Auto Crane Company

9260 Broken Arrow Expressway
P. O. Box 45548 – Tulsa, Oklahoma 74145
PHONE (918) 627-9475

OWNER'S MANUAL

5000 SERIES

AUTO CRANE

OPERATION SERVICE AND MAINTENANCE TIPS

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.

1. The batteries are normally charged while driving the vehicle from one job site to another. Our customers have reported that fuel savings over a period of 3 or 4 years have been enough to pay for the units. Under extraordinary operating conditions, when the crane is operating continuously in one spot for a number of hours, the vehicle engine may be operated occasionally at a medium idle RPM during the work period to maintain an adequate charge on the battery.

2. As a security measure, a keylock switch is provided with each of our larger cranes. This is an important feature in that the operator can turn the switch off, remove the key and thus prevent vandals or other unauthorized persons from trying to operate the crane. In the case of the smaller cranes and winches, the pendant control cable should be removed and stored in a locked compartment or in the vehicle cab.

3. 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 G.V.W. rating 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.

4. Always take the necessary time to properly install and/or set the jacklegs or outriggers before lifting a load with the crane. Insure that the base of the jacklegs or outriggers is firmly positioned on solid footings. The extra time taken to properly set these outriggers will be more than compensated for by the reduced "wear, tear" and strain on the vehicle which is normally caused by the "tipping moment" induced by the crane. Most of the best engineered bodies have jackleg positions or "pockets" at each corner (minimum of four pockets). It is highly recommended that crane operators take full advantage of these four pockets. Use a jackleg in each pocket on the "curb side" of the body when unloading or loading from this side. Always place jacklegs solidly under the body in the area where the load is being handled by the crane. Remember that the crane can create enough tipping moment, in lifting a heavy load, to overturn the vehicle.

5. Auto Crane Company Engineering personnel have developed a number of safety devices to prevent inadvertent damage to the various Auto Crane Models:

   A. A boom limit switch, installed on all of our larger cranes (with power up and down features) prevents the boom from being raised too high. It is good practice to test this switch on a weekly basis by manually depressing the spring loaded actuating bolt while operating the "boom up" control.

   B. A moment-type load sensing device prevents our crane from being inadvertently overloaded and operates to limit the load lifting capability of the boom to the rated load at any and all angles of the boom. These sensors should be checked on a monthly (30-day) basis by lifting a known load at the proper boom angles (refer to boom moment diagram plate on crane) or use an adequate tension or load guage such as a Dillon or Chatilon.

   C. A swing sensing device (furnished as optional equipment) prevents the boom from lifting or dragging loads beyond plus or minus 30 degrees from the normal free-handing position of the hoist hook. This device limits the handling of a dangerously swinging load, and prevents the hoist block from ramming the crown block, causing the hoist line to actually lift the boom. Check this sensor by manually operating the swing lever as the crane is operating "turn right or turn left." Check the hoist up limit switch by pressing the spring loaded bolt up as the "hoist up" function is operating. (This test should be accomplished once every days days minimum.)

   Occasionally, even a crane equipped with all of the above safety devices, is damaged through carelessness, misuse, or by the operator nullifying these safety items. Naturally, the Auto Crane Company cannot assume responsibility or liability in these cases and our limited warranty does not apply to these types of cases.

6. The boom on the larger Auto Crane units is a unique lightweight, box-type structure, designed to handle only column or compressive-type loads. If bending or twisting loads are induced (by laying the boom over an object which acts as a fulcrum turning the boom into a lever, or trying to lift or drag a load from the side) the boom can bend or fail far below its rated load capacity.

The booms on the smaller Auto Crane Units are designed to resist some bending and torsional loads, but to eliminate possible problems, it is recommended that the same care be exercised with these booms as with the larger trapezoidal tapered box booms. Never operate the cranes near overhead electrical power lines. Auto Crane Company recommends that a crane boom never be moved any closer to a power line (including telephone lines) than 20 feet at any point.

7. The "B" actuator or gear box is the heart of all Auto Crane products in which it is utilized. The operator should read and study the pages in this manual applying to the actuator, motor and brake. The oil level in each actuator should be checked periodically (bi-weekly) and the recommended 90 weight gear oil added to maintain the level required. Check to insure that the vent fittings are not plugged and are functioning properly. Plugged vents can cause pressure "build up" in the cases and may cause seal leakage. Read the "cold weather" instructions in this manual and thin the 90 weight oil with kerosene as recommended. Check the motor brushes once every 30 days. Check the brake at least once every two weeks and adjust as described.

   A worm gear actuator (which ranges from 37 to 45 percent efficient) would not require a brake to hold the load because of high friction, but the Auto Crane "B" actuator with helicon gears (ranging from 78 to 87 percent efficient) requires a brake; however, this efficiency is well worth the cost of a brake considering that the "B" actuator attached to a hoist will operate from a fully charged battery for 2½ to 4 hours as compared to the worm gear box 20 to 35 minutes doing the identical amount of work.

8. 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.

   A. **Never place a chain link on the tip of the hook and try to lift a load with the hoist.**

   B. **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.**

   C. In the case of 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.

Auto Crane Company issues a limited warranty certificate with each unit sold. A special limited warranty card is furnished with each unit which must be "filled in" and mailed directly to Auto Crane Company or the limited warranty on the unit is voided.

It has always been Auto Crane Company policy to handle the few 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, misused, 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.

Occasionally a customer will overload a crane and bend the boom and try to straighten the boom and reinforce it by welding angle or plate to it; or they replace a relay, switch or solenoid or some other component with an inappropriate, locally purchased component. The Auto Crane Company cannot warrant a unit under these conditions. Auto Crane Company utilizes a 50,000 P.S.I. yield type steel in all our crane structural sections. If a unit should be heavily overloaded, it would "crumple" rather than snap as a brittle type steel (yield point close to tensile point) would react. This is the main reason that Auto Crane cannot permit a customer to weld on Auto Crane units. Welding heat could change the molecular structure and cause our steel to become brittle. All of the various components utilized in Auto Crane Products have been thoroughly tested and are the best available for the particular function they perform. Many components are custom built to stringent Auto Crane specifications. Auto Crane Company has a continuous "on-going" Research and Development Program, and as new components appear on the market, they are thoroughly tested. Only a few of these many components pass the rigid requirements demanded by Auto Crane Engineers. This is the basic reason that our warranty is automatically voided when a customer replaces a factory furnished part with an "unauthorized" component which has not been factory tested and approved.

Auto Crane Company maintains a crew of skilled and highly trained Service Personnel. The men in our Service Department are available to all of our customers throughout the continental limits of the United States. Many times a telephone conversation with a serviceman can solve a customer's equipment problem. When the serviceman makes a field trip, an accepted warranty claim trip is naturally paid by Auto Crane Company; however, our service rates are reasonable and, in most instances, the serviceman can repair a damaged unit on the spot, plus the Auto Crane serviceman can train customer operators, maintenance and servicemen in the field. This training can alleviate a lot of customer expense due to inexperienced personnel, and most customers agree that the nominal service trip expense is well worth the cost because of the training benefits gained. We hope to make this service available to our "overseas" customers in the near future.

Auto Crane Company's extensive and "on-going" 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 problems. When in doubt – call the Auto Crane factory.

– IMPORTANT –

OPERATION PROCEDURES SAFETY TIPS AND PRECAUTIONS

1. Keep hoist cable pulled tight at all times.
2. Never un-reel last wrap of cable from drum.
3. Keep truck in as level a position as possible while loading or unloading.
4. Never wrap cable around load.
5. Use jacklegs (stabilizers) from truck to the ground.
6. A manual hand crank is supplied in case of power failure and is located under the hoist cover.
7. Oil gears as required (Once a year minimum). Remove the cover and apply light grade oil or Moly Coate G.
8. A friction brake holds the load when power is off. This brake may need to be adjusted periodically. Never adjust brake tighter than required to hold the load. Adjustment nuts are located inside the hoist cover on the manual hand crank shaft.
9. Never assist the motor with the hand crank. The hand crank is for use ONLY if power fails.
10. When power is off the brake should hold the load without "creeping." If "creeping" occurs, tighten the two (2) nuts on the shaft protruding from the hoist housing ONLY until the load is stabilized. DO NOT tighten any more than required to hold the load.

When ordering replacement parts, please provide the following information:

1. Model Number
2. Serial Number
3. Part Number and description

"COLD WEATHER OPERATION"

All standard products (all models of cranes and winches) as manufactured by the Auto Crane Company will operate satisfactorily from $0^{\circ}F$ to $120^{\circ}F$. By making the following minor modifications, all Auto Crane models of winches and cranes will be given the capability of operating from $0^{\circ}F$ down to $-65^{\circ}F$:

1. Dilute S.A.E. 90 wt. oil in actuator gear boxes with kerosene (use one to one and one-half pints per actuator).
2. Replace standard urethane protective boots on pendant control switches with special low-temperature Tech-Nut flex boots.
3. The minimum bend radius of the standard Auto Crane pendant control cable may be increased from three inches to nine inches.
4. Spray all electrical equipment with special corrosion-resistant coating (eliminates rust or corrosion due to melting and freezing action of condensate).

The only inconvenience for the operator created by the above procedure is that the pendant control cable must be coiled into larger loops for storage purposes. Care must be exercised to avoid sharp bending of this pendant control cable during extreme cold operating conditions.

When Auto Crane winches and cranes are subjected to extreme cold ($-65^{\circ}F$) for long periods (two to six months or more), it is recommended that the following procedure be placed in action:

1. Completely drain the existing oil from the actuators and flush with kerosene.
2. Fill each actuator with Mobilube SHC-629 (approximately two quarts required per actuator) to the proper level (oil level plug must be removed to check level).

NOTE: Many customers have utilized heater-blanket type wrapping for these gear boxes.

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.

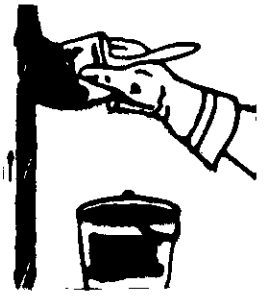


Fig. 1

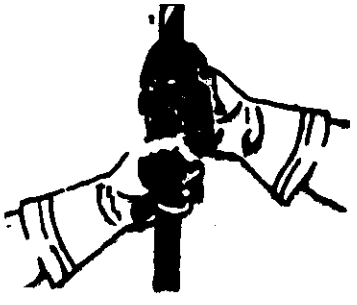


Fig. 2

"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. Loads 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 up to 2,400 pound ratings use 3/16 inch diameter galvanized preformed 7 x 19 aircraft cable which, when new, has a minimum strength of 4,200 pounds. It is recommended when 1,200 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 3.5 to 1 when the cable is new.

Auto Crane units above 2,000 pound ratings use 1/4 inch diameter galvanized preformed 7 x 19 aircraft cable having a breaking strength of 7,000 pounds. It is recommended when 2,000 pound loads are exceeded to use a two-part line with a traveling block and a cross sheave. It can be seen that a safety factor of 3.5 to 1 is provided when the cable is new.

Auto Crane units with a rating of 5,000 pounds use 5/16 inch diameter galvanized preformed (on boom) 7 x 19 aircraft cable having a minimum breaking strength of 9,800 pounds.

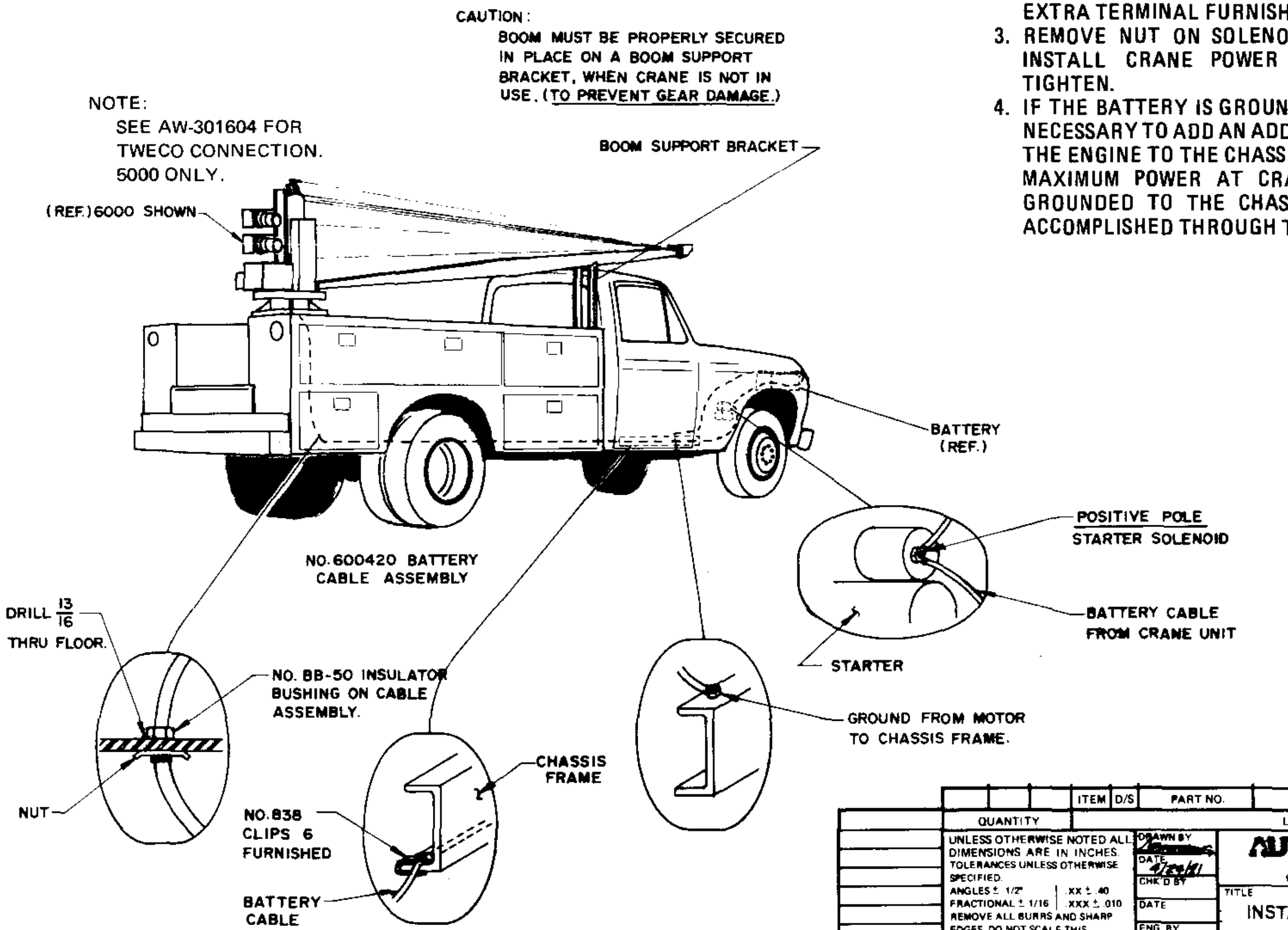
Keeping the above factor of safety in mind, and knowing the kind of loads that will be handled, the user can determine by inspection of the cable as to when it should be replaced.

Items to look for while inspecting the cables are:

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

FIXTURE NO.	FINISH NO.

1. DRILL 13/16 DIAMETER HOLE IN FLOOR. INSTALL CABLE, AND BUSHING WHICH IS FURNISHED ON CABLE, AS SHOWN. WRAP ELECTRICAL TAPE AROUND CABLE SO IT WILL FIT BUSHING SNUG.
2. RUN CABLE INSIDE CHASSIS FRAME TO STARTER SOLENOID BATTERY CONNECTION. LOCATE CABLE SO THAT IT WILL BE PROTECTED, AVOID SHARP EDGES. INSTALL THE NO. 838 FRAME CLIPS TO HOLD CABLE SECURELY IN PLACE. IF SURPLUS CABLE EXISTS THE CABLE CAN BE CUT OFF, AND EXTRA TERMINAL FURNISHED WITH CABLE INSTALLED.
3. REMOVE NUT ON SOLENOID BATTERY TERMINAL POST, INSTALL CRANE POWER CABLE, REPLACE NUT AND TIGHTEN.
4. IF THE BATTERY IS GROUNDED TO THE ENGINE IT MAY BE NECESSARY TO ADD AN ADDITIONAL GROUND CABLE FROM THE ENGINE TO THE CHASSIS FRAME IN ORDER TO OBTAIN MAXIMUM POWER AT CRANE. THE CRANE SHOULD BE GROUNDED TO THE CHASSIS FRAME. THIS IS USUALLY ACCOMPLISHED THROUGH THE MOUNTING BRACKET.



			ITEM	D/S	PART NO.	DESCRIPTION
QUANTITY						LIST OF MATERIAL

UNLESS OTHERWISE NOTED ALL DIMENSIONS ARE IN INCHES. TOLERANCES UNLESS OTHERWISE SPECIFIED. ANGLES ± 1/2° | .XX ± .40 FRACTIONAL ± 1/16 | .XXX ± .010 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.

DRAWN BY | DATE 4/29/81 | CHK'D BY | DATE | ENG. BY | DATE

NEXT ASS'Y

AUTO CRANE COMPANY
P.O. BOX 45548 • TULSA, OKLAHOMA 74145
9260 BROKEN ARROW EXPRESSWAY • 918-627-9475

TITLE: INSTALLATION - BATTERY CABLE

SCALE | SIZE C | DRAWING NO. AW-6018 | REVISION

WEIGHT | SHEET 1 OF 1

RIDGWAYS 1000H

MAINTENANCE OF BATTERIES

Batteries furnished with Auto Crane units for 24-volt or 12-24-volt operation, are required by law to be shipped without electrolyte. Be sure the electrolyte has been added before operating the unit.

Maintenance of Auto Crane unit batteries differs very little from the generally prescribed maintenance of any lead acid battery. All batteries must be kept properly charged; they must be kept properly filled with water; and they must be kept relatively clean.

Many things affect the proper charge to a battery, such as regulator settings, the proper tightness of belts on the alternator or generator, and good, clean connections of all cables and wires at the battery, regulator, starting motor, alternator or generator, and – most important – the ground connections. See Cable Instructions.

Keeping the battery as fully charged as possible without overcharging is of extreme importance, especially when vehicles are left outside for extended periods of time in extremely cold climates. A battery can freeze; freezing points for various specific gravities of acid are as follows:

Specific Gravity (Corrected to 80°F)	Freezing Temperature Degrees F.
1.280	−90°F
1.250	−62°F
1.200	−16°F
1.150	5°F
1.100	19°F

From the above, it is apparent that a half-charged battery (about 1.200 specific gravity) cannot stand for any length of time at −20°F or it will freeze.

The main reason for keeping the battery as fully charged as possible without overcharging, of course, is to assure that power is available even though the vehicle has been standing for some time.

The battery should be properly filled with water at all times. If the electrolyte level is allowed to fall below the top of the plates, the results become threefold: 1, the exposed portion of the plate will become sulfated; 2, the portion of the plate exposed is not usable; and 3, that portion of the acid remaining becomes more concentrated and may cause more rapid deterioration of the remaining parts of the battery.

The battery should be kept clean. Batteries filled with acid and which are not in use self-discharge to a limited degree because of the nature of the materials within the battery; but if dirt is allowed to collect on the top of the battery, and this dirt absorbs moisture, an electrical path can be set up between the various terminals of the battery or the ground. Once such a path has been established, the self-discharge of the battery is considerably accelerated. This also accelerates corrosion of the battery cables at the terminals.

Periodic Maintenance is Needed.

A definite program of periodic maintenance of all batteries should be conducted on a regular basis. Periodic maintenance includes checking belts for tightness on the charging equipment, checking battery electrolyte levels, checking cables for good connections, and cleaning where corrosion is apparent. When corrosion is cleaned off, the cable terminals and battery terminals should be coated with a light coating of petroleum jelly before they are replaced. When terminals are cleaned the top of the battery should be cleaned with a mild solution of soda water.

If the condition of the battery is in question, it should be removed from the vehicle, taken to the shop, and allowed to reach room temperature. It should then be recharged until specific gravity readings are unchanged over three readings taken at one-half hour intervals. If the specific gravity readings are fairly uniform, the battery should be checked with a high rate tester in accordance with instructions on the tester. A load test is the best test one can make on a battery.

If, after charging, it is noted that the specific gravity reading of one cell is 30 points less than any of the other cells, it may be assumed that that cell is bad and that the battery should be replaced. If all cells are uniform but not up to full charge, a low rate of charge should be attempted for an extended period of time. This usually will recover a badly sulfated battery.

If it is necessary to replace a battery, and a dry charge battery is used, the following procedure applies:

1. Fill the battery with electrolyte of the proper specific gravity.

2. Place the battery on charge in accordance with instructions given by the manufacturer.

It is essential that the second step above be followed to assure that the battery going on the vehicle is fully charged.

It is also very important that the battery hold-downs be checked periodically to assure that the batteries are properly positioned to avoid vibration problems, breakage of cables, or terminal breakage. Care must be taken to avoid cracking or breaking containers or covers by tightening hold-down fixtures excessively, yet they must not be so loose that breakage results from a too loose hold-down.

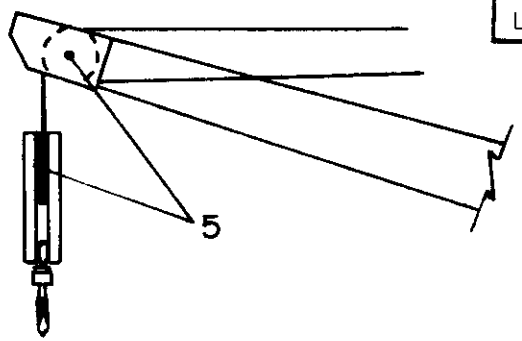
Low maintenance batteries (such as the Delco "Freedom Battery") should not be used on Auto Cranes or trucks equipped with Auto Cranes. These batteries are not designed for "deep" discharge.

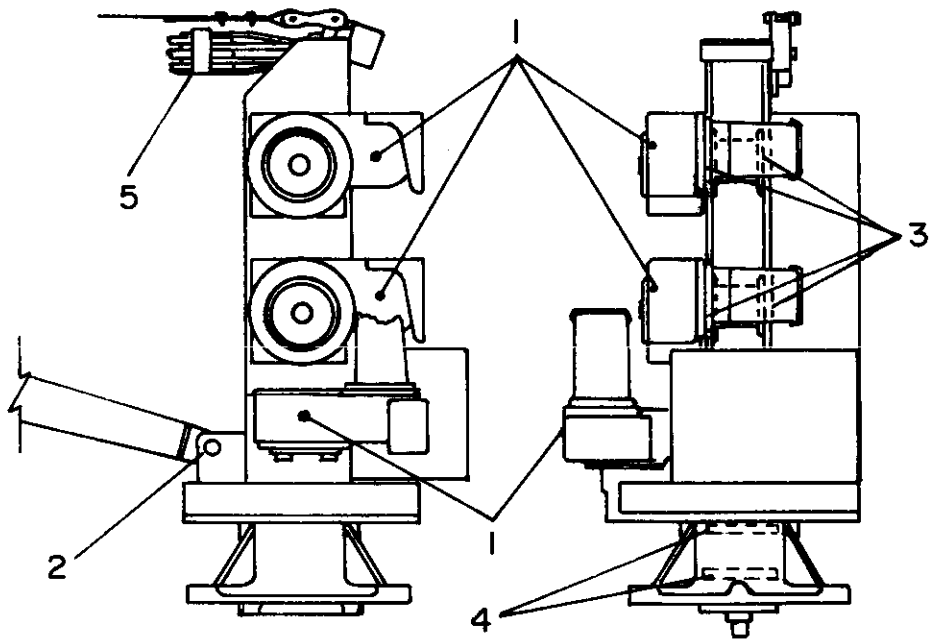
MINIMUM VOLTAGE AT CRANE BATTERY – 13.5V. Check to make sure of ground between truck engine and frame. Manufacturers sometimes leave this off and ground only to cab of truck, which is mounted on rubber pads and does not conduct a good ground.

If bodies or beds are to be mounted on wooden strips (along top of frame), a ground strap must be routed from frame (truck) to the body (across the wooden strips). All of the above is important to assure good ground for the charging system of the unit, as well as proper installation of the Tweco bracket (6000) on base (bracket already installed from factory on 5000).

To keep your charging system working correctly, do not jump start other equipment off of battery unit.

CHG LTR	REVISIONS DESCRIPTION	DATE	APP'D





1. ACTUATOR GEAR CASES: Maintain oil level at points indicated. Use extreme pressure gear lube (E.P. 80-90).
2. BOOM HINGE POINT: 3 strokes with grease gun every 15 days. Use chassis lubricant.
3. DRUM SHAFT BALL BEARINGS: Sealed for life. No lube required.
4. QUILL TAPER ROLLER BEARINGS: Packed at factory. No lube required unless disassembled. Use chassis lubricant.
5. SHEAVE ROLLER BEARINGS: Sealed type. No lube required.

ITEM	D/S	PART NO.	DESCRIPTION	QUANTITY
			LIST OF MATERIAL	

UNLESS OTHERWISE NOTED ALL DIMENSIONS ARE IN INCHES.
TOLERANCES UNLESS OTHERWISE SPECIFIED.
ANGLES ± 1/2° | .XX ± .40
FRACTIONAL ± 1/16 | .XXX ± .010
REMOVE ALL BURRS AND SHARP EDGES. DO NOT SCALE THIS DRAWING.
TOLERANCES NOT SHOWN ABOVE ARE PER ANSI Y14 .5 - 1973

DRAWN BY: Aemstrong
DATE: 4/23/81
CHK'D BY:
DATE:
ENG. BY:
DATE:

NEXT ASS'Y

AUTO CRANE COMPANY
P.O. BOX 45548 • TULSA, OKLAHOMA 74145
9260 BROKEN ARROW EXPRESSWAY • 918-627-9475

TITLE
LUBRICATION CHART 5000 - 6000

SCALE	SIZE	DRAWING NO.	REVISION
~	A	AW-1001	

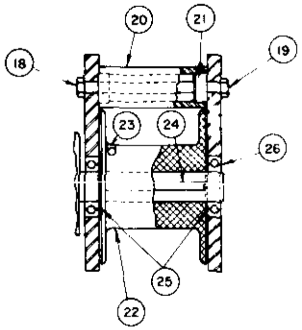
WEIGHT

SHEET 1 OF 1

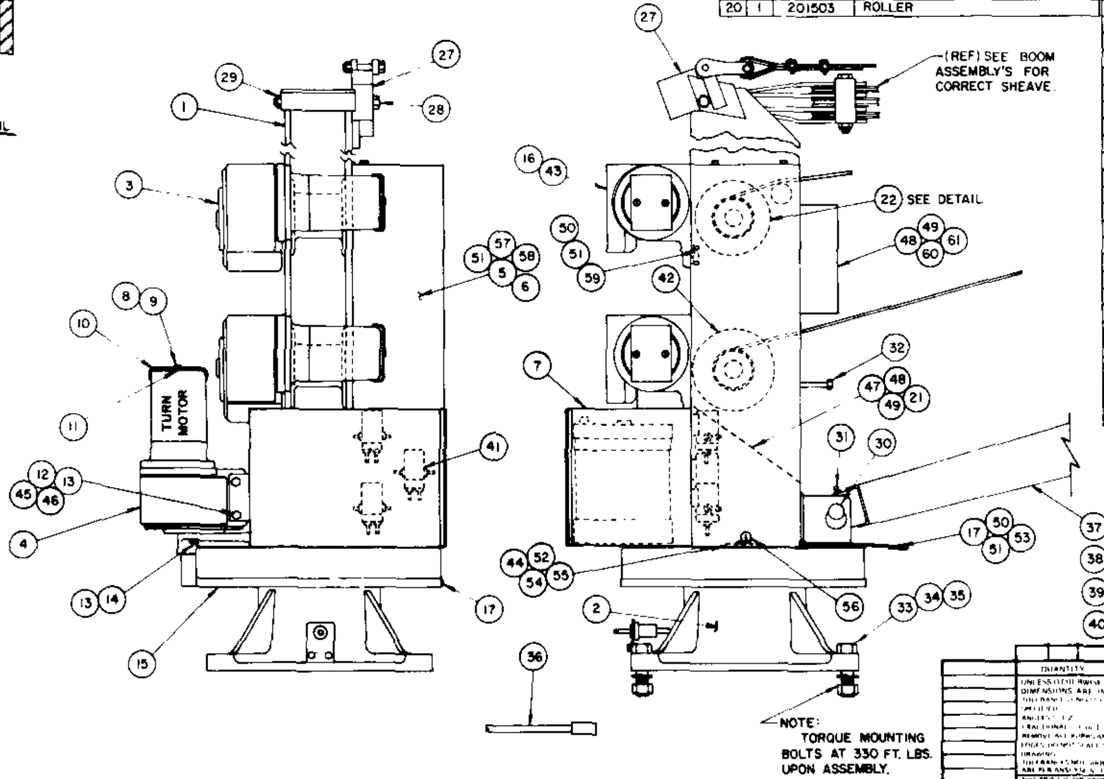
RIDGWAYS 1000H

FIXTURE NO	FINISH NO

NO	QTY	PART NO.	DESCRIPTION
1	1	229002	PEDESTAL
2	1	306400	BASE ASSEMBLY
3	2	300002	ACTUATOR ASSEMBLY
4	1	315302	TURNER ASSEMBLY
5	1	305600	RELAY GUARD
6	1	676103	PANEL ASSEMBLY
7	1	305603	BATTERY COVER
8	6	001302	#8-32 X 1/2 RD. HD. MACH. SCREW
9	6	019700	#8 LOCKWASHER
10	3	306600	SHIELD
11	13	015900	1/4-20 NC NUT (AS SPACER)
12	8	008601	3/8-16NC X 7/8 CAPSCREW
13	8	021100	3/8 LOCKWASHER
14	8	008601	3/8-16NC X 7/8 SCREW G5
15	1	302203	GEAR GUARD-LOWER
16	9	004800	#10 SELF TAPPING SHEET METAL SCW
17	8	002605	SCREW, HX. HD. S.T. 12 X 1/2
18	1	017400	3/8-24 THIN SELF-LOCKING NUT
19	1	009900	3/8-24NF X 5 1/2 CAPSCREW
20	1	201503	ROLLER
21	1	305700	GUARD, QUILL
22	1	400900	BOOM DRUM
23	1	002900	1/4-20NC X 3/8 SCREW
24	2	101024	1/4 X 1/4 X 4 KEY STOCK
25	4	307100	SPIRO LOX RETAINING RING
26	4	400500	BEARING
27	1	241138	LOAD LIMIT SWITCH
28	1	013301	5/8-18 X 7 1/2 CAPSCREW GR 8
29	1	018100	5/8-18 HALF LOCK NUT
30	2	330009	HINGE PIN
31	2	239000	GREASE ZERK
32	1	659700	BOOM LIMIT SWITCH
33	4	015100	7/8NF X 4 CAPSCREW GR 5
34	10	019800	7/8NF HEX NUT
35	4	022200	7/8 LOCKWASHER
36	1	600420	BATTERY CABLE INSTALLATION
37	1	233600	BOOM (9,12,14 FT.) OPTIONAL
38	1	233601	BOOM (17,20 FT.) OPTIONAL
39	1	241197	BOOM (10-16 FT EXT.) OPTIONAL
40	1	240200	BOOM (14-20 FT EXT.) OPTIONAL
41	1	301015	VOLTAGE SWITCHING UNIT
42	1	400900	HOIST DRUM
43	3	308201	BRAKE ASSEMBLY
44	2	020600	WASHER, SPLK 5/16 CP
45	1	241188	BRACKET, TURNER
46	2	017301	NUT, HEX.-LK. 3/8 NC CP G5
47	2	005500	SCREW, HEX. HD. 1/4 X 3/4 NC G5
48	15	020200	WASHER, SPLK 1/4 CP
49	13	015900	NUT, HEX 1/4 NC CP G5
50	3	663300	MOUNT, CABLE TIE
51	5	663100	TIE, CABLE
52	1	301105	SWIVEL, BRACKET TWECO
53	1	642420	PENDANT ASSEMBLY
54	2	007808	SCREW, HEX. HD. 5/16 X 1/2 NF G5
55	1	002900	SCREW, SET-CUP 1/4 X 3/8 NC
56	1	640700	SWITCH, KEY-LOCK
57	3	005601	SCREW, HEX HD. 1/4 X 1 NCCP G5
58	1	005700	SCREW, HEX. HD. 1/4 X 1 1/4 NCCPG5
59	12	015600	NUT, HEX #10 NF CP G3
60	1	634400	PENDANT BRACKET
61	5	005901	SCREW, 1/4 NC X 1/2 G5
62	1	040628	DECAL KIT
63	1	006600	SHIP LOOSE KIT
64	1	302600	BRACKET, SWIVEL



