

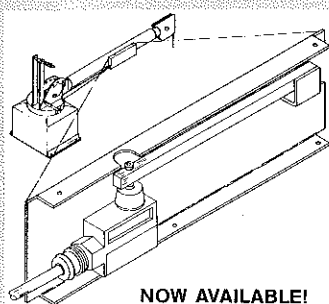
# AUTO CRANE

## BACKSAVER JUNIOR

MODEL CB — 12 1,000 LBS. CAPACITY  
12 - VOLT D.C. BATTERY POWERED

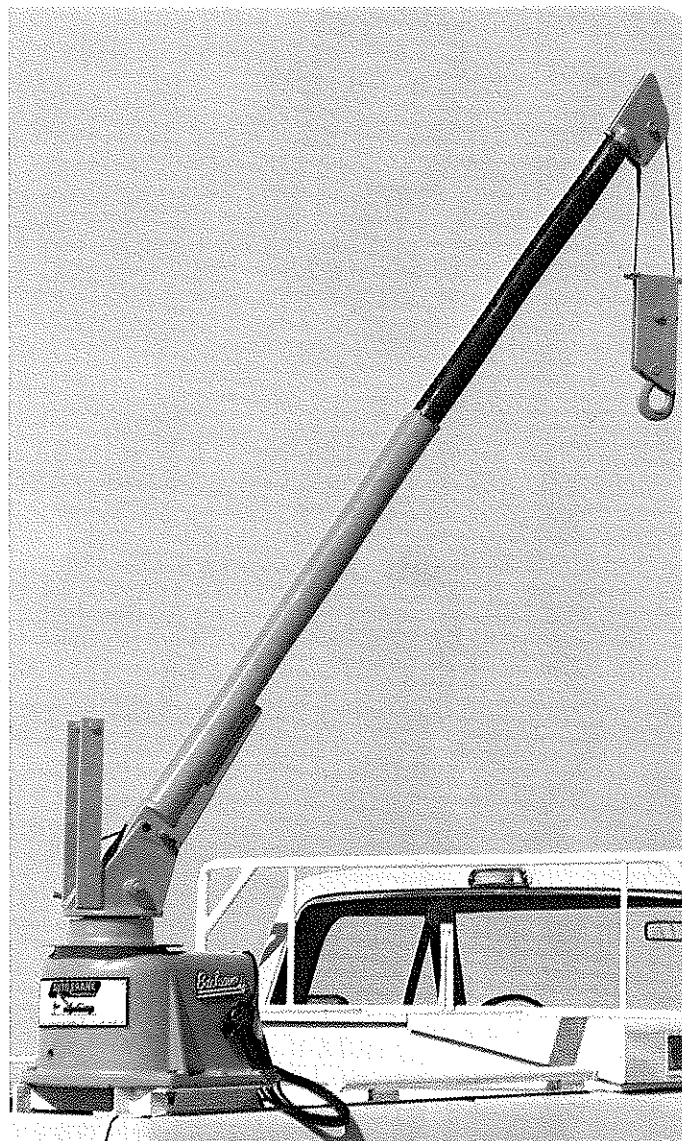
## BACKSAVER SENIOR

MODEL CAB-12 1,500 LBS. CAPACITY  
12 - VOLT D.C. BATTERY POWERED



**NOW AVAILABLE!**

**NEW APPROVED LOAD SENSOR**  
— Automatic safety overload switch protects crane from accidental overload, thereby reducing maintenance and adding to length of service life.

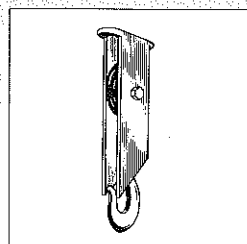


### BACKSAVER JUNIOR — MODEL CB

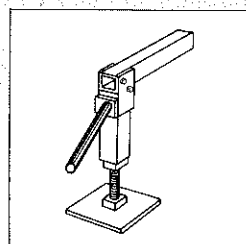
Auto Crane's BACKSAVER JUNIOR enables one operator to handle with power, items in the up to 1,000 lb. range without risk of injury. Power hoists by 12-volt D.C. electric motor, powered by vehicle battery. Boom manually extends from 3' 7" to 5' 8", locks into position. Manual hand brake controls boom through full, continuous 360° manual rotation.

### BACKSAVER SENIOR — MODEL CAB

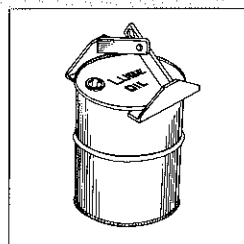
BACKSAVER SENIOR is one of the most popular general utility models of Auto Crane. Power hoisting using 12-volt D.C. electric motor is controlled with remote hand pendant using toggle switches. Boom can be manually extended from 4' 5" to 7' and the manual hand brake controls the boom through full 360° continuous manual rotation. Easy to install.



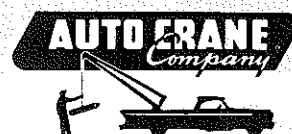
Model "S" Traveling Block



Quick Detachable Jackleg



Drum Tongs



9260 Broken Arrow Expressway  
P.O. Box 45548  
Tulsa, Oklahoma 74145  
Phone 918-627-9475

**GIVING INDUSTRY A LIFT—THE WORLD OVER**

# SPECIFICATIONS

## Backsaver Junior

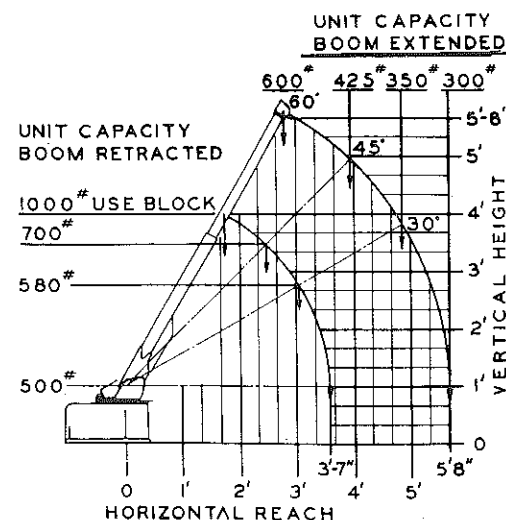
Series C-12 — 1,000 lbs. Capacity

**HOISTING UNIT.** Consists of a cable drum of special aluminum 4½" O.D. flanges, distance between flanges 2". The drum is mounted on a 1" diameter shaft and is driven by a totally enclosed worm gear with oil bath lubrication, and having a reduction of 30 to 1. The hoist is powered by a high torque motor attached to spur gear housing having a reduction of 4 to 1 (overall reduction 120 to 1). The standard hoist is equipped with 30' of 3/16" 4,200 lb. cable with hook swaged on. Line speed: single line, no load, 30-ft. per min. Single line pull 1,000 lbs.

**BOOM.** Manually extended to 5' 8", telescoped to 3' 7". Roller bearing mounted, single crown sheave and deadline eye for safety block operation. Fabricated with seamless steel tubing hinged on rotatable high grade cast steel quill mounted on heavy duty anti-friction bearings. Manual brake for controlling swing and for holding boom in set position.

**ELECTRICAL.** High torque D.C. reversible 12-volt motor, complete wiring, remote control relays, 20-ft. battery cable with grommet and frame clips, high current plug-in connector at unit and terminal connector for 12-volt vehicle battery.

**CONTROLS.** The unit is controlled by a remote pendant control connected to the unit by 15 ft. of extension cord. Longer extension cords are available at extra cost. The control pendant has normally open toggle switch which returns to "off" position unless held in "on" position by the operator. The pendant cord has a quick disconnect plug-in at the unit, which permits removal of the control, thus avoiding unauthorized operation of the unit.



## Backsaver Senior

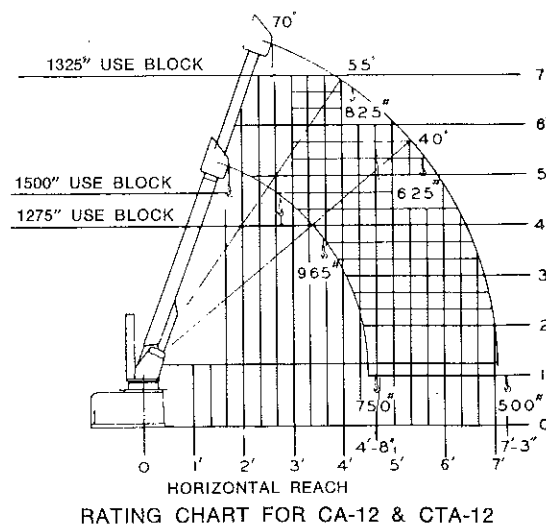
Series CA-12 — 1,500 lbs. Capacity

**HOISTING UNIT.** Consists of a cable drum with 4½" O.D. flanges, distance between flanges 2". The drum is mounted on 1" diameter shaft and is driven by a totally enclosed worm gear with oil bath lubrication, and having a reduction of 30 to 1. The hoist is powered by a high torque motor attached to spur gear housing having a reduction of 4 to 1 (overall reduction 120 to 1). The standard hoist is equipped with 40' of 3/16" 4,200 lb. cable with hook swaged on. Line speed: single line, no load, 30-ft. min. Single line pull 1,500 lbs.

