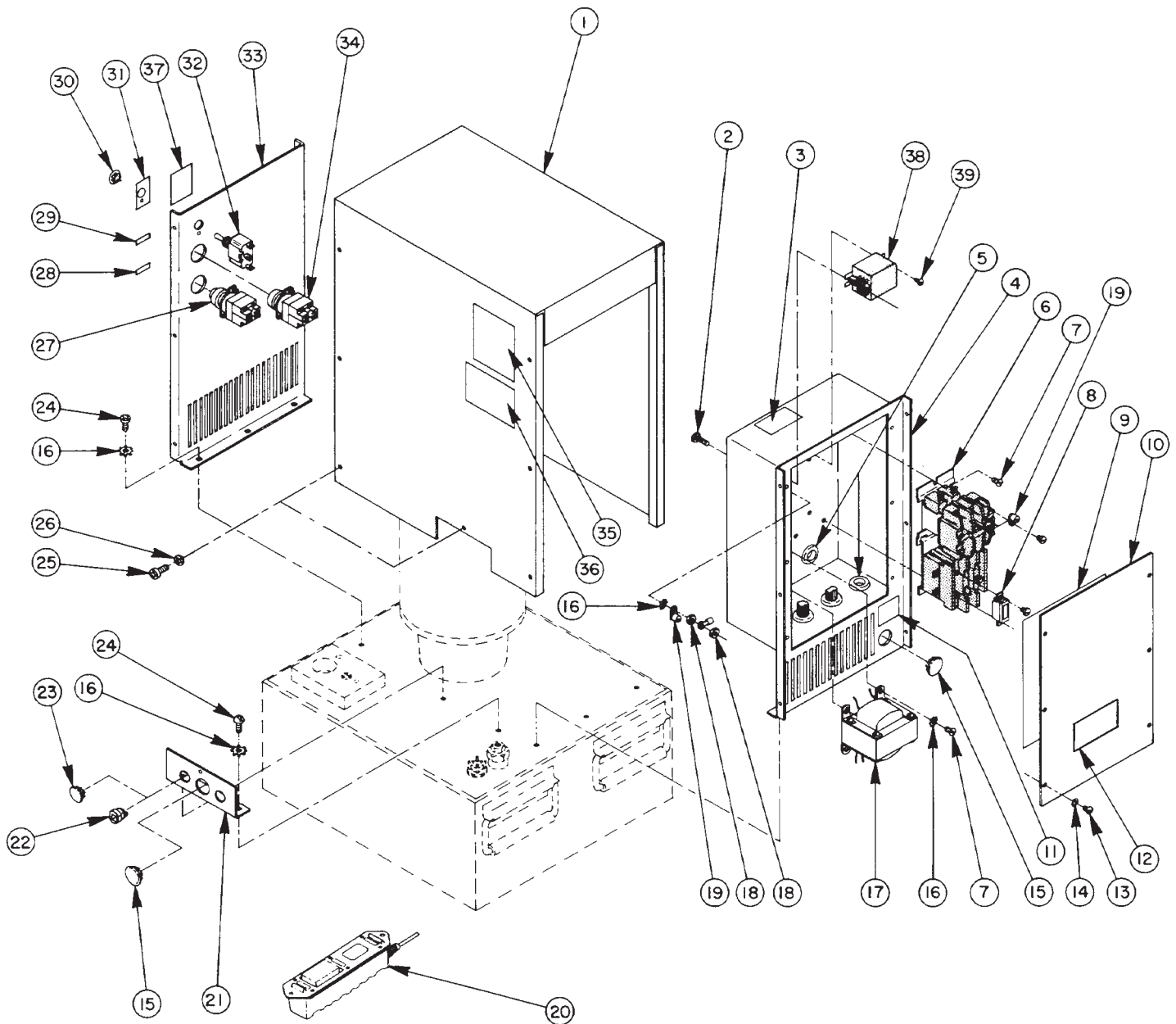


Parts List for:

