270301-011-AP-1-93 EFFECTIVE SERIAL NO. 270303-001-AQ-1-93

# OWNERS MANUAL 2703 M/MR REVISION 12/94 PART NO. 999949

SERIAL NO.

#### **AUTO CRANE COMPANY**

PO BOX 580697, TULSA, OK 74158-0697 4707 N. MINGO ROAD, TULSA, OK 74117 PHONE (918) 836-0463, TELEX 158108 RAMSEY TUL SALES FAX (918) 438-6688 SERVICE FAX (918) 834-5979



#### **WARNINGS**



#### **READ THIS PAGE!**

- WARNING! Federal law (49 cfr part 571) requires that the Final Stage Manufacturer of a vehicle certify that the vehicle complies with all applicable federal regulations. Any modifications performed on the vehicle prior to the final stage are also considered intermediate stage manufacturing and must be certified as to compliance. The installer of this crane and body is considered one of the manufacturers of the vehicle. As such a manufacturer, the installer is responsible for compliance with all applicable federal and state regulations, and is required to certify that the vehicle is in compliance.
- WARNING! It is the further responsibility of the installer to comply with the OSHA Truck Crane Stability Requirements as specified by 29 CFR part 1910.180 (C) (1).
- WARNING! NEVER OPERATE THE CRANE NEAR ELECTRICAL POWER LINES! Auto Crane Company recommends that a crane never be moved any closer than 10 feet (3.05m) from power lines at any point. SEE DANGER DECAL (P/N 040529) in this Owner's Manual.

#### WARNING! NEVER .....

- EXCEED load chart capacities (centerline of rotation to hoist hook).
- · un-reel last 5 wraps of cable from drum!
- wrap cable around load!
- attempt to lift or drag a load from the side! The boom can fail far below its' rated capacity.
- weld, modify, or use unauthorized components on any Auto Crane unit! This will void any warranty or liability. Also failure of the crane may result.
- place a chain link on the tip of the hook and try to lift a load!
- use a sling bar or anything larger than the hook throat that could prevent the hook latch from closing, thus negating the safety feature!
- hold on any pendant Select Switch that will cause unsafe operating conditions!
- WARNING! In using a hook with latch, ALWAYS make sure that the hook throat is closed before lifting a load! Proper attention and common sense applied to the use of the hoist hook and various slings will prevent possible damage to material being hoisted and may prevent injury to personnel.
- WARNING! Failure to correctly plumb and wire crane can cause inadvertent operation and damage to crane and/or personnel!
- WARNING! Auto Crane Company remote controlled, stiff boom cranes are not designed or intended to be used for any applications involving the lifting or moving of personnel.
- WARNING! ALWAYS operate the crane in compliance with the load capacity chart.
   <u>Do not use</u> the overload shutdown device to determine maximum rated loads, if your crane is equipped with this type of device.



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# INTRODUCTION 2703 SERIES

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

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

For your convenience the overall dimensions of the 2703 series crane are on the General Dimension Drawing. Maximum turning radius is shown at the outside point of the hoist actuator (M model) and the outside edge of the rotation gearmotor (MR model).

Remember, the crane adds weight to the vehicle. Adding weight may change the driving and riding characteristics of the vehicle unless the appropriate overload spring(s) are installed on the truck. The psyload of the vehicle is reduced by the weight of the crane. The operator should exercise care when loading the vehicle. Distributing the psyload on the vehicle evenly will greatly improve the driving and riding characteristics of the vehicle. A minimum G.V.W. of 8,000 lbs, with two rear jacklegs (or outriggers) is recommended for mounting the 2703 series cranes. Crane side jackleg should extend 45" from centerline of truck chassis.

The 2703 series cranes are attached directly to your 12 volt truck electrical system. The power cable and retaining clips are included with the crane. A typical power cable mounting and hookup is shown on page 2-1.0.0. The performance of your new crane depends on the truck electrical system. The use of the low maintenance battery is not recommended for use on any Auto Crane product. The recommended alternator and battery that will give the longest life with the most useful duty cycle is a 60 amp, alternator with a 120 minute reserve capacity, deep cycle battery. These specifications should be considered minimum.

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

It has always been Auto Crane Company policy to handle all warranty claims we receive as promptly as possible. If a warranty claim involves discrepant material or workmanship, Auto Crane will take immediate corrective action. It is understandable that Auto Crane company cannot assume responsibility of liability when it is obvious that our products have been abused, mis-used, overloaded or otherwise damaged by inexperienced persons trying to operate the equipment without reading the manual.

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

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

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

#### **DISTRIBUTOR ASSISTANCE:**

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

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

This manual does not cover all maintenance, operating, or repair instructions pertinent to all possible situations. If you require additional information, please contact the Auto Crane Company at the following telephone number: (918) 438-2760. The information contained in the manual is in effect at the time of this printing. Auto Crane Company reserves the right to update this material without notice or obligation.

# GENERAL SPECIFICATIONS 2703 SERIES

#### **Dimensions**

Width:

[M] 19 in (.48 m)

[MR] 21.5 in (.55 m)

Height:

27.25 in (.69 m)

Length:

6 ft 11 in (2.11 m)

[boom(s) stored]

Weight:

M 6-10

365 lbs (166 kg)

M 6-10-14

430 lbs (195 kg)

MR 6-10

430 lbs (195 kg)

MR 6-10-14

460 lbs (209 kg)

[Add 5 lbs (2.25 kg) for cable length

of 75 feet (23 m)]

#### Capacity

8,100 ft lbs (1.12 ton/m)

[ft lbs = horizontal distance from centerline
of rotation to free hanging weight (feet) x
amount of weight (pounds)]

LIFTING CAPACITIES						
ft	lbs	ft	lbs			
3	2,700	9	900			
4	2,025	10	810			
5	1,620	11	735			
6	1,350	12	675			
7	1,150	13	620			
8	1,010	14	575			

#### Reach

Second boom will reach from 6 ft to 10 ft Third boom will reach from 10 ft to 14 ft

#### Cable

62 ft (18.9 m) of 7/32" diameter aircraft quality cable is standard [75 ft (22.86 m) optional]. This cable has a single line breaking strength of 5,600 lbs (2,540 kg).

#### **Chassis Requirements**

8,000 lb (3,628 kg) GVWR minimum

#### **Electrical System**

**Hoist Motor:** 

12 voit DC series wound

Rotation Gearmotor: 12 volt DC, PM type

#### **Electrical System Requirements**

Alternator:

60 amp (minimum)

Battery:

100 minute reserve

capacity (minimum)
Maintenance type

#### Rotation

M model: 360° Continuous manual rotation MR model: 360° Continuous power rotation

### --- IMPORTANT ---SAFETY TIPS AND PRECAUTIONS

- Make certain the vehicle meets minimum chassis requirements. (These requirements do not guarantee unit stability)
- 2. Make certain the crane is installed per factory specifications. Contact your local Distributor or the Auto Crane factory if any questions arise.
- 3. Keep the vehicle in as level a position as possible while loading or unloading.
- 4. ALWAYS set the vehicle emergency brake before beginning crane operations.
- ALWAYS use outriggers from vehicle to the ground during crane operation. Make sure they are firmly positioned on solid footings.
- 6. All load ratings are based on crane capacity, NOT truck/crane stability.
- 7. Keep objects and personnel clear of crane path during operation.
- 8. Keep hoist cable pulled tight at all times.
- REMEMBER, in lifting a heavy load, the weight can create enough tipping moment to overturn the vehicle.
- ALWAYS keep load as close to ground as possible.
- 11. Oil gears as required.
- Periodic adjustment of hoist worm brake may be required (see automatic safety brake drawing in this manual).
- 13. Hydraulic hoses need to be inspected frequently for signs of deterioration, and be replaced as required.
- 14. The hoist hook is an important item that an operator should consider and use properly. It should be checked on a daily basis for distortion or cracks.
- 15. ALWAYS store outriggers before road travel.

- 16. NEVER OPERATE THE CRANE NEAR ELECTRICAL POWER LINES! Auto Crane Company recommends that a crane never be moved any closer than 10 feet (3.05m) from power lines at any point. SEE DANGER DECAL (P/N 040529) in this Owner's Manual.
- 17. NEVER un-reel last 5 wraps of cable from drum!
- 18. NEVER wrap cable around load!
- 19. **NEVER** attempt to lift or drag a load from the side! The boom can fail far below its rated capacity.
- 20. NEVER weld, modify, or use unauthorized components on any Auto Crane unit! This will void any warranty or liability. Also failure of the crane may result.
- 21. **NEVER** place a chain link on the tip of the hook and try to lift a load!
- 22. NEVER use a sling bar or anything larger than the hook throat that could prevent the hook latch from closing, thus negating the safety feature!
- 23. In using a hook with latch, ALWAYS insure that the hook throat is closed before lifting a load! Proper attention and common sense applied to the use of the hoist hook and various slings will prevent possible damage to material being hoisted and may prevent injury to personnel.
- 24. NEVER hold any pendant Select Switch on that will cause unsafe operating conditions!
- 25. **NEVER EXCEED** load chart capacities (centerline of rotation to hoist hook).

REVISED 3/96

# --- IMPORTANT --OPERATION OF UNIT

- Make sure this manual has been thoroughly read by all crane operating personnel and supervisors.
- A routine inspection of the crane should be mandatory before each operating day. Any defects should be corrected immediately.
- At a job site the vehicle should be positioned so that the crane can adequately reach the load within the rated capacity (centerline of rotation to hoist hook).
- 4. Keep the vehicle as level as possible during operation.
- 5. For electric cranes, engage emergency brake and leave ignition on with transmission in neutral (or in park for automatic transmissions). Activate any crane power switches. For Auto Crane units requiring battery and hydraulic operation, engage emergency brake, place gear selector in neutral, press clutch, activate PTO, release clutch and after hydraulic fluid is warm, set throttle control to proper engine speed.
- Always use outriggers from the truck to the ground.
   Be sure these are firm and adequately positioned.
   When rotating, keep load as low to the ground as possible.
- 7. Remove pendant control from cab or storage area. On smaller units, plug pendant into receptacle on crane. On larger units, remove pendant control from guard and unwrap cable from boom. Do not operate crane until cable is unwound completely. On all cranes, detach hook from dead man. Crane is now ready for operation.

- Always boom up before rotating so the boom will clear the required boom support.
- When extending the boom, always maintain clearance between the boom crown and the traveling block or hoist book.
- Always observe safe and practical operation to avoid possible accidents. Refer to Safety Tips and Precautions.
- 11. After completing lifting operations, return the boom to stowed position on the boom support. Avoid unneeded pressure on the boom support.
- 12. Store pendant control on proper location (in cab or on crane).
- Return outriggers to stowed position. Make sure they are pinned in place or jacklegs are returned to compartment.
- 14. Check work area for any tools or equipment not stored.
- 15. Release throttle control, depress clutch and disengage PTO. Deactivate any crane power switches
- 16. Report any unusual occurrence during crane operation that may indicate required maintenance or repair.
- 17. NEVER use two cranes to support a load too large for either crane.
- 18. Spray all electrical equipment with special corrosion resistant coating. This eliminates rust or corrosion due to melting and freezing action of condensation.