BOOM DRUM DETAIL



ITEM		PART NO.	DESCRIPTION
QUANTITY		LIST OF MATERIAL	

AUTO CRANE COMPANY

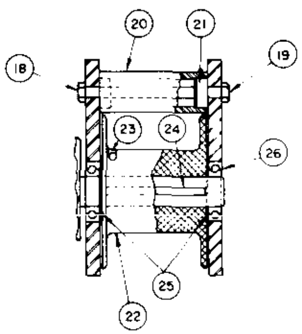
TITLE: GENERAL ASSEMBLY - 5000 12/24 V

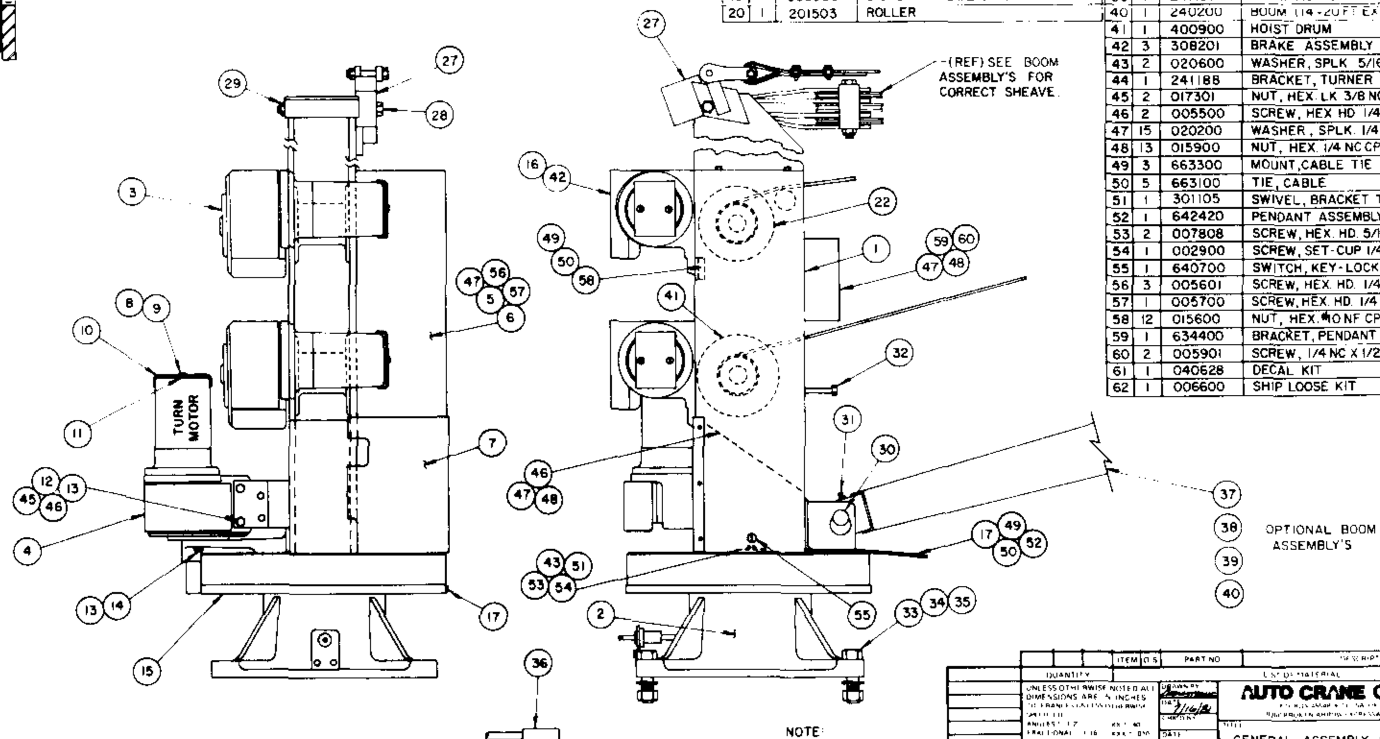
SCALE: ~ | SIZE: D | DRAWING NO: AW-170000 | REVISION:

NEXT ASS'Y

SHEET 1 OF 2

FIXTURE NO	FINISH NO





NO	QTY	PART NO.	DESCRIPTION
1	1	229002	PEDESTAL
2	1	306400	BASE ASSEMBLY
3	2	300002	ACTUATOR ASSEMBLY
4	1	315302	TURNER ASSEMBLY
5	1	305600	RELAY GUARD
6	1	676103	PANEL ASSEMBLY
7	1	305800	GUARD, PANEL
8	6	001302	#8-32 X 1/2 RD. HD. MACH. SCREW
9	6	019700	#8 LOCKWASHER
10	3	306600	SHIELD
11	13	015900	1/4-20 NC NUT (AS SPACER)
12	8	008601	3/8-16NC X 7/8 CAPSCREW
13	8	021100	3/8 LOCKWASHER
14	8	008601	3/8-16NC X 7/8 CAPSCREW G5
15	1	302203	GEAR GUARD - LOWER
16	9	004800	#10 SELF TAPPING SHEET METAL SCW
17	7	002605	SCREW, HX. HD. S.T. 12 X 1/2
18	1	017200	3/8-24 THIN SELF-LOCKING NUT
19	1	009900	3/8-24NF X 5 1/2 CAPSCREW
20	1	201503	ROLLER

NO	QTY	PART NO.	DESCRIPTION
21	2	201600	BEARING
22	1	400900	BOOM DRUM
23	2	002900	1/4-20NC X 3/8 SCREW
24	2	101024	1/4 X 1/4 X 4 KEY STOCK
25	4	307100	SPIRO LOX RETAINING RING
26	4	400500	BEARING
27	1	241138	LOAD LIMIT SWITCH
28	1	013301	5/8-18 X 7 1/2 CAPSCREW GR 8
29	1	018100	5/8-18 HALF LOCK NUT
30	2	330009	HINGE PIN
31	2	239000	GREASE ZERK
32	1	659700	BOOM LIMIT SWITCH
33	4	015100	7/8NF X 4 CAPSCREW GR 5
34	4	018900	7/8NF HEX NUT
35	4	022200	7/8 LOCKWASHER
36	1	600420	BATTERY CABLE INSTALLATION
37		233600	BOOM (9,12,14 FT.) OPTIONAL
38	1	233601	BOOM (17,20 FT.) OPTIONAL
39	1	241197	BOOM (10-16 FT. EXT.) OPTIONAL
40	1	240200	BOOM (14-20 FT. EXT.) OPTIONAL
41	1	400900	HOIST DRUM
42	3	308201	BRAKE ASSEMBLY
43	2	020600	WASHER, SPLK 5/16 CP
44	1	241188	BRACKET, TURNER
45	2	017301	NUT, HEX. LK 3/8 NC CP G5
46	2	005500	SCREW, HEX HD 1/4 X 3/4 NC G5
47	15	020200	WASHER, SPLK. 1/4 CP
48	13	015900	NUT, HEX. 1/4 NC CP G5
49	3	663300	MOUNT, CABLE TIE
50	5	663100	TIE, CABLE
51	1	301105	SWIVEL, BRACKET TWECO
52	1	642420	PENDANT ASSEMBLY
53	2	007808	SCREW, HEX. HD. 5/16 X 1/2 NF G5
54	1	002900	SCREW, SET-CUP 1/4 X 3/8 NC
55	1	640700	SWITCH, KEY-LOCK
56	3	005601	SCREW, HEX. HD. 1/4 X 1 NCCP G5
57	1	005700	SCREW, HEX. HD. 1/4 X 1 1/4 NCCP G5
58	12	015600	NUT, HEX. #10 NF CP G3
59	1	634400	BRACKET, PENDANT
60	2	005901	SCREW, 1/4 NC X 1/2 G5
61	1	040628	DECAL KIT
62	1	006600	SHIP LOOSE KIT

NOTE:
TORQUE MOUNTING BOLTS AT 330 FT. LBS. UPON ASSEMBLY.

			ITEM	O.S.	PART NO.	DESCRIPTION
QUANTITY			LIST OF MATERIAL			

UNLESS OTHERWISE NOTED ALL DIMENSIONS ARE IN INCHES

DRAWN BY — DATE 7/16/81 — CHECKED BY — DATE — ENG. BY — DATE

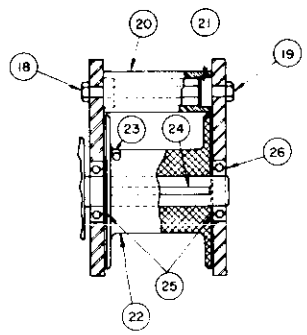
AUTO CRANE COMPANY

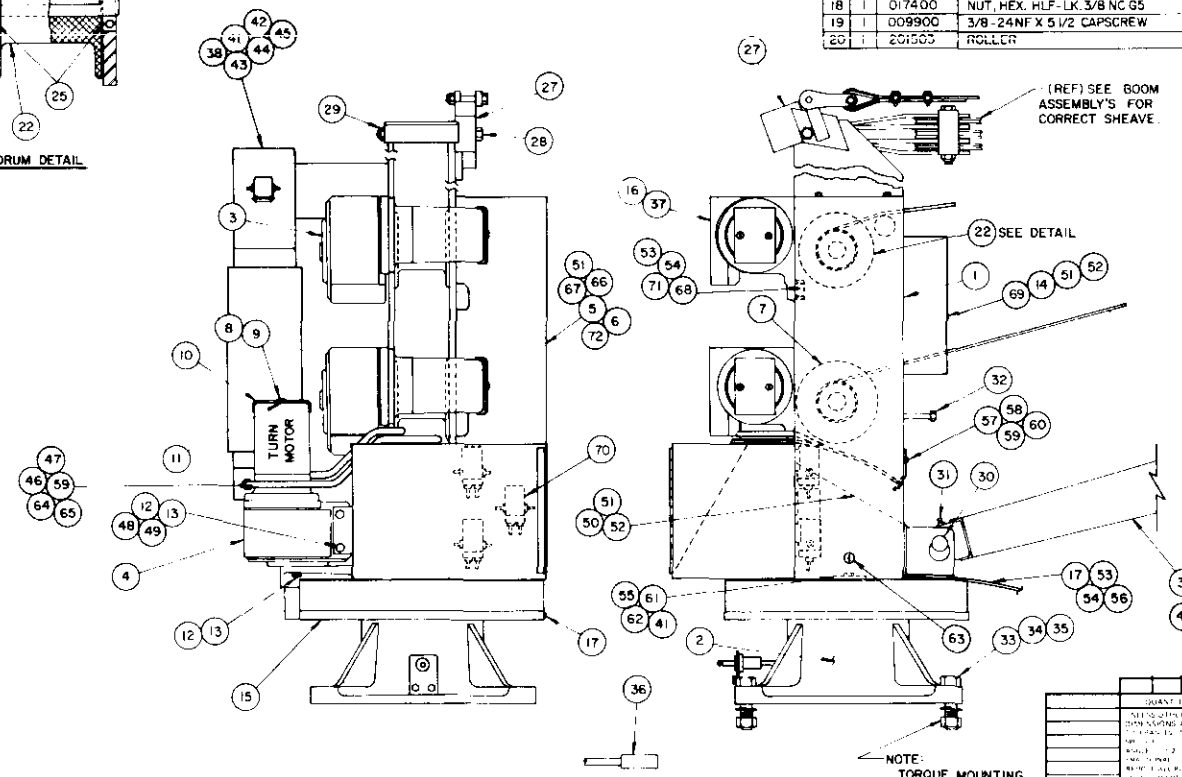
TITLE: GENERAL ASSEMBLY -5000 220/110

SCALE: ~ — SIZE: D — DRAWING NO.: AW-170003 — REVISION

NEXT ASS'Y — WEIGHT — SHEET 1 OF 1

FIXTURE NO	FINISH NO





NO	QTY	PART NO.	DESCRIPTION
1	1	229003	PEDESTAL
2	1	306400	BASE ASSEMBLY
3	2	300002	ACTUATOR ASSEMBLY
4	1	315302	TURNER ASSEMBLY
5	1	676103	PANEL ASSEMBLY
6	1	305600	RELAY GUARD
7	1	400900	HOIST DRUM
8	6	001302	#8-32 X 1/2 RD HD MACH SCREW
9	6	019700	#8 LOCKWASHER
10	3	306600	SHIELD
11	13	015900	1/4-20 NC NUT (AS SPACER)
12	6	008601	3/8-16NC X 7/8 CAPSCREW
13	8	021100	3/8 LOCKWASHER
14	5	005901	SCREW, HEX. 1/4 X 1/2 NC G5
15	1	302203	GEAR GUARD - LOWER
16	9	004800	#10 SELF TAPPING SHEET METAL SCW
17	8	002605	SCREW, HX. HD. S.T. 12 X 1/2
18	1	017400	NUT, HEX. HLF-LK. 3/8 NC G5
19	1	009900	3/8-24NF X 5 1/2 CAPSCREW
20	1	201303	ROLLER

NO.	QTY	PART NO.	DESCRIPTION
21	2	201600	BEARING
22	1	400900	BOOM DRUM
23	1	002900	1/4-20 NC X 3/8 SCREW
24	2	101024	1/4 X 1/4 X 4 KEY STOCK
25	4	307100	SPIRO LOX RETAINING RING
26	4	400500	BEARING
27	1	241138	LOAD LIMIT SWITCH
28	1	013301	5/8-18 X 7 1/2 CAPSCREW GR 8
29	1	018100	5/8-18 HALF LOCK NUT
30	2	330009	HINGE PIN
31	2	239000	GREASE ZERK
32	1	659700	BOOM LIMIT SWITCH
33	13	015100	7/8NF X 4 CAPSCREW GR 5
34	4	018900	7/8NF HEX NUT
35	4	022200	7/8 LOCKWASHER
36	1	600420	BATTERY CABLE INSTALLATION
37	3	308201	BRAKE ASSEMBLY
38	1	243040	HYDRAULIC PUMP
39	1	240258	BOOM (10-16 FT EXT) OPTIONAL
40	1	240257	BOOM (14-20 FT EXT) OPTIONAL
41	2	020600	WASHER, SPLK. 5/16 CP
42	4	007200	SCREW, HEX. 5/16 NC CP
43	6	020901	WASHER, FLAT 5/16
44	6	016500	NUT, HEX. 5/16 NCCP
45	2	008701	SCREW, HEX 3/8 X 1 NC G5
46	1	200876	ADAPTER, O-RING
47	2	243152	HYDRAULIC HOSE
48	1	241188	BRACKET, TURNER
49	2	017301	NUT, HEX.-LK. 3/8 NCCP G5
50	2	005500	SCREW, HEX. HD. 1/4 X 3/4 NC G5
51	15	020200	WASHER, SPLK. 1/4 CP
52	13	015900	NUT, HEX. 1/4 NCCP G5
53	3	663300	MOUNT, CABLE TIE
54	5	663100	TIE, CABLE
55	1	302600	SWIVEL, BRACKET TWECO
56	1	243045	PENDANT ASSEMBLY
57	2	007807	SCREW, HEX. 1/2 X 3/4 NC G5
58	1	243190	PLATE, HOSE PROTECTOR
59	1	243158	ELL, 45° 9/16 O-RING JIC
60	2	241170	ADAPTER, BLK HD. 9/16-18 JIC
61	2	007808	SCREW, HEX HD. 5/16 X 1/2 NF G5
62	1	002900	SCREW, SET-CUP 1/4 X 3/8 NC
63	1	640700	SWITCH, KEY-LOCK
64	2	008900	SCREW, HEX HD. 3/8 X 1 1/4 NC
65	4	021200	WASHER, FLAT 3/8 SAE
66	3	005601	SCREW, HEX. HD. 1/4 X 1 NCCP G5
67	1	005700	SCREW, HEX. HD 1/4 X 1 1/4 NCCP G5
68	12	015600	NUT, HEX. #10 NF G3
69	1	634000	BRACKET, PENDANT
70	1	301015	VOLTAGE SWITCHING UNIT
71	2	002200	SCREW, 10 X 3/4 NF CP
72	4	005405	SCREW, HEX. 1/4 X 3/8 NC G5
73	1	040628	DECAL KIT
74	1	006600	SHIP LOOSE KIT

ITEM NO.	PART NO.	DESCRIPTION
		BILL OF MATERIAL

AUTO CRANE COMPANY

GENERAL ASSEMBLY - 5000 - HYD.

SCALE ~ | SIZE D | DRAWING NO. AW-170005 | REVISION

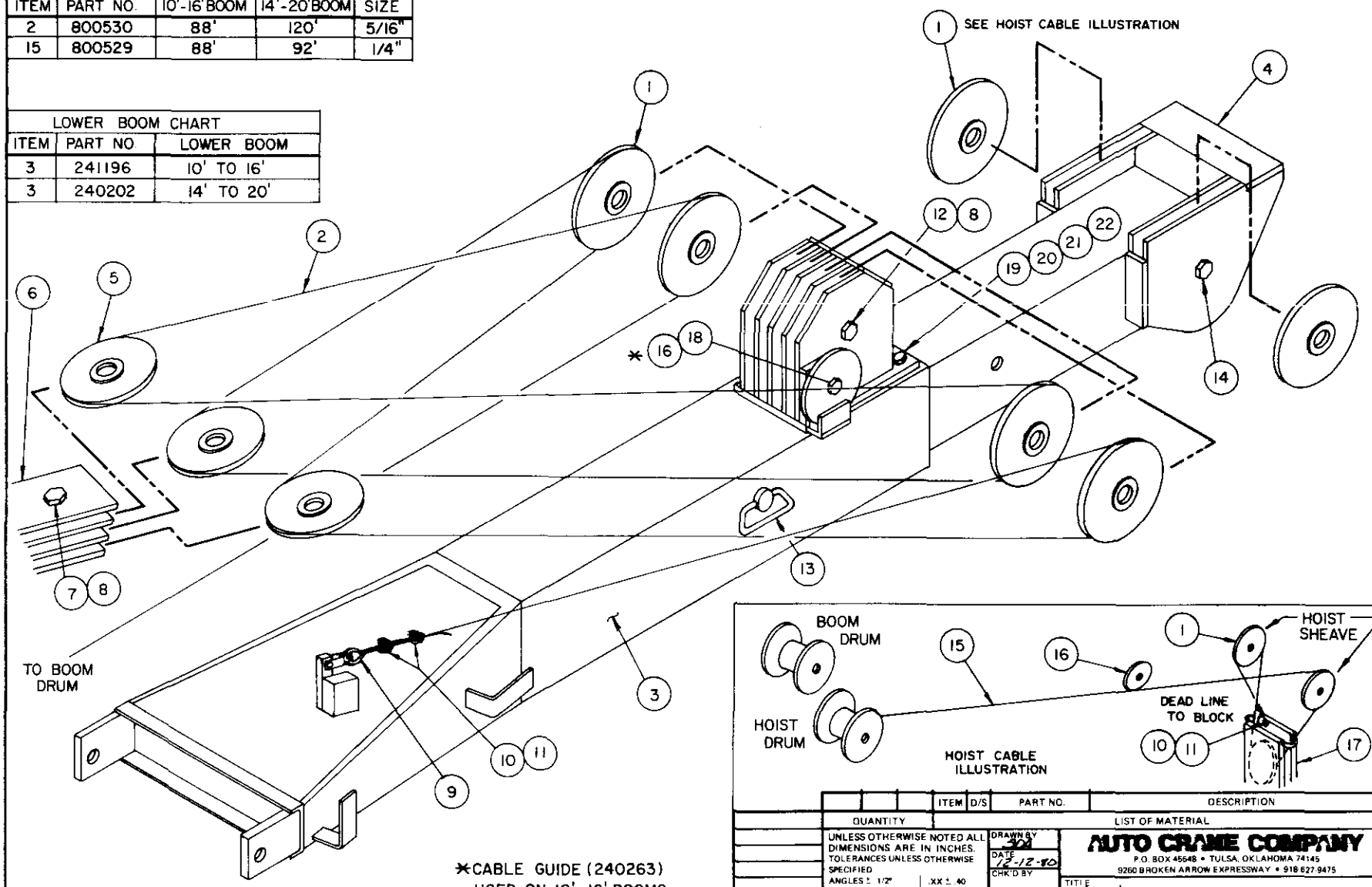
WEIGHT | SHEET 1 OF 1

FIXTURE NO.	FINISH NO.

CHG LTR	REVISIONS DESCRIPTION	DATE	APP'D

CABLE CHART				
ITEM	PART NO.	10'-16' BOOM	14'-20' BOOM	SIZE
2	800530	88'	120'	5/16"
15	800529	88'	92'	1/4"

LOWER BOOM CHART		
ITEM	PART NO	LOWER BOOM
3	241196	10' TO 16'
3	240202	14' TO 20'



*CABLE GUIDE (240263) USED ON 10'-16' BOOMS.

HOIST CABLE ILLUSTRATION

ITEM	D/S	PART NO.	DESCRIPTION
QUANTITY			LIST OF MATERIAL

UNLESS OTHERWISE NOTED ALL DIMENSIONS ARE IN INCHES. TOLERANCES UNLESS OTHERWISE SPECIFIED
ANGLES ± 1/2° | .XX ± .40
FRACTIONAL ± 1/16 | .XXX ± .010
REMOVE ALL BURRS AND SHARP EDGES. DO NOT SCALE THIS DRAWING.
TOLERANCES NOT SHOWN ABOVE ARE PER ANSI Y14.5-1973

DRAWN BY JDA
DATE 12-12-90
CHK'D BY
DATE
ENG. BY
DATE

NEXT ASS'Y

AUTO CRANE COMPANY
P.O. BOX 45648 • TULSA, OKLAHOMA 74145
9260 BROKEN ARROW EXPRESSWAY • 918 627-9475

TITLE 10'-16' / 14'-20' EXTENDABLE BOOM - 5000

SCALE ~ | SIZE C | DRAWING NO. 241197 AW- 240200 | REVISION

WEIGHT

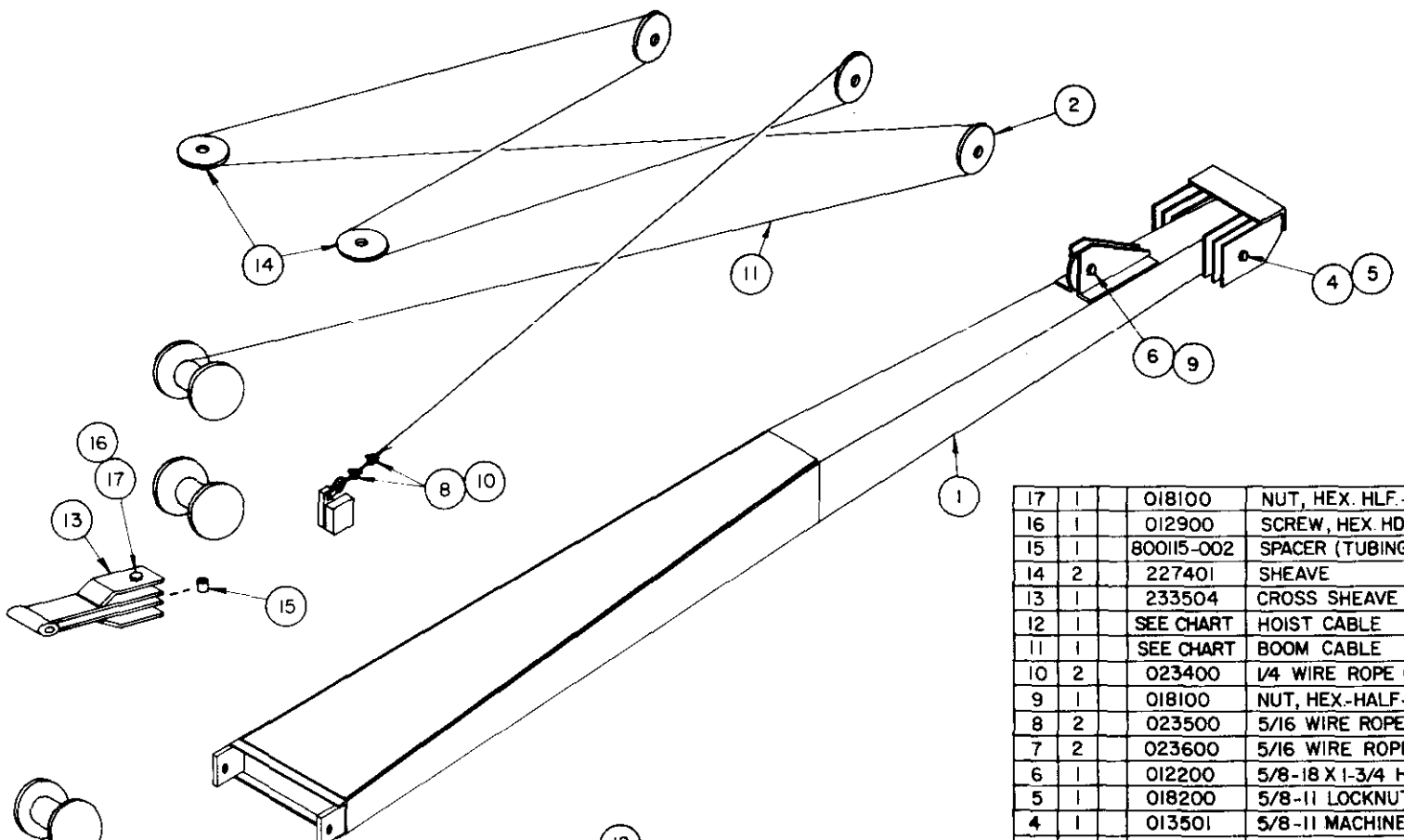
SHEET 1 OF 2

PARTS LIST – EXTENDABLE BOOM – 5000 $\frac{241197}{240200}$

ITEM	QTY.	PART NO.	DESCRIPTION
1	6	240241	SHEAVE
2	1		SEE CABLE CHART
3			SEE LOWER BOOM CHART
4	1	240201	BOOM, UPPER
5	3	227401	SHEAVE
6	1	233504	CROSS SHEAVE
7	1	012900	SCREW, 5/8-18 x 3½ GR. 5
8	2	018100	NUT, HEX HLF LK 5/8-18
9	2	023600	5/16 WIRE ROPE THIMBLE
10	2	023400	1/4 WIRE ROPE THIMBLE
11	2	023500	5/16 WIRE ROPE CLAMP
12	1	013504	SCREW, HEX 5/8-18 x 5 GR. 5
13	1	240246	PIN ASSEMBLY
14	2	012501	SCREW, HEX 5/8-18 x 2½ GR. 5
15	1		SEE CABLE CHART
16	1	200909	SHEAVE
17	1	200161	SWIVEL BLOCK
18	1	012203	SCREW, HEX 5/8-18 x 1¼ GR 5
19	1	240224	PAD, LOCKING
20	2	007400	SCREW, HEX 5/16-18 x 1 GR 5
21	2	020600	WASHER, SPLIT-LK 5/16
22	2	020901	WASHER, FLAT 5/16 SAE

FIXTURE NO.	FINISH NO.

BOOM		BOOM CABLE		HOIST CABLE	
PART NO.	LG.	PART NO.	LG.	PART NO.	LG.
228009	9'	223002	62'	236803	75'
228012	12'	223006	80'	236803	75'
228014	14'	223003	92'	236803	75'



ITEM	QTY	D/S	PART NO.	DESCRIPTION
17	1		018100	NUT, HEX. HLF.-LK. 5/8-18
16	1		012900	SCREW, HEX. HD. 5/8-18 X 3-1/2 GR-5
15	1		800115-002	SPACER (TUBING, RD.)
14	2		227401	SHEAVE
13	1		233504	CROSS SHEAVE FRAME
12	1		SEE CHART	HOIST CABLE
11	1		SEE CHART	BOOM CABLE
10	2		023400	1/4 WIRE ROPE CLAMP
9	1		018100	NUT, HEX.-HALF-LOCK 5/8-18
8	2		023500	5/16 WIRE ROPE CLAMP
7	2		023600	5/16 WIRE ROPE THIMBLE
6	1		012200	5/8-18 X 1-3/4 HEX. HD. SCREW
5	1		018200	5/8-11 LOCKNUT
4	1		013501	5/8-11 MACHINE BOLT 9" LONG
3	1		200161	SWIVEL BLOCK
2	3		200906	SHEAVE
1	1		SEE CHART	BOOM

LIST OF MATERIAL

UNLESS OTHERWISE NOTED ALL DIMENSIONS ARE IN INCHES. TOLERANCES UNLESS OTHERWISE SPECIFIED: ANGLES ± 1/2° | .XX ± .40 | FRACTIONAL ± 1/16 | .XXX ± .010 | REMOVE ALL BURRS AND SHARP EDGES. DO NOT SCALE THIS DRAWING. TOLERANCES NOT SHOWN ABOVE ARE PER ANSI Y14.5 1973

DRAWN BY JDK | DATE 11/20/80 | CHK'D BY | DATE | ENG BY | DATE

NEXT ASS'Y

AUTO CRANE COMPANY
P.O. BOX 45548 • TULSA, OKLAHOMA 74145
9260 BROKEN ARROW EXPRESSWAY • 918-627-9475

TITLE: 9', 12', & 14' BOOM ASSEMBLY

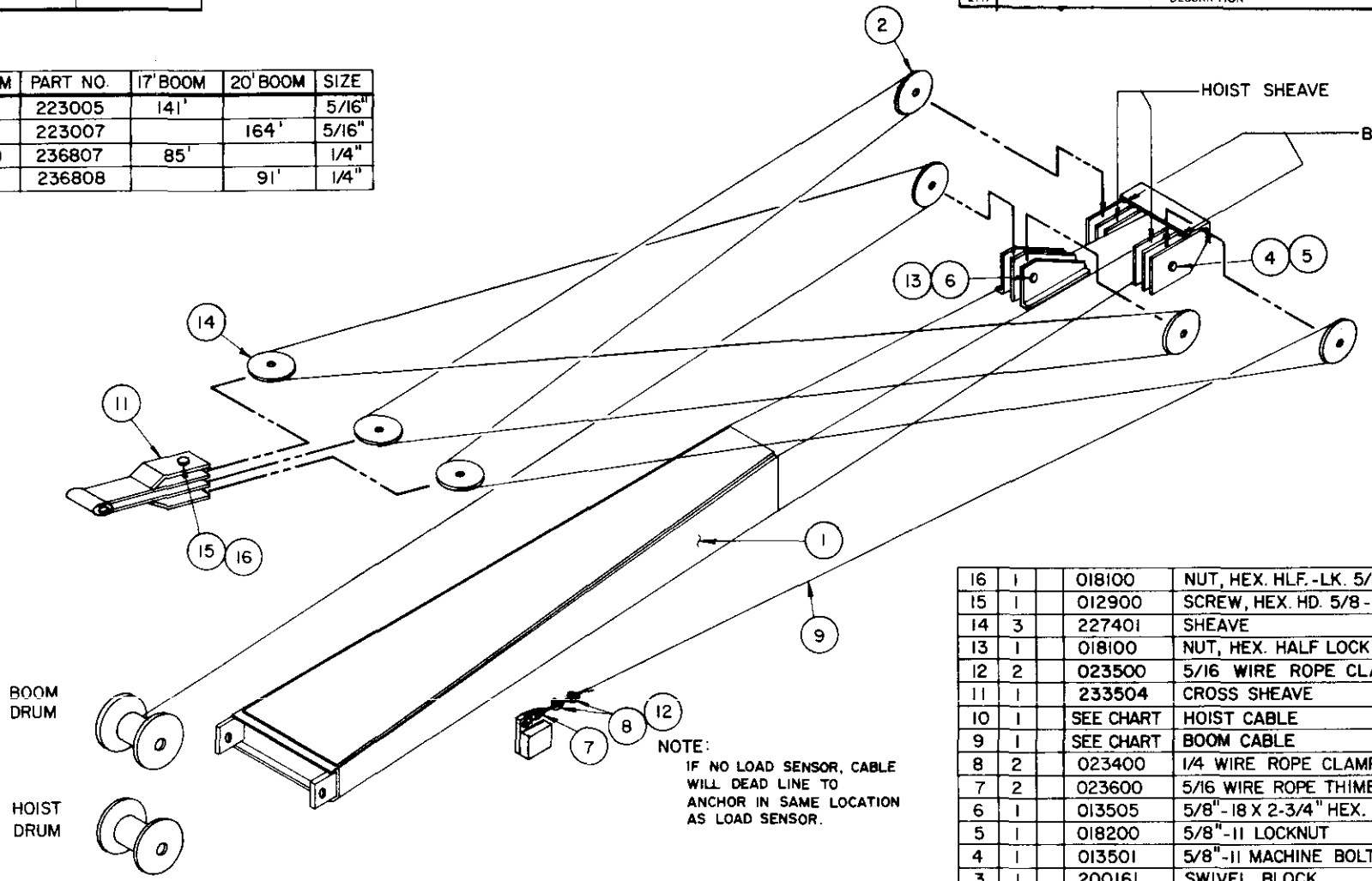
SCALE ~ | SIZE C | DRAWING NO. AW-233600 | REVISION

WEIGHT | SHEET 1 OF 1

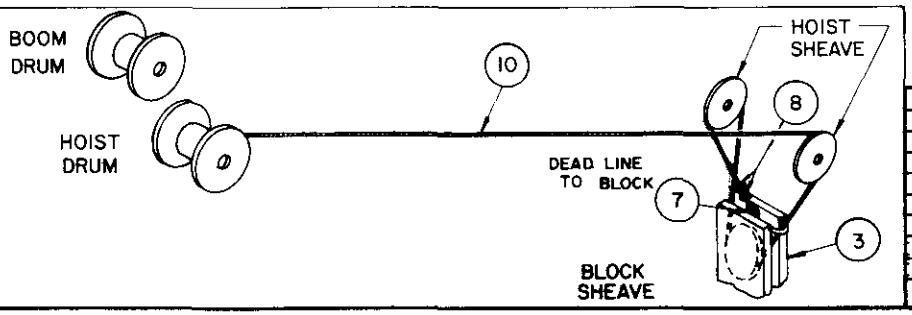
FIXTURE NO.	FINISH NO.