PQ120 Series

## MODEL C ELECTRIC TWO-STAGE HYDRAULIC PUMP CONTROL BOX & COVER ASSEMBLY

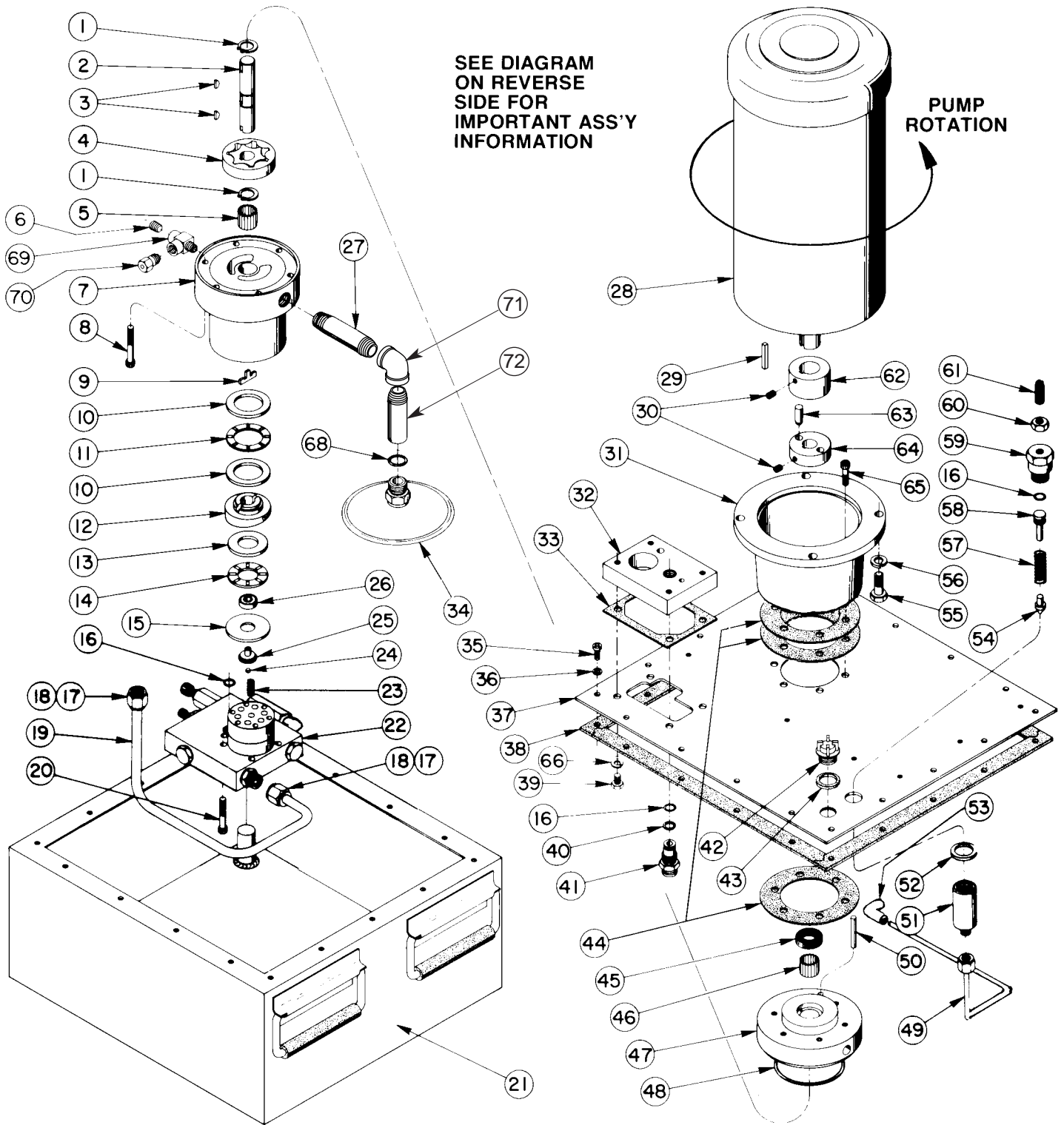


# Parts List, Form No. 100353, Back sheet 1 of 5

Item No.	Part No.	No. Req'd	Description	Item No.	Part No.	No. Req'd	Description
1	50946WH2	1	Shroud Cover		15993	1	Strain Relief Bushing (Pressure Switch Units)
2	104484	1	Machine Screw (#10-24 X 3/4 Lg.)	23	16412	2	Snap Plug (For 5/8" Hole; Manual Valve Units)
3	202504	1	Rotation Decal		16412	1	Snap Plug (For 5/8" Hole; Pressure Switch Units)
4	60235OR9	1	End Panel & Electrical Box	24	16613	8	Pan Hd. Mach. Screw (#10-24 X 5/16 Lg.)
5	15497	6	Rubber Grommet	25	14394	AR	Self-Tapping Screw (#10 X 3/8 Lg.)
6	17861-4	1	Magnetic Starter	26	12356	AR	Serrated Washer (#10 Internal)
7	10164	AR	Machine Screw (#10-24 X 3/8 Lg.)	27	39283	1	Pushbutton Switch (Red)
8	16641-39	3	Starter Heater (575V, 60 Hz)	28	203769	1	Stop Decal
	16641-44	3	Starter Heater (460V, 60 Hz; For all pumps built before 5-1-96.)	29	203808	1	Start Decal
	16641-50	3	Starter Heater (460V, 60 Hz; For all pumps built after 5-1-96.)	30	17782	1	Snap Plug (For 1/2 hole; Solenoid Units)
	16641-52	3	Starter Heater (460V, 60Hz; For pumps with Emerson motor)	31	203912	1	On-Off-Jog Decal (Manual Valve & Press. Switch Units)
	16641-47	3	Starter Heater (380V, 50 Hz)	32	16617	1	On-Off-Jog Switch (Manual Valve & Press. Switch Units)
	16641-53	3	Starter Heater (220V, 50 Hz)	33	51124OR9	1	End Panel
	16641-54	3	Starter Heater (230 V., 60 Hz; For all pumps built before 5-1-96.)	34	39282	1	Pushbutton Switch (Green)
	16641-57	3	Starter Heater (230 V., 60 Hz; For all pumps built after 5-1-96)	35	309221	2	Trade Name Decal
	16641-61	3	Starter Heater (230V, 60Hz; For pumps with Emerson motor)	36	39266	1	Rating Decal (60 Cycle Units)
9	39401	1	Electrical Schematic Decal (For Manual & Sol. Operated Units, 230/460V, 60 Hz)	37	204015	1	Instruction Decal
