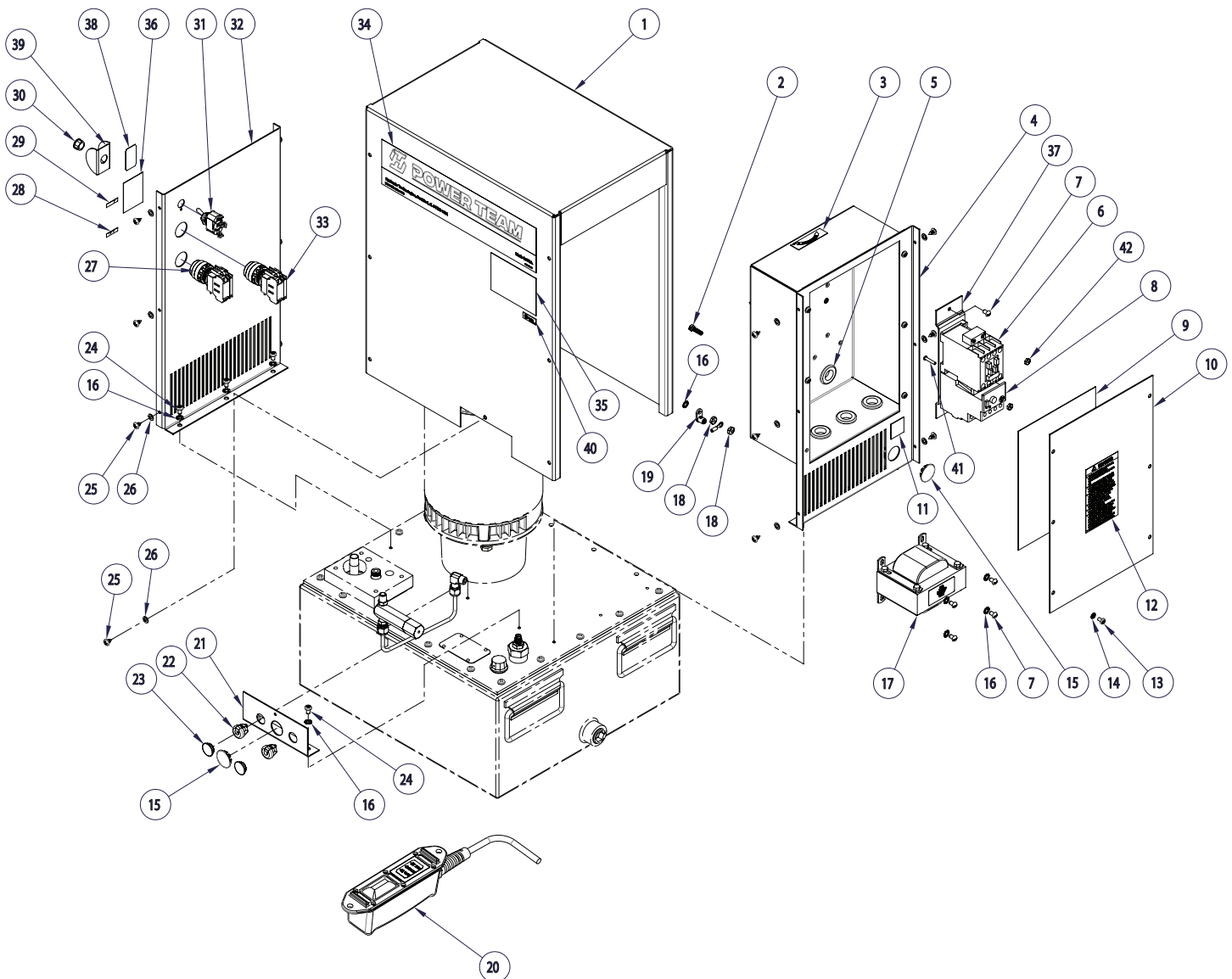


## ELECTRIC TWO-STAGE HYDRAULIC PUMP CONTROL BOX & COVER ASSEMBLY



## PARTS LIST

| ITEM | PART NO. | DESCRIPTION                                                                          | QTY. |
|------|----------|--------------------------------------------------------------------------------------|------|
| 1    | 50946WH2 | COVER, TOP                                                                           | 1    |
| 2    | 104484   | SCREW, MACH. #10-24 X .75 HEX SLOT.                                                  | 1    |
| 3    | 202504   | DECAL, ROTATION DIRECTION                                                            | 2    |
| 4    | 60235OR9 | PANEL, W/BOX                                                                         | 1    |
| 5    | 15497    | GROMMET, RUBBER 5/8 ID                                                               | 6    |
| 6    | 422011   | CONTACTOR                                                                            | 1    |
|      | 17861-4  | MAGNETIC STARTER (FOR ALL PUMPS BUILT BEFORE JANUARY 2016)                           | 1    |
| 7    | 10164    | SCREW, RND 10-24 X 0.38                                                              | 6    |
| 8    | 360022   | RELAY, OVERLOAD(380V 50HZ,230V 575V 60HZ; FOR ALL PUMPS BUILT AFTER JANUARY 2016)    | 1    |
|      | 360165-5 | RELAY, OVERLOAD(380V, 50HZ FOR ALL PUMPS BUILT AFTER JANUARY 2016)                   | 1    |
|      | 360012   | RELAY, OVERLOAD(220V, 50HZ FOR ALL PUMPS BUILT AFTER JANUARY 2016)                   | 1    |
|      | 360013   | RELAY, OVERLOAD(220V 50HZ, 230V 60HZ) FOR ALL PUMPS BUILT AFTER JANUARY 2016)        | 1    |
|      | 16641-39 | STARTER HEATER( 575V, 60 Hz) (FOR ALL PUMPS BUILT BEFORE JANUARY 2016)               | 3    |
|      | 16641-44 | STARTER HEATER (460V, 60 Hz; FOR ALL PUMPS BUILT BEFORE MAY 1996)                    | 3    |
|      | 16641-50 | STARTER HEATER (460V, 60 Hz; FOR ALL PUMPS BUILT BETWEEN MAY 1996 TO JANUARY 2016)   | 3    |
|      | 16641-52 | STARTER HEATER (460V, 60Hz; FOR PUMPS WITH EMERSON MOTOR)                            | 3    |
|      | 16641-47 | STARTER HEATER (380V, 50 Hz) (FOR ALL PUMPS BUILT BEFORE JANUARY 2016)               | 3    |
|      | 16641-53 | STARTER HEATER (220V, 50 Hz) (FOR ALL PUMPS BUILT BEFORE JANUARY 2016)               | 3    |
|      | 16641-54 | STARTER HEATER (230 V., 60 Hz; FOR ALL PUMPS BUILT BEFORE MAY 1996)                  | 3    |
|      | 16641-57 | STARTER HEATER (230 V., 60 Hz; FOR ALL PUMPS BUILT BETWEEN MAY 1996 TO JANUARY 2016) | 3    |
|      | 16641-61 | STARTER HEATER (230V, 60Hz; FOR PUMPS WITH EMERSON MOTOR)                            | 3    |
| 9    | 39401    | DECAL, ELECT SCHEMATIC (FOR MANUAL AND SOL. OPERATED UNITS, 230/460V, 60Hz)          | 1    |
|      | 39400    | DECAL, ELECT SCHEMATIC (FOR MANUAL AND SOL. OPERATED UNITS,220/380V, 50 Hz)          | 1    |
|      | 304483   | DECAL, ELECT SCHEMATIC (FOR MANUAL & SOL. OPERATED UNITS,575V, 60 Hz)                | 1    |

