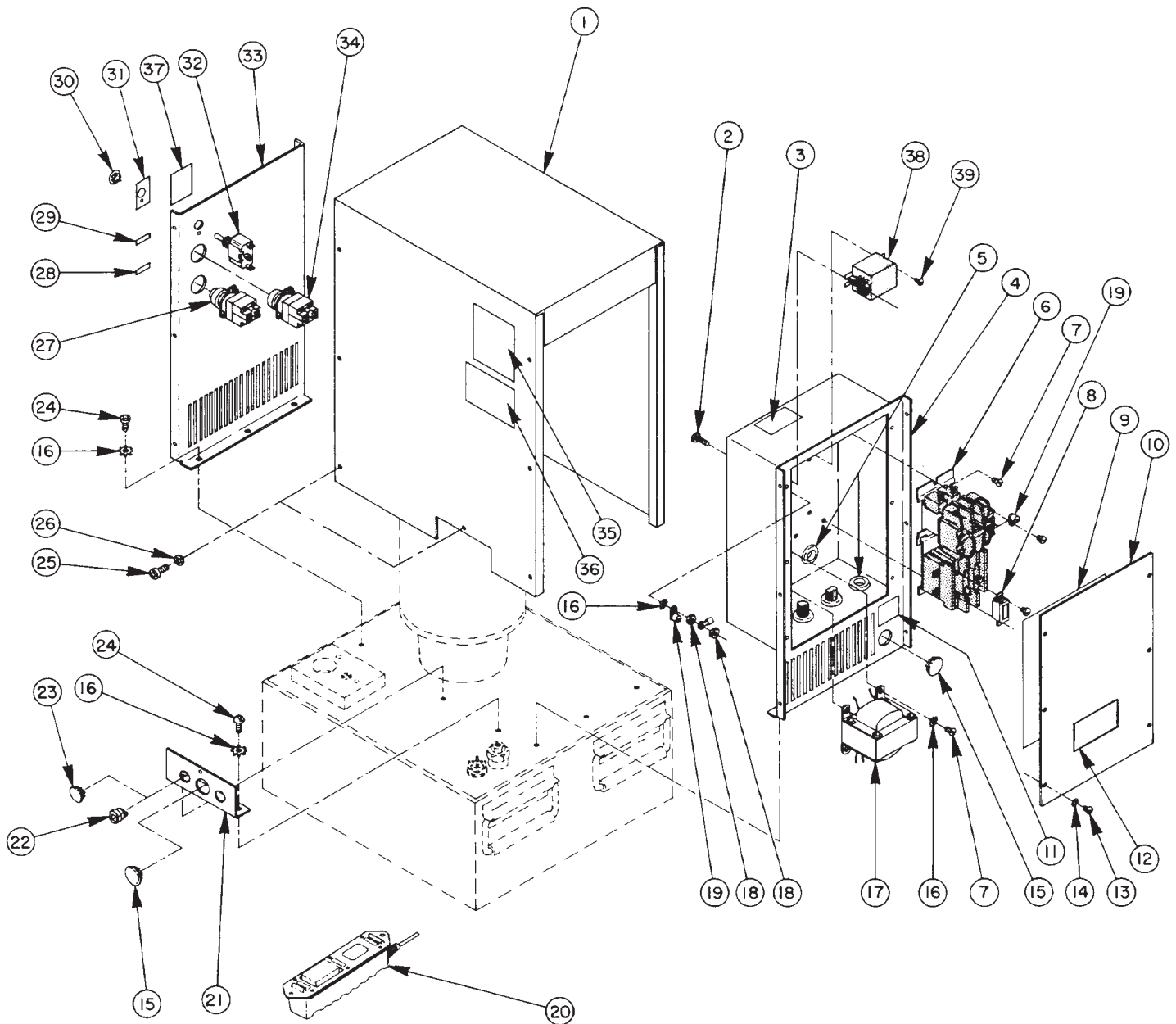


Parts List for:

PQ120 Series

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

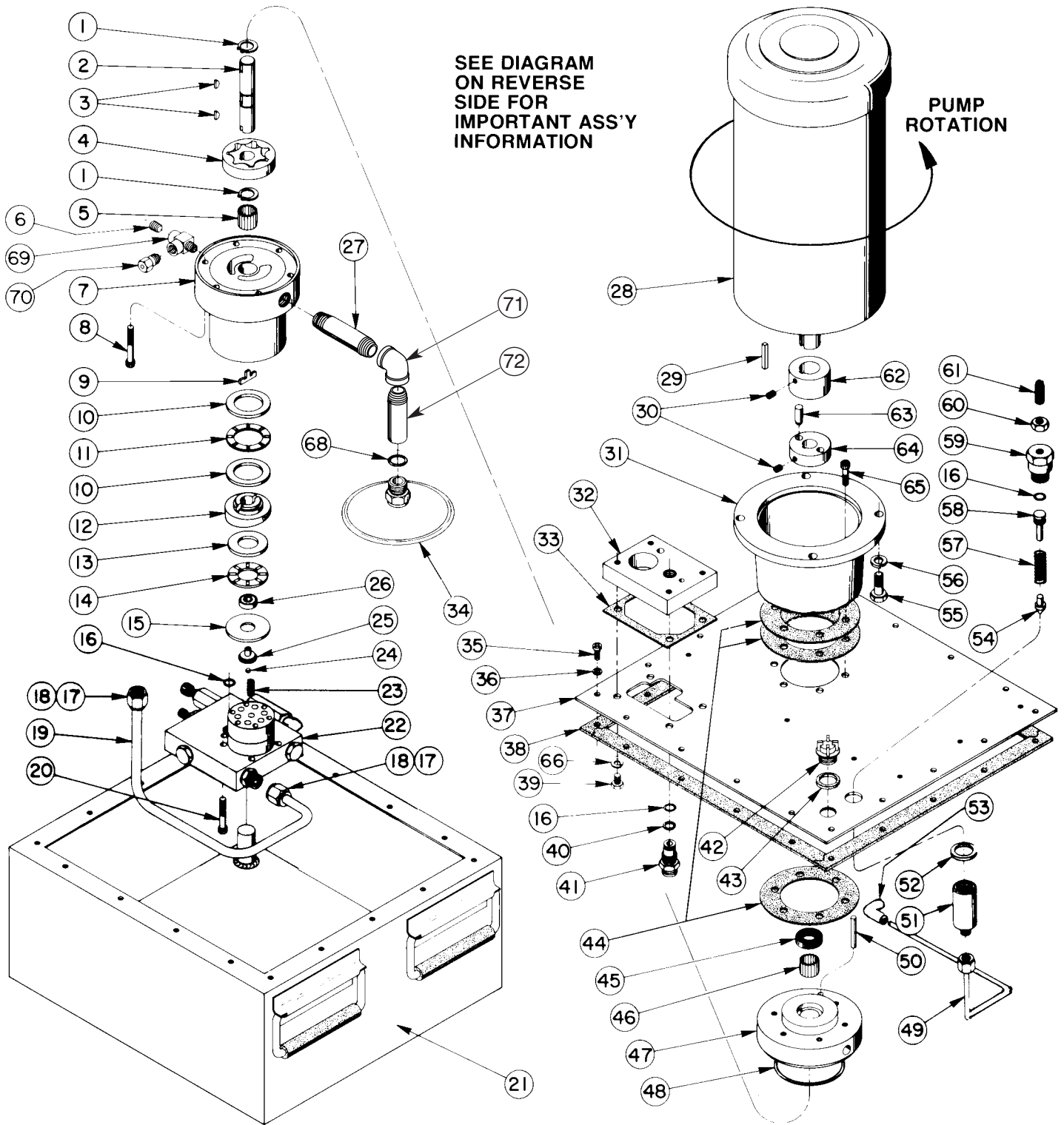


Parts List, Form No. 100353, Back sheet 1 of 5

| 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) | PARTS INCLUDED BUT NOT SHOWN | | | |
| 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) | OPTIONAL VALVES/MANIFOLD/PRESSURE SWITCH | | | |
| 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

