BT Prime-Mover

SC 10 / 20 / 30 / 40

O/M/P Manuals

310681-000 1968_October
310668-000 1971_February
310564-000 1973_October
Update Memo 1977_January
301043-000 Late in the year 1980

Return

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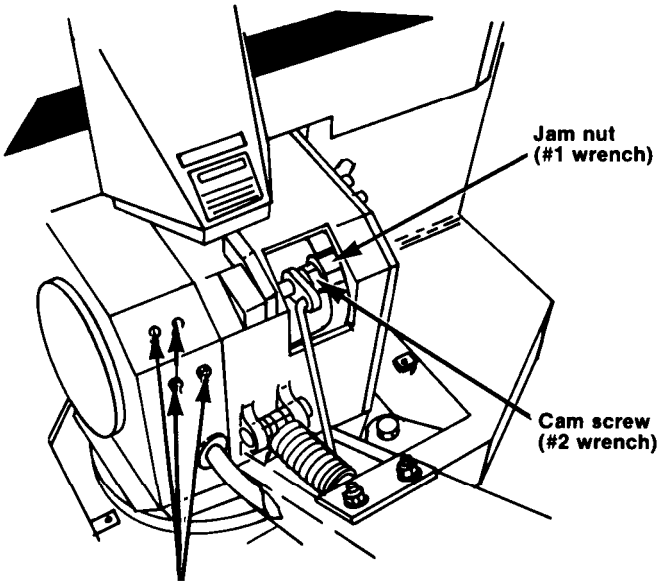
CONTROL WIRING

One circuit breaker protects all control wiring. **No control device will operate when this circuit breaker is open. However, power circuits will function if switched manually.** Opening of this circuit control breaker usually indicates a **short circuit** in the control system, as it is impossible to overload this circuit breaker through normal operations.

Wires are numbered and color coded to facilitate maintenance. Open circuits in a given system may be due to switch adjustment, broken wires, defective terminals or loose joints. Placing a jumper wire across questionable switches will indicate whether the switch is the cause of the difficulty. The controls are wired per the block diagram in this manual.

MECHANICAL BRAKE

FIG. B



Proper adjustment of the mechanical brake is important for satisfactory operation of the Prime-Mover electric truck.

The braking action of a Prime-Mover transmission is achieved by a set of springs that press against a brake actuating lever, which in turn grips a brake disc. The brake is always applied in the static position.

To release the brake the actuating lever must be pushed away from the brake disc. This is accomplished by a camming action that occurs when the brake rod is rotated against the adjusting cam screw. (See the 22:1 spur gear transmission drawing #8, ref. nos. 14 and 17.)

There are two adjustments provided to permit tailoring the brake for different operating conditions. The first adjustment is the brake release. **This controls overall braking and uniformity between handle up and handle down positions. To make this adjustment:**

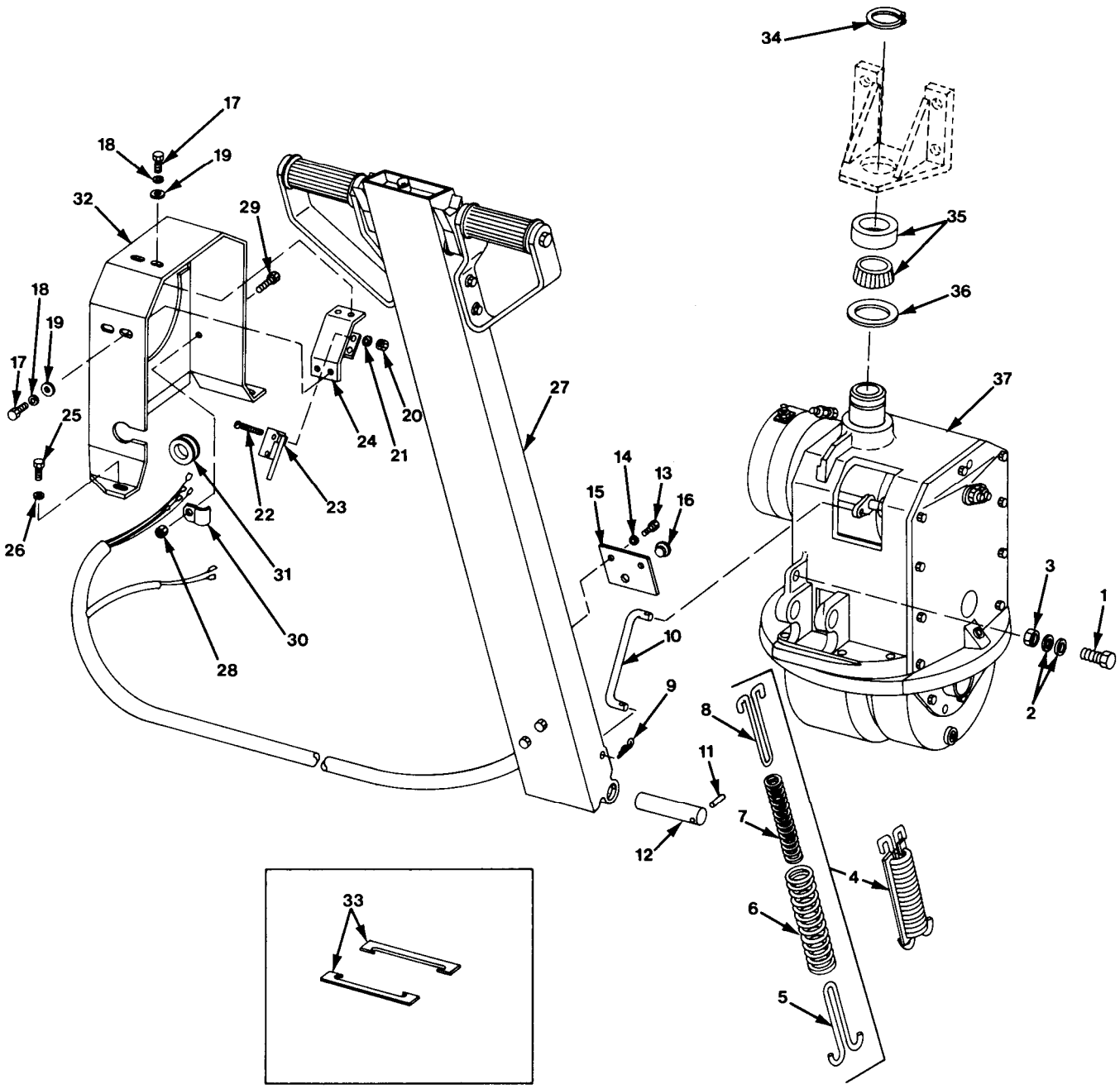
1. Loosen the four cap screws that hold the brake interlock switch bracket and slide as far left as possible.
2. On the front cover of the transmission, back out the two brake pressure adjusting screws. These screws control the amount of spring pressure needed by the brake actuating lever to grip the brake disc.
3. Loosen the jam nut. (Drawing #8, Ref. 15).
4. Lower the handle to the full down position where the brake should be engaged.
5. Turn the adjusting cam screw at $\frac{1}{3}$ of a revolution increments. Adjust inward toward the brake actuating lever for less brake and outward for more brake.
6. After each attempt at adjustment move the handle to the operating position. Get the truck moving and lower the handle to test the brake.
7. When correctly adjusted with the handle down, test with the handle up.
8. If braking is uneven between handle up and handle down, try to even it using $\frac{1}{16}$ turn increments of the cam screw.
9. Tighten the jam nut.
10. Recheck the brake. If the brake release is properly adjusted the braking will be even in the handle up and down positions with no brake drag in the operating position.
11. Readjust the interlock switch as described on following page.

The second brake adjustment controls the aggressiveness of the brake. To make this adjustment:

1. **Move the handle to the operating position.**
2. Turn each of the brake pressure adjusting screws (located in the front cover of the transmission) inward the same amount. This creates more spring pressure against the brake actuator lever causing it to grip the brake disc more positively.
3. Operate the truck and readjust if necessary until a satisfactory stopping range is achieved.
   Note: Over adjustment of the brake pressure screws may cause excessive brake wear.

Inadequate brake after this adjusment may be due to excessive wear of the brake adjusting screw or to worn linings. The adjusting screw can be readily removed for inspection.

FIGURE 4 HANDLE AND TRANSMISSION ASSEMBLY



Service Reference 20110-00 and 10310-00

Fig. #	Item #	Part #	Name	# for Assy.
4	1	P-11854-5	Screw, Cap	1
4	2	P-11016-2	Washer	2
4	3	P-11261-5	Nut, Jam	1
4	4	P-20405-2	Spring, Assembly	1
4	5	A-20398-2	Retainer, Spring	1
4	6	A-27542	Spring	1
4	7	A-20400	Spring	1
4	8	A-20398-1	Retainer, Spring	1
4	9	P-11429-4	Clip, Spring	2
4	10	A-27529-2	Rod, Brake Control	1
4	11	P-11073-4	Pin, Roll	1
4	12	A-13813-19	Pin, Handle Pivot	1
		A-20287-19	Pin, Handle Pivot (cold storage)	1
4	13	A-14892-1	Screw, H.H.	2