# OPERATION OF OUTRIGGERS

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

For hydraulic outriggers:

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

For manual outriggers:

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

REVISED 4/94

#### LIFE OF WIRELINE

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

- 1. Load being handled
- 2. Corrosive conditions
- 3. Maintenance of the unit
  - A.Keep the sheaves turning freely
  - B.Maintain tension on cable to insure proper spooling
  - C.Avoid kinks in cable
  - D.Avoid abrasive action and contact with sharp corners
- 4. Frequency of use

Auto Crane units, 2700 pound rating to 3200 pound rating use 7/32 inch diameter galvanized pre-formed 7 x 19 aircraft cable. This cable has a working strength, when new, of 5600 pounds. It is recommended when 1600 pound loads are exceeded to use a two part line with a traveling block. This will ensure a 3.5 to 1 safety factor when the cable is new.

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

Items to look for while inspecting the cables are:

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

#### MAINTENANCE OF BATTERIES

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, properly filled with water and relatively clean.

#### **Keep Properly Charged**

Many things affect the proper charge to a battery, such as:

- 1 Regulator settings
- 2 Proper tightness of belts on the alternator or generator
- 3 Good, clean connections of all cables and wires at the following places:
  - A.Battery
  - **B.Regulator**
  - C.Starting motor
  - D.Alternator or generator
  - E.Ground connections (most important)

It is of extreme importance to keep the battery as fully charged as possible without overcharging, especially when vehicles are left outside for extended periods in extremely cold climates. A battery care freeze. Freezing points for various specific gravities of acid are as follows:

Specific Gravity	Freezing Temp.
(Corrected to 80°F)	Degrees F.

	,	_	
1.280		-90°F	
1.250		-62°F	
1.200		-16°F	
1.15		5°F	
1.100		19°F	

As shown, 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 over-charging is to ensure that power is available even though the vehicle has been standing for some time.

#### Keep Properly Filled with Water

The battery should always be properly filled with water. 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.
- 3 That portion of the acid remaining becomes more concentrated and may cause more rapid deterioration of the remaining parts of the battery.

#### Keep A Relatively Clean 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. 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 and the ground. Once such a path has been established, the self-discharge of the battery is accelerated. This also accelerates corrosion of the battery cables at the terminals.

#### MAINTENANCE OF BATTERIES

#### Periodic Maintenance is Needed.

A definite program of periodic maintenance of all batteries should be conducted on a regular basis. Periodic maintenance includes:

- 1 Checking belts for tightness on the charging equipment
- 2 Checking battery electrolyte levels
- 3 Checking cables for good connections
- 4 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.

### Low Maintenance Batteries (Maintenance Free)

Low maintenance batteries should not be used on Auto Cranes or trucks equipped with Auto Cranes. The batteries are not designed for "deep" discharge.

#### **Testing Your Battery**

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 bat-

tery should be checked with a high rate tester. Use the tester in accordance with the manufacturer's instructions. The high rate tester is the best method to test a questionable 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 the 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 time. This usually will recover a badly sulfated battery.

#### Replacing a Battery

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

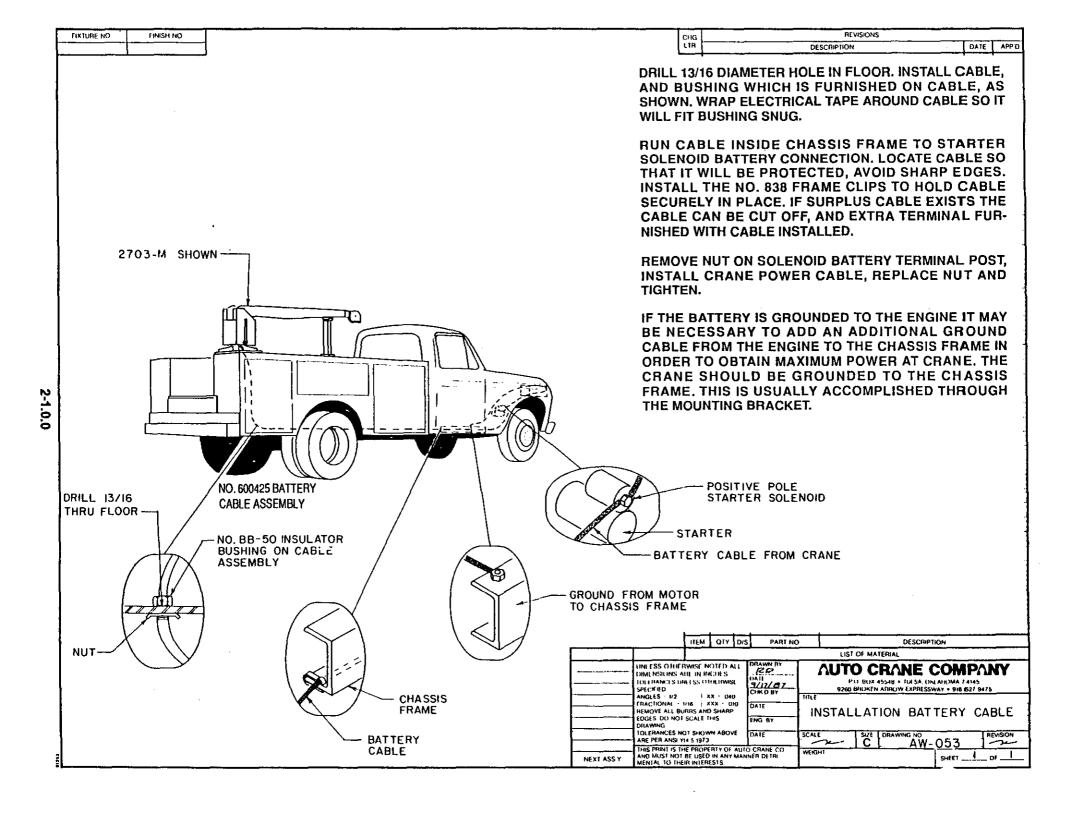
- 1 Fill the battery with electrolyte of the proper specific gravity.
- 2 Place the battery on charge according to the manufacturer's instructions.

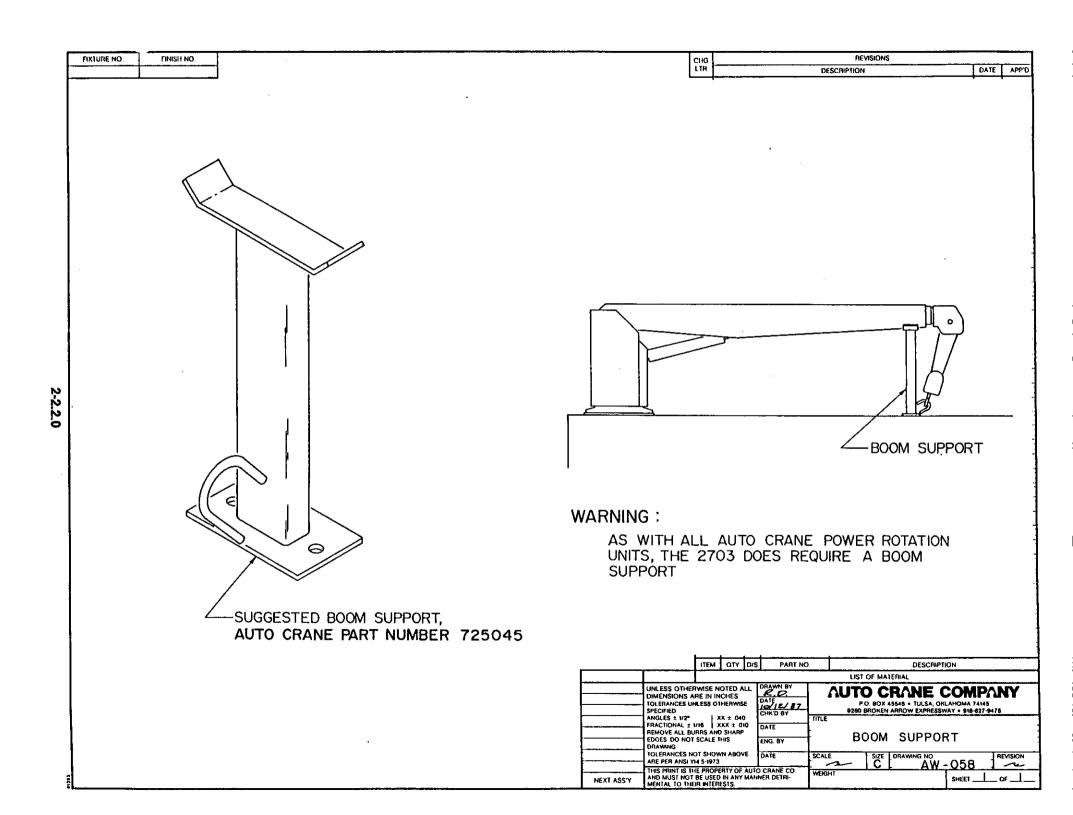
It is essential that the second step above be followed to ensure that the battery going on the vehicle is fully charged.

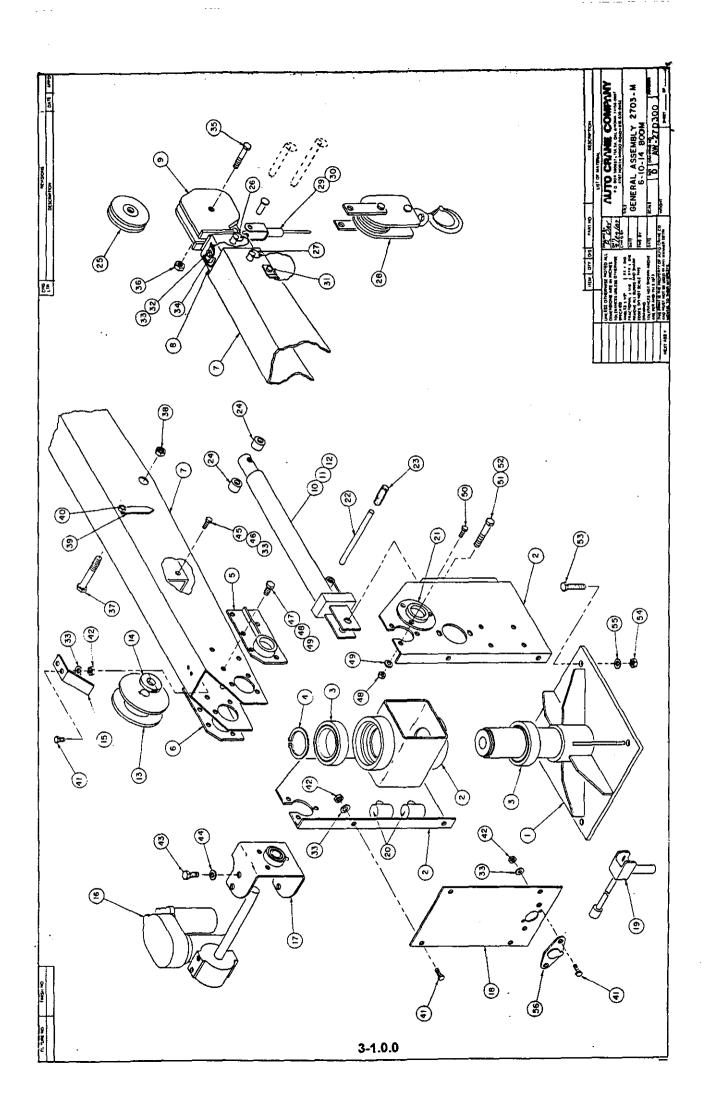
It is also very important that the battery hold-downs be checked periodically to ensure that the batteries are properly positioned to avoid vibration problems, breakage of cables or terminals. Care must be taken to avoid cracking or breaking containers or covers by tightening hold-down fixtures excessively.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