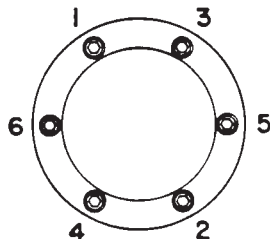
BASIC PUMP ASSEMBLY



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

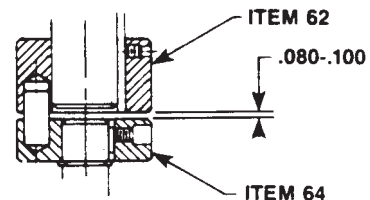
| Item No. | Part No. | No. Req'd | Description | Item No. | Part No. | No. Req'd | Description |
|----------|----------|-----------|---|---|----------|--|--|
| 1 | 12178 | 2 | Retaining Ring | 38 | 50712 | 1 | Cover Gasket |
| | **12178 | 3 | Retaining Ring | 39 | 10004 | 4 | Cap Screw (1/4-20 X 3/8 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 | PARTS INCLUDED BUT NOT SHOWN | | | |
| 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.) | *When ordering Motor, order appropriate Motor Leads Decal (Item 67). | | | |
| | **60922 | 1 | Cover Plate (.164 Thk.) | **After August 1981 | | | |

BOLT TIGHTENING SEQUENCE