FIGURE 12 WIRING SCHEMATIC SC-20/40

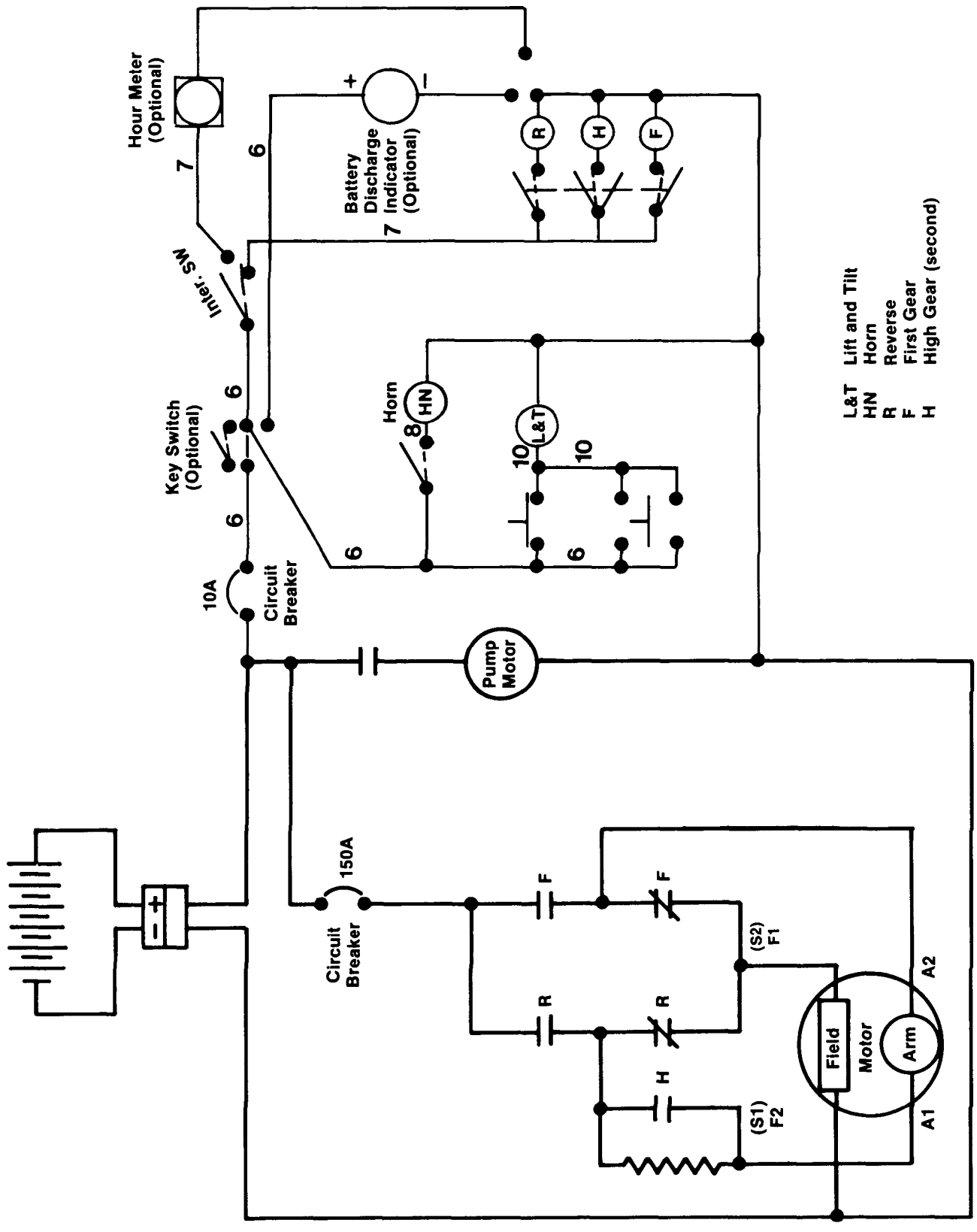
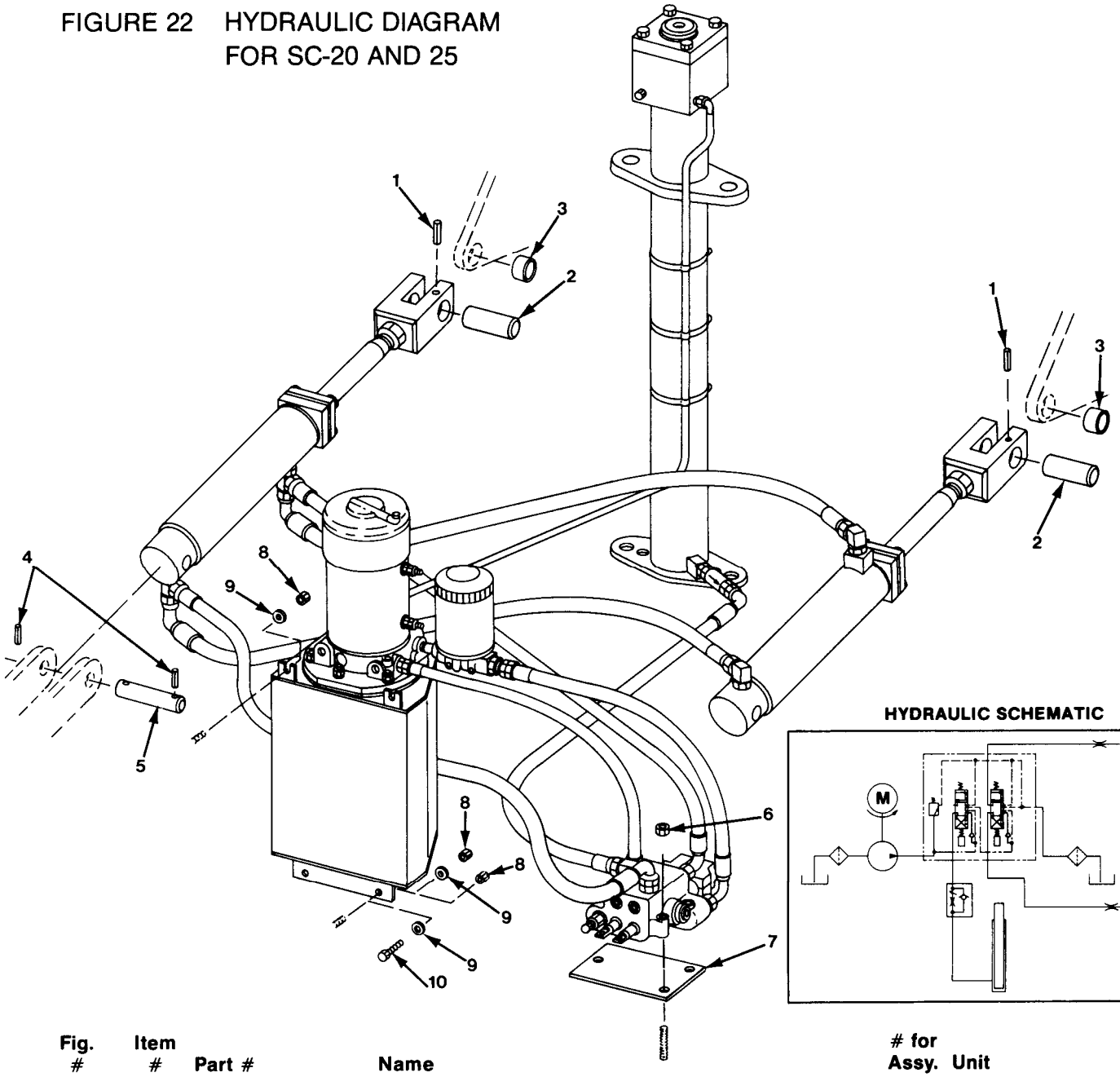


FIGURE 22 HYDRAULIC DIAGRAM FOR SC-20 AND 25

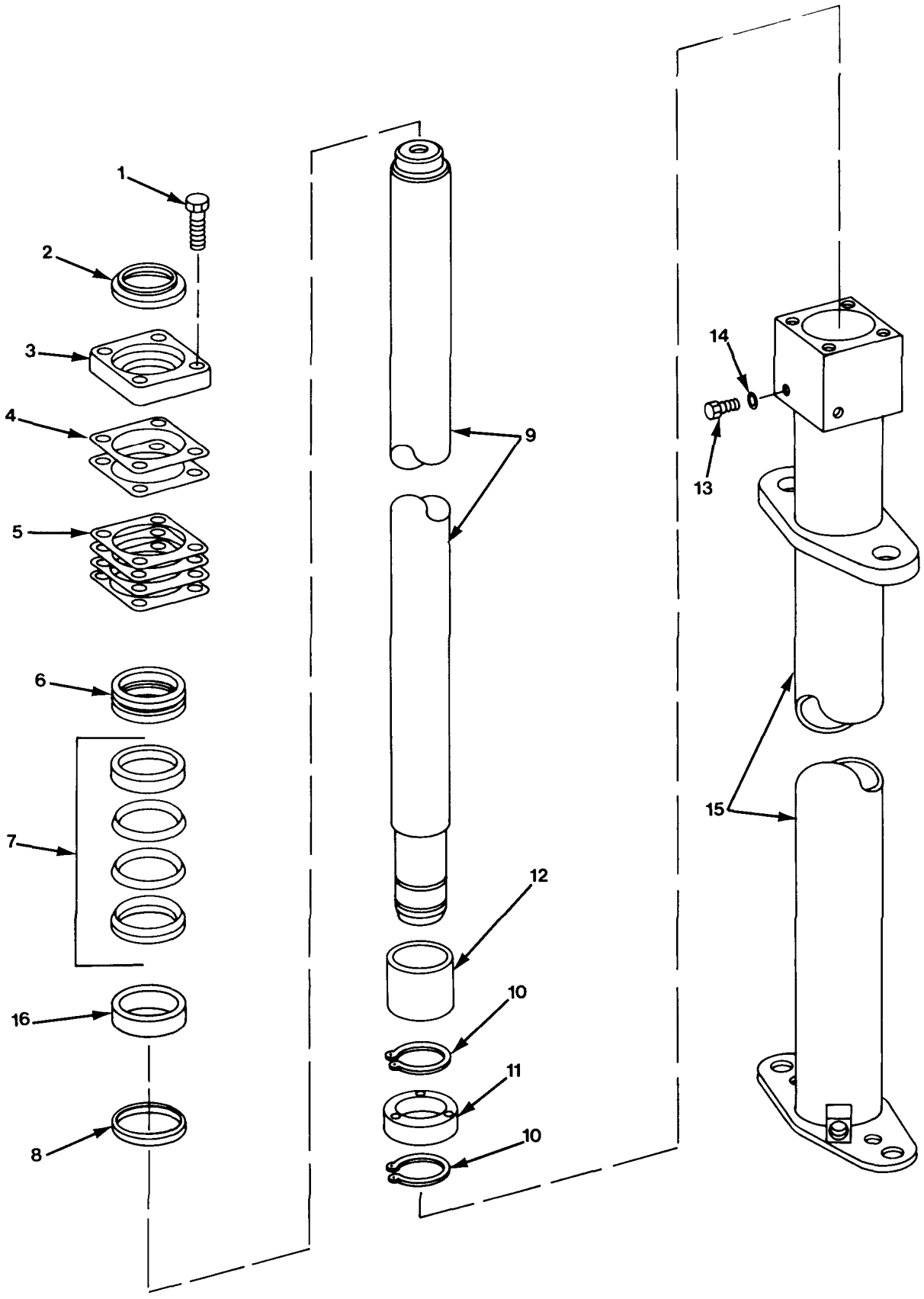


HYDRAULIC SCHEMATIC

Fig. #	Item #	Part #	Name	# for Assy.	Unit
22	1	P-11073-21	Pin, Roll	2	
22	2	A-22088-1	Shaft	1	
22	3	P-11020-16	Bushing	2	
22	4	P-11073-4	Pin, Roll	4	
22	5	A-22027	Shaft	2	
22	6	P-11170-5	Nut, Self-Locking, Hex	3	
22	7	A-22170	Spacer, Valve	1	
22	8	P-11170-6	Nut, Self-Locking, Hex	4	
22	9	P-11016-3	Washer, Flat	4	
22	10	P-11143-5	Screw, Cap, Head, Hex (24 Volt System Only)	2	