**Parts List continued**

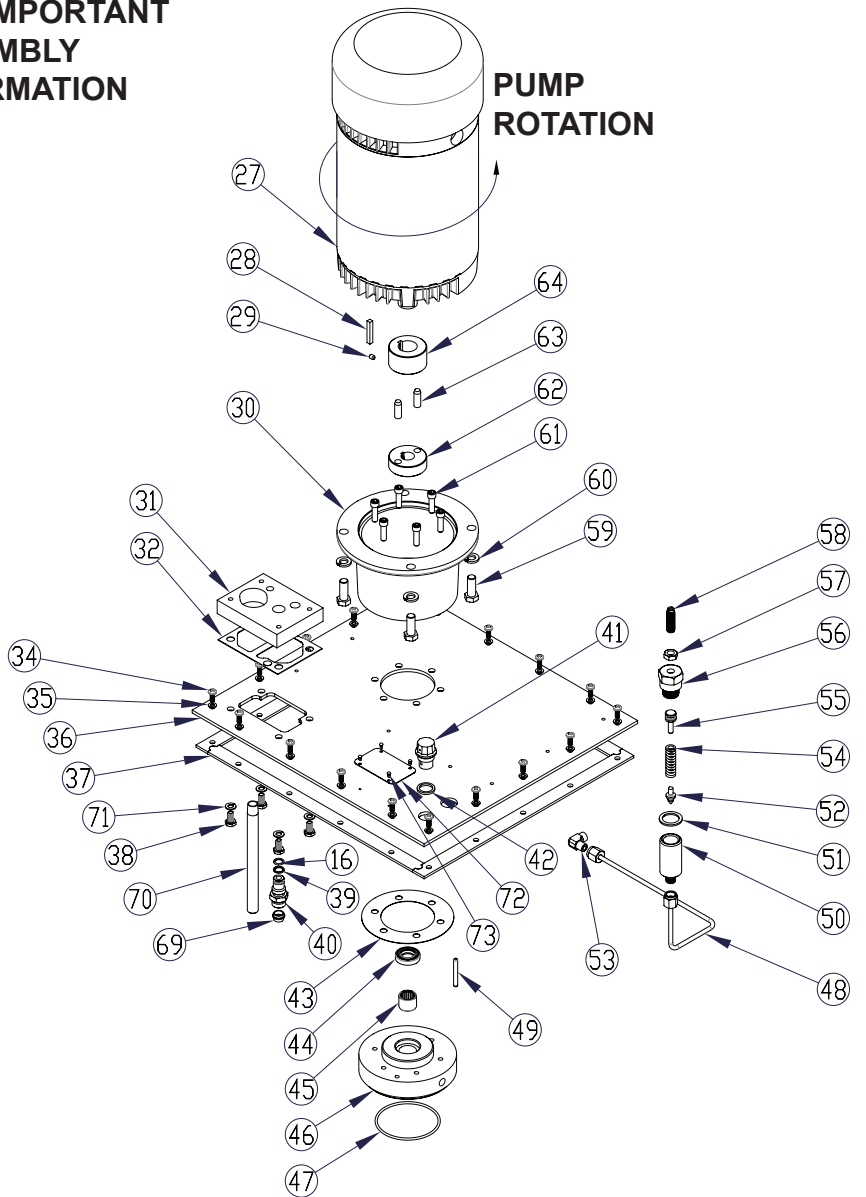
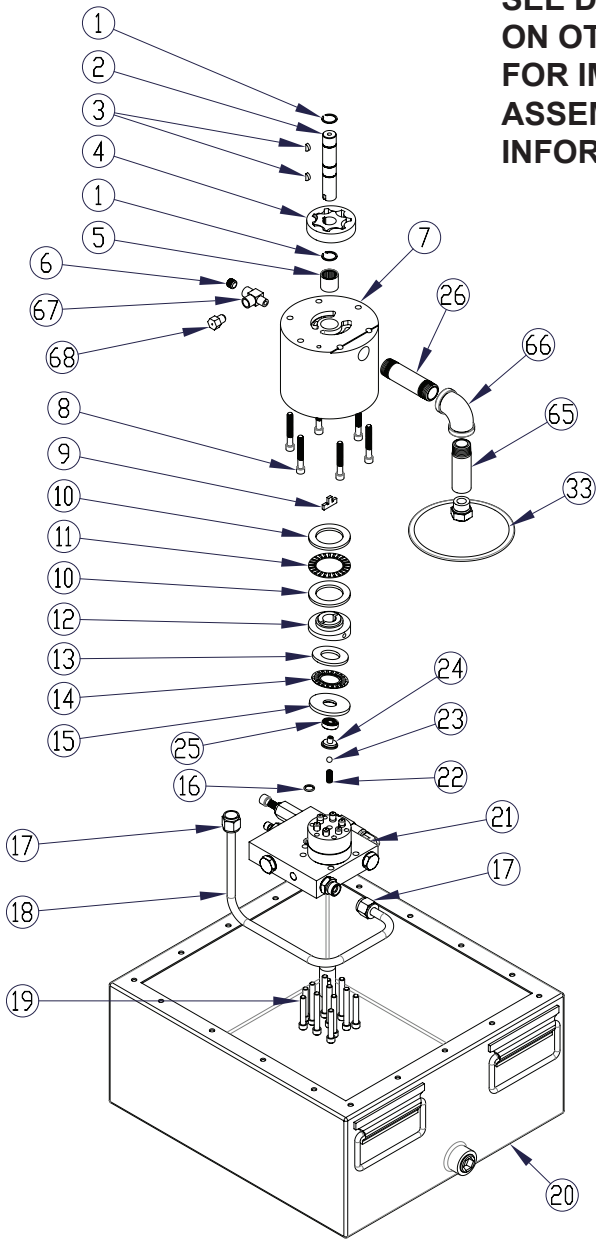
|    |          |                                                                             |    |
|----|----------|-----------------------------------------------------------------------------|----|
| 9  | 39416    | ELECTRICQL SCHEMATIC DECAL (FOR PRESS. SWITCH CONTROLLED UNITS,460V, 60 Hz) | 1  |
| 10 | 424570R9 | PLATE, COVER ELECTRICAL                                                     | 1  |
| 11 | 203802   | DECAL, TRADENAME POWER TEAM PQ120 (FOR 220/380V, 50 Hz)                     | 1  |
|    | 209309   | DECAL, PT PQ120 SERIES (FOR 575V, 60 Hz)                                    | 1  |
| 12 | 200188   | DECAL, WARNING IMPORTANT                                                    | 1  |
| 13 | 10975    | SCREW, PAN 8-32 X 0.31                                                      | 6  |
| 14 | 11107    | WASHER, TOOTH INT 0.330 x0.170                                              | 6  |
| 15 | 15327    | PLUG, SNAP - 7/8 DIA TUBING TYPE                                            | 2  |
| 16 | 11108    | WASHER, TOOTH EXT 0.400 x0.200                                              | AR |
| 17 | 39693    | TRANSFORMER, 220V/440V TO 24V, 100VA (FOR 230/460V, 60 Hz)                  | 1  |
|    | 39750    | TRANSFORMER, 220V/380V TO 24V, 100VA(FOR 220/380V, 50 Hz)                   | 1  |
|    | 302202   | TRANSFORMER, 575V TO 24V, 150VA (575V, 60 Hz)                               | 1  |
|    | 350064   | TRANSFORMER, 220V/380V TO 24V, 150VA(380V, 50 Hz)                           | 1  |
| 18 | 10197    | NUT, HEX 10-24                                                              | 2  |
| 19 | 205420   | CONNECTOR, LUG - SCREW TYPE                                                 | 4  |
| 20 | 202777   | REMOTE CONTROL ASS'Y(FOR 3-WAY SOL. VALVE UNITS; SEE PARTS LIST NO. 101644) | 1  |
|    | 202778   | REMOTE CONTROL ASS'Y(FOR 4-WAY SOL. VALVE UNITS; SEE PARTS LIST NO. 101644) | 1  |
| 21 | 36746WH2 | PLATE, ANGLE                                                                | 1  |
| 22 | 15993    | BUSHING, STR REL .325/.360 OD .625 HOLE (SOLENOID UNITS)                    | 2  |
|    | 15993    | BUSHING, STR REL .325/.360 OD .625 HOLE (PRESSURE SWITCH UNITS)             | 1  |
| 23 | 16412    | PLUG, SNAP - 5/8 DIA TUBING TYPE (MANUAL VALVE UNITS)                       | 2  |
|    | 16412    | PLUG, SNAP - 5/8 DIA TUBING TYPE (PRESSURE SWITCH UNITS)                    | 1  |
| 24 | 16613    | SCREW, PAN 10-24 X 0.31                                                     | 8  |
| 25 | 14394    | SCREW, PAN #10-16 X 0.38 PHIL TAPPING                                       | AR |
| 26 | 12356    | WASHER, TOOTH INT 0.370 X 0.200                                             | AR |
| 27 | 39283    | SWITCH, PUSHBUTTON - RED                                                    | 1  |
| 28 | 203769   | DECAL, LABEL STOP                                                           | 1  |
| 29 | 203808   | DECAL, LABEL START                                                          | 1  |
| 30 | 17782    | PLUG, SNAP BUTTON - 1/2" DIA HOLE                                           | 1  |
| 31 | 16617    | SWITCH, TOGGLE (MANUAL VALVE & PRESS. SWITCH UNITS)                         | 1  |
| 32 | 51124OR9 | PANEL, FRONT                                                                | 1  |
| 33 | 39282    | SWITCH, PUSHBUTTON - GREEN                                                  | 1  |