**BOOM.** Manually extended to 7' telescoped to 4' 5". Roller bearing mounted, single crown sheave and deadline pin for safety block operation. Fabricated from seamless steel tubing hinged on rotatable high grade cast steel quill mounted on heavy duty anti-friction bearings. Manual brake for controlling swing and for holding boom in set position.

**ELECTRICAL.** High torque D.C. reversible 12-volt motors complete wiring, remote control relays, 20-ft. battery cable with grommet and frame clips, high current plug-in connector at unit and terminal connector for 12-volt vehicle battery.

**CONTROLS.** The unit is controlled by a 15-ft. long remote pendant control. The normally open toggle switches return to "Off" position unless held in the "On" position. The pendant is a quick disconnect type, at the unit plug-in, which allows pendant removal, thus avoiding unauthorized operation of the unit.



# AUTO CRANE COMPANY

## Operation

## Service And Maintenance Tips

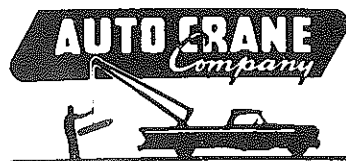
Auto Crane products have been engineered to provide safe, trouble-free, dependable service for many years when these products are properly used and maintained.

Auto Crane Company policy is to provide our customers with the best products and the best service possible within our capability. Our number one priority is to furnish parts and service to our customers and should a choice ever have to be made between supplying a part for a new crane being produced in our shops and shipping that part to a customer with a crane requiring the part in the field, the customer with the existing crane in the field will automatically get the part, and the production crane will wait until a new supply is received.

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 electrical power source for Auto Cranes is a very important item. In the case of the 12 volt DC battery or batteries (24 volt DC) supply, the operator should review Page M-107 in the Parts and Service Manual. Because of the efficiency of our "B" actuator, Auto Crane units may be continuously operated for normal loading and unloading of vehicles without operating the vehicle engine to maintain the battery charge. 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.

Form 727



### Giving Industry a Lift — The World Over

Office & Plant: 9260 Broken Arrow Expressway Telephone: Area Code 918-627-9475  
Box 45548, Tulsa, Oklahoma 74145

ADDITIONAL SPECIFICATIONS AVAILABLE ON REQUEST

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 compensated or 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, such as the Auto Crane Utility or Service Body, 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. Refer to Drawing 6761 in the manual.
  - B. A moment-type load sensing device (furnished as optional equipment) prevents our cranes 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 angle (refer to boom moment diagram plate on crane) or use an adequate tension or load gauge such as a Dilland or Chatillon. Refer to Drawings 6504 and/or 6664 in the manual.
  - 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-hanging 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 and 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 30 days minimum). Refer to Drawing 6500 in the manual.

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 tubular material and 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 tubular 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 the manual (M114-M118 & M119) 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 as 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 the manual and thin the 90 weight oil with kerosene as recommended. Check the motor brushes once every 30 days. (See Drawings B-3001 and M-102) Check the brake at least once every two weeks and adjust as shown on Drawing M-118 and as described on sheets M-118-1, -2 and -3.

A worm gear actuator (which ranges from 37 to 45% 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% 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 2-½ 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, the crane 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" completely and mailed directly to the Auto Crane factory. This card must be "filled out and mailed in" and received by 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. When an Auto Crane product leaves the factory, it is herein certified that each crane and winch meet, comply and/or exceed the known applicable standards of O.S.H.A., A.N.S.I., S.A.E., D.O.T. and the applicable specified ASTM specifications, as of the date of delivery of the unit. Auto Crane will not, therefore, assume responsibility or liability for any unit which has been modified, changed, reinforced 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 may 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 mild steel in all of 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 & 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.





# AUTO CRANE COMPANY

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



CABLE ADDRESS  
*Autocrane*  
TULSA, OKLAHOMA

ENGINEERING ALERT  
April 23, 1975

## "Cold Weather Operation"

All standard products (all models of cranes and winches) as manufactured by the Auto Crane Company will operate satisfactorily from 0° F. to 120° F. By making the following minor modifications, all Auto Crane models of winches and cranes will be given the capability of operating from 0° F. down to -65°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°F) for long periods (two to six months or more), it is recommended that the following procedure be placed in action:

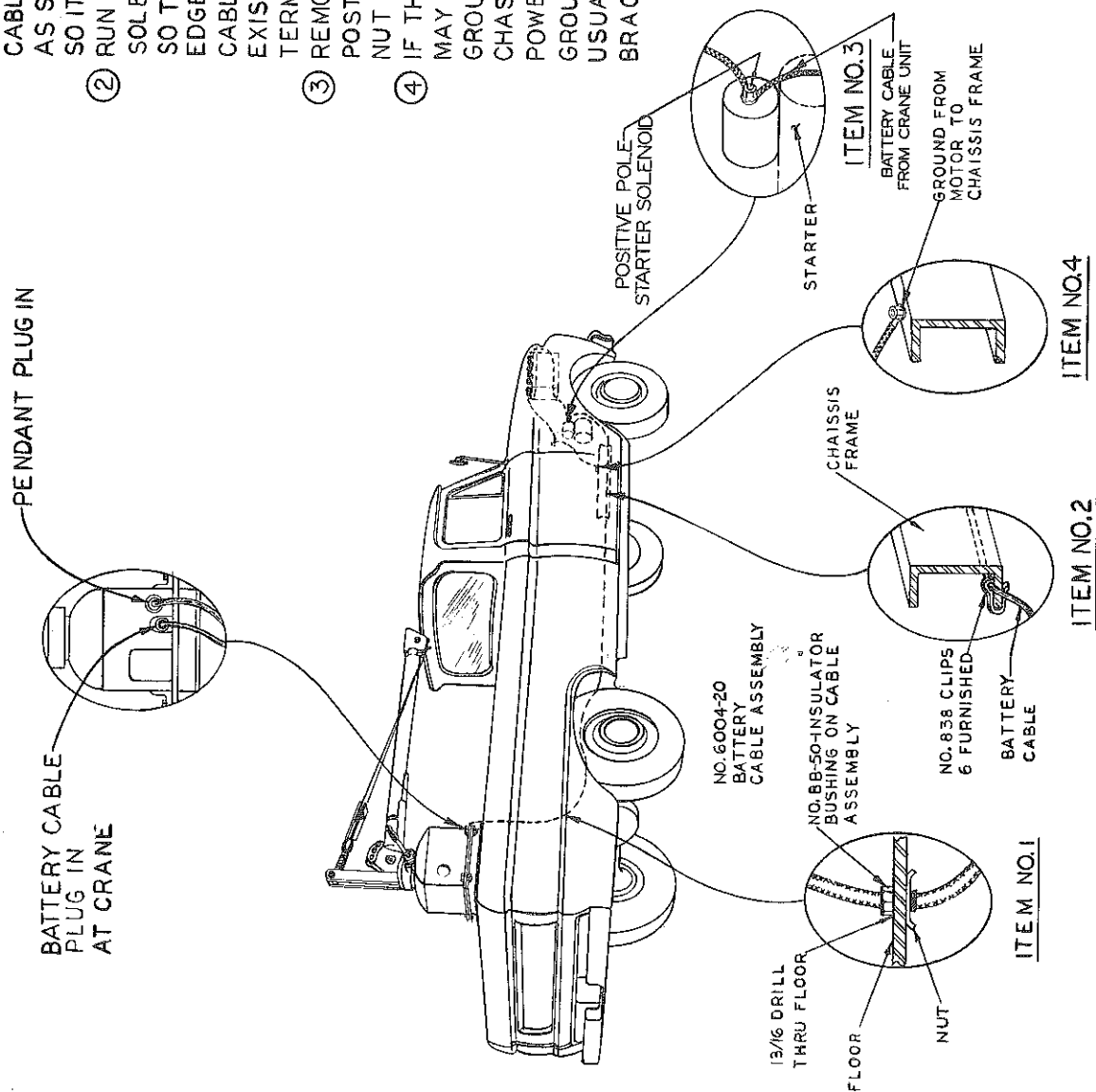
1. Completely drain the existing oil from the actuators and flush with kerosene.
2. Fill each actuator with Mobilube SHC-629 (approximately two quarts required per actuator) to the proper level (oil level plug must be removed to check level).
3. Refer to Pages M119-1 & -2, and M114-1, -2, & -3 in Service Manual.

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

*C. E. Hickman*  
C. E. Hickman  
Chief Engineer

NO - 2 4-23-75

- ① DRILL  $1\frac{3}{16}$  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.



