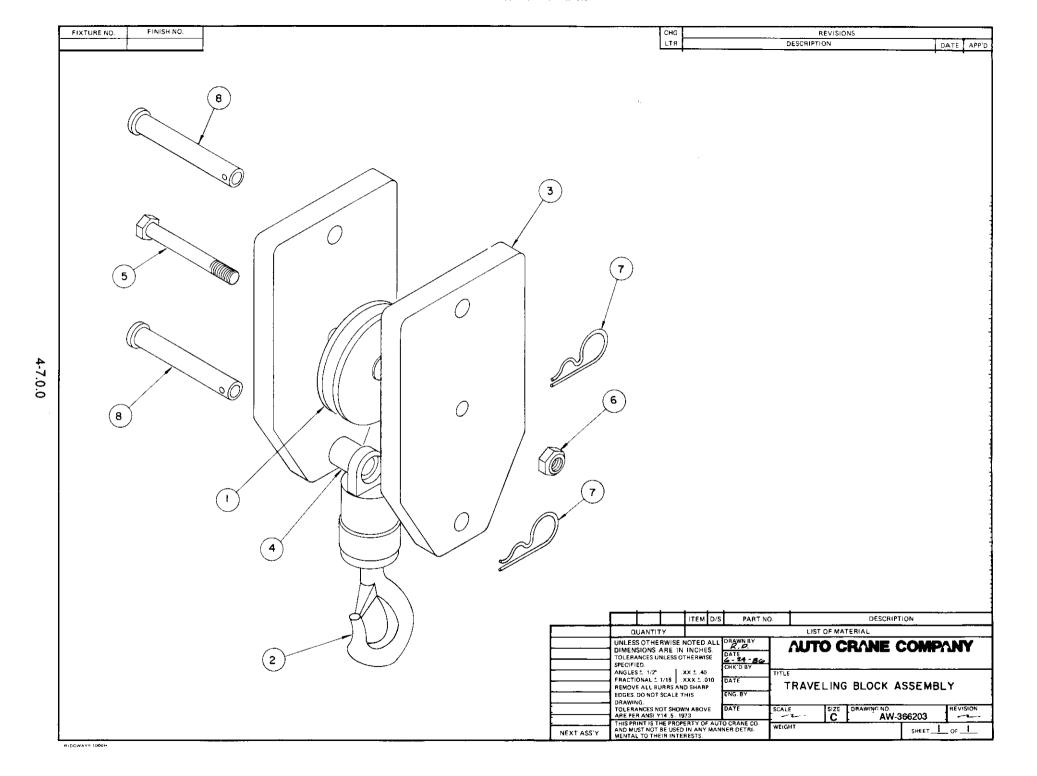
- 1. Winch has right hand worm and gear and spools over drum; use number one slots for brake balls.
- 2. Install brake hub on winch worm with key.
- 3. Assemble balls in cam using hard grease to hold balls in place.
- 4. Install cam and balls, fitting balls in slots on hub.
- 5. Install brake disc.
- 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.





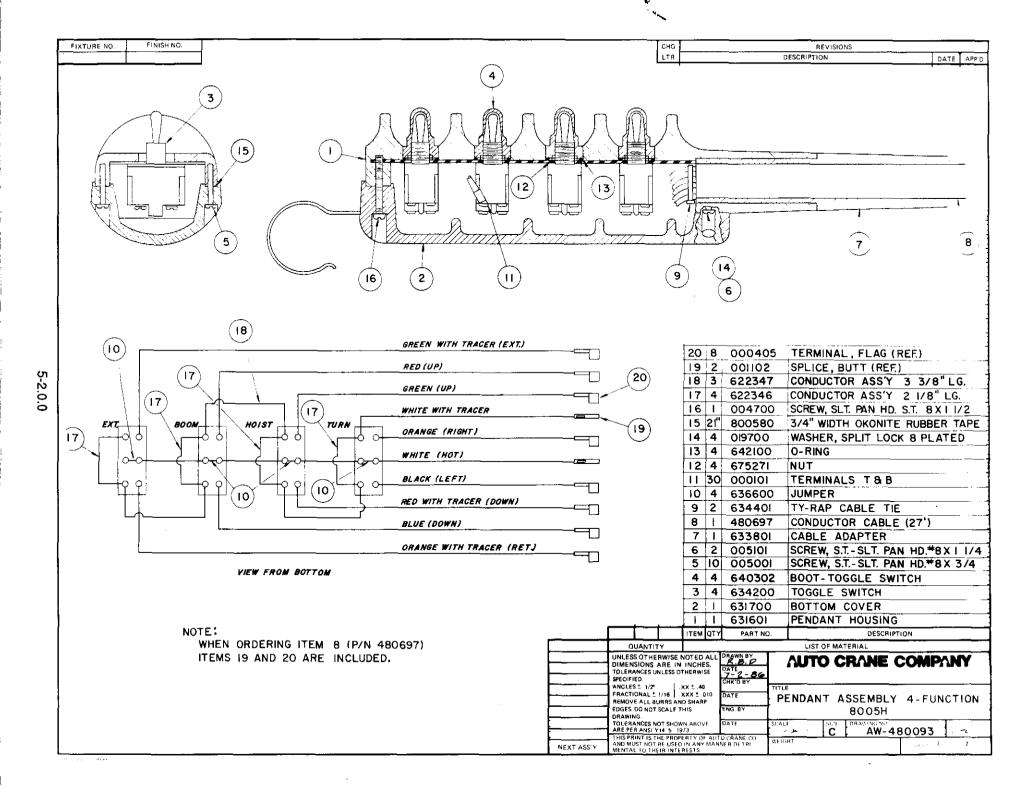
## **GEAR BOX, ROTATION AW-480028**

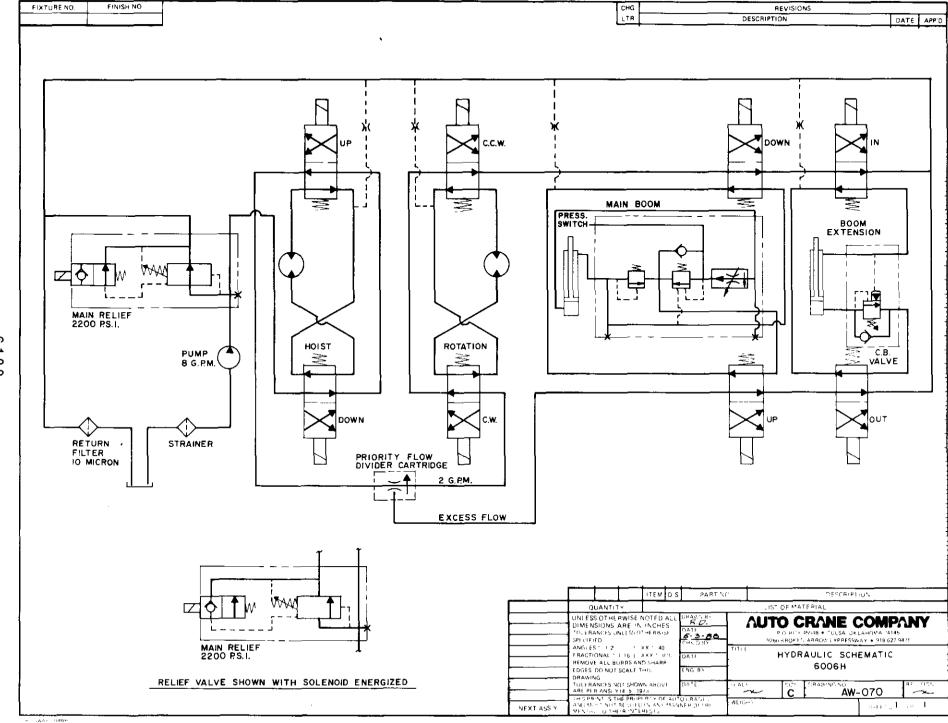
ITEM	QTY.	PART NO.	DESCRIPTION
1	1	480240	ADAPTER
2	1	480241	BUSHING
3	1	480242	CAP, BEARING
4	1	480243	COVER
5	1	480244	GEAR - R.H.
6	1	480237	HOUSING-GEAR
7	2	480246	KEY
8	1	480247	SHAFT-OUTPUT
9	1	480248	WASHER-THRUST
10	1	480249	WORM, R.H.
11	1	480251	BEARING-BALL
12	1	480252	BEARING-NEEDLE
13	1	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. LOCWEL
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
30	2	480268	WASHER-THRUST
31	1	480269	PLUG, EXPANSION