## Parts List continued

|                                                 |         |                                                                                     |       |
|-------------------------------------------------|---------|-------------------------------------------------------------------------------------|-------|
| 34                                              | 309221  | DECAL, TRADENAME POWER TEAM BLANK                                                   | 2     |
| 35                                              | 39266   | DECAL, SPECIFICATIONS (60 CYCLE UNITS)                                              | 1     |
| 36                                              | 204015  | DECAL, NOTE                                                                         | 1     |
| 37                                              | 2002397 | BRACKET, CONTACTOR OVERLOAD                                                         | 1     |
| 38                                              | 360133  | DECAL, LABEL ON/OFF/JOG                                                             | 1     |
| 39                                              | 352061  | GUARD, SWITCH                                                                       | 1     |
| 40                                              | 203972  | DECAL, CSA                                                                          | 1     |
| 41                                              | 16099   | SCREW, #6-32 X 0.75 RND                                                             | 2     |
| 42                                              | 10195   | NUT, #6-32 HEX                                                                      | 2     |
| <b>AR = AS REQUIRED</b>                         |         |                                                                                     |       |
| <b>PARTS INCLUDED BUT NOT SHOWN</b>             |         |                                                                                     |       |
|                                                 | 9041    | GAUGE, 2.5", UNIVERSAL, DRY, 2500/500 PSI (BEFORE JANUARY 2016)                     | 1     |
|                                                 | 204610  | MOTOR LEADS DECAL (BEFORE JANUARY 2016)                                             | 1     |
|                                                 | 205189  | DECAL, LABEL GROUND                                                                 | 1     |
|                                                 | 216666  | BUSHING, STR REL .230/.470 OD 1/2 NPT                                               | 1     |
|                                                 | 12908   | CABLE, 18/3 SJTO (SOLENOID UNITS)                                                   | 2 Ft. |
|                                                 | 39092   | RELAY, GENERAL PURPOSE 24V (PRESSURE SWITCH UNITS)                                  | 1     |
|                                                 | 10159   | SCREW, RND 6-32 X 0.31 (FOR PUMPS BEFORE JANUARY 2016, USED TO MOUNT CONTROL RELAY) | 2     |
|                                                 | 203912  | DECAL, ON/OFF/JOG (MANUAL VALVE & PRESS. SWITCH UNITS)                              | 1     |
| <b>OPTIONAL VALVES/MANIFOLD/PRESSURE SWITCH</b> |         |                                                                                     |       |
|                                                 | 9520    | 3-WAY MANUAL VALVE ASS'Y (SEE FORM NO. 101377)                                      | 1     |
|                                                 | V33S    | 3-WAY SOLENOID VALVE ASS'Y (SEE FORM NO. 100422)                                    | 1     |
|                                                 | 9506    | 4-WAY MANUAL VALVE ASS'Y (SEE FORM NO. 100628)                                      | 1     |
|                                                 | 9512    | 4-WAY SOLENOID (SEE FORM NO. 101653)                                                | 1     |
|                                                 | 9626    | MANIFOLD ASS'Y (SEE FORM NO. 100605)                                                | 1     |
|                                                 | 9625    | PRESSURE SWITCH ASS'Y (SEE FORM NO. 100589)                                         | 1     |
|                                                 | V23A    | AUTOMATIC VALVE ASS'Y (SEE FORM NO. 100415)                                         | 1     |
|                                                 | 58478   | VALVE, MANUAL 3 WAY PUMP MOUNT                                                      | 1     |
|                                                 | 41825   | VALVE, BASIC DIRECTIONAL 3 WAY                                                      | 1     |
|                                                 | 52516   | VALVE, MANUAL 4 WAY TANDEM CTR                                                      | 1     |
|                                                 | 65008   | VALVE, SOLENOID 4 WAY                                                               | 1     |
|                                                 | 420468  | VALVE, AUTOMATIC/MANUAL                                                             | 1     |
|                                                 | 15643-4 | VALVE, SOLENOID, 24 VAC                                                             | 1     |
|                                                 | 16664-4 | VALVE, SOLENOID 24 V                                                                | 1     |