See figure below for parts breakdown of assembly.
Pump Motor and Hose Assembly Fig. #23
Reservoir Pump and Motor Assembly Fig. #24
Pump and Motor Assembly (D-21421-D-21422) Fig. #25
Motor Assembly Fig. #26
Tilt Cylinder and Related Parts Fig. #27
Tilt Cylinder Fig. #28
Lift Cylinder and Hose Assembly Fig. #29
2" Lift Cylinder C-21066 Fig. #30
2½" Lift Cylinder C-22214 Fig. #31

FIGURE 30 SC-20 2" LIFT CYLINDER ASSEMBLY (C-21066)



Service Reference 45650-00

FIGURE 38 SC-30 RESERVOIR ASSEMBLY

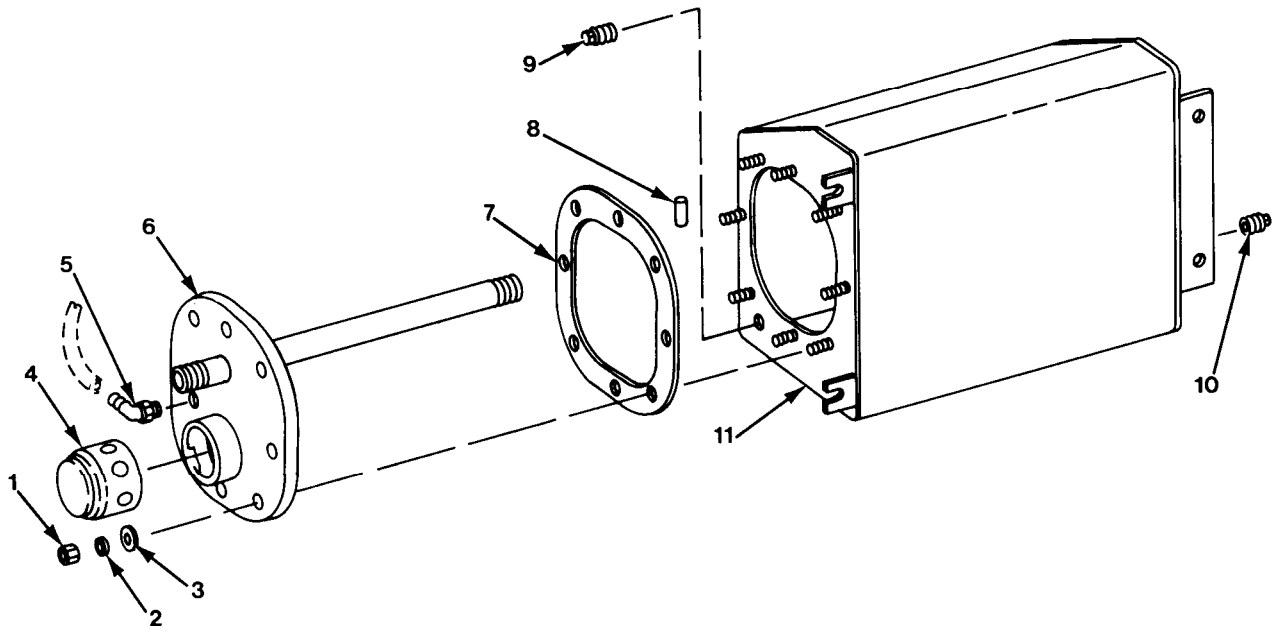
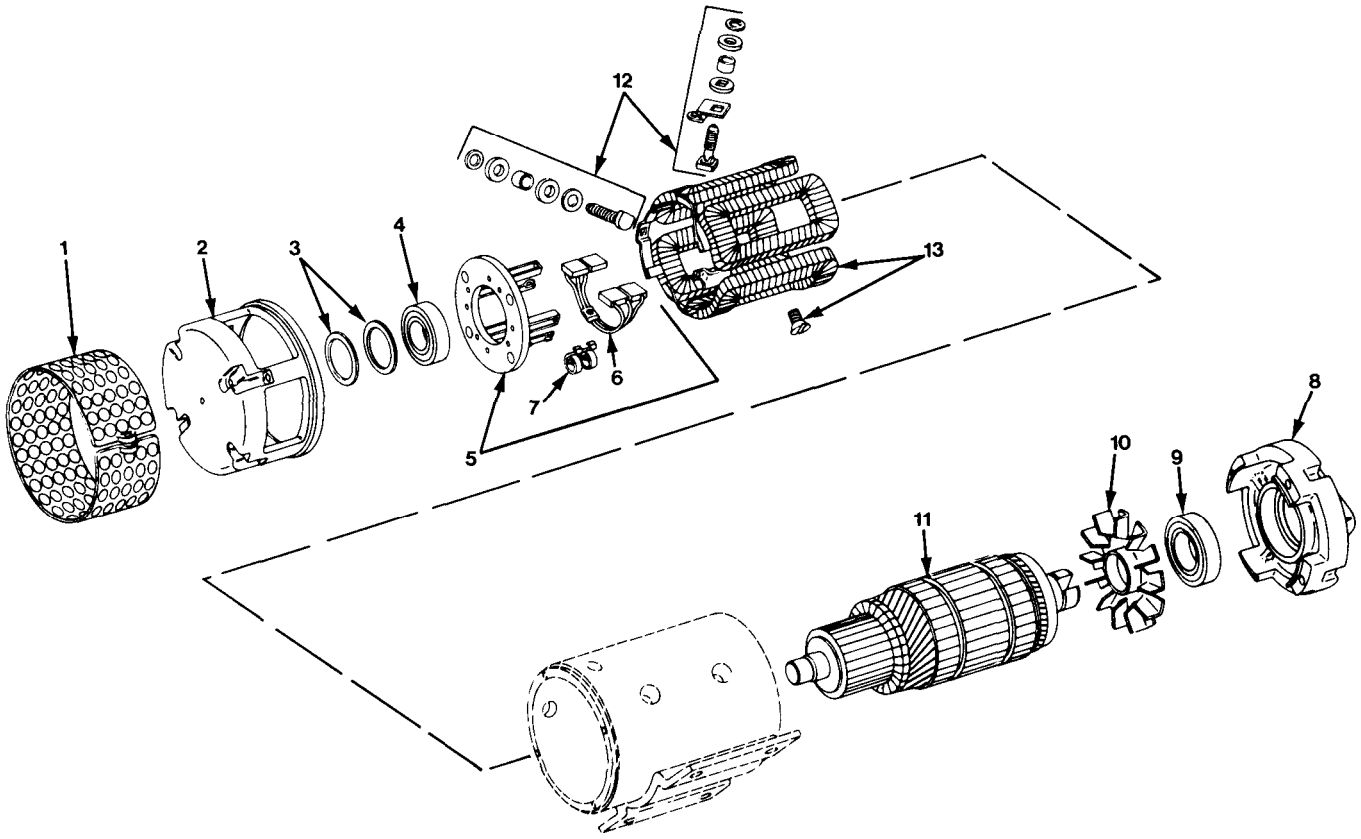


Fig. #	Item #	Part #	Name	# for Assy.	Unit
38	1	P-11261-5	Nut	8	
38	2	P-11009-5	Lockwasher	8	
38	3	P-11016-3	Washer, Plain	8	
38	4	P-14961	Breather, Filter	1	
38	5	P-20195	Elbow, 90°	1	
38	6	C-21436	Cover	1	
38	7	B-21434	Basket	1	
38	8	A-13928	Magnet	1	
38	9	P-11816-5	Plug	1	
38	10	P-11816-3	Plug	2	
38	11	C-21425-1	Reservoir	1	

FIGURE 47 SC-40 PUMP MOTOR ASSEMBLY (P-25428, MBD-5007)



Service Reference 30700-00
(see also 30310-00A for warranty information)

Fig. #	Item #	Part #	Name	# for Assy.	Unit
47	1	EMBD-1468A	Band, Cover	1	
47	2	EMBD-502	Head, Comm. End	1	
47	3	E90-701	Thrust Washer Package	1	
47	4	EX-3991	Bearing, Ball, Sealed	1	
47	5	EMBD-1564	Plate Assembly, Brush	1	
47	6	EMBD-1512S	Brush Set, Service	1	
47	7	EMBD-19S	Spring Set, Brush	1	
47	8	EMBD-423B	Head, Drive End	1	
47	9	EX-3990	Bearing, Ball Shielded	1	
47	10	*EMBD-1427*	*Fan*	1	
47	11	EMBD-2526	Armature	1	
47	12	E90-2695	Terminal Stud Pkg.	1	
47	13	EMBD-1005PS	Coil, Field Pkg.	1	

FIGURE 56 SC-20/25 FORK ASSEMBLY (P-25008)