	TRAVELING BLOCK ASSEMBLY - AW-366203				
ITEM	QTY.	PART NO.	DESCRIPTION		
1 2 3 4 5 6 7 8	QTY.  1 1 2 1 1 2 2	480130 200197 360601 240237 006801 017800 360124 360605	SHEAVE ASSEMBLY HOOK, SWIVEL BLOCK, SIDE PLATE SPACER, BUSHING 1" O.D. SCREW, HX. HD. 1/2 - 20 X 4" LG. NUT, HX. LK. 1/2 - 20 PIN, HITCH PIN, BLOCK		

5-1.0.0





6-1.0.0

## HYDRAULICS-6006H (AW-075)

## VENTED RELIEF VALVE SETTING

Ref: see reservoir assembly AW-366160

- 1. The crane must receive 8 GPM and 2200 PSI. To assure proper flow, install an inline flow meter between the crane and the reservoir in the return hose, or confirm pump (480018) speed at 1000 RPM. Proper pressure setting can be achieved by removing the pipe plug 000209 on relief valve (see page 6-8.0.0) and installing a 0-2500 PSI pressure gage. WARNING, this should be done with the PTO disengaged.
- 2. The boom can now be elevated to 75° (full cylinder extension) and the pressure noted. If the gage reading is not 2200 PSI, adjust the pressure relief (part no. 366211 of 366212 assembly) until the correct pressure is registered. Verify this setting by booming down to 60°, then booming up to full cylinder extension and the pressure checked for 2200 PSI.
- 3. Disengage PTO. Remove gage and re-install the plug. The crane is now ready for operation.

### COUNTERBALANCE VALVE ADJUSTMENT

Ref: see hydraulic assembly, AW-366160 (page 6-4.0.0)

- 1. With PTO disengaged and BOOM PROPERLY SUPPORTED, remove the "X" port plug located on the left side of the boom cylinder hydraulic block, and install a pressure gage (0-2500 PSIG).
- 2. engage PTO and maintain proper engine speed to supply 8 GPM at 2200 PSI to the crane. With no load, boom up to approximately 45° and loosen the 5mm lock nut on the flow control valve (see diagram below). With a 4mm allen wrench, turn the adjusting screw counter clockwise (CCW) two full turns to open the valve fully.

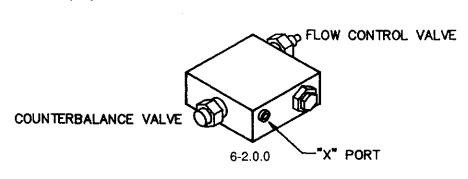
Boom up to 75, boom down and note pressure reading. The pressure reading should be 1200-1300 PSIG. If not, the counterbalance valve requires adjustment.

- A. To increase CB valve seting, loosen the 17mm locknut and with a 5mm allen wrench turn the adjusting screw clockwise (CW).
- B. To reduce the CB valve setting, loosen the 17mm locknut and with a 5mm allen wrench turn the adjusting screw counter clockwise (CCW).

After adjusting the CB valve, turn the flow control valve adjusting screw clockwise (CW) until the boom down pressure reading is 1,450 PSIG (internal relief pressure setting non-adjustable). Continue turning clockwise to achieve desired boom down speed. If the speed is too fast, a slight bounce may occur during boom down. Tighten both flow control valve and counterbalance valve locknuts.

3. Disengage PTO. Remove gage and re-install the plug. The crane is now ready for operation.

NOTE: DANGER- Adjust valves with boom stationary. Failure to do so may result in personal injury!



## 6006H SERIES HYDRAULICS TROUBLESHOOTING

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 sever injury, or death.

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 p.s.i. (REF). Standard pump speed is 1000 R.P.M. (Ref. Pump P/N 480018). This pump is for direct flange mounting only, not to be shaft driven.

#### **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. With pump operating, operate pendant switch to supply flow to the crane and twist/pull the manual override knob out. If function does <u>not</u> operate, check pump pressure and relief valve setting. If the function does operate, check for loose wire, low voltage or bad ground. If the above items check out all right, replace valve cartridge. 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.

## 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 vented relief valve by pressing manual over-ride on solenoid of relief valve while operating crane. If crane functions, check for 12V at solenoid when operating crane. If voltage present-check solenoid on relief for continuity and ground. If low flow condition continues to exist when relief valve vent manual over ride is operated, remove relief valve cartridge and check for dirt. Other possible causes for a low flow condition are:

- 1. Engine speed to slow.
- 2. 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.

Progressively disconnect fittings at test points to verify existence of flow. Rule: Pumps pump flow only, systems and their loads-resistances produce pressure, up to that limit imposed by lowest pressure limiting exposed to pressure.

## NO PRESSURE OR TOO LOW PRESSURE

Check to maintain adequate oil in reservoir (approx. 8 gal.) by means of sight gauge. Make sure pressure gauge is functioning correctly. Possible relief hung open. Check for excessive leakage and correct. Check to insure that pressure limit switch is correctly set.

Progressively test circuit points to determine pressure existence.