# BASIC PUMP ASSEMBLY

**SEE DIAGRAM  
ON OTHER SIDE  
FOR IMPORTANT  
ASSEMBLY  
INFORMATION**



**Parts List continued**

| ITEM | PART NO. | DESCRIPTION                                                             | QTY. |
|------|----------|-------------------------------------------------------------------------|------|
| 1    | 12178    | RING, RETAIN EXT 0.58 X .062                                            | 2    |
|      | 12178    | RING, RETAIN EXT 0.58 X .062 (AFTER AUGUST 1981)                        | 3    |
| 2    | 35272    | PUMP SHAFT (BEFORE 1981)                                                | 1    |
|      | 303009   | SHAFT, PUMP (AFTER AUGUST 1981)                                         | 1    |
| 3    | 12179    | KEY, WOODRUFF                                                           | 2    |
| 4    | 15428    | SET, GEROTOR                                                            | 1    |
| 5    | 15461    | BEARING, NEEDLE - .625 x .812 x .750                                    | 1    |
| 6    | 10427    | FITTING, PLUG - 1/8 NPTF x 5/16                                         | 1    |
| 7    | 50705    | HOUSING                                                                 | 1    |
| 8    | 10854    | SCREW, SHC 1/4-20 X 1.75 (SEE NOTE BELOW)                               | 6    |
| 9    | 200397   | KEY - "T"                                                               | 1    |
| 10   | 11227    | RACE, BEARING                                                           | 2    |
| 11   | 11228    | BEARING, THRUST - 1.92 x 1.25 x .078                                    | 1    |
| 12   | 35271    | PLATE, ANGLE - 10 DEGREE                                                | 1    |
| 13   | 15432    | RACE, BEARING                                                           | 1    |
| 14   | 15431    | BEARING, NEEDLE - .88 x 1.67 x .078                                     | 1    |
| 15   | 23548    | PLATE, TOP                                                              | 1    |
| 16   | 10268    | O-RING (-012) 0.364ID x 0.070 NITRILE 70                                | 3    |
| 17   | 214269   | FITTING, NUT 5/8-18 F (3/8 OD TUBE) (AFTER JANUARY 2016)                | 2    |
|      | 10430    | TUBE, SLEEVE 3/8 DIA. (BEFORE JANUARY 2016)                             | 2    |
|      | 10431    | FITTING, NUT 5/8-18 F (3/8 OD TUBE) (BEFORE JANUARY 2016)               | 2    |
| 18   | 35281    | TUBE, OIL LINE - HIGH PRESSURE                                          | 1    |
| 19   | 10022    | SCREW, SHC 1/4-20 X 1.50 (TORQUE TO 110/120 IN. LBS.)                   | 5    |
| 20   | 60234OR9 | TANK PT 04.50 GAL STEEL OR9 VERT WELD 15.                               | 1    |
|      | 64594OR9 | RESERVOIR, STEEL DUAL HANDLE (FOR PQ1204-ATLAS)                         | 1    |
| 21   | 41833    | PUMP, HIGH PRESSURE (SEE SHEET 9 of 25; ADJUSTMENT REQUIRED)            | 1    |
| 22   | 10361    | SPRING COM OD.253IDX.XXXR9.4L1.025MW                                    | 1    |
| 23   | 10375    | BALL, 1/4" DIA STEEL                                                    | 1    |
| 24   | 23547    | PLATE, BEARING TOP                                                      | 1    |
| 25   | 11814    | BEARING, BALL - .25 x .75 x .219                                        | 1    |
| 26   | 260022   | FITTING, STR 1/2 NPT M x 1/2 NPT M 3"                                   | 1    |
| 27   | 59333    | MOTOR (3 H.P., 220/380V OR 230/460V, 50/60 Hz)                          | 1    |
|      | *304477  | MOTOR, ELEC 575V 60HZ 3PH 3HP 1725RPM                                   | 1    |
|      | 501077   | MOTOR, ELEC 230/460V 50/60 Hz 3PH 3HP (FOR 380V 50HZ PUMPS, AFTER 2016) | 1    |

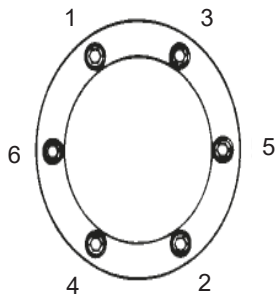
**Parts List continued**

| ITEM | PART NO. | DESCRIPTION                                                | QTY. |
|------|----------|------------------------------------------------------------|------|
| 28   | 27778    | KEY - 3/16 SQ x 1-1/4 LG                                   | 1    |
| 29   | 10133    | SCREW, SET #10-24 X 0.25 KNURLED CUP                       | 2    |
|      | 10133    | SCREW, SET #10-24 X 0.25 KNURLED CUP (AFTER AUGUST 1981)   | 3    |
| 30   | 41838    | MOUNT, MOTOR                                               | 1    |
| 31   | 43110    | BLOCK, MOUNTING                                            | 1    |
| 32   | 200395   | GASKET, VALVE BASE                                         | 1    |
| 33   | 21345    | SCREEN, FILTER                                             | 1    |
| 34   | 16876    | SCREW, PAN 10-24 X 0.50                                    | 18   |
| 35   | 12356    | WASHER, TOOTH INT 0.370 x0.200 (#10 INTERNAL)              | 18   |
| 36   | 60231WH2 | COVER PLATE (.104 Thk.)                                    | 1    |
|      | 60922    | PLATE, COVER (.164 Thk.) (AFTER AUGUST 1981)               | 1    |
| 37   | 50712    | GASKET, RESERVOIR (4 PIECE SET)                            | 1    |
| 38   | 10004    | SCREW, HEX 1/4-20 X 0.38                                   | 4    |
|      | 10005    | SCREW, HEX CAP 1/4-20 X 0.50 (AFTER AUGUST 1981)           | 4    |
| 39   | 11863    | WASHER, BACKUP 0.500 x0.375 (-012)                         | 1    |
| 40   | 20787    | CONNECTOR, VALVE                                           | 1    |
| 41   | 251689   | CAP, FILLER BREATHER                                       | 1    |
|      | 20937    | FILLER PLUG                                                | 1    |
| 42   | 200415   | PACKING, O-RING (SQUARE SECTION)                           | 1    |
| 43   | 35266    | GASKET, PUMP TO COVER                                      | 3    |
| 44   | 12194    | PACKING, OIL SEAL                                          | 1    |
| 45   | 15430    | BEARING, NEEDLE - .625 x .812 x .625                       | 1    |
| 46   | 50706    | HOUSING, GEROTOR                                           | 1    |
| 47   | 12504    | O-RING (-149) 2.800ID x 0.103 NITRILE 70                   | 1    |
| 48   | 350524   | TUBE, PRESSURE REGULATOR                                   | 1    |
| 49   | 13152    | PIN, DOWEL .19 X 1.50                                      | 1    |
| 50   | 22361    | BODY, VALVE                                                | 1    |
| 51   | 17065    | FLAT WASHER (.125 Thk.)                                    | 1    |
|      | 14857    | WASHER, PLAIN 0.78 x 1.06 x 0.07 STEEL (AFTER AUGUST 1981) | 1    |
| 52   | 21046    | STEM, VALVE                                                | 1    |
| 53   | 16177    | FITTING, 90D ELB 1/8 NPTF M x 3/16 TUBE                    | 1    |
| 54   | 10495    | SPRING COM OD.473IDX.XXXR410L1.687CS                       | 1    |
| 55   | 21306    | GUIDE, SPRING                                              | 1    |
| 56   | 21305    | CAP, VALVE                                                 | 1    |
| 57   | 10386    | NUT, HEX JAM 3/8-24                                        | 1    |

