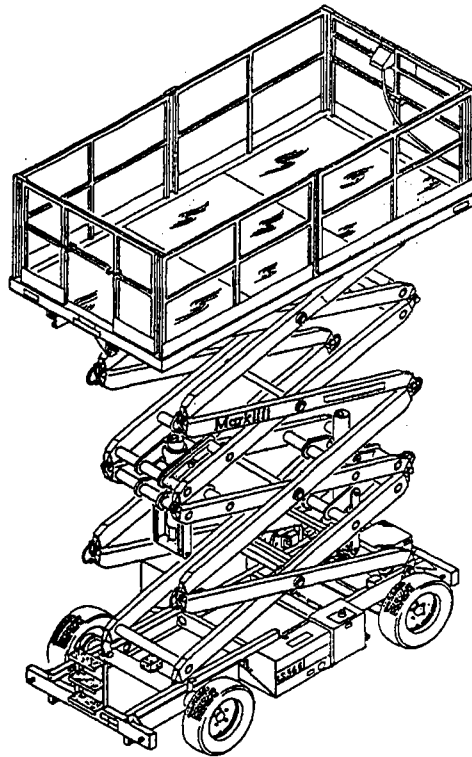


The Marklifts.®

A Product of Mark Industries

SELF-PROPELLED SCISSOR OPERATION MAINTENANCE AND PARTS MANUAL



Model
LS36E
Shown

Models: LS30E & LS36E

FIRST EDITION: September 1989



Mark Industries

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TITLE 8 DIVISION OF INDUSTRIAL SAFETY 358.38.113 (Register 73, No. 30—7-28-73)

Article 86. Provisions for Preventing Accidents Article 86. Provision for Preventing Accidents Due to Proximity to Overhead Lines

2946. Provisions for Preventing Accidents Due to Proximity to Overhead Lines.

(a) General. No person, firm, or corporation, or agent of same, shall require or permit any employee to perform any function in proximity to energized high-voltage lines; to enter upon any land, building, or other premises and thereto engage in any excavation, demolition, construction, repair, or other operation; or to erect, install, operate, or store in or upon such premises any tools, machinery, equipment, materials, or structures (including scaffolding, house moving, well drilling, pile driving, or hoisting equipment) unless and until danger from accidental contact with said high-voltage lines has been effectively guarded against.

(b) Clearances or Safeguards Required. Except where electrical distribution and transmission lines have been de-energized and visibly grounded or effective barriers have been erected to prevent physical and arcing contacts with the high-voltage lines, the following provisions shall be met:

(1) Over Lines. The operation, erection, or handling of tools, machinery, apparatus, supplies, or materials, or any part thereof, over energized high-voltage lines shall be prohibited.

(2) Equipment and Materials in Use. The operation, erection, or handling of tools, machinery, equipment, apparatus, materials, or supplies, or any part thereof within the minimum clearances from energized lines set forth in Table X shall be prohibited.

TABLE X Required Clearances from Overhead High-Voltage Lines

Table with 2 columns: Nominal Voltage (Phase to Phase) and Minimum Required Clearance (Feet). Rows include voltage ranges from 750 - 50,000 to over 550,000 - 1,000,000 with corresponding clearance values from 10 to 42 feet.

(3) TRANSPORTATION OR TRANSIT. The transportation or transit of any tool, machinery, equipment, or apparatus, or the moving of any house or other building in proximity to overhead high-voltage lines shall be expressly prohibited if at any time during such transportation or transit of such tool, machinery, equipment, apparatus, or building, or any part thereof, can come closer to high-voltage lines than the minimum clearances set forth in Table Y.



7. **STABILIZERS (Optional)**

The MARKLIFT has been designed to meet all safety standards without the use of stabilizers. However, for increased stability, stabilizers are offered as an option.

Hydraulic Stabilizers

1. Hydraulic stabilizers can only be operated from the aerial control panel. The momentary switch is located on the bottom center of the face of the control panel and is labeled 'Stabilizers'.
2. Position the switch to 'Down' to lower the stabilizers and 'Up' to retract.



MARKLIFT SERVICE MAINTENANCE CHECKLIST

MODEL NUMBER _____

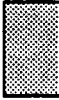
SERIAL NUMBER _____

DATE SOLD _____

DATE IN SERVICE _____

OPTIONS _____

WARRANTY PERIOD _____

 APPLIES TO MODELS WITH ENGINES ONLY

- CODE:
- C -- CHECKED
 - A -- ADJUSTED
 - R -- REPAIRED
 - N -- NEW PART
 - X -- NEEDS REPAIR

PREVENTIVE MAINT.	ELECTRICAL	HYDRAULIC	FUEL	STEER	TIRE MAJ.	MISC.
<ul style="list-style-type: none"> OL CHANGE AM FILTER HYDRAULIC OIL CHANGE WHEEL BEARING PACK DRIVE MOTOR PUMP MOTOR BRUSHES ELECTRICAL CONTROLS TRANSFERR OIL CHANGE TUNE UP SPARK PLUGS GENERATOR VOLTAGE REGULATOR BATTERY STARTER POINTS / CONDENSER HYDRAULIC SYSTEM LEFT CYLINDER HYD CONTROL VALVE ROTARY MANIFOLD LEFT ROLLERS HYDRAULIC HOSES BRAKES FUEL SYSTEM CARBURATION FUEL PUMP STEERING PUMP STEERING HOSES STEERING GEAR STEER CYLINDER DRIVE TIRES STEER TIRES ENGINE OVERHAUL DRIVE AXEL OVERHAUL 						

DATE	REMARKS	DATE	REMARKS	AGENCY



2

3

4A

1A



TITLE	ROTARY MANIFOLD ASSEMBLY
MODEL	ALL MODELS
NOTES	SINCE EARLY 1988

SECTION	3
FIGURE	8
PAGE	2

ITEM	PART NUMBER	DESCRIPTION	UNITS PER ASSEMBLY
		1234	
-1	21898	ROTARY MANIFOLD ASSEMBLY (See Sect. 2, Fig. 1 for NHA)	REF
2	24132	. ROTARY MANIFOLD (TH) (See Section 2, Figure 1A for Details)	1
3		.. LOCK WASHER	4
4		.. CAPSCREW	4
5		.. SPOOL RETAINER	1
6		.. SWIVEL SPOOL ASSEMBLY	1
7		.. HOUSING	1
-8	67817	.. SEAL KIT	1
9		... GLYD RING	7
10		... D.C. GLYD RING	2
11		... WEAR RING	1
12	80004-03	. MALE CONNECTOR	2
13	80001-03	. MALE CONNECTOR	1
14	80008-08	. MALE ELBOW	1
15	80008-03	. MALE ELBOW	1
16	80001-08	. MALE CONNECTOR	1
17	80004-18	. MALE CONNECTOR	2
18	80012-18	. MALE ELBOW	2
19	80012-03	. MALE ELBOW	2

5

4B

4C

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2

3

4



Mark Industries

TITLE	FINAL ASSEMBLY
MODEL	LS36E
NOTES	

SECT.	2
FIG.	1A
PAGE	3

ITEM	PART NUMBER	DESCRIPTION	UNITS PER ASSY
		1234	
-1	30008	FINAL ASSEMBLY	REF
2	32408	.UPPER CONTROL BOX ASSEMBLY (See Sect. 2, Fig. 5 for Details)	1
3	32383	.FRAME ASSEMBLY (See Sect. 3, Fig. 1A for Details)	1
4	30232	.SCISSOR ASSEMBLY (See Sect. 4, Fig. 1A for Details)	1
5	32184	.DECK ASSEMBLY (See Sect. 5, Fig. 1 for Details)	1
6	130337-75	.CONDUCTOR CABLE	1
7	30775	.EAR PIVOT BOLT	4
8	61304	.LOCK NUT	4
9	80042-05	.UNION	5
10	32402	.HYDRAULIC HOSE KIT DIAGRAM (See Sect. 2, Fig. 3 for Details)	1
-11	32405	.HYDRAULIC TUBE KIT DIAGRAM (See Sect. 2, Fig. 4 for Details)	1
12	65188	.PLUG CAP	40
13	80014-05	.UNION ELBOW	1
14	765	.CLAMP	24
15	63651	.POP RIVET	24
16	80031-05	.UNION TEE	1
17	65842	.ANTI-ROLL CAP	2
18	60711	.LOCK NUT	2
19	17413	.SCISSOR HANDBOOK	1
20	65867	.CLAMP	2
21	130927	.PLASTIC CONTAINER	1
22	60315	.CAP SCREW	2

REV.