REVISIONS				AUTO CRANE CO.		TULSA, OKLAHOMA	
NO.	DATE	BY					
1	1967-1-11	W. J. DAY					
2							
3							
4							
5							

NEW PART NO.	PART NO.	QTY.	DESCRIPTION
005000	BB-50	1	BUSHING, OZ (REF.)
083800	838	6	CLIP, CABLE
600420	6004-20	1	POWER CABLE

INSTALLATION BATTERY CABLE			
DRAWN BY	J. DAY	SCALE	
CHECKED		DATE	7-2-67
TRACED		APP'D	6018

## "CAB" MODEL OPERATING INSTRUCTIONS

TO EXTEND: RELEASE BRAKE (2) & TURN BOOM TO ANY CONVENIENT LOCATION FOR EXTENDING. PULL UPPER BOOM (3) OUTWARDLY WHILE PUSHING "DOWN" BUTTON (1). WHEN UPPER BOOM HITS STOP, ROTATE BOOM UNTIL LUG (4) WILL SLIDE THROUGH SLOT (5) IN SLEEVE LOCATED IN END OF LOWER BOOM (6). ROTATE UPPER BOOM UNTIL LUG (4) IS ON UNDERSIDE. PUSH BOOM IN UNTIL LUG (4) ENGAGES NOTCH IN END OF LOWER BOOM.

BOOM IS NOW READY TO RAISE

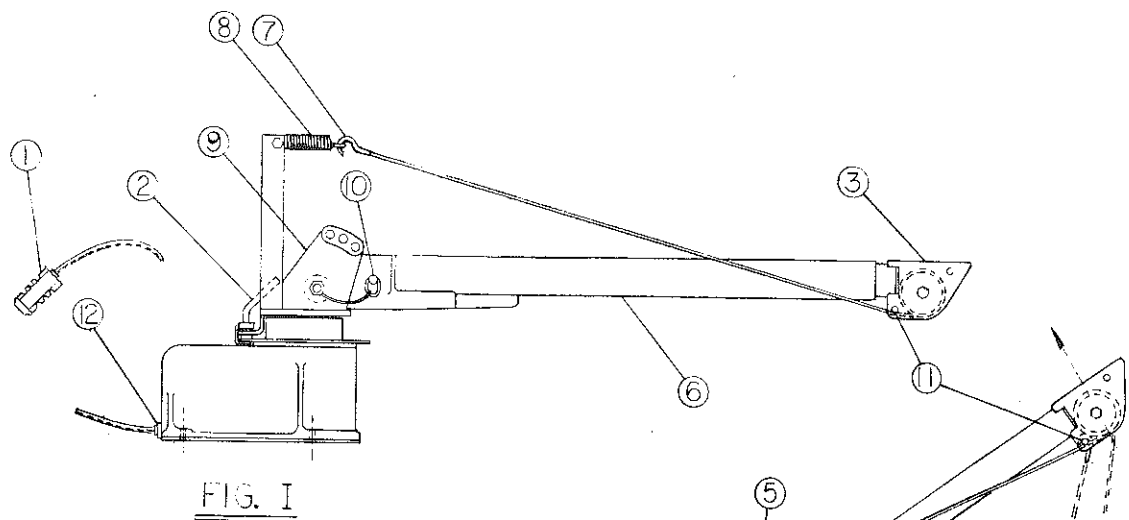
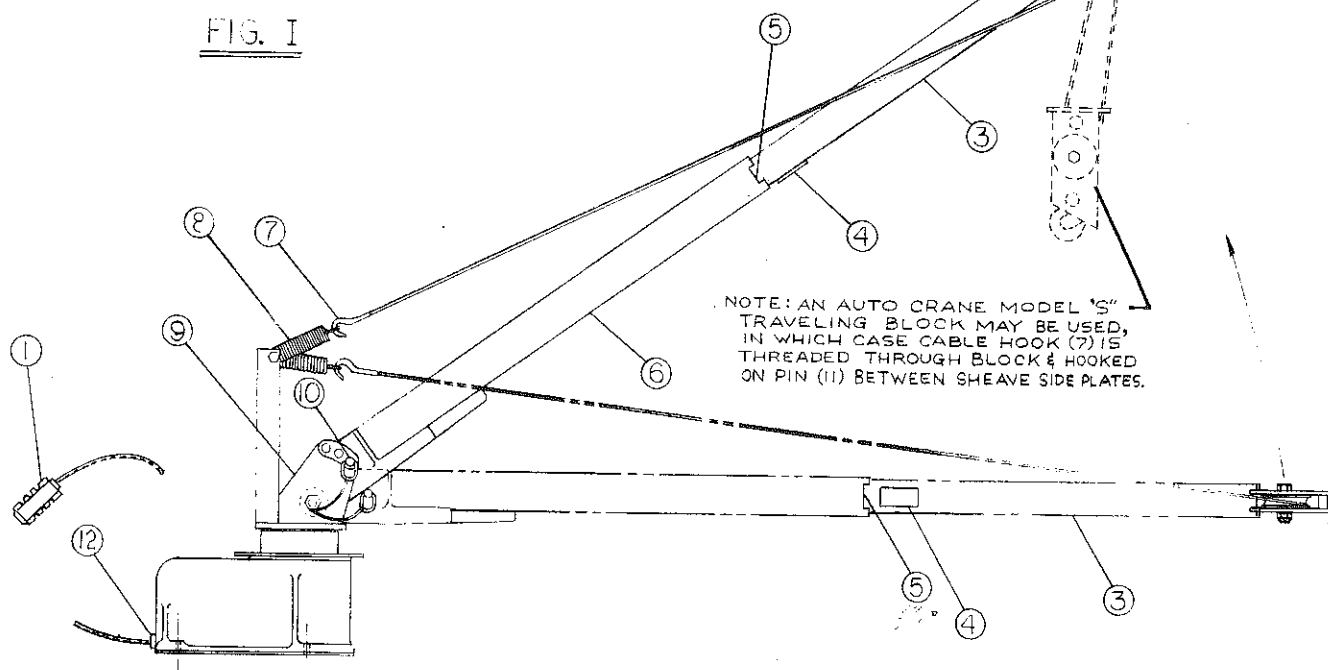


FIG. I



NOTE: AN AUTO CRANE MODEL "S" TRAVELING BLOCK MAY BE USED, IN WHICH CASE CABLE HOOK (7) IS THREADED THROUGH BLOCK & HOOKED ON PIN (11) BETWEEN SHEAVE SIDE PLATES.

FIG. II

TO RAISE: WITH CABLE HOOK (7) HOOKED IN EYE OF SPRING (8) AS SHOWN, PUSH "UP" ON PENDANT CONTROL (1). THE CABLE WILL LIFT THE BOOM TO THE DESIRED POSITION. MANUALLY ALIGN HOLES IN HINGED END OF BOOM (6) WITH HOLES IN SIDE PLATE OF QUILL (9) INSERT POSITION PIN (10). RELEASE HOOK (7) FROM SPRING (8).

THE UNIT IS NOW READY TO LIFT THE LOAD

TO RETURN BOOM TO POSITION SHOWN IN FIG. I: PERFORM THE ABOVE OPERATIONS THE SAME AS BEFORE, ONLY IN REVERSE ORDER.

CAUTION: WHEN SPOOLING CABLE OUT OR IN, MANUALLY PULL ON CABLE TO INSURE PROPER SPOOLING ON DRUM. ALSO WHEN NOT IN USE DISCONNECT PENDANT CONTROL AT PLUG IN (12) & STORE IN CAB OF TRUCK TO AVOID UNINTENTIONAL OR UNAUTHORIZED OPERATION OF THE UNIT.