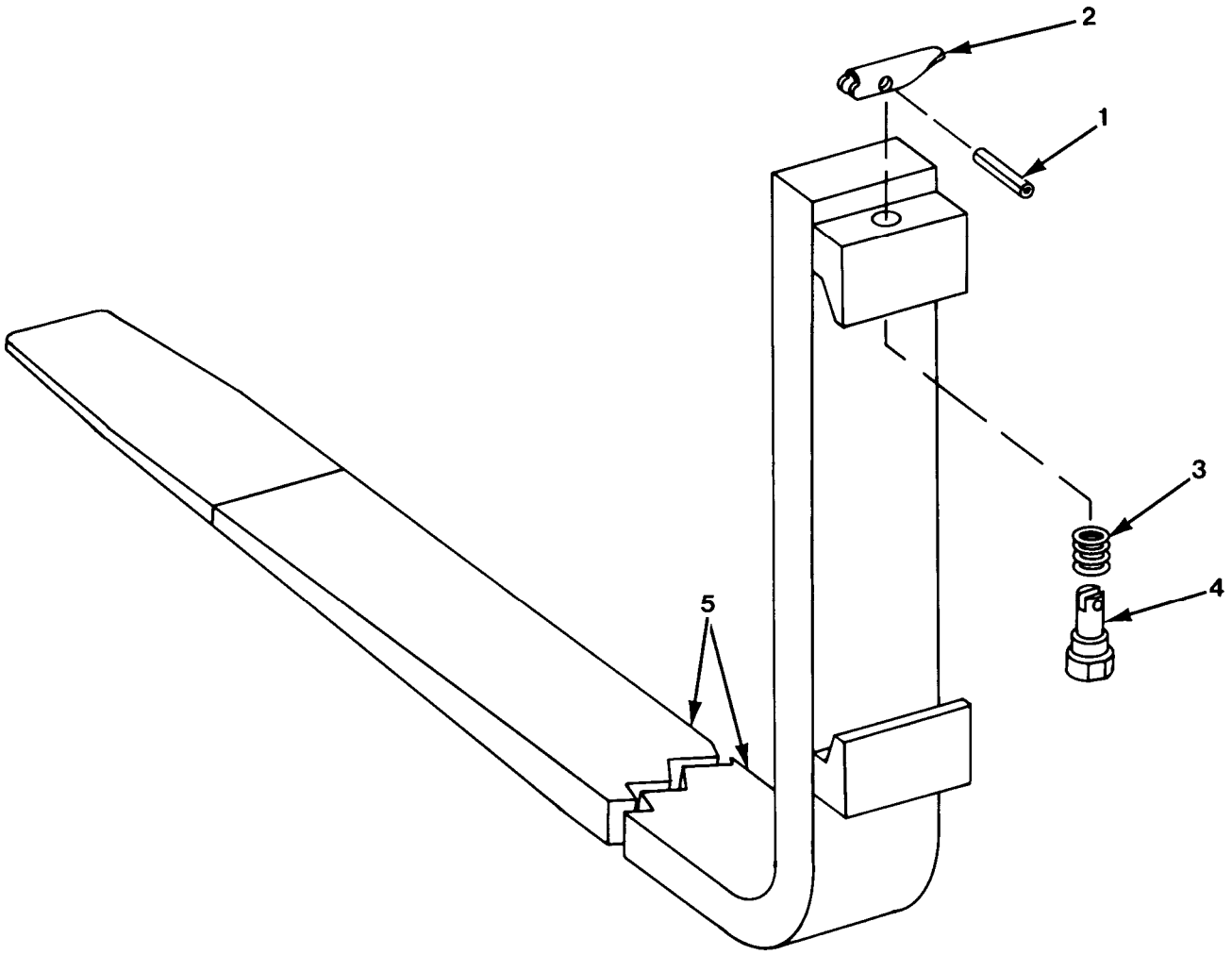


Fig. #	Item #	Part #	Name	# for Assy	Unit
56	1K	MT107-ABC	Pin, Roll	1	
56	2K	MT105-ABC	Handle	1	
56	3K	MT106-ABC	Spring	1	
56	4K	MT102-A	Pin	1	
56	5	MT1640215A11-30	Fork, 30 Inch	1	
56		MT1640215A11-36	Fork, 36 Inch	1	
56		MT1640215A11-42	Fork, 42 Inch	1	
56		MT1640215A11-48	Fork, 48 Inch	1	
56	K	MT101-A	Pin Assembly (Contains parts indicated by letter "K")	1	

FIGURE 66 SC-30 LIFT CYLINDER AND RELATED PARTS

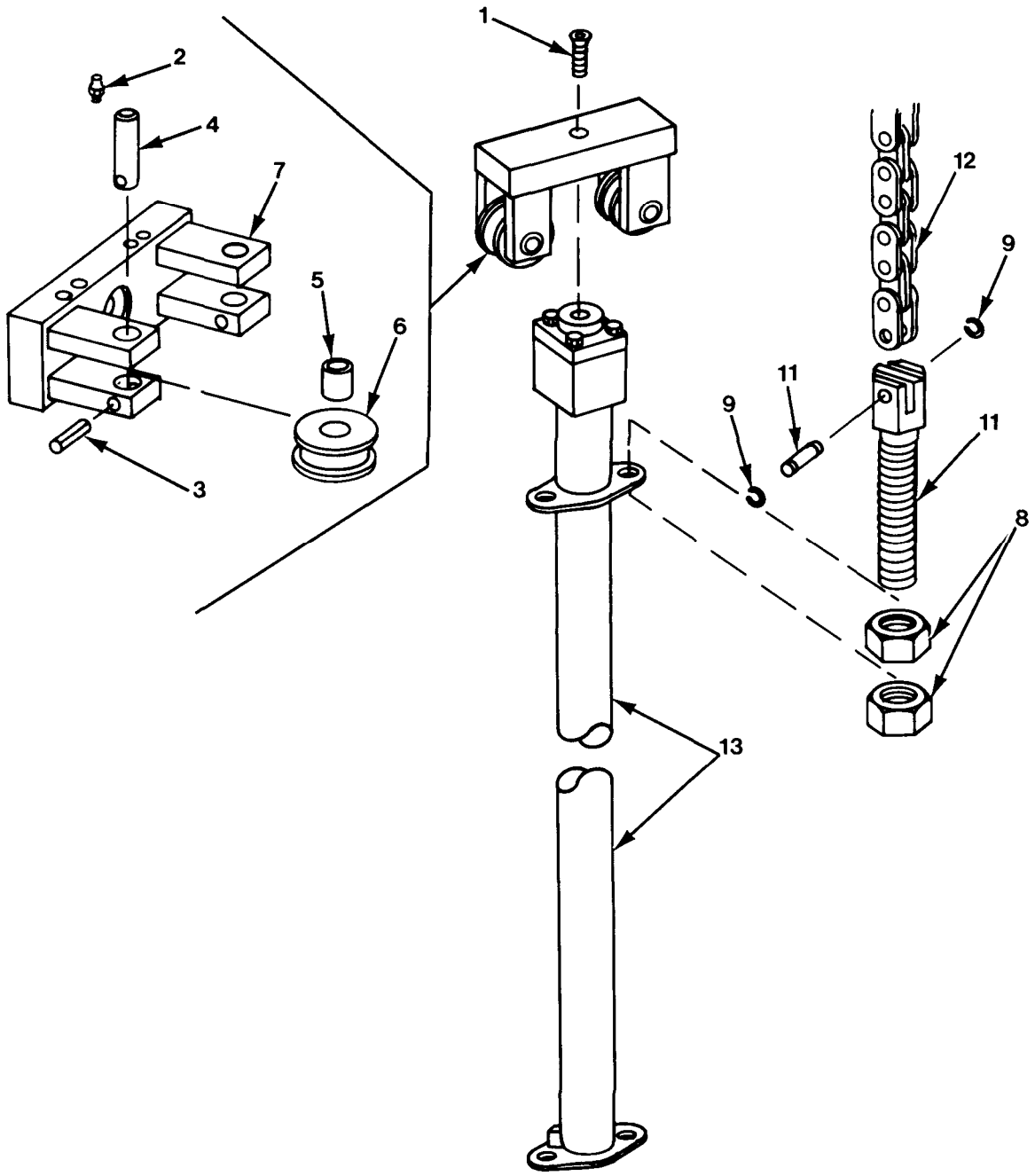


Fig. #	Item #	Part #	Name	# for Assy	Unit
66	1	P-11047-9	Screw, Cap S.L.	1	
66	2	P-11160-9	Fitting, Grease	2	
66	3	P-11073-21	Pin, Roll	2	
66	4	A-21057	Shaft	2	
66	5	P-11523-4	Bearing	2	
66	6	A-21056	Sheave	2	
66	7	A-21114	Head, Sheave	1	
66	8	P-11261-12	Nut	4	
66	9	P-13281-1	Ring, Retaining	4	
66	10	P-13280-1	Pin, Clevis	2	
66	11	A-21055	Anchor, Chain	2	
66	12	52-7962	Chain, Lift	As Req.	
66	13		Cylinder, Lift (see fig. #42)	1	

FIGURE 75 SC-40 FORK ASSEMBLY (P-25008)