#### TOO HIGH FLOW

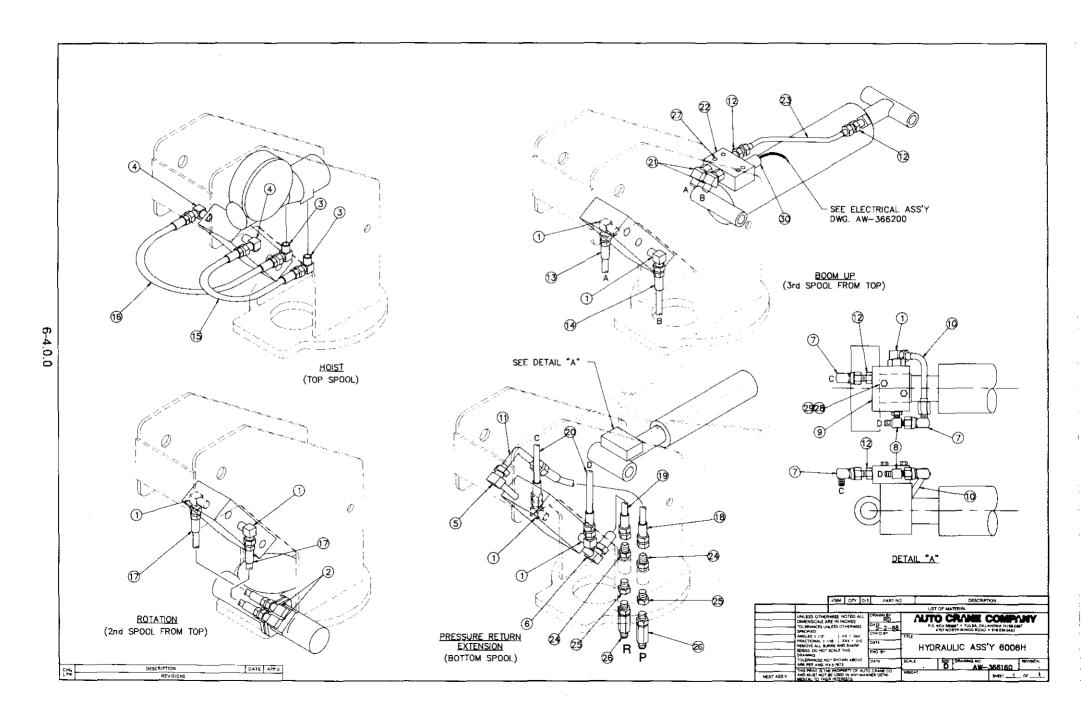
Make sure pump size is correct and pump speed is not too fast (1000R.P.M.). Check or replace flow control. Check components for flow displacements.

## TOO HIGH PRESSURE

Make sure pressure relief valve is correctly set.

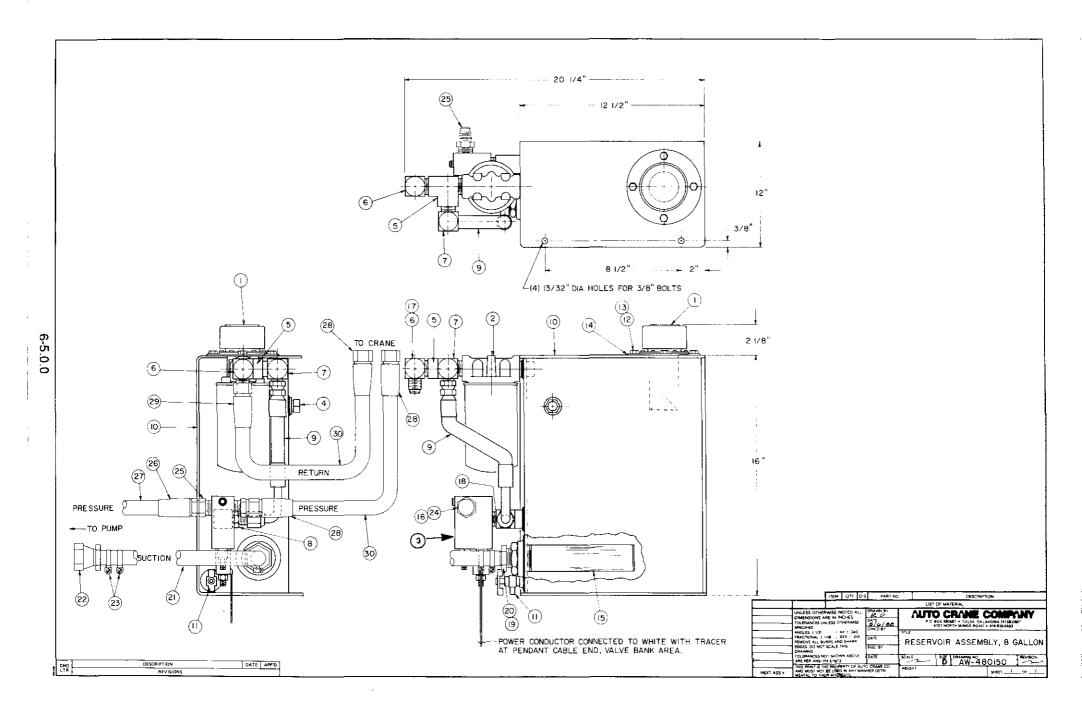
#### **CAUTION**

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 overload. Attempting to raise the main boom with a load 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.



## **HYDRAULIC ASSEMBLY, AW-366160**

		п	YDRAULIC ASSEMBLY, AW-366160
ITEM	QTY.	PART NO.	DESCRIPTION
1	7	200892	ELL, 90° 3/8 - 18 NPT, 9/16 - 18 JIC
2	2	202759	ELL, 90° 1/2 - NPT, 9/16 - JIC
3	2	360043	ELL, 90° 1/2 - 14 NPT, 3/4 - JIC
4	2	360044	ELL, 90° 3/8 - 18 NPT, 3/4 - 16 JIC
5	1	480190	ELL, 90° 3/8 - 18 NPT, 3/4 - 16 JIC (LONG) ELL, 90° 3/8 NPT, 3/4 JIC (MED. LONG) ELL, 90° 9/16 - 18 JIC SWIVEL, 9/16 - 18 TEE, 9/16 O-RING, 9/16 JIC RUN COUNTER BALANCE VALVE
6	1	480213	
7	2	480194	
8	1	241168	
9	1	330412	
10	1	480212	TUBE ASSEMBLY (EXT. CYL.)
11	1	480211	TUBE ASSEMBLY (PRESSURE)
12	3	200876	ADAPTER, 9/16 - 18 O-RING, 9/16 - 18 JIC
13	1	360572	HOSE ASSEMBLY
14	1	360573	HOSE ASSEMBLY HOSE ASSEMBLY HOSE ASSEMBLY HOSE ASSEMBLY HOSE ASSEMBLY
15	1	480202	
16	1	480203	
17	2	480204	
18	1	360578	
19	1	360579	HOSE ASSEMBLY HOSE ASSEMBLY ELL, 45° 9/16 O-RING, 9/16 - JIC COUNTER BALANCE VALVE TUBE ASSEMBLY
20	2	480208	
21	2	480195	
22	1	366164	
23	1	366163	
24	2	360054	ADAPTER, STR. 1/2 - 14 NPT, 3/4 - 16 JIC
25	2	750413	REDUCER, 1/2 - 14 NPT, 3/8 NPTF
26	1	750412	SWIVEL JOINT -8
27	4	005612	SCREW, 1/4 - 20 X 3/4 SOC. HD.
28	2	020200	1/4" LK. WASHER
29	2	005810	SCREW, 1/4 NC X 1 3/4 HX. HD.
30		320472	LOAD SENSOR