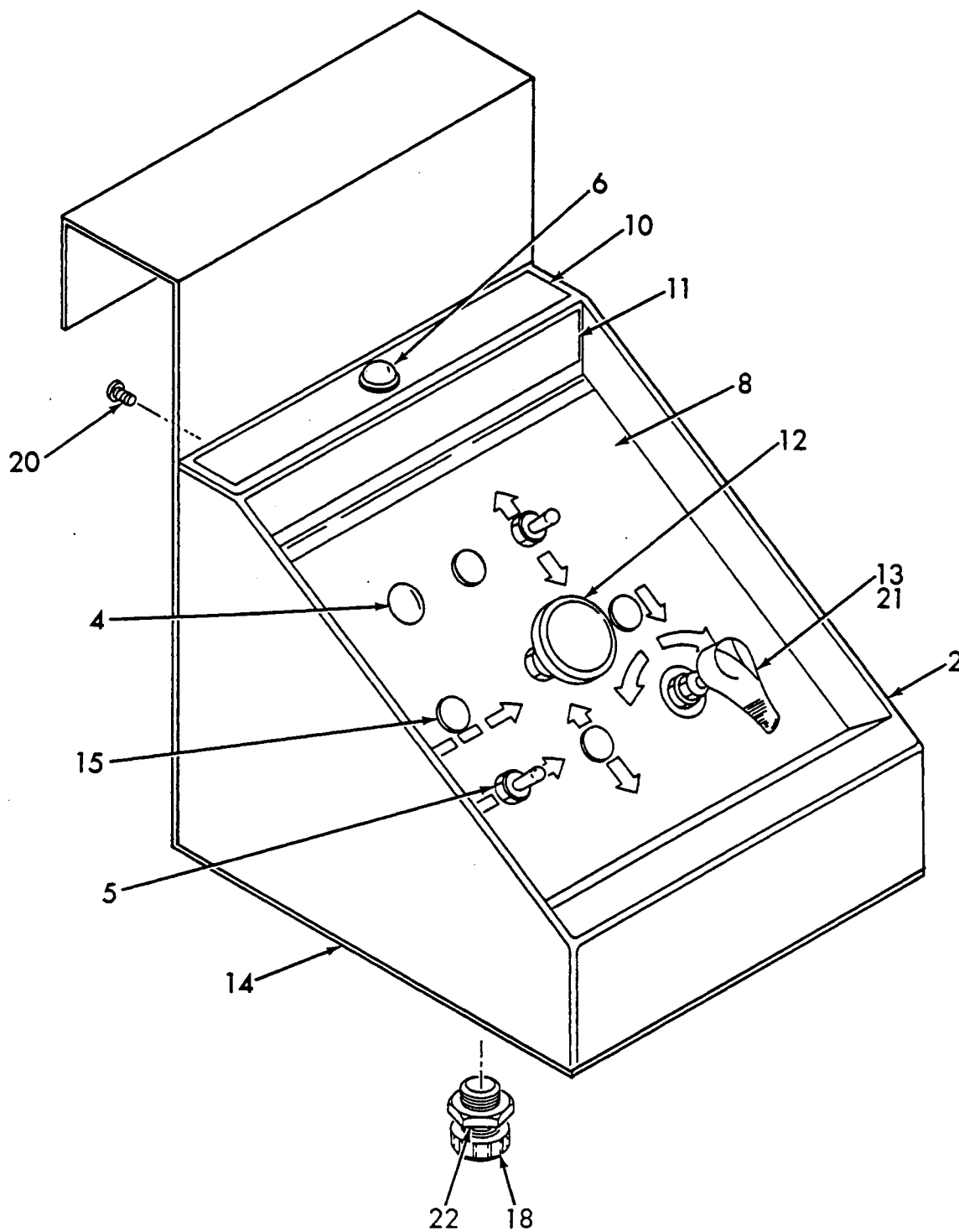
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Mark Industries

TITLE	UPPER CONTROL BOX ASSEMBLY
MODEL	LS30E & LS36E
NOTES	

SECTION	2
FIGURE	5
PAGE	1



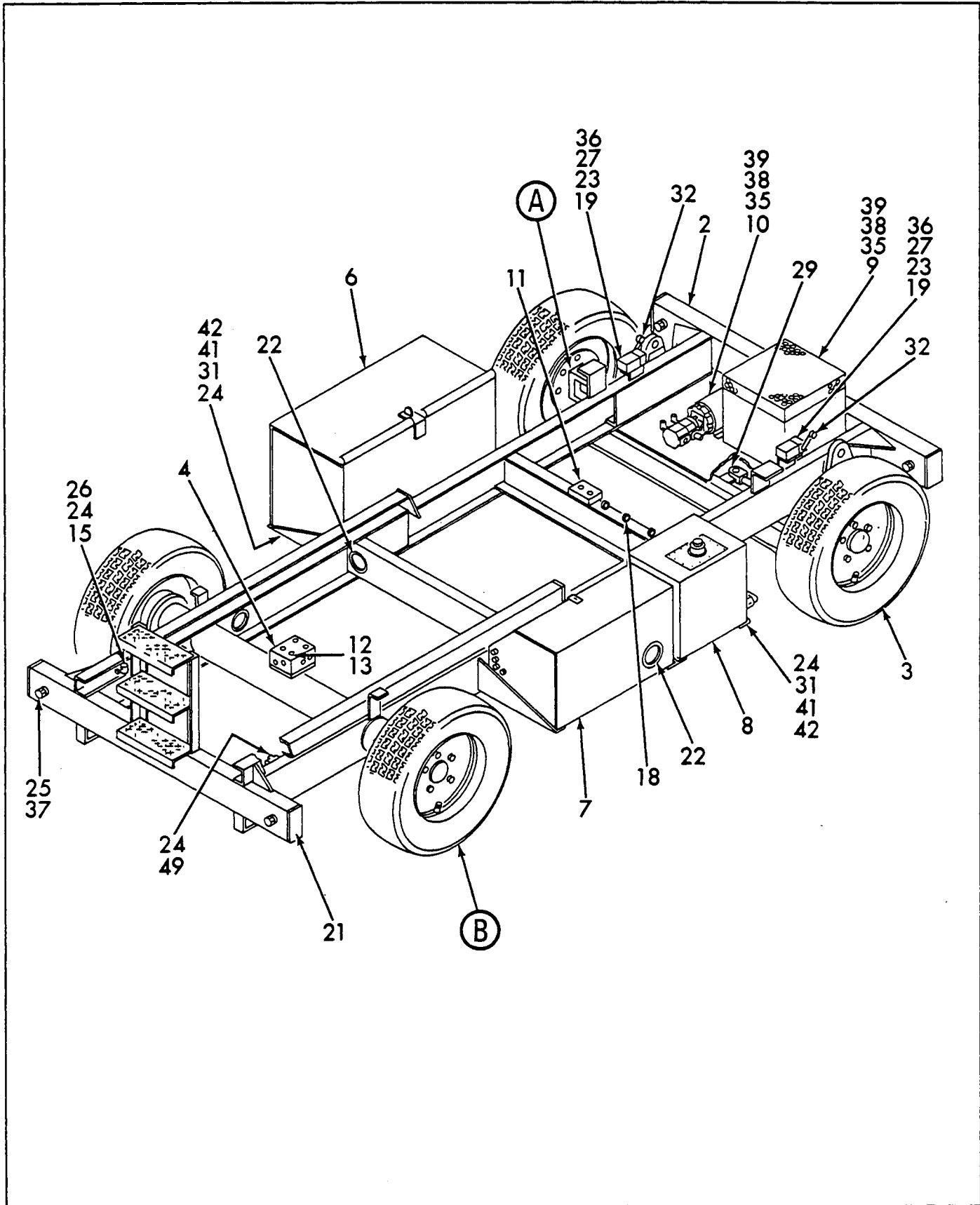
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Mark Industries