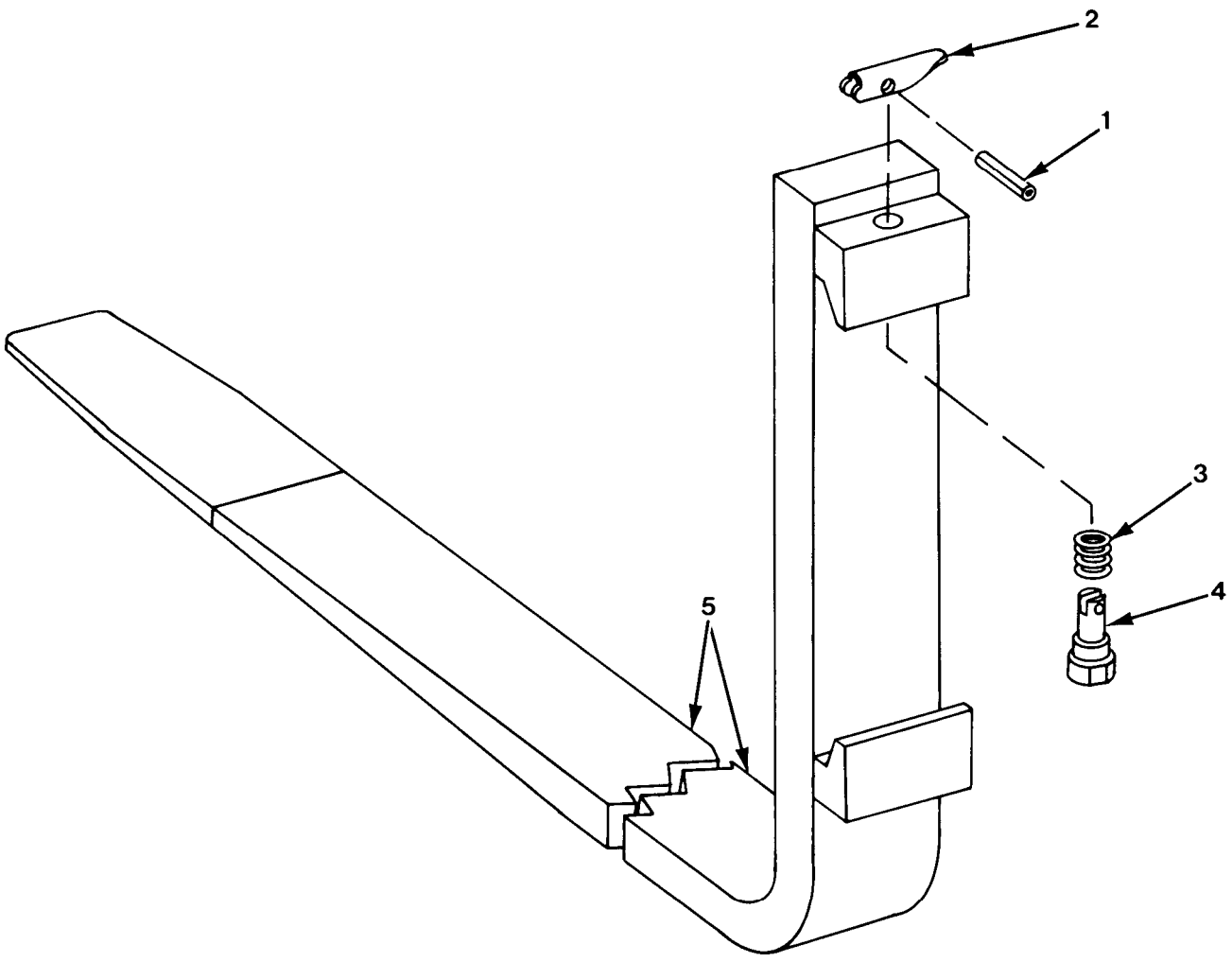


Fig. #	Item #	Part #	Name	# for Assy.	Unit
75	1K	MT107-ABC	Pin, Roll	1	
75	2K	MT105-ABC	Handle	1	
75	3K	MT106-ABV	Spring	1	
75	4K	MT102-A	Pin	1	
75	5	MT1640215A11-30	Fork, 30 Inch	1	
75		MT1640215A11-36	Fork, 36 Inch	1	
75		MT1640215A11-42	Fork, 42 Inch	1	
75		MT1640215A11-48	Fork, 48 Inch	1	
75	K	MT101-A	Pin Assembly (Contains part indicated by letter "K")	1	

No tilt (motor runs)	Severe cylinder leak Hydraulic pump defective	Repair cylinder Replace
Slow tilt	Battery discharged Lift cylinder leaks Orifice plugged	Charge battery Repair cylinder Clean hydraulic system
No raise or lower	Binding linkage	Check linkage
No raise (motor inoperative)	Hydraulic contactor defective Power wiring open Control wiring open (line 5) Hydraulic valve switch	Replace Check wiring Check wiring Check switch
No raise (motor runs)	Excessive load Severe lift cylinder leak	Check load Check oil flow in breather line — tighten or replace cylinder packing
	Air lock Hydraulic pump defective	Bleed hydraulic unit Check oil pressure, repair
Slow raise	Battery discharged Excessive load Lift cylinder leaks	Charge battery Check load Check oil flow in breather line — tighten or replace cylinder packing
	Hydraulic unit worn	Inspect
No lower	Mechanical binding	Inspect mast
Slow lower	Flow valve defective Filter plugged	Clean or replace valve (in hydraulic line) Clean
Fast lower	Flow valve defective	Clean or replace valve (in hyd. line)
Won't hold lift	Leak in hydraulic system Lift cylinder leaks	Check for leaks — replace hose Check oil flow in breather line — tighten or replace cylinder packing
	Manual valve leaks	Repair valve
Insufficient lift	Low oil supply	Check oil level — fill to proper level
Inner column sticks	Binding column	Clean bearing surfaces on rollers and columns
	Defective roller(s)	Replace rollers
Forks will not drop to lowered height	Mechanical binding	Check for spring frame Check for bending or corrosion
	Chain out of adjustment	Readjust
Squeak or squeal in lift	Binding in column	Clean bearings and column surfaces, lubricate
	Overload (relief valve) Cavitation	Observe load rating Prime hydraulic pump
Hydraulic system leaks oil	Defective hose(s) Loose fittings	Inspect — Replace Tighten
Reservoir overflows	Overfilled Air entering system	Drain to proper oil level Return tube in reservoir defective — Inspect and replace
Cylinder leaking	Seals or wiper damaged Rod damaged	Adjust or replace Inspect and replace
Oil in breather line	Leakage in cylinder packing	Tighten or replace cylinder packing
Transmission leaks oil	Worn seal Loose joints	Replace Tighten
Bent frame (forks, handle, etc.)	Hit by other vehicles, dropped, or upset	Straighten or consult dealer
Transmission loose	Cam followers adjustment Cam followers defective	Readjust Replace cam followers
Mast loose	Bearings failed Excessive bearing end clearance	Replace Reshim bearings
Transmission noisy	Eccentric adjustment Worn or damaged gears	Readjustment Inspect and replace
Drive axle loose	Retaining nut loose	Tighten nut on axle to specified torque Use wrench available from Prime-Mover

DIRECTION CONTROL SWITCHES

To remove the direction control switches in the handle, remove the handle cover, loosen the locking screws in the side of the handle and loosen four set screws (two in the direction levers and two in the cams). Remove the handle shaft and then the switch subassembly. The screws through the switches can be removed to disassemble the switch subassembly. Upon reassembly, check for free spring operation, proper switch adjustment and make sure that all four set screws align with the sockets in the shaft. Oil the felt seals.

TRANSMISSION

To remove the transmission, remove the back shield, block the carrier frame to its free height, disconnect the motor cables and disconnect the wiring harness. Remove the four cap screws holding the transmission pivot and lift the drive. Observe notes on transmission parts page when reassembling. When the transmission is reinstalled, the cam followers should be assembled with the cup of the bearing washers away from the roller and the nuts only tight enough to grip the bearing washers without hindering the roller turning. Then readjust the cam followers as described under maintenance instructions.

DRIVE MOTOR

To remove the drive motor, remove the motor shield, disconnect the motor cable, unbolt the motor mounting plate from the transmission case and slip the motor off the dowels. The motor can normally be reinstalled if the brake remains "locked" when the motor is out. Fabrication of two long headless bolts for use as dowels will aid reassembly.

DRIVE GEAR ADJUSTMENT

When adjusting the transmission eccentric dowel (cam), loosen the three cap screws and nut holding the drive motor plate to the case. The cam will rotate 180 degrees and is normally set 1/8 of a turn clockwise from the (CCW) end. Counterclockwise rotation decreases the backlash and excessive rotation causes a deep growl. Adjust the cam for minimum noise, retighten drive motor plate fasteners, and recheck noise level.

ELECTRIC CONTROL PANEL

To remove the electrical control panel, disconnect the electrical leads and remove the four nuts.

HYDRAULIC PUMP

To remove the hydraulic pump unit, disconnect the hoses and electrical leads and remove the cap screws holding the reservoir. (12 volt) or the pump assembly (24 volt).

MAST ASSEMBLY

To remove the mast assembly, tilt the mast to the vertical position and remove the forks. Fasten a chain hoist or similar device to the top cross members of the column assembly. Remove hydraulic hose from the control valve and the breather line from the reservoir. Remove the tilt cylinder pins from the column and the 4 cap screws from the pillow blocks. Raise the column until it is free from the machine. (Torque pillow block cap screws to 150-170 ft.-lbs. on reassembly). Care should be taken not to damage flow control valve when removing mast.

LIFT FRAME

To remove the lift frame, detach the forks and the lift chains and raise the inner column enough to clear the top of the lift frame. Pull the lift frame out the front of the machine.