	39400	1	Electrical Schematic Decal (For Manual & Sol. Operated Units, 220/380V, 50 Hz)	38	39092	1	Control Relay-24V (Pressure Switch Units)
	304483	1	Electrical Schematic Decal (For Manual & Sol. Operated Units, 575V, 60 Hz)	39	10159	2	Rd. Hd. Mach. Screw (#6-32 X 5/16 Lg.; Used to mount Control Relay)
	39416	1	Electrical Schematic Decal (For Press. Switch controlled Units, 460V, 60 Hz)	<b>PARTS INCLUDED BUT NOT SHOWN</b>			
10	424570R9	1	Cover Plate	9041	1	Pressure Gauge (Pressure Switch Units)	
11	203802	1	Voltage Decal (230/380V, 50 Hz)	204610	1	Motor Leads Decal	
	209309	1	Voltage Decal (575V, 60 Hz)	205189	1	Ground Decal	
12	200188	1	Warning Decal	216666	1	Strain Relief Bushing (Solenoid Units)	
13	10975	6	Pan Hd. Mach. Screw (#8-32 X 5/16 Lg.)	12908	2 Ft.	Solenoid Cable - 18/3 SO (Solenoid Units)	
14	11107	6	Serrated Washer (#8 Internal)	<b>OPTIONAL VALVES/MANIFOLD/PRESSURE SWITCH</b>			
15	15327	2	Snap Plug (For 7/8" Hole)	9520	1	3-Way Manual Valve Ass'y (See Form No. 101377)	
16	11108	AR	Serrated Washer (#10 External)	V33S	1	3-Way Solenoid Valve Ass'y (See Form No. 100422)	
17	39693	1	Transformer (230/460V, 60 Hz)	9506	1	4-Way Manual Valve Ass'y (See Form No. 100628)	
	39750	1	Transformer (230/380V, 50 Hz)	9512	1	4-Way Solenoid Valve (See Form No. 101653)	
	302202	1	Transformer (575V, 60 Hz)	9626	1	Manifold Ass'y (See Form No. 100605)	
18	10197	2	Hex Nut (#10-24)	9625	1	Pressure Switch Ass'y (See Form No. 100589)	
19	205420	4	Lug Connector	V23A	1	Automatic Valve Ass'y (See Form No. 100415)	
20	202777	1	Remote Control Ass'y (For 3-Way Sol. Valve Units; See Parts List no. 101644)				
	202778	1	Remote Control Ass'y (For 4-Way Sol. Valve Units; See Parts List no. 101644)				
21	36746WH2	1	Angle Plate				
22	15993	2	Strain Relief Bushing (Solenoid Units)				