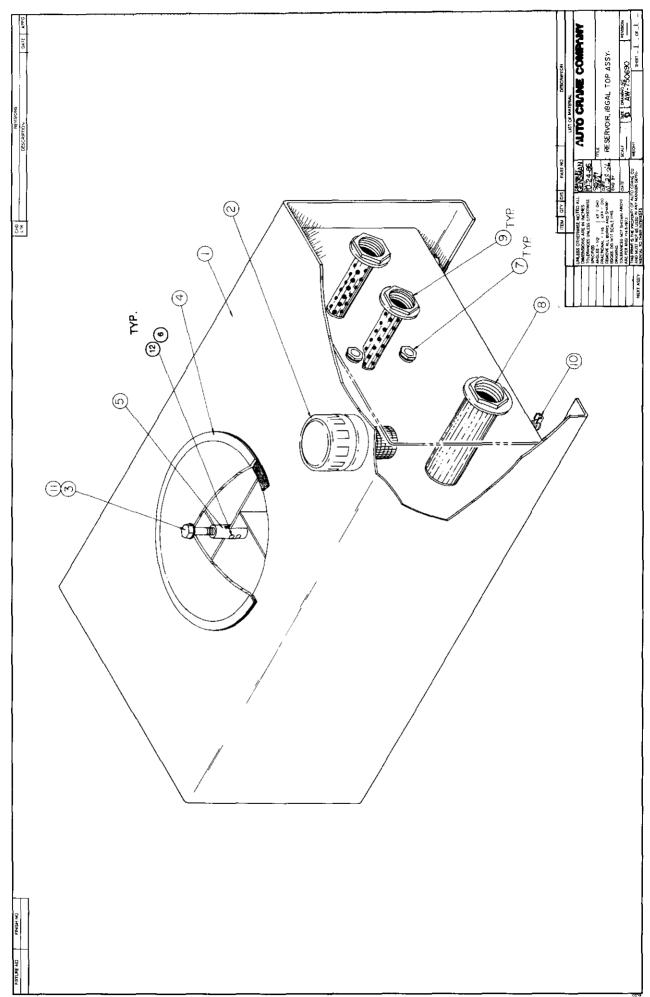


## **RESERVOIR ASS'Y 8 GAL. AW-480150**

ITEM	QTY.	PART NO.	DESCRIPTION
	4	360151	FILLER ASS'Y
1 1	1 2	360156	FILTER ASS'Y (SEE NOTE 2)
2	1	366212	VENTED RELIEF VALVE ASS'Y
1 4	1	360150	SIGHT PLUG
2 3 4 5 6 7 8	i	360262	TEE
۾ ا	1	360263	ELL
7	1	551222	ELL
۾ ا	i	360054	ADAPTER, STRAIGHT
9	1	360284	HOSE ASS'Y
10	1	480151	RESERVOIR, WELDMENT
11	1	750715	DRAIN
12	4	005500	SCREW, 1/4 - 20 X 3/4" LG.
13	4	020200	WASHER, 1/4 SP. LK.
14	1	360249	COVER, CLEAN OUT
15	1	360282	STRAINER, SUCTION LINE
16	1	360276	DUST CAP
17	1	360272	DUST CAP
18	1	360279	DUST CAP
19	1	360271	DUST CAP
20	1	REF.	ADAPTER, 16-16
21	1	REF.	HOSE, -16
22	1	REF.	HOSE ADAPTER, 16-16
23	4	REF.	HOSE CLAMPS, -16
24	1	REF.	ADAPTER, 8-8
25	1	REF.	ADAPTER, 8-10
26	2	REF.	FITTING, REUSABLE 10-12
27	1	REF.	HOSE, -12 FITTING, REUSABLE, 8-8
28	3 1	REF. REF.	FITTING, REUSABLE, 8-8 FITTING, REUSABLE, 10-8
29 30	2	REF.	HOSE, -8
30	۷	ncr.	1100L, -0

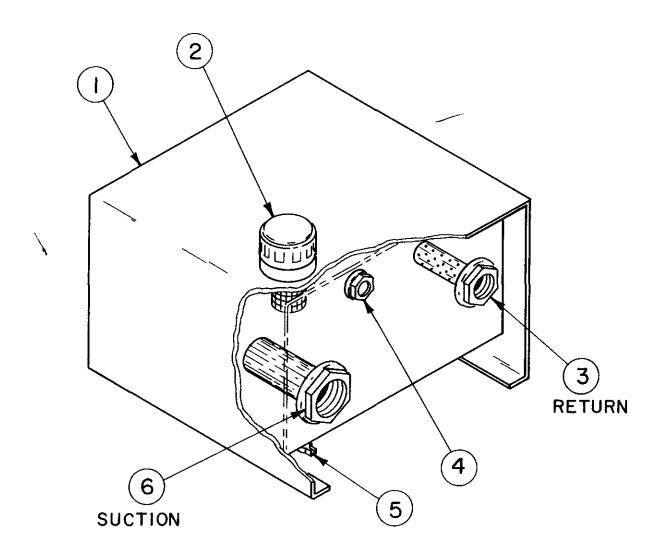
## NOTE:

- 1. THE REFERENCED ITEMS CAN BE PURCHASED AS A KIT WITH PART NUMBER 480159
- 2. FOR REPLACEMENT FILTER, ORDER PART NUMBER 360277



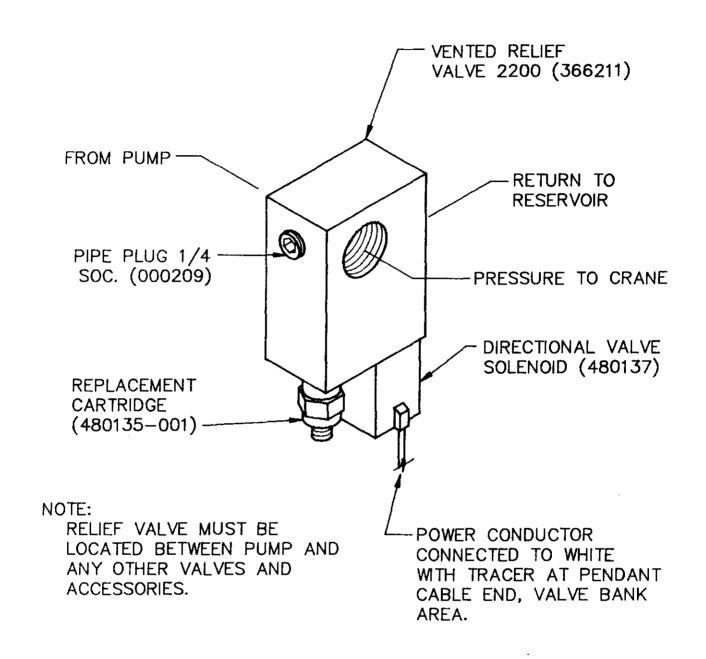
# RESERVOIR, 18 GALLON AW-750690

ITEM	QTY.	PART NO.	DESCRIPTION
1 2 3 4	1 1 1	750691 360151 750711 750712	RESERVOIR WELD ASS'Y FILLER ASS'Y BOLT, END COVER END COVER
5	1	750709	ADAPTER, BAFFLE
6	2	330394	SCREW, 3/8 X 1 1/2 HX. HD. NC
7	2	360150	PLUG, RESERVOIR
8	1	750707	STRAINER, SUCTION
9	2	750708	STRAINER, DIFFUSER
10	1	750715	VALVE, DRAIN
11	1	750716	CRUSH WASHER
12	2	017301	NUT 3/8 NC. HX. LK.