INNER COLUMN

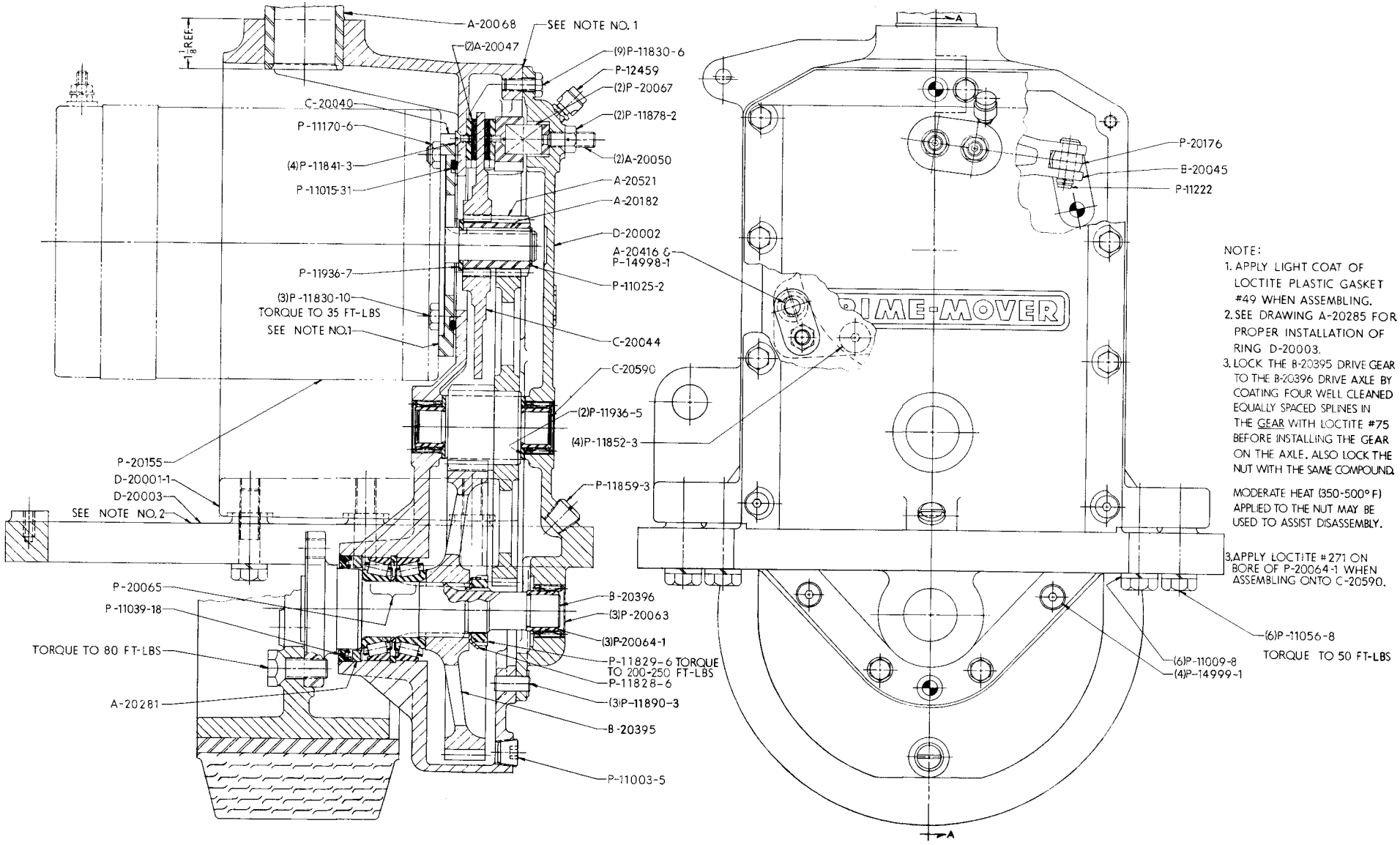
To remove the inner column, remove the column stops and 4 socket flat head cap screws on sheave head weldment. Lift the inner column straight out until it separates from the outer column. (upon reassembly, the lift chains must be free of twist and adjusted for equal tension with adjusting nuts torqued to 185 ft-lbs.)

TILT CYLINDER

To remove the tilt cylinders, remove the hydraulic hoses and the mounting pins. To eliminate mast twist, adjust the nut and clevis on the left hand tilt cylinder to the proper length and lock by torquing the hex nut to 100-125 ft.-lbs. Adjust the right hand cylinder to match and torque that nut to the same value.

To remove internal parts of the tilt cylinder, remove the 4 cap screws and lift off the cap. Pull the piston rod from the cylinder.

To assembly the tilt cylinder, follow these instructions: Thoroughly clean the cylinder and all components. Install the cap, pressure wiper seal, guide ring and head onto the piston rod ahead of the



NOTE:

1. APPLY LIGHT COAT OF LOCTITE PLASTIC GASKET #49 WHEN ASSEMBLING.
2. SEE DRAWING A-20285 FOR PROPER INSTALLATION OF RING D-20003.
3. LOCK THE B-20395 DRIVE GEAR TO THE B-20396 DRIVE AXLE BY COATING FOUR WELL CLEANED EQUALLY SPACED SPLINES IN THE GEAR WITH LOCTITE #75 BEFORE INSTALLING THE GEAR ON THE AXLE. ALSO LOCK THE NUT WITH THE SAME COMPOUND.

MODERATE HEAT (350-500° F) APPLIED TO THE NUT MAY BE USED TO ASSIST DISASSEMBLY.

3. APPLY LOCTITE #271 ON BORE OF P-20064-1 WHEN ASSEMBLING ONTO C-20590.

NOTES:

Direction control sticks	Binding linkage	Check and free linkage
	Spring defective	Replace spring
No raise	Lift switch adjustment	Readjust
	Lift switch defective	Replace
	Control wiring open	Check wiring
No raise or tilt (Motor inoperative)	Hydraulic contactor defective	Replace
	Power wiring open	Check wiring
	Control wiring open (line 5)	Check wiring
	Switch adjustment	Readjust switch and readjust stop bar
No raise (motor runs)	Excessive load	Check load
	Severe lift cylinder leak	Check oil flow in breather line — tighten or replace cylinder packing
	Air lock	Bleed hydraulic cylinder, prime lift pump
	Hydraulic pump defective	Check oil pressure, repair
Slow raise	Battery discharged	Charge battery
	Excessive load	Check load
	Lift cylinder leaks	Check oil flow in breather line — tighten or replace cylinder packing
	Hydraulic unit worn	Inspect
No lower	Control valve stuck	Inspect
	Mechanical binding	Inspect mast
	Control valve linkage broken	Inspect
Slow lower	Flow valve defective	Clean or replace valve (in hyd. line)
Fast lower	Flow valve defective	Clean or replace valve (in hyd. line)
No tilt (motor runs)	Excessive load	Check load against rating
	Orifice blocked	Inspect orifices in valve and cylinder
No tilt (motor inoperative)	Switch adjustment	Readjust switch and adjust stop bar (on control levers)
Mast creeps forward	Piston seal defective	Inspect seal
	Valve leaking	Replace valve
Mast twists at full tilt	Tilt cylinder misadjusted	Readjust
Mast controls stick	Bent levers	Straighten
	Linkage binding	Lubricate pivots
	Spool sticking	Inspect and clean valve and service oil filter
Won't hold lift	Leak in hydraulic system	Check for leaks — replace hose
	Lift cylinder leaks	Check oil flow in breather line — tighten or replace cylinder packing
	Control valve worn	Inspect
Insufficient lift	Low oil supply	Check oil level — fill to proper level
Inner column sticks	Binding in column	Clean bearing surfaces on rollers and columns
	Defective roller(s)	Replace rollers
Forks will not drop to lowered height	Mechanical binding	Check for sprung frame Check for bending or corrosion
Machine tends to tip forward	Excessive load weight or load center distance	Observe ratings
	Insufficient battery weight	Observe 800 lb. min. battery weight (SC30) Observe 400 lb. min. battery weight (SC20)

Mechanical Brake: (cont'd) Note F

The spring tension is adjusted by means of two socket screws (with locking nuts) located near the top of the gear case cover. Make this adjustment with the handle in an intermediate position (brake off). The screws may then be turned in until the springs bottom or to any lesser tension. Maximum tension should be maintained where braking on ramps or in close quarters is required.

Refer to drawing A-20273, page 24, for assistance in making the brake position adjustment. The nut P-11878-3 is used for locking the adjusting screw A-20123 in position. Use 1¼ inch and 1 inch open end wrenches on the hex portions of these fittings. Turning the adjusting screw 'out' allows the spring loaded arm to move more firmly against the brake disc.

The brake position is properly adjusted when the lever A-20126 is free(for slight movement)when the brake is 'on' and there is no brake drag in the 'off' position. Index the adjusting screw so that the brake is equally applied with the handle fully raised and fully lowered and lock in position to complete the adjustment.

Check brake operation in all positions after adjustment. Inadequate brake after this adjustment may indicate that brake facings need to be replaced. It will probably be necessary to readjust the interlock switch following adjustment of the mechanical brake.

Interlock Switch: Note G

The interlock switch is located inside the motor shield and is operated by the brake operating linkage. The brake operating shaft A-20226-2 moves into the adjusting screw with brake operation as shown on drawing A-20273, page 24. Any required brake adjustment should be performed prior to adjustment of the interlock switch.

Adjusting Procedure:

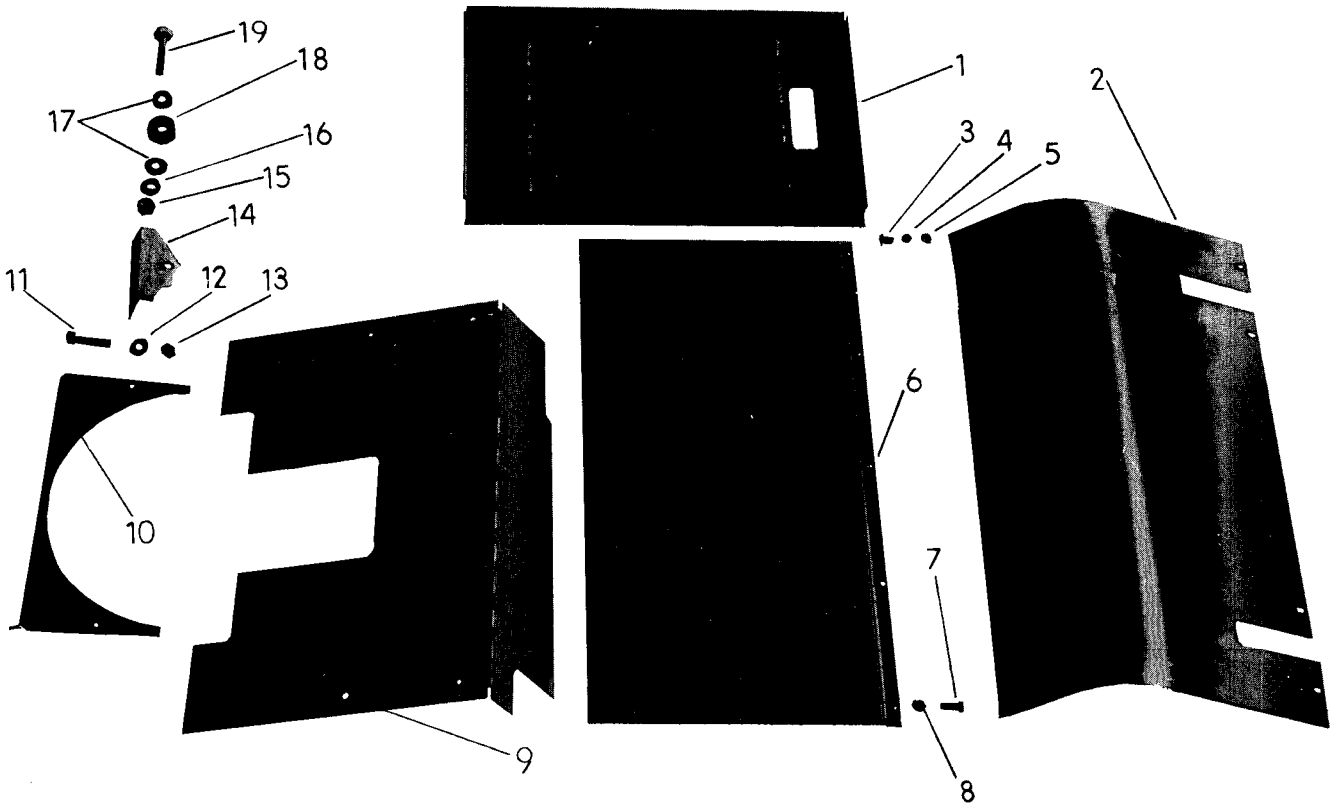
1. Loosen four screws on motor shield.
2. Slip switch to left (away from brake) as far as possible.
3. Adjust brake in accordance with instructions for that procedure.
4. Place brake in the "braked" position.
5. Slowly slide switch assembly to the right until the switch snaps.
6. Move an additional 1/16 inch and tighten screws.
7. Check that switch lever matches actuating rod A-20226-2.
8. Check that switch snaps near middle of actuating rod movement with the handle approaching both the raised and lowered positions.