AR = As Required

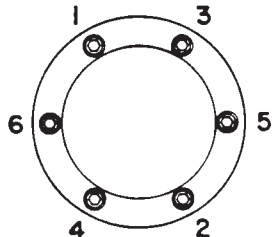
# BASIC PUMP ASSEMBLY



# Parts List, Form No. 100353, Back sheet 2 of 5

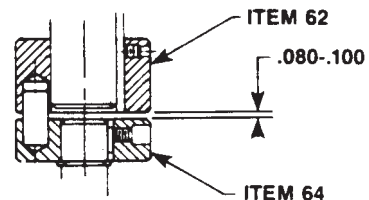
Item No.	Part No.	No. Req'd	Description	Item No.	Part No.	No. Req'd	Description
1	12178	2	Retaining Ring	38	50712	1	Cover Gasket
	**12178	3	Retaining Ring	39	10004	4	Cap Screw (1/4-20 X 3/8 Lg.)
2	35272	1	Pump Shaft		**10005	4	Cap Screw (1/4-20 X 1/2 Lg.)
	**303009	1	Pump Shaft	40	11863	1	Backup Washer (1/2 X 3/8 X 1/16)
3	12179	2	Woodruff Key	41	20787	1	Connector
4	15428	1	Geroter Set	42	20937	1	Filler Plug
5	15461	1	Needle Bearing	43	200415	1	Washer
6	10427	1	Pipe Plug (1/8 NPTF)	44	35266	3	Gasket
7	50705	1	Pump Housing	45	12194	1	Seal
8	10854	6	Soc. Hd. Cap Screw (1/4-20 X 1-3/4 Lg.; See Note Below)	46	15430	1	Needle Bearing
9	200397	1	Key	47	50706	1	Gerotor Pump Housing
10	11227	2	Needle Thrust Race	48	12504	1	O-ring (3" X 2-13/16 X 3/32)
11	11228	1	Needle Thrust Bearing	49	350524	1	Oil Line Ass'y with Fittings (3/16 Dia.)
12	35271	1	Angle Plate	50	13152	1	Dowel Pin (3/16 X 1-1/2 Lg.)
13	15432	1	Needle Thrust Race	51	22361	1	Body
14	15431	1	Needle Thrust Bearing	52	17065	1	Flat Washer (.125 Thk.)
15	23548	1	Top Plate		**14857	1	Flat Washer (.062 Thk.)
16	10268	3	O-ring (1/2 X 3/8 X 1/16)	53	16177	1	90° Elbow Fitting
17	10430	2	Tube Sleeve	54	21046	1	Valve Stem
18	10431	2	Tube Nut	55	10049	4	Cap Screw (3/8-16 X 1" Lg.)
19	35281	1	Oil Line (3/8 Dia.)	56	10247	4	Lockwasher
20	10022	5	Soc. Hd. Cap Screw (1/4-20 X 1-1/2 Lg.; Torque to 110/120 in. lbs.)	57	10495	1	Compression Spring (1/2 O.D. X 1-5/8 Lg.)
21	60234OR9	1	Reservoir	58	21306	1	Spring Guide
	64594OR9	1	Reservoir (For PQ1204-ATLAS)	59	21305	1	Valve Cap
22	41833	1	High Pressure Pump Ass'y (See sheet 3 of 5; Adjustment required)	60	10386	1	Hex Nut (3/8-24)
23	10361	1	Compression Spring (1/4 O.D. X 1" Lg.)	61	22362	1	Valve Adjusting Screw
24	10375	1	Steel Ball (1/4 Dia.)	62	200396	1	Coupling
25	23547	1	Top Bearing Plate		**207440	1	Coupling
26	11814	1	Ball Bearing	63	27003	2	Nylon Pin
27	260022	1	Straight Fitting	64	27001	1	Coupling
28	59333	1	Motor (3 H.P., 220/380V or 230/460V, 50/60 Hz)	65	10012	6	Cap Screw (1/4-20 X 7/8 Lg.; Torque to 110/120 in. lbs.)
	*304477	1	Motor (3 H.P., 575V, 60 Hz)	66	**10244	4	Lockwasher
29	27778	1	Square Key	67	209307	1	Motor Leads Decal (3 H.P., 575V, 60 Hz)
30	10133	2	Soc. Hd. Set Screw (#10-24 X 1/4 Lg.)	68	10527	1	O-ring (13/16 X .644 X .087)
	**10133	3	Soc. Hd. Set Screw (#10-24 X 1/4 Lg.)	69	18969	1	Tee Fitting
31	41838	1	Motor Mount	70	306957	1	Air Bleed Valve
32	43110	1	Valve Mounting Block	71	260023	1	90° Elbow Fitting
33	200395	1	Gasket	72	260021	1	Tube Extension
34	21345	1	Filter Ass'y	<b>PARTS INCLUDED BUT NOT SHOWN</b>			
35	16876	18	Mach. Screw (#10-24 X 1/2 Lg.)	350431	1	Sight Gauge	
36	12356	18	Serrated Washer (#10 Internal)	200609	1	Drain Tube (For PQ1203S, PQ1203S-230 & PQ1203S-50-380)	
37	60231WH2	1	Cover Plate (.104 Thk.)	<b>*When ordering Motor, order appropriate Motor Leads Decal (Item 67).</b>			
	**60922	1	Cover Plate (.164 Thk.)	<b>**After August 1981</b>			