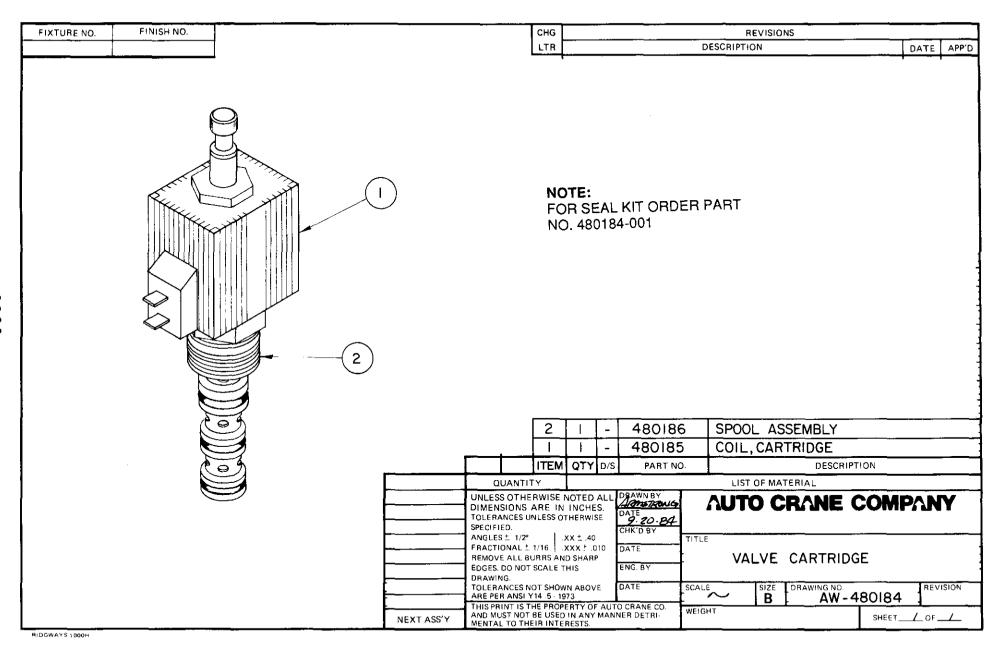
9 GALLON RESERVOIR
PART NO. 750500

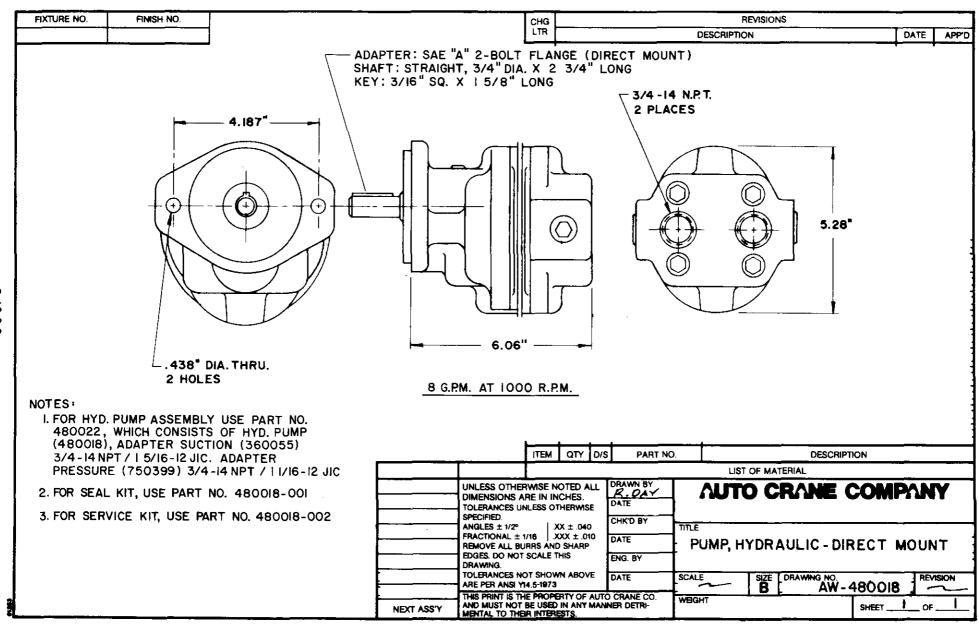
			RESERVOIR ASS'Y AW-750500
ITEM	QTY.	PART NO.	DESCRIPTION
1 2 3 4 5 6	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	750501 360151 750708 360150 750715 360282	RESERVOIR, WELD. ASS'Y FILLER ASS'Y STRAINER, DIFFUSER SIGHT GAGE DRAIN VALVE STRAINER, SUCTION

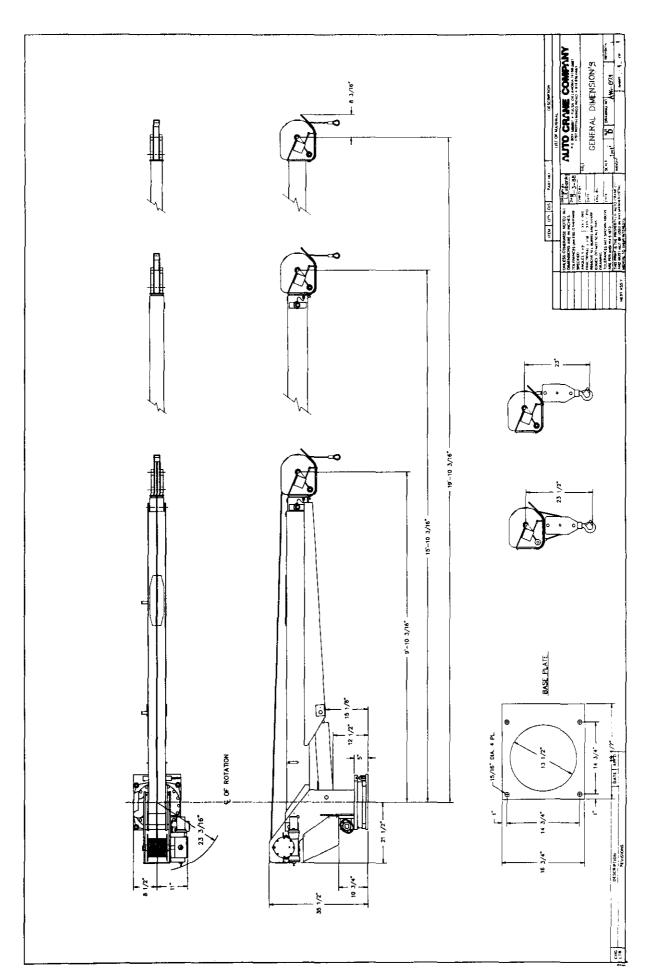


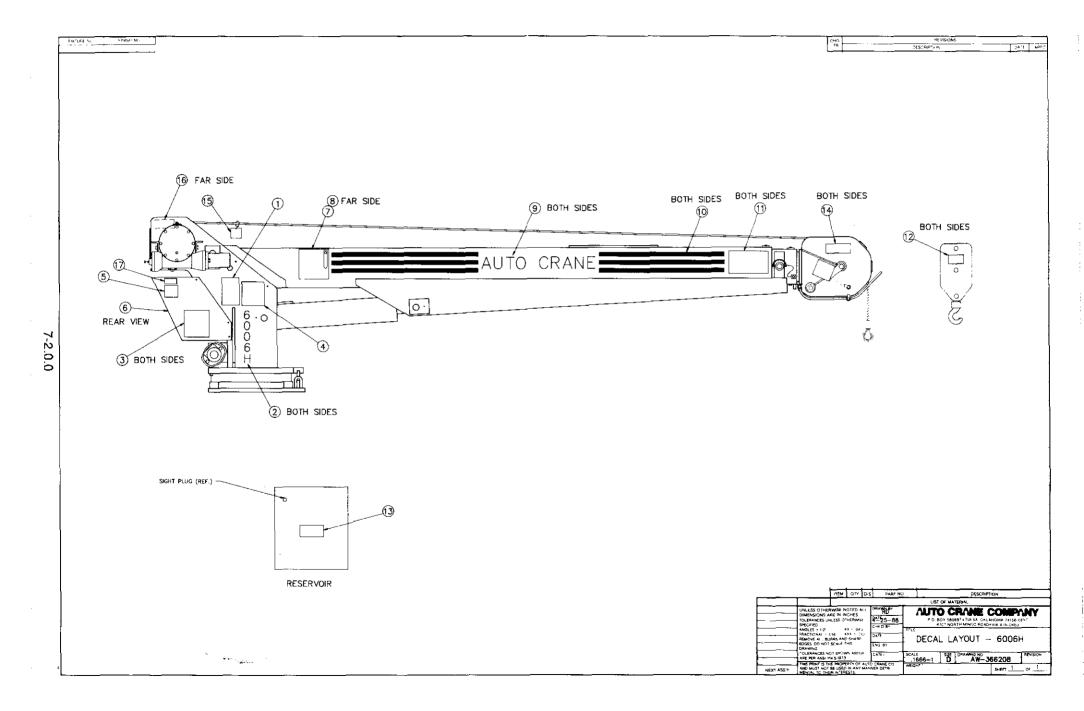
# VENTED RELIEF VALVE ASSEMBLY, WITH SOLENOID