Transmission Rollers: Note H

The four rollers containing the transmission may require adjustment. Loosen the screws holding the two rear roller brackets and wedge the transmission firmly against the two front rollers. Then move the rear rollers against the ring and tighten the fastening screws.

Contactor Points: Note J

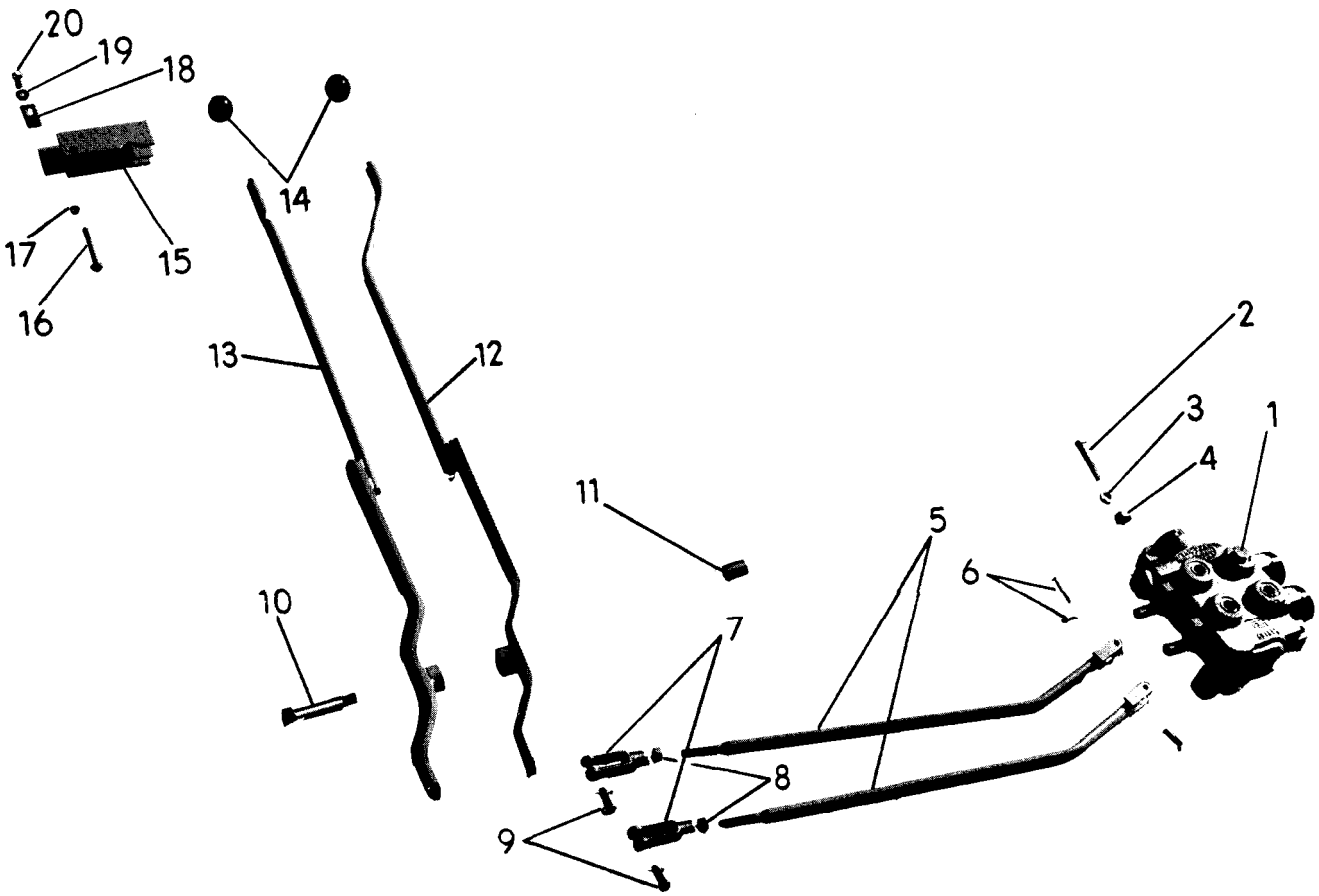
Replace the contactor points only when the silver is eroded to within 1/32 inch of the backing material. Discoloration or blackening of the points is not detrimental to operation. Transfer peaks may be removed by light filing, but this is the only maintenance of points which will benefit operation.



SHIELDING

REF. NO.	PART NO.	DESCRIPTION	NO. REQ'D
1	A-22125-2	Battery End Shield	1
	*A-22125-1	Battery End Shield	1
2	C-22083	Load End Shield	1
3	P-11884-3	5/16 x 3/4 Socket Button Head Cap Screw	13
4	P-11016-2	5/16 Washer	7
5	P-11009-5	5/16 Lockwasher	13
6	A-22124	Battery Top Shield	1
7	P-11055-2	5/16 x 1/2 Hex. Hd. Cap Screw	5
8	P-11009-5	5/16 Lockwasher	5
**9	B-22084	Panel Shield(Casting)	1
	B-22157	Panel Shield(Weldment)	1
10	C-22087	Bottom Shield	1
11	P-11047-11	1/2-13 x 2 Socket Head Cap Screw	4
12	P-11016-4	1/2 Washer	4
13	P-11170-8	1/2 Self Locking Nut	4
14	A-22041	Bracket, Bearing Adjustment	2
15	P-11261-10	5/8-11 Nut	4
16	P-11009-10	5/8 Lockwasher	4
17	A-20359	Washer, Special	8
18	P-22014-1	Bearing, Roller	4
19	P-11418-11	5/8-11 x 2 3/4 Hex. Hd. Cap Screw	4

* Item not shown. ** See page 14



LIFT - TILT LINKAGE

REF. NO.	PART NO.	DESCRIPTION	NO. REQ'D
1		Valve, Control See page 27	1
2	P-11008-9	3/8-16 x 2¼ Hex. Hd. Cap Screw	3
3	P-11009-6	3/8 Lockwasher	3
4	P-11261-6	3/8-16 Nut	1
5	B-22117	Control Lever Linkage	2
6	———	These parts are supplied with Valve	
7	P-22120	Rod End	2
8	P-11129-6	3/8-24 Nut	2
9	P-11222	Yoke Pin	2
10	P-11873-4	5/8 x 2 1/4 Shoulder Screw	1
11	P-11020-17	Bushing	2
12	B-22111	Tilt Lever	1
13	B-22112	Lift Lever	1
	*P-11073-15	3/16 x 1 Roll Pin	2
14	P-11234	Knob	2
15	A-22106	Valve Lever Guide	1
16	P-11045-10	1/4-20 x 2½ Hex. Hd. Hardened Cap Screw	1
17	P-11009-4	1/4 Lockwasher	1
18	A-22129	Bar, Stop	1
19	P-11016-1	1/4 Washer	1
20	P-11895	1/4-20 x 1/2 Hex. Hd. Flange Cap Screw	1

* Items not shown.

BATTERY CARE:

Your Prime-Mover Stacker Truck operates on only the power stored in its battery. The charge in this battery must be maintained for the truck to perform satisfactorily. The following battery conditions must be observed for best operation of the Prime-Mover.

1. Size the battery and charger to your particular duty cycle. (Prime-Mover and battery distributors can provide valuable assistance in this choice).

2. Charge (or change) battery daily under normal operating conditions.

3. A battery with a specific gravity of 1.12 is discharged and must be recharged before further use.

4. Maintain water level - note manufacturer's instructions.

5. Operate the machine in "high" where possible for minimum battery draw down.

6. Battery acid is corrosive - keep battery and machine free of acid - grease terminals to reduce corrosion.

MAINTENANCE INSTRUCTIONS

Your Prime-Mover Electric Stacker Truck is designed to operate reliably with a minimum of operator maintenance. The operator maintenance which is required is described in the Operating Instructions portion of this book. That maintenance involves primarily checking lubricant levels to assure that the machine is not damaged by lack of lubrication.

Your Prime-Mover Distributor stands ready to assist in event of operational difficulties; however, most adjustments and some repair can be readily performed by the user. The following instructions are provided to facilitate maintenance of the Prime-Mover Stacker Truck at peak operating efficiency.