## BOLT TIGHTENING SEQUENCE

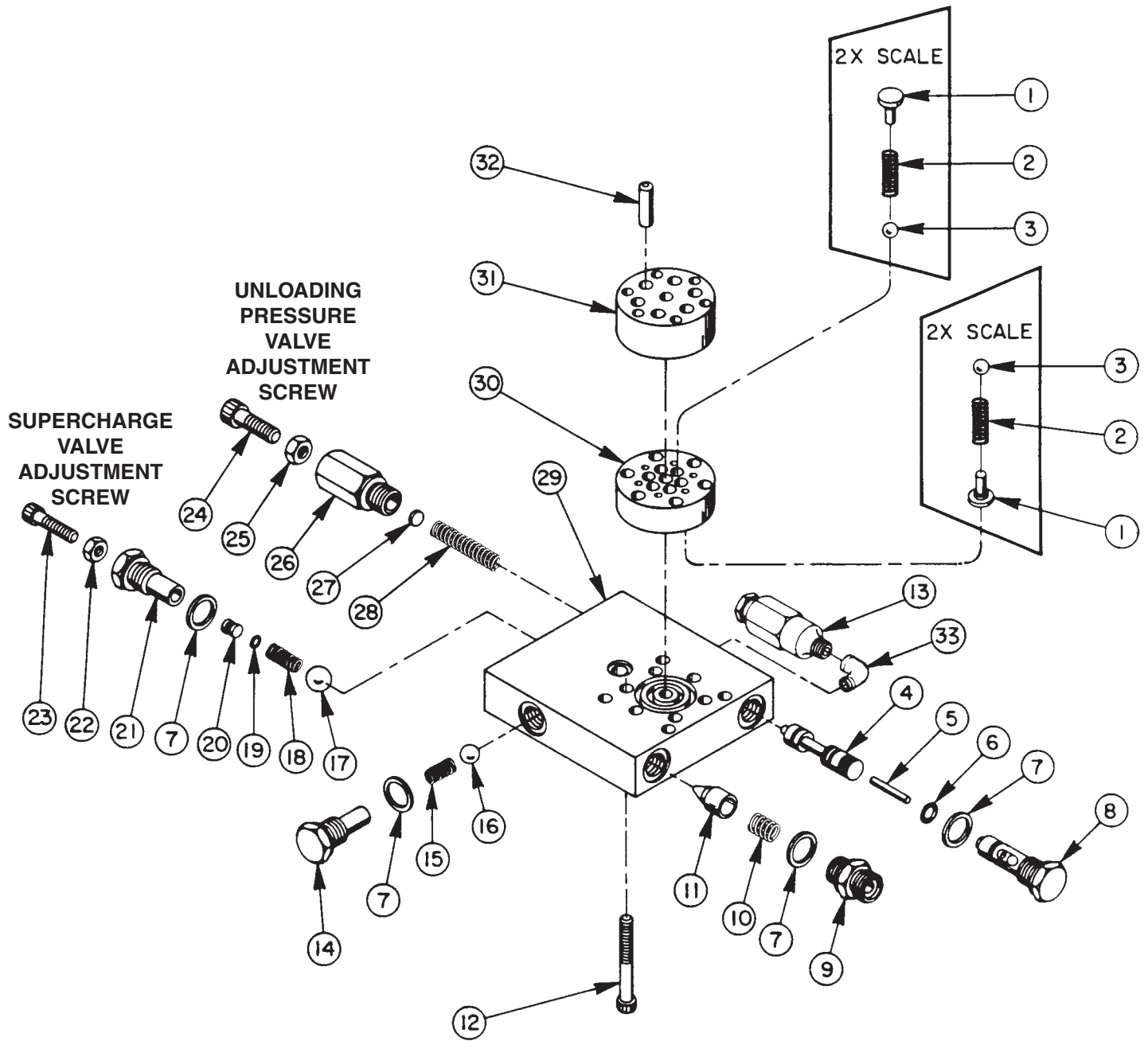


1. All bolts must be initially hand tightened in sequence shown (do not exceed 10 in. lbs.)
2. All bolts must be torqued in sequence shown. Torque to 110/120 in. lbs. in increments of 50/60 in. lbs.

## COUPLING CLEARANCE



# HIGH PRESSURE PUMP ASSEMBLY



SEE DIAGRAM ON REVERSE SIDE FOR IMPORTANT ASSEMBLY INFORMATION

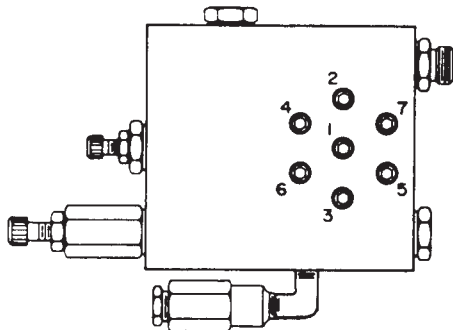
**Note: Supercharge Valve and Unloading Pressure Valve of the high pressure pump assembly are NOT factory set! They require adjustment at final pump assembly. Refer to the pump's hydraulic schematic for specifications.**

# Parts List, Form No. 100353, Back sheet 3 of 5

Item No.	Part No.	No. Req'd	Description	Item No.	Part No.	No. Req'd	Description
1	*24549	12	Valve Guide	17	10379	1	Steel Ball (1/2 Dia.)
2	*10445	12	Compression Spring (5/32 O.D. X 3/4 Lg.)	18	15319	1	Compression Spring (1/4 O.D. X 3/4 Lg.)
3	*12223	12	Steel Ball (3/16 Dia.)	19	12099	1	O-ring (9/32 X 5/32 X 1/16)
4	200273	1	Spool	20	200271	1	Adapter
5	16471	1	Dowel Pin (1/8 X 1" Lg.)	21	200270	1	Fitting, Super charge (Torque to 30/35 ft. lbs.)
6	14763	1	O-ring (7/16 X 5/16 X 1/16)	22	10383	1	Finished Jam Nut (1/4-20)
7	10261	4	Copper Washer (3/4 X 19/32 X 1/32)	23	10016	1	Soc. Hd. Cap Screw (1/4-20 X 1" Lg.)
8	202561	1	Adapter, Actuating Pin (Torque to 30/35 ft. lbs.)	24	10809	1	Soc. Hd. Cap Screw (5/16-18 X 1" Lg.)
9	20770	1	Connector (Torque to 30/35 ft. lbs.)	25	10385	1	Finished Jam Nut (5/16-18)
10	10425	1	Compression Spring (3/8 O.D. X 3/4 Lg.)	26	36545	1	Fitting, Unloading
11	20771	1	Poppet	27	16528	1	Disc
12	*15318	7	Soc. Hd. Cap Screw (1/4-28 X 2" Lg.; See diagram below)	28	203031	1	Compression Spring (.300 O.D. X 1-3/4 Lg.)
13	21278	1	Relief Valve Ass'y (Set at 10,100/10,700 PSI)	29	*50691	1	Valve Body
14	200269	1	Adapter Plug (Torque to 30/35 ft. lbs.)	30	*41048	1	Valve Head
15	11451	1	Compression spring (1/4 O.D. X 5/8 Lg.)	31	*41063	1	Pump Barrel
16	10378	1	Steel Ball (3/8 Dia.)	32	*21628	6	Piston (9/32 Dia.)
				33	13229	1	90° Elbow Fitting

Consult Factory when replacing items marked with an asterisk (\*).