M105

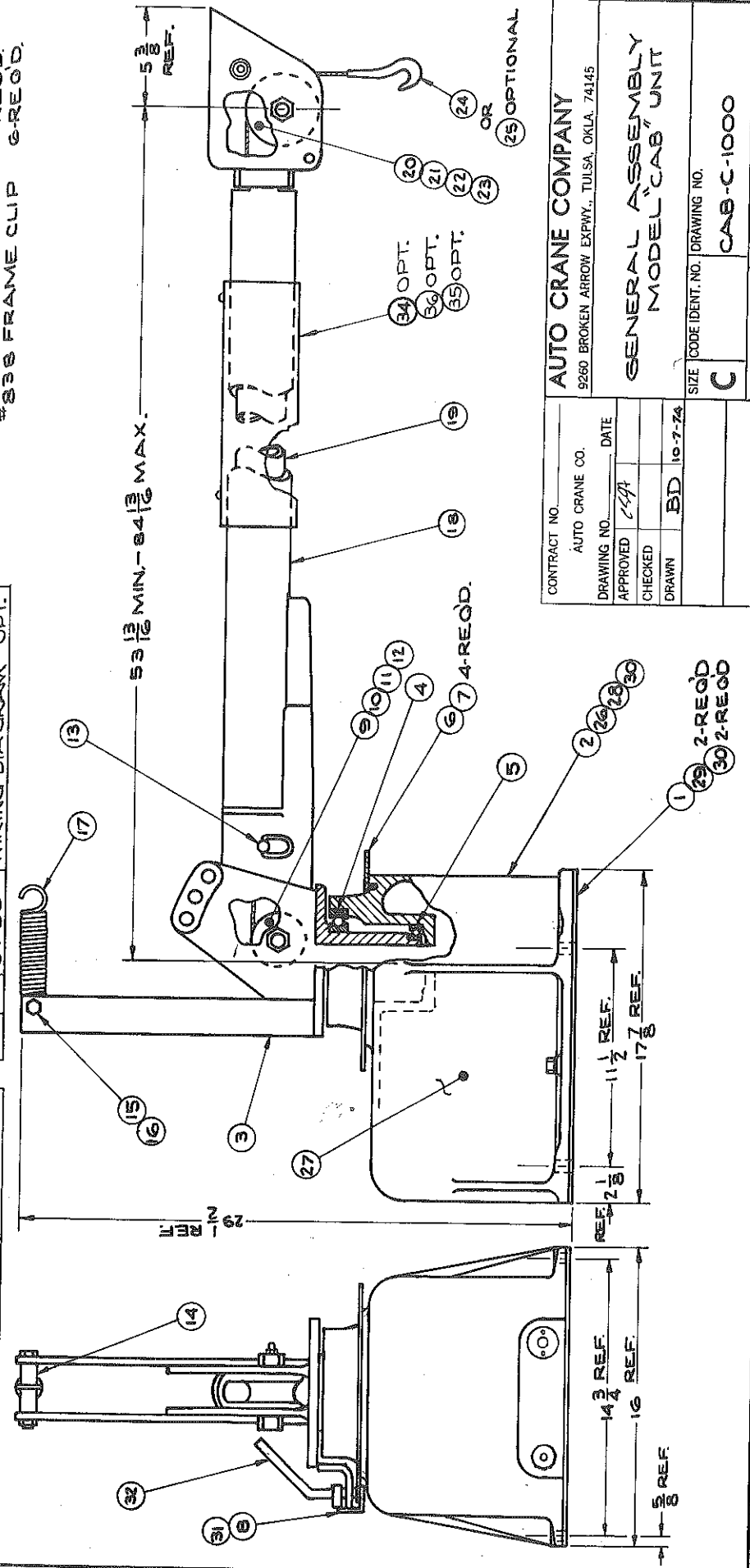




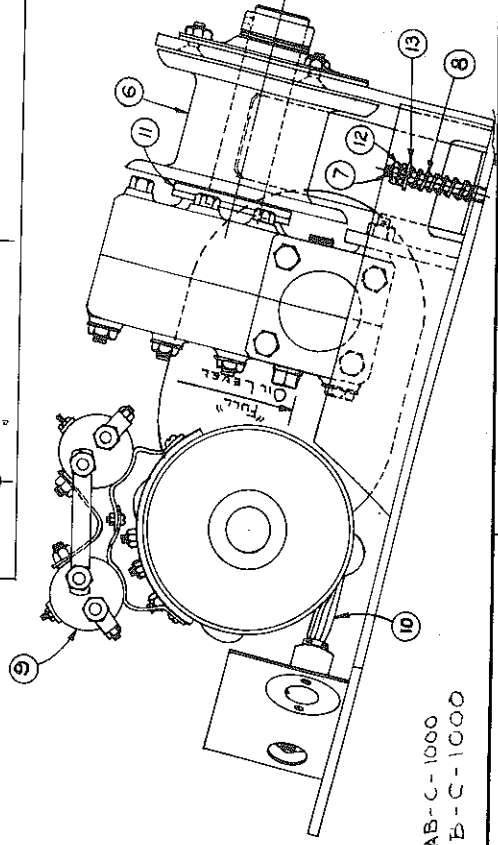
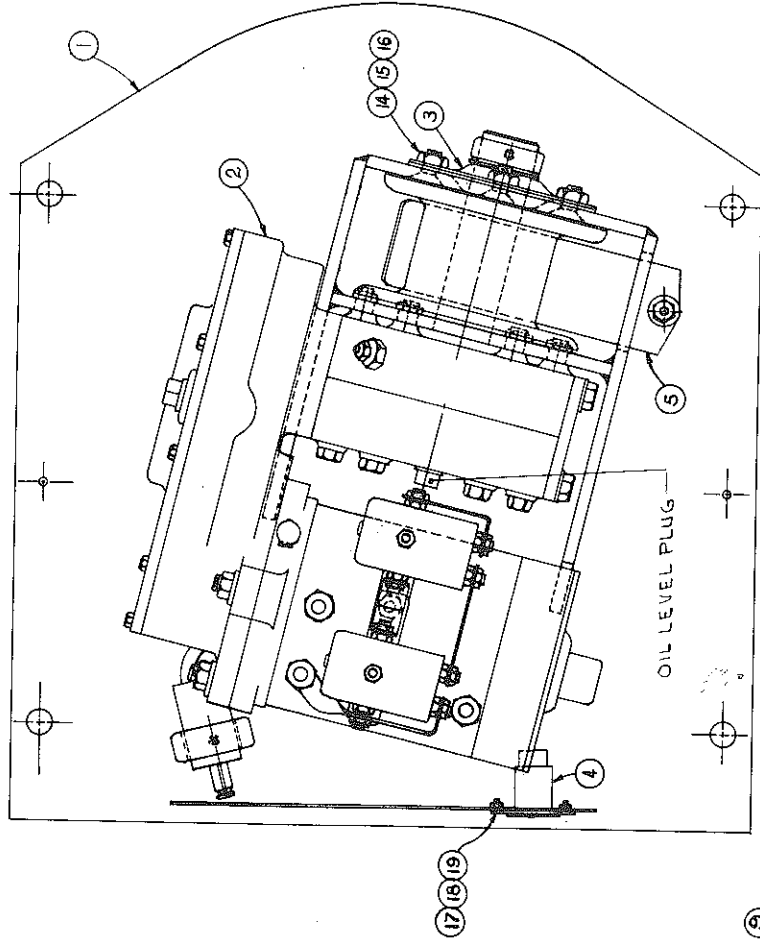
LIST OF MATERIAL	
ITEM QTY	PART NO DESCRIPTION
1	1 CB-C-3000 HOIST ASSY.
2	1 CB-B-2010-A CASE, HOIST
3	1 OA-2004C GULL ASSY
4	1 BA-2002 BEARING
5	1 BA-2003 BEARING
6	1 C-2004 BRAKE RING
7	4 SCREW, MACH. FLT. HD. 1/2 UNF. X 1 1/2
8	1 OA-2023 CLAMP-BRAKE SHOE
9	1 OA-2008 SHEAVE
10	1 OA-2010 HINGE PIN
11	1 NUT, HEX-LOCK- 3/4 UNF.
12	1 ZERK, GREASE- 1 NPT.
13	1 BA-2011 PIN-BOOM POSITIONING
14	1 OA-2022 SPACER
15	1 SCREW, CAP-HEX 1/2 UNF. X 4
16	1 NUT, HEX-LOCK-THIN- 1/2 UNF.
17	1 OA-2018 SPRING
18	1 OA-2005-7 BOOM, LOWER

LIST OF MATERIAL	
ITEM QTY	PART NO DESCRIPTION
19	1 OA-2006-7 BOOM, UPPER
20	1 OX-2009 SHEAVE.
21	1 BA-2001 BEARING
22	1 SCREW, CAP-HEX HD- 3/8 UNF. X 1 1/2
23	1 NUT, HEX-LOCK-THIN 1/2 UNF.
24	1 00-2012-40A CABLE - 40 FT.
25	REF 00-2012-30A CABLE - 30 FT. (OPTIONAL)
26	1 00-1011-1 AUTO CRANE EMBLEM
27	REF 6740 WIRING ASSY.
28	1 CA-1001 SERIAL PLATE
29	2 SCREW, CAP-HEX HD 1/2 UNF. X 1 1/2
30	2 WASHER, LOCK- 1/2
31	1 00-2022 BRAKE SHOE
32	1 00-2024 HANDLE, BRAKE
33	1 BA-1010 WARNING PLATE 3 X 3 1/2
34	1 6664 LOAD SENSOR OPT.
35	1 7608 BOOM STOP INST. OPT.
36	1 6769 WIRING DIAGRAM OPT.

GENERAL NOTES:  
1. ADD THESE ITEMS FOR SHIPMENT  
6004-20, POWERCABLE 1-REQD.  
6751-15, PENDANT 1-REQD.  
#838 FRAME CLIP 6-REQD.