CHG LTR	REVISIONS DESCRIPTION	DATE	APP'D

ITEM	PART NO.	17' BOOM	20' BOOM	SIZE
9	223005	141'		5/16"
"	223007		164'	5/16"
10	236807	85'		1/4"
"	236808		91'	1/4"



NOTE:
IF NO LOAD SENSOR, CABLE WILL DEAD LINE TO ANCHOR IN SAME LOCATION AS LOAD SENSOR.



ITEM	QTY	D/S	PART NO.	DESCRIPTION
16	1		018100	NUT, HEX. HLF.-LK. 5/8-18
15	1		012900	SCREW, HEX. HD. 5/8-18 X 3-1/2 GR-5
14	3		227401	SHEAVE
13	1		018100	NUT, HEX. HALF LOCK 5/8-18
12	2		023500	5/16 WIRE ROPE CLAMP
11	1		233504	CROSS SHEAVE
10	1		SEE CHART	HOIST CABLE
9	1		SEE CHART	BOOM CABLE
8	2		023400	1/4 WIRE ROPE CLAMP
7	2		023600	5/16 WIRE ROPE THIMBLE
6	1		013505	5/8"-18 X 2-3/4" HEX. CAPSCREW
5	1		018200	5/8"-11 LOCKNUT
4	1		013501	5/8"-11 MACHINE BOLT 9" LG.
3	1		200161	SWIVEL BLOCK
2	4		200906	SHEAVE
1	1		~~228017-17~~ ~~228020-20~~	BOOM ASSEMBLY

LIST OF MATERIAL

UNLESS OTHERWISE NOTED ALL DIMENSIONS ARE IN INCHES. TOLERANCES UNLESS OTHERWISE SPECIFIED.
ANGLES ± 1/2° | .XX ± .40
FRACTIONAL ± 1/16 | .XXX ± .010
REMOVE ALL BURRS AND SHARP EDGES. DO NOT SCALE THIS DRAWING.
TOLERANCES NOT SHOWN ABOVE ARE PER ANSI Y14.5 - 1973

DRAWN BY
DATE 11-18-80
CHK'D BY
DATE
ENG. BY
DATE

NEXT ASS'Y

AUTO CRANE COMPANY
P.O. BOX 45548 • TULSA, OKLAHOMA 74145
9260 BROKEN ARROW EXPRESSWAY • 918 627-9475

TITLE
17' & 20' BOOM ASSEMBLY FOR 5000

SCALE	SIZE	DRAWING NO.	REVISION
~	C	AW-233601	

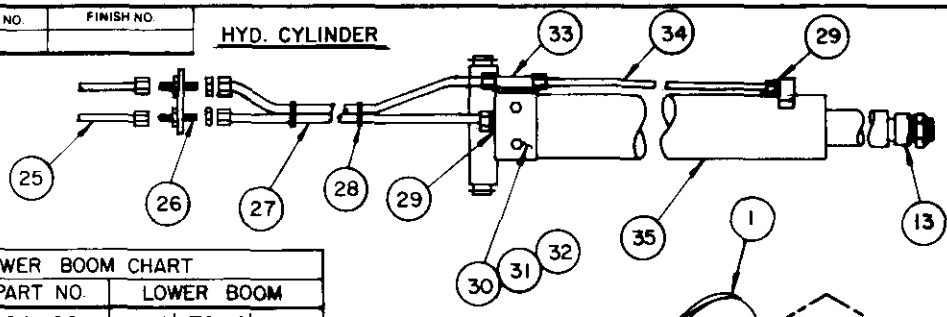
WEIGHT

SHEET 1 OF 1

RIDGWAYS 1000H

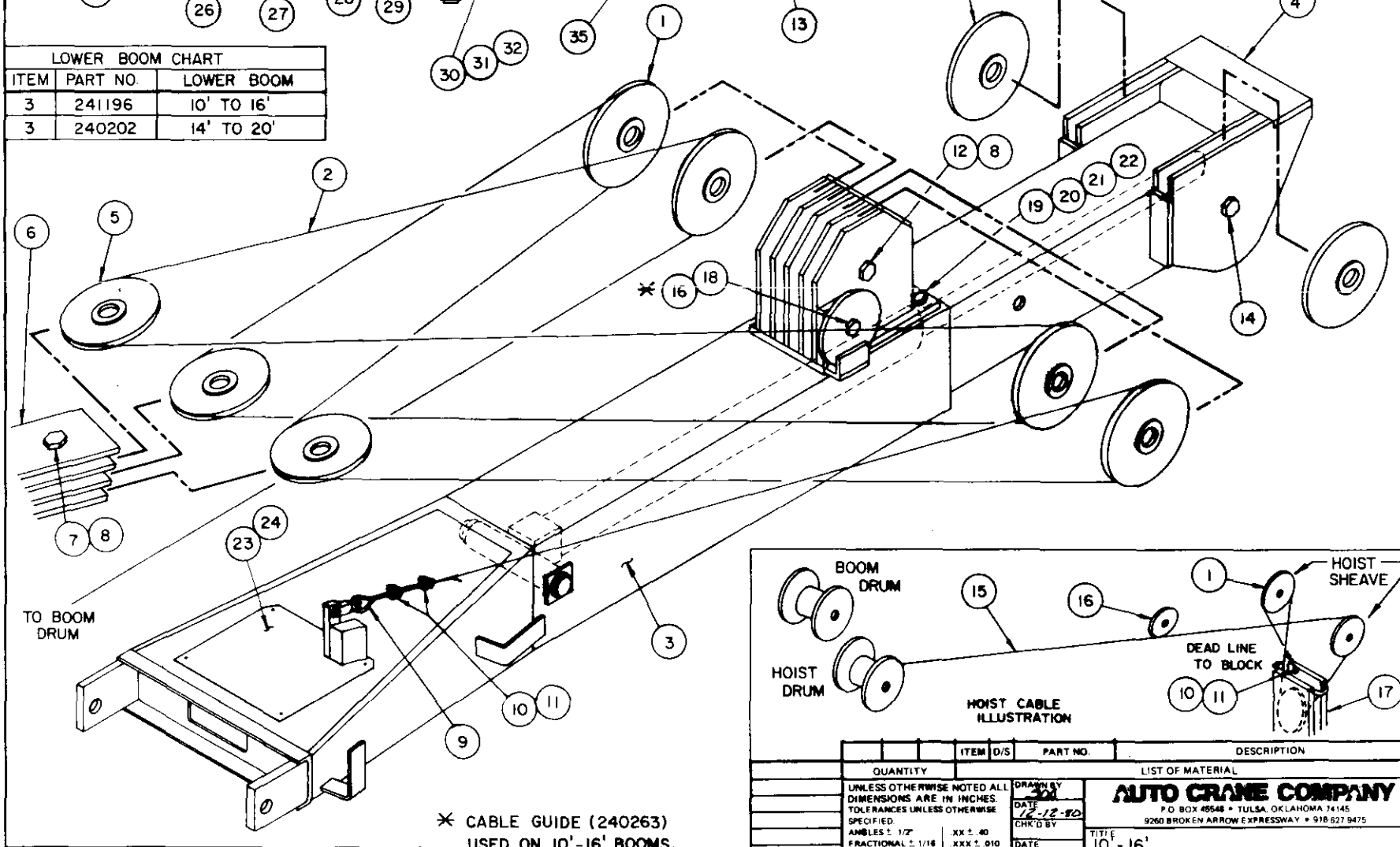
FIXTURE NO.	FINISH NO.

HYD. CYLINDER



HOSE CHART			
ITEM	QTY	PART NO.	BOOM ASSEMBLY
27	2	241173	240258 10'-16'
27	2	241172	240257 14'-20'

LOWER BOOM CHART		
ITEM	PART NO.	LOWER BOOM
3	241196	10' TO 16'
3	240202	14' TO 20'



* CABLE GUIDE (240263) USED ON 10'-16' BOOMS

CABLE CHART				
ITEM	PART NO.	10'-16' BOOM	14'-20' BOOM	SIZE
2	800530	88'	120'	5/16"
15	800529	88'	92'	1/4"

HOIST CABLE ILLUSTRATION

ITEM	D/S	PART NO.	DESCRIPTION
QUANTITY			LIST OF MATERIAL

UNLESS OTHERWISE NOTED ALL DIMENSIONS ARE IN INCHES. TOLERANCES UNLESS OTHERWISE SPECIFIED. ANGLES ± 1/2° | .XX ± .40 | FRACTIONAL ± 1/16 | .XXX ± .010 | REMOVE ALL BURRS AND SHARP EDGES. DO NOT SCALE THIS DRAWING. TOLERANCES NOT SHOWN ABOVE ARE PER ANSI Y14.5-1973

DRAWN BY JCH | DATE 12-12-80 | CHK'D BY | DATE | ENG. BY | DATE

NEXT ASS'Y

AUTO CRANE COMPANY
P.O. BOX 45548 • TULSA, OKLAHOMA 74145
9260 BROKEN ARROW EXPRESSWAY • 918 627 9475

TITLE 10'-16' / 14'-20' EXTENDABLE BOOM - HYD.

SCALE ~ | SIZE C | DRAWING NO. 240258 AW- 240257 | REVISION

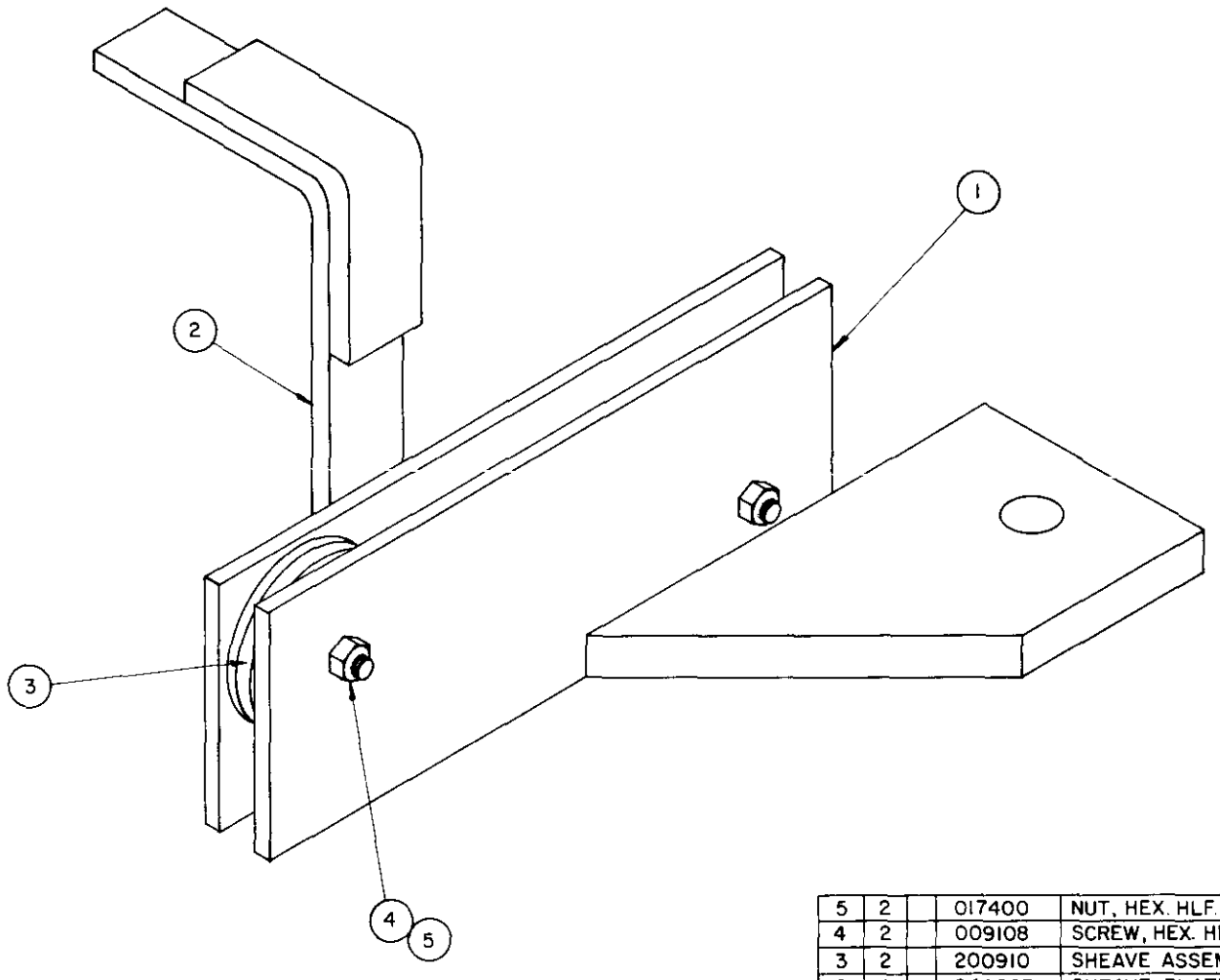
WEIGHT | SHEET 1 OF 2

PARTS LIST – EXTENDABLE BOOM – 5000 – HYD. 240258 / 240257

ITEM	QTY.	PART NO.	DESCRIPTION
1	6	240241	SHEAVE
2	1		SEE CABLE CHART
3			SEE LOWER BOOM CHART
4	1	330110	BOOM, UPPER
5	3	227401	SHEAVE
6	1	233504	CROSS SHEAVE
7	1	012900	SCREW, 5/8-18 x 3½ GR. 5
8	2	018100	NUT, HEX HLF LK 5/8-18
9	2	023600	5/16 WIRE ROPE THIMBLE
10	2	023400	1/4 WIRE ROPE THIMBLE
11	2	023500	5/16 WIRE ROPE CLAMP
12	1	013504	SCREW, HEX 5/8-18 x 5 GR. 5
13	1	800065-001	SPACER
14	2	012501	SCREW, HEX 5/8-18 x 2½ GR. 5
15	1		SEE CABLE CHART
16	1	200909	SHEAVE
17	1	200161	SWIVEL BLOCK
18	1	012203	SCREW, HEX 5/8-18 x 1¼ GR 5
19	1	240224	PAD, LOCKING
20	2	007400	SCREW, HEX 5/16-18 x 1 GR 5
21	2	020600	WASHER, SPLIT-LK 5/16
22	2	020901	WASHER, FLAT 5/16 SAE
23	1	240242	COVER, ACCESS
24	4	002006	SCREW, HEX SL. S.T. #10 x ½"
25	2	241173	HOSE ASSY – HYD.
26	2	241170	ADAPTER, BULKHEAD 9/16-18, 37°
27			SEE HOSE CHART
28	4	634400	TIE, CABLE
29	3	241169	ADAPTER, 9/16-18 – O-RING
30	2	020200	WASHER, SPLIT-LK. ¼
31	2	005800	SCREW, HEX HD. 1/4-20 x 1½ GR. 5
32	1	241165	HOLDING VALVE
33	1	241168	TEE, 9/16, 37° RUN - 9/16-18 O-RING
34	1	330087	LINE ASSY - HYD.
35	1	241166	CYLINDER, HYD. W/HARDWARE

FIXTURE NO.	FINISH NO.

CHG LTR	REVISIONS DESCRIPTION	DATE	APP'D



ITEM	QUANTITY	D/S	PART NO.	DESCRIPTION
5	2		017400	NUT, HEX. HLF. LK. 3/8 NF CP
4	2		009108	SCREW, HEX. HD. 3/8 X 1 1/4 NF CPG5
3	2		200910	SHEAVE ASSEMBLY
2	1		240265	SHEAVE PLATE
1	1		240264	SHEAVE PLATE

LIST OF MATERIAL

NEXT ASS'Y

UNLESS OTHERWISE NOTED ALL DIMENSIONS ARE IN INCHES. TOLERANCES UNLESS OTHERWISE SPECIFIED:
ANGLES ± 1/2° | .XX ± .40
FRACTIONAL ± 1/16 | .XXX ± .010
REMOVE ALL BURRS AND SHARP EDGES. DO NOT SCALE THIS DRAWING.
TOLERANCES NOT SHOWN ABOVE ARE PER ANSI Y14.5 1973

DRAWN BY: [illegible]
DATE: 2/12/71
CHK'D BY:
DATE:
ENG. BY:
DATE:

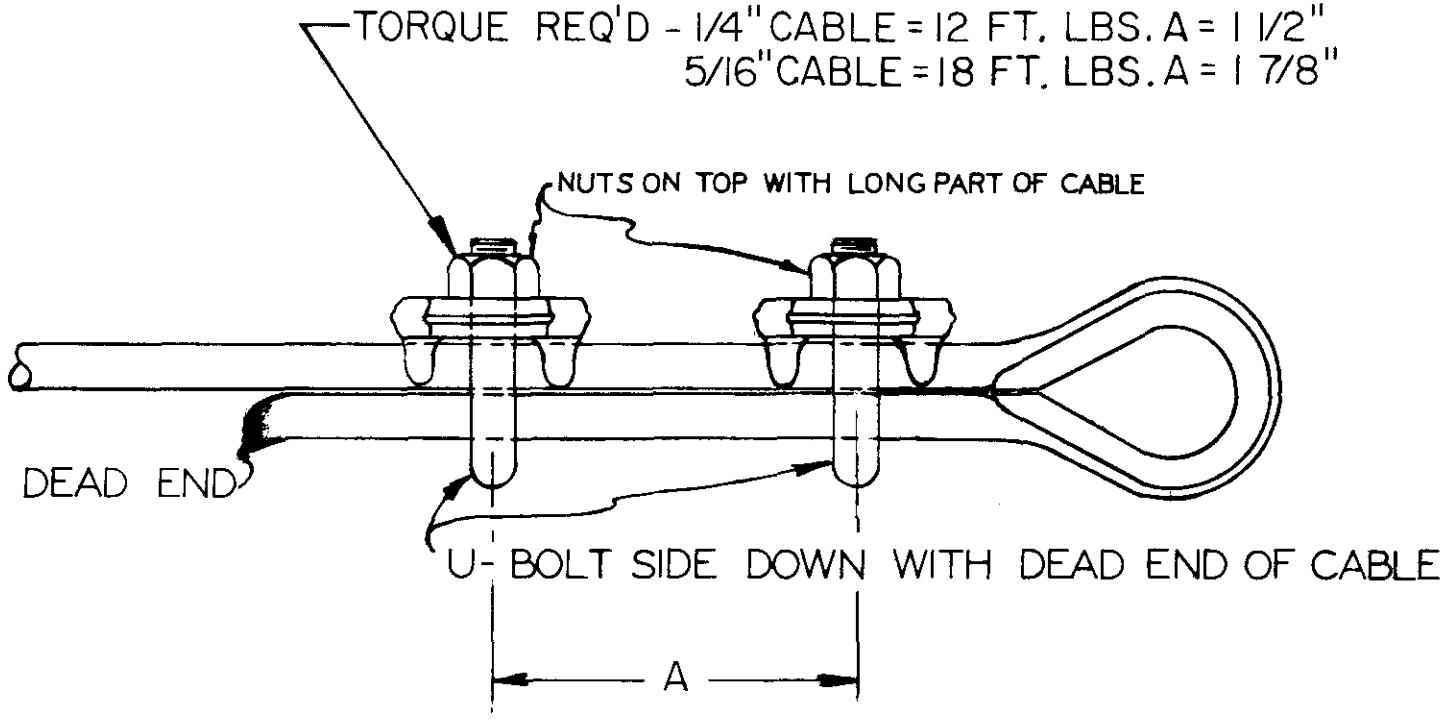
AUTO CRANE COMPANY
P.O. BOX 45548 • TULSA, OKLAHOMA 74145
9260 BROKEN ARROW EXPRESSWAY • 918 627 9475

TITLE
(STANDARD 10'-16')
CABLE GUIDE ASSEMBLY

SCALE	SIZE	DRAWING NO.	REVISION
~	C	AW-240263	3-81

WEIGHT

SHEET 1 OF 1



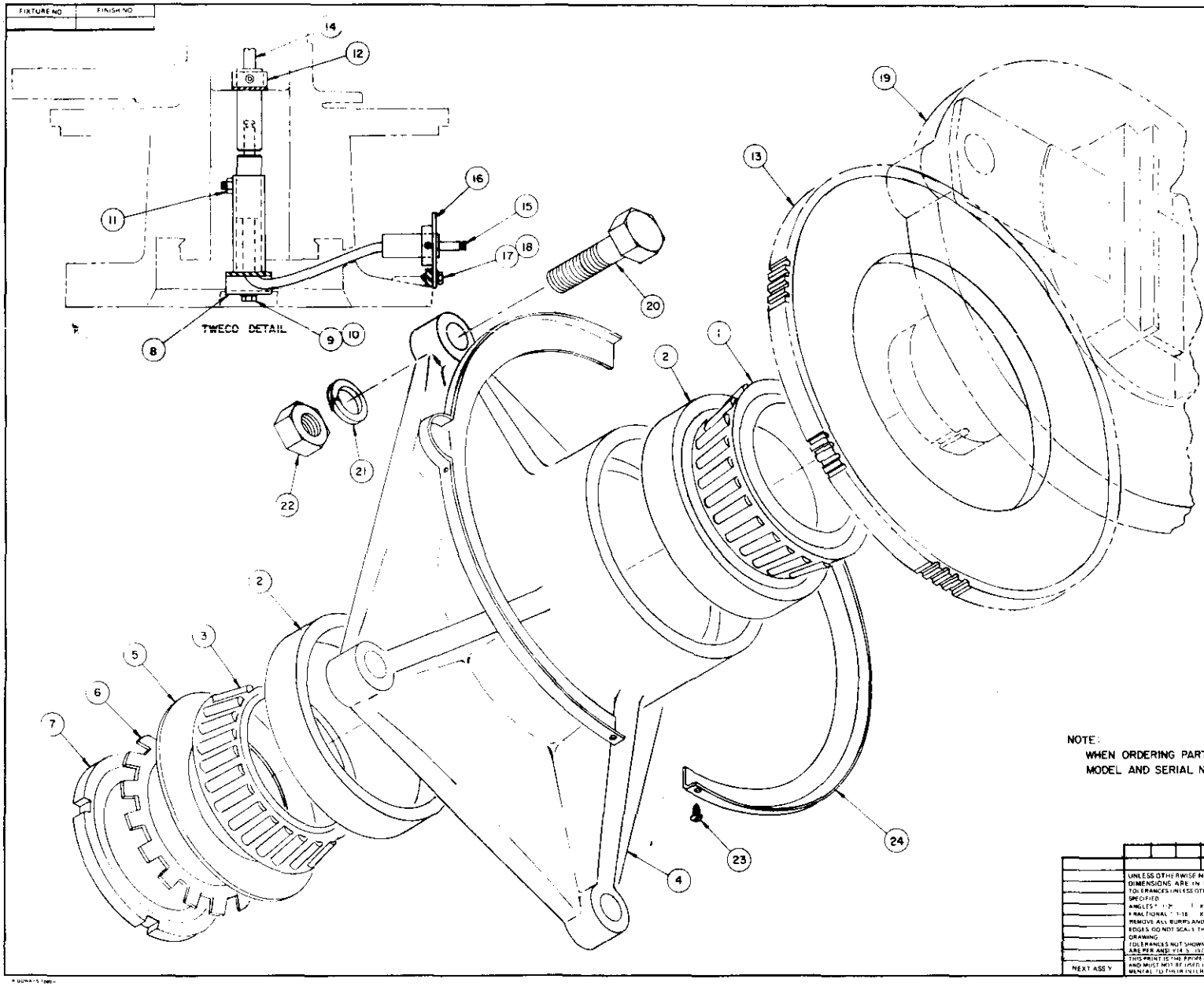
REVISIONS		
NO.	DATE	BY
1		
2		
3		
4		
5		

AUTO CRANE CO.
TULSA, OKLAHOMA

INSTALLATION OF CABLE CLAMP

DRAWN BY CATES	SCALE FULL	MATERIAL NOTED
CHK'D	DATE 3-8-72	DRAWING NO. M-124
TRACED	APP'D	

FIXTURE NO. | FINISH NO.



PARTS LIST

ITEM	QTY	PART NO.	DESCRIPTION
1	1	238700	CONE UPPER
2	2	238900	CUP
3	1	238800	CONE, LOWER
4	1	306400	BASE
5	1	302400	SHIELD
6	1	308202	LOCKWASHER
7	1	307702	NUT
8	1	302600	HOLDER
9	4	007808	SCREW, 5/16 NF X 1/2
10	4	020600	LOCKWASHER, 5/16
11	1	016600	NUT, 5/16 NF
12	1	301105	HOLDER
13	1	301300	GEAR
14	1	603317	CONDUCTOR
15	1	602713	CONDUCTOR
16	1	661201	MOUNTING PLATE
17	2	005500	SCREW, 1/4 NC X 3/4
18	2	020200	LOCKWASHER, 1/4
19	1	229002	PEDESTAL
20	4	015100	CAPSCREW, 7/8 NF X 4 GR5
21	4	022200	LOCKWASHER, 7/8
22	4	018900	NUT, 7/8 NF
23	7	004800	SCREW, #10 X 3/8 S.T.
24	1	302203	GEAR GUARD, LOWER

NOTE:
WHEN ORDERING PARTS BE SURE TO SPECIFY MODEL AND SERIAL NUMBER.

UNLESS OTHERWISE NOTED ALL DIMENSIONS ARE IN INCHES
TOLERANCES UNLESS OTHERWISE SPECIFIED
ANGLES ± 1/2° | XX ± .02
FRACTIONAL ± 1/16 | XXX ± .010
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 (IN WHOLE OR IN PART) DETRIMENTAL TO THEIR INTEREST.

DRAWN BY
CHECKED
ENG. BY
DATE

NEXT ASSY

LIST OF MATERIAL

AUTO CRANE COMPANY
P.O. BOX 45548 • TULSA, OKLAHOMA 74145
9260 BROKEN ARROW EXPRESSWAY • 918/627-9415

TITLE
BASE ASSEMBLY - 5000

SCALE ~ | SIZE D | DRAWING NO. AW - 301604 | REVISION

WEIGHT

SHEET 1 OF 2

MAINTENANCE OF BASE ASSEMBLY MODEL 5000

The base supports the rotating pedestal and boom by means of two opposed heavy duty tapered roller bearings. The base provides the means for attaching the unit to a support or to a vehicle. The opening through the center of the quill accommodates the power swivel connector which permits 360 degree continuous rotation.

1. PREPARATION FOR DISASSEMBLY:
   To disassemble the base, some preparation must be made: disconnect the power at (15) from the power source, remove turn actuator, remove unit battery. Remove crane from its mounting by removing four hold-down bolts (20). Block up under the boom near the hinge point and tilt the unit over on the boom to a horizontal position. Remove lower gear guard (24) by removing seven self-tapping screws, Item (23).

2. REMOVE SWIVEL ASSEMBLY:
   Remove capscrews (9) and swivel bracket (8).

3. REMOVE BEARING NUT:
   One tongue of lock washer (6) is bent into one of the key slots in the nut (7). Bend tongue out of key slot, using screwdriver or drive bar. Remove nut, using spanner wrench or drive bar.

   The base (4) is now held to the quill by the cone of bearing (3). Remove base from quill, using puller or drive bar. Cone bearing (3) will come off with base.

4. GEAR REMOVAL:
   If the base was removed in order to replace the gear ring (13) no further disassembly need be done. The gear has been heated and installed on the gear plate and then tack-welded in place. Remove tackwelds with a chisel or cutting torch. A grinder could also be used. The gear can be cut with a cutting torch, holding the torch at a tangent to the gear, or the gear may be driven off.

5. GEAR INSTALLATION:
   Check to be sure all burrs have been removed from the gear mounting surface of the gear plate. The installation procedure is as follows:

   Heat the ring with a torch or in an oven to around 500° F., Using heavy gloves, install the ring down against shoulder on gear plate. Allow to cool.

   NOTE: It is important that the gear ring be evenly heated around the total circumference.

   Tack-weld the ring to the gear plate in at least four places.

6. BEARING REMOVAL:
   If the base is being disassembled in order to replace the pedestal assembly Item (19), the bearing cone Item (1) should be removed from the pedestal quill. This can be done by using a pry bar. If the bearings are to be replaced, the cone (1) should be removed as well as the bearing cups Item (2). The cups can be removed by using a drive bar through the open ends of the base.

7. BEARING INSTALLATION:
   To install bearing cone (1), heat to around 200° F. Be sure that bearing cup is installed up against upper shoulder. Install bearing cups (2) in base. Be sure they are all of the way in, up against the shoulders in the base. Lubricate upper cone (2) with grease gun grease, filling spaces between rollers. Install base on pedestal quill. Lubricate and install lower cone (3). Install grease shield (5), lockwasher (6) and nut (7).