## BOLT TIGHTENING SEQUENCE



**NOTE: Assemble in sequence shown.  
Lubricate under head and on threads.  
Torque to 180 in. lbs.**

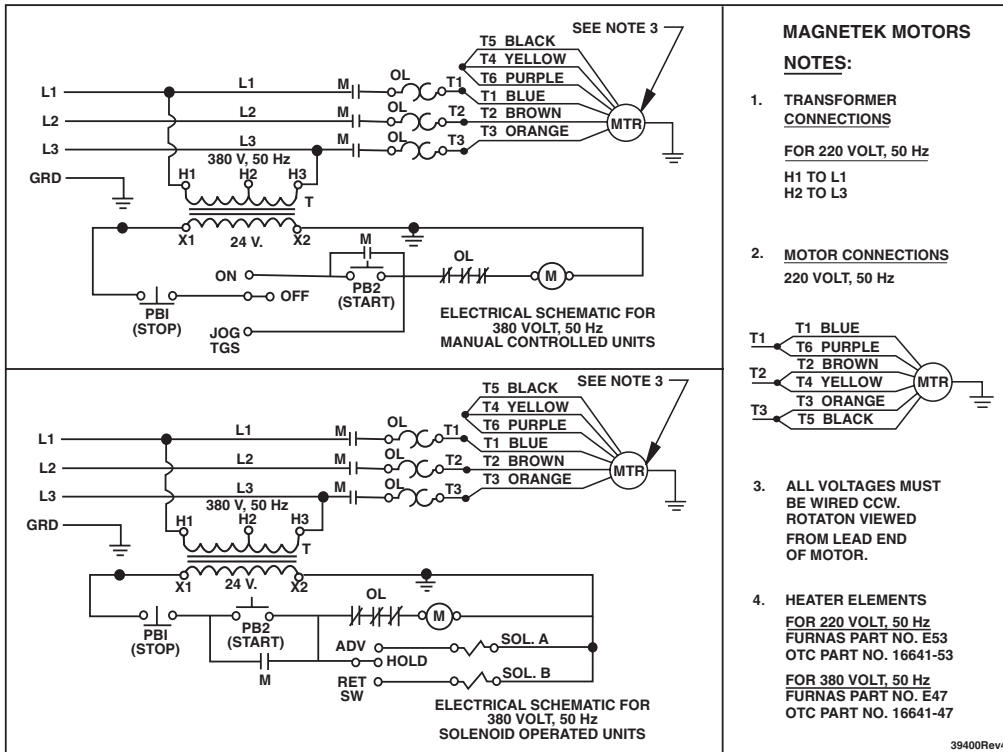
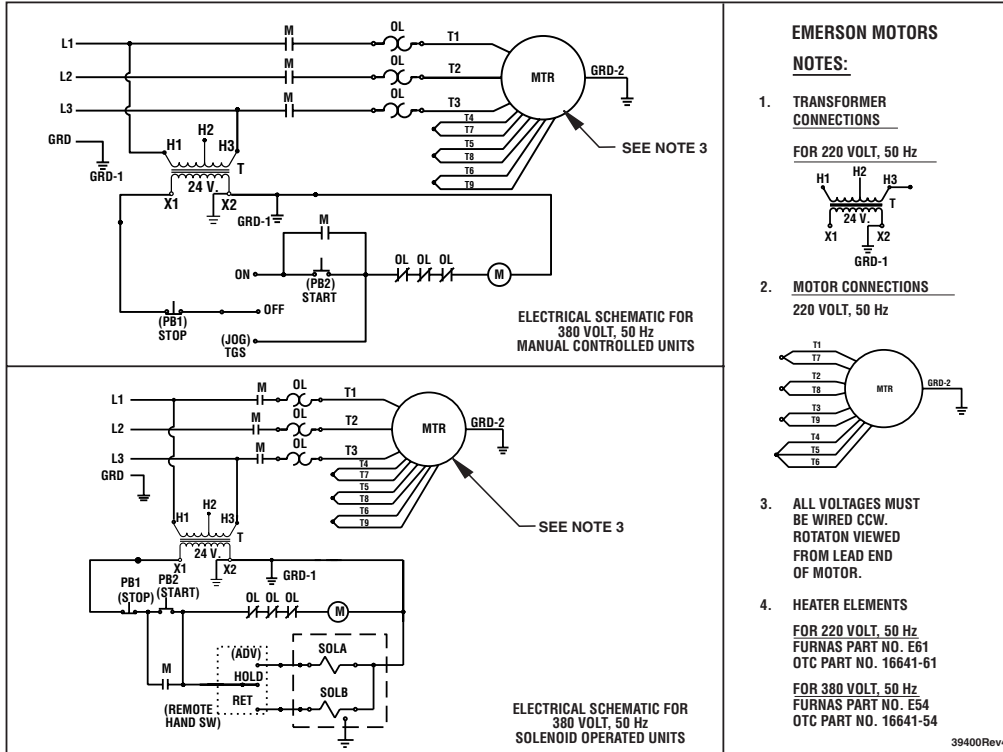
Refer to any operating instructions included with this product for detailed information about operation, testing, disassembly, reassembly, and preventive maintenance.