TITLE	FRAME ASSEMBLY
MODEL	LS36E
NOTES	

SECTION	3
FIGURE	1A
PAGE	1



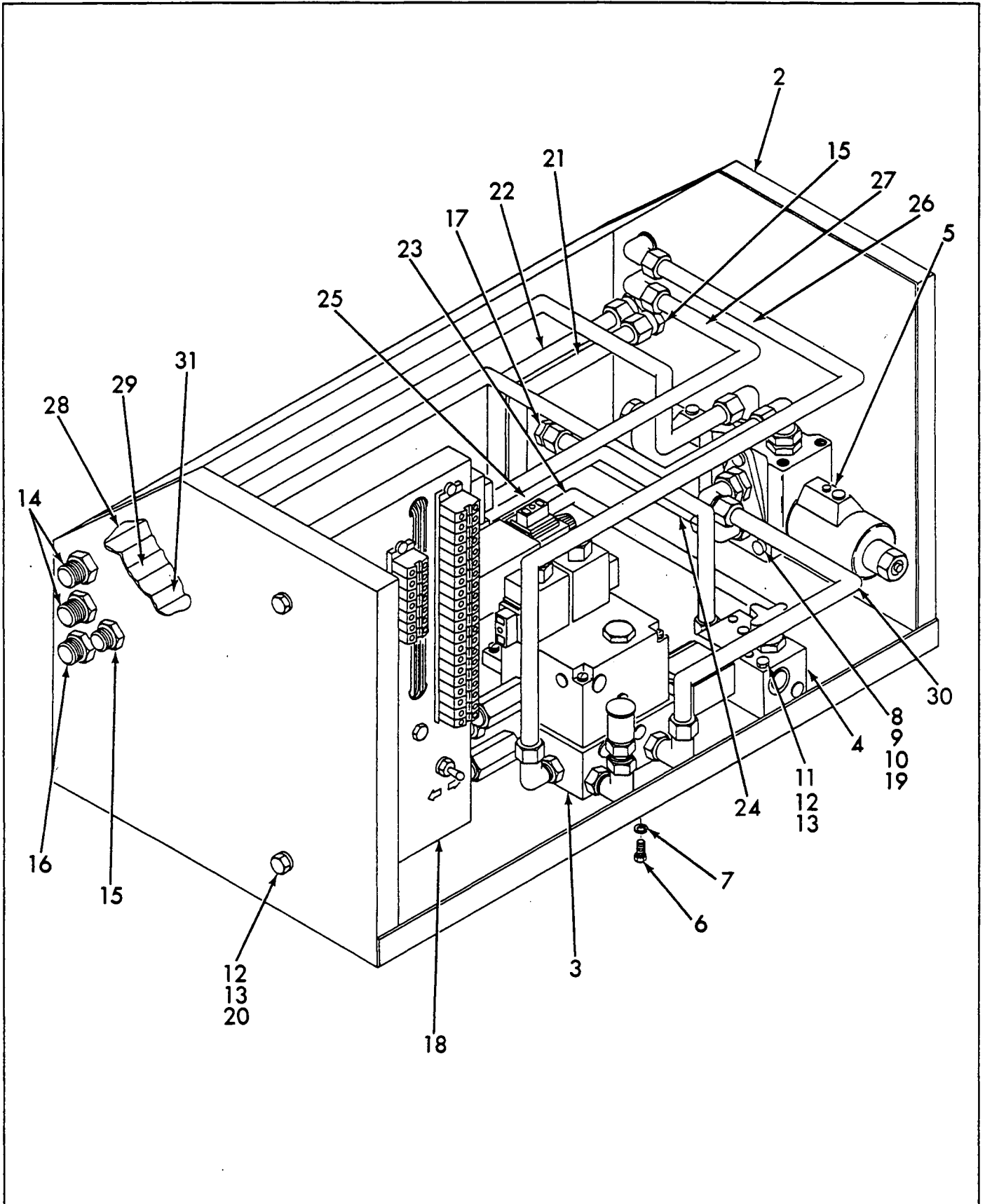
REV.



Mark Industries

TITLE	HYDRAULIC COMPONENT BOX ASSEMBLY
MODEL	LS30E
NOTES	SINCE JUNE 1989

SECTION	3
FIGURE	6
PAGE	1



REV.



Mark Industries

TITLE	HYDRAULIC COMPONENT BOX ASSEMBLY
MODEL	LS36E
NOTES	UNTIL JUNE 1989

SECT.	3
FIG.	6C
PAGE	2

ITEM	PART NUMBER	DESCRIPTION	UNITS PER ASSY
		1234	
-1	32484	HYDRAULIC COMPONENT BOX ASSEMBLY (See Sect. 3, Fig. 1A for NHA)	REF
2	32530	.COMPONENT BOX	1
3	32358	.VALVE PACKAGE ASSEMBLY (See Sect. 3, Fig. 14 for Details)	1
4	32557	.LOWERING CONTROL VALVE ASSEMBLY (See Sect. 3, Fig. 15 for Details)	1
5	32762	.DRIVE SOLENOID VALVE ASSEMBLY (See Sect. 3, Fig. 16 for Details)	1
6	60320	.CAP SCREW	2
7	63303	.LOCK WASHER	2
8	60339	.CAP SCREW	3
9	63302	.LOCK WASHER	3
10	60702	.HEX NUT	3
11	60352	.CAP SCREW	2
12	63301	.LOCK WASHER	5
13	60701	.HEX NUT	5
14	80045-07	.BULKHEAD UNION	2
15	80045-05	.BULKHEAD UNION	3
16	80045-06	.BULKHEAD UNION	1
17	80011-07	.BULKHEAD ELBOW UNION	3
18	32481	.ELECTRICAL PANEL ASSEMBLY (See Sect. 3, Fig. 17 for Details)	1
19	63402	.FLAT WASHER	3
20	60353	.CAP SCREW	1
21	32484-1	.TUBE ASSEMBLY	1
22	32484-2	.TUBE ASSEMBLY	1
23	32484-3	.TUBE ASSEMBLY	1