## Parts List continued

| ITEM                                                                    | PART NO. | DESCRIPTION                                           | QTY. |
|-------------------------------------------------------------------------|----------|-------------------------------------------------------|------|
| 58                                                                      | 22362    | SCREW, ADJUST 3/8-24 X 1-1/4                          | 1    |
| 59                                                                      | 10049    | SCREW, HEX 3/8-16 X 1.00                              | 4    |
| 60                                                                      | 10247    | WASHER, LOCK 0.680 X0.390                             | 4    |
| 61                                                                      | 10012    | SCREW, SHC 1/4-20 X 0.88 (TORQUE TO 110/120 IN. LBS.) | 6    |
| 62                                                                      | 27001    | COUPLING                                              | 1    |
| 63                                                                      | 27003    | PIN, NYLON                                            | 2    |
| 64                                                                      | 200396   | COUPLING                                              | 1    |
|                                                                         | 207440   | COUPLING (AFTER AUGUST 1981)                          | 1    |
| 65                                                                      | 260021   | EXTENSION, TUBE - FILTER                              | 1    |
| 66                                                                      | 260023   | FITTING, 90D ELB 1/2 NPT F x 1/2 NPT F                | 1    |
| 67                                                                      | 18969    | FITTING, TEE 1/8 NPTF M x (2) 1/8 NPTF F              | 1    |
| 68                                                                      | 306957   | VALVE, AIR BLEED                                      | 1    |
| 69                                                                      | 214270   | SLEEVE, TUBE 3/8 DIA                                  | 1    |
| 70                                                                      | 200609   | TUBE, DRAIN .50 OD X 6.00                             | 1    |
| 71                                                                      | 10244    | LOCKWASHER (AFTER AUGUST 1981)                        | 4    |
| 72                                                                      | 202120   | PLATE, NAME                                           | 1    |
| 73                                                                      | 10575    | SCREW, DRIVE RD 2 X 0.19 STD B18.6.4                  | 4    |
| <b>*WHEN ORDERING MOTOR, ORDER APPROPRIATE MOTOR LEADS DECAL 209307</b> |          |                                                       |      |
| <b>PARTS INCLUDED BUT NOT SHOWN</b>                                     |          |                                                       |      |
|                                                                         | 350431   | SIGHT GAUGE                                           | 1    |
|                                                                         | 10195    | NUT #6-32 HEX                                         | 2    |

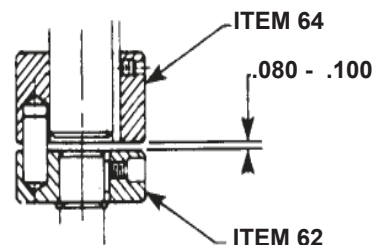
### BOLT TIGHTENING SEQUENCE



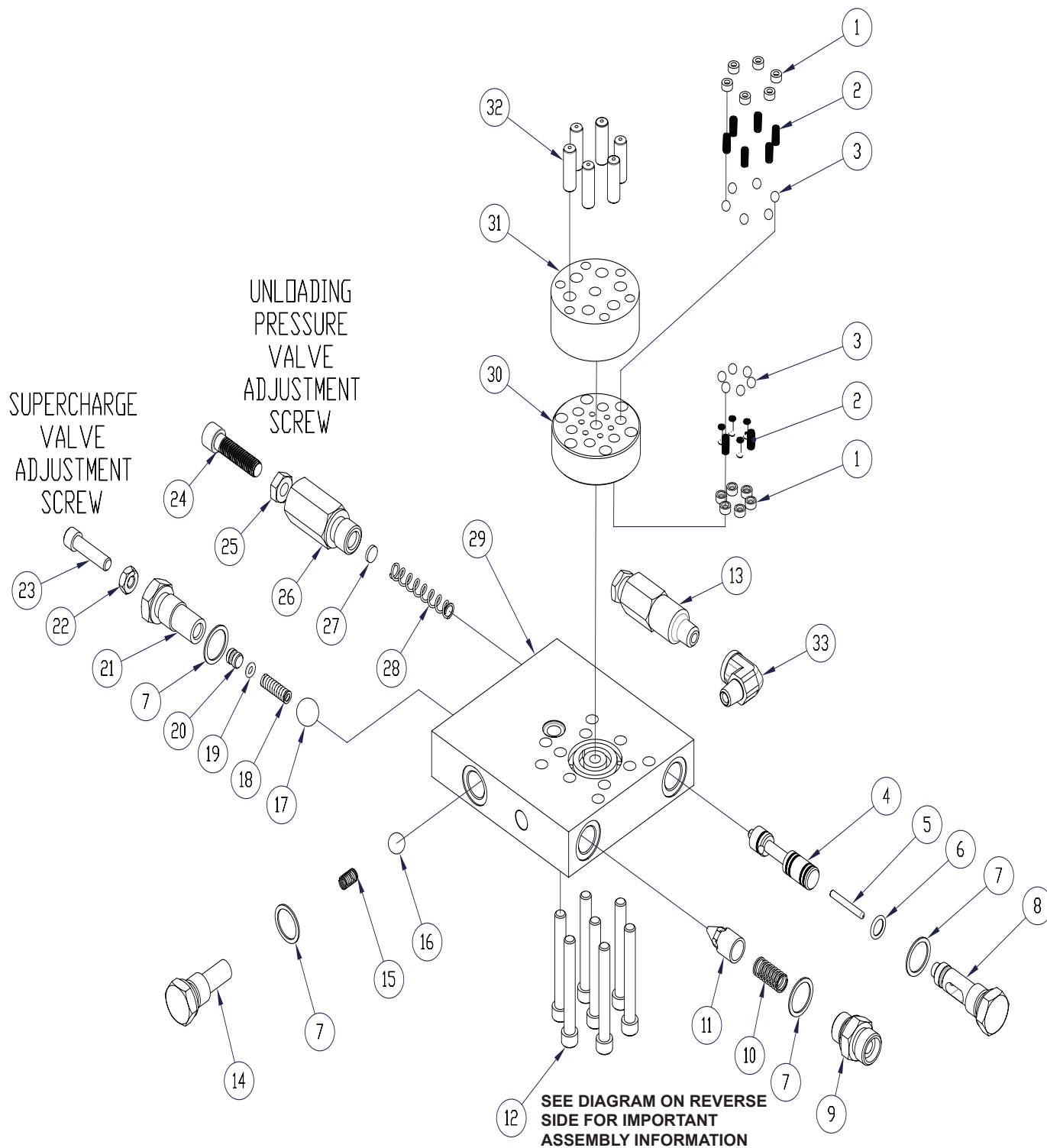
1. All bolts must be initially hand tightened in sequence shown (do not exceed 10 in. lbs.)