#### LUBRICATION & MAINTENANCE SCHEDULE 2703 M/MR CRANE

SERVICE PERFORMED	DAILY	WEEKLY	MONTHLY	6 MONTHS	1 YEAR	NOTES
LOAD HOOK	Х			<u> </u>		INSPECT HOOK & LATCH FOR DEFORMATION, CRACKS, & CORROSION
CABLE DRUM	Х					MAKE SURE CABLE IS WOUND EVENLY ON DRUM
MOUNTING BOLTS	Х					CHECK-TORQUE TO 85 FT-LBS (DRY) AS REQUIRED
HOIST CABLE	Х					CHECK FOR FLATTENING, KINKS, & BROKEN STRANDS, SEE MANUAL
MOTOR CONNECTION		Х				CHECK TERMINALS FOR TIGHT CONNECTIONS
SHEAVE BEARINGS		Х				SEALED BEARING, REPLACE IF ROUGH OR LOOSE
ALL OTHER BOLTS		Х				CHECK-TIGHTEN AS REQUIRED
BATT. CONNECTIONS		Х				CHECK FOR CORROSION & TIGHT CONNECTIONS, CLEAN & COAT A/R
BOOM CYLINDER		X				CHECK AROUND CYLINDER ROD FOR EXCESS FLUID LEAKAGE
BOOM CYLINDER PINS		Х				GREASE WITH MOBILPLEX EP- 2 OR EQUIV. @ ZERKS
EXT. DETENT PIN		Х				LUBE SPRING & BALL W/ WD-40
ROTATION BRAKE (M)		X				CHECK ADJUSTMENT AND OIL SCREW THREAD WITH MACHINE OIL
POWER CABLE			X			CHECK INSULATION FOR DAMAGE OR DETERIORATION
ROTATION GEAR (MR)			X			WATER PROOF BEARING GREASE OR DRY MOLYLUBE IF DUSTY
ROT. WORM BRNGS (MR)				X		GREASE WITH MOBILPLEX EP- 2 OR EQUIV. @ ZERKS
HOIST GEARBOX				Х		WORM GEAR-EP GEAR LUBE SAE 80-90; SPUR GEARS - SAE 30 OIL
HYDRAULIC FLUID					X	DRAIN, FLUSH, & REFILL WITH MOBIL DTE 13, OR EQUIV.
ROTATION BEARINGS						SEALED BEARING - NO MAINTENANCE REQUIRED
BOOM SLIDE PADS						PADS GREASED WHEN REPLACED
FOR ADDITIONAL INFORMATION SEE:	2) OSHA	ER'S MANU SECTION B30.5-1989				







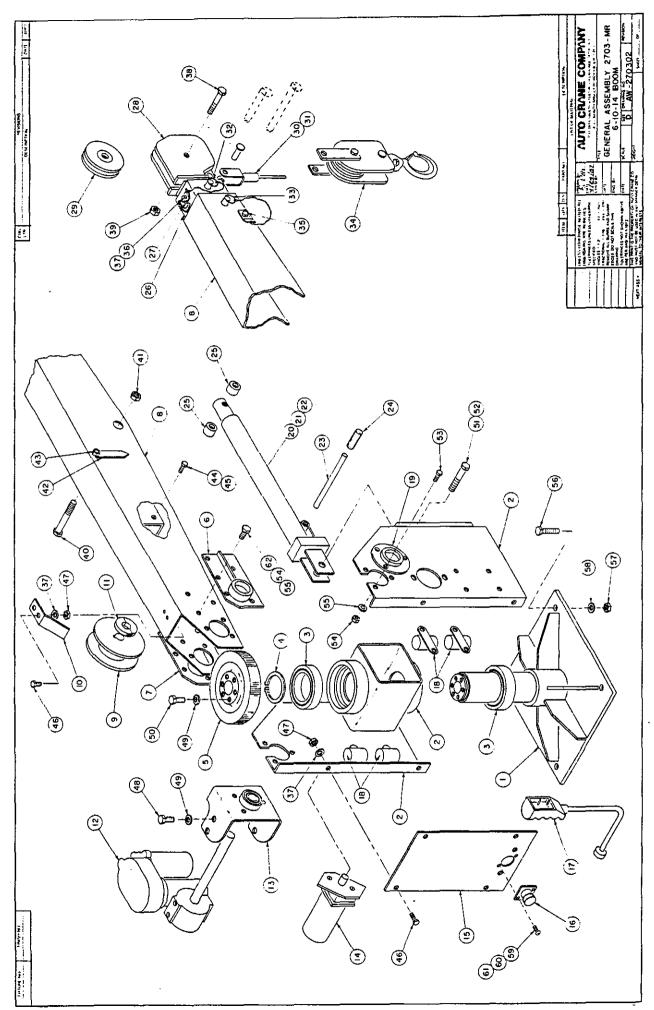
#### AW-270300 GENERAL ASSEMBLY, 2703 M, 6-10-14 BOOM

ITEM	QTY.	PART NO.	DESCRIPTION
1	1	270387	QUILL/BASE
2	1	270394	SIDE PLATE
3	2	330192	BEARING, BALL, SEALED
4	1	330182	
5	1	330471	
6	1	330471001	
7	1	270380	· · · · · · · · · · · · · · · · · · ·
8	1	270408	
9	1		BOOM, MANUAL W/ CROWN
10	1		CYLINDER, HYDRAULIC
11 -	1		SEAL KIT (FOR 270325 CYL.)
12	1	270325-002	
13	1	320379	DRUM
14	2	330468	
15	1	270389	
16			ACTUATOR ASSEMBLY
17	1		ACTUATOR BRACKET
18	1		REAR PANEL
19	1		PENDANT CONTROL
20	1		RELAY ASSEMBLY
21	1	330470	
22	1		HANDLE, PUMP
23	1		GRIP, HANDLE
24	2	800167-001	·
25	1	227401	
26	1	320327	
27	1	320328	
28	1	320433	· · · · · · · · · · · · · · · · · · ·
29	1	320338	CABLE ASSEMBLY, 62' (STANDARD)
30	1	320339	CABLE ASSEMBLY, 75' (OPTIONAL)
31	1	002614	SCREW, HEX HD 5/16-18NC x 5/8 LG. SELF-TAP
32	1	005501	SCREW, HEX HD 1/4-28NF x 3/4 LG.
33	10	020200	WASHER, SP LK 1/4
34	1	320415	BOOM, RETAINER MANUAL
35	1	012200	SCREW, HEX HD 5/8-18NF x 1 3/4 LG. GR.5
36	1	018100	NUT, HEX HALF-LOCK 5/8-18NF
37	1	330185	SCREW, HEX HD 1-12NF x 5 1/2 LG. GR.5
38	1	019106	NUT, HEX 1-12NF
39	1	360038	ANGLE INDICATOR
40	1	016300	NUT, HEX LOCK 1/4-20NC
41	8	005500	SCREW, HEX HD 1/4-20NC x 3/4 LG.
42	8	015900	NUT, HEX 1/4-20NC
43	4	007807	SCREW, HEX HD 5/16-18NC x 3/4 LG.
44	4	020600	WASHER, SP LK 5/16
45	2	005406	SCREW, HEX HD 1/4-28NF x 1/2 LG.
46	2	016100	NUT, HEX 1/4-28NF
47	12	330370	SCREW, HEX HD 3/8—16NC x 7/8 LG.
48	18	330372	NUT, HEX 3/8-16NC

AW-270300 GENERAL ASSEMBLY, 2703 M, 6-10-14 BOOM

ITEM	QTY.	PART NO.	DESCRIPTION
49	18	021100	WASHER, SP LK 3/8
50	6	330371	SCREW, HEX HD 3/8-16NC x 1" LG. GR.8
51	1	014400	SCREW, HEX HD 3/4-16NF x 5" LG.
52	1	018600	NUT, HEX LOCK 3/4-16NF
53	4	011200	SCREW, HEX HD 1/2-20NF x 2 1/2 LG. GR.5
54	4	017704	NUT, HEX 1/2-20NF HEAVY
55	4	021500	WASHER, SP LK 1/2
56	1	REF.	RECEPTACLE ASSEMBLY (SEE RELAY ASSEMBLY)

# NOTES



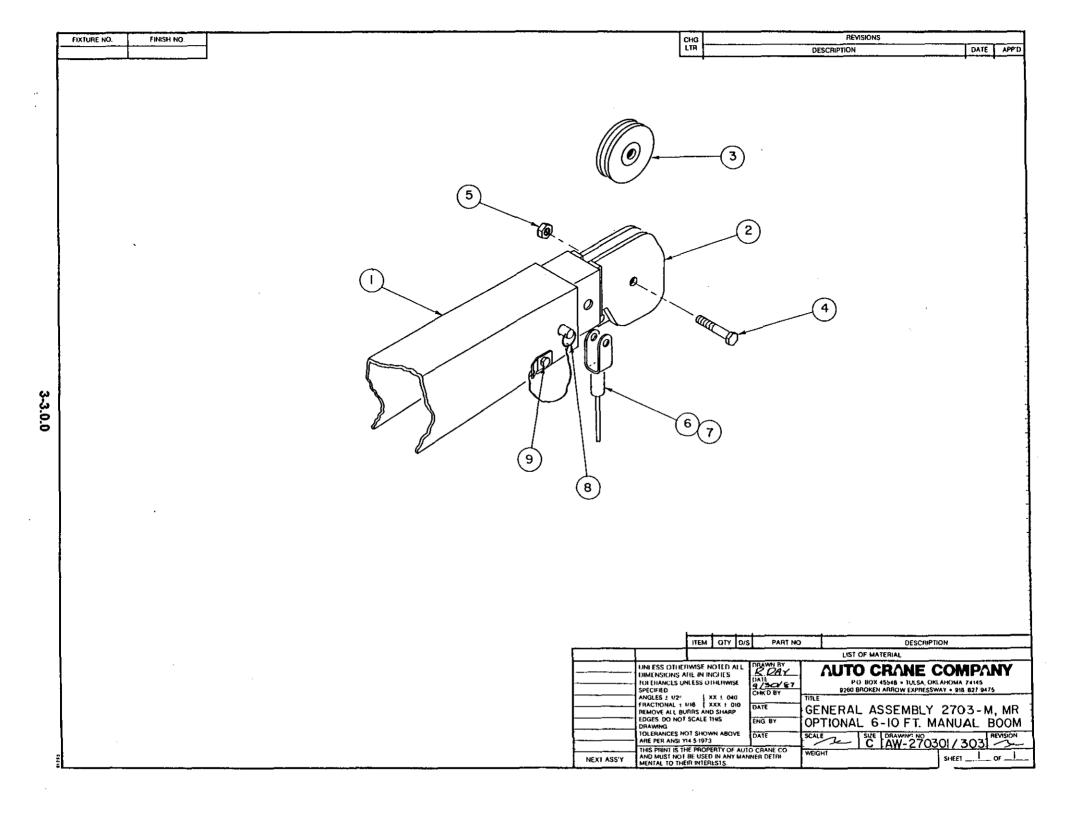
#### AW-270302 GENERAL ASSEMBLY, 2703 MR, 6-10-14 BOOM