Items found in this parts list have been carefully tested and selected. **Therefore: Use only genuine Power Team replacement parts!**

Additional questions can be directed to our Technical Services Department.



# ELECTRIC SCHEMATICS FOR MANUAL AND SOLENOID OPERATED UNITS, 220/380 VOLT, 50 CYCLE

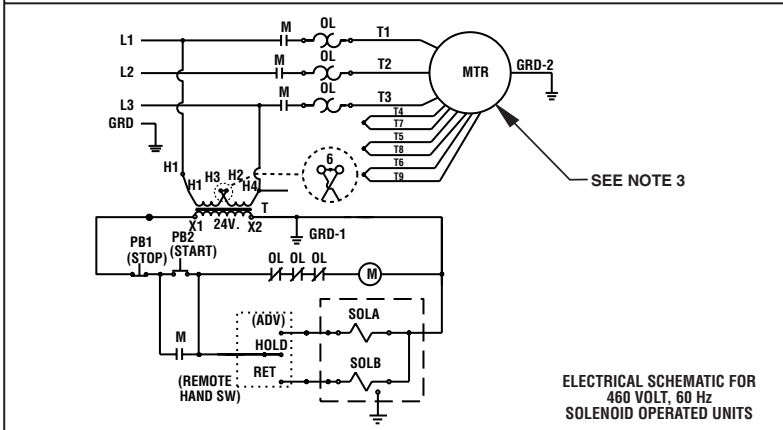
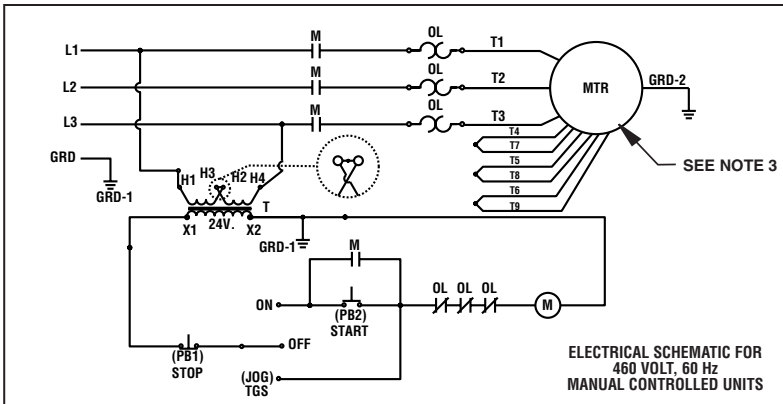


**WARNING:** To help prevent personal injury, all electrical work must be done by a qualified electrician.

**North American & International Color Codes:**

Conductors	North American	International
Line . . . . .	Black . . . . .	Brown
Neutral . . . . .	White . . . . .	Blue
Ground . . . . .	Green . . . . .	Green/Yellow

# ELECTRIC SCHEMATICS FOR MANUAL AND SOLENOID OPERATED UNITS, 230/460 VOLT, 60 CYCLE

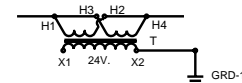


**EMERSON MOTORS**

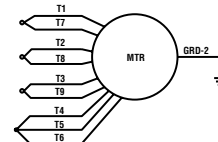
**NOTES:**

**1. TRANSFORMER CONNECTIONS**

FOR 230 VOLT, 60 Hz



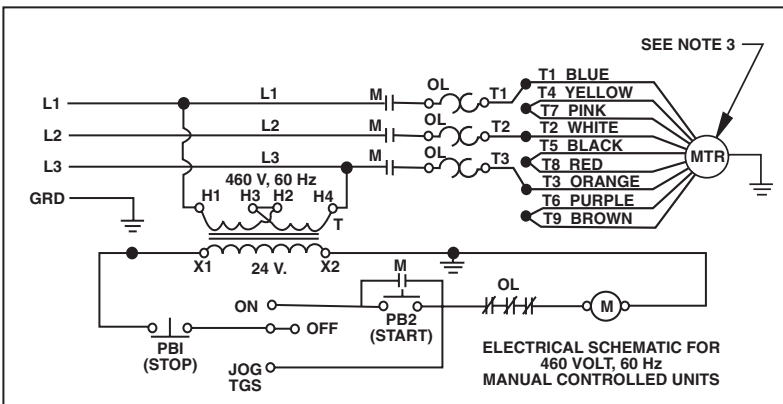
**2. MOTOR CONNECTIONS**  
230 VOLT, 60 Hz



**3. ALL VOLTAGES MUST BE WIRED CCW. ROTATION VIEWED FROM LEAD END OF MOTOR.**

**4. HEATER ELEMENTS FOR 230 VOLT, 60 Hz FURNAS PART NO. E61 OTC PART NO. 16641-61 FOR 460 VOLT, 60 Hz FURNAS PART NO. E52 OTC PART NO. 16641-52**