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Mark Industries

TITLE	TILT SWITCH ASSEMBLY
MODEL	LS30E & LS36E
NOTES	

SECT.	3
FIG.	10
PAGE	2

ITEM	PART NUMBER	DESCRIPTION	UNITS PER ASSY
		1234	
-1	30387	TILT SWITCH ASSEMBLY (See Sect. 3, Fig. 1 or 1A for NHA)	REF
2	30385	.TILT SWITCH BRACKET	1
3	30386	.TILT SWITCH COVER	1
4	199 A	.SWITCH BRACKET	4
5	4014	.MERCURY SWITCH	4
6	117-0	.BUTT CONNECTOR	2
7	62605	.ROUND HEAD SCREW	8
8		.SAFETY WIRE	8
9		.ELECTRICAL SLEEVING	4
10		.ELECTRICAL SLEEVING	1
11		.90° CONNECTOR	1
12		.ELECTRICAL CABLE	1
13	60701	.NUT	4
14	35715	.ROUND TUBE	2
15	60319	.BOLT	2
16	63301	.LOCK WASHER	2
17	61317	.NUT	1

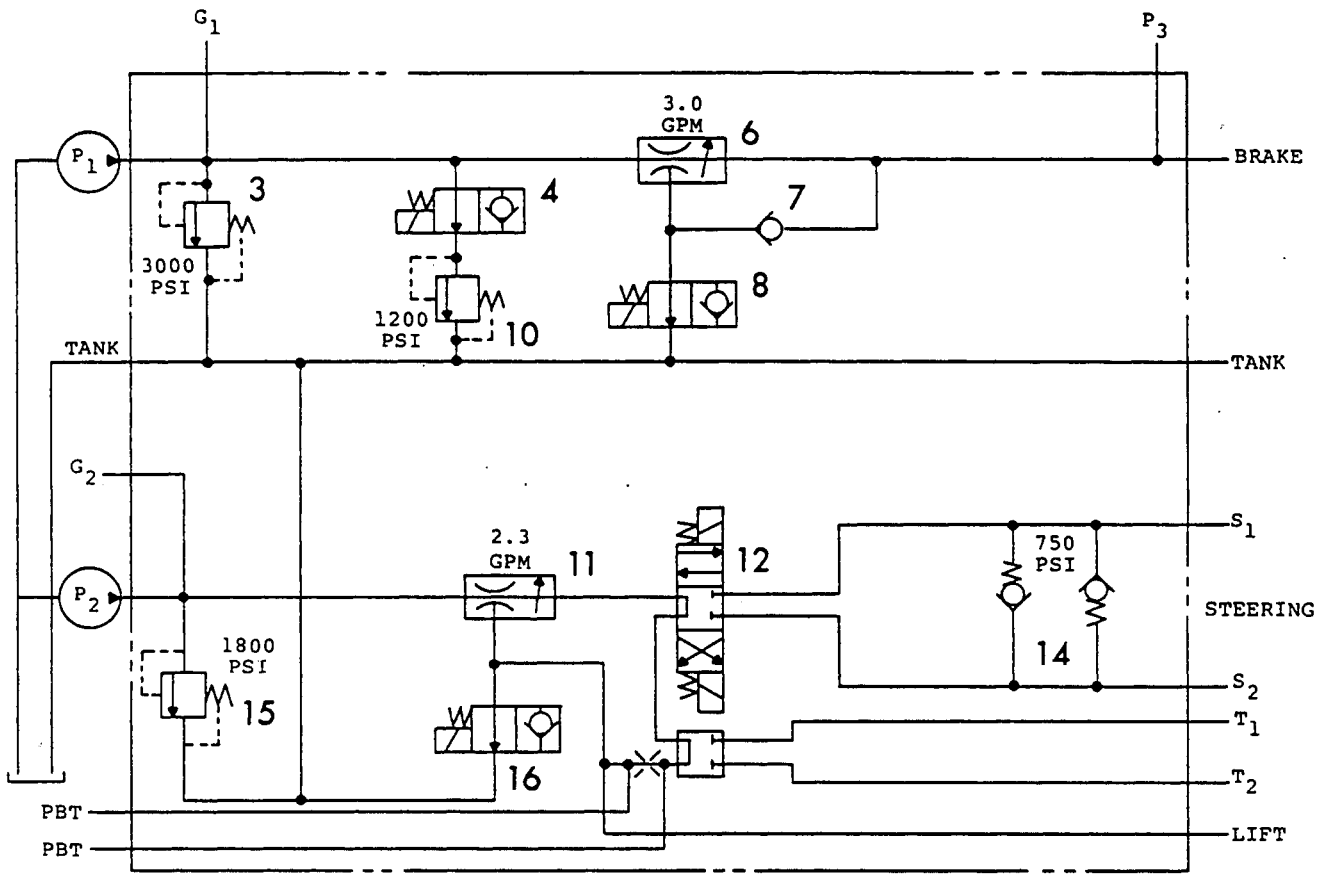
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TITLE	VALVE PACKAGE ASSEMBLY
MODEL	LS30E & LS36E
NOTES	UNTIL JUNE 1989

SECTION	3
FIGURE	14A
PAGE	2



INSTALL PLUG PRIOR TO USING
POWER BEYOND PORTS



Mark Industries

TITLE	ELECTRICAL PANEL ASSEMBLY
MODEL	LS36E
NOTES	

SECT.	3
FIG.	17A
PAGE	2

ITEM	PART NUMBER	DESCRIPTION	UNITS PER ASSY
		1234	
-1	32481	ELECTRICAL PANEL ASSEMBLY (See Sect. 3, Fig. 6A for NHA)	REF
2	30312	.PANEL	1
3	4027	.TERMINAL BLOCK	23
4	117-A	.TERMINAL BLOCK END	2
5	70313	.TOGGLE SWITCH	1
6	4021	.TOGGLE SWITCH	1
7	70306	.TIME DELAY RELAY	1
8	2717	.IGNITION SWITCH	1
9	20562	.CIRCUIT BREAKER	1
10	30310	.DECAL	1
11	496-A	.PUSH-ON TERMINAL	4
12	32518	.DECAL	1
13	771	.PLUG	1
14	70016	.GROMMET	2
15	130600	.CABLE CONDUCTOR	7 FT
16	70029	.CONNECTOR	8 -
17	70271	.CONNECTOR	5
18	117-C	.CONNECTOR RING	11
19	256	.CABLE TIE	45
20	4045	.DIODE	9
21	70008	.WIRE	2 FT
22	70232	.WIRE	7 FT
23	70233	.WIRE	10 FT
24	16214	.MOUNT	5
25	63322	.LOCK WASHER	1

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TITLE	DRIVE MOTOR
MODEL	LS30E & LS36E
NOTES	UNTIL OCT. 1988 (REPLACED BY 81272)

SECT.	3
FIG.	19A
PAGE	3

ITEM	PART NUMBER	DESCRIPTION	UNITS PER ASSY
		1234	
26		.MANIFOLD PLATE	1
27		.MANIFOLD	1
-28		.COMMUTATOR ASSEMBLY (MATCHED SET)	1
29		..COMMUTATOR	1
30		..COMMUTATOR RING	1
31		.SLEEVE	1
-32		.END COVER ASSEMBLY	1
33		..END COVER	1
34		..PLUG	2
35		..O-RING	2
36		..RELIEF VALVE CARTRIDGE	2
37		.SPECIAL BOLT	7

REV.