ITEM	QTY.	PART NO.	DESCRIPTION	
1	1	270388	QUILL/BASE	
2	1	270398	SIDE PLATE	
3	2	330192		
4	1	330182	·	
5	1	270385		
6	1	330471		
7	1	330471-001		
8	1	270380	·	
9	1	320379		
10	1		GUARD, CABLE	
11	2		COLLAR, SP. LK.	
12	1	320324		_
13	1	270403		
14	1	330313	GEAR, MOTOR 12V	
15	1	270391	REAR PANEL	
16	1	REF.		
17	1		PENDANT CONTROL	
18	1		RELAY ASSEMBLY	
19	1		FLANGE, BEARING	
20	1	270325		
21	1		SEAL KIT (FOR 270325 CYL.)	
22	1		REPAIR KIT (FOR 270325 CYL)	
23	1		HANDLE, PUMP	
24	1	270325-007	GRIP, HANDLE	
25	2	800167-001	SPACER	
26	1	270408	BOOM, MID MANUAL	
27	1	320415	BOOM, RETAINER MANUAL	
28	1	320423	BOOM, MANUAL w/ CROWN	
29	1	227401	SHEAVE ASSEMBLY (BEARING ONLY 200100)	
30	1	320338	CABLE ASSEMBLY, 62' (STANDARD)	
31	1	320339	CABLE ASSEMBLY, 75' (OPTIONAL)	
32	1	320327	POSITION PIN	
33	1	320328	POSITION PIN (LONG)	
34	1	320433	TRAVELING BLOCK	
35	1	002614	SCREW, HEX HD 5/16-18NC x 5/8 LG. SELF-TAP	
36	1	005501	SCREW, HEX HD $1/4-28$ NF $\times$ $3/4$ LG.	
37	7	020200	WASHER, SP LK 1/4	
38	1	012200	SCREW, HEX HD 5/8-18NF x 1 3/4 LG. GR.5	
39	1	018100	NUT, HEX HALF-LOCK 5/8-18NF	
40	1	330185	SCREW, HEX HD 1-12NF x 5 1/2 LG. GR.5	
41	1	019106	NUT, HEX 1-12NF	
42	1	360038	ANGLE INDICATOR	
43	1	016300	NUT, HEX LOCK 1/4-20NC	
44	2	005406	SCREW, HEX HD 1/4-28NF x 1/2 LG.	
45 46	2	016100	NUT, HEX 1/4-28NF	
46	6	005500	SCREW, HEX HD 1/4-20NC x 3/4 LG.	
47	6	015900	NUT, HEX 1/4-20NC	ļ
48	4	007807	SCREW, HEX HD 5/16-18NC x 3/4 LG.	

#### AW-270302 GENERAL ASSEMBLY, 2703 MR, 6-10-14 BOOM

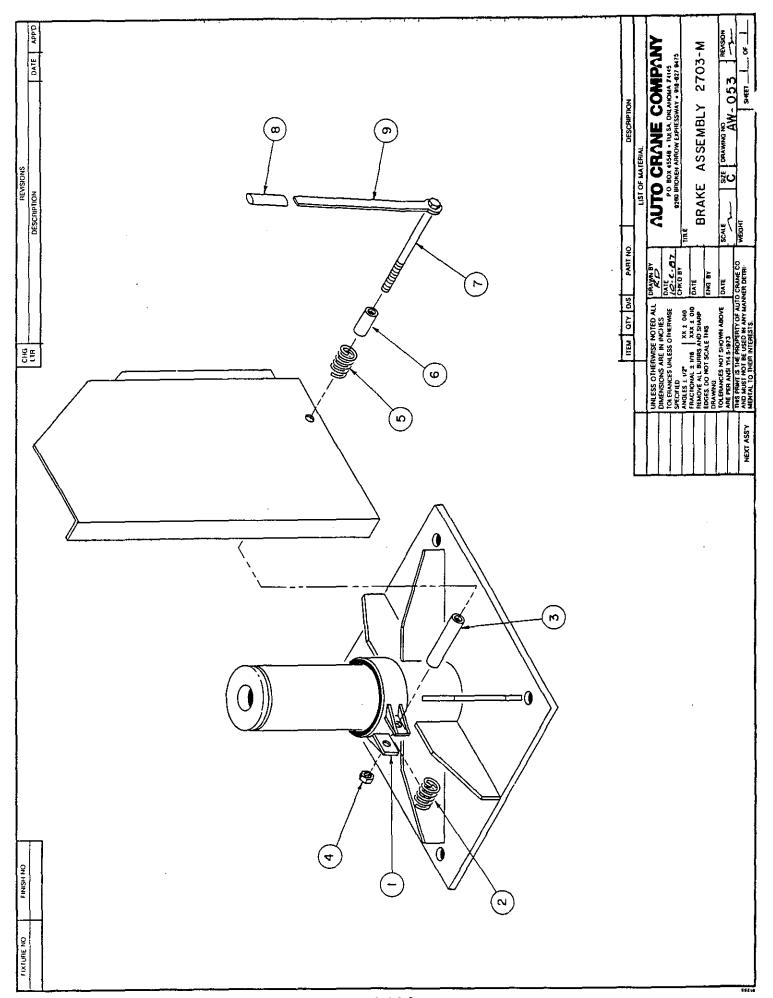
ITEM	QTY.	PART NO.	DESCRIPTION
49	10	020600	WASHER, SP LK 5/16
50	6	007805	SCREW, HEX HD 5/16-18NC x 1 1/2 LG. GR.5
51	1	014400	SCREW, HEX HD 3/4-16NF x 5" LG.
52	1	018600	NUT, HEX LOCK 3/4-16NF
53	6	330371	SCREW, HEX HD 3/8-16NC x 1" LG. GR.8
54	18	330372	NUT, HEX 3/8-16NC
55	18	021100	WASHER, SP LK 3/8
56	4	011200	SCREW, HEX HD 1/2-20NF x 2 1/2 LG. GR.5
57	4	017704	NUT, HEX 1/2-20NF HEAVY
58	4	021500	WASHER, SP LK 1/2
59	2	000404	SCREW, RD HD $\#6-32$ NC $\times$ 5/8 LG.
60	2	019600	WASHER, SP LK #6
61	2	015400	NUT, HEX #6-32NC
62	12	330370	SCREW, HEX HD 3/8-16NC x 7/8 LG.

### NOTES

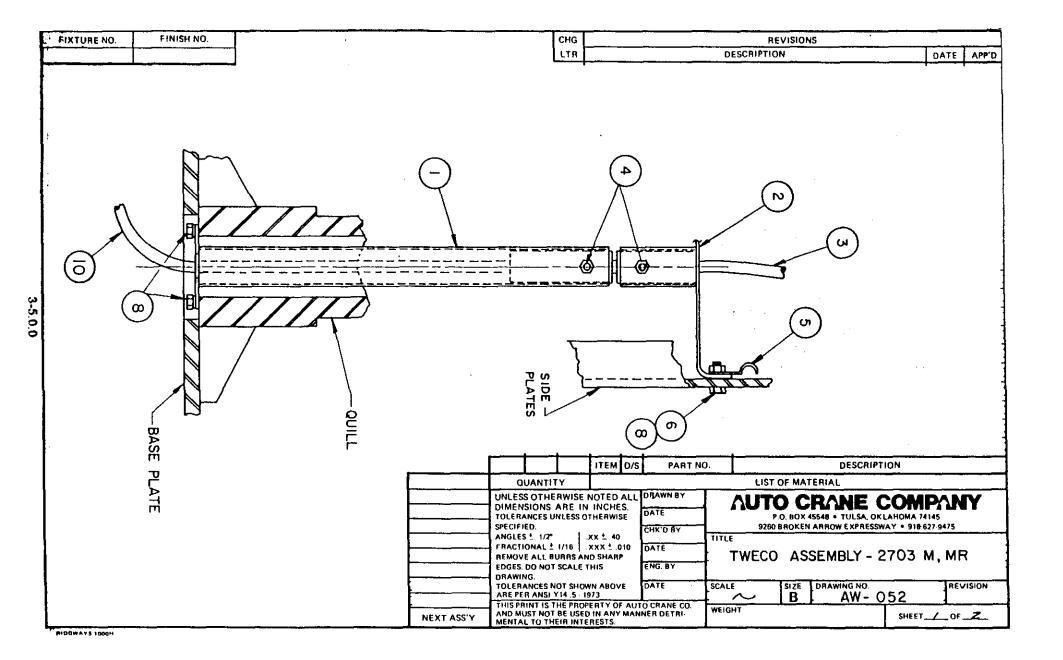


### GENERAL ASSEMBLY 2703-M, MR AW-270301/303 6-10 BOOM

ITEM	QTY.	PART NO.	DESCRIPTION	
1	1	270380	BOOM, LOWER WELDMENT	
2	1	270402	BOOM, MANUAL WITH CROWN	
3	1	227401	SHEAVE ASS'Y (BEARING ONLY 200100)	
4	1	012200	SCREW, HX. HD. 5/8 X 1 3/4 N.F. GR.5	
5	1	018100	NUT, HLF. LK. 5/8 N.F.	
6	1	320338	CABLE ASS'Y 62' (STD.)	
7	1	320339	CABLE ASS'Y 75' (OPTIONAL)	
8	1	320328	POSITION PIN	
9	1	002614	SCREW HX. HD. 5/16 S.T.	

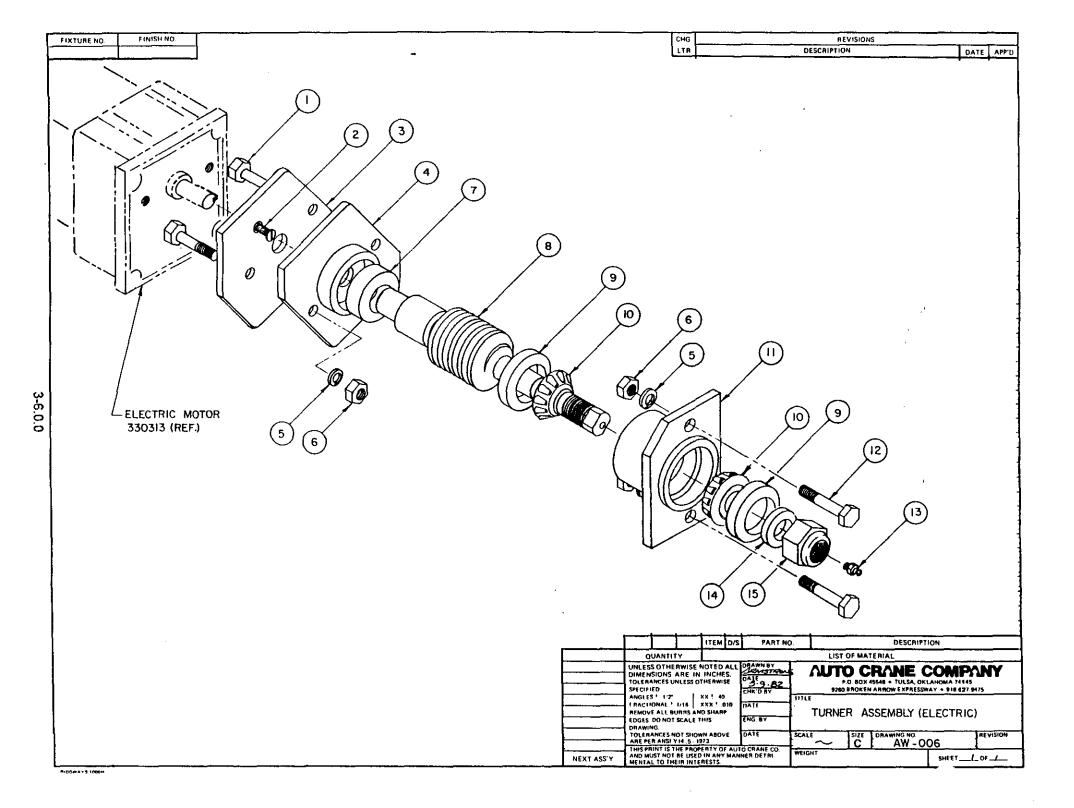


ITEM	QTY.	PART NO.	DESCRIPTION
1 2 3 4 5 6 7 8 9	1 1 1 1 1 1	PART NO. 270376 330184 330490 018301 330488 330489 013503 330303 330136	BRAKE BAND ASSEMBLY SPRING, COMPRESSION SPACER NUT, HX. 5/8 N.C. SPRING, COMPRESSION SPACER SCREW, HX. HD. 5/8 X 7 N.C. GR.5 GRIP, HANDLE