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



**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.**

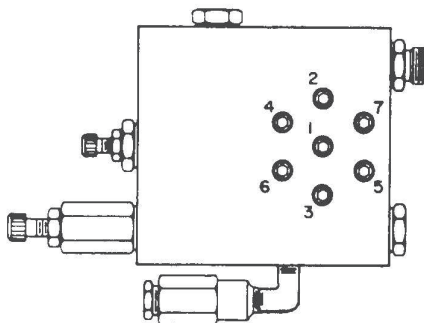
**Parts List continued**

|                                                                   | PART NO. | DESCRIPTION                                                        | QTY. |
|-------------------------------------------------------------------|----------|--------------------------------------------------------------------|------|
| 1                                                                 | *24549   | GUIDE, BALL                                                        | 12   |
| 2                                                                 | *10445   | SPRING COM OD.166IDX.XXXR.580L.751MW                               | 12   |
| 3                                                                 | *12223   | BALL, 3/16" DIA STEEL                                              | 12   |
| 4                                                                 | 200273   | SPOOL                                                              | 1    |
| 5                                                                 | 16471    | PIN, DOWEL .125 X 1.00                                             | 1    |
| 6                                                                 | 14763    | O-RING (-011) 0.301ID X 0.070 URETHAN 92                           | 1    |
| 7                                                                 | 10261    | WASHER, PLAIN 0.60 X 0.75 X 0.03 COPR                              | 4    |
| 8                                                                 | 202561   | ADAPTER, ACTUATING PIN (TORQUE TO 30/35 FT. LBS.)                  | 1    |
| 9                                                                 | 20770    | FITTING, STR 9/16-18 M ORB X5/8-18 M ORB (TORQUE TO 30/35 FT. LBS) | 1    |
| 10                                                                | 10425    | SPRING COM ODX.XXXIDX.XXXR7.6L.780MW                               | 1    |
| 11                                                                | 20771    | POPPET                                                             | 1    |
| 12                                                                | *15318   | SCREW, SHC 1/4-28 X 2.00                                           | 7    |
| 13                                                                | 21278    | VALVE, RELIEF 10000 PSI (SET AT 10,000/10,7000 PSI)                | 1    |
| 14                                                                | 200269   | PLUG, ADAPTER: 9/16-18 UNF (TORQUE TO 30/35 FT. LBS)               | 1    |
| 15                                                                | 11451    | SPRING COM OD.245IDX.XXXR3.7L.650MW                                | 1    |
| 16                                                                | 10378    | BALL, 3/8" DIA STEEL                                               | 1    |
| 17                                                                | 10379    | BALL, 1/2" DIA STEEL                                               | 1    |
| 18                                                                | 15319    | SPRING COM OD.250IDX.XXXR102L.770MW                                | 1    |
| 19                                                                | 12099    | O-RING (-007) 0.145ID X 0.070 NITRILE 70                           | 1    |
| 20                                                                | 200271   | ADAPTER                                                            | 1    |
| 21                                                                | 200270   | FITTING, STR 9/16-18 M X 1/4-20 F                                  | 1    |
| 22                                                                | 10383    | NUT, HEX JAM 1/4-20                                                | 1    |
| 23                                                                | 10016    | SCREW, SHC 1/4-20 X 1.00                                           | 1    |
| 24                                                                | 10809    | SCREW, SHC 5/16-18 X 1.25                                          | 1    |
| 25                                                                | 10385    | NUT, HEX JAM 5/16-18                                               | 1    |
| 26                                                                | 36545    | FITTING, STR 5/16-18 F X 9/16-18 ORB                               | 1    |
| 27                                                                | 16528    | DISC, 0.315 DIA                                                    | 1    |
| 28                                                                | 203031   | SPRING COM OD3.10IDX.XXXR15.6L1.790MW                              | 1    |
| 29                                                                | *50691   | BODY, VALVE                                                        | 1    |
| 30                                                                | *41048   | HEAD, VALVE (6 PISTON)                                             | 1    |
| 31                                                                | *41063   | BARREL, PUMP                                                       | 1    |
| 32                                                                | *21628   | PISTON - 9/32 OD                                                   | 6    |
| 33                                                                | 13229    | FITTING, 90D ELB 1/8 NPTF M X 1/8 NPTF F                           | 1    |
| CONSULT FACTORY WHEN REPLACING ITEMS MARKED WITH AN ASTERISK (*). |          |                                                                    |      |

## Parts List continued

| PARTS INCLUDED BUT NOT SHOWN |        |                                       |          |
|------------------------------|--------|---------------------------------------|----------|
|                              | 305912 | SCREW, ADJUST 9/16-18 X 5/8 LG        | 1        |
|                              | 305913 | GUIDE, BALL                           | 1        |
|                              | 10428  | SPRING COM OD .489IDX.XXXR1280L.738CS | 1        |
|                              | 46006  | BODY, RELIEF VALVE                    | 1        |
|                              | 86082  | .688 HEX 4140/4142 CF ANN             | 0.259 FT |