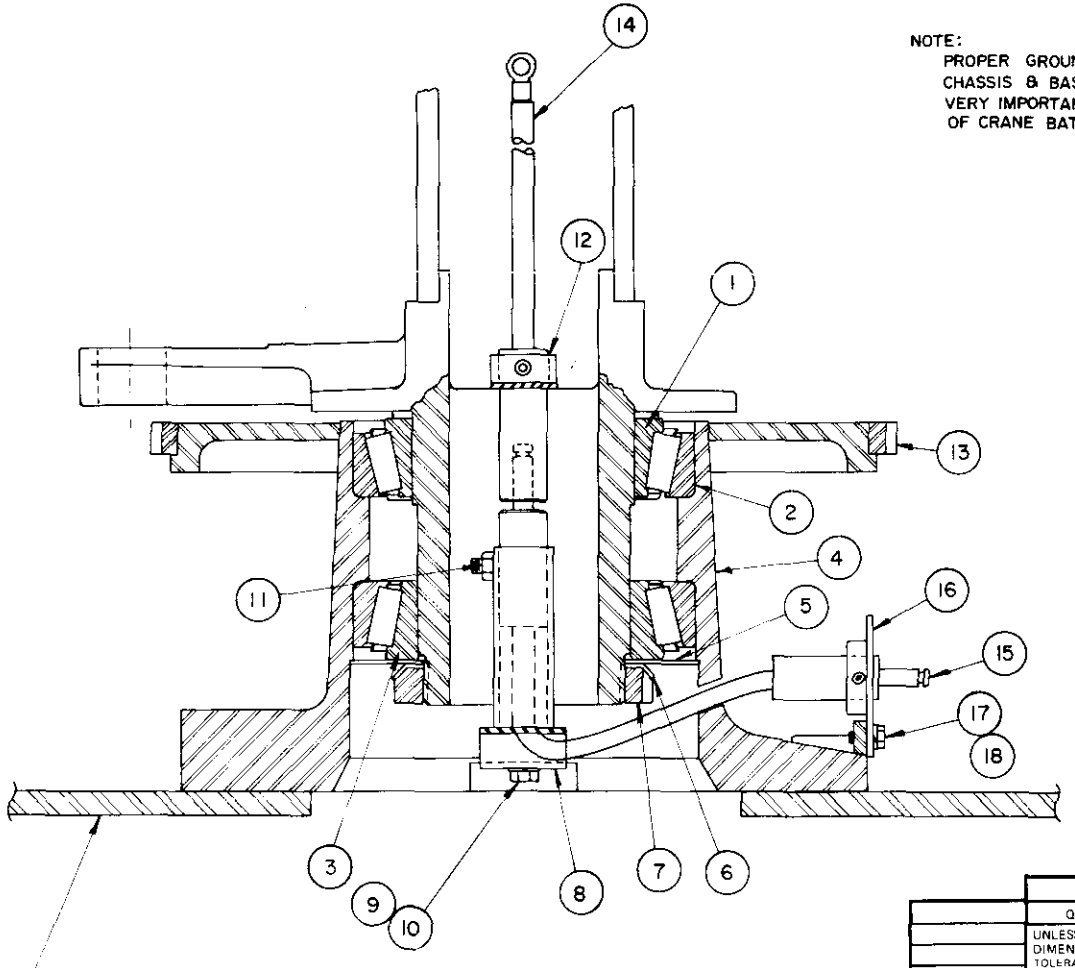
   Tighten nut (7) until it requires considerable effort to rotate the base on the quill. Bend one of the tongues on lockwasher (6) into one of the slots on the nut (7). Install swivel connection.

   The unit can now be raised and hold-down bolts (20) installed. Reinstall turn actuator.

WHEN ORDERING PARTS BE SURE TO SPECIFY MODEL AND SERIAL NUMBER.

FIXTURE NO	FINISH NO.

CHG LTR	REVISIONS DESCRIPTION	DATE	APP'D



SERVICE BODY
CUT-OUT – 101/8" (TYP.)

NOTE:
PROPER GROUND BETWEEN TRUCK CHASSIS & BASE OF CRANE IS VERY IMPORTANT FOR CHARGING OF CRANE BATTERY.

ITEM	QUANTITY	D/S	PART NO.	DESCRIPTION
18	2		020200	LOCKWASHER, 1/4
17	2		005500	SCREW, 1/4 NC X 3/4
16	1		661201	MOUNTING PLATE
15	1		602713	CONDUCTOR
14	1		603317	CONDUCTOR
13	1		301300	GEAR
12	1		301105	HOLDER
11	1		016600	NUT, 5/16 NF
10	4		020600	LOCKWASHER, 5/16
9	4		007808	SCREW, 5/16NF X 1/2
8	1		302600	HOLDER
7	1		307702	NUT
6	1		308202	LOCKWASHER
5	1		302400	SHIELD
4	1		306400	BASE
3	1		238800	CONE, LOWER
2	2		238900	CUP
1	1		238700	CONE UPPER

LIST OF MATERIAL

UNLESS OTHERWISE NOTED ALL DIMENSIONS ARE IN INCHES. TOLERANCES UNLESS OTHERWISE SPECIFIED.
ANGLES ± 1/2° | .XX ± 40
FRACTIONAL ± 1/16 | .XXX ± 010
REMOVE ALL BURRS AND SHARP EDGES. DO NOT SCALE THIS DRAWING.
TOLERANCES NOT SHOWN ABOVE ARE PER ANSI Y14.5 1973

DRAWN BY
DATE 7-1-81
CHK'D BY
DATE
ENG. BY
DATE

NEXT ASS'Y

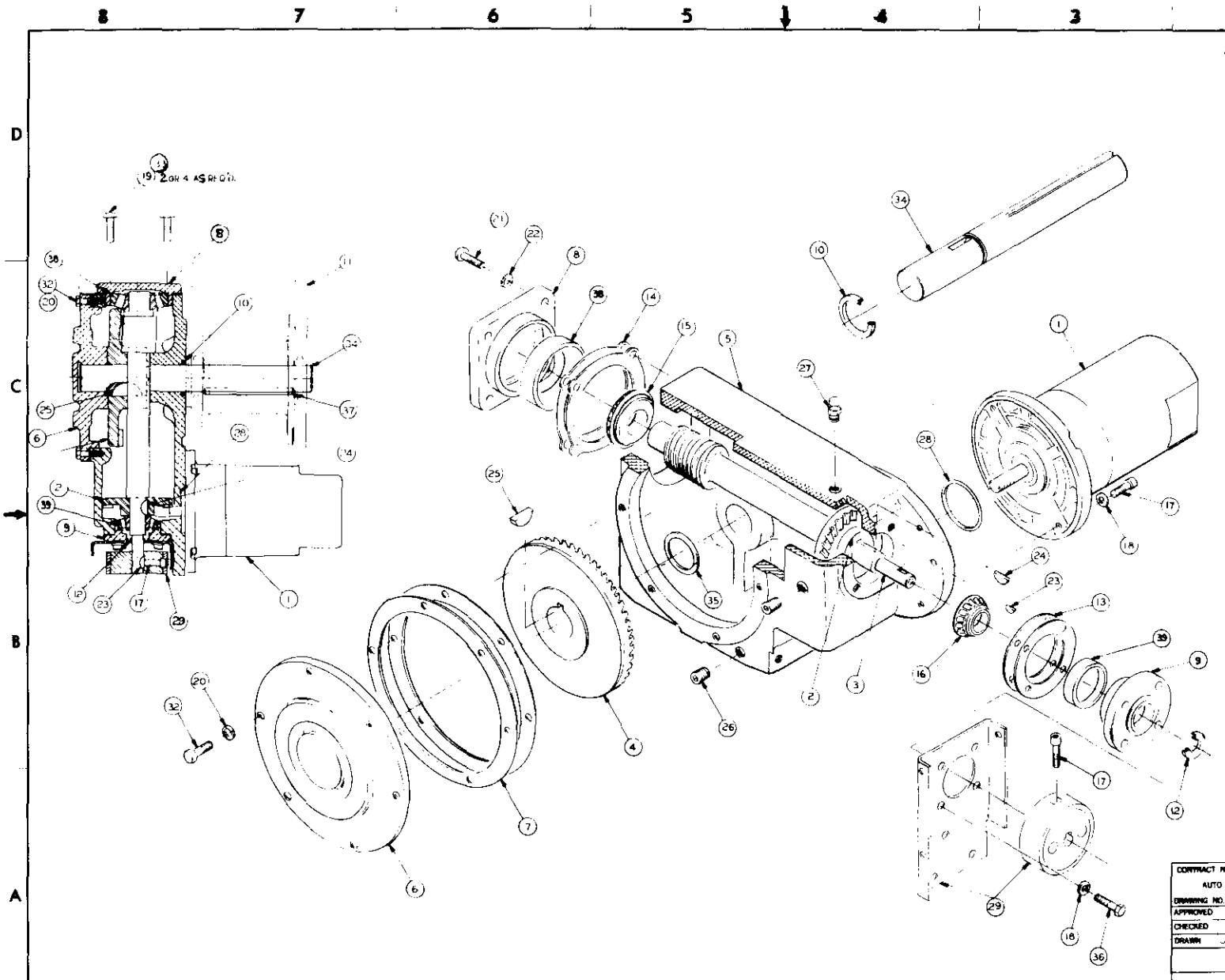
AUTO CRANE COMPANY
P.O. BOX 45548 • TULSA, OKLAHOMA 74145
9260 BROKEN ARROW EXPRESSWAY • 918-627-9475

TITLE
BASE ASSEMBLY 5000 12/24

SCALE	SIZE	DRAWING NO.	REVISION
~	C	AW-301604	

WEIGHT

SHEET 2 OF 2



Item	Qty	Part No	Description
1	1	300105	12VDC, 24VDC
2	1	300205	PRIMARY GEAR
3	1	300306	SHAFT
4	1	300405	SECONDARY GEAR
5	1	300503	GEAR CASE
6	1	300601	COVER
7	1	300706	GASKET SET
8	1	300800	BEARING CARRIER
9	1	300903	BEARING CARRIER
10	1	301706	SEAL-OUTPUT SHAFT
11			PEDESTAL ASSY (REF)
12	1	301806	SEAL-SECONDARY SHAFT
13	1	301906	SHIM SET
14	1	302008	SHIM SET
15	1	302101	BEARING CONE
16	1	302201	BEARING CONE
17	5	005610	1/4-20x3/4 SOC HD CAPSCREW
18	8	020200	1/4 LOCKWASHER
19	2	008601	3/8-16x7/8 HEX HD CAPSCREW
20	6	020601	5/16 LOCKWASHER
21	4	008404	3/8-16x1 BUTTON HD SOC SCR
22	4	021402	3/8 LOCKWASHER SHAKEPROOF
23	1	040406	#404 WOODRUFF KEY (HARD 1/8x1/2
24	1	060600	#606 WOODRUFF (Key 3/16x3/4)
25	1	060601	#E WOODRUFF KEY (3/8x1 1/4)
26	3	000209	1/4 PIPE PLUG SOC HD
27	1	302406	VENT FITTING
28	1	302500	SEAL
29	1	SEE ASSY	BRAKE KIT
30	2 QT	801200	MOBIL OIL #46 SAE 90
31			
32	6	007811	5/16-18x1" GR 5 CAPSCREW
33	2	021100	3/8 LOCKWASHER
34	1	301006	SHAFT, OUTPUT
35	1	400600	RETAINING RING (RST-125)
36	4	005606	1/4-20x7/8 GR 5 CAPSCREW
37	2	101024	1/4x1/4x4 KEYSTOCK (REF)
38	1	302102	BEARING CUP
39	1	302202	BEARING CUP

CONTRACT NO. _____
AUTO CRANE CO.
DRAWING NO. _____ DATE
APPROVED
CHECKED
DRAWN JCH 7-21-81

AUTO CRANE COMPANY
9280 BROKEN ARROW EXPWY., TULSA, OKLA. 74145

ACTUATOR ASSEMBLY
MODEL "B"
(B-3000)

SIZE	CODE IDENT. NO.	DRAWING NO.
D		M-119

SCALE | WEIGHT | SHEET OF

MAINTENANCE OF HOIST ACTUATOR AND BOOM ACTUATOR

This actuator is used with cable drums. It is used as the load hoist and boom hoist on the 5000 and 6000 Series units. It is also used on the 2000R Series units.

1. **ACTUATOR REMOVAL**
   The actuator is attached to the base or pedestal by 3/8" NC x 3/4" long bolts (Item 19). A typical hoist drum installation is shown in the cross-sectional view. After capscrews (1) have been removed and electrical wires disconnected from the motor, the actuator and output shaft can be moved to the left. The key (37) will remain in the drum. On pedestal mounted units as shown, spacer rings are located on the shaft between the drum and support bearings, also between the gear case and the bearing.

2. **OIL REMOVAL**
   The next operation will be to drain the oil from the gear case. This can be accomplished by removing one of the plugs (Item 26) located on the bottom side of the case.

3. **MOTOR REMOVAL**
   Remove 4 socket head capscrews (Item 17) using the 3/16" long handle Allen wrench furnished with the unit for this purpose. The motor can now be lifted away from the gear case. The "O" ring (Item 28) serves as an oil seal between the motorpilot and the gear case. Be sure that this "O" ring is in the recess of the gear case before reinstalling the motor.

4. **COVER AND GEAR REMOVAL**
   Remove six capscrews (Item 32); remove cover (6) and shim set (7). **CAUTION: Do not damage or destroy shim set).** Drive the drum shaft (34) to the left, using block of wood (Avoid damage to the shaft). The gear (4) will come out of the large opening as the shaft is driven out. Remove gear from shaft. Woodruff key (25) and retaining ring (35) will remain with shaft.

5. **PRIMARY GEAR AND SECONDARY PINION SHAFT REMOVAL**
   Remove brake kit (See brake kit instructions.) Remove screw (31) from brake hub. Pull brake hub, remove key (23). Remove 4 capscrews (Item 36) which hold brake channel and bearing carrier (8) to case. Remove Item (8). **CAUTION: The shim sets (13 and 14) consist of the correct thickness for bearing and primary gear adjustment on each individual gear case.** Remove seal (12). Remove four buttonhead capscrews (Item 21) using a 7/32" Allen wrench. Remove cover (9) and shim set (14). Bearing cups (15 and 16) can be removed by using a pry bar.

   The pinion shaft and primary gear can now be removed from the gear case by extending the pinion end through the opening to the left until the primary gear end can be moved outwardly through the large side opening. Bearing (16) can best be removed by pulling primary gear (2) and bearing together – use puller or press. Bearing (15) can be removed with puller or press.

6. **REASSEMBLY**
   The above procedure constitutes removal and disassembly of the Actuator. To reassemble, perform the operations in reverse order.

7. **GEAR ADJUSTMENT**
   The gear adjustment should be checked if new bearings (15 and 16) or new gears (2, 3 or 4) are installed. Proceed as follows:

   Install motor (1) with bearings (15 and 16) and primary gear (2) installed on shaft (3). Insert shaft in gear case. With bearing cups installed in bearing carriers (8 and 9), install bearing carriers without shims, using capscrews (21 and 36). Adjust the shaft until gear (2) fits snugly against pinion shaft on the motor.

   Using plastic color coded shim set (14) as a feeler guage, add or remove shims until a drag occurs when inserted between carrier (9) and gear case (5). Remove carrier (9) and add two paper shims, one each on front and back sides of the plastic shim set. This usually gives the proper clearance between primary gear and motor pinion. Check backlash between the gear and motor pinion which should be not less than .002" or more than .007". This can be approximated by placing the hand through the large opening in the gear case and determining that the gear has a very small amount of backlash.

   Next remove motor and install carrier (8) with plastic shim set and two paper shims. Add or remove plastic shims until bearings fit snugly in cups with the shaft free to turn. Reinstall motor and again check the backlash.

   Install cover (6) and gear (4) against secondary pinion (3); determine thickness of shim set required in the manner described above. Check the backlash for the full 360° rotation.

   If new gears or bearings are to be installed, new shim set are recommended. Each shim set consists of:

   1 – .005 Blue
   1 – .0075 Clear
   2 – .020 Yellow
   2 – .005 Vellumoid Brown

8. **REINSTALL ACTUATOR ON PEDESTAL**
   This can best be accomplished by removing the outboard bearing from the side plate (Removal of relay panel will be required). Install spacers on output shaft which will be between actuator case and side plate. Install shaft through left bearing just far enough to install spacer which will be between drum and bearing. Install the drum between the side plates and shove shaft through the drum. Key (37) and the drum spacer can be installed through the bearing opening. Reinstall outboard bearing.

9. **LUBRICATION**
   An extreme pressure (EP-80-90) lubricant is used in the gear case. The output shaft bearings are factory lubricated and sealed and need no further lubrication.

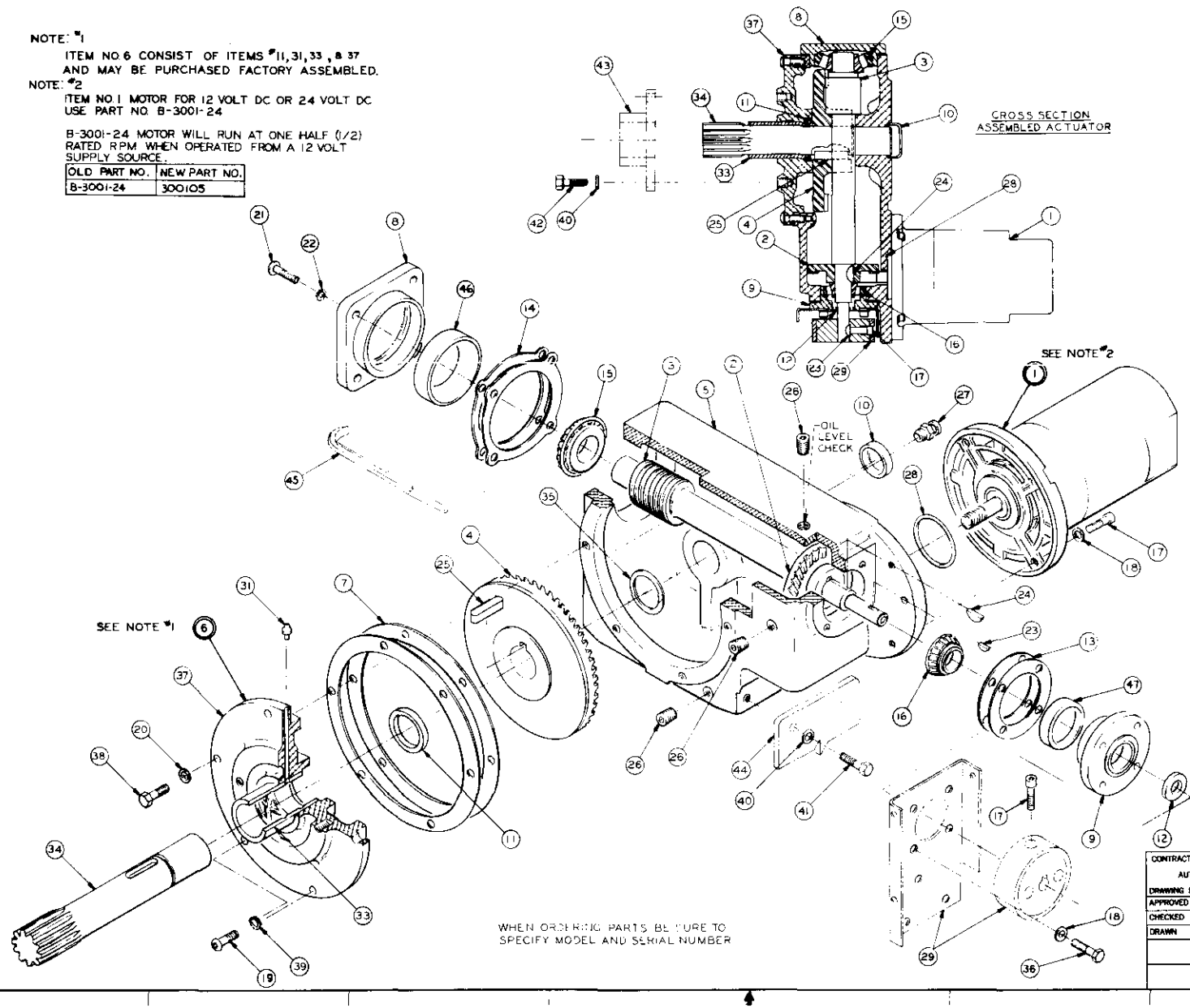
WHEN ORDERING PARTS – BE SURE TO SPECIFY MODEL AND SERIAL NUMBER

NOTE: *1
ITEM NO. 6 CONSIST OF ITEMS *11, 31, 33, & 37 AND MAY BE PURCHASED FACTORY ASSEMBLED.

NOTE: *2
ITEM NO. 1 MOTOR FOR 12 VOLT DC OR 24 VOLT DC USE PART NO. B-3001-24

B-3001-24 MOTOR WILL RUN AT ONE HALF (1/2) RATED RPM WHEN OPERATED FROM A 12 VOLT SUPPLY SOURCE.

OLD PART NO.	NEW PART NO.
B-3001-24	300105



ITEM	QUAN	PART NO	DESCRIPTION
1	1	SEE NOTE *2	R AND M MOTORS
2	1	300205	PRIMARY GEAR
3	1	315000	SHAFT
4	1	315100	SECONDARY GEAR
5	1	300503	GEAR CASE
6	1	319200	COVER ASSY. SEE NOTE *1
7	1	300706	GASKET SET
8	1	300800	BEARING CARRIER
9	1	300903	BEARING CARRIER
10	1	309600	SHAFT END COVER
11	1	310800	SEAL - OUTPUT SHAFT
12	1	301806	SEAL - SECONDARY SHAFT
13	1	301906	SHIM SET
14	1	302008	SHIM SET
15	1	302101	BEARING CONE
16	1	302201	BEARING CONE
17	5	005610	1/4-20 x 3/4 SOC HD CAPSCREW
18	8	020200	1/4 LOCKWASHER
19	2	007812	5/16-18 X1 BUTTON-SOC-HD SCR
20	4	020601	5/16 LOCKWASHER
21	4	008404	3/8-16 x1 BUTTON-SOC-HD-SCR
22	4	021402	3/8 LOCKWASHER SHAKEPROOF
23	1	040406	404 WOODRUFF KEY-HARDX(1/8 x 1/2)
24	1	060600	606 WOODRUFF KEY-(3/16x3/4)
25	1	315325	KEY 3/8 x 3/8 x 1-1/2 RD END
26	3	000209	1/4 PIPE PLUG - SOC-HD
27	1	302406	VENT FITTING
28	1	302500	SEAL
29	1	SEE ASSY	BRAKE KIT
30	2QT.	801200	MOBIL OIL *46 SAE 90
31	1	239004	ALEMITE 1728-B ZERK
32			
33	1	330061	SLEEVE BEARING
34	1	309600	PINION
35	1	400600	RETAINING RING
36	4	005606	1/4 x 7/8 NC GR 5 CAPSCREW
37	1	310600	ACTUATOR COVER
38	4	007811	5/16 X1 NC GR 5 CAPSCREW
39	2	020702	5/16 LOCKWASHER SHAKEPROOF
40	4	021100	3/8 LOCKWASHER
41	2	008701	3/8-16 x1 NC GR 5 CAPSCREW
42	2	008601	3/8-16 X 7/8 GR 5 CAPSCREW
43	—	——	QUILL (REF)
44	—	——	ANCHOR BRACKET (REF)
45	—	——	LINE UP BAR (REF)
46	1	302102	BEARING CUP
47	1	302202	BEARING CUP

CONTRACT NO.
AUTO CRANE CO.
DRAWING NO. DATE
APPROVED
CHECKED
DRAWN JBH 6-23-70

AUTO CRANE COMPANY
9260 BROKEN ARROW EXPWY., TULSA, OKLA. 74145

TURNER ACTUATOR ASSY. (8-3153)

SIZE D | CODE IDENT. NO. | DRAWING NO. M-114
SCALE 1.50(1/2) | WEIGHT | SHEET 1 OF 1

MAINTENANCE OF TURNER ACTUATOR

This actuator is used on units that provide power rotation of the boom. It is installed on the unit with the motor in a vertical position. The actuator is attached to the pedestal by support arm (43) which positions the pinion (34) in the proper relation to the turn gear mounted on the base of the unit. Two capscrews (Item 42) hold the actuator down on the support arm. Two capscrews (Item 41) attach the actuator to bracket (44) to prevent rotation of the gear case about pinion shaft (34).

1. **ACTUATOR REMOVAL**
   To remove actuator from pedestal, remove capscrews (41) and (42), disconnect electric cables from motor and lift actuator vertically upward until the pinion (34) is out of the support arm (43).

2. **OIL REMOVAL**
   The next operation will be to drain the oil from the gear case. This can be accomplished by removing one of the plugs (Item 26) located on the bottom side of the case.

3. **MOTOR REMOVAL**
   Remove 4-socket head capscrews (Item 17) using the 3/16 long handle Allen wrench furnished with the unit for this purpose. The motor can now be lifted away from the gear case. The "O" ring (Item 28) serves as an oil seal between the motor pilot and the gear case. Be sure that this "O" ring is in the recess of the gear case before reinstalling the motor.

   The motor removal can be accomplished without removing the actuator from the unit as described in Paragraph (1).

4. **GEAR COVER AND PINION REMOVAL**
   The output shaft (34), cover plate (37), secondary gear (4) and retaining ring (35) are put together as a sub-assembly, and must be assembled in this order before installing in gear case.

   Observe location of zerk fitting (31). The cover must be reinstalled in the same relation to the gear case. Remove the two buttonhead capscrews using a 3/16 Allen wrench. Observe that these buttonhead capscrews are on opposite side from the zerk fitting, and are required to provide clearance between the cover and the support arm (43). Remove the remaining hex-head capscrews (38). Remove cover from gear case.

5. **PINION REMOVAL**
   After removing cover from gear case, remove retaining ring (Item 35) from pinion shaft (34). Pull secondary gear (4) from shaft, using puller or press. Remove key (25) from shaft. Drive shaft through cover, use hammer handle or other soft object. Do not damage shaft. The seal (11) can now be removed.

6. **REMOVAL OF BUSHING**
   The bushing (33) is installed in the cover in the following manner:
   The bushing is pressed into cover, being sure that oil holes through bushing will line up with grease groove in cover. Two holes, 3/16" diameter are then drilled through the cover and bushing to accommodate the dowel pins (32). The dowel pins are then driven into place against a dummy shaft within the bushing. The outer ends of the dowel pins are then sealed with a hardening metallic cement to prevent any oil leakage around the pins. After installing the bushing, a 1-1/4" diameter reamer is run through bushing in order to remove any burrs or metal interference due to reduced inside diameter of the bushing when pressed into the cover plate.

   To remove the bushing, the 3/16" diameter dowel pins (32) can be driven through to the inside of the bushing and the bushing can be driven or pressed out of the cover. The new bushing can then be installed as described in the preceding paragraph.

   NOTE: Unless the customer has the facilities to install the bushing as outlined above, it is recommended that he order a cover plate assembly, complete with the bushing factory installed. If the used cover plate and bushing are returned, an exchange price adjustment will be made.

7. **PRIMARY GEAR AND SECONDARY PINION SHAFT REMOVAL**
   Remove brake kit. (See brake kit instructions.) Remove 4 capscrews (Item 36) which hold brake channel and bearing carrier (9) to case. Remove Item (9). **CAUTION: The shim sets (13 and 14) consist of the correct thickness for bearing and primary gear adjustment on each individual gear case.** Remove seal (12). Remove four buttonhead capscrews (Item 21) using a 7/32" Allen wrench. Remove cover (3) and shim set (14). Bearing cups (15 and 16) can be removed by using a line-up bar.

   The pinion shaft and primary gear can now be removed from the gear case extending the pinion end through the opening to the left until the primary gear end can be moved outwardly through the large side opening. Bearing (16) can best be removed by pulling primary gear (2) and bearing together – use puller or press. Bearing (15) can be removed with puller or press.

8. **REASSEMBLY**
   The foregoing constitutes disassembly of the turner actuator. To reassemble, perform the operations in reverse order.

9. **GEAR ADJUSTMENT**
   The gear adjustment should be checked if new bearings (15 and 16) or new gears (2, 3 or 4) are installed. Proceed as follows:
   Install motor (1) with bearings (15 and 16) and primary gear (2) installed on shaft (3). Insert shaft in gear case. With bearing cups installed in bearing carriers (8 and 9), install bearing carriers without shims, using capscrews (21 and 36). Adjust the shaft until gear (2) fits snugly against pinion shaft on the motor.

   Using plastic color coded shim set (14) as a feeler guage, add or remove shims until a drag occurs when inserted between carrier (8) and gear case (5). Remove carrier (8) and add two paper shims, one each on front and back sides of the plastic shim set. This

usually gives the proper clearance between primary gear and motor pinion. Check backlash between the gear and motor pinion which should be not less than .002" or more than .007". This can be approximated by placing the hand through the large opening in the gear case and determining that the gear has a very small amount of backlash.

Next remove motor and install carrier (9) with plastic shim set and two paper shims. Add or remove plastic shims until bearings fit snugly in cups with the shaft free to turn. Reinstall motor and again check the backlash.

With turner pinion shaft assembly consisting of pinion (34), cover (37) and gear (4) installed against secondary pinion (3), determine thickness of shim set required in the manner described above. Check the backlash for the full 360 degree rotation.

WHEN ORDERING PARTS, BE SURE TO SPECIFY MODEL AND SERIAL NUMBER.

If new gears or bearings are to be installed, new shim sets are recommended. Each shim set consists of:

1 – .005 Blue
1 – .0075 Clear
2 – .020 Yellow
2 – .005 Vellumoid Brown

If a shim is added to the front carrier bearing, you must take the same amount out of the rear. This moves the shaft forward toward the motor pinion shaft.

For Example: If you take twenty-thousandths (1 yellow shim) out of the rear, you must add twenty-thousandths to the front if the shaft needs to be moved forward. Reverse this procedure to move the shaft backwards, away from the motor pinion shaft.

10. **LUBRICATION**
An extreme pressure (EP-80-90) lubricant is used in the gear case (capacity 2 quarts). A chassis lubricant is recommended for the bushing. Check oil level and lubricate bushing every 40 hours of crane operation.

MODEL "B" ACTUATOR

Designed and Manufactured by AUTO CRANE for the most efficient operation.

OUTSTANDING FEATURES

1. The motor is the source of power: It is a universal type, reversible motor, available in up to 24-volt direct current and 110-volt alternating current. The direct current motor will develop 3/4 H.P. on 12-volt direct current at 5000 RPM (8000 RPM no load speed), or 1-1/2 H.P. on 24-volt direct current at 10,500 RPM (16,000 RPM no load speed). The 110 volt motor develops 1-1/4 H.P. at 10,500 RPM and will run at 16,000 RPM with no load applied.

   The primary gear pinion (1-a) is integral with the armature shaft. The armature shaft is mounted on two ball bearings (1-b). The motor is cooled by a fan (1-c) which is mounted on the armature shaft, providing forced air cooling through the motor housing.

2. The primary gear is mounted on the secondary pinion shaft.

3. The secondary pinion is integral with the shaft.

4. The secondary pinion shaft is mounted between two Timken tapered roller bearings.

5. The secondary gear is mounted on the output shaft (5-a) and completes the Helicon R gear train which provides the most efficient reduction. Ratios of 514 to 1, or 1028 to 1 overall reductions are available. (A 163 to 1 high speed reduction is also available using a secondary worm and gear.)

6. When mounted on the crane structure, outboard ball bearings (sealed for life) support the 1-1/4" diameter output shaft (5-a).

7. The gear train is mounted within an aluminum alloy case. The gears are totally enclosed and are oil bath lubricated. The motor (1) mounts directly to the gear case.

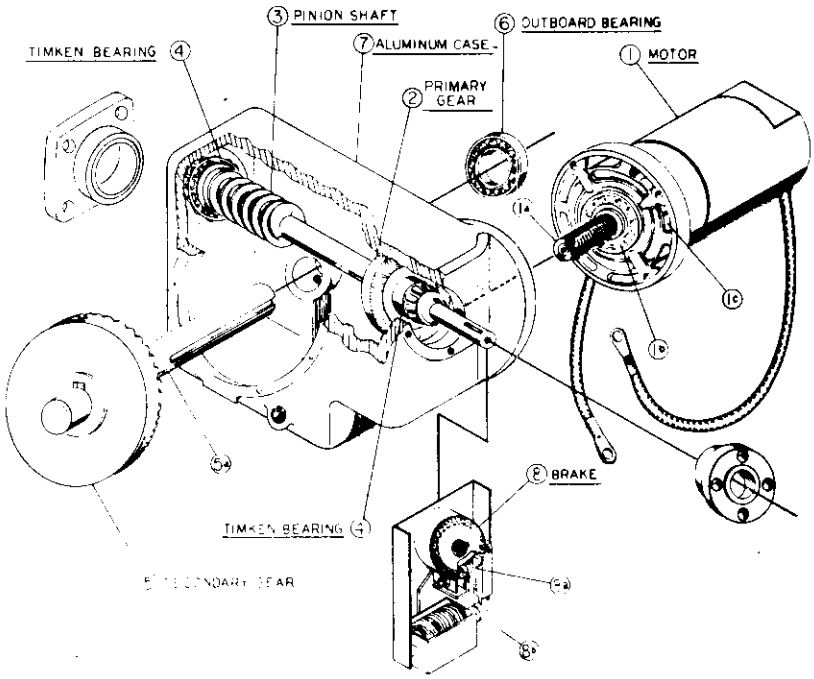
8. The secondary pinion shaft (3) extends through the gear housing and provides for attachment of the inertia and load holding brake (8). The spring (8-a) applies the brake band at all times except when the motor is energized. When the motor is energized, the solenoid (8-b) is also energized and will release the brake. Since the motor is reversible, the load is controlled during raising or lowering under power. When the motor and solenoid are de-energized, the brake will hold the load until the motor and solenoid are again energized.