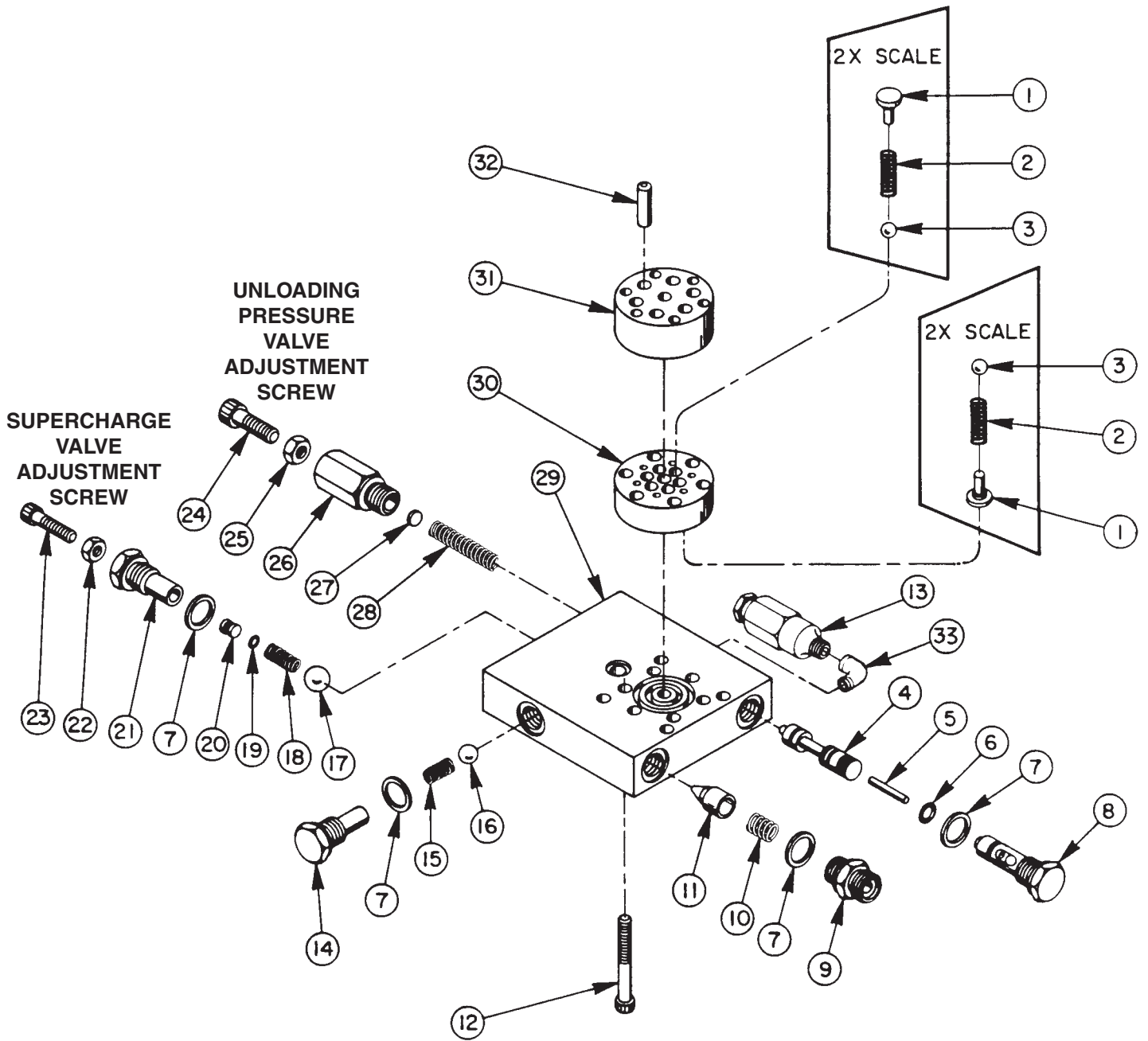


1. All bolts must be initially hand tightened in sequence shown (do not exceed 10 in. lbs.)
2. All bolts must be torqued in sequence shown. Torque to 110/120 in. lbs. in increments of 50/60 in. lbs.

COUPLING CLEARANCE



HIGH PRESSURE PUMP ASSEMBLY



SEE DIAGRAM ON REVERSE
SIDE FOR IMPORTANT
ASSEMBLY INFORMATION

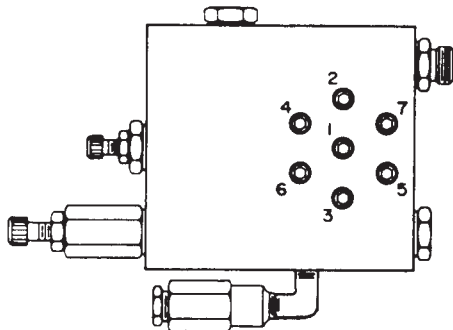
Note: Supercharge Valve and Unloading Pressure Valve of the high pressure pump assembly are NOT factory set! They require adjustment at final pump assembly. Refer to the pump's hydraulic schematic for specifications.

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



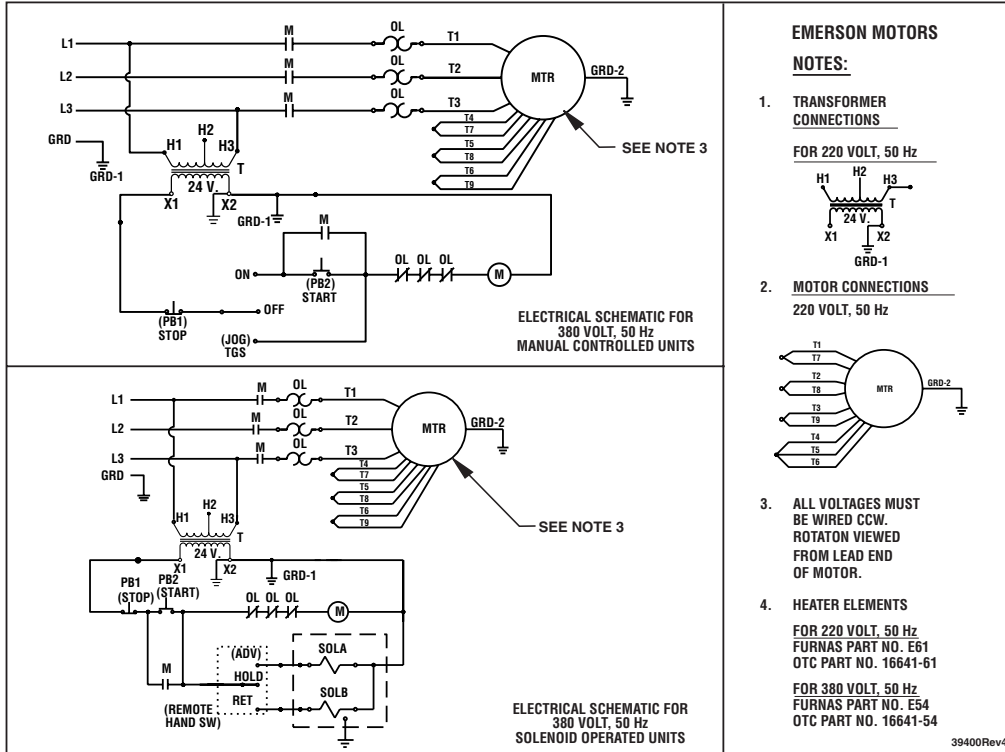
**NOTE: Assemble in sequence shown.
Lubricate under head and on threads.
Torque to 180 in. lbs.**