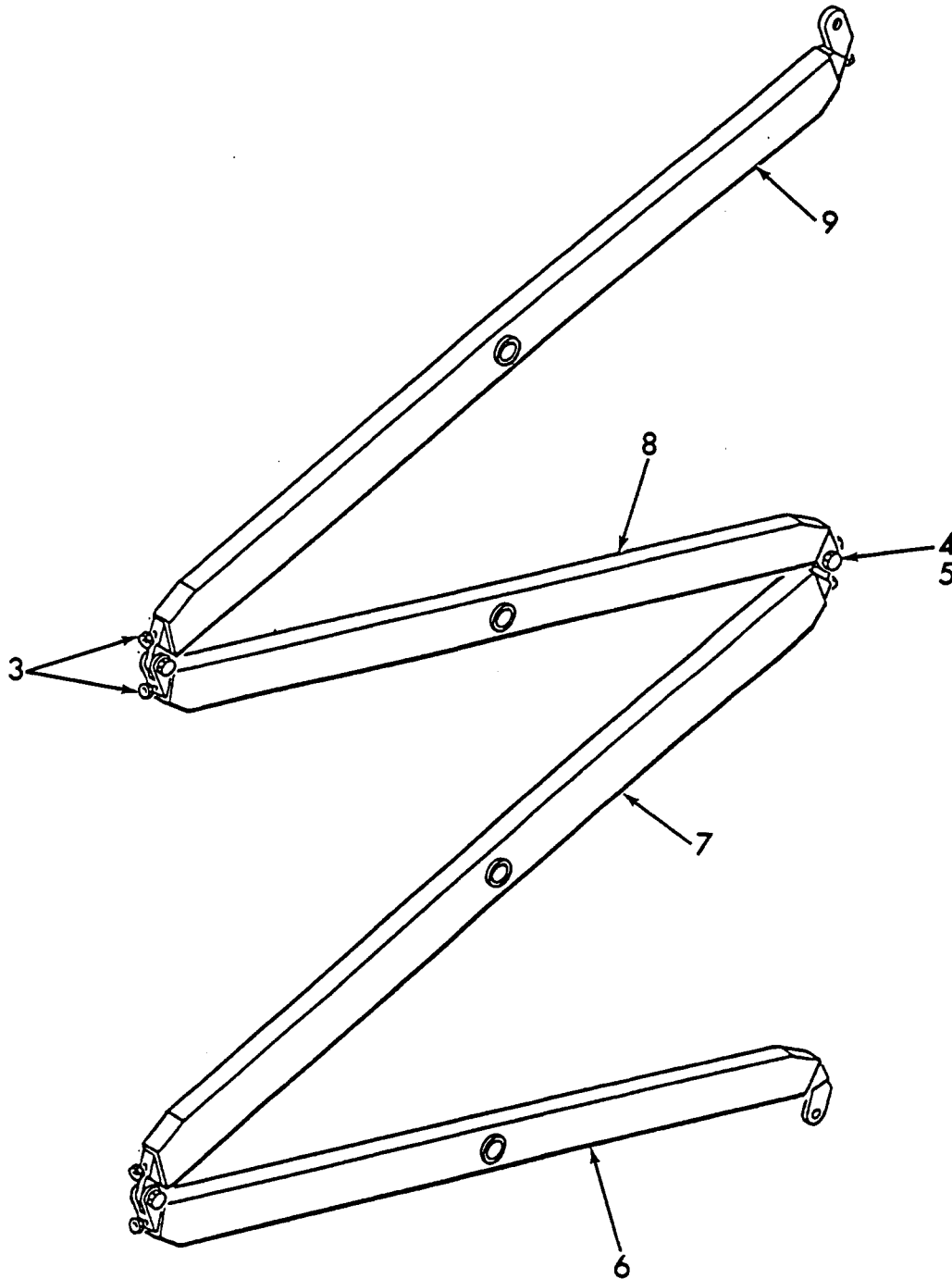
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Mark Industries

TITLE	SCISSOR ASSEMBLY
MODEL	LS36E
NOTES	

SECTION	4
FIGURE	1A
PAGE	2



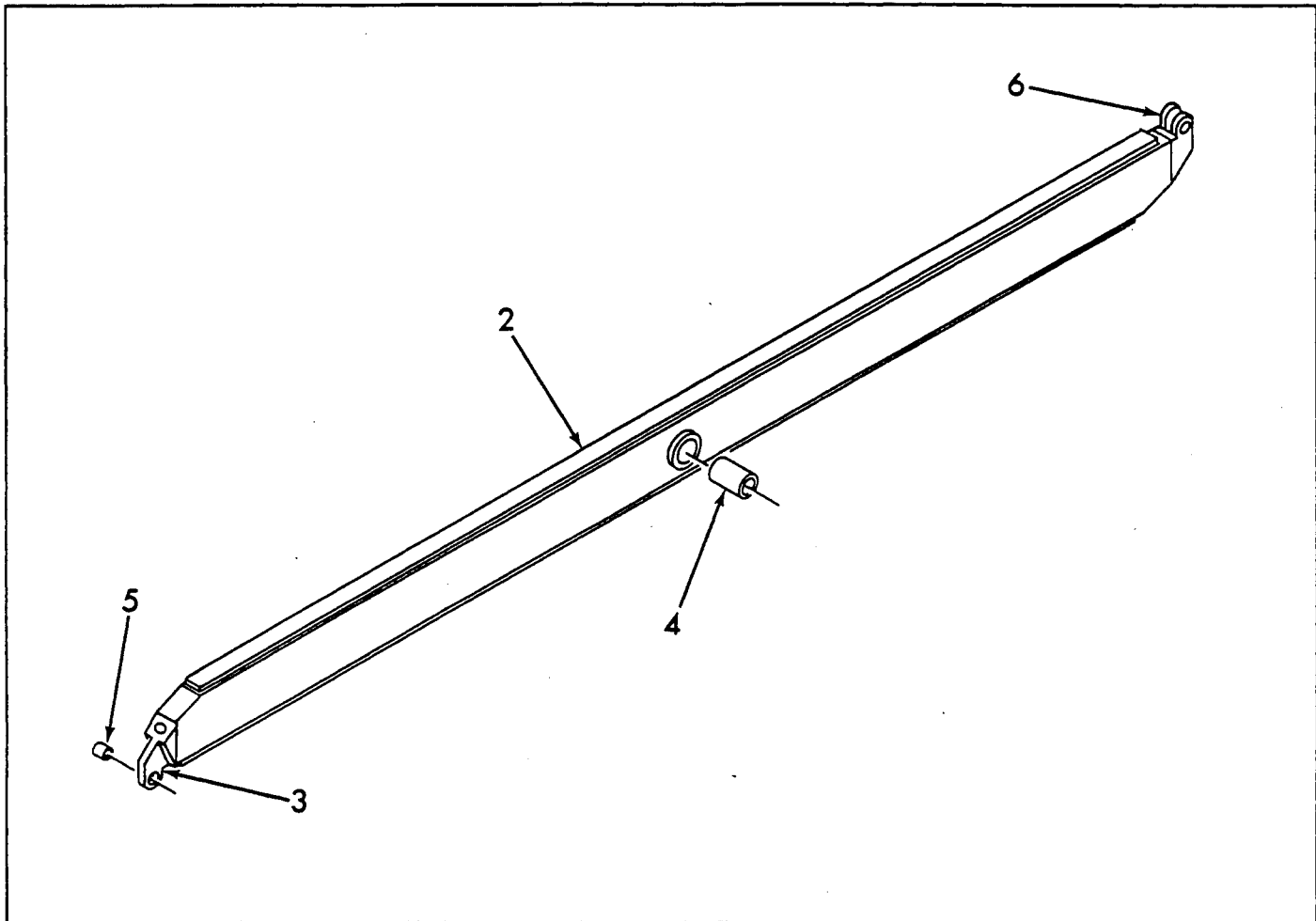
(A)



Mark Industries

TITLE	MIDDLE OUTER ARM ASSEMBLY
MODEL	LS36E
NOTES	

SECTION	4
FIGURE	3B
PAGE	1



ITEM	PART NUMBER	DESCRIPTION	UNITS PER ASSY
		1234	
-1	30157	MIDDLE OUTER ARM ASSEMBLY (See Sect. 4, Fig. 1A for NHA)	REF
2	30175	.OUTER ARM FABRICATION	1
3	30154	.SHORT MALE EAR	1
4	30207	.BUSHING	1
5	30635	.BUSHING	1
6	30155	.FEMALE EAR	1