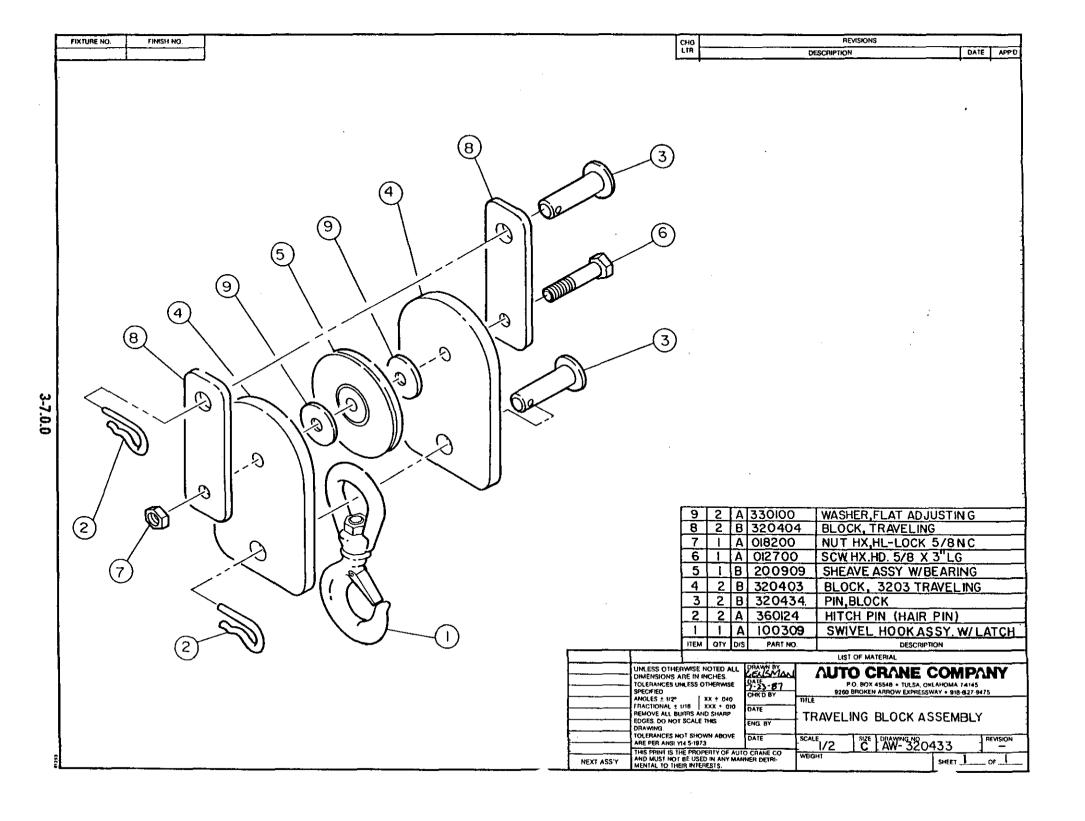
#### TWECO ASSEMBLY, 2703-M, MR AW-052

ITEM	QTY.	PART NO.	DESCRIPTION	
1	1	320488	POWER CABLE ASS'Y	
2	1	330212	BRACKET, TWECO UPPER	
3	1	REF.	CONNECTOR, TWECO MALE	
4	1	002900	SCREW HX. 1/4 X 3/8 S.T.	
5	1	000115	CLAMP	
6	1	005500	SCREW, HX. HD. 1/4 X 3/4 N.C.	
7 ·	1	015900	NUT HX. 1/4 N.C.	
8	3	020200	WASHER SP. LK. 1/4	
9	2	005401	SCREW, HX. HD. 1/4-20 X 5/8	
10	1	REF.	CONNECTOR, TWECO FEMALE	



#### AW-006 TURNER ASSEMBLY

ITEM	QTY.	PART NO.	DESCRIPTION	
1	2	010201	SCREW, HEX HD 1/2-13NC x 1 1/2 LG. GR.5	
2	3	330389	SCREW, FLAT HD 1/4-20NC x 1/2 LG.	
3	1	330504	MOUNT, MOTOR	
4	1	330498	MOUNT, TURN MOTOR	
5	4	021500	WASHER, SP LK 1/2	
6	4	017701	NUT, HEX 1/2-13NC	
7	1	330500	BEARING	
8	1	330421	SHAFT ASSEMBLY	
9	2	330486	SEAL, OIL	
10	2	330485	BEARING, CONE	
11 -	1	330472	HOUSING, BEARING	
12	2	011603	SCREW, HEX HD 1/2-13NC x 1 3/4 LG. GR.5	
13	1	239300	ZERK, GREASE	
14	1	330483	SPACER	
15	1	019000	NUT, HEX 7/8-14NF	



#### TRAVELING BLOCK ASSEMBLY AW-320433

TRAVELING BLOCK ASSEMBLY AW-320433					
ITEM	QTY.	PART NO.	DESCRIPTION		
1 2 3 4 5 6 7 8 9	1 2 2 2 1 1 1 2 2	100309 360124 320434 320403 200909 013512 018200 320404 330100	SWIVEL HOOK HITCH PIN PIN, BLOCK BLOCK SHEAVE ASS'Y WITH BEARING SCREW. HX - HD. 5/8 NC X 3 1/2 NUT HX. HLF. LK. 5/8 NC BLOCK TRAVELING WASHER FLAT		
			:		
			·		

38 65

#### AW-320324 HOIST ACTUATOR

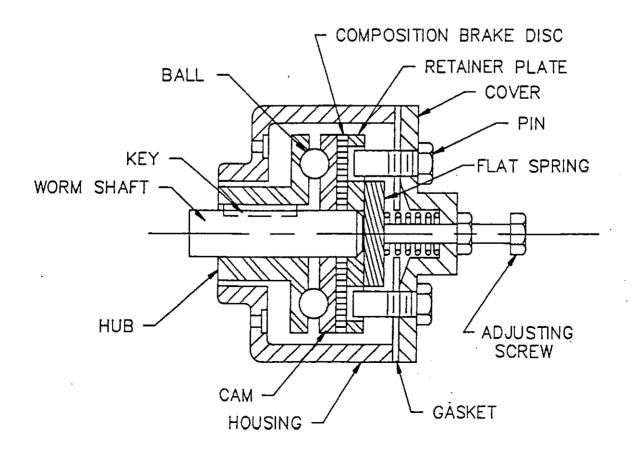
ITEM	QTY.	PART NO.	DESCRIPTION
1	1	360637	SPRING, FLAT
2	1	360331	PLATE, CAM
3	1	300041	COVER, GEAR HOUSING
4	1	300042	COVER, SPUR GEAR HOUSING
5	1	360450	COVER, BRAKE
6	i	300043	GEAR, IDLER
7	2	300044	GEAR, SPUR
8	1	300045	·
9	1	300046	GEAR, PINION
10	1	360336	HOUSING, BRAKE
11	i	300047	•
12	1	300048	HOUSING, GEAR
13	1	360339	HUB, BRAKE
14	1	300049	KEY, 3/16 SQ. x 1/2 LG.
15	1	_	
16	1	300050	KEY, 3/16 SQ. x 1 9/16 LG.
17	1	800479-001	
18	2	300052	KEY, RD. 5/16 x 5/16 x 15/16 LG.
19	1	3603 <del>4</del> 2	
		300053	•
20	1 1	320323	·
i .	1		SHAFT, OUTPUT
22		320312	WORM, R.H.
	2 3	360345	BALL BEADING NEEDLE
24	2	300056 300057	•
25	1	300057	BEARING, BALL
26 27	1	300058 300059	BUSHING BUSHING
28	10		
[	12		· · · · · · · · · · · · · · · · · · ·
29		005500 005604	SCREW, HEX HD 1/4-20NC x 3/4 LG.
30	4		SCREW, HEX HD 1/4-20NC x 1" LG.
31	1 A	320311	SCREW, HEX HD 3/8-16NC x 1 1/2 LG. ALL THREAD
32	4	320310	SCREW, BUTTON HD 1/4-20NC x 1" LG.
33	4 1	300060 300061	SCREW, SOC HD 1/4-20NC x 1 3/4 LG. LOCWEL.
34 35	1	300061 360353	SETSCREW, 1/4-20NC x 5/16 LG. LOCWELL
35 36	3	360353 071012	NUT, HEX JAM 3/8-16NC NUT, HEX 3/8-24NF
36 37	4	360354	WASHER, SP LK 1/4 MED. SECT.
38	2	360455	WASHER, FLAT 1/4 ALUM.
39	3	021100	WASHER, FLAT 1/4 ALOM. WASHER, SP LK 3/8
40	1	320314	ELBOW, 90° 3/8-18 NPT BOTH ENDS
41	1	320315	ELBOW, 90° 1/4-18 NPT BOTH ENDS
42	2	300062	GASKET BEARING
43	1	300063	GASKET, SPUR GEAR HOUSING
44	1	300064	GASKET, GEAR HOUSING COVER
45	1	360359	GASKET, BRAKE COVER
46	1	300065	KEY, WOODRUFF
47	2	300066	FITTING, RELIEF
48	1	300067	MOTOR, 12V
TU		300007	WOTON, 124

#### AW-320324 HOIST ACTUATOR

ITEM	QTY.	PART NO.	DESCRIPTION
49	1	300068	0-RING 1" O.D. x 1/8 THICK
50	1	300069	REDUCER, -6 NPT / -2 NPT
51	2	300070	PLUG, PIPE -4 NPT SQ HD
52	1	300073	PLUG, PIPE -6 NPT HEX SOC HEADLESS
53	1	300074	REDUCER, -4 NPT / -2 NPT
54	2	300075	PIN, DOWEL
55	1	360364	PLATE, THRUST
56	1	300076	SEAL, OIL 3/4 I.D. x 1 1/4 O.D. x 1/4 THICK
57	1	300077	SEAL, OIL 1 1/4 I.D. x 1 3/4 O.D. x 1/4 THICK
58	1	300078	SEAL, OIL 1 1/2 I.D. x 2 1/4 O.D. x 5/16 THICK
59	1	360371	SEAL, THREAD
60	1	300079	RING, SNAP
61	1	360368	SPRING
62	3	300080	WASHER, THRUST
63	1	300081	WASHER, THRUST
64	1	300082	WASHER, FIBER
65	2	360453	SCREW, 1/4-20NC x 1" LG. ALL THREAD
66	2	320382	PIPE PLUG

### AUTOMATIC SAFETY BRAKE ASSEMBLY (OIL COOLED) HOIST

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





# Safety Decal Section 2703

Revision 12/94

ITEM	DESCRIPTION	QTY	FIG
1	CAUTION, WORK RULES	1	S-1
2	DANGER, OPERATOR TRAINING	1	S-2
3	DANGER, SCISSORS POINT	2	S-3
4	DANGER, ELECTROCUTION HAZARD	2	S-4
5	DANGER, STAY CLEAR OF BOOM	2	S-5
6	DANGER, STAY CLEAR OF LOAD	2	S-6

#### **AUTO CRANE COMPANY**

PO BOX S80697, Tulsa, OK 741S8-0697 4707 N. MINGO ROAD, Tulsa, OK 74117 Phone (918) 836-0463, Telex 1S8108 Ramsey Tul Sales Fax (918) 438-6688 Service Fax (918) 834-S979

## SAFETY DECAL SECTION **2703 SERIES**

Revision 12/94

FIG. S-1.