39401Rev3



**LEESON MOTORS**

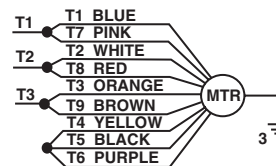
**NOTES:**

**1. TRANSFORMER CONNECTIONS**

FOR 230 VOLT, 60 Hz

H1 & H3 TO L1  
H2 & H4 TO L3

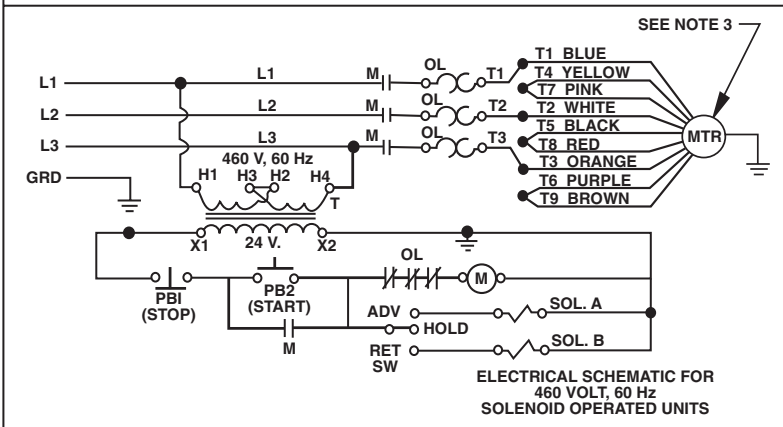
**2. MOTOR CONNECTIONS**  
230 VOLT, 60 Hz



**3. ALL VOLTAGES MUST BE WIRED CCW. ROTATION VIEWED FROM LEAD END OF MOTOR.**

**4. HEATER ELEMENTS FOR 230 VOLT, 60 Hz FURNAS PART NO. E57 OTC PART NO. 16641-57 FOR 460 VOLT, 60 Hz FURNAS PART NO. E50 OTC PART NO. 16641-50**

39401Rev3

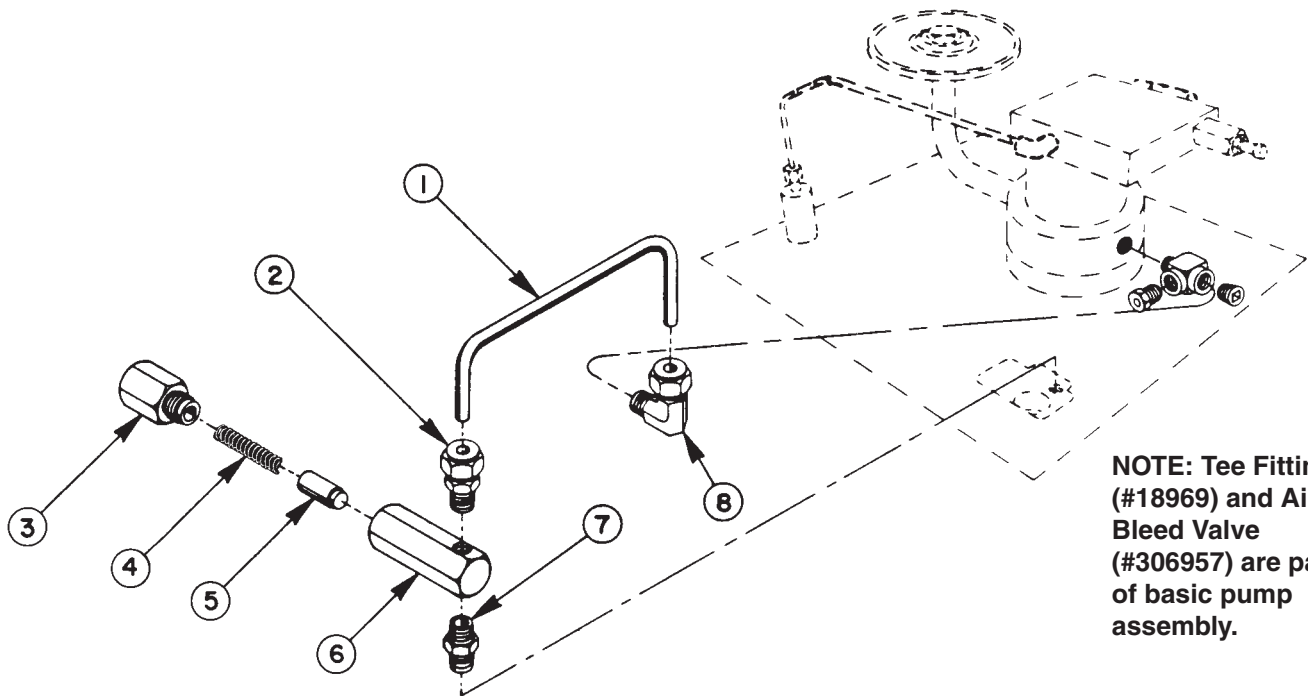


**NOTE: To convert from 460 volt to 230 volt, order Voltage Conversion Kit No. 205584.**





## OPTIONAL PILOT OIL LINE/ACCUMULATOR ASSEMBLY



Item No.	Part No.	No. Req'd	Description
1	200405	1	Oil Line
2	11173	1	Connector
3	202121	1	Spring Retainer (Torque to 50/70 in. lbs.)
4	16499	1	Compression Spring
5	21945	1	Plunger
6	21944	1	Cylinder Body
7	11421	1	Pipe Nipple
8	11278	1	Connector
	21943	1	Accumulator (Consists of items 3,4,5, & 6)