CONTRACT NO. _____		DATE _____	
AUTO CRANE CO.		9260 BROKEN ARROW EXPWY., TULSA, OKLA. 74145	
DRAWING NO. _____	APPROVED _____	CHECKED _____	DRAWN _____
BD 10-7-74			
SCALE, QUARTER		WEIGHT	SHEET OF
C		CAB-C-1000	
SIZE CODE IDENT. NO. DRAWING NO.		GENERAL ASSEMBLY MODEL "CAB" UNIT	
AUTO CRANE COMPANY			

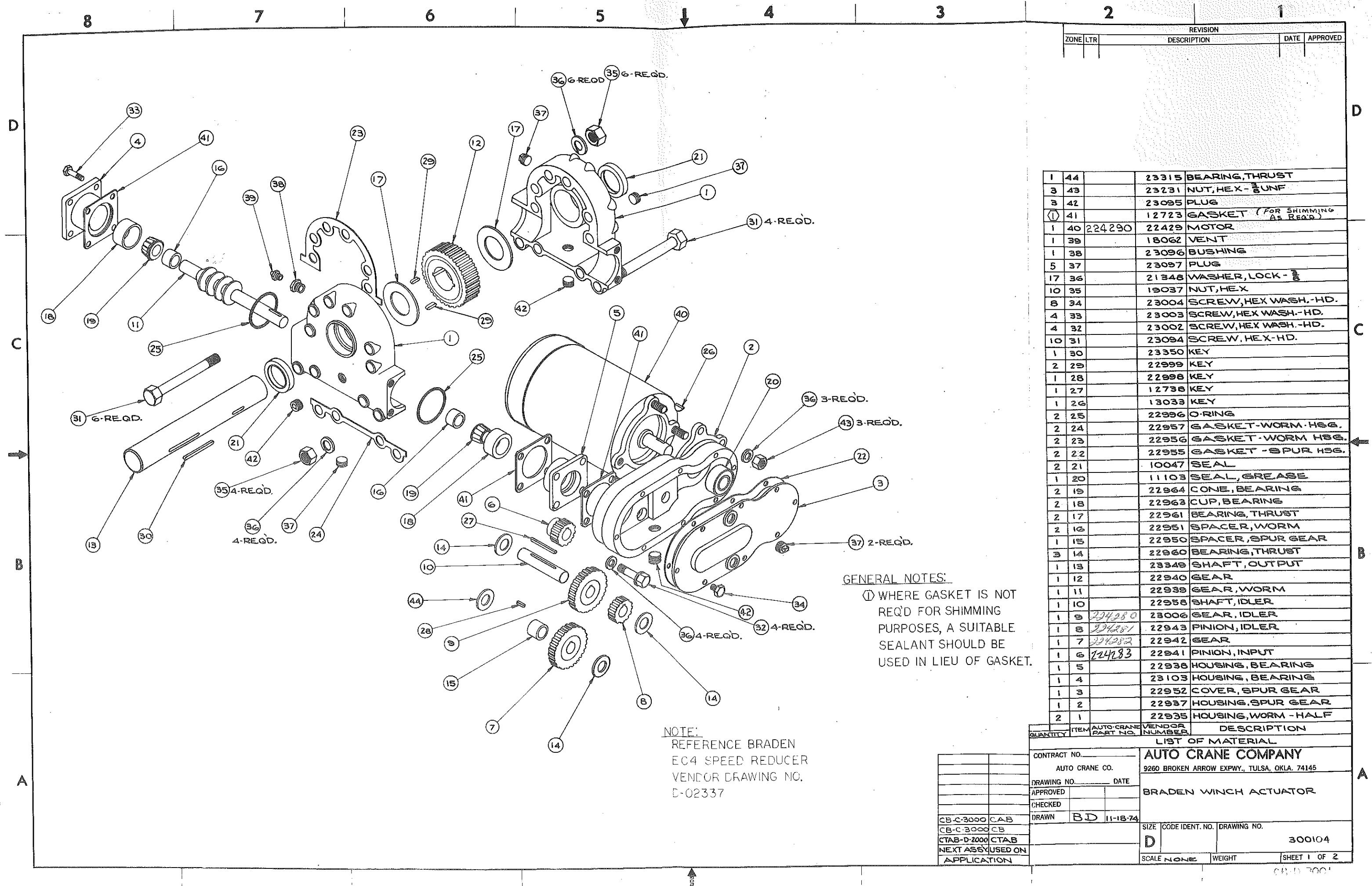


CAB-C-1000  
N/A CB-C-1000

ZONE	LTR	REVISION	DATE	APPROVED
A	1	ITEM 1B - WAS #6-32 x 5/16 TO #6-32 x 3/8 ITEM 12 - QUAN. WAS (2) CHANGED TO (1) Also Hex Nut To Self Locking Nut ITEM 5 - CHANGED DESIGN ADDED NUT ASSEMBLY CAB-C-1000	6-16-75	RICKMAN
B	2	BW-3004 WAS BW-A-3004	6-16-75	AUC

ITEM	QUAN.	PART NO.	DESCRIPTION
19	2	---	#6 LOCK WASHER
18	2	---	#6-32 X 3/8 FLAT HD. MACH. SCREW
17	2	---	#6-32 HEX. NUT
16	3	---	3/8" LOCK WASHER
15	3	---	3/8" 16NC. HEX. NUT
14	3	---	3/8" 16NC. XI" FLAT HD. MACH. SCREW
13	1	---	1/4" FLAT WASHER
12	1	---	1/4" 20NC. SELF LOCKING NUT
11	2	CB-A-3009	SPACER
10	1	6740	WIRING ASSEMBLY
9	1	6741	RELAY ASSEMBLY (REF)
8	1	CB-A-3008	SPRING
7	1	CB-A-3007	STUD - CABLE GUARD
6	1	B-4003	DRUM
5	1	CB-B-3004	CABLE GUARD
4	1	6309-1	PLUG ASSY. (REF)
3	1	BW-3004	BEARING
2	1	CB-D-3001	ACTUATOR ASSEMBLY
1	1	CB-D-3006	FRAME-HOIST BASE ASSY.

CONTRACT NO.		DATE	
AUTO CRANE CO.		3-3-75	
DRAWING NO.	APPROVED	CHECKED	DRAWN
	AUC		DWCATES/6-28-74
<b>AUTO CRANE COMPANY</b> 9260 BROKEN ARROW EXPWY., TULSA, OKLA. 74145			
HOIST ASSEMBLY MODEL CB-8 & CAB-			
SIZE	CODE IDENT. NO.	DRAWING NO.	
C		300006	
SCALE	HALF	WEIGHT	SHEET OF
			CB-C-3000



ZONE		LTR		REVISION		DESCRIPTION		DATE	APPROVED

1	44		23315	BEARING, THRUST
3	43		23231	NUT, HEX - 3/8 UNF
3	42		23095	PLUG
①	41		12723	GASKET (FOR SHIMMING AS REQ'D)
1	40	224290	22429	MOTOR
1	39		18062	VENT
1	38		23096	BUSHING
5	37		23097	PLUG
17	36		21348	WASHER, LOCK - 1/2
10	35		19037	NUT, HEX
8	34		23004	SCREW, HEX WASH.-HD.
4	33		23003	SCREW, HEX WASH.-HD.
4	32		23002	SCREW, HEX WASH.-HD.
10	31		23094	SCREW, HEX-HD.
1	30		23350	KEY
2	29		22999	KEY
1	28		22998	KEY
1	27		12738	KEY
1	26		13033	KEY
2	25		22996	O-RING
2	24		22957	GASKET-WORM-HSG.
2	23		22956	GASKET-WORM HSG.
2	22		22955	GASKET-SPUR HSG.
2	21		10047	SEAL
1	20		11103	SEAL, GREASE
2	19		22964	CONE, BEARING
2	18		22963	CUP, BEARING
2	17		22961	BEARING, THRUST
2	16		22951	SPACER, WORM
1	15		22950	SPACER, SPUR GEAR
3	14		22960	BEARING, THRUST
1	13		23349	SHAFT, OUTPUT
1	12		22940	GEAR
1	11		22939	GEAR, WORM
1	10		22938	SHAFT, IDLER
1	9	224280	23006	GEAR, IDLER
1	8	224281	22943	PINION, IDLER
1	7	224282	22942	GEAR
1	6	224283	22941	PINION, INPUT
1	5		22938	HOUSING, BEARING
1	4		23103	HOUSING, BEARING
1	3		22952	COVER, SPUR GEAR
1	2		22937	HOUSING, SPUR GEAR
2	1		22935	HOUSING, WORM - HALF

GENERAL NOTES:  
① WHERE GASKET IS NOT REQ'D FOR SHIMMING PURPOSES, A SUITABLE SEALANT SHOULD BE USED IN LIEU OF GASKET.