BATTERY: Note A

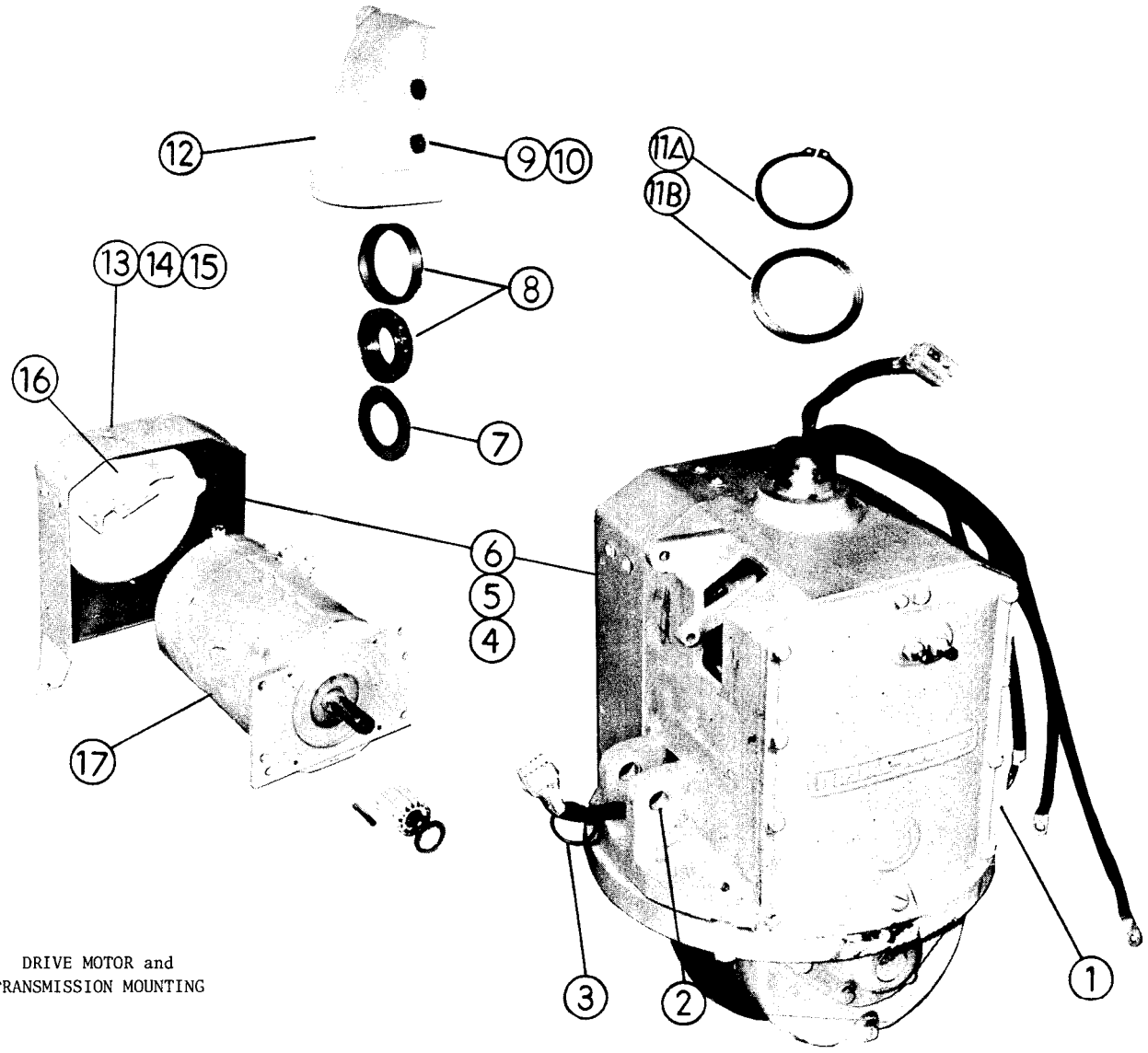
Proper care and servicing of the battery, as indicated elsewhere, is vital to assure satisfactory operation and life of your Prime-Mover Stacker Truck. Battery acid is, of course, extremely corrosive and should be kept off or washed off the machine as any spillage occurs. The battery should always be kept in a charged state. An overly discharged battery will cause a number of operational difficulties in any electric truck and the battery charge should be checked first if any electrical difficulties occur.

In cases of a battery not taking a charge, make sure that the charger is being attached to the battery connector and not to the connector on the machine. A battery which does not take a proper charge should be referred to the battery manufacturer's representative for service.

Power Wiring: Note B

The power circuits are wired per drawing A-22045, page 18 . All connections must be clean at time of assembly and securely fastened. Connections showing heat discoloration should be thoroughly checked.

A separate circuit breaker protects the traction motor. This circuit breaker resets automatically after a short cooling period. Opening of the circuit breaker may indicate a short circuit, but is normally an indication of excessive current draw. Operating conditions should be checked if circuit breaker continually opens.

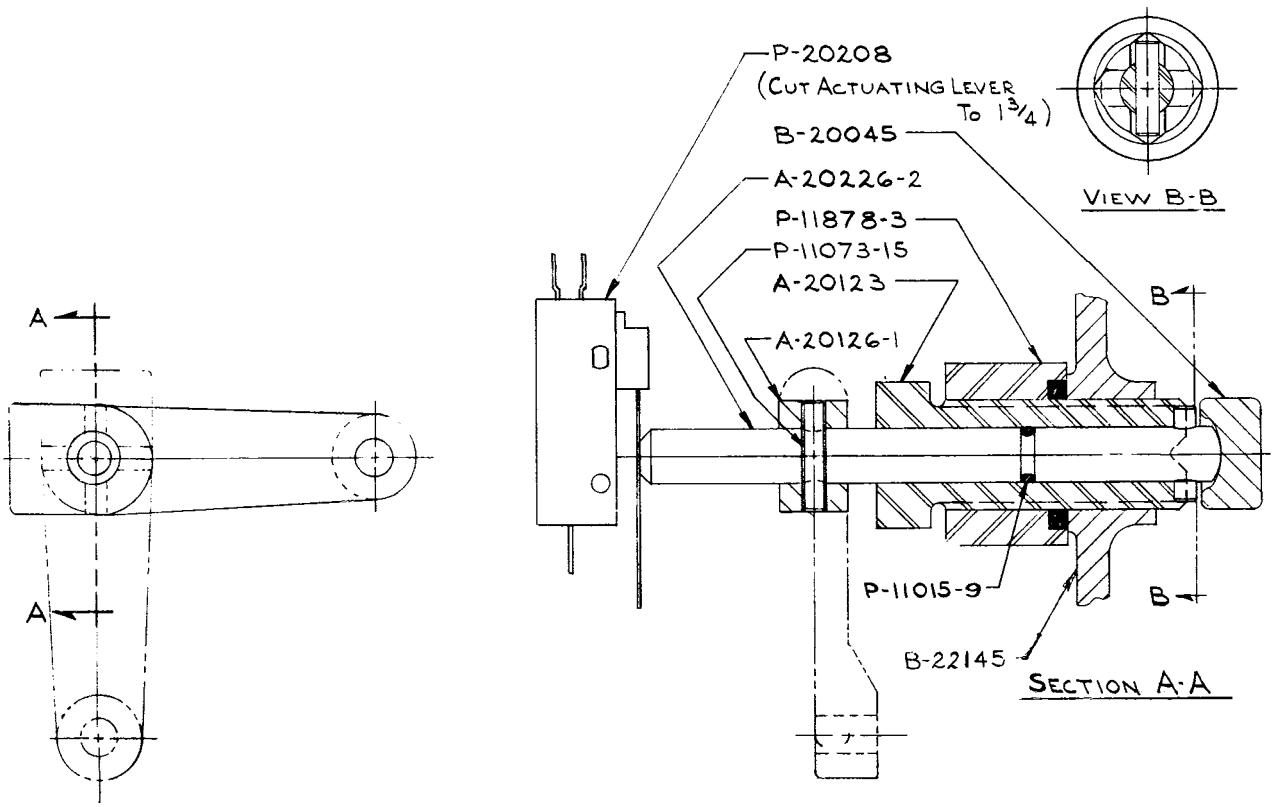


DRIVE MOTOR and
TRANSMISSION MOUNTING

REF. NO.	PART NO.	DESCRIPTION	NO. REQ'D
1	D-20257-3	Assembly, Transmission ..... See Pages 12 & 13	
2	P-15032-1	Bushing, "D.U."	2
3	P-11015-20	"O" Ring	1
4	P-11884-3	5/16-18 x 3/4 Button Hd. Cap Screw	4
5	P-11009-5	5/16 Lockwasher	4
6	C-20215	Shield, Motor	1
7	P-20069-1	Washer, Mach. Bush.	1
8	P-20070-1	Bearing, Spherical Roller, Complete	1
9	P-11056-8	1/2-13 x 2 Hex. Hd. Cap Screw	4
10	P-11009-8	1/2 Lockwasher	4
11A	P-11025-14	Retaining Ring	1
11B	A-22103	Spacer, Pivot Tube	1
12	B-22102	Pivot, Transmission Mounting	1
13	P-11884-5	1/4-20 x 1/2 Button Hd. Cap Screw	4
14	P-11016-11	1/4 Washer	4
15	P-11009-4	1/4 Lockwasher	4
16	B-20212-2	Bracket Assembly, Interlock Switch	1
17	*P-20155	Motor, Drive	1

* MOTOR SERVICE PARTS (Not Shown)

PART NO.	DESCRIPTION	NO. REQ'D	PART NO.	DESCRIPTION	NO. REQ'D
EMGY-2006	Armature Assembly	1	EMGP-18SS	Spring Set, Brush	1
EMGU-24	Band, Cover	1	EH7-291	Bearing, Comm. End	1
EMGU-3005S	Field Coil Package	1	EH1-295	"O" Ring, Comm. End	1
EP-90-795	Terminal Stud Package	1	EMGU-1203	Head Assembly, Drive End	1
EMGQ-1002	Head Assembly, Comm. End	1	EH7-298	Bearing, Drive End	1
EMCP-2012ES	Brush Set, Service	1	EH5-299	Seal, Oil, 1.250" O.D.	1
EMGQ-1016	Plate Assembly, Brush	1			



BRAKE LINKAGE and INTERLOCK SWITCH

A-20273

PART NO.	DESCRIPTION	NO. REQ'D
P-11015-9	"O" Ring	1
P-11073-15	3/16-1 Roll Pin	1
P-11878-3	7/8-9 Dynaloc Nut	1
B-20045	Lever, Brake Actuating	1
A-20123	Screw, Brake Adjustment	1
A-20126-1	Arm, Brake Actuating	1
P-20208	Switch, Control	1
A-20226-2	Assembly, Brake Actuating Pin	1
B-22145	Gear Case	1