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

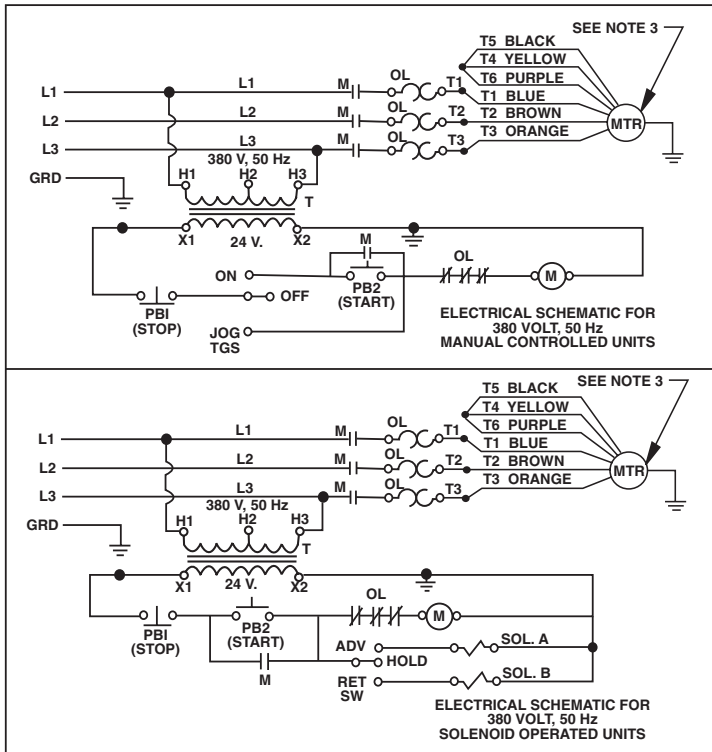


EMERSON MOTORS

NOTES:

1. **TRANSFORMER CONNECTIONS**
FOR 220 VOLT, 50 Hz
2. **MOTOR CONNECTIONS**
220 VOLT, 50 Hz
3. ALL VOLTAGES MUST BE WIRED CCW. ROTATION VIEWED FROM LEAD END OF MOTOR.
4. **HEATER ELEMENTS**
FOR 220 VOLT, 50 Hz
FURNAS PART NO. E61
OTC PART NO. 16641-61
FOR 380 VOLT, 50 Hz
FURNAS PART NO. E54
OTC PART NO. 16641-54

39400Rev4



MAGNETEK MOTORS

NOTES:

1. **TRANSFORMER CONNECTIONS**
FOR 220 VOLT, 50 Hz
H1 TO L1
H2 TO L3
2. **MOTOR CONNECTIONS**
220 VOLT, 50 Hz
3. ALL VOLTAGES MUST BE WIRED CCW. ROTATION VIEWED FROM LEAD END OF MOTOR.
4. **HEATER ELEMENTS**
FOR 220 VOLT, 50 Hz
FURNAS PART NO. E53
OTC PART NO. 16641-53
FOR 380 VOLT, 50 Hz
FURNAS PART NO. E47
OTC PART NO. 16641-47