9. Refer to Dwg. M-102 for maintenance instructions for the motor brushes.

SEE NEXT PAGE FOR ILLUSTRATION.

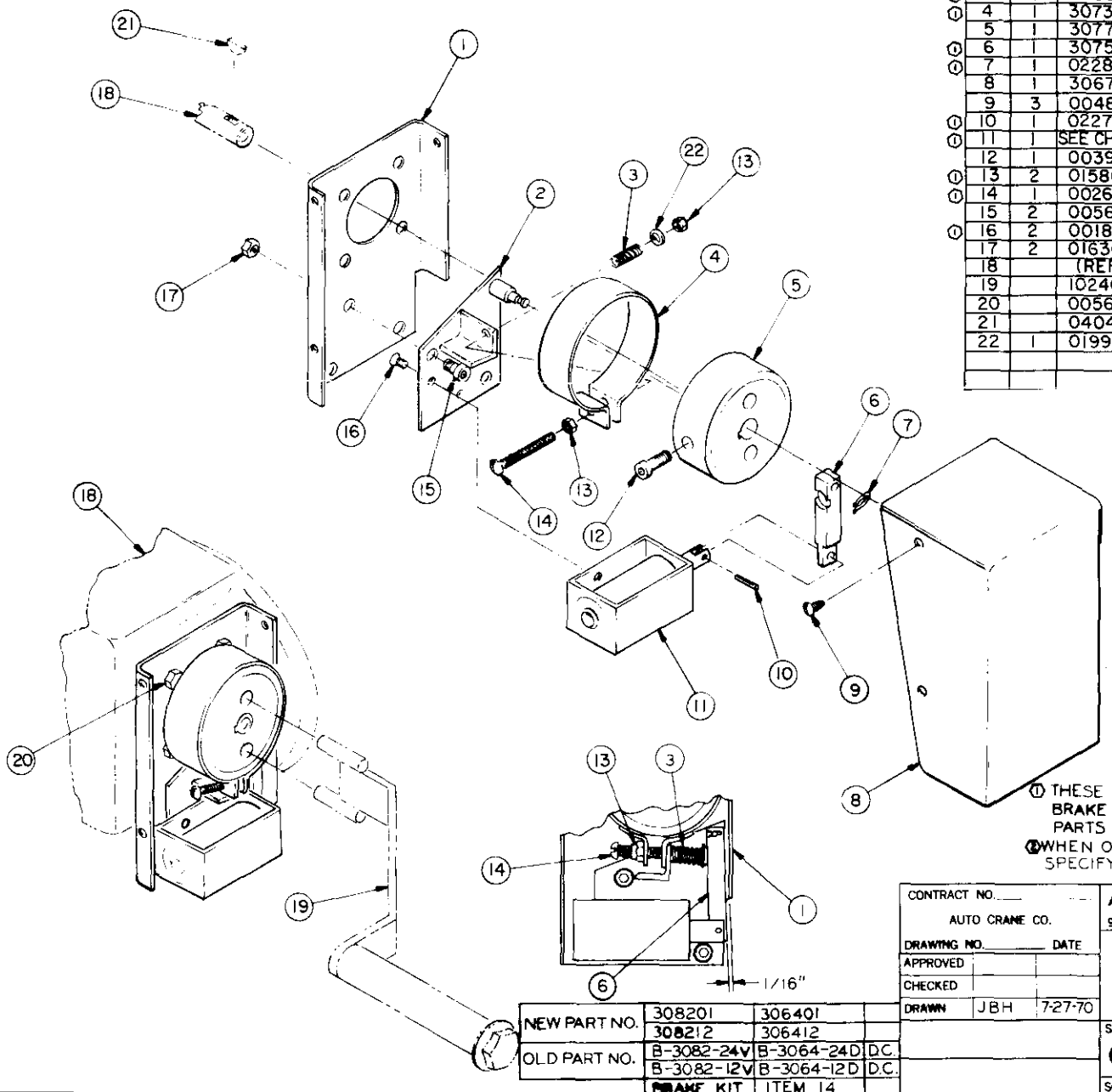
AUTO CRANE

Model "B" Actuator



PERFORMANCE CHARACTERISTICS						
AMPERAGE DRAW				CAPACITY USING TRAVELING BLOCK		
24 VOLT DC		110 VOLT AC		LIFTING WEIGHT	LIFT SPEED	No. OF LINES
START	RUN	START	RUN	IN POUNDS	IN FT. PER MIN	TO BLOCK
45	*40	10	7	NO LOAD	15	2
84	70	12	10	2000	9.125	2
118	105	17	15	3000	6	2
94	80	15	13	4000	4.56	3
107	93	18	16	5000	3.65	3
12 VOLT DC				LIFTING WEIGHT	LIFT SPEED	NO. OF LINES
START	RUN			IN POUNDS	IN FT. PER MIN	TO BLOCK
45	40			NO LOAD	7.5	2
84	70			2000	4.5	2

* NOTE: AMPERAGE DRAW WHILE LOWERING A 2000# LOAD IS 22 AMPS



ITEM	QTY	PART NO.	DESCRIPTION
1	1	307201	CHANNEL
① 2	1	307900	BRACKET
① 3	1	308000	COMPRESSION SPRING
① 4	1	307300	BRAKE BAND
5	1	307701	BRAKE HUB ASSEMBLY
① 6	1	307500	LEVER
① 7	1	022800	CARBURETOR CLIP, 1/8"
8	1	306700	GUARD, ACTUATOR BRAKE
9	3	004800	SCREW, #10 X 3/8 SELF TAP PAN HD.
① 10	1	022700	SELOK PIN 3/32 X 1/2
① 11	1	SEE CHART	SOLENOID
12	1	003901	SCREW, 1/4-20 X 3/4
① 13	2	015800	NUT, #10-32 SELF-LOCKING
① 14	1	002603	SCREW, #10-32 X 2 RD. HD.
15	2	005609	SCREW, 1/4-20 X 5/8
① 16	2	001800	SCREW, #10-32 X 1/4 FLAT HD.
17	2	016300	NUT, 1/4-20 SELF-LOCKING
18		(REF.)	ACTUATOR ASSEMBLY
19		102400	HAND CRANK (REF.)
20		005606	SCREW, 1/4-20 X 7/8 HEX. HD.(REF.)
21		040406	WOODRUFF KEY #404 (REF.)
22	1	019900	#10 FLAT WASHER CP

① THESE ITEMS INCLUDED IN REPLACEMENT BRAKE KIT 308201-12V OR 24V. INDIVIDUAL PARTS MAY BE ORDERED SEPARATELY IF DESIRED.

②WHEN ORDERING PARTS BE SURE TO SPECIFY MODEL AND SERIAL NUMBER.

1/16"

NEW PART NO.	308201	306401	
	308212	306412	
OLD PART NO.	B-3082-24V	B-3064-24D	D.C.
	B-3082-12V	B-3064-12D	D.C.
	BRAKE KIT	ITEM 14	

CONTRACT NO._____
AUTO CRANE CO.
DRAWING NO._____ DATE
APPROVED
CHECKED
DRAWN JBH 7-27-70

AUTO CRANE COMPANY
9260 BROKEN ARROW EXPWY., TULSA, OKLA. 74145

BRAKE ASSEMBLY 12 V.
MAINTENANCE DRAWING

SIZE C | CODE IDENT. NO. | DRAWING NO. M-118
SCALE NONE | WEIGHT | SHEET OF

MAINTENANCE OF 12/24 VOLT BRAKE KIT

1. **FUNCTION**
A brake is incorporated on each actuator. The brake was designed to perform two functions. One of the functions is load holding after the pendant switch is neutralized. The other function is to prevent excessive coasting after either pendant switch release or the boom travel limit switch is triggered.

2. **TROUBLE SHOOTING:**

	Problem	Cause	Repair
A.	Brake fails to hold load or stop hub effectively	Damaged or out of adjustment	Replace damaged parts. If necessary, adjust per instructions.
B.	Brake hub turns on shaft	Woodruff key sheared in actuator shaft	Replace key
C.	No electrical current to brake	Broken wires or damaged terminals	Replace wiring to brake
D.	Solenoid inoperative	Dirty contact points at solenoid	Remove brake wires from solenoid terminals, clean and reattach.
		Solenoid burned out	Replace with new solenoid.

3. **ADJUSTMENT:**
A view of proper adjustment of the brake is shown on illustration and inside brake guard, Item (8). The sequence is repeated here in the event the instructions in the cover are not available.

A. Remove brake guard (Item 8) by removing three # 10 pan HD screws.
B. Inspect brake assembly to insure that no foreign objects will impair a proper setting of the brake.
C. Hold the self-locking nut (Item 13) with a proper wrench. With a screwdriver, turn the adjusting screw (Item 14) until a clearance of 1/16" is obtained between brake lever (Item 6) and brake channel (Item 1).
D. Observe brake operation by operating the proper toggle on pendant. Make sure the brake releases the instant it is pushed. If not, increase brake lever clearance slightly until this occurs.
E. Replace brake guard.

4. **DISASSEMBLY:**
Disassembly of the brake can be accomplished without removing actuator from unit. However, if disassembly is to include brake channel (Item 1) and brake hub (Item 5), the oil should be drained from actuator.

A. Removal of Brake Assembly:
(1) Remove brake guard (Item 8) by removing three #10 pan HD screws (Item 9).
(2) Remove the two brake wires to solenoid (Item 11).
(3) Release brake assembly from brake system by removing two 1/4-20 Allen head capscrews (Item 18).
(4) Located on backside of brake assembly bracket (Item 2) are two #10 flat HD screws (Item 16) which must be removed to replace brake solenoid (Item 11).
(5) Remove small carburetor clip from brake lever anchor pin, compress brake band spring (Item 4) and lift off brake lever (Item 6).
(6) Hold acorn nut (Item 13) and turn adjusting screw (Item 16) until separation. Then slide off washer (Item 4) and spring (Item 3).
(7) To remove solenoid plunger from brake lever (Item 6) drive out pin (Item 10).

B. The remaining two items are attached to the actuator assembly and care should be taken during their removal to avoid damage to actuator.
(1) Remove 1/4-20 Allen HD bolt (15). The brake hub (Item 5) is a press fit on actuator shaft; therefore, a small gear puller will be required for removal. Check Woodruff key (Item 21) for damage.
(2) The brake channel (Item 1) is held in place by four 1/4-20 Hex HD capscrews that also hold bearing carrier for actuator shaft to actuator housing.

5. **REASSEMBLY:**
Assemble in reverse sequence to above.

A. When brake hub has been removed, the proper relocation during assembly is approximately 1/32" past being flush with end of shaft.
B. Do not fail to place a small amount of grease on the anchor pin and in the counter bore of the brake lever.
C. Adjust brake per instructions and install brake guard (Item 11).

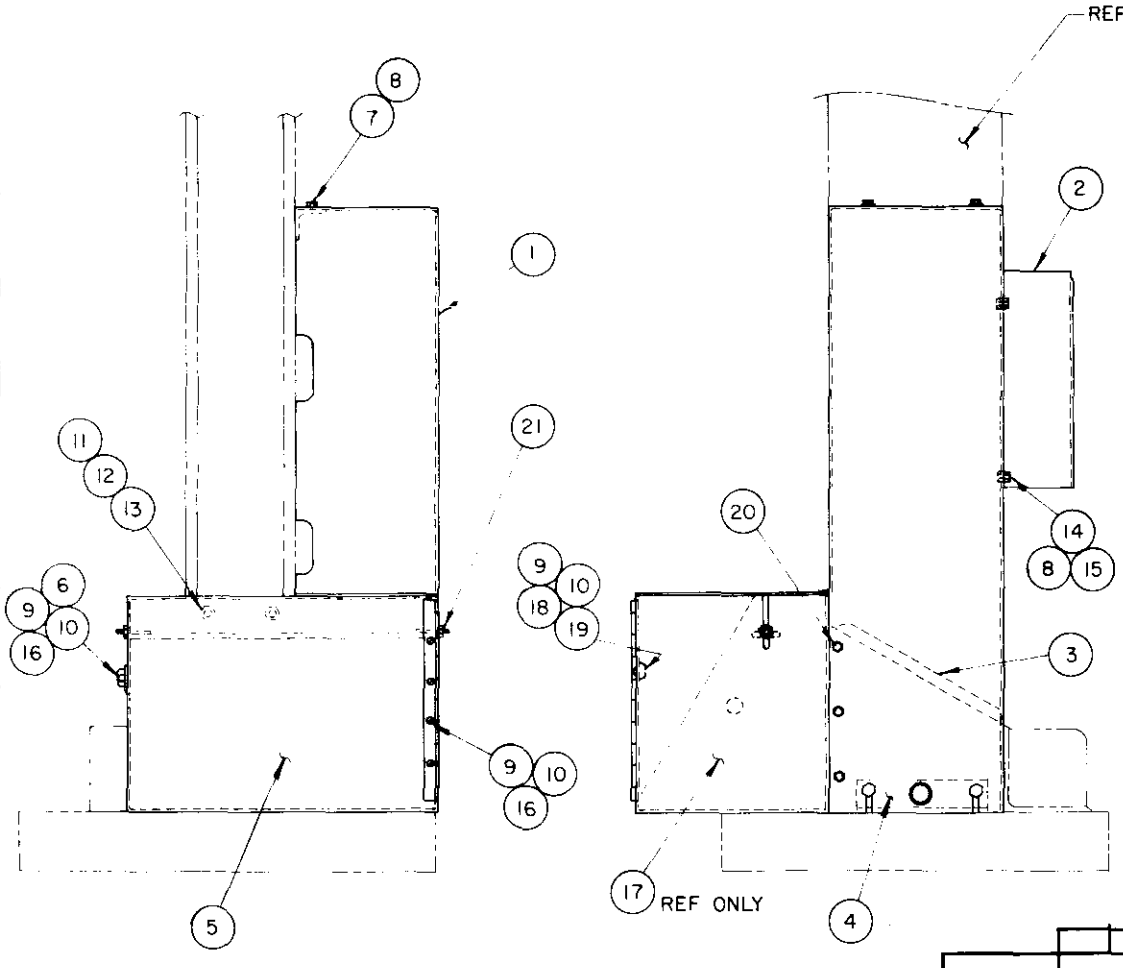
6. **EMERGENCY MANUAL OPERATION:**
In case of power failure, remove three #10x3/8 screws (Item 9) holding the brake cover (Item 8). Insert hand crank (Item 19) into the two holes in the brake hub. Release the brake by manually actuating brake solenoid with thumb or finger while turning crank. This will permit positioning the crane in stowed position until power can be restored.

BRAKE REPAIR
Brake Hub Assembly (Item 7) is subject to normal wear. As a result, the brake pad surface will become glazed and smooth over a period of time, depending upon usage of the crane and cause ineffective braking and increased coasting after the pendant switch is released.

The easiest way to repair the brake pad is as follows:
1. Remove brake guard (Item 11) by removing three #10 pan head screws (Item 12).
2. Remove band and solenoid assembly by removing two 1/2-20 soc. head capscrews (Item 18).
3. Hold the solenoid and press the lever (Item 8) keeping the lever pressed to release the brake band (Item 6). Carefully pull the whole assembly away from the hub.
4. Brake Hub Assembly (Item 7) will now be visible for inspection. If the surface of pad is found to be glazed, hold a Vixon file or Emery cloth against the pad (braking surface) and run the particular motor by engaging pendant switch.
5. After the entire surface of the pad has been uniformly roughened, assemble in reverse sequence to above.

FIXTURE NO	FINISH NO

CHG LTR	REVISIONS DESCRIPTION	DATE	APP'D



ITEM	QTY	D/S	PART NO.	DESCRIPTION
21	1		305604	BATTERY HOLD
20	3		002605	SCREW, #12 X 1/2" HEX. HD.
19	2		019900	FLATWASHER #10
18	2		659500	BUMPER, RUBBER
17	1		305602	BATTERY BOX (REF.)
16	9		019800	LOCKWASHER #10
15	2		015900	NUT, 1/4 NC CP G5
14	2		005901	CAPSCREW, HEX. 1/4 NC X 1/2 G5
13	2		021100	LOCKWASHER, 3/8
12	2		017102	NUT, 3/8 NF
11	2		008800	CAPSCREW, HEX 3/8 NF X 1
10	9		015600	NUT, #10-32
9	9		001900	MACHINE SCREW, #10-32 X 3/8
8	8		020200	LOCKWASHER, 1/4 SPLK
7	4		005405	CAPSCREW, HEX 1/4 NC X 3/8
6	1		310400	LATCH
5	1		305603	BATTERY COVER
4	1		306201	ANGLE CLIP
3	1		305700	GUARD QUILL CENTER
2	1		634000	PENDANT BRACKET
1	1		305600	RELAY GUARD

LIST OF MATERIAL

UNLESS OTHERWISE NOTED ALL DIMENSIONS ARE IN INCHES
TOLERANCES UNLESS OTHERWISE SPECIFIED
ANGLES ± 1/2° | XX ± .40
FRACTIONAL ± 1/16 | .XXX ± .010
REMOVE ALL BURRS AND SHARP EDGES. DO NOT SCALE THIS DRAWING
TOLERANCES NOT SHOWN ABOVE ARE PER ANSI Y14.5 1973

NEXT ASS'Y

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DATE 1/14/81
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DATE
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DATE

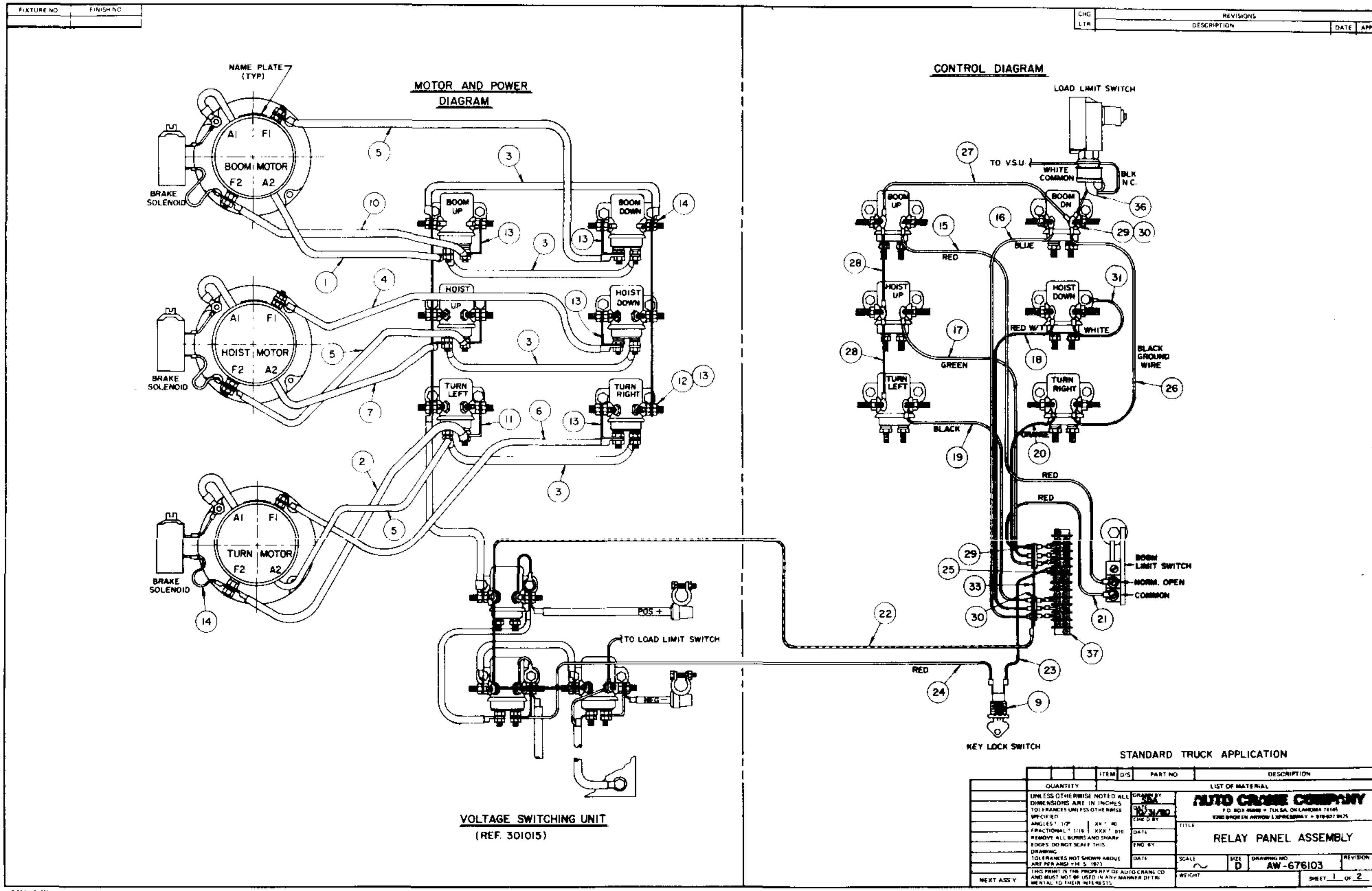
AUTO CRANE COMPANY
P.O. BOX 45548 • TULSA, OKLAHOMA 74145
9260 BROKEN ARROW EXPRESSWAY • 918-627-9475

TITLE
GUARD ASSEMBLY 24 V.

SCALE	SIZE	DRAWING NO.	REVISION
~	C	AW-306000-1	

WEIGHT

SHEET 1 OF 1


FIXTURE NO
FINISH NO
CHG LTR
REVISIONS
DESCRIPTION
DATE
APP'D
MOTOR AND POWER DIAGRAM
NAME PLATE (TYP)
A1 F1
BOOM MOTOR
F2 A2
BRAKE SOLENOID
BOOM UP
BOOM DOWN
HOIST UP
HOIST DOWN
HOIST MOTOR
TURN LEFT
TURN RIGHT
TURN MOTOR
POS +
NEG
TO LOAD LIMIT SWITCH
VOLTAGE SWITCHING UNIT
(REF. 301015)
CONTROL DIAGRAM
LOAD LIMIT SWITCH
TO V.S.U.
WHITE COMMON
BLK N.C.
BOOM DN
RED
BLUE
RED W/T
WHITE
GREEN
BLACK GROUND WIRE
BLACK
ORANGE
BOOM LIMIT SWITCH
NORM. OPEN
COMMON
KEY LOCK SWITCH
STANDARD TRUCK APPLICATION
ITEM
D/S
PART NO
DESCRIPTION
QUANTITY
LIST OF MATERIAL
UNLESS OTHERWISE NOTED ALL DIMENSIONS ARE IN INCHES
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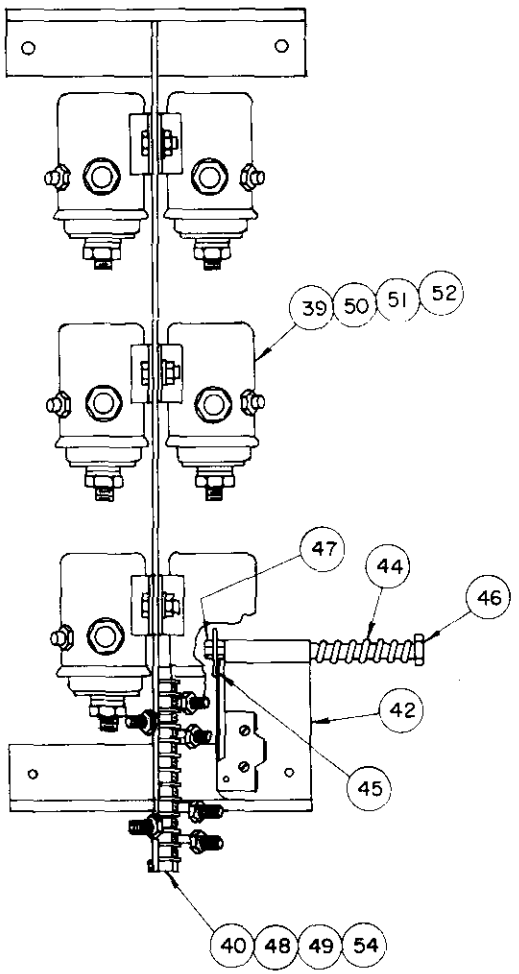
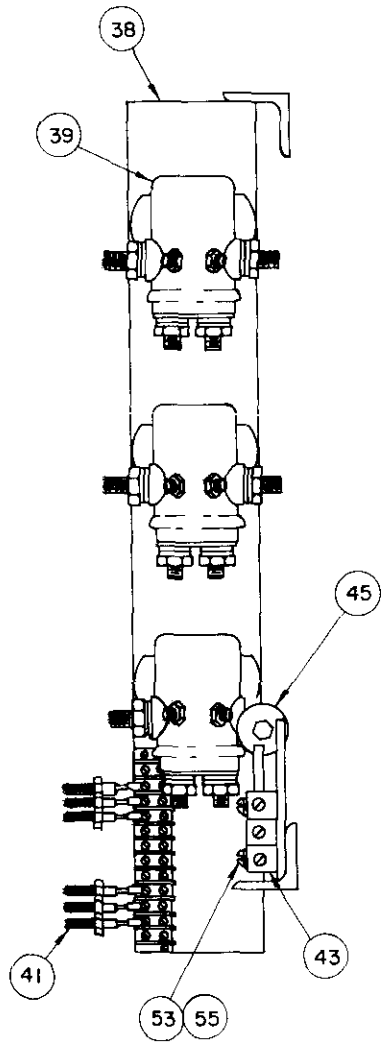
DATE
AUTO CRANE COMPANY
TULSA, OKLAHOMA
TITLE
RELAY PANEL ASSEMBLY
SCALE
SIZE
D
DRAWING NO
AW-676103
REVISION
WEIGHT
SHEET 1 OF 2

FIXTURE NO.	FINISH NO.

CHG LTR	REVISIONS DESCRIPTION	DATE	APP'D





ITEM	D/S	PART NO.	DESCRIPTION	QUANTITY
			LIST OF MATERIAL	

UNLESS OTHERWISE NOTED ALL DIMENSIONS ARE IN INCHES.
TOLERANCES UNLESS OTHERWISE SPECIFIED.
ANGLES ± 1/2° | .XX ± .40
FRACTIONAL ± 1/16 | .XXX ± .010
REMOVE ALL BURRS AND SHARP EDGES. DO NOT SCALE THIS DRAWING.
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DATE
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DATE

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TITLE
RELAY PANEL ASSEMBLY

SCALE	SIZE	DRAWING NO.	REVISION
~	C	AW-676103	

WEIGHT

SHEET 2 OF 2

PARTS LIST – RELAY PANEL ASSEMBLY – 5000-676103

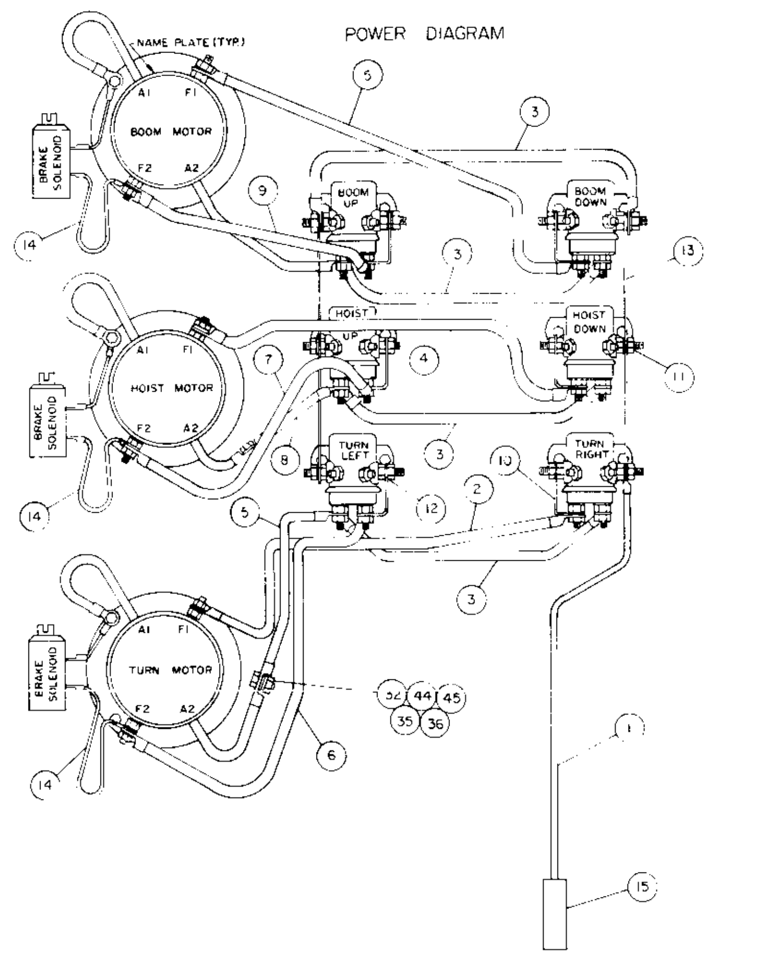
ITEM	QTY.	PART NO.	DESCRIPTION
1	1	600316	CONDUCTOR
2	1	622321	CONDUCTOR
3	4	600304	CONDUCTOR
4	1	622326	CONDUCTOR
5	3	622316	CONDUCTOR
6	1	622331	CONDUCTOR
7	1	622302	CONDUCTOR
8	1	622310	CONDUCTOR
9	1	640700	SWITCH, PENDANT LOCK
10	2	658500	BUS BAR
11	6	658300	BUS BAR
12	24	016800	5/16 N.F. CAD. PL. HALF NUT
13	24	020700	5/16 LOCKWASHER
14	3	660000	BRAKE LEAD ASSEMBLY
15	1	660226	CONDUCTOR (RED)
16	1	660223	CONDUCTOR (BLUE)
17	1	660229	CONDUCTOR (GREEN)
18	1	660218	CONDUCTOR (RD/T)
19	1	660206	CONDUCTOR (BLACK)
20	1	660230	CONDUCTOR (ORANGE)
21	1	660310	CONDUCTOR (RED)
22	1	660406	CONDUCTOR (BLACK W/T)
23	1	660312	CONDUCTOR (WHITE)
24	1	660506	CONDUCTOR (RED)
25	1	636600	JUMPER BAR
26	1	660415	CONDUCTOR (BLACK)
27	1	660405	CONDUCTOR (BLACK)
28	2	660408	CONDUCTOR (BLACK)
29	1	015600	#10-32 CAD. PL. HEX NUT
30	1	020001	#10 CAD. PL. LOCKWASHER
31	1	659906	CONDUCTOR (WHITE)
32	1	663100	CABLE TIE
33	1	657400	DIODE CONNECTOR
34	13	663200	CABLE TIE
35	3	663300	CABLE, TIE MOUNT
36	1	655604	CONDUCTOR
37	1	635200	TERMINAL STRIP (12 PT.)
38	1	305401	PANEL BRACKET MEMBER
39	6	200182	RELAY 12-V.
40	1	635200	TERMINAL BOARD
41	6	647501	DIODE
42	1	654000	BOOM LIMIT BRACKET
43	1	654100	SWITCH
44	1	301401	SPRING
45	1	020900	5/16 FENDER WASHER 1¼ O.D.
46	1	007808	5/16-18 NC x 6" HEX CAPSCREW
47	2	016500	5/16-18 NC HEX NUT
48	2	000602	#6-32 NC x 1 RD. HD. MACHINE SCREW
49	2	019600	#6 SPLIT LOCKWASHER
50	6	005901	SCREW, HEX HD. ¼-20 x ½"

PARTS LIST – RELAY PANEL ASSEMBLY – 5000 - 676103

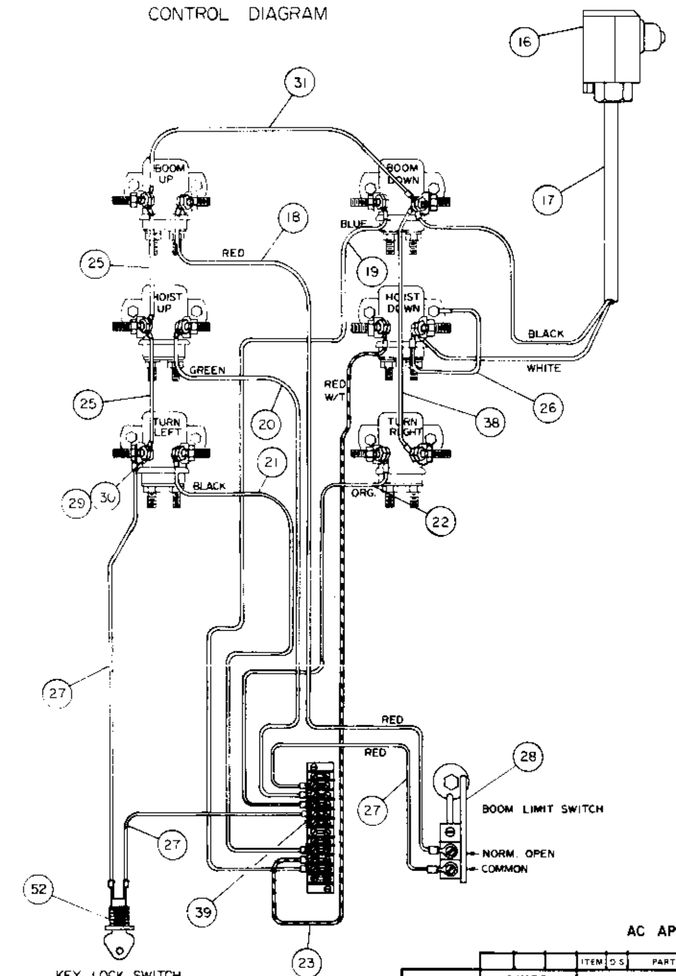
ITEM	QTY.	PART NO.	DESCRIPTION
51	6	015900	NUT, HX. HD. ¼-20 x ½''
52	10	020200	WASHER, SPLIT LOCK ¼
53	2	000404	SCREW, RD. SLT. HD. #6-32 x 5/8
54	2	015400	NUT, HEX #6-32
55	2	019600	WASHER, SPLIT LOCK #6

FIXTURE NO | FINISH NO

POWER DIAGRAM



CONTROL DIAGRAM



CHG LTR	REVISIONS DESCRIPTION	DATE	APP'D

AC APPLICATIONS

QUANTITY	ITEM	D.S.	PART NO	DESCRIPTION
				LIST OF MATERIAL

UNLESS OTHERWISE NOTED ALL DIMENSIONS ARE IN INCHES. TOLERANCES UNLESS OTHERWISE SPECIFIED: ANGLES ± 1/2°; XX ± .40; FRACTIONAL ± 1/16; XXX ± .010. REMOVE ALL BURRS AND SHARP EDGES. DO NOT SCALE THIS DRAWING. TOLERANCES NOT SHOWN ABOVE ARE PER ANSI Y14.5 1973.