PART NO. 366212



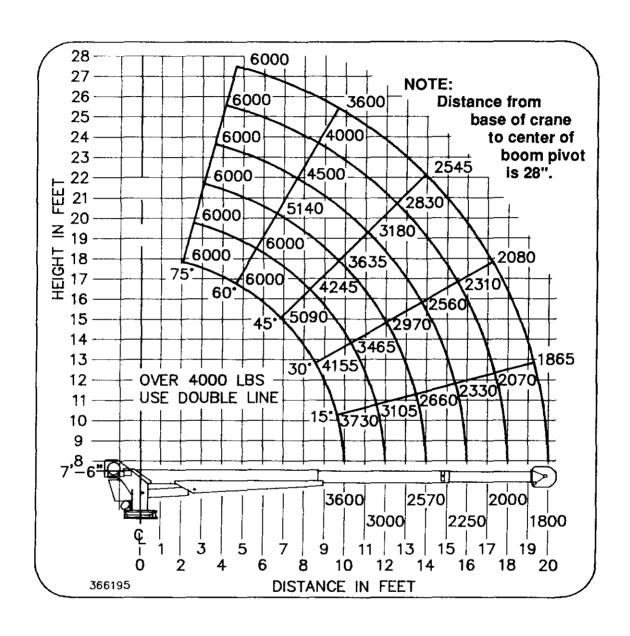




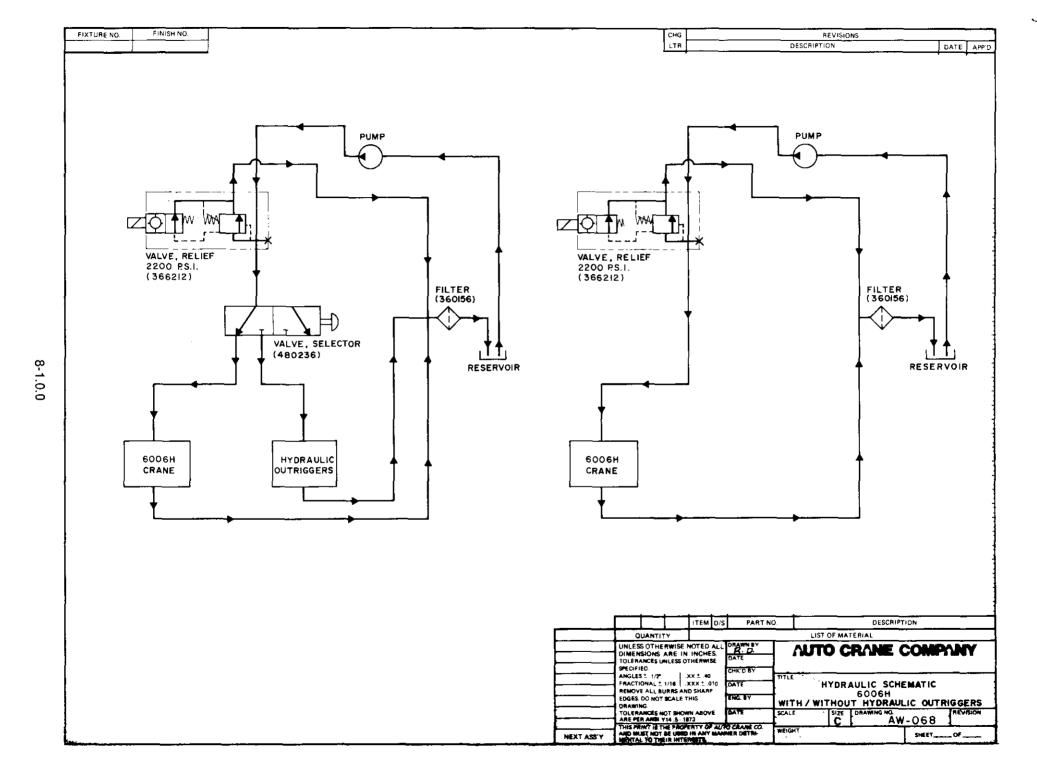


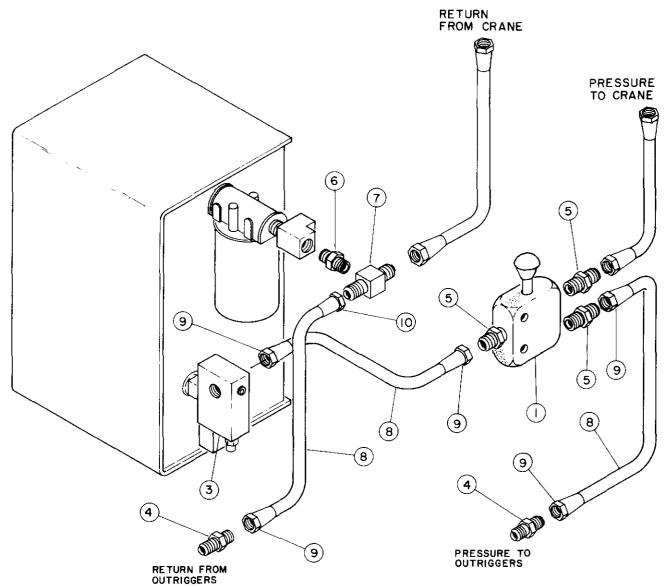
### **DECAL LAYOUT 6006H, AW-366208**

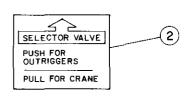
ITEM	QTY.	PART NO.	DESCRIPTION
		0.40570	DECAL MORKELLES
1 1	]	040579	DECAL, WORK RULES
2	2	366210	DECAL, 6006H
3	2	366195	LOAD CHART
4	1	040580	DECAL, OPERATE
5	1	040632	DECAL, WARNING, CYL. IN OPER.
6	1	360034	DECAL A/C LOGO
7	1	360036	DECAL, ANGLE IND. RIGHT
8	1	360037	DECAL, ANGLE IND. LEFT
9	2	040624	DECAL, AUTO CRANE
10	13'	040620	STRIPING
11	2	040529	DECAL, WIRING SHOCK
12	2	040630	DECAL, STAY CLEAR OF LOAD
13	1	366209	CAUTION, 8 GPM
14	2	040517	DECAL, STAY CLEAR OF BOOM
15	1	999946	CHECKLIST
16	1	330622	DECAL, SERIAL NO.
17	1	330633	DECAL, OPTI-FLOW