NOTE:  
REFERENCE BRADEN  
EC4 SPEED REDUCER  
VENDOR DRAWING NO.  
D-02337

CONTRACT NO.	AUTO CRANE CO.	
DRAWING NO.	DATE	
APPROVED		
CHECKED		
DRAWN	B.D. 11-18-74	
CB-C-3000 CAB		
CB-C-3000 CB		
CTAB-D-2000 CTAB		
NEXT ASSY USED ON		
APPLICATION		

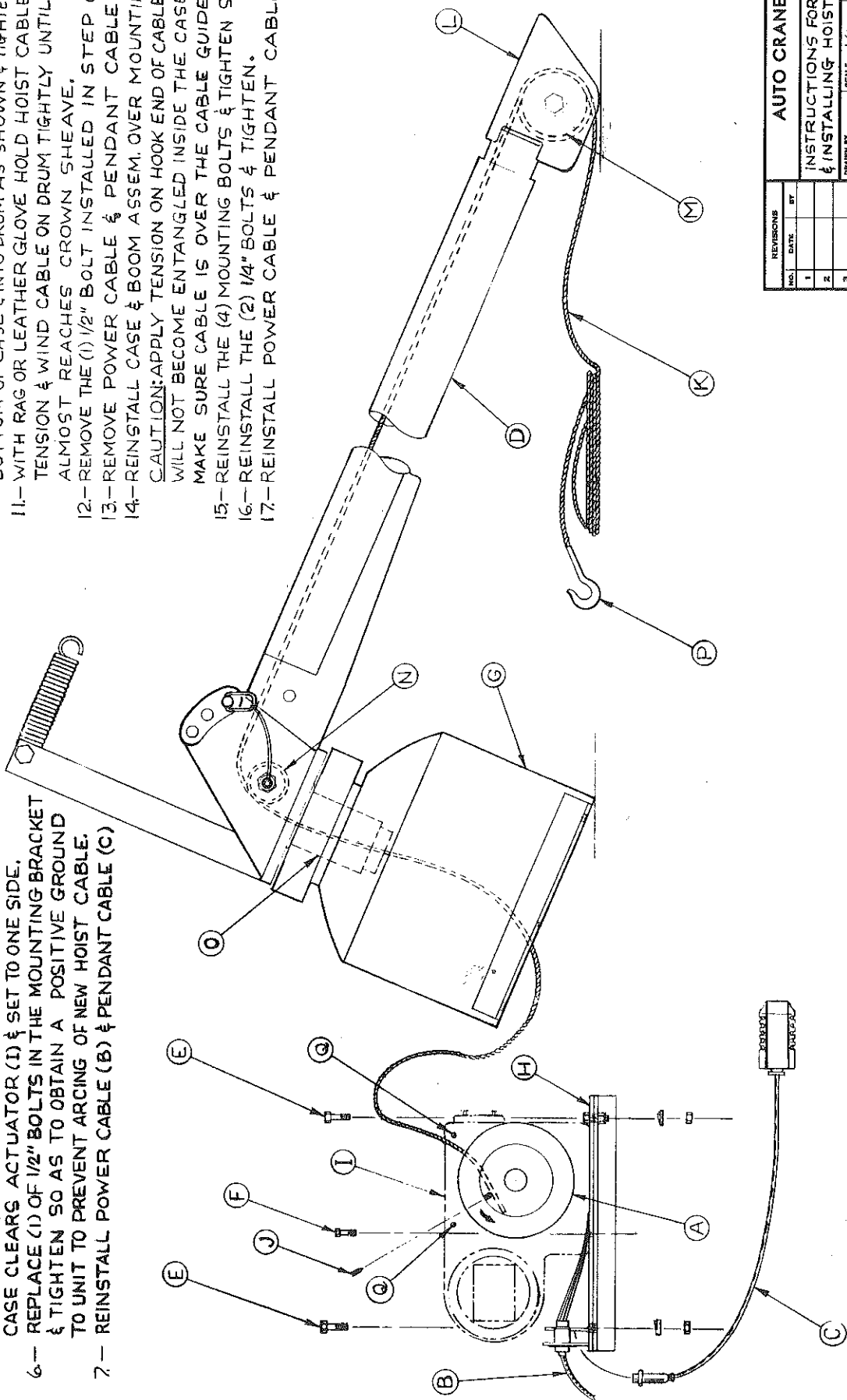
QUANTITY	ITEM	AUTO-CRANE PART NO.	VENDOR NUMBER	DESCRIPTION
LIST OF MATERIAL				
AUTO CRANE COMPANY				
9260 BROKEN ARROW EXPWY., TULSA, OKLA. 74145				
BRADEN WINCH ACTUATOR				
SIZE	CODE IDENT. NO.	DRAWING NO.		
D		300104		
SCALE	NONE	WEIGHT	SHEET 1 OF 2	



# PROCEDURE FOR REPLACEMENT OF HOIST CABLE

## STEPS:

- 1.- PRESS PENDANT "DOWN" TOGGLE & RUN ALL OF OLD HOIST CABLE OFF DRUM (A) & REMOVE OLD HOIST CABLE FROM DRUM. USE PENDANT CONTROL IF NECESSARY TO ROTATE DRUM FOR ACCESS TO SET SCREW.
- 2.- THEN REMOVE POWER CABLE (B) AT "TWECO" CONNECTION AT BASE OF UNIT.
- 3.- IF EQUIPPED WITH REMOVABLE PENDANT CABLE (C) ALSO REMOVE FROM CONNECTION AT BASE OF UNIT.
- 4.- WITH BOOM (D) EITHER LAYING IN BOOM SUPPORT RACK OR BY BLOCKING UP TO BOTTOM OF BOOM, REMOVE THE (4) 1/2" MOUNTING BOLTS (E) & THE (2) 1/4" BOLTS (F) THAT HOLD THE CASE (G) TO THE MOUNTING PLATE (H).
- 5.- LIFT CASE & BOOM AS AN ASSEMBLY VERTICALLY UNTIL CASE CLEARS ACTUATOR (I) & SET TO ONE SIDE.
- 6.- REPLACE (1) OF 1/2" BOLTS IN THE MOUNTING BRACKET & TIGHTEN SO AS TO OBTAIN A POSITIVE GROUND TO UNIT TO PREVENT ARCING OF NEW HOIST CABLE.
- 7.- REINSTALL POWER CABLE (B) & PENDANT CABLE (C).
- 8.- REMOVE CABLE SET SCREW (J) IN DRUM & REMOVE OLD HOIST CABLE FROM DRUM. USE PENDANT CONTROL IF NECESSARY TO ROTATE DRUM FOR ACCESS TO SET SCREW.
- 9.- REMOVE OLD HOIST CABLE (K) FROM CASE & BOOM BY PULLING ON HOOK END OF HOIST CABLE.
- 10.- INSTALL THE NEW HOIST CABLE BY INSERTING PLAIN END IN CROWN (L) OVER CROWN SHEAVE (M) & FEEDING IT BACK TO BOTTOM PIVOT SHEAVE (N) & THEN DOWN THRU QUILL (O) & OUT WITH RAG OR LEATHER GLOVE HOLD HOIST CABLE UNDER TENSION & WIND CABLE ON DRUM TIGHTLY UNTIL HOOK (P) ALMOST REACHES CROWN SHEAVE.
- 11.- REMOVE THE (1) 1/2" BOLT INSTALLED IN STEP 6.
- 12.- REMOVE POWER CABLE & PENDANT CABLE.
- 13.- REINSTALL CASE & BOOM ASSEMBLY OVER MOUNTING PLATE. CAUTION: APPLY TENSION ON HOOK END OF CABLE SO IT WILL NOT BECOME ENTANGLED INSIDE THE CASE.
- 14.- MAKE SURE CABLE IS OVER THE CABLE GUIDE BOLT (Q).
- 15.- REINSTALL THE (4) MOUNTING BOLTS & TIGHTEN SECURELY.
- 16.- REINSTALL THE (2) 1/4" BOLTS & TIGHTEN.
- 17.- REINSTALL POWER CABLE & PENDANT CABLE.



REVISIONS		DATE		BY	
1					
2					
3					
4					
5					

AUTO CRANE CO.		TOLSON, ILLINOIS	
INSTRUCTIONS FOR REMOVING & INSTALLING HOIST CABLE			
DRAWN BY	J. DAY	SCALE	1/4"
CHECK'D		DATE	11-17-67
TRACED		APP'D	M 103

TULSA, OKLAHOMA

"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 reverse side)
  - D. Avoid kinks in cable.
  - E. Avoid abrasive action and contact with sharp corners.
4. Frequency of use.

AUTO CRANE units, up to 2,000 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 1,000 pound loads are exceeded to use a two-part line with a traveling block. It can be seen that there is a safety factor of 4.2 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 1,500 pound loads are exceeded to use a two-part line with the Model "SX" Traveling Block, and when 3,000 pound loads are exceeded that a three-part line be used with the Model "SX" 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 8,200 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.