PART NO .:

040579

DECAL:

**OPERATION INSTRUCTIONS** 

**FUNCTION:** 

To inform the operator of the proper procedure to follow for safe operation

of the crane.

USED ON:

All Cranes

**QUANTITY:** 1

PLACEMENT: Right sideplate

PART NO.:

040580

DECAL:

OPERATOR TRAINING

**FUNCTION:** 

To inform the operator of the need to receive

proper training before using the crane.

**USED ON:** 

All Cranes

QUANTITY:

PLACEMENT: Right sideplate (5005H)

FIG. S-2.

#### **ACAUTION**

INSPECT VEHICLE AND CRANE INCLUDING OPERATION, PRIOR TO USE DAILY.

DO NOT USE THIS EQUIPMENT EXCEPT ON SCIED, LEVEL SURFACE WITH OUTRIGGERS PROPERLY EXTENDED AND CRAME MOUNTED ON FACTORY-RECOMMENDED TRUCK.

BEFORE OPERATING THE CRANE, REFER TO MAXIMUM LOAD (CAPACITY) CHART ON CRANE FOR OPERATING (LOAD) LIMITATIONS.

OPERATE ALL CONTROLS SLOWLY AND SMOOTHLY.

KEEP LOAD UNDER BOOM TIP. DO NOT SIDE LOAD BOOM OR DRAG LOADS, AVOID FREE SWINGING LOADS.

DO NOT OPERATE, WALK OR STAND BENEATH BOOM OR A SUSPENDED LOAD.

KEEP AT LEAST 5 WRAPS OF LOADLINE ON HOIST DRUM.

FOR TRAVELING, BOOM AND OUTRICCERS MUST BE IN THE STOWED POSITION.

ALL REMOVABLE PENDANTS MUST BE STORED IN CAB OR TOOL COMPARTMENT WHEN CRANE IS NOT IN USE.

<u>MDANGER</u>

AN UNITRAINED OPERATOR SUBJECTS HIMSELF AND OTHERS TO

#### DEATH OR SERIOUS INJURY

1.) YOU MUST HAVE BEEN TRAINED IN THE OPERATION OF THIS CRANE, AND

2.) YOU MUST KNOW AND FOLLOW THE SAFETY AND OPERATING RECOMMENDATIONS CONTAINED IN THE MANUFACTURER'S MANUAL. YOUR EMPLOYER'S WORK RULES AND APPLICABLE GOVERNMENT REGULATIONS.

PART NO .:

040519

USED ON:

All cranes

DECAL:

SCISSORS POINT

QUANTITY:

2

FUNCTION:

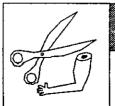
To inform the operator of

PLACEMENT:

Both sides of the lift cylinder

possible danger at scissors

point on crane.



**SCISSORS POINT** SERIOUS INJURY MAY RESULT KEEP HANDS AND ARMS CLEAR AT ALL TIMES

FIG. S-3.

# SAFETY DECAL SECTION 2703 SERIES

Revision 12/94

PART NO .:

040529

DECAL:

**ELECTROCUTION HAZARD** 

FUNCTION:

To inform the operator of the

hazard involved with contacting electrical power lines with crane

boom.

USED ON:

Articulated & Stiff Boom

Cranes

QUANTITY:

2

PLACEMENT: Both sides of end of lower boom

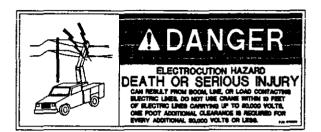


FIG. S-4.

PART NO .:

040517

DECAL:

STAY CLEAR OF BOOM

FUNCTION:

To inform the operator of the hazard of proximity or contact

with the crane boom during

operation.

USED ON:

All cranes

QUANTITY:

2

PLACEMENT: Both sides of crown

STAY CLEAR OF BOOM AT ALL TIMES

FIG. S-5.

PART NO.:

040518

DECAL:

STAY CLEAR

OF LOAD

FUNCTION:

To inform the operator of the

hazard of proximity or contact with the crane load

during operation.

USED ON:

All cranes

**OUANTITY**:

2

PLACEMENT: Both sides of

crown plate

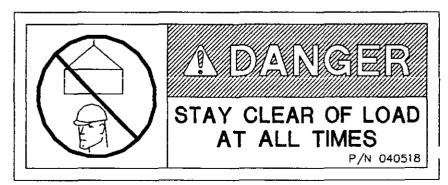
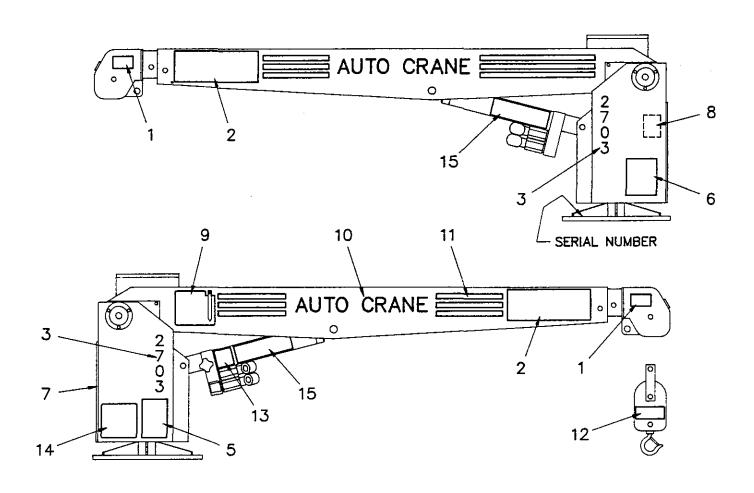


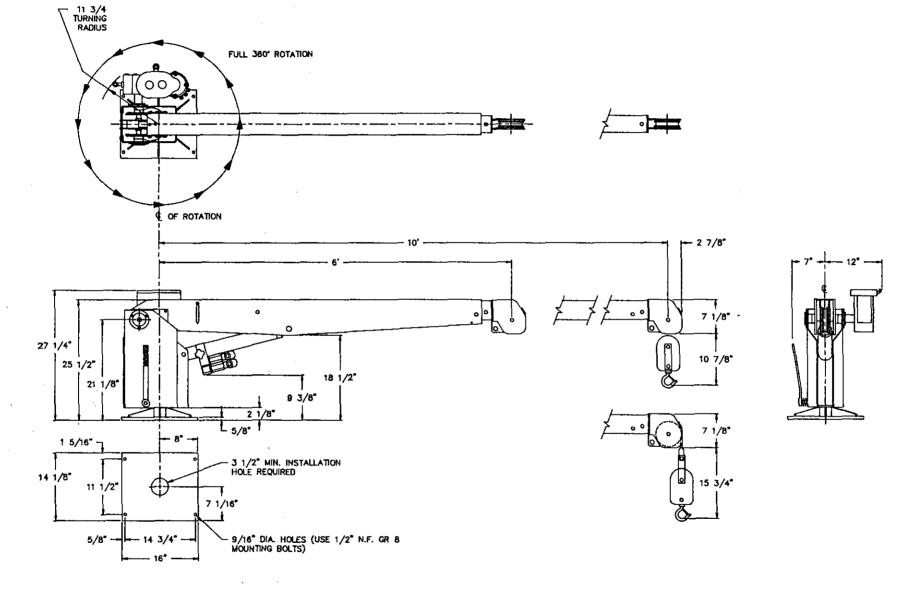
FIG. S-6.



<u>ITEM</u>	OTY	P/N	DESCRIPTION	<u>ITEM</u>	QTY <u>P/N</u>		DESCRIPTION		
1	2	040517	DECAL, STAY CLEAR	9	1	360036	DECAL, ANGLE IND.		
2	2	040529	DECAL, DANGER ELECT.	10	2	040624	DECAL, AUTO CRANE		
3	2	270321	DECAL, 2703	11	10'	040620	DECAL, STRIPING		
4	1	330622	DECAL, SERIAL NO.	12	2	040518	DECAL, STAY CLEAR		
5	1	040579	DECAL, WORK RULES	13	1	330624	DECAL, LOWER BOOM		
6	1	040580	DECAL, DANGER MUST	14	1	270322	DECAL, LOAD CHART		
7	1	040622	DECAL, A/C LOGO	15	2	040519	DECAL, SCISSORS POINT		
8	1	040552	DECAL, RELAY						

AW-270395 DECAL DRAWING 2703 M & 2703 MR

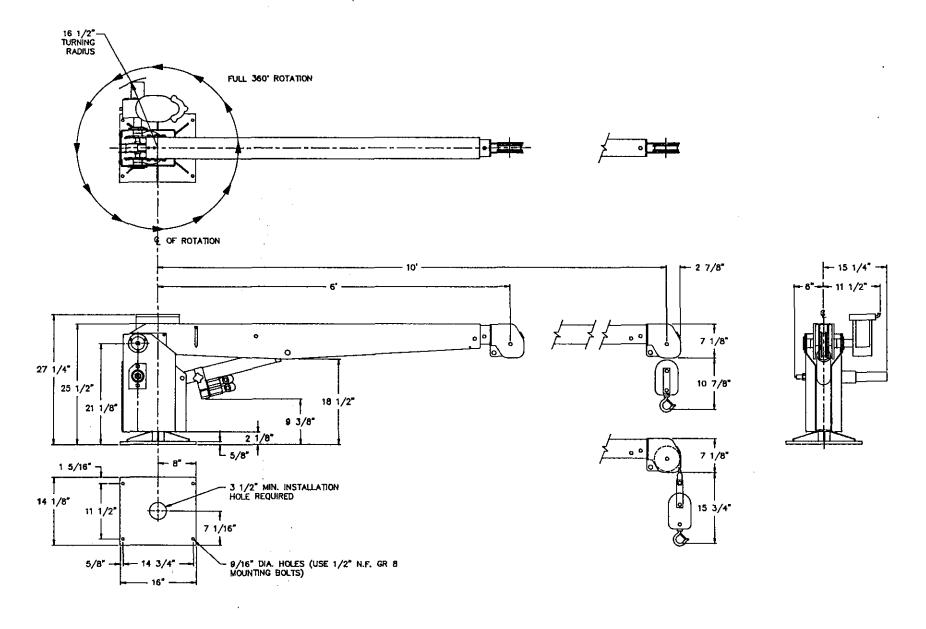
AW-054
GENERAL DIMENSIONS
2703-M 6-10-14