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9260 BROKEN ARROW EXPRESSWAY • 918-627-9475

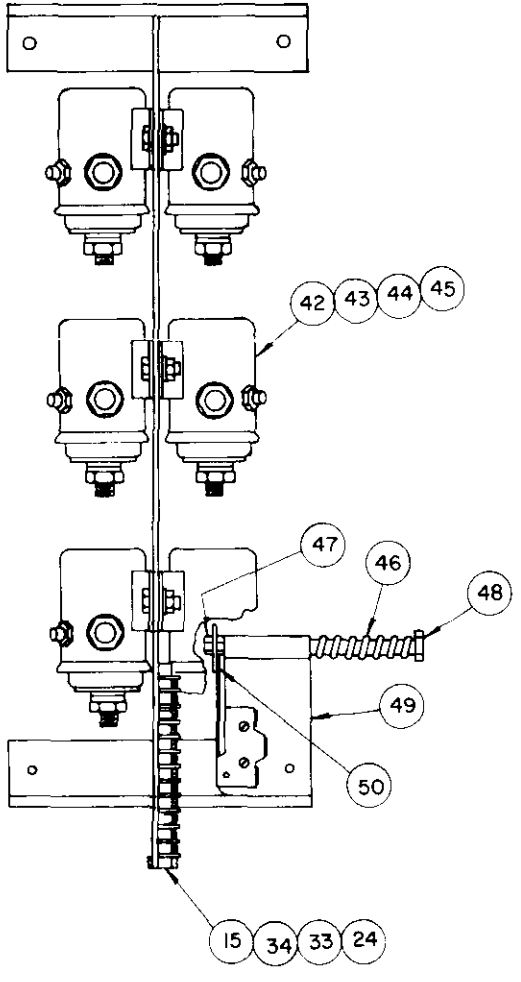
TITLE: WIRING DIAGRAM 220/24 VOLT
110/24 VOLT

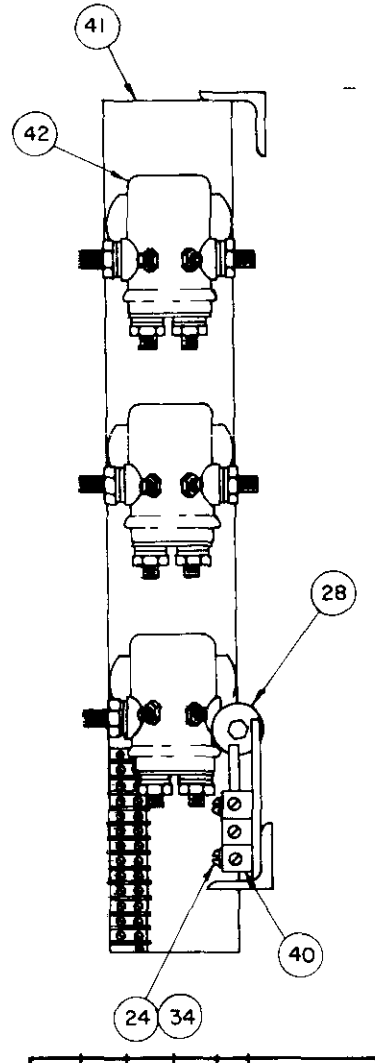
SCALE: ~ | SIZE: D | DRAWING NO: AW-699012 | REVISION

WEIGHT | SHEET 1 OF 2

FIXTURE NO	FINISH NO.

CHG LTR	REVISIONS DESCRIPTION	DATE	APP'D





ITEM	D/S	PART NO.	DESCRIPTION	QUANTITY
			LIST OF MATERIAL	

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TOLERANCES UNLESS OTHERWISE SPECIFIED
ANGLES ± 1/2° | XX ± .40
FRACTIONAL ± 1/16 | XXX ± .010
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DATE

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9260 BROKEN ARROW EXPRESSWAY • 918 627-9475

TITLE
RELAY PANEL ASSEMBLY

SCALE	SIZE	DRAWING NO.	REVISION
~	C	AW-699012	

WEIGHT

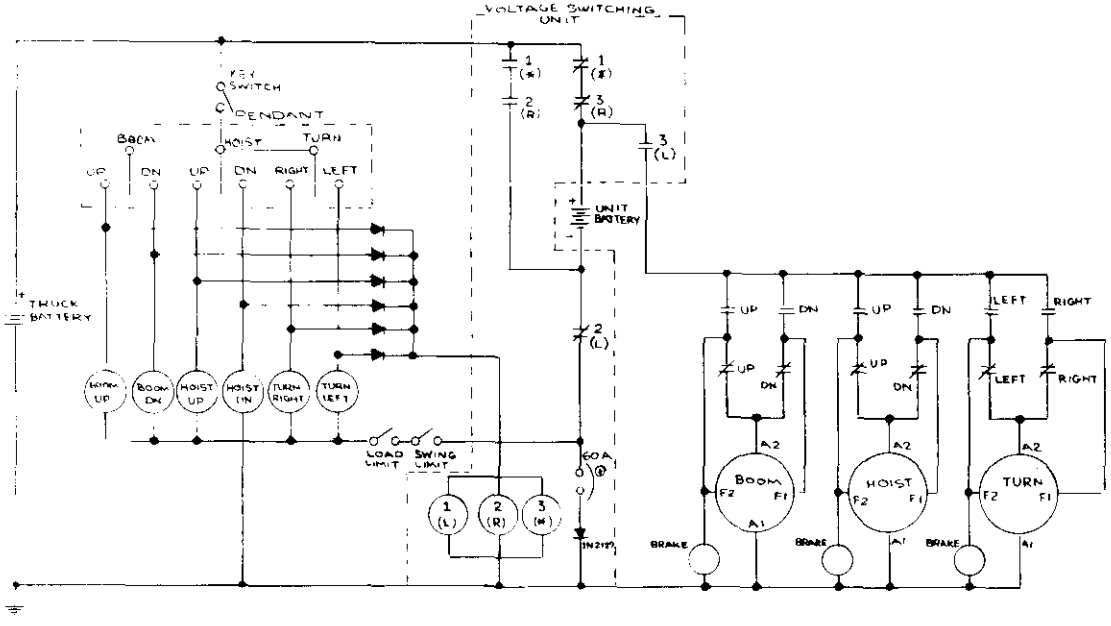
SHEET 2 OF 2

PARTS LIST – 5000 – 699012

ITEM	QTY.	PART NO.	DESCRIPTION
1	1	614230	CONDUCTOR
2	1	622331	CONDUCTOR
3	4	600304	CONDUCTOR
4	1	622321	CONDUCTOR
5	2	622318	CONDUCTOR
6	1	622326	CONDUCTOR
7	1	622316	CONDUCTOR
8	1	622302	CONDUCTOR
9	1	622310	CONDUCTOR
10	6	658300	CONDUCTOR
11	28	016800	5/16 NF CAD. PL. HALF NUT
12	28	020700	5/16 INTERNAL SHAKEPROOF LOCKWASHER
13	2	658500	RELAY CONDUCTOR
14	3	660000	BRAKE LEAD ASSY.
15	1	635200	TERMINAL BOARD
16	1	646900	SWITCH
17	1	665750	CONDUCTOR ASSY.
18	1	660226	CONDUCTOR
19	1	660223	CONDUCTOR
20	1	660217	CONDUCTOR
21	1	660215	CONDUCTOR
22	1	660213	CONDUCTOR
23	1	660219	CONDUCTOR
24	4	019600	#6 SPLIT LOCKWASHER
25	2	660410	CONDUCTOR
26	1	659904	CONDUCTOR
27	3	660310	CONDUCTOR
28	1	659700	BOOM LIMIT SWITCH
29	16	015600	#10-32 CAD. PL. HEX NUT
30	16	020001	#10 CAD. PL. LOCKWASHER
31	1	660407	CONDUCTOR (BLACK)
32	2	005901	¼ x ½ CAD. PL. CAPSCREW
33	2	015400	NUT, HEX #6-32
34	4	000404	SCREW, RD. SLOT HD. #6-32 x 5/8
35	4½"	800589	ELECT. INSULATION PUTTY
36	90"	800580	BLK. VINYL ELECT. TAPE
37	17	634401	CABLE, TIE (MEDIUM)
38	1	660417	CONDUCTOR (BLK W/T)
39	1	636600	JUMPER BAR
40	1	654100	SWITCH
41	1	305401	PANEL, BRACKET
42	6	200182	RELAY, 12-V.
43	6	005401	SCREW, HEX HD. ¼-20 x 5/8"
44	8	015900	NUT, HX. HD. ¼-20 x ½"
45	8	020200	WASHER, SPLIT LOCK ¼
46	1	301401	SPRING
47	2	016500	5/16-18 NC HEX NUT
48	1	007808	5/16-18 NC x 6" HEX CAPSCREW
49	1	654000	BOOM LIMIT BRACKET
50	1	020900	5/16 FENDER WASHER 1¼ O.D.
51	1	640700	SWITCH, PENDANT LOCK

FIXTURE NO	FINISH NO

CHG LTR	REVISIONS DESCRIPTION	DATE	APPD



NOTES: ON VOLTAGE SWITCHING UNIT, NUMBERS REFER TO REVISED VERSION WITH THREE RELAYS. LETTERS IN PARENTHESES REFER TO OLDER VERSION WITH TWO RELAYS. * INDICATES NOT USED IN OLD VERSION. ⊕ INDICATES NOT USED IN REVISED VERSION

ITEM	D/S	PART NO	DESCRIPTION	QUANTITY
			LIST OF MATERIAL	

UNLESS OTHERWISE NOTED ALL DIMENSIONS ARE IN INCHES
TOLERANCES UNLESS OTHERWISE SPECIFIED
ANGLES ± 1° | XX ± .02
FRACTIONAL ± 1/16 | XXX ± .010
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CHK'D BY — DATE
ENG. BY — DATE

NEXT ASS'Y

AUTO CRANE COMPANY
P.O. BOX 45548 • TULSA, OKLAHOMA 74145
9780 BROKEN ARROW EXPRESSWAY • 918/627-8415

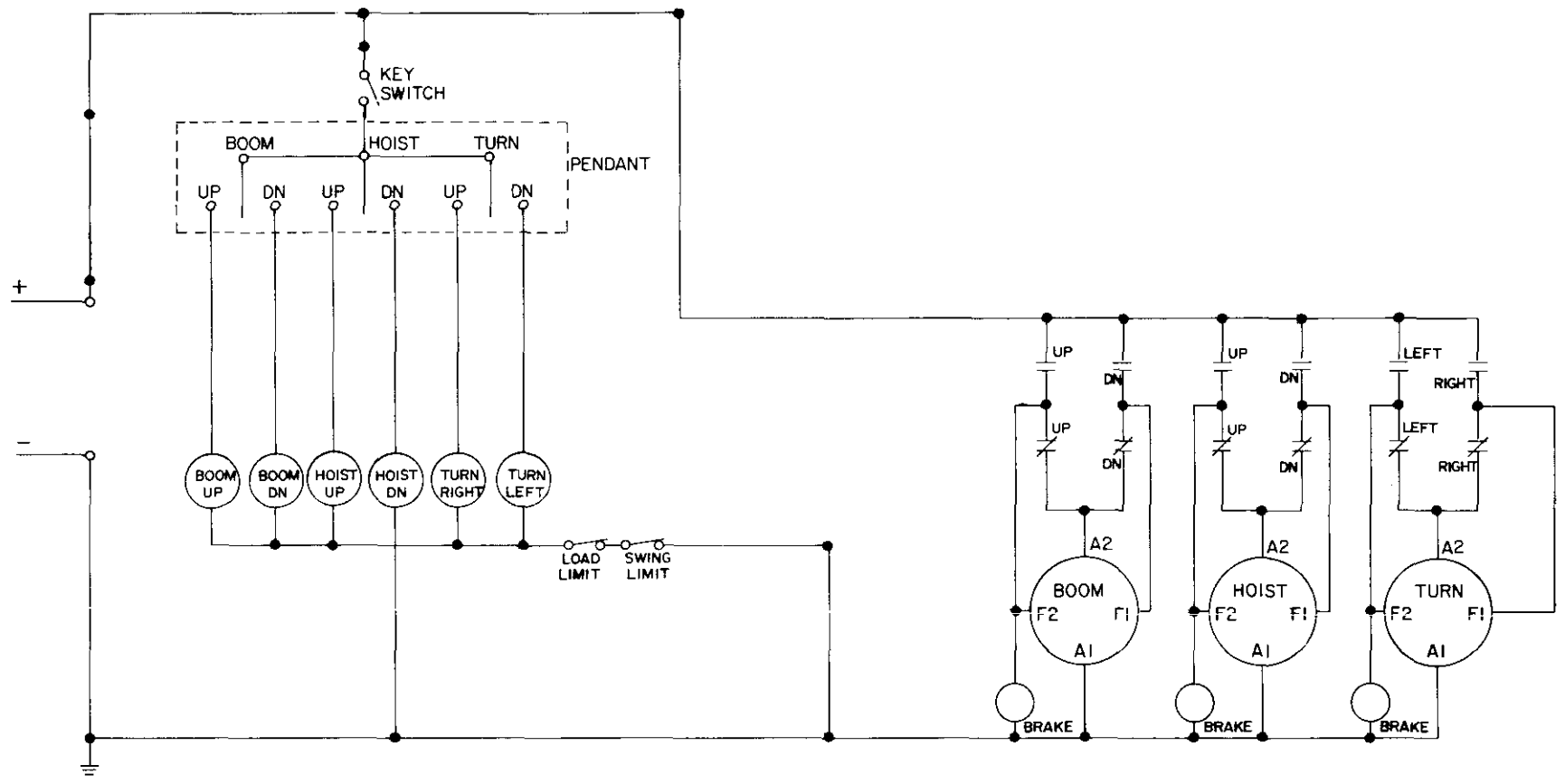
TITLE
ELECTRICAL SCHEMATIC
12/24 VOLT

SCALE	SIZE	DRAWING NO	REVISION
~	D	SD-301013	

WEIGHT — SHEET 1 OF 1

FIXTURE NO	FINISH NO.

CHG LTR	REVISIONS DESCRIPTION	DATE	APP'D



ITEM	D/S	PART NO	DESCRIPTION
QUANTITY		LIST OF MATERIAL	

UNLESS OTHERWISE NOTED ALL DIMENSIONS ARE IN INCHES.
TOLERANCES UNLESS OTHERWISE SPECIFIED.
ANGLES ± 1/2° | .XX ± .40
FRACTIONAL ± 1/16 | XXX ± .010
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DATE 1/9/81
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DATE
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DATE

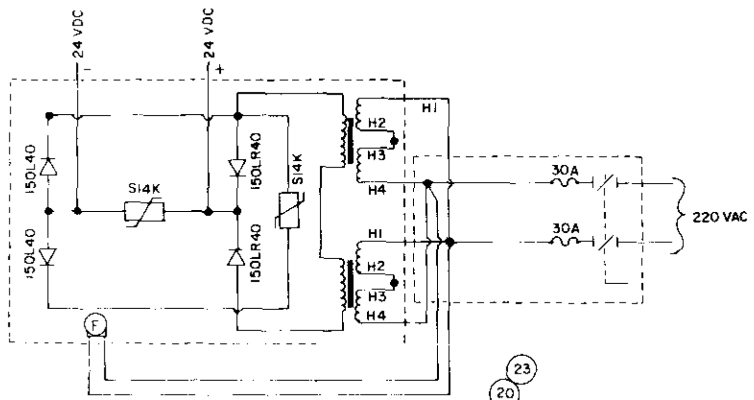
AUTO CRANE COMPANY
P O BOX 45548 • TULSA, OKLAHOMA 74145
9260 BROKEN ARROW EXPRESSWAY • 918 627 9475

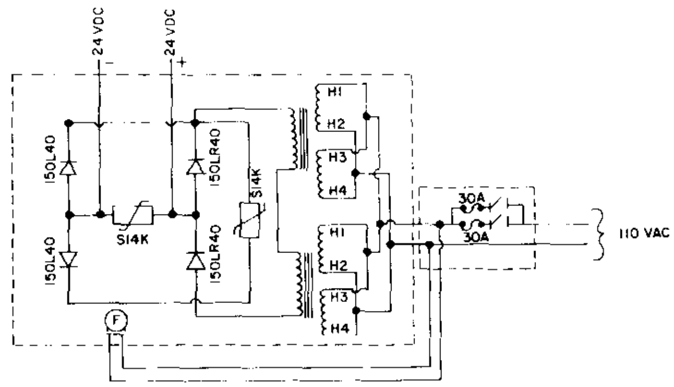
TITLE
ELECTRICAL SCHEMATIC
110/220 VOLT

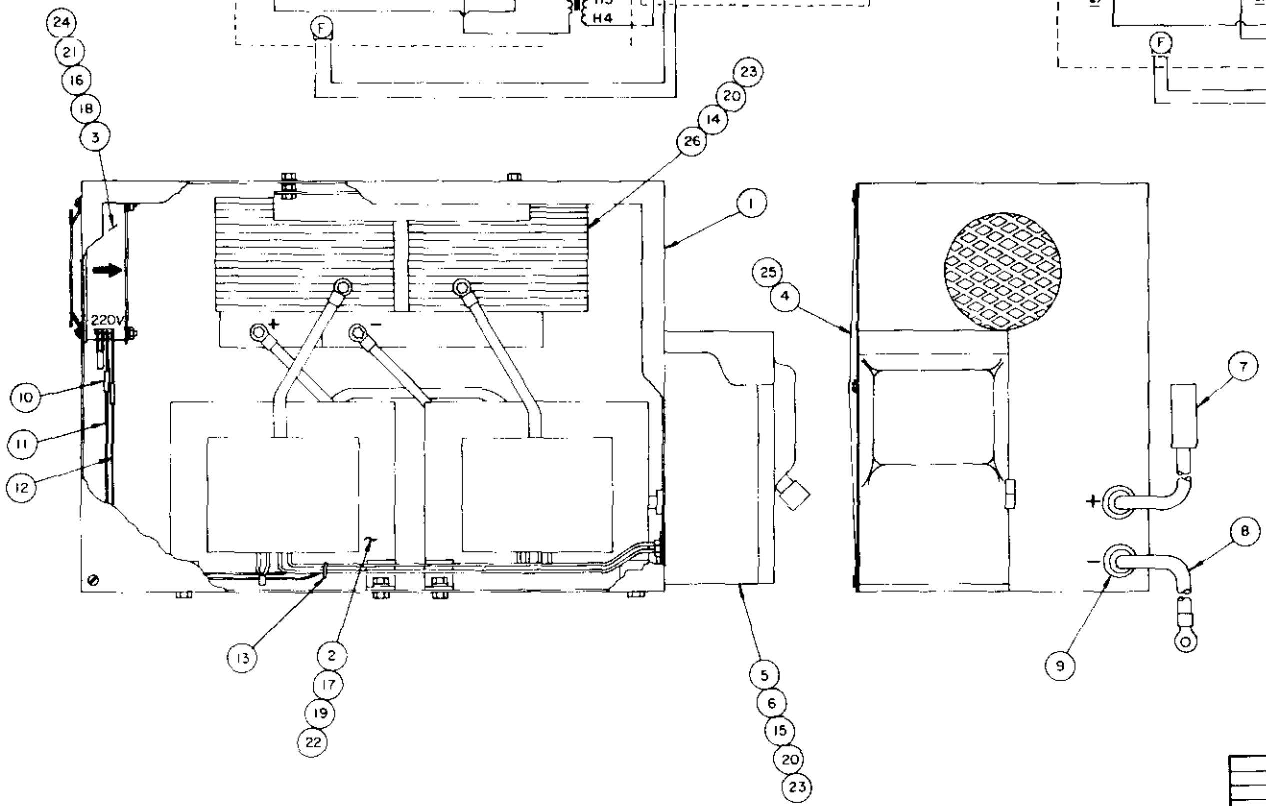
SCALE	SIZE	DRAWING NO	REVISION
~	C	AW-301013	

WEIGHT

SHEET 1 OF 1







ITEM	QTY	D S	PART NO	DESCRIPTION
26	1		699023	RECTIFIER - 24 VOLT
25	10		002006	SCREW, HX SL HD. #10 ST-A
24	4		015400	NUT, HEX #6 NCCP
23	11		015900	NUT, HEX 1/4 NCCP
22	8		016500	NUT, HEX 5/16 NCCP
21	4		019600	WASHER, SPLK #6 CP
20	11		020200	WASHER, SPLK 1/4 CP
19	8		020600	WASHER, SPLK 5/16 CP
18	1		699022	GUARD, FINGER
17	8		007402	SCREW, HX HD 5/16 NCG5 X 5/8
16	4		000606	SCREW, RD HD #6 NCCP X 2
15	3		005901	SCREW, HX HD 1/4 NCCP G5 X 1/2
14	4		005500	SCREW, HX HD 1/4 NCCP G5 X 3/4
13	6		663200	TIE, CABLE
12	1		800591-003	WIRE, ELEC 16 GA BRN
11	1		800590-010	WIRE, ELEC 16 GA BLK
10	3		000302	SPLICE, 2RB 14
9	3		619201	GROMMET, SNAP-IN
8	1		330006	CONDUCTOR
7	1		330007	POWER CABLE
6	2		699014	FUSE, CARTRIDGE - 30A
5	1		699013	BOX, FUSE
4	1		699020	COVER, VOLTAGE CONVERTER
3	1		699021	FAN, ELECTRIC
2	1		699018	TRANSFORMER SET
1	1		699019	HOUSING, VOLTAGE CONVERTER

LIST OF MATERIAL

UNLESS OTHERWISE NOTED ALL DIMENSIONS ARE IN INCHES
TOLERANCES UNLESS OTHERWISE SPECIFIED
ANGLES ± 1/2° | .XX ± .40
FRACTIONAL ± 1/16 | .XXX ± .010
REMOVE ALL BURRS AND SHARP EDGES. DO NOT SCALE THIS DRAWING
TOLERANCES NOT SHOWN ABOVE ARE PER ANSI Y14.5 1973

DRAWN BY: [illegible]
DATE: 1-5-81
CHK'D BY:
DATE:
ENG BY:
DATE:

AUTO CRANE COMPANY

TITLE: VOLTAGE CONVERTER ASSEMBLY

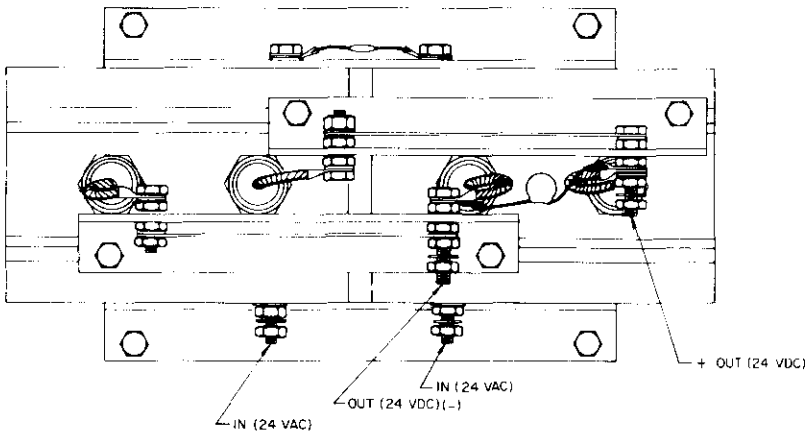
SCALE: ~ | SIZE: D | DRAWING NO: AW-699011 | REVISION:

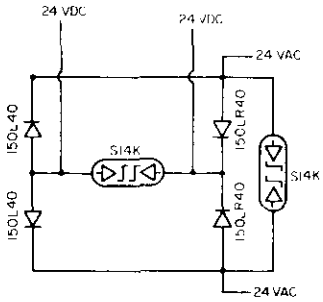
WEIGHT: | SHEET 1 OF 1

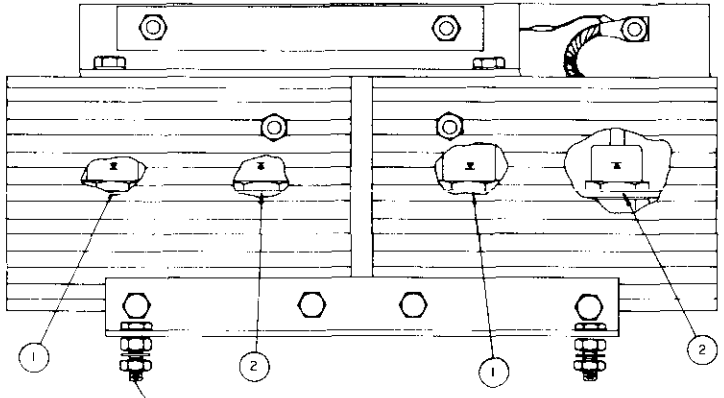
NEXT ASS'Y

FIXTURE NO | FINISH NO

REVISIONS: CHG LTR | DESCRIPTION | DATE | APP'D







3/4" LG. BOLTS (REF.) INSTALLED BY AUTO CRANE

ITEM	QTY	D.S	PART NO	DESCRIPTION
2	2		336062	DIODE (150RL40)
1	2		336063	DIODE (150L40)

LIST OF MATERIAL

UNLESS OTHERWISE NOTED ALL DIMENSIONS ARE IN INCHES
TOLERANCES UNLESS OTHERWISE
SPECIFIED
ANGULAR ±2°
FRACTIONAL
REMOVE ALL BURRS AND SHARP EDGES, DO NOT SCALE THIS DRAWING
TOLERANCES NOT SHOWN ARE AS PER ANSI Y14.5 1973
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DRAWN BY
DATE
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DATE
ENG'D BY
DATE

NEXT ASSY

AUTO CRANE COMPANY

TITLE
RECTIFIER - 24 VOLT

SIZE D
DWG NO AW-699023
REVISION

TROUBLE SHOOTING THE VOLTAGE CONVERTER

PROBLEM	PROCEDURE
No Output Voltage	Turn unit on with the lever on the fuse box. Check fuses in the fuse box. Check power to the fuse box; it should be 110 volts (or 220 volts). Check inside the converter to see if the transformer output leads are connected. Check all the diodes to see if they are burned open.
Low voltage output	Check input voltage. The 110 volt unit requires a minimum of 110 volts. The 220 volt unit requires a minimum of 210 volts. Check to be sure you do not have a 220 volt unit in place of a 110 volt unit. Check the transformer output to ground. It should be 24-34 volts ac.
High output voltage	Check input line voltage. The 110 volt unit takes a maximum of 120 volts and the 220 volt unit takes a maximum of 240 volts. Check to be sure a 110 volt unit has not been substituted for a 220 volt unit.
AC Voltage on Converter Output	There is a bad diode in the bridge. Remove diodes and check for polarity and current blocking.