39400Rev4

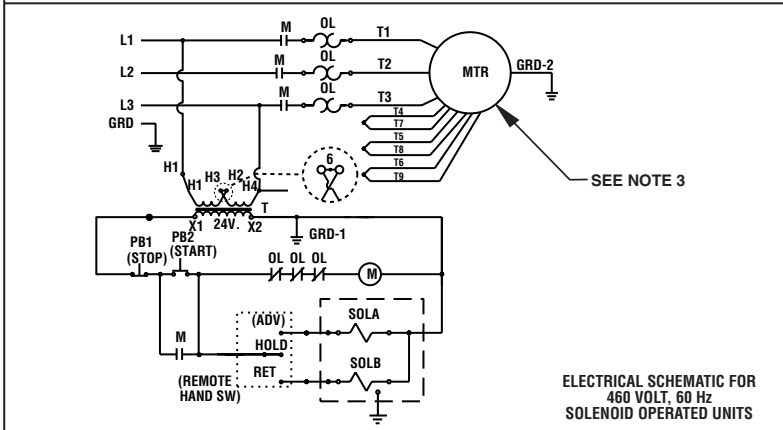
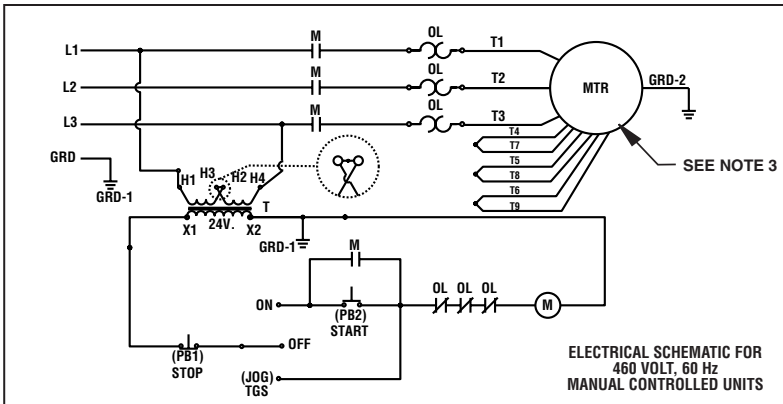


WARNING: To help prevent personal injury, all electrical work must be done by a qualified electrician.

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

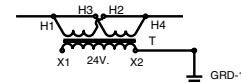


EMERSON MOTORS

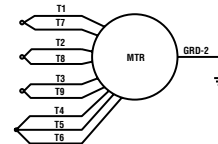
NOTES:

1. TRANSFORMER CONNECTIONS

FOR 230 VOLT, 60 Hz



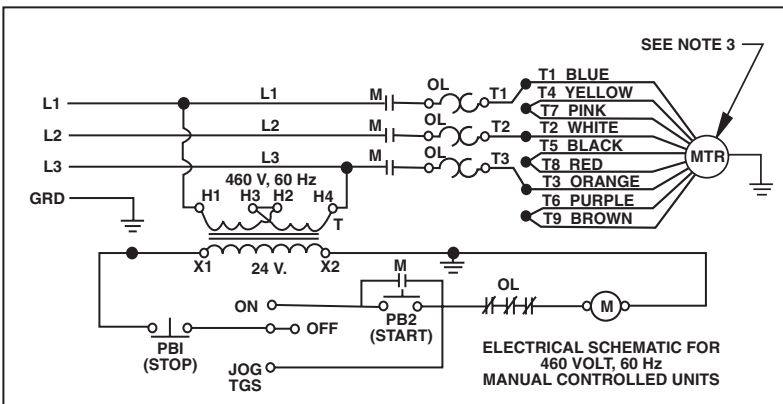
2. MOTOR CONNECTIONS
230 VOLT, 60 Hz



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

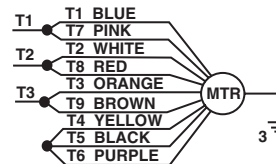
NOTES:

1. TRANSFORMER CONNECTIONS

FOR 230 VOLT, 60 Hz

H1 & H3 TO L1
H2 & H4 TO L3

2. MOTOR CONNECTIONS
230 VOLT, 60 Hz



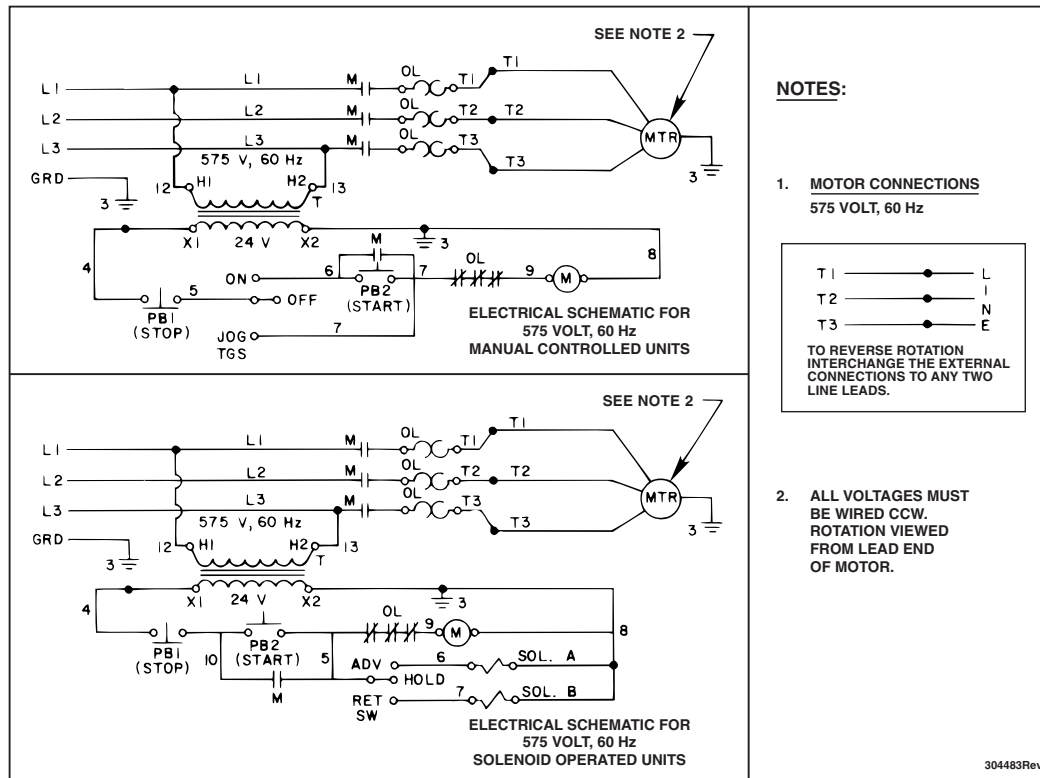
3. ALL VOLTAGES MUST BE WIRED CCW. ROTATION VIEWED FROM LEAD END OF MOTOR.