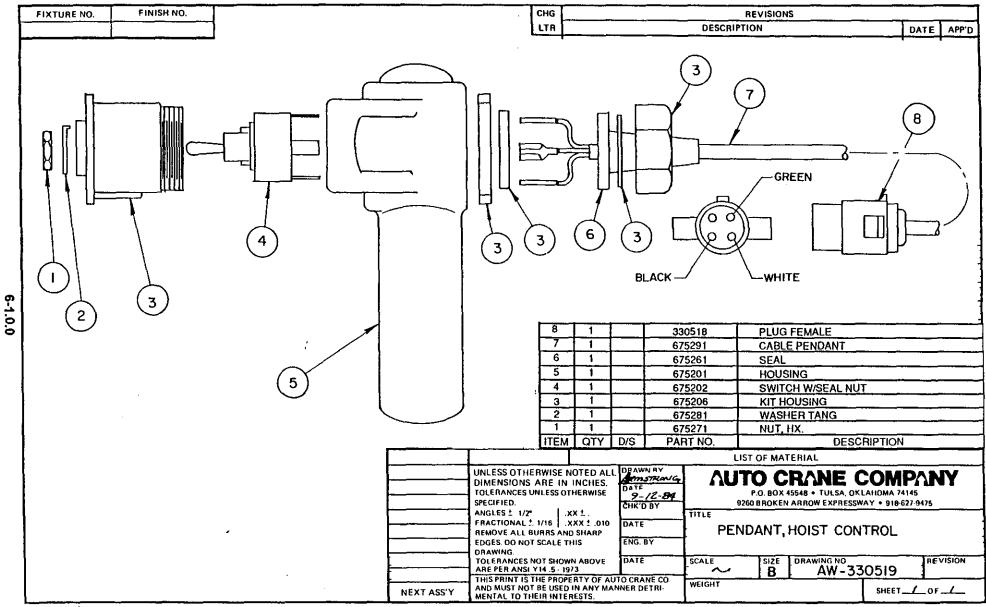
AW-055 GENERAL DIMENSIONS 2703-M 6-10

R 12/94

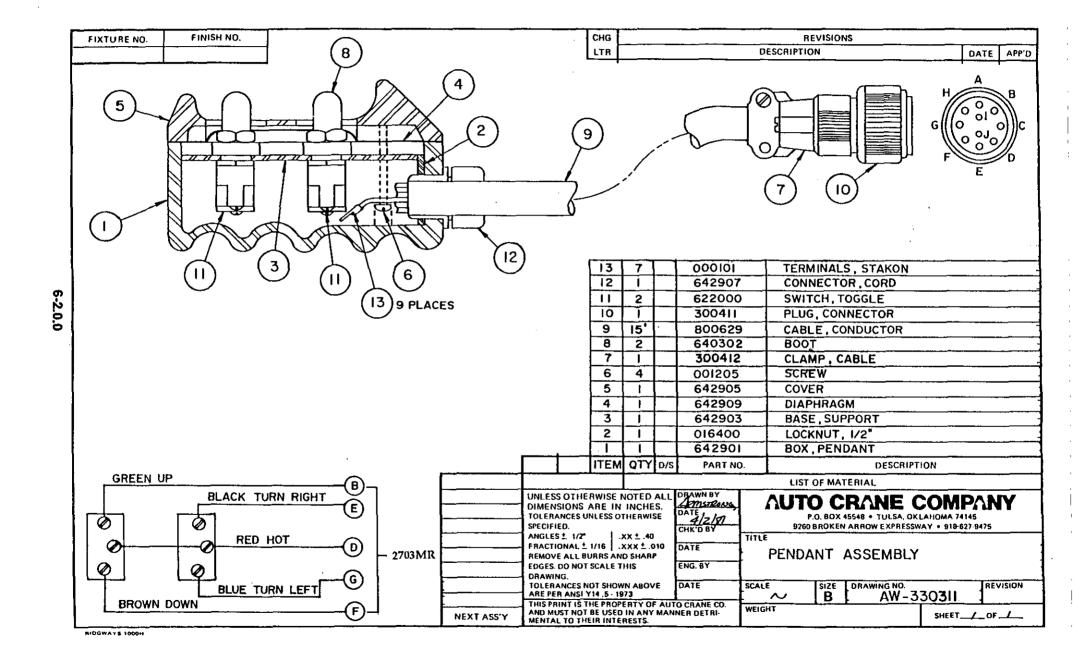
AW-056
GENERAL DIMENSIONS
2703-MR 6-10-14