LOAD CHART
AW-366195







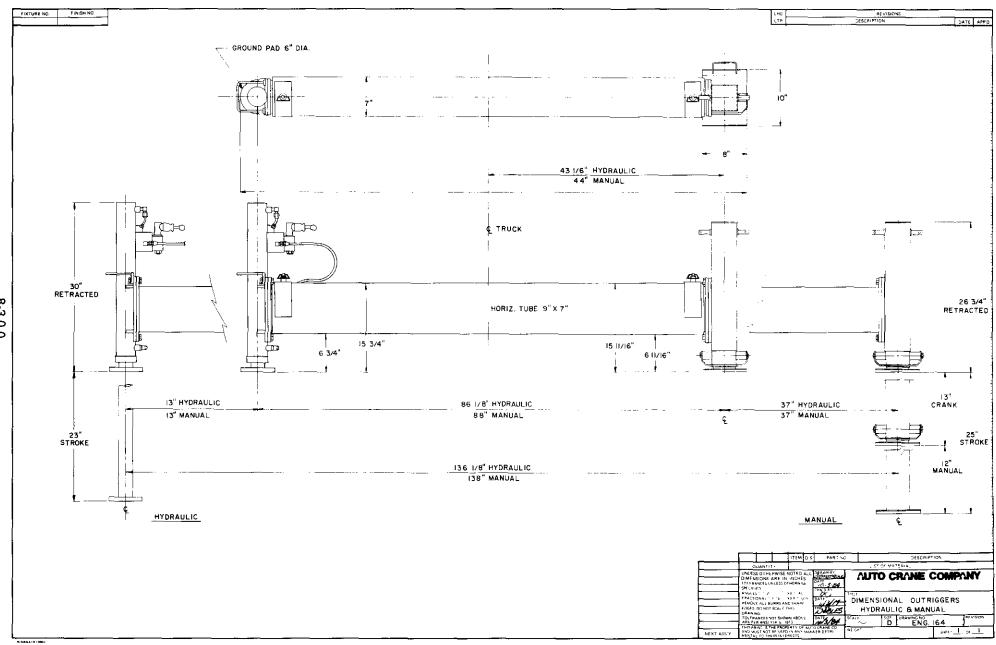
#### NOTES

- I. ITEMS 4 THROUGH IO MAY BE PURCHASED AS A KIT WITH PART NUMBER 480234.
- 2. FOR ADDITIONAL IMFORMATION, SEE AW- 480150 AND 366212.

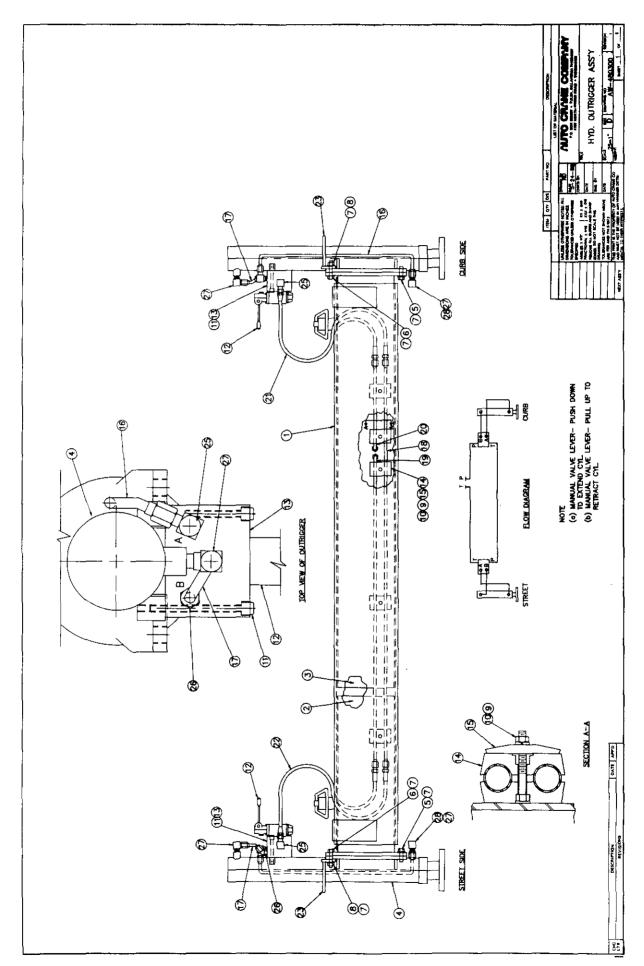
ITEM	QTY.	PART NO.	DESCRIPTION
1	I	480236	SELECTOR
2	1	750271	DECAL, SEL
3		REF.	DUMP VALVE
4	2	REF.	ADAPTER ST
5	3	REF.	ADAPTER ST
6	1	REF.	ADAPTER ST
7	1	REF.	TEE, -10 JIC
8	12'	REF.	HOSE,-8
9	5	REF.	HOSE FITTIN
10	ŧ	REF.	HOSE FITTIN

#### OUTRIGGER INSTALLATION KIT

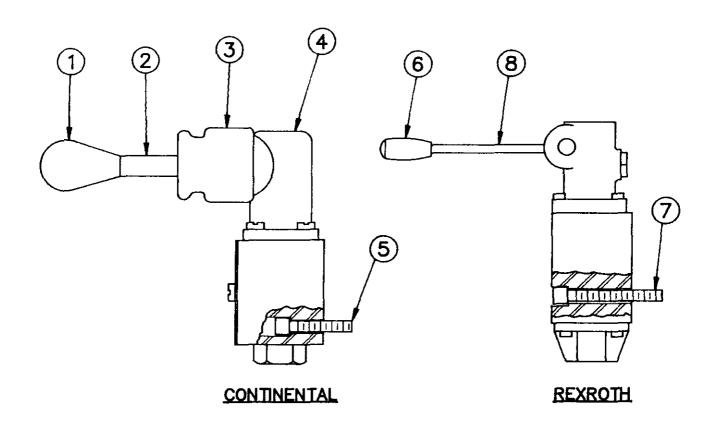
PART NO. 480235



8-3.0.0



		HY	D. OUTRIGGER ASS'Y, AW-480300
ITEM	QTY.	PART NO.	DESCRIPTION
1 2 3 4 5 6 7 8 9 10 11 2 13 14 5 16 17 18 19 20 1 22 32 4 25 27 28 29	1 1 1 2 4 8 8 4 5 5 4 2 2 5 5 2 2 1 1 1 2 2 2 1 6 2 4 2 1	759035 750893 750894 480017 012203 013506 023800 018302 016500 020600 003906 480230 480231 480232 480220 480221 480222 480223 480224 480225 480225 480225 480227 480235 241175 480195 200892 360048 480014	MAIN CROSS TUBE SLIDE, STREET SIDE SLIDE, CURB SIDE CYLINDER, VERTICAL SCREW, HX. HD. 5/8 - NF X 1 1/4 SCREW, HX. HD. 5/8 - NF X 2 1/4 WASHER, SP. LK. 5/8 NUT, HX. 5/16 - NC WASHER, SP. LK. 5/16 SCREW SOC. HD. 5/16 - 18 NC X 3 1/4 VALVE MANUAL, OUTRIGGER (VERTICAL) MANIFOLD, OUTRIGGER CLAMP, HALVES PLATE, TWIN COVER TUBE ASS'Y (LEG) TUBE ASS'Y TUBE ASS'Y TUBE ASS'Y HOSE ASS'Y O.R. (CURB SIDE) HOSE ASS'Y O.R. (STREET SIDE) HANDLE ASS'Y KIT, OUTRIGGER INSTALLATION ELL, 90°, -6 ORB/ -6 JIC ELL, 45°, -6 ORB/ -6 JIC ELL, 90°, -6 NPT/ -6 NPTF SEAL KIT (FOR CYL. 480017)