VOLTAGE CHECK

220/24 CONVERTER

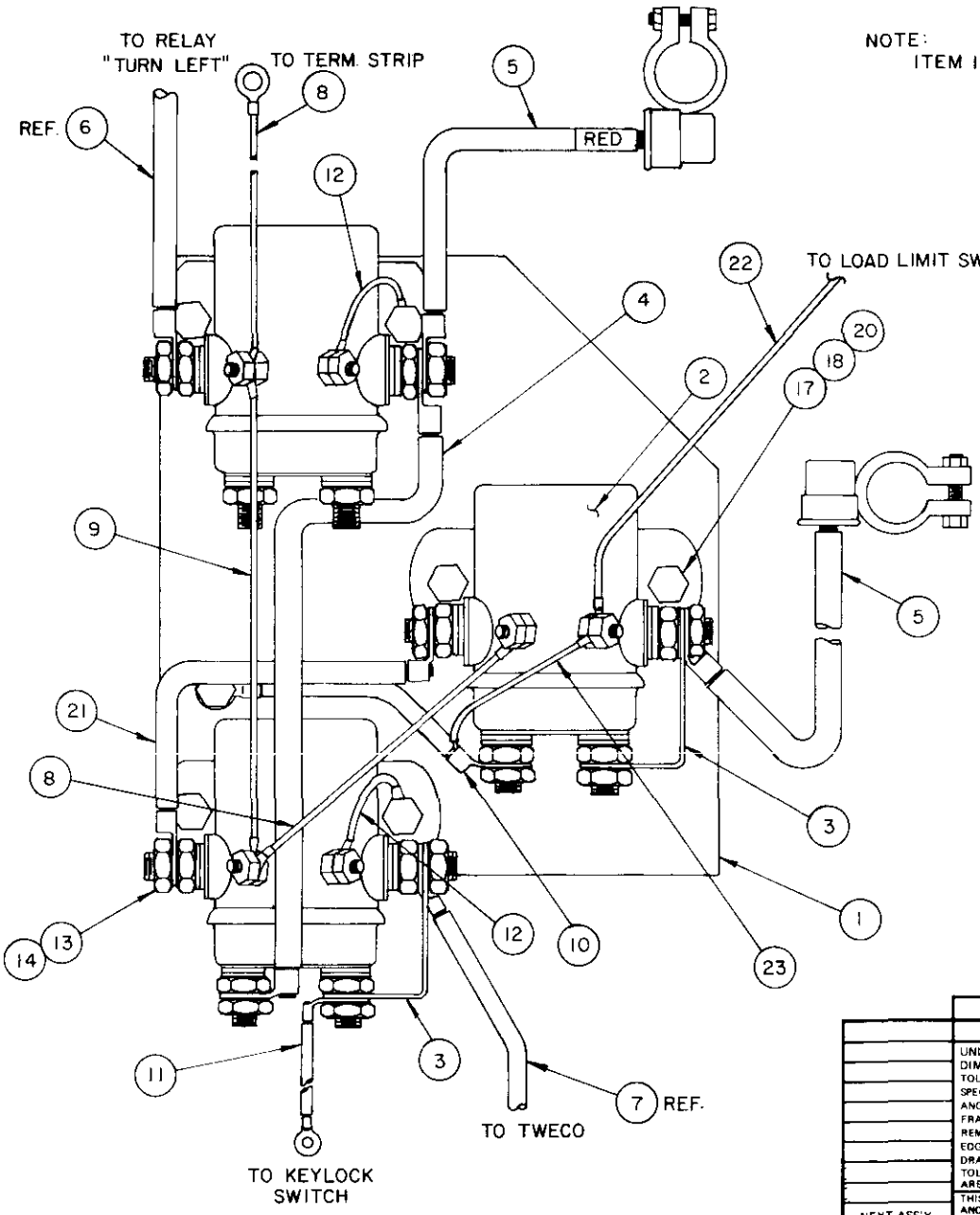
1. Connect 220V leads to generator or other 220V source.
2. Check voltage across top of fuses in fuse box on rectifier. Voltage should be 220VAC $\pm$ 5%. If voltage is above 230 or below 210 check voltage at source.
3. If voltage in Step (2) is correct, close fuse box and turn on rectifier.
4. Check rectifier output. Voltage on D.C. output leads should read 24 to 34 V.D.C. unloaded.
5. Turn rectifier off.
6. Connect DC leads to crane.
7. Turn rectifier on.
8. Connect voltmeter positive lead to hoist motor stud F2 (Stud that brake lead connects to) and negative lead to crane case ground. With 2000 lb. load on crane, hoist (with 3 line block). Start hoist in up condition. Voltmeter should read 22 to 28 VDC.

110/24 CONVERTER

1. Connect 110V leads to generator or other 110V source.
2. Check voltage from top of fuses to buss bar in bottom of box. Voltage should be 110V $\pm$ 5%. If voltage is above 116V or below 106V check voltage at source.
   NOTE: Fuses are connected in parallel; checking from the top of either fuse to buss bar will give the same voltage.
3. If voltage in Step (2) is correct, close fuse box and turn on rectifier.
4. Check rectifier output. Voltage on D.C. output leads should read 24 to 34 VDC unloaded.
5. Turn rectifier off.
6. Connect DC leads to crane.
7. Turn rectifier on.
8. Connect voltmeter positive lead to hoist motor stud F2 (Stud that brake lead connects to) and negative lead to crane case ground. With 2000 lb. load on crane, hoist (with 3 line block). Start hoist in up condition. Voltmeter should read 22 to 28 VDC.

FIXTURE NO.	FINISH NO.

CHG LTR	REVISIONS DESCRIPTION	DATE	APP'D



NOTE:
ITEM 19 NOT SHOWN - MOUNTING BOLTS

ITEM	QUANTITY	D/S	PART NO.	DESCRIPTION
23	1		800592-009	CONDUCTOR (REF)
22	1		659628	CONDUCTOR (WHT.)
21	1		600304	CONDUCTOR
20	7		020200	LOCKWASHER, 1/4
19	2		005604	BOLT, 1/4-20 X 1" LG.
18	7		015900	NUT, HEX 1/4-20
17	5		005901	SCREW, HEX. HD. 1/4-20 X 1/2"
16	6		020001	WASHER, INT. LOCK # 10
15	6		015600	NUT, 10-32
14	10		020700	WASHER, INT. LOCK 5/16
13	10		016800	NUT, HEX-HALF 5/16-24
12	2		659903	CONDUCTOR, (BLK)
11	1		660506	CONDUCTOR (RED)
10	1		667001	CONDUCTOR ASSEMBLY
9	1		660408	CONDUCTOR (BLK W/ WHT. TRACER)
8	1		660406	CONDUCTOR (BLK W/WHT. TRACER)
7	1		603701	CONDUCTOR (BLK)
6	1		600316	CONDUCTOR (BLK)
5	2		603700	CONDUCTOR (BLK)
4	1		600308	CONDUCTOR (BLK)
3	2		658300	CONDUCTOR
2	3		200182	RELAY-12V. SPDT (SEALED)
1	1		301011	MOUNTING PLATE, V.S.U.

LIST OF MATERIAL

UNLESS OTHERWISE NOTED ALL DIMENSIONS ARE IN INCHES. TOLERANCES UNLESS OTHERWISE SPECIFIED.
ANGLES ± 1/2° | .XX ± .40
FRACTIONAL ± 1/16 | .XXX ± .010
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DATE 11/16/81
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ENG. BY
DATE

NEXT ASS'Y

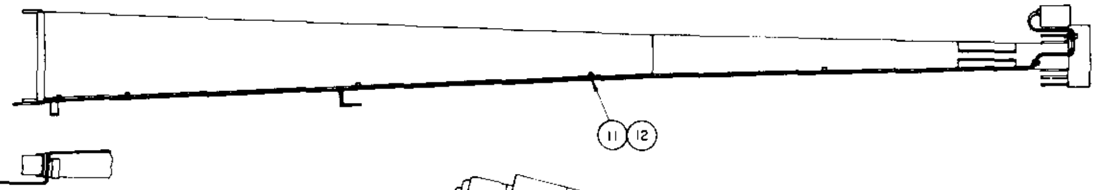
AUTO CRANE COMPANY
P.O. BOX 45548 • TULSA, OKLAHOMA 74145
9260 BROKEN ARROW EXPRESSWAY • 918 627-9475

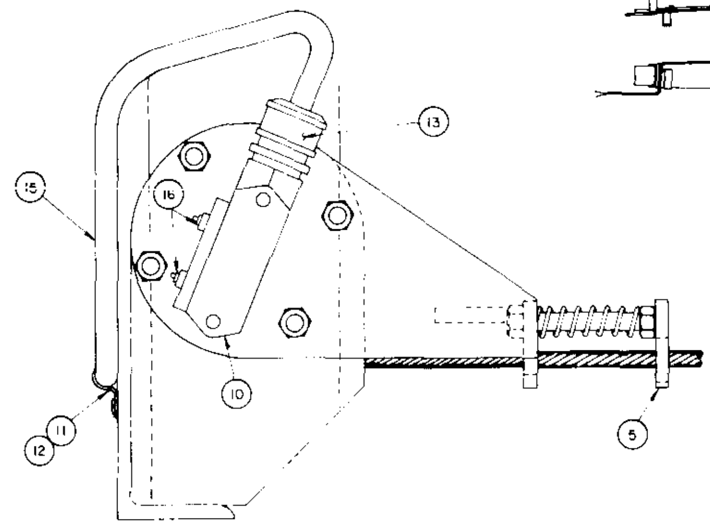
TITLE: VOLTAGE SWITCHING UNIT ASSEMBLY

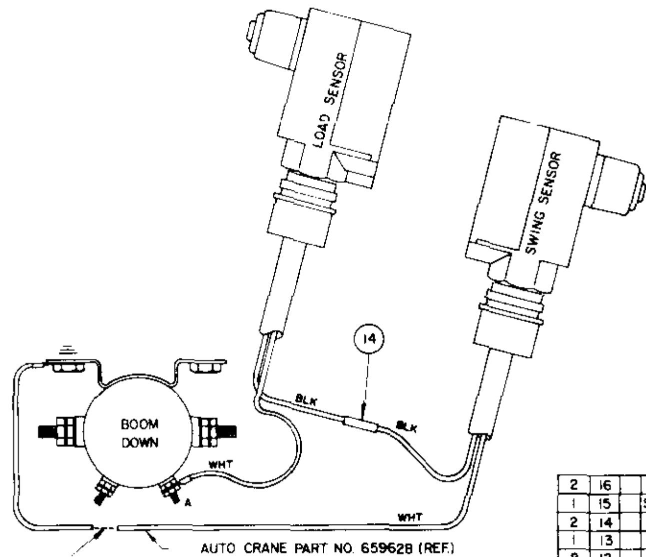
SCALE	SIZE	DRAWING NO	REVISION
~	C	AW-301015	

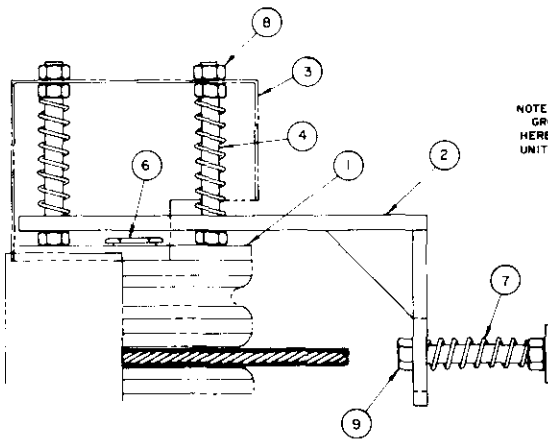
WEIGHT

SHEET 1 OF 1









AUTO CRANE PART NO. 659628 (REF.)

NOTE:
GROUND WIRE (659628) SPLICED HERE FOR 24V VOLTAGE SWITCHING UNIT ONLY.

WIRING PROCEDURE

STEP ONE

TO CONNECT LOAD LIMIT SWITCH, RUN WHITE LEAD TO TERMINAL-A ON BOOM DOWN RELAY AND ATTACH BLACK LEAD TO BLACK LEAD FROM SWING SENSOR

STEP TWO

CONNECT WHITE LEAD FROM SWING SENSOR TO GROUND AS SHOWN.

QUANTITY	ITEM	D S	PART NO	DESCRIPTION
2	16		015410	NUT, HEX-LOCK 6-32
1	15		SEE CHART	CONDUCTOR ASSEMBLY
2	14		000302	TERMINAL, WIRE (SPLICE)
1	13		642908	CLAMP, CABLE
8	12		004800	SCREW, PAN-HD S.T. - 10 X 3/8
8	11		000115	CLIP, JIFFY
1	10		646900	SWITCH - W/HARDWARE
1	9		007900	SCREW, HEX-HD. 5/16-24 X 2 1/2"
13	8		016600	NUT, HEX 5/16-24
5	7		301400	SPRING
1	6		649900	SCREW - MODIFIED
1	5		649800	PLATE, BUMP
4	4		649700	STUD
1	3		649600	GUARD
1	2		649501	SWING ARM
1	1		649400	PLATE, ANCHOR

LIST OF MATERIAL

USAGE		PART NO	DESCRIPTION
BOOM	20 FT	650104	CONDUCTOR ASSEMBLY
	17 FT	650103	
	14 FT	650102	
	12 FT	650101	
	9 FT	650100	

NEXT ASS'Y

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P.O. BOX 4848 • TULSA, OKLAHOMA 74145
9700 BROKEN ARROW EXPRESSWAY • 918/627-9475

TITLE: SWING LIMIT SENSOR ASSEMBLY

SCALE: ~ | SIZE: D | DRAWING NO: AW-650000 | REVISION:

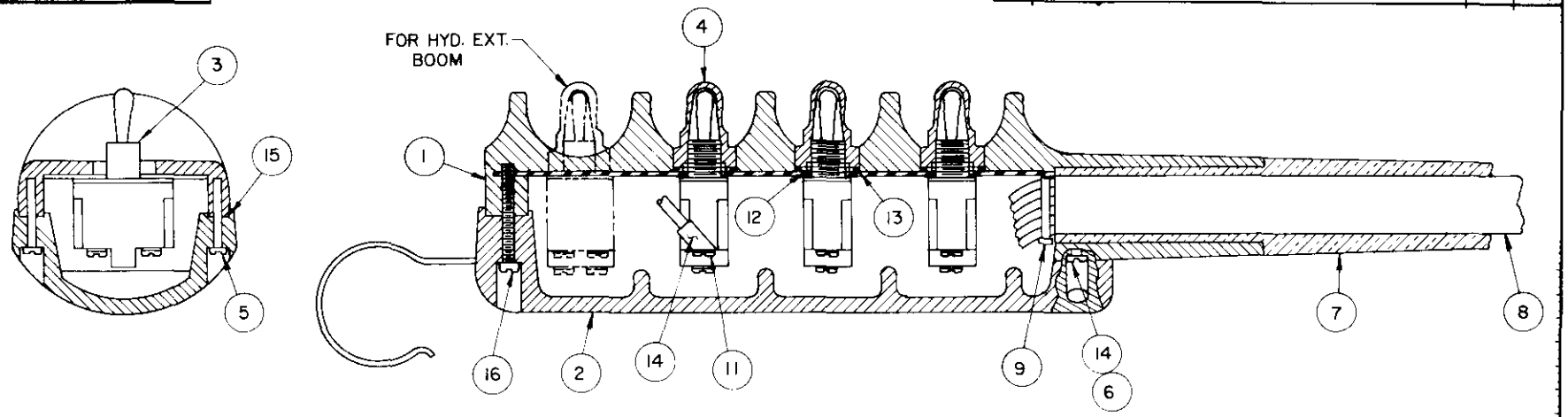
WEIGHT: | SHEET 1 OF 1

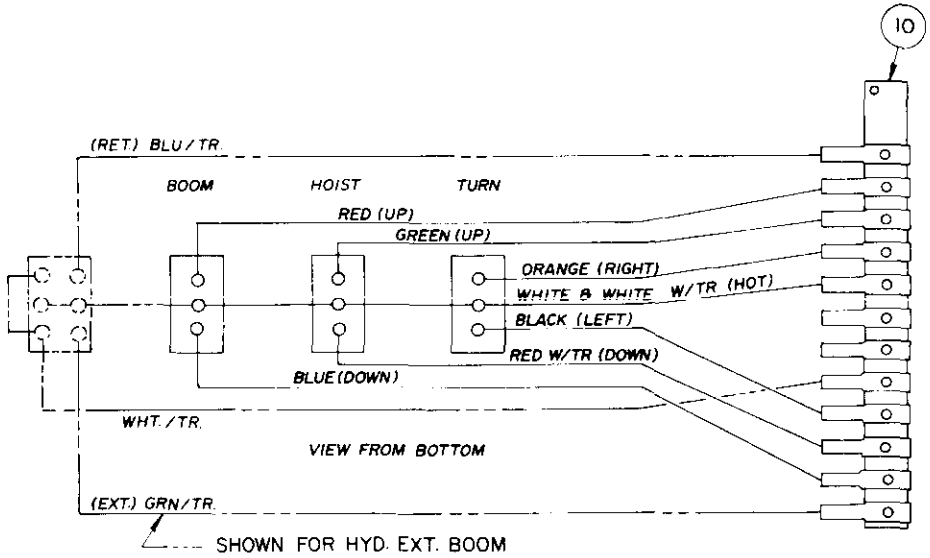
FIXTURE NO	FINISH NO

CHG LTR	REVISIONS DESCRIPTION	DATE	APP'D

FIXTURE NO	FINISH NO.

CHG LTR	REVISIONS DESCRIPTION	DATE	APP'D





PART NO.	LENGTH	DESCRIPTION
642450	53 FT.	CONDUCTOR CABLE
642440	43 FT.	
642437	40 FT.	
642430	33 FT.	
642426	29 FT.	
642423	26 FT.	
642420	23 FT.	
642415	18 FT.	

QTY	ITEM	QTY	PART NO	DESCRIPTION
	18	5	660302	CONDUCTOR
	17	1	634200	TOGGLE SWITCH
	8	1	800631	CONDUCTOR CABLE (26')
ADDITIONAL ITEMS REQ'D FOR HYD. EXT. BOOM				
1	16	1	004700	SCREW, SLT. PAN HD. S.T. 8 X 1 1/2
21"	15	21"	800580	3/4" WIDTH OKONITE RUBBER TAPE
4	14	4	019700	WASHER, SPLIT LOCK 8 PLATED
4	13	3	642100	O-RING
4	12	3	675271	NUT
11	11	11	000101	TERMINALS T&B
1	10	1	635301	TERMINAL STRIP (90°)
2	9	2	634401	TY-RAP CABLE TIE
	8	1	800630	CONDUCTOR CABLE (23') STD.
1	7	1	633801	CABLE ADAPTER
2	6	2	005101	SCREW, S.T.-SLT. PAN HD 8 X 1 1/4
10	5	10	005001	SCREW, S.T.-SLT. PAN HD. 8 X 3/4
4	4	3	640302	BOOT-TOGGLE SWITCH
3	3	3	622000	TOGGLE SWITCH
1	2	1	631700	BOTTOM COVER
1	1	1	631602	PENDANT HOUSING

QTY'S FOR HYD. EXT. BOOM

QUANTITY — LIST OF MATERIAL

UNLESS OTHERWISE NOTED ALL DIMENSIONS ARE IN INCHES. TOLERANCES UNLESS OTHERWISE SPECIFIED
ANGLES ± 1/2° | .XX ± .40
FRACTIONAL ± 1/16 | .XXX ± .010
REMOVE ALL BURRS AND SHARP EDGES. DO NOT SCALE THIS DRAWING.
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DATE 11/9/90
CHK'D BY
DATE
ENG BY
DATE

NEXT ASS'Y

AUTO CRANE COMPANY
P.O. BOX 45548 • TULSA, OKLAHOMA 74145
9260 BROKEN ARROW EXPRESSWAY • 918 627-9475

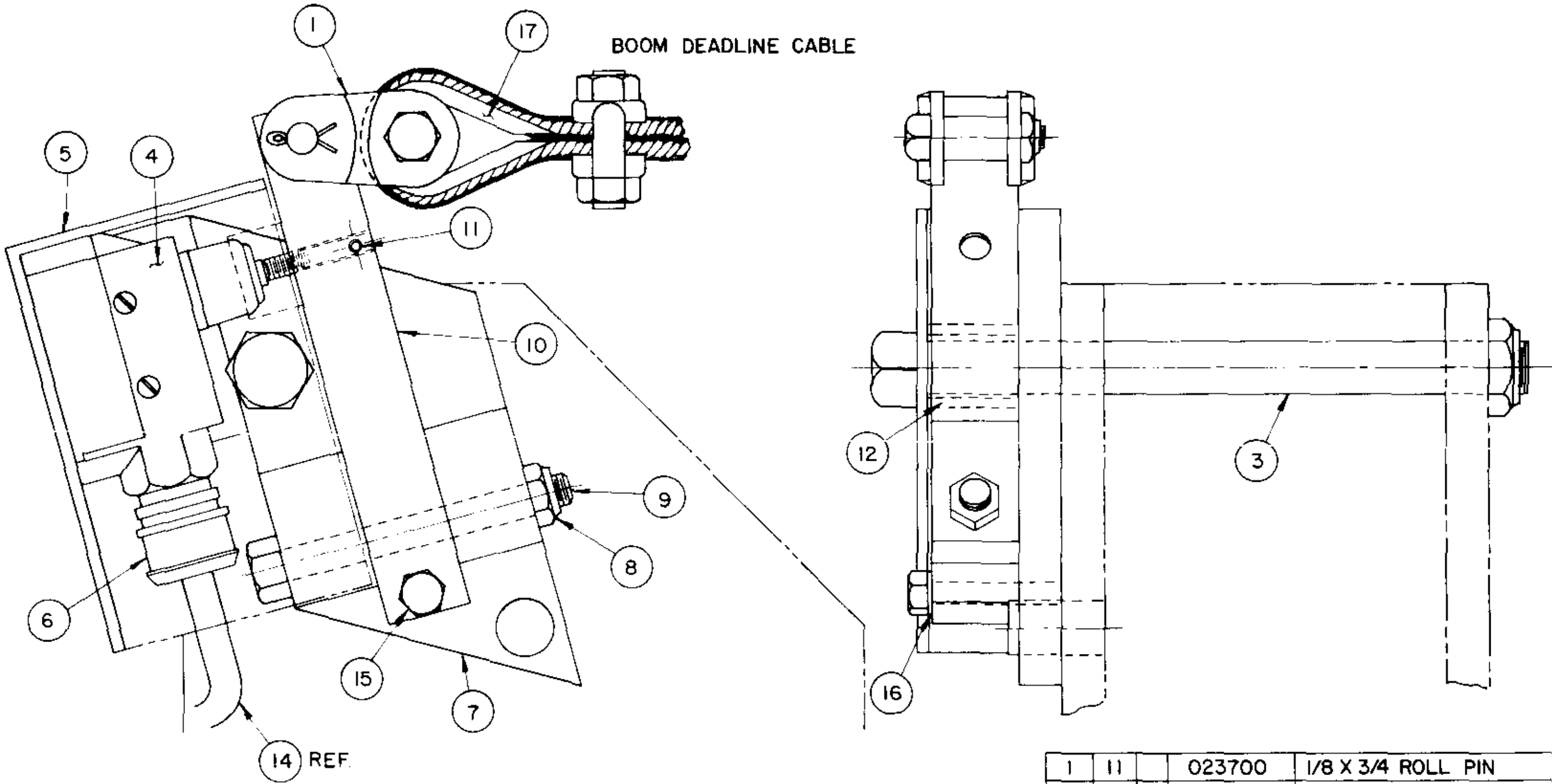
TITLE: PENDANT ASSEMBLY

SCALE ~ | SIZE C | DRAWING NO. AW- 243045 / 642420 | REVISION

WEIGHT | SHEET 1 OF 1

FIXTURE NO	FINISH NO.

CHG LTR	REVISIONS DESCRIPTION	DATE	APP'D



QUANTITY	ITEM	D/S	PART NO	DESCRIPTION
1	19		009100	SCREW, HEX. HD. 3/8-24 X 1 1/2
1	18		017400	NUT, HEX-HALF LOCK 3/8-24
1	17		023600	THIMBLE, 5/16-WIRE ROPE
1	16		020200	1/4 LOCKWASHER
1	15		005702	1/4-28 X 1 1/2 HEX. CAPSCREW
1	14		655604	CONDUCTOR
1	13		002905	SENSING ARM SCREW
1	12		646700	SPACER
1	11		023700	1/8 X 3/4 ROLL PIN
1	10		650205	SENSING ARM
1	9		009800	3/8 NF X 3 1/2 CAPSCREW
2	8		017400	3/8 NF HALF-LOCK NUT
1	7		241105	BRACKET
1	6		642908	CLAMP
1	5		241147	GUARD
1	4		646900	SWITCH
1	3		013301	5/8 NF X 7 1/2 CAPSCREW
1	2		018100	5/8 NF HALF-LOCK NUT
1	1		100801	CLEVIS

LIST OF MATERIAL

NEXT ASS'Y

UNLESS OTHERWISE NOTED ALL DIMENSIONS ARE IN INCHES.
TOLERANCES UNLESS OTHERWISE SPECIFIED
ANGLES ± 1/2° | .XX ± .40
FRACTIONAL ± 1/16 | .XXX ± .010
REMOVE ALL BURRS AND SHARP EDGES. DO NOT SCALE THIS DRAWING
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DATE 11/7/80
CHK'D BY
DATE
ENG. BY
DATE

AUTO CRANE COMPANY
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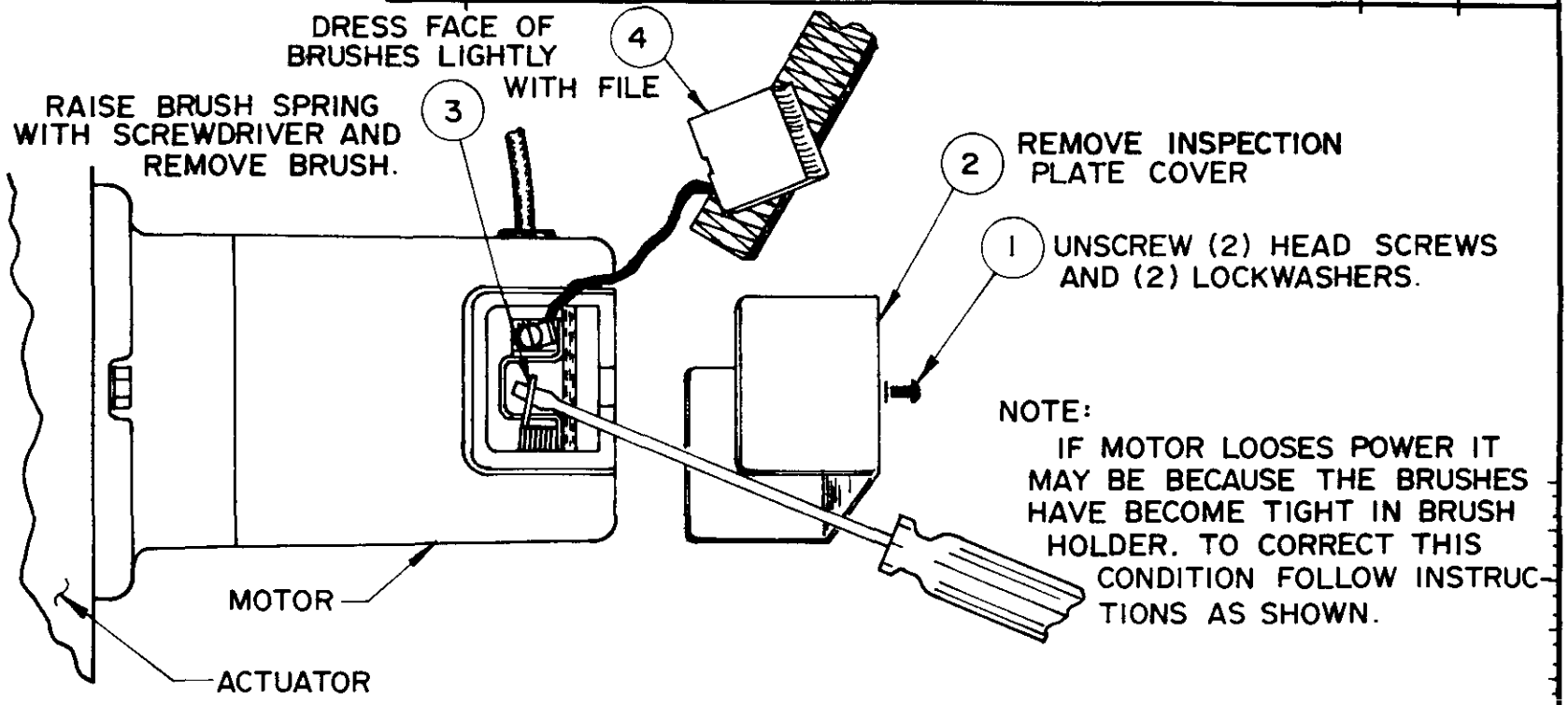
9260 BROKEN ARROW EXPRESSWAY • 918 627 9475

TITLE
LOAD LIMIT SWITCH ASSEMBLY

SCALE ~ | SIZE C | DRAWING NO. AW-241138 | REVISION

WEIGHT | SHEET 1 OF 1

CHG LTR	REVISIONS DESCRIPTION	DATE	APP'D



ITEM	D/S	PART NO.	DESCRIPTION
QUANTITY		LIST OF MATERIAL	

UNLESS OTHERWISE NOTED ALL DIMENSIONS ARE IN INCHES.
TOLERANCES UNLESS OTHERWISE SPECIFIED.
ANGLES ± 1/2° | .XX ± .40
FRACTIONAL ± 1/16 | .XXX ± .010
REMOVE ALL BURRS AND SHARP EDGES. DO NOT SCALE THIS DRAWING.
TOLERANCES NOT SHOWN ABOVE ARE PER ANSI Y14.5 - 1973

DRAWN BY SDK
DATE 11/4/80
CHK'D BY
DATE
ENG. BY
DATE

NEXT ASS'Y

AUTO CRANE COMPANY
P.O. BOX 45548 • TULSA, OKLAHOMA 74145
9260 BROKEN ARROW EXPRESSWAY • 918-627-9475

TITLE
MAINTENANCE INSTRUCTIONS —MOTOR BRUSHES

SCALE	SIZE	DRAWING NO.	REVISION
~	A	M-102	

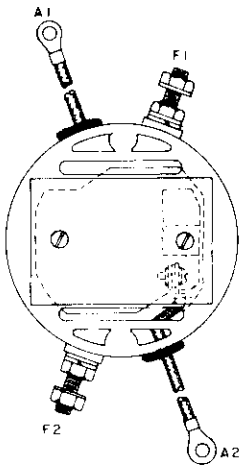
WEIGHT

SHEET 1 OF 2

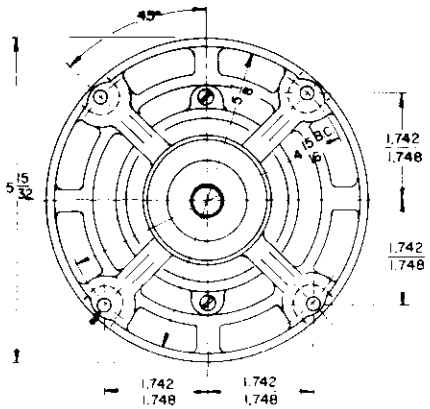
RIDGWAYS 1000H

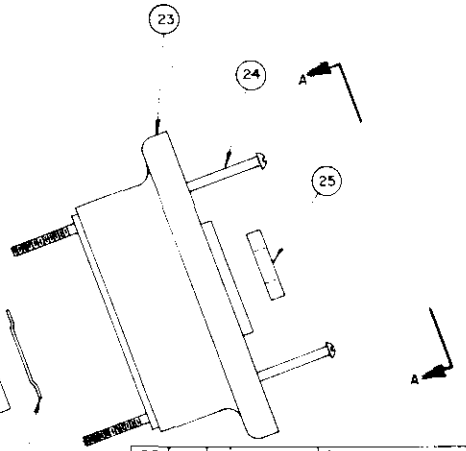
PARTS LIST – MOTOR – M-102

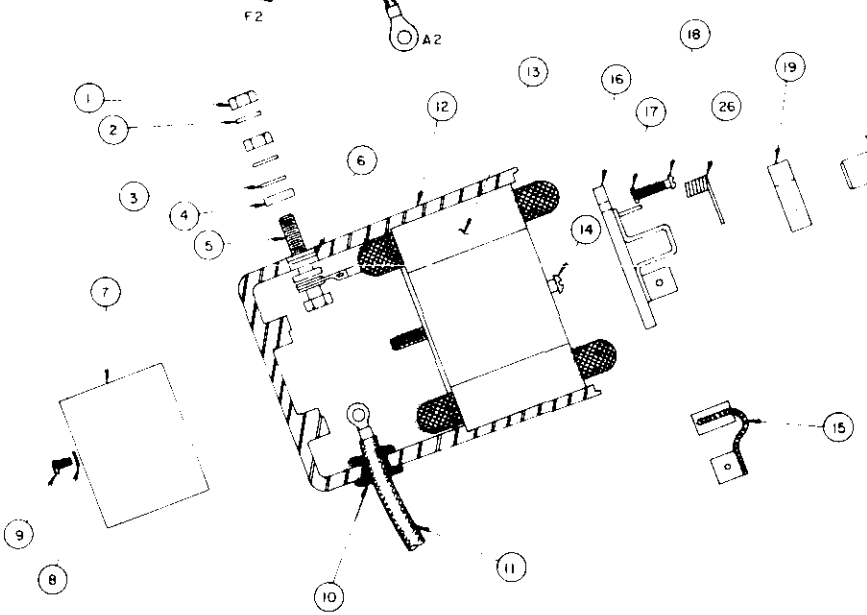
ITEM	QTY.	PART NO.	DESCRIPTION
1	2	300143	#8-32 x ¼ RD. HD. SCREW
2	1	300129	COVER - INSPECTION
3	2	300116	SPRING - HEAVY DUTY
4	2	309100	BRUSH



A1 IS CONNECTED TO GROUND.
FOR CW ROTATION CONNECT A2
TO F2 AND F1 TO POWER POLE.
FOR CCW ROTATION CONNECT A2
TO F1 AND F2 TO POWER POLE.