## WIRE LINE LUBRICATION

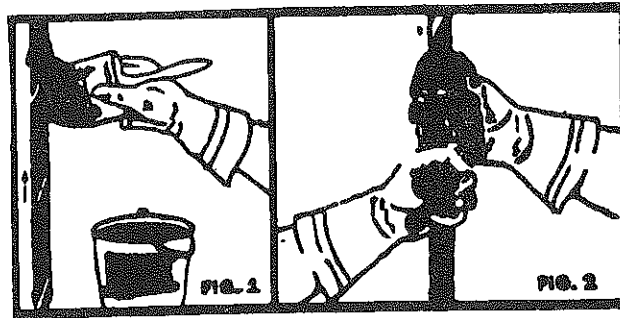
Lubrication of the wire line serves two important purposes: (1) helps to prevent corrosion; (2) lubricates the cable strands to reduce wear due to flexing and abrasion caused by contact with the sheaves, rollers, and cable on the drum.

### Preparation:

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

### Application:

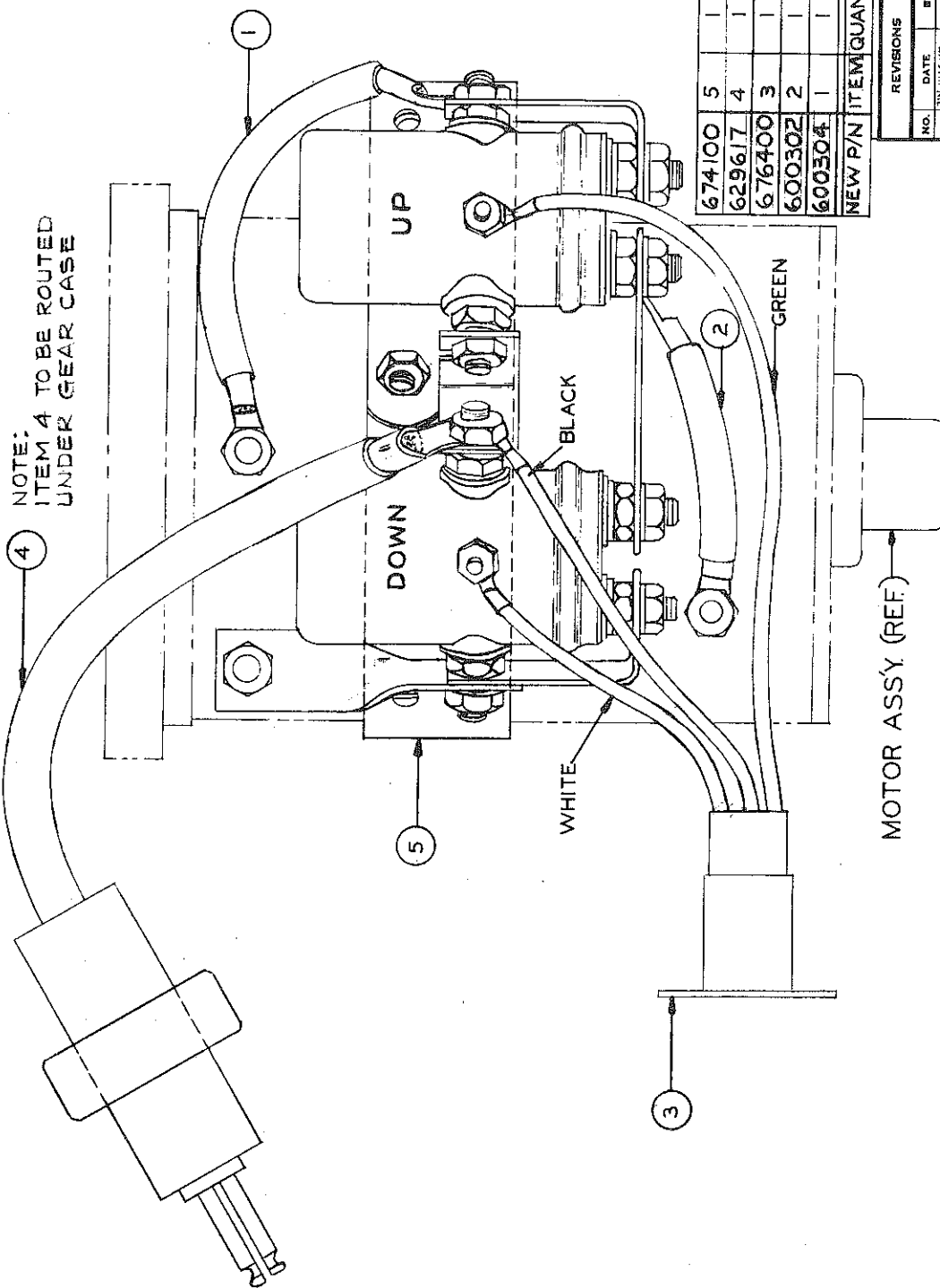
Two methods are illustrated in figures #1 and #2 below. A light weight motor oil may be used, as in figure #1; or a heavier lubricant such as grease gun lubricant, as in figure #2.



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.

6740000



NEW P/N	ITEM	QUAN.	PART NO.	DESCRIPTION
674100	5	1	6741	RELAY ASS'Y.
629617	4	1	6296-17	17" LONG CONDUCTOR
676400	3	1	6764	PLUG ASS'Y.
600302	2	1	6003-2	2" LONG CONDUCTOR
600304	1	1	6003-4	4" LONG CONDUCTOR

REVISIONS				
NO.	DATE	BY	APPROVED	REASON
1	7-16-74	APC		INITIALS
2				
3				
4				
5				

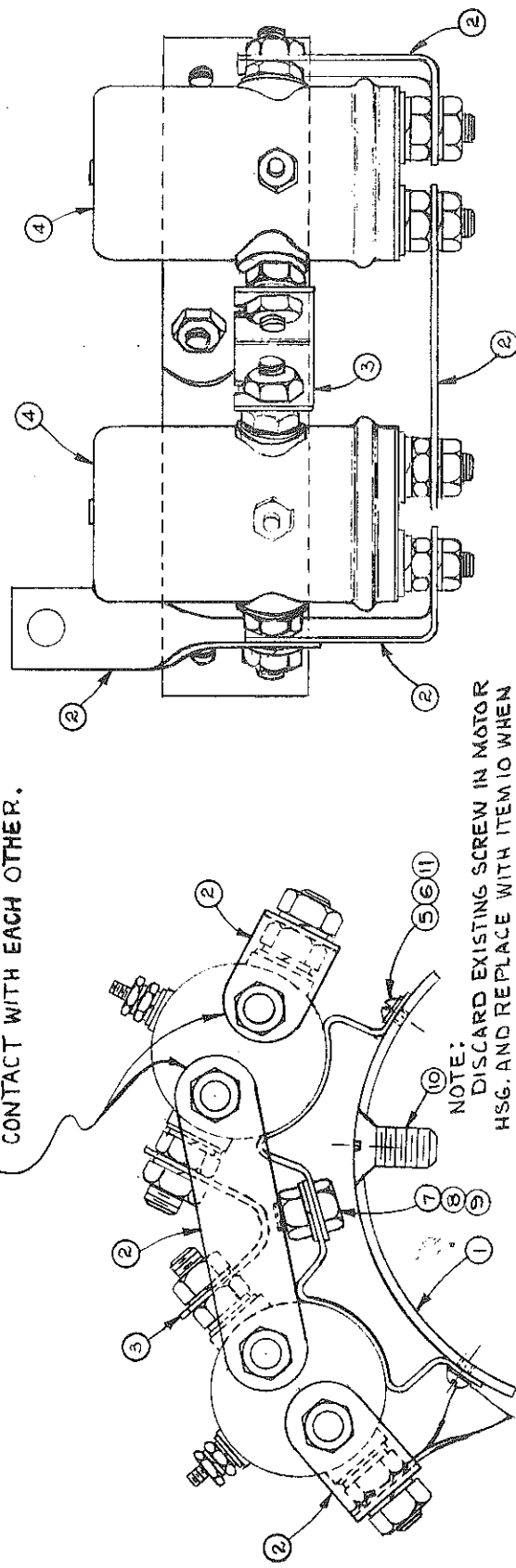
AUTO CRANE CO.				
TULSA, OKLAHOMA				
WIRING ASSEMBLY				
FOR CB & CAB UNITS				
DRAWN BY	P.W.G.	SCALE	NONE	MATERIAL
CHK'D		DATE	7-16-74	NOTED
TRACED		APP'D	APC	DRAWING NO.
				674000

N/A 300006

6740

674100

ENDS OF ITEM 2 (CONDUCTOR) TO BE TRIMMED AT ASSEMBLY TO PREVENT CONTACT WITH EACH OTHER.



NOTE:  
DISCARD EXISTING SCREW IN MOTOR HSG. AND REPLACE WITH ITEM 10 WHEN ATTACHING RELAY ASSEMBLY TO MOTOR.