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

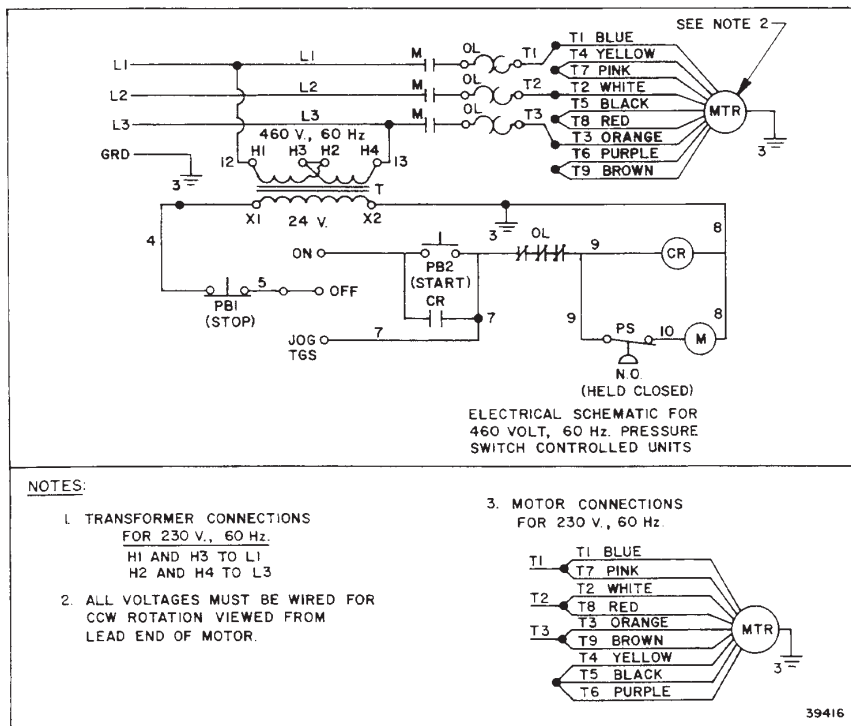
39401Rev3

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

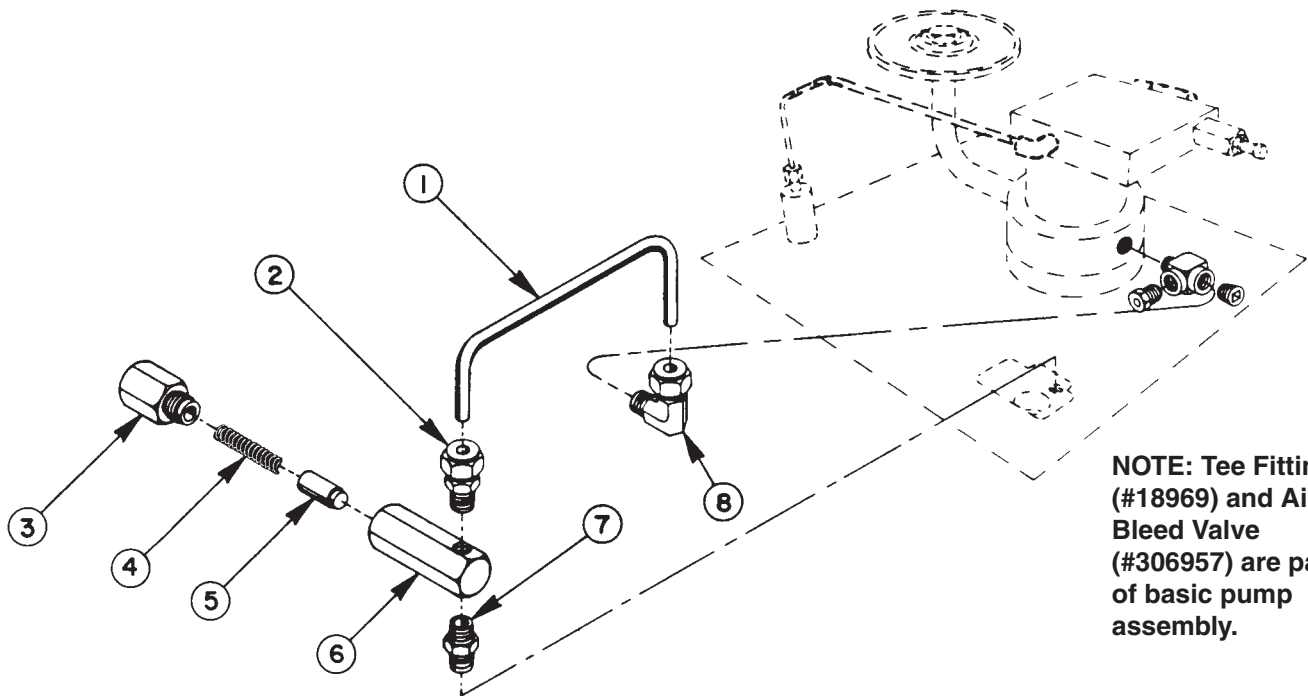
ELECTRICAL SCHEMATICS FOR MANUAL AND SOLENOID OPERATED UNITS, 575 VOLT, 60 CYCLE



ELECTRICAL SCHEMATIC FOR PRESSURE SWITCH CONTROLLED UNITS, 460 VOLT, 60 CYCLE



OPTIONAL PILOT OIL LINE/ACCUMULATOR ASSEMBLY



NOTE: Tee Fitting (#18969) and Air Bleed Valve (#306957) are part of basic pump 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) |