## BOLT TIGHTENING SEQUENCE



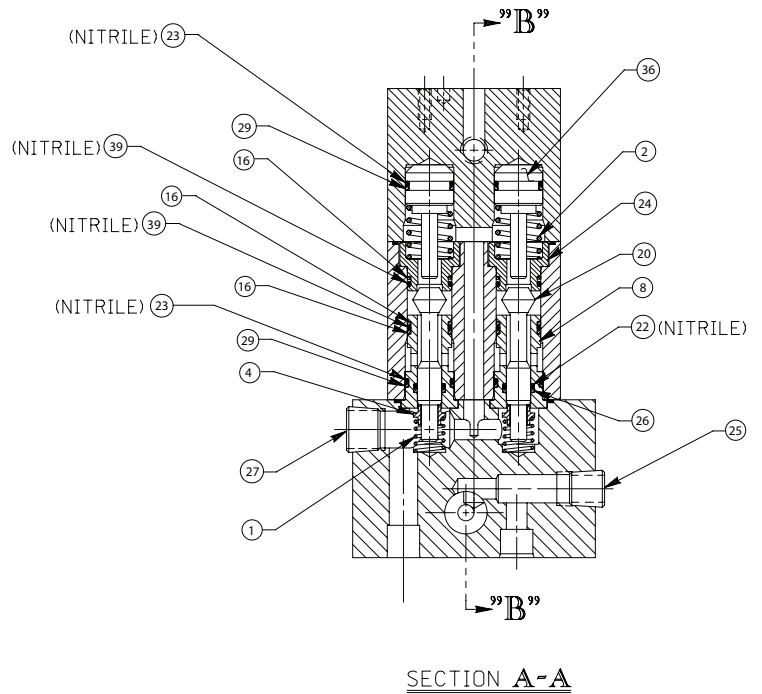
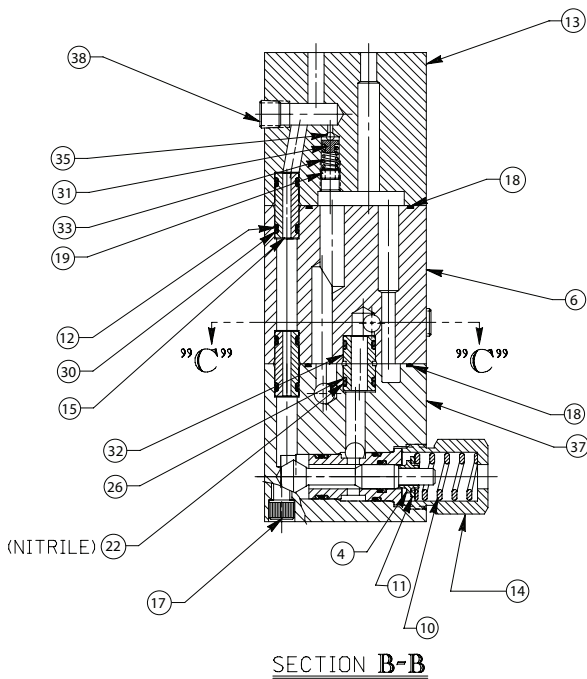
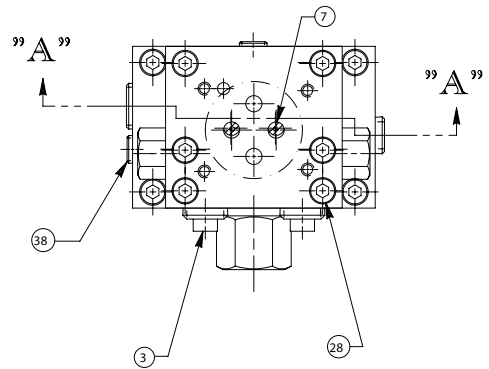
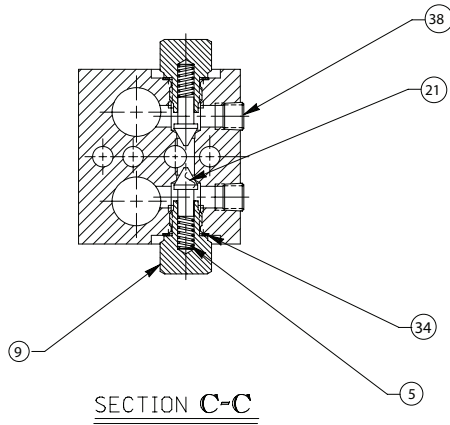
**NOTE: Assemble in sequence shown.  
Lubricate under head and on threads.  
Torque to 180 in. lbs.**

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.

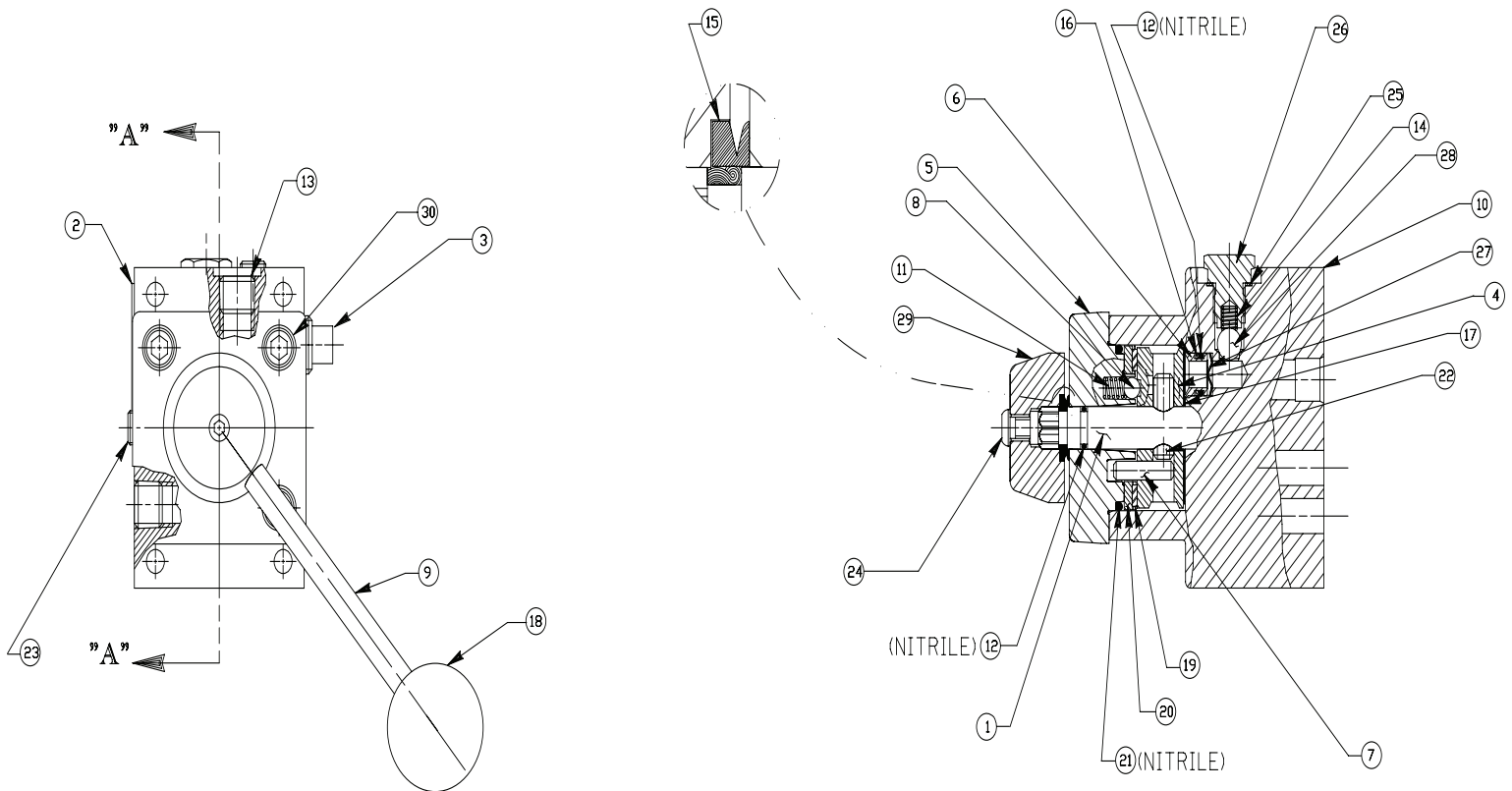
# **65008** (VALVE, SOLENOID 4 WAY)