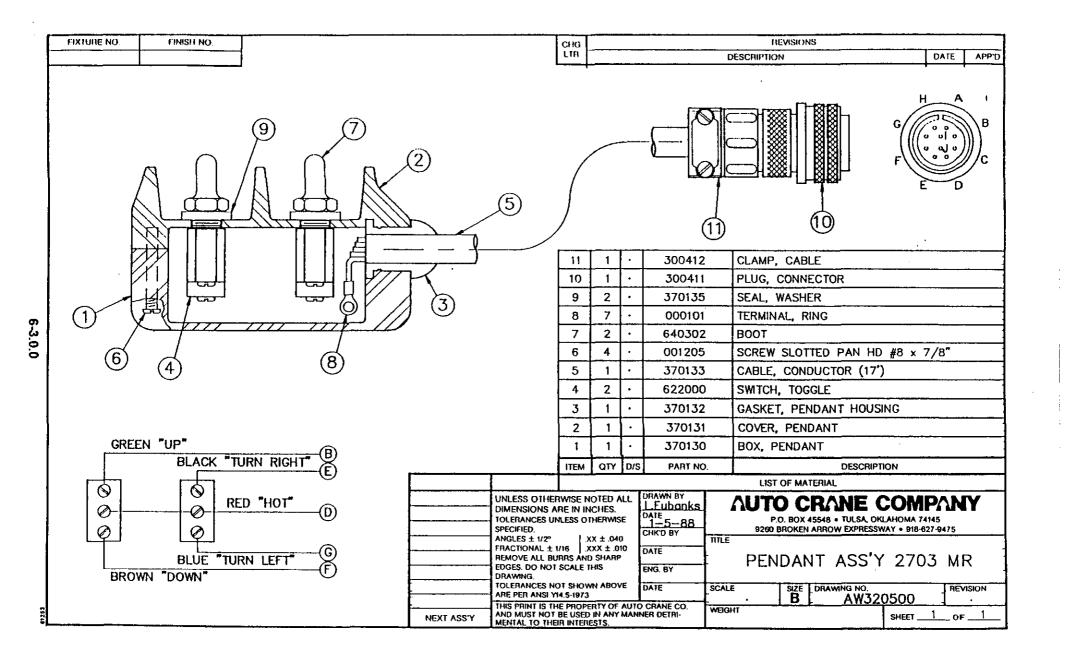


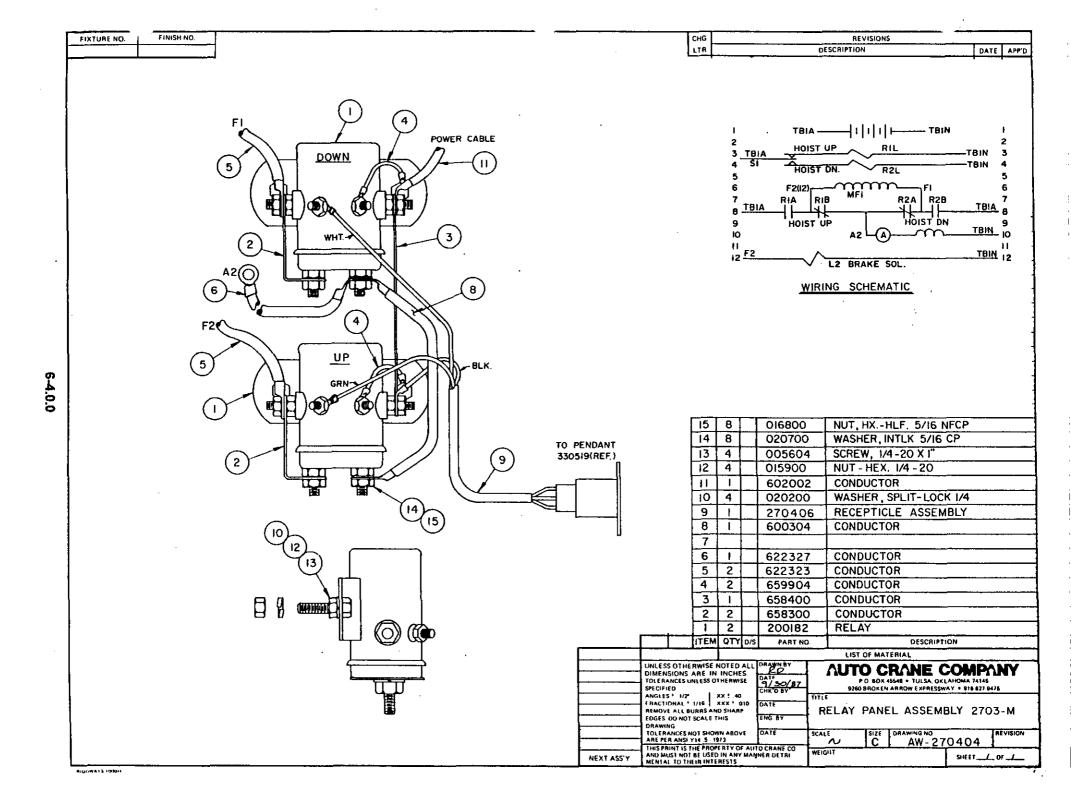
AW-057 GENERAL DIMENSIONS 2703-MR 6-10

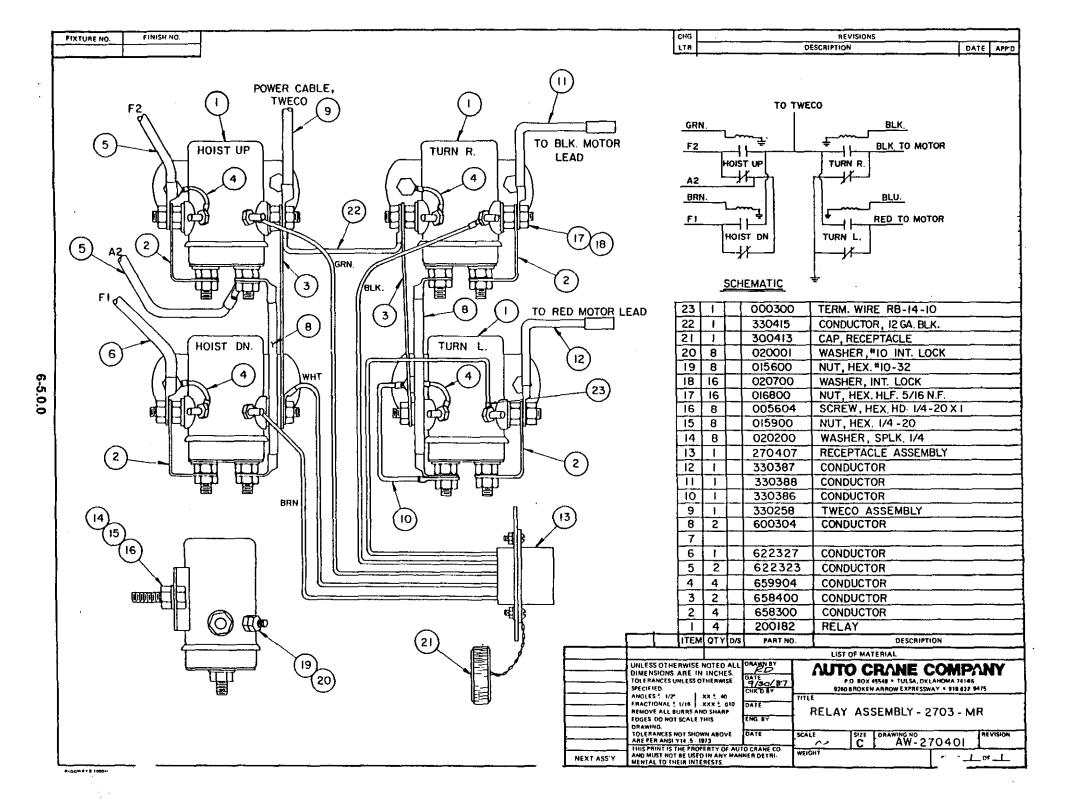


RIDGWAYS 1000H







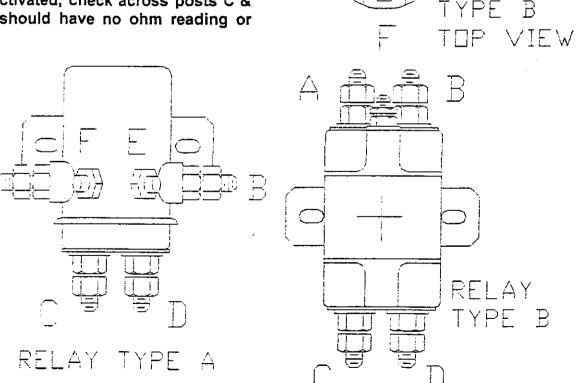


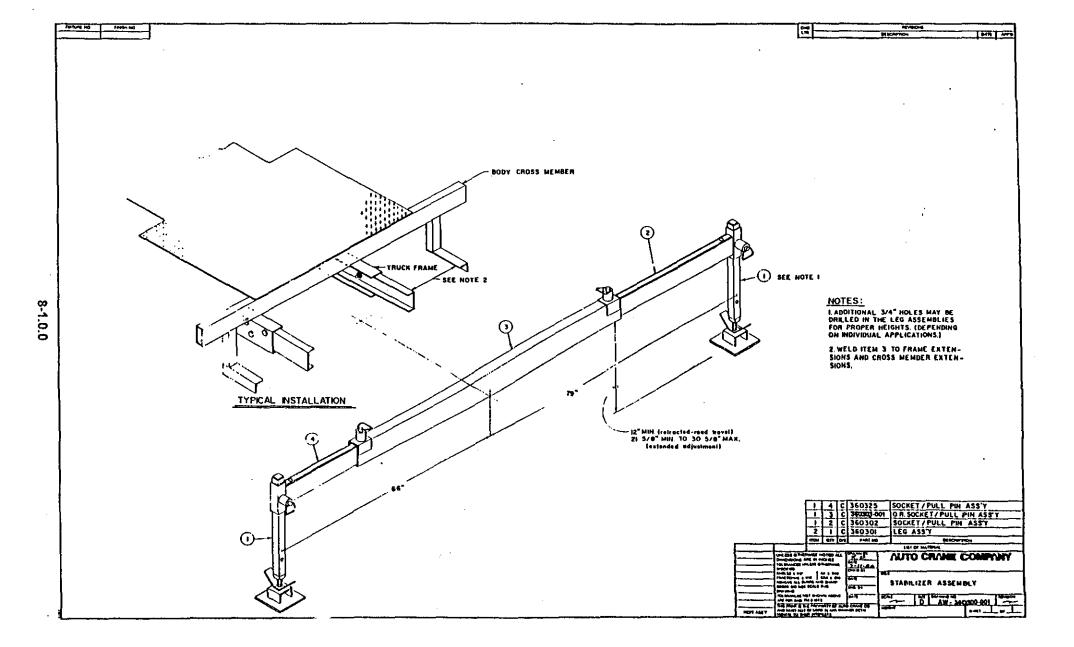
### RELAY CHECKING PROCEDURE

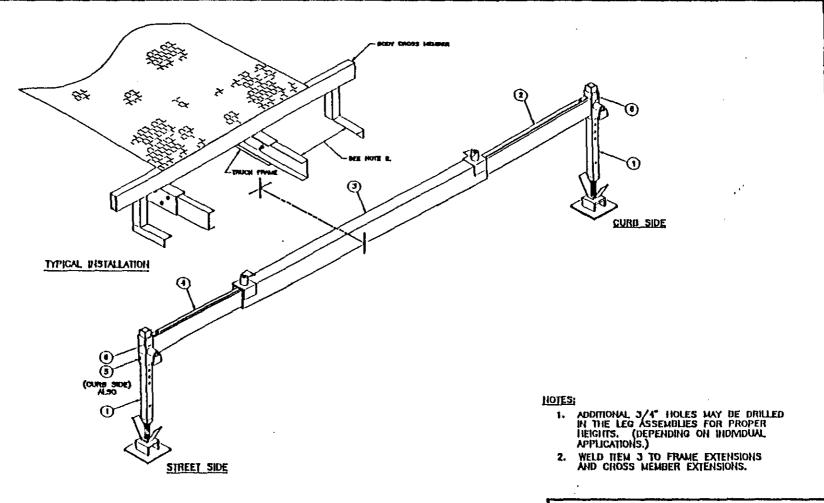
NOTE: The following procedure is performed with relays completely disconnected from all wires on motor circuits and ground wires. These circuits can give you false readings sometimes.

Checking a relay on this or any Auto Crane product is done in the same way, but there may be a difference in physical appearance of the relay. Shown below are two types of relays used by Auto Crane. Our relays are normally closed across the bottom posts C & D and normally open across the A & B posts. 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 12Von 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.





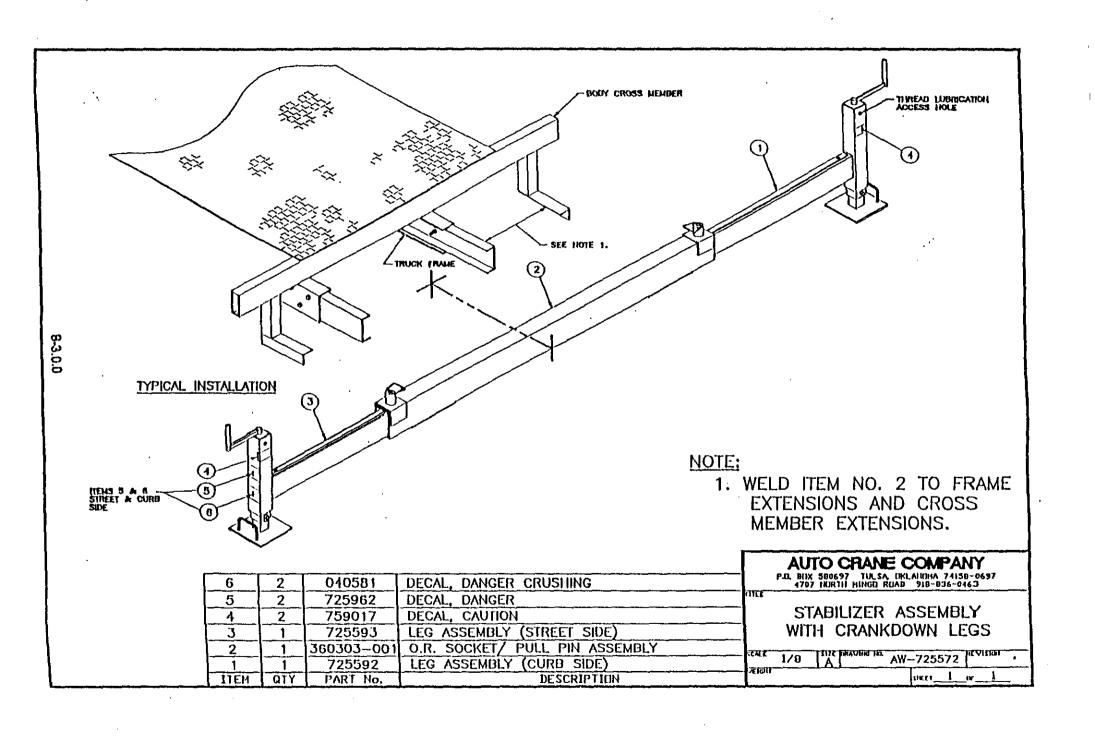


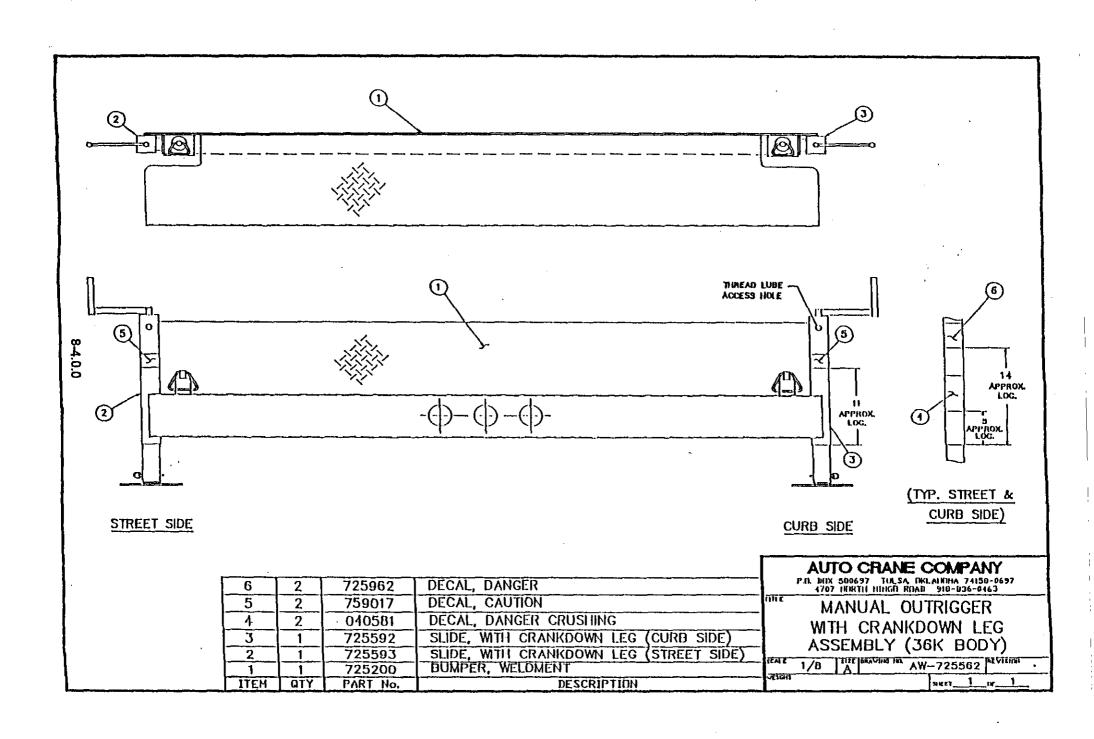
_					1
1	6	2	759017	DECAL, CAUTION	l
Į	5	2	040581	DECAL, DANGER CRUSHING	ľ
1	4	1	725589	SOCKET/ PULL PIN ASSEMBLY (STREET SIDE)	1
Į	3	1	360303-001	O.R. SOCKET/ PULL PIN ASSEMBLY	1
Í	2	1	725588	SOCKET/ PULL PIN ASSEMBLY (CURB SIDE)	
	1	2	360301	LEG ASSEMBLY	1
	ITEM	QTY	PART No.	DESCRIPTION	1

AUTO CRANE COMPANY
P.D. BITX 500697 TULSA DIKLAHDHA 74150-9697
4707 HIRRIH HINGU RUAD 910-036-0463

STABILIZER ASSEMBLY

ı									
ı	SCALE	1/8	N.	DRAVING	Mr. AW-	-7255	70	HEVISION	•
1	JE IGHT					SINTET	1	nr. 1	







# Cimited Warranty

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

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

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

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

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

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

AC-57 11/87