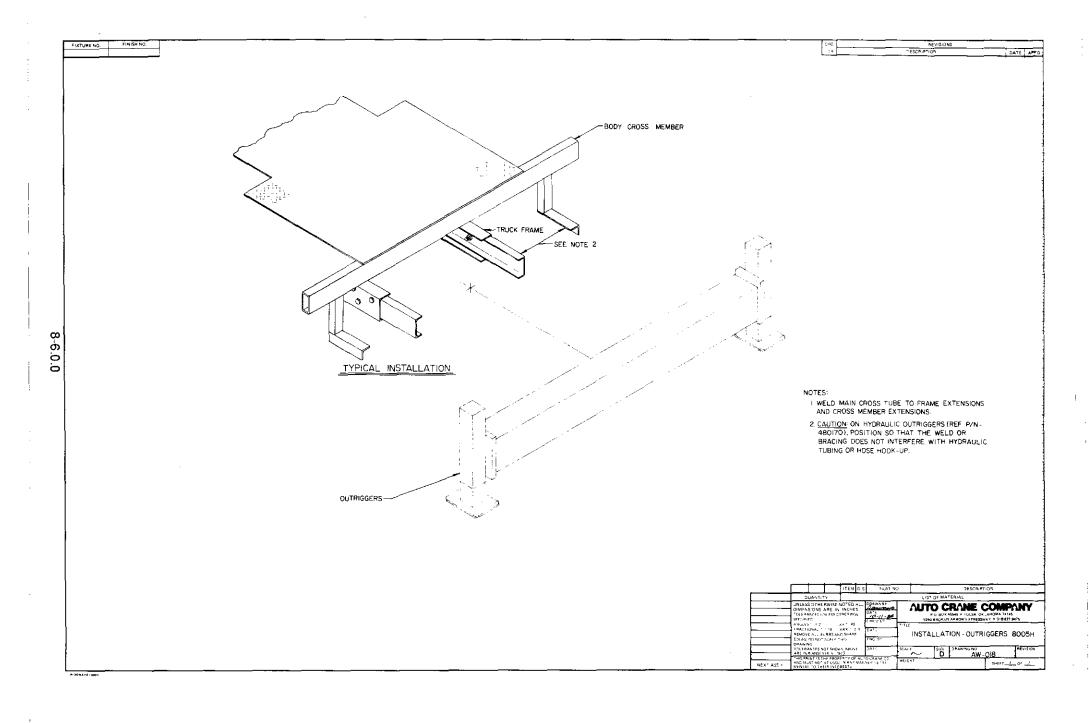
SEAL KIT (CONTINENTAL) 480230-009

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

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

## **OUTRIGGER VALVE, AW-073**

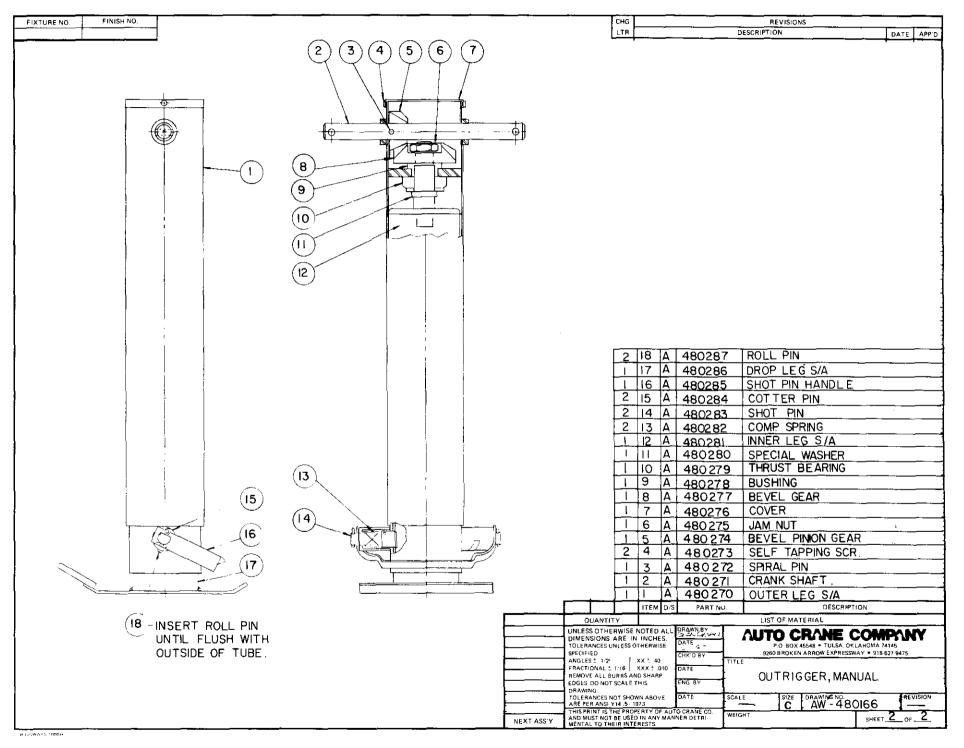
480230-001 480230-002 480230-003	KNOB LEVER ASS'Y BOOT
480230-002 480230-003	LEVER ASS'Y BOOT
480230-003	BOOT
400000 004	
480230-004	HOUSING, ASS'Y
480230-005	BOLT KIT (4 SOC. HD. SCREWS #10 - 24 X 7/8)
480230-006	KNOB '
480230-007	BOLT KIT(4, SOC. HD. SCREWS #10 - 24 X 2" LG)
480230-008	LEVER ASS'Y
4	180230-006 180230-007



H USWATS 1000H

FINISH NO. REVISIONS FIXTURE NO. LTR DESCRIPTION DATE HOTE: Y WEN EACH SIDE OF CRANK SHAFT. PIN ROLL 3/ x 2"LG. 9 A 480162 A 480164 HANDLE CRANK A 023800 WASHER, SP LK 5/8 012203 SCREW HX HD 5/8 NF XIX"LG A B 480169 OUTRIGGER, MANUAL WELDMENT (R) B 480168 OUTRIGGER, MANUAL WELDMENT (L) 750894 В SLIDE, CURB SIDE **b** 750893 2 SLIDE, STREET SIDE B 750891 MAIN CROSS TUBE ASS'Y 1 ITEM D/S DESCRIPTION LIST OF MATERIAL QUANTITY UNLESS OTHERWISE NOTED ALL DIMENSIONS ARE IN INCHES.
TOLERANCES UNLESS OTHERWISE AUTO CRANE COMPANY 8-5-84 P.O. BOX 45548 \* TULSA, OKLAHOMA 74145 9260 BROKEN ARROW EXPRESSWAY • 918-627-9475 ANGLES 1 1/2" XX 1 FRACTIONAL 1 1/16 XXX 1 010 OUTRIGGER ASSEMBLY (MANUAL) 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 AW-480301 WEIGHT AND MUST NOT BE USED IN ANY MANNER DETRI-MENTAL TO THEIR INTERESTS SHEFT 1 OF 1







## Cimited 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 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.

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