**Parts List continued**

|    | <b>PART NO.</b> | <b>DESCRIPTION</b>                                    | <b>QTY.</b> |
|----|-----------------|-------------------------------------------------------|-------------|
| 1  | 11195           | SPRING COM OD.495 ID.401 R23 L.768 MW                 | 2           |
| 2  | 213880          | SPRING COM OD.725IDX.XXXR49.5L1.015MW                 | 2           |
| 3  | 11127           | FITTING, PLUG 3/8 NPTF W/SEALANT                      | 2           |
| 4  | 202479          | GUIDE, SPRING                                         | 3           |
| 5  | 15691           | SPRING COM OD.246IDX.XXXR57L.645MW                    | 2           |
| 6  | 64989           | BODY, VALVE STACK CENTER                              | 1           |
| 7  | 251675          | SCREW, ORIFICE 10-24 X 7/32                           | 2           |
| 8  | 22068           | BUSHING                                               | 3           |
| 9  | 307136          | SCREW, VALVE 1/2-20 X 1.06 (TORQUE TO 35/40 FT. LBS)  | 2           |
| 10 | 14979           | SPRING COM OD.750ID.375R312L1.000CV                   | 1           |
| 11 | 16668           | WASHER, SPECIAL 0.630 X0.390                          | 1           |
| 12 | 12184           | WASHER, BACKUP 0.375 x0.250 (-010)                    | 4           |
| 13 | 64981           | BODY, VALVE STACK TOP                                 | 1           |
| 14 | 202494          | RETAINER, SPRING (TORQUE TO 100/125 FT. LBS)          | 1           |
| 15 | 215261          | BUSHING                                               | 2           |
| 16 | 12391           | WASHER, BACKUP 0.690 X0.560 (-015)                    | 8           |
| 17 | 209945          | SCREW, SHC 5/16-18 X 2.50 (TORQUE TO 200/230 FT. LBS) | 4           |
| 18 | 251954          | O-RING (-035) 2.239ID X 0.070 NITRILE 70              | 2           |
| 19 | 16704           | SCREW, 5/16-24 X 5/32 HEX HALLOW                      | 1           |
| 20 | 200542          | POPPET, HALF                                          | 3           |
| 21 | 213096          | POPPET                                                | 2           |
| 22 | 10268           | O-RING (-012) 0.364ID x 0.070 NITRILE 70              | 5           |
| 23 | 10302           | O-RING (-016) 0.614ID x 0.070 NITRILE 70              | 5           |
| 24 | 307089          | SEAT, VALVE                                           | 2           |
| 25 | 10479           | FITTING, PLUG 1/4 NPTF                                | 1           |
| 26 | 11863           | WASHER, BACKUP 0.500 X0.375 (-012)                    | 5           |
| 27 | 10909           | FITTING, PLUG - 3/8 NPTF M FLUSH                      | 1           |
| 28 | 10856           | SCREW, SHC 1/4-20 X 2.50 (TORQUE TO 200/230 FT. LBS)  | 6           |
| 29 | 12392           | WASHER, BACKUP 0.750 X0.630 (-016)                    | 5           |
| 30 | 10266           | O-RING (-010) 0.239ID X 0.070 NITRILE 70              | 4           |
| 31 | 202499          | GUIDE, SPRING SAFETY                                  | 1           |
| 32 | 21094           | BUSHING                                               | 1           |
| 33 | 16665           | SPRING COM ODX.XXXID.165R180L.520MW                   | 1           |
| 34 | 14874           | WASHER, PLAIN 0.700 x0.500 x0.032 COPR                | 2           |
| 35 | 10418           | BALL, 1/8" DIA STEEL                                  | 1           |
| 36 | 307090          | PISTON, PILOT                                         | 2           |
| 37 | 64984           | BODY, VALVE STACK BOTTOM                              | 1           |
| 38 | 10427           | FITTING, PLUG - 1/8 NPTF x 5/16                       | 4           |
| 39 | 11284           | O-RING (-015) 0.551ID x 0.070 NITRILE 70              | 5           |

**58478**  
(VALVE, MANUAL 3 WAY PUMP MOUNT)

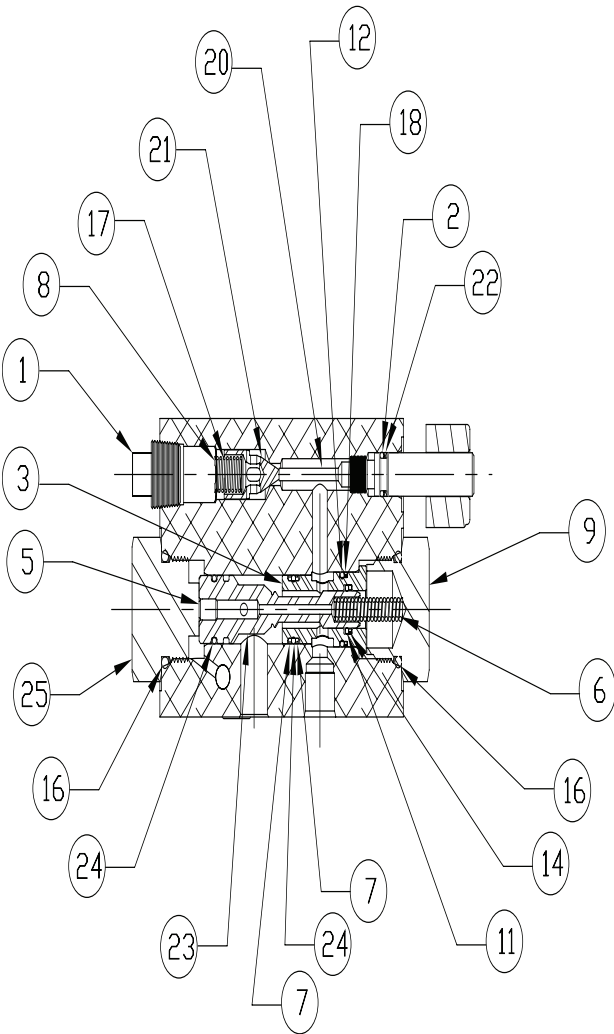
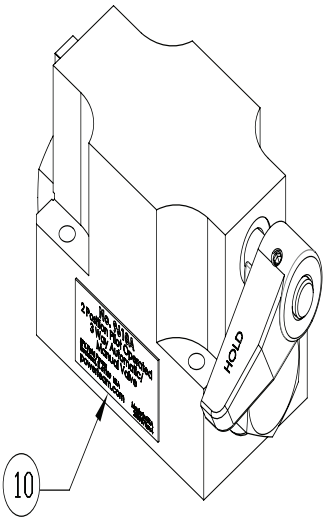
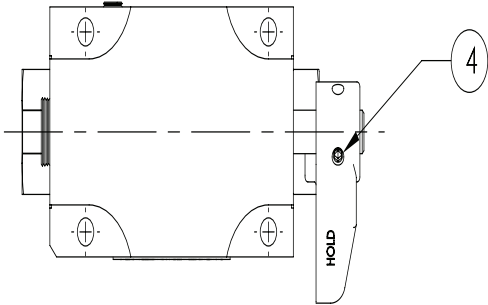


**SECTION A-A**