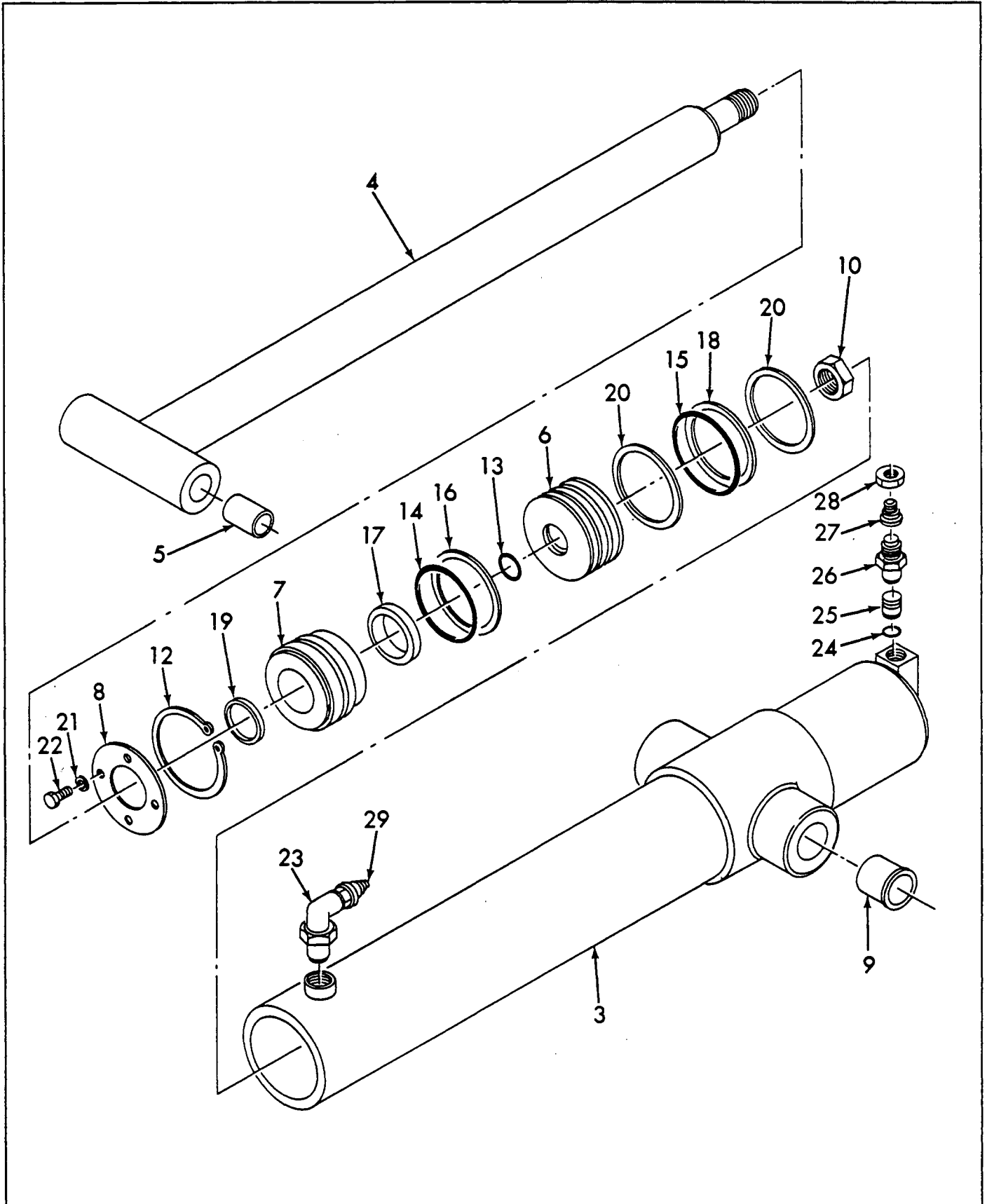
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Mark Industries

TITLE	MAIN LIFT CYLINDER ASSEMBLY (FRONT)
MODEL	LS30E
NOTES	

SECTION	4
FIGURE	10
PAGE	1



REV.



Mark Industries

TITLE	MAIN LIFT CYLINDER ASSEMBLY (REAR)
MODEL	LS36E
NOTES	

SECT.	4
FIG.	10C
PAGE	2

ITEM	PART NUMBER	DESCRIPTION	UNITS PER ASSY
		1234	
-1	30327	MAIN LIFT CYLINDER ASSEMBLY (FRONT) (See Sect. 4, Fig. 1A for NHA)	REF
-2	30194	.CYLINDER	1
3		..BARREL ASSEMBLY	1
4		..ROD ASSEMBLY	1
5		..ROD BUSHING	2
6		..PISTON	1
7		..HEAD	1
8		..RETAINER PLATE	1
9	64910	..TRUNNION BUSHING	2
10		..NUT	1
11		..STOP TUBE	1
-12	66962	..SEAL KIT (STEEL PISTON RINGS) (SHOWN)	1
	66017	SEAL KIT (POLY PAK)	1
	66018	SEAL KIT (HCI) (7/81-3/87 INTERMITTENTLY)	1
13		...SNAP RING	1
14		...O-RING	1
15		...O-RING	1
16		...O-RING	1
17		...BACK-UP RING	1
18		...ROD SEAL	1
19		...SHAMBAN SEAL	1
20		...ROD WIPER	1
21		...WEAR RING	2
22		...LOCK WASHER	4
23		...CAP SCREW	4
24	80012-09	.STRAIGHT THREAD ELBOW	1

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Mark Industries

TITLE	HOURMETER
MODEL	
NOTES	

SECT.	6
FIG.	3
PAGE	2

ITEM	PART NUMBER	DESCRIPTION	UNITS PER ASSY
		1234	
-1	131065	HOURMETER .	REF
2	20571	.HOURMETER	1
3	70232	.WHITE WIRE (1.5 FT)	AR
4	70008	.YELLOW/GREEN WIRE (1.5 FT)	AR
5	117-C	.CONNECTOR RING	2

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TITLE	FEMALE PLUG ONLY FOR REMOTE DRIVE
MODEL	
NOTES	

SECTION	6
FIGURE	8
PAGE	1

THIS SECTION 6 - OPTION ASSEMBLY
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TITLE	VENDORS
MODEL	LS30E & LS36E
NOTES	

SECTION
7

SECTION 7 CONTAINS:

<u>PAGE NO.</u>	<u>TITLE</u>
1	TRW ROSS GEAR DRIVE MOTOR - P/N 81165
13	TRW ROSS GEAR DRIVE MOTOR - P/N 81272
41	MICO DISC BRAKE - P/N 81117
47	TROJAN BATTERY
51	ANPAT MANUAL BATTERY CHARGER - P/N 4006
57	LESTER MANUAL BATTERY CHARGER - P/N 70430
62	LESTER AUTOMATIC BATTERY CHARGER - P/N 70228
68	LESTER AUTOMATIC BATTERY CHARGER - P/N 70435



TITLE	TRW ROSS GEAR DRIVE MOTOR
MODEL	
NOTES	P/N 81165

SECTION	7
PAGE	10

Final Checks

Final Checks

- Pressurize the Torqmotor™ with 100 p.s.i. (6.9 BAR) dry nitrogen and submerge in solvent to check for external leaks.
- Check Torqmotor™ for rotation. Torque required to rotate coupling shaft should not be more than 50 ft.lbs. (68 N m)
- Pressure port with "A" cast under it on housing (6) is for counter-clockwise coupling shaft rotation as viewed from the output end of coupling shaft. Pressure port with "B" cast under it is for clockwise coupling shaft rotation.
- Use test stand if available, to check operation of the Torqmotor™.