ITEM	QTY	PART NO	DESCRIPTION
28			SHIM
27	1	102202	DECAL, MOTOR
26	2	300116	SPRING, MOTOR
25	1	300126	SEAL, MOTOR
24	2	200572	SCREW, MOTOR
23	1	300108	HEAD, MOTOR
22	1	300124	SPRING, MOTOR
21	1	300111	BEARING
20	1	300258	ARMATURE -12V
19	1	300110	BEARING
18	2	300145	SCREW
17	2	300144	WASHER, LOCK
16	1	300118	BRACKET, MOTOR
15	2	309100	BRUSH, MOTOR
14	2	005502	SCREW
13	1	300121	STATOR - 12V
12	1	300130	HOUSING, MOTOR
11	2	300128	LEAD, MOTOR
10	2	300148	GROMMET, INSULATOR
9	2	300143	SCREW
8	2	300142	WASHER, LOCK
7	1	300129	COVER, END-MOTOR
6	6	300122	INSULATOR, MOTOR
5	2	300141	SCREW, HEX.-HD
4	4	300123	INSULATOR, MOTOR
3	4	300140	WASHER, FLAT
2	6	300139	WASHER, LOCK
1	4	300138	NUT

LIST OF MATERIAL

REVISIONS

LTR	DESCRIPTION	DATE	APP'D

AUTO CRANE COMPANY

MOTOR

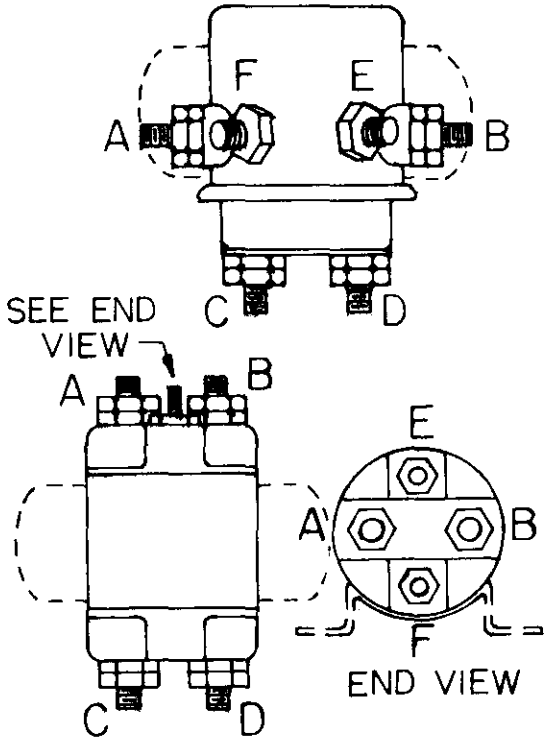
SIZE D | DRAWING AW-300105 | REV

NEXT ASSY

TROUBLESHOOTER – 5000

PROBLEM	CAUSE
Charging	647400 Diode on voltage switching unit (V.S.U.) blown. Incorrect hookup of V.S.U., bad ground to truck chassis, bad battery not staying charged, not running, truck regulator or alternator problem.
Crane will operate on hoist down only.	Lost ground to other relays. Diode on V.S.U. bad. Load limit switch kicked out.
Crane operates two functions at same time such as hoist up, turn right, boom down, turn right, etc.	647501 Diode on picking circuit has gone to ground, broken wire in pendant, head shorting to other terminals, boom relay has stuck in operate position.
Boom will not go up	Boom limit switch not adjusted properly or broken, boom up relay stuck, broken wire in pendant, 647501 diode on picking circuit or boom up is bad.
Crane will not operate in any single motor function such as boom down, hoist down, hoist up, turn right, turn left	Excluding boom limit switch, same as above; also check leads and motor brushes. Ground lost to any relay or all relays.
Crane will not operate at all	Check to make sure battery is connected in crane, power cable is connected to truck battery, key lock switch is turned on and properly connected, make sure of ground between crane and truck frame. Make sure battery in truck is connected. Check V.S.U. connection. Check grounds or relays and check load limit switch.
Motor or motors will not run	Check leads on motor; check brushes; broken wires in pendant, broken toggle switch, stuck relays. Check or see if motor or motors are getting 24 volts; if not check V.S.U. Check to see if both batteries are connected. Burned up fields and armatures also cause this.
Relays not functioning properly or stuck	Check relays using ohm meter. Relay should be closed on bottom end, open top end, use 12 volts to operate relays. Positive on one small post and negative on the other. This is top end when energized continuity should disappear at bottom and appear at top. When disconnected continuity should reappear at bottom. (Essex relay 200220)
Crane running slow – starts out good, then dies out	Battery in truck or crane or both is bad or low; diode in charging circuit is bad not going to ground. Crane not grounded to truck chassis. Make sure motor and battery in truck are grounded to chassis relay in V.S.U. stuck or not grounded good. Connections on battery corroded not making good contact. Alternator or voltage regulator bad on truck; this causes battery not to fully charge.
Diode in V.S.U. charging unit circuit going out too often	Welders on truck ac units of any kind too high amperage from alternator boosting truck or crane battery from another source, jump starting other vehicles, arcing across terminals on crane battery, battery charger units placed on alternator of truck, unit to run drill motors or electric impact wrenches placed on alternator. We suggest no larger than a 60 amp alternator if you do have to jump start your truck or another vehicle disconnect the power cable that goes to the crane. We suggest you do not jump start any vehicle with crane battery.

PROBLEM	CAUSE
Pendant (or remote control) not operating crane properly	Broken toggle switches in control head; broken wires in control head or cable; diodes in picking circuit bad (647501); terminal strip on control cable broken or not connected properly to terminal bar; wires from terminal bar to relays not connected or broken.
Bad ground circuit on relays hoist up, boom up, boom down, turn right, turn left	Loose connections on relays, load limit switch, diode, can cause crane not to operate properly; For example, when you try to operate more than one function at once, operation will work but the second will not. But each function will operate separately.



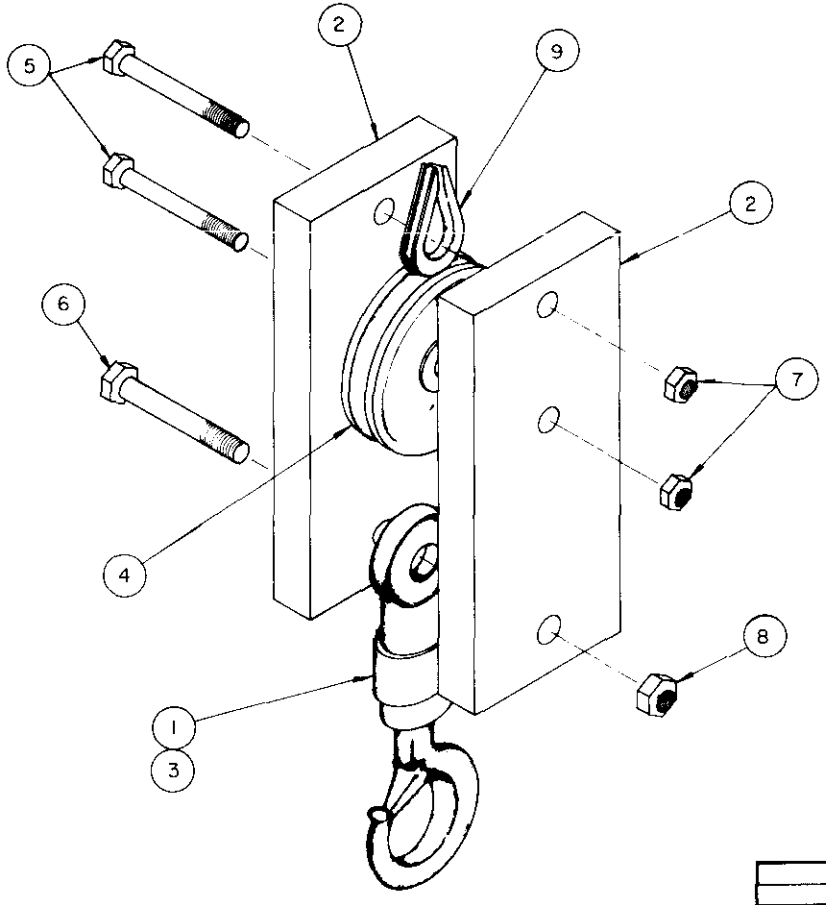
HOW TO CHECK RELAY:

To check a relay on this or any Auto Crane product is the same. The difference being in physical appearance. Shown at left are two types of relays Auto Crane uses. Our relays are normally closed across the bottom posts (C & D). When activated, they will open across (C & D) and close across (A & B). To activate these relays, use 12V positive and 12V negative wires and place them on posts (F & E). You may place 12V+ on post F or E as long as you place 12V on the remaining post (F & E) using an ohm meter or test light. Check across posts (A & B). You should get an ohm reading or your test light should be on when you have the relay activated. With the relay still activated, check across posts (C & D). You should have no ohm reading or test light at this point with relay activated. (At this point, disconnect 12V+ and 12V- from posts (F & E). This should let relay return to its normal position. Using your ohm meter or test light again, check the relay across posts (A & B). If relay is working correctly, you should have no reading at all. Then check across posts (C & D). You should have an ohm reading or test light should be on. If you get the above results, relay is okay. If you get any variation in the above explanation on the relay you are checking, check the relay again. If it still shows a difference, the relay is bad and should be replaced.

NOTE: The above explanation is with relays completely disconnected from all wires on motor circuits and ground wires. These circuits can give you false readings sometimes.

FIXTURE NO	FINISH NO.

CHG LTR	REVISIONS DESCRIPTION	DATE	APP'D



ITEM	D/S	PART NO	DESCRIPTION
1	9	023600	THIMBLE - 5/16
1	8	018100	NUT, HEX. HALF LOCK 5/8 -18
2	7	017700	NUT, HEX. HALF LOCK 1/2 -20
1	6	013513	SCREW, H.H. 5/8-18 X 3 1/2" GR 5
2	5	011506	SCREW, H.H. 1/2-20 X 3 1/2" GR 5
1	4	200163	SHEAVE ASSEMBLY
1	3	330000	TUBING, RD. DOM. 1"O.D. X 1"LG
2	2	200162	PLATE, TRAVELING BLOCK
1	1	200197	HOOK, SWIVEL

QUANTITY — LIST OF MATERIAL

NEXT ASS'Y

UNLESS OTHERWISE NOTED ALL DIMENSIONS ARE IN INCHES. TOLERANCES UNLESS OTHERWISE SPECIFIED
ANGLES ± 1/2° | XX ± .40
FRACTIONAL ± 1/16 | XXX ± .010
REMOVE ALL BURRS AND SHARP EDGES. DO NOT SCALE THIS DRAWING
TOLERANCES NOT SHOWN ABOVE ARE PER ANSI Y14.5 1973

DRAWN BY SDA
DATE 12/24/80
CHK'D BY
DATE
ENG BY
DATE

AUTO CRANE COMPANY
P.O. BOX 45548 • TULSA, OKLAHOMA 74145
9260 BROKEN ARROW EXPRESSWAY • 918 627 9475

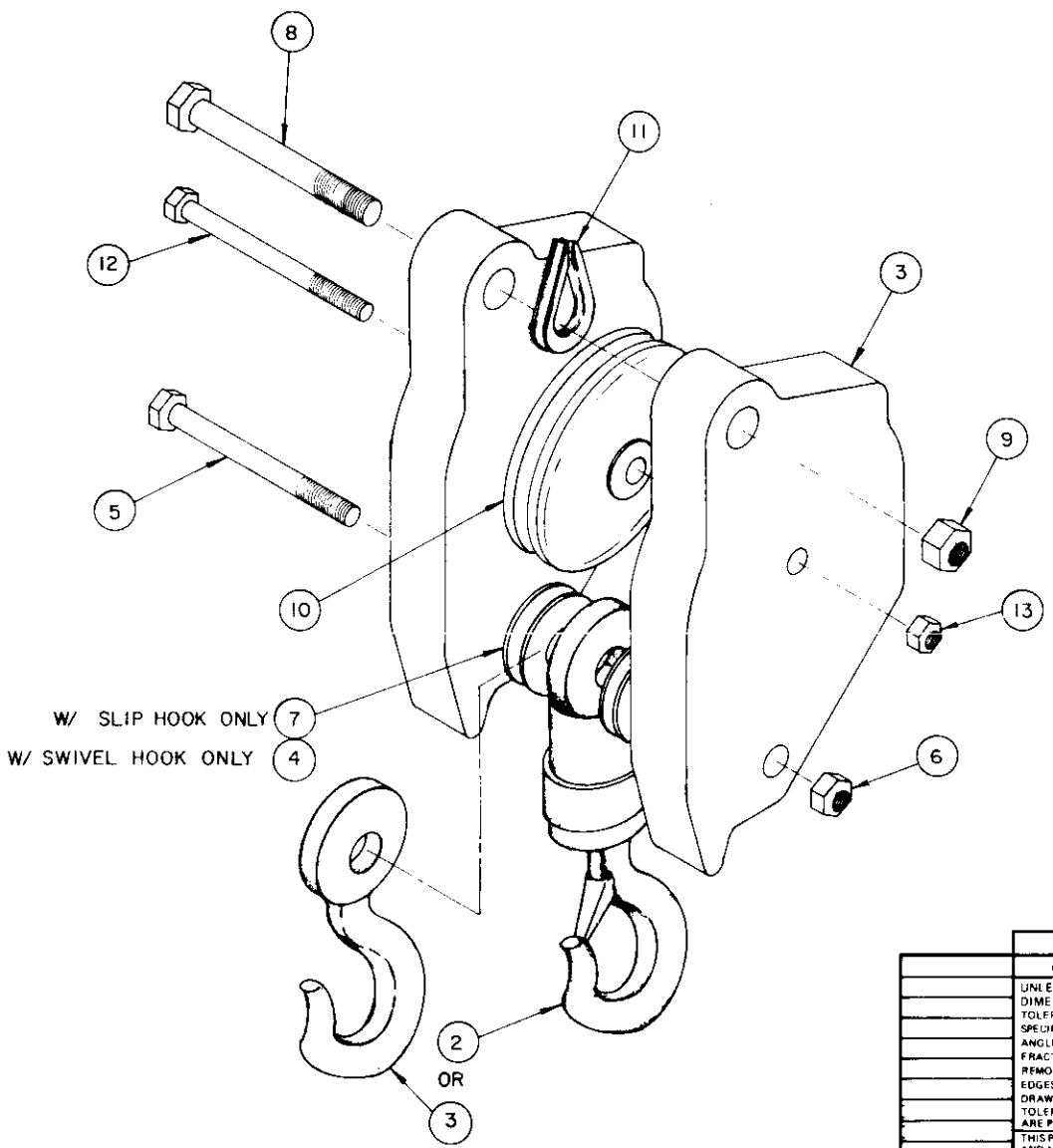
TITLE
TRAVELING SWIVEL BLOCK ASSEMBLY
(STANDARD)

SCALE	SIZE	DRAWING NO	REVISION
~	C	AW-200161	

WEIGHT — SHEET 1 OF 1

FIXTURE NO.	FINISH NO.

CHG LTR	REVISIONS DESCRIPTION	DATE	APP'D



ITEM	D/S	PART NO.	DESCRIPTION
1	13	017800	NUT, HEX.-LOCK 1/2-20
1	12	011610	SCREW, HEX.-HD. 1/2-20 X 5 GR 5
1	11	023600	THIMBLE, WIRE ROPE
1	10	240236	SHEAVE ASSEMBLY
1	9	018600	NUT, HEX.-LOCK 3/4-16
1	8	014400	SCREW, HEX.HD. 3/4-16 X 5
1	7	021802	WASHER, FLAT-5/8
1	6	018300	NUT, HEX.-LOCK 5/8-18 X 5
1	5	013504	SCREW, HEX.-HD. 5/8-18 X 5
1	4	240237	SPACER, BUSHING 1" O.D.
1	3	240238	PLATE, SIDE-TRAVEL BLOCK
1	2	200197	HOOK, SWIVEL
1	1	100205	HOOK, SLIP

QUANTITY — LIST OF MATERIAL

NEXT ASS'Y

UNLESS OTHERWISE NOTED ALL DIMENSIONS ARE IN INCHES. TOLERANCES UNLESS OTHERWISE SPECIFIED
ANGLES ± 1/2° | XX ± .40
FRACTIONAL ± 1/16 | XXX ± .010
REMOVE ALL BURRS AND SHARP EDGES. DO NOT SCALE THIS DRAWING.
TOLERANCES NOT SHOWN ABOVE ARE PER ANSI Y14.5 1973

DRAWN BY JDS
DATE 12/29/10
CHK'D BY
DATE
ENG. BY
DATE

AUTO CRANE COMPANY
P.O. BOX 45548 • TULSA, OKLAHOMA 74145
9250 BROKEN ARROW EXPRESSWAY • 918 627 9475

TITLE
TRAVELING BLOCK ASSEMBLY
(STANDARD 10'-16' BOOMS)

SCALE	SIZE	DRAWING NO.	REVISION
~	C	240203 SW AW-240223	

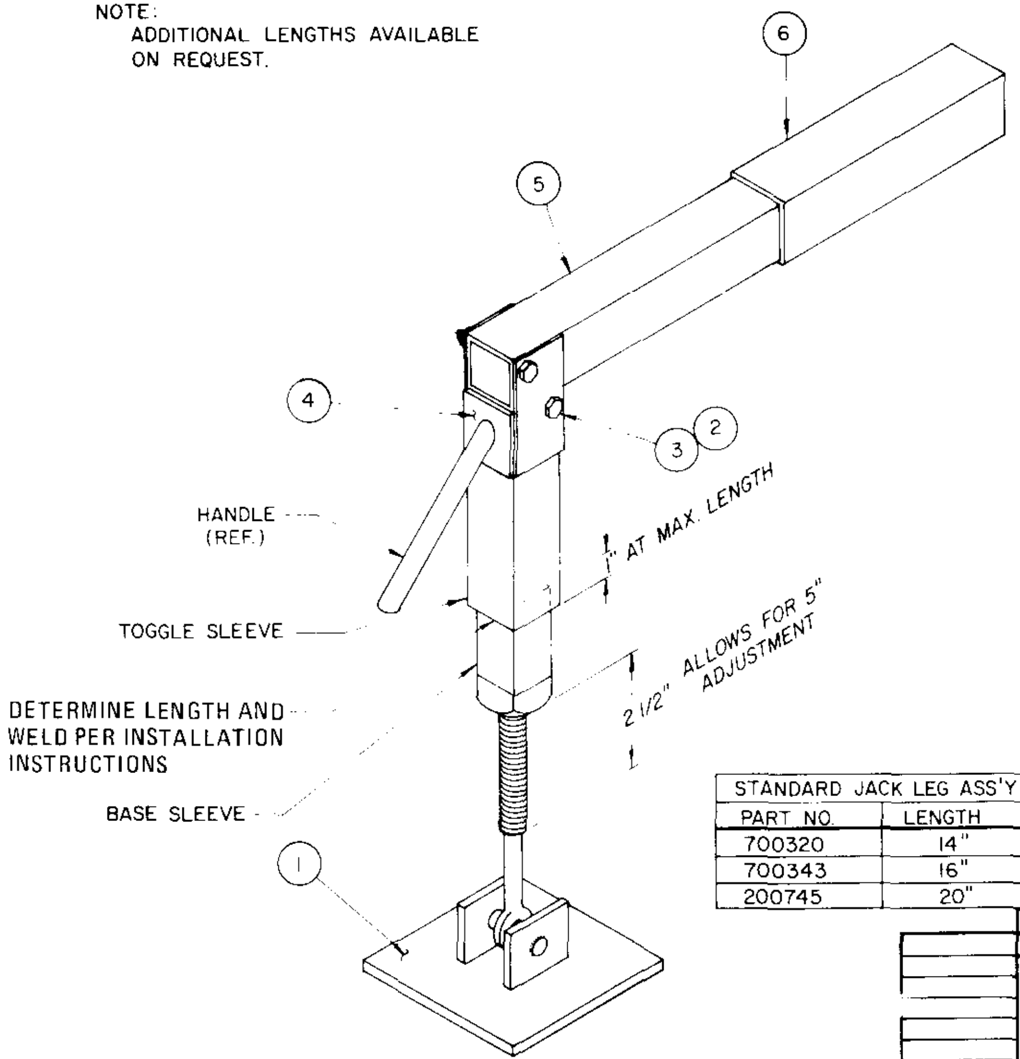
WEIGHT

SHEET 1 OF 1

FIXTURE NO	FINISH NO

CHG LTR	REVISIONS DESCRIPTION	DATE	APP'D

NOTE:
ADDITIONAL LENGTHS AVAILABLE ON REQUEST.



INSTALLATION INSTRUCTIONS (JACKLEG)

MAKE SURE TRUCK IS PARKED ON LEVEL SURFACE. WELD POCKET (Item 6) TO TRUCK BODY AT REAR JUST INSIDE BUMPER, OR DESIRABLE LOCATION. END OF POCKET SHOULD BE FLUSH WITH OUTSIDE OF THE TRUCK BODY. BE SURE THE POCKET IS WELDED SECURELY. NEXT, SLIDE HORIZONTAL MEMBER (Item 5) INTO POCKET. SLIDE BASE ASSEMBLY (Item 1) INTO TOGGLE SLEEVE. MAKE SURE LEG ASSEMBLY IS VERTICAL & FULLY INSERTED IN POCKET. NOW BASE SCREW SHOULD BE ADJUSTED SO THAT 2½" OF THREAD IS EXPOSED. MARK BASE SLEEVE WHERE TOGGLE SLEEVE ENDS. PULL JACK LEG OUT OF THE POCKET & WELD (Ref. -3/16") ALL AROUND AT MARK.

JACK LEG IS READY FOR USE. UPON USE, MAKE SURE JACK LEG HAS ADEQUATE TENSION (SELF-DETERMINING), BEFORE SELF-LOCKING IN PLACE. ADJUSTMENT OF SCREW MAY BE NEEDED DEPENDING ON GROUND SURFACE.

STANDARD JACK LEG ASS'Y	
PART NO.	LENGTH
700320	14"
700343	16"
200745	20"

ITEM	D'S		PART NO	DESCRIPTION
6	1		700047	TUBE, POCKET
5	1		200081	MEMBER, HORIZONTAL
4	1		200085	TOGGLE
3	2		006801	CAPSCREW, HEX. HD. 1/2"NF X 4"
2	2		017800	LOCKNUT, HEX. 1/2"NF X 4"
1	1		200041	BASE ASSEMBLY

QUANTITY — LIST OF MATERIAL

UNLESS OTHERWISE NOTED ALL DIMENSIONS ARE IN INCHES.
TOLERANCES UNLESS OTHERWISE SPECIFIED
ANGLES ± 1/2° ; XX ± .40
FRACTIONAL ± 1/16 ; XXX ± .010
REMOVE ALL BURRS AND SHARP EDGES. DO NOT SCALE THIS DRAWING
TOLERANCES NOT SHOWN ABOVE ARE PER ANSI Y14.5 1973

DRAWN BY [signature] DATE 1/24/81
CHK'D BY
DATE
ENG BY
DATE

AUTO CRANE COMPANY
P.O. BOX 45548 • TULSA, OKLAHOMA 74145
9260 BROKEN ARROW EXPRESSWAY • 918 627 9475

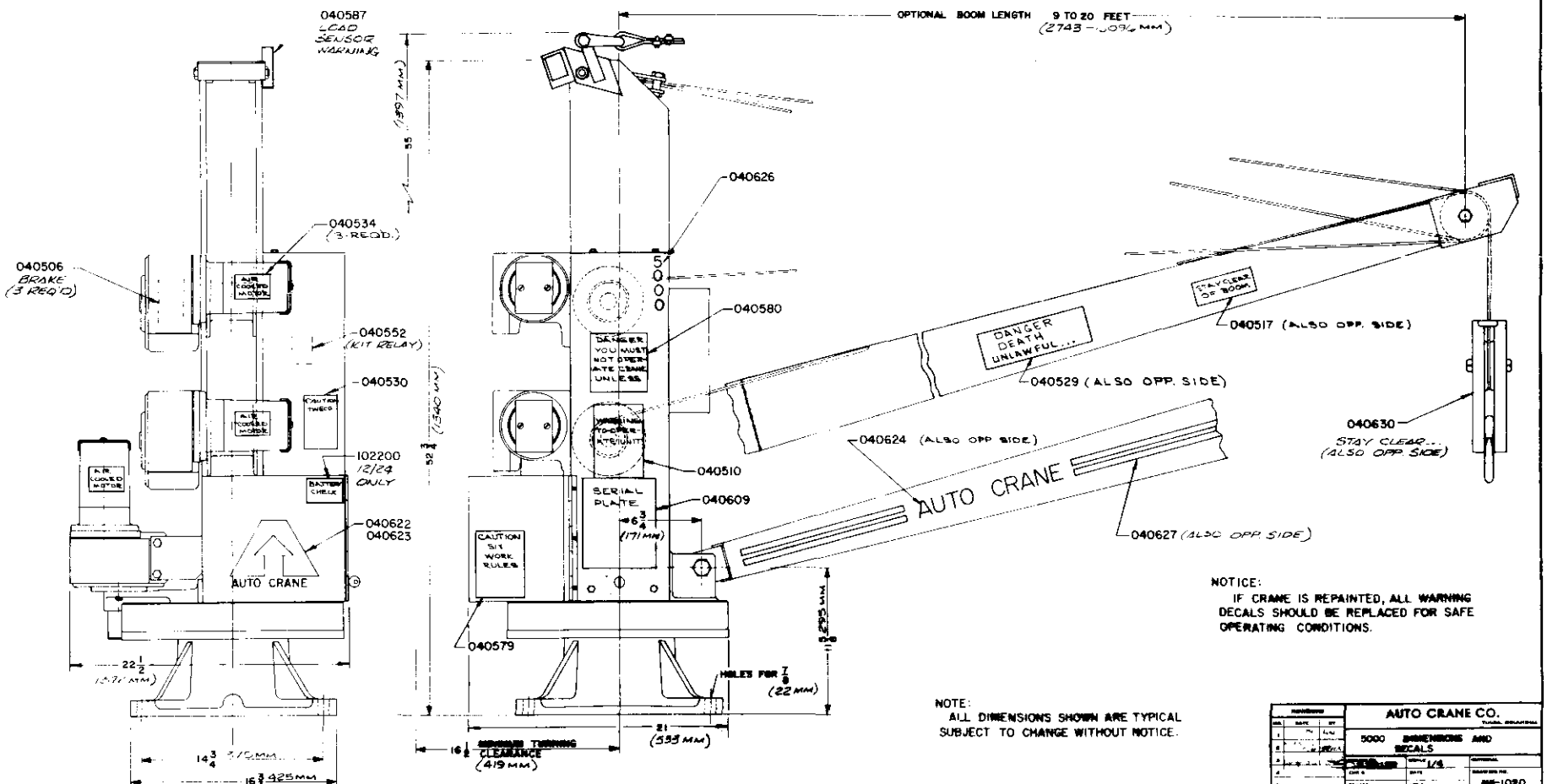
TITLE: JACKLEG ASSEMBLY

SCALE: ~ | SIZE: C | DRAWING NO: AW-LEG H.D. W/P | REVISION:

WEIGHT

NEXT ASS'Y

SHEET 1 OF 1



NOTICE:
IF CRANE IS REPAINTED, ALL WARNING DECALS SHOULD BE REPLACED FOR SAFE OPERATING CONDITIONS.

NOTE:
ALL DIMENSIONS SHOWN ARE TYPICAL SUBJECT TO CHANGE WITHOUT NOTICE.

AUTO CRANE CO.

5000 DIMENSIONS AND DECALS

SCALE 1/4

AMF-1020

AUTO CRANE COMPANY
P. O. BOX 45548 • TULSA, OKLAHOMA 74145

Limited Warranty

Auto Crane Company warrants to Consumer for a period of six (6) months from date of purchase, each new Auto Crane product sold by it to be free, under normal use and service, from defects in material and workmanship. Such warranty is expressly limited to the replacement or the repair, without charge, of parts, exclusive of component accessories, which are returned, with all transportation charges prepaid, to Auto Crane Company's factory in Tulsa, Oklahoma, and are disclosed, upon the inspection and to the satisfaction of Auto Crane Company to be thus defective.

This warranty does not obligate Auto Crane Company to bear the cost of labor or parts or transportation charges in connection therewith when the replacement or repair of parts claimed to be defective is performed by a party other than Auto Crane Company; nor shall this warranty apply to an Auto Crane product upon which any alterations or repairs, other than normal maintenance, have been made without the approval of Auto Crane Company.

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

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

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.

AUTO CRANE COMPANY

AUTO CRANE SERVICE POLICY

AUTO CRANE COMPANY

Auto Crane's main service point is Tulsa, Oklahoma.
Other service points staffed by trained factory personnel.

REQUESTS FOR SERVICE

Requests for service and parts on Auto Crane products may be made directly to the Service Department, Auto Crane Company, the nearest Auto Crane service center, or a distributor or dealer.

PARTS

Parts orders may be placed with the factory or through any authorized Auto Crane distributor or dealer.

Parts returned to the factory for warranty adjustment are to be prepaid. If, upon inspection at our plant, such part or parts are deemed to be defective, credit will be issued.

Standard current production parts may be returned for credit and if acceptable to Auto Crane Company, a restocking charge of 10% will be assessed against the credit issued.

Parts may not be returned to the factory for credit without the express authority of Auto Crane Company.

Special parts, not carried in current stocks, may be ordered but not subject to return for credit under the above conditions. Authority to return such special parts may be granted by Auto Crane Company and credit will be determined at that time.

ALL returned parts, when authorized by Auto Crane Company, must have transportation charges prepaid.

TRANSPORTATION

Regular Field Service Vehicle — 0.30 per mile.
Air Lines (Regular Coach Fare when Available)
Other transportation prices upon application

EXPENSES

All expenses incurred by service man while on customer's service job will be based upon the total of such expense to Auto Crane, except $50.00 per man per day will be charged when service man remains away from home base overnight.

EXCHANGE ASSEMBLIES

Subject to availability, there are special arrangements concerning complete assemblies.

1. Exchange prices may be quoted on all Auto Crane Actuator Assemblies.
2. Rebuilt actuators are available at special prices.
3. Trade in allowance may be offered after inspection.
4. Any complete actuator assembly or part thereof may be repaired at our Tulsa plant or one of our service centers at our regular parts and service rates.

REGULAR SHOP AND FIELD RATES:

Shop rate . . . . . $27.50 per hour
Field rate, experienced Service Man . . $27.50 per hour

NOTE: Service rates start when Auto Crane's employee is assigned to the job or field activity pursuant to the customer's service request. Rates subject to change without notice.

OVERTIME RATES

Overtime is all time other than regular time and holidays. Overtime and holiday rate is one and a half times regular time rates.

Regular time rates apply between the hours of 8:00 AM and 5:00 PM Monday through Friday, except on holidays.

Holidays are New Years Day, Good Friday, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Friday after Thanksgiving Day, ½ day Christmas Eve, Christmas Day.

MISCELLANEOUS SERVICE CHARGES

Any miscellaneous expenses incurred in the repair of the unit, such as machining or welding work not performed by the service man — whether in the field or at a shop (other than Auto Crane's), will be charged to the customer. Customer may, however, have such work done in their shops or on their own order if they so desire.

Special work desired by the customer such as changing a unit over from one truck to another, installing new accessories on old equipment, adapting booms to units not originally constructed, may be arranged for and charges will be based on the nature of the work, the amount of engineering involved, etc.

(Rates Subject to Change Without Notice)

SERVICE PHONES

For Service or Parts, call the Service Department

Day-Time Calls — Local 627-9475
Day-Time Calls — Long Distance . . . . . 918 — 627-9475

Night-Time Calls — Local or Long Distance

Charles "Bud" Carper, Parts & Service Manager . . . . . 918 — 252-4447 Broken Arrow, Ok.
Kenny Guinn, Service Representative . . . . . 918 — 663-1821 Tulsa, Ok.

For fast efficient service call Auto Crane Company, (Mail address P. O. Box 45548. Tulsa, Oklahoma 74145) or your nearest Auto Crane Distributor or Dealer.