ITEM	QUAN.	PART NO.	DESCRIPTION
11	2		#10 EXTERNAL TOOTH LOCKWASHER
10	1		3/8-16 UNC. FLAT. HD. MACH. SCW. 32" HD. X 3/4" LG.
9	1		1/4" LOCKWASHER
8	1		1/4"-20 UNC. HEX. NUT
7	1		1/4"-20 UNC. CAPSCREW X 1/2" LG.
6	2		10 SAE FLAT WASHER
5	2		10-32 RD. HD. MACH. SCREW X 5/16 LG.
4	2	6551	12V RELAY
3	1	6742	CONDUCTOR
2	4	6583	RELAY CONDUCTOR
1	1	6743	RELAY MOUNTING BRKT.
ITEM	QUAN.	PART NO.	DESCRIPTION

NOTE: ITEMS 2 & 3 TO BE BENT TO FIT AT INSTALLATION

N/A 6768  
N/A 6767  
N/A 6740

REVISIONS				
NO.	DATE	BY	DATE	BY
1	2-5-75	MD		
2	6-2-78	MR		
3				
4				
5				

AUTO CRANE CO.		TULSA, OKLAHOMA	
RELAY ASSEMBLY			
DRAWN BY	DWC.	SCALE	NONE
CHK'D		DATE	7-15-74
TRACED		APPRO'D	AAC
			6741

674100

1

2

3

4

1 REF.

WHT.

GRN.

VIEW A-A

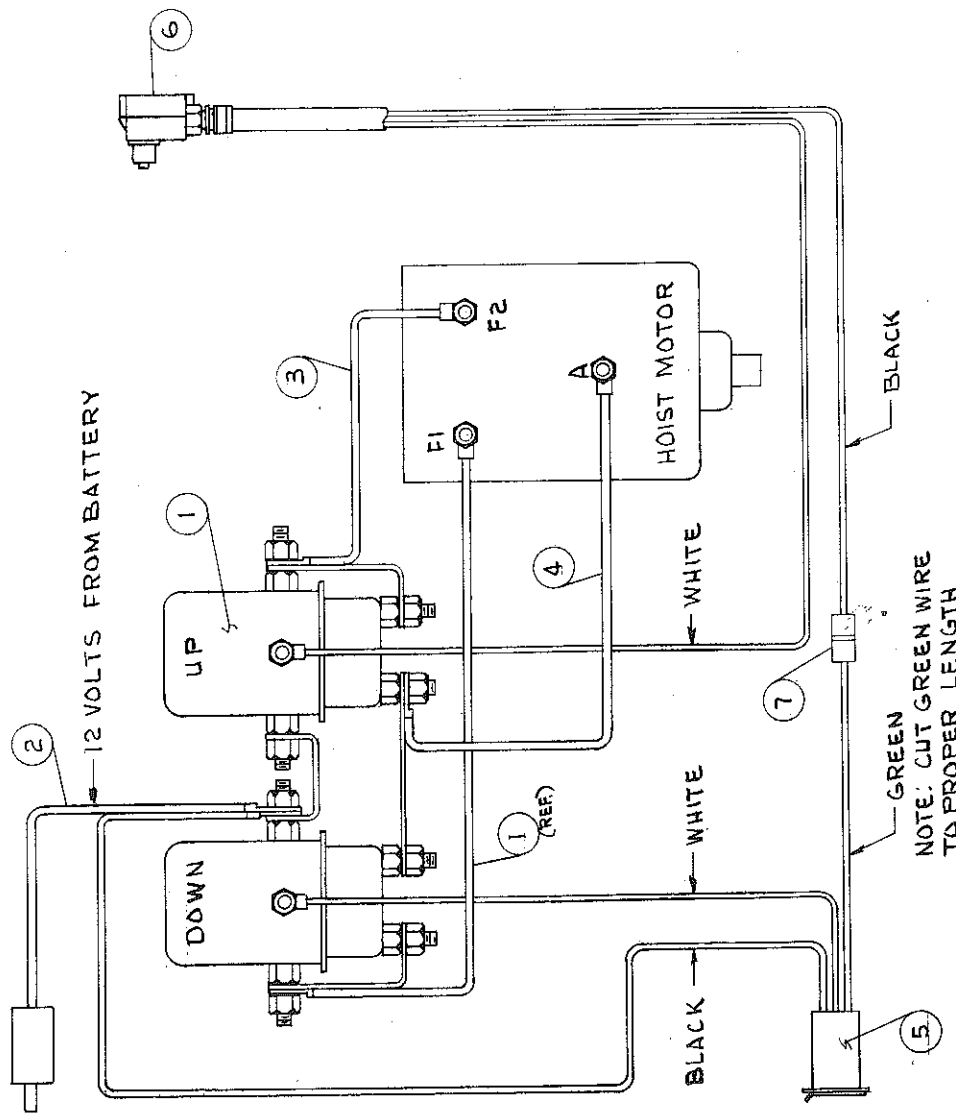
VIEW A-A

ITEM(1)CONSISTS OF 2 PARTS.

634401	2	4	6344-1	CABLE TIE
675200	1	3	6752	PENDANT HOIST,CONT.
643200	1	2	6432	SPRING, WIRE
630903	1	1	6309-3	PLUG, FEM. W/BOOT
NEW PART NO.	QTY	ITEM	PART NO.	DESCRIPTION

LIST OF MATERIAL											
AUTO CRANE CO.											
TULSA, OKLAHOMA											
HOIST CONTROL PENDANT											
REVISIONS				DRAWN BY		SCALE		FULL		MATERIAL	
NO.		DATE		BY				CHK'D		DATE	
1								BD		12-19-74	
2										APP'D	
3										APPROVED	
4										DATE	
5										APPROVED	
6374										DRAWING NO.	
6276										675115	
6554											
6297-1											
6695											
NEXT ASS'Y.											

6751-15'



NOTE:  
1. FOR INSTALLATION OF LOAD  
LIMIT SWITCH REFER TO DRAW-  
ING NO. 666400

1	7	—	STA-KON #2RB-14
1	6	B	LOAD LIMIT SW.
1	5	A	PLUG ASS'Y
1	4	A	CONDUCTOR
1	3	A	CONDUCTOR
1	2	A	CONDUCTOR
1	1	B	RELAY ASSY
QTY	TEMP	SIZE	DESCRIPTION
REVISONS		PART NO.	
NO.	DATE	BY	
1			
2			
3			
4			
5			





# AUTO CRANE COMPANY

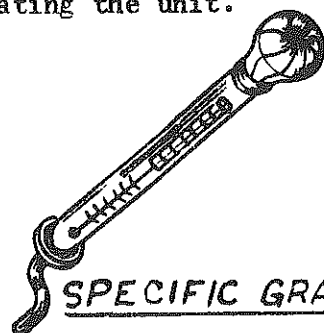
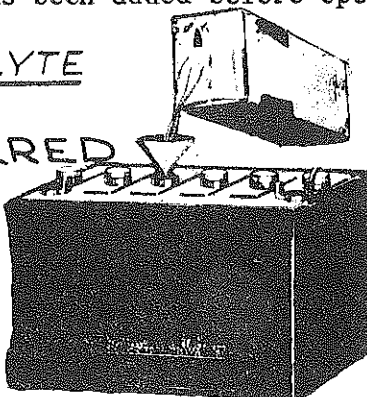
Tulsa, Oklahoma

## 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.

### ELECTROLYTE

100 AMP. PREFERRED  
60 AMP. MINIMUM  
MAX. PHYSICAL  
SIZE: 6<sup>5</sup>/<sub>8</sub> W X  
9<sup>1</sup>/<sub>2</sub> H X 11<sup>1</sup>/<sub>4</sub> L



### SPECIFIC GRAVITY

Maintenance of Auto Crane unit battery 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.

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) can not 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.

(Over)

M107

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.

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.

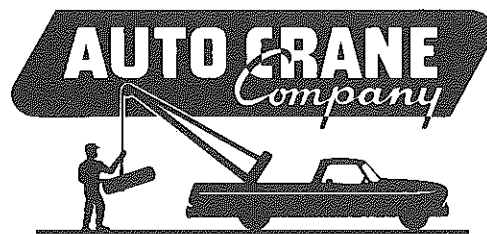
If it is necessary to replace a battery, and a dry charge battery is used, the following procedure applies:

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.





9260 BROKEN ARROW EXPRESSWAY, 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 SERVICE POLICY

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 — 0.20 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 \$40.00 per man per day will be charged when service man remains away from home base overnight.

## 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)

## 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 ..... \$20.00 per hour  
Field rate, experienced Service Man ..... \$20.00 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.

## 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.

## 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

Ralph Reeves, General Parts & Service Manager ..... 918 258-2080 Broken Arrow, Ok.  
James Lamer, Service Representative ..... 918 272-5006 Owasso, Ok.  
Charles "Bud" Carper, Service Representative ..... 918 252-4447 Broken Arrow, Ok.  
Ronald Dodd, Sales Manager ..... 918 663-9785 Tulsa, Ok.  
Jack Hamilton, Mfg. Manager ..... 918 663-3236 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.