Hydraulic Fluid

Keep the hydraulic system filled with one of the following:

- 10W40 SE or SF manufacturers suggested oil.
- Hydraulic fluid as recommended by equipment manufacturer, but the viscosity should not drop below 50 SSU or contain less than .125% zinc anti-wear additives.

CAUTION: Do not mix oil types. Any mixture, or an unapproved oil, could deteriorate the seals. Maintain the proper fluid level in the reservoir. When changing fluid, completely drain old oil from the system. It is suggested also that you flush the system with clean oil.

Filtration

Recommended filtration 20-50 micron.

Oil Temperature

Maximum operating temperature 200°F (93.3°C).



TITLE	TRW ROSS GEAR DRIVE MOTOR
MODEL	
NOTES	P/N 81272

SECTION	7
PAGE	20

Disassembly and Inspection

(Reference Exploded Assembly View)

place Torqmotor in a vise

1. Place the Torqmotor in a soft jawed vice, with coupling shaft (12) pointed down and the vise jaws clamping firmly on the sides of the housing (18) mounting flange or port bosses. Remove manifold port O-Rings (18A) if applicable.

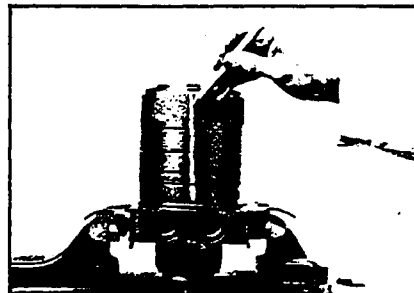


Figure 3

WARNING

WARNING: IF THE TORQMOTOR IS NOT FIRMLY HELD IN THE VISE, IT COULD BE DISLODGED DURING THE SERVICE PROCEDURES, CAUSING INJURY.

scribe alignment mark & loosen valve plugs

2. Scribe an alignment mark down and across the Torqmotor components from end cover (2) to housing (18) to facilitate reassembly orientation where required. Loosen two shuttle or relief valve plugs (21) for disassembly later if included in end cover. 3/16 or 3/8 inch allen wrench or 1 inch hex socket required. SEE FIGURE 3 & 4.

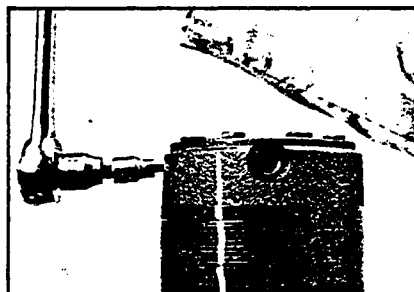


Figure 4

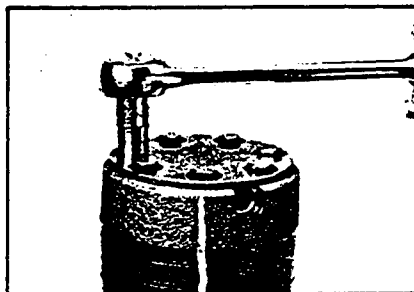


Figure 5

remove special bolts & inspect bolts

3. Remove the five or seven special ring head bolts (1, 1A, 1B, or 1C) using an appropriate 1/2 or 9/16 inch size socket. SEE FIGURE 5. Inspect bolts for damaged threads, or sealing rings, under the bolt head. Replace damaged bolts. SEE FIGURE 6.

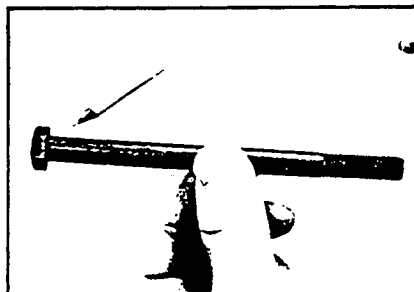


Figure 6



TITLE	TRW ROSS GEAR DRIVE MOTOR
MODEL	
NOTES	P/N 81272

SECTION	7
PAGE	30

install drive link

11. Install drive link (10) the long splined end down into the coupling shaft (12) and engage the drive link splines into mesh with the coupling shaft splines. SEE FIGURE 51.

NOTE

NOTE: Use any alignment marks put on the coupling shaft and drive link before disassembly to assemble the drive link splines in their original position in the mating coupling shaft splines.

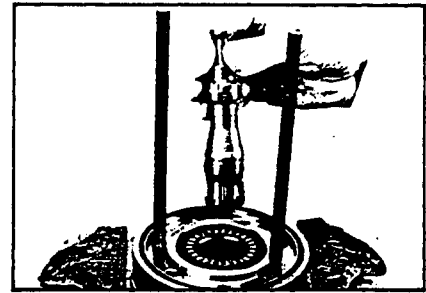


Figure 51

assemble wear plate

12. Assemble wear plate (9) over the drive link (10) and alignment studs onto the housing (18). SEE FIGURE 52.

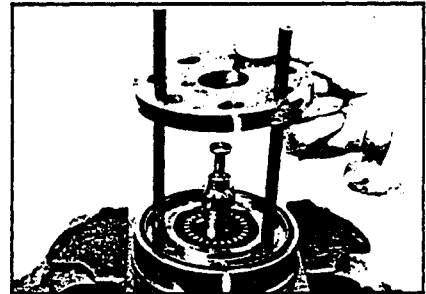


Figure 52

assemble seal ring

13. Apply a small amount of clean grease to a new seal ring (4) and assemble it into the seal ring groove on the wear plate side of the rotor set stator (8B). SEE FIGURE 53.

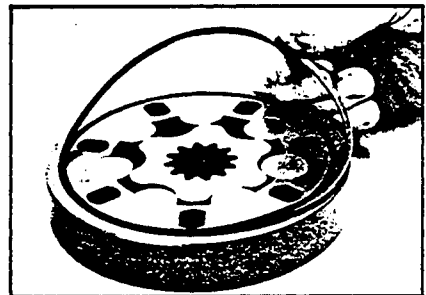


Figure 53

install the assembled rotor set

14. Install the assembled rotor set (8) onto wear plate (9) with rotor (8A) counterbore and seal ring side down and the splines into mesh with the drive link splines. SEE FIGURE 54.

NOTE

NOTE: It may be necessary to turn one alignment stud out of the housing (18) temporarily to assemble rotor set (8) or manifold (7) over the drive link.

NOTE

NOTE: If necessary, go to the appropriate, "Rotor Set Component Assembly Procedure," on page 30 or 31.

NOTE

NOTE: The rotor set rotor counterbore side must be down against wear plate for drive link clearance and to maintain the original rotor-drive link spline contact. A rotor set without a counterbore and that was not etched before disassembly can be reinstalled using the drive link spline pattern on the rotor splines if apparent, to determine which side was down. The rotor set has a seal ring groove on the wear plate contact side of the stator (8B).

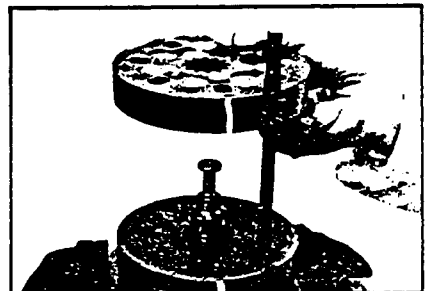


Figure 54



TITLE	TRW ROSS GEAR DRIVE MOTOR
MODEL	
NOTES	P/N 81272

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Application Data ME Series

ME

Torquemotor Series	ME	09	12	15	18	21	29	33	48	58
Displacement	(in ³ /rev)	8.6	12.1	14.6	17.7	20.6	29.0	32.6	48.1	58.0
	(cm ³ /rev)	141	198	239	290	338	475	534	788	950
Pressure (PSI)	Continuous (differential) 1, 3	3000	3000	3000	3000	3000	2000	2000	1500	1000
	(kg/cm ²)	210.9	210.9	210.9	210.9	210.9	140.6	140.6	105.5	70.3
Torque (In-Lbs)	Intermittent (differential) 1, 3, 4	4000	4000	4000	4000	4000	3000	2500	2000	1500
	(kg-m)	281.2	281.2	281.2	281.2	281.2	210.9	175.6	140.6	105.5
Torque (In-Lbs)	At continuous rated pressure and flow	3456	4699	5992	7061	8339	7313	8326	8737	6908
	(kg-m)	39.82	54.14	69.04	81.35	96.08	84.25	95.93	100.66	79.59
	At intermittent rated pressure and continuous rated flow	4725	6434	8154	9619	11126	12013	10735	11789	10954
	(kg-m)	54.44	74.13	93.94	101.82	128.18	138.40	123.68	135.82	126.20
Flow (GPM)	Minimum starting at continuous rated pressure	2667	3313	4930	5600	6529	6287	7104	7339	5733
	(liters/min)	30.73	38.17	56.80	64.52	75.22	72.43	81.85	84.55	66.05
Speed (rpm)	Minimum starting at intermittent rated pressure	3495	3889	6491	7552	8987	9678	8974	9313	8544
		40.27	44.81	74.78	87.01	103.54	111.50	103.39	107.30	98.44
Flow (GPM)	Continuous	20	20	20	20	20	20	20	20	20
	(liters/min)	76	76	76	76	76	76	76	76	76
Speed (rpm)	Maximum	25	25	25	25	25	30	30	30	30
		95	95	95	95	95	114	114	114	114
Speed (rpm)	At continuous rated flow & pressure	494	349	288	245	197	145	127	87	76
	At maximum flow and no load ²	670	479	395	336	279	236	212	141	118

Notes:

1. The maximum pressure at the motor inlet or outlet ports without regard to the continuous or intermittent pressure ratings is 4000 PSI (281.2 kg/cm²).
2. For applications with rpm requirements in excess of the maximum rating contact your authorized Ross Gear representative.
3. Differential pressure is the difference between inlet and outlet port pressures.
4. Intermittent pressure applies to a maximum of 10% of every minute.
5. Operating Temperature:
Recommended 0 to 200 °F.
6. Filtration: Recommended nominal filtration is 20 to 50 micrometers.
7. Recommended fluid: 10W40 SE or SF API designation; 50 SUS minimum at maximum operating temperature; and .125% zinc antiwear by weight.



Mark Industries

TITLE	TROJAN BATTERY
MODEL	
NOTES	

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TROJAN MILEAGE MASTER BATTERIES

GROUP NUMBER	TYPE	VOLTS	REF.		OVERALL DIMENSIONS			WEIGHT
			20 HOUR RATE A.H.	75 AMPS TO 5.25 VOLTS AT 80° F MINUTES	LENGTH	WIDTH	*HEIGHT	
GC-2	T-90	6	185	90	10-3/8	7-1/8	10-3/4	56
GC-2H	T-105	6	217	105	10-3/8	7-1/8	10-3/4	61
GC-2H	T-135	6	244	135	10-3/8	7-1/16	11-1/2	72

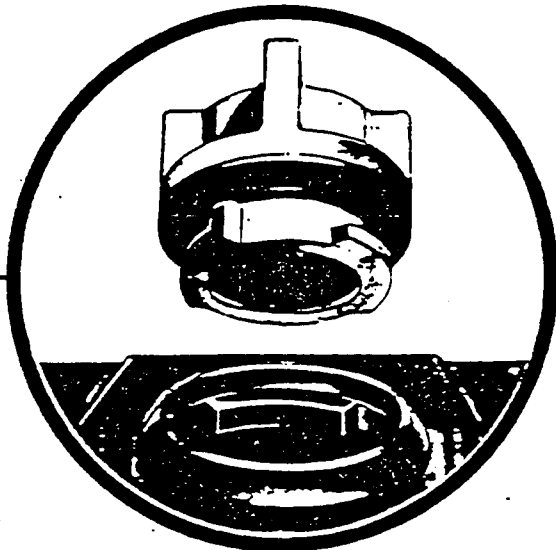
OTHER SPECIAL BATTERIES AVAILABLE FOR ELECTRIC VEHICLES.

*TYPE OR TERMINAL WILL VARY HEIGHT SLIGHTLY

TROJAN "MILEAGE MASTER" TYPES FEATURE QUARTER-TURN VENT CAPS REDUCING SERVICE TIME 75%

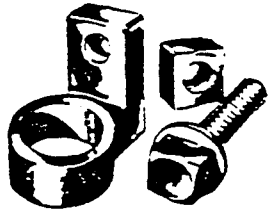


TYPE AP
STRAIGHT POST

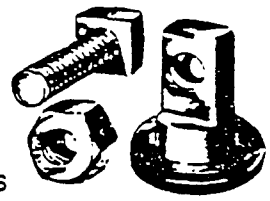


TYPE WT
WING NUT TERMINAL
3/16 or 5/16 Stud

TYPE LT
ANGLE TERMINAL
5/16 Lead coated bolt



TYPE UT
UNIVERSAL TERMINAL



ALL BATTERIES COME WITH UNIVERSAL TERMINALS UNLESS OTHERWISE SPECIFIED

DISTRIBUTED BY

MARK INDUSTRIES

TROJAN BATTERY COMPANY
 12380 CLARK STREET • SANTA FE SPRINGS, CA 90670
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TITLE	LESTER MANUAL BATTERY CHARGER
MODEL	
NOTES	P/N 70430

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- (b) A short circuit failure of one or both diodes. First disconnect one diode. Using a low voltage continuity tester check each diode. Then reverse the tester leads and check each diode again. If the diode conducts current in both directions the diode is shorted and must be replaced. Replace either the entire heat-sink assembly or the defective diode. When replacing a single diode be sure the new diode is pressed squarely into the hole and that it does not extend beyond the rear surface of the heat sink plate.
- (c) If (a) and (b) fail to reveal the malfunction, check wiring of both charger and battery connections against their respective wiring diagrams. The charger wiring diagram is shown on the enclosed sheet along with the parts list.

CHARGER OUTPUT IS LOW

The most probable cause is one diode shorting and blowing one fuse. Refer to "Fuse Link Blowing" part (b) to check the diodes. If a diode is shorted, both the defective diode/heat sink and the defective fuse assembly must be replaced.

CHARGER DOES NOT TURN OFF

In models equipped with timers, this is due to an inoperative timer. In this case replace timer assembly.

AC LINE FUSE OR CIRCUIT BREAKER BLOWS

If this occurs when charger is turned on without being plugged into the vehicle, the AC cord, timer motor coil, or the transformer may be shorted. To check the AC cord, insure that the timer is "OFF" and connect the continuity tester across the AC plug prongs. If circuit is complete the LAC cord is shorted and must be replaced. To check the timer motor coil, disconnect one of the timer motor wires and connect continuity tester to the motor coil leads. If the lamp glows, the coil is shorted. To test the transformer, first disconnect all the secondary leads to the diodes. Then reconnect the AC cord and turn timer "ON". If the AC fuse or circuit breaker still blows, the transformer is probably shorted internally and must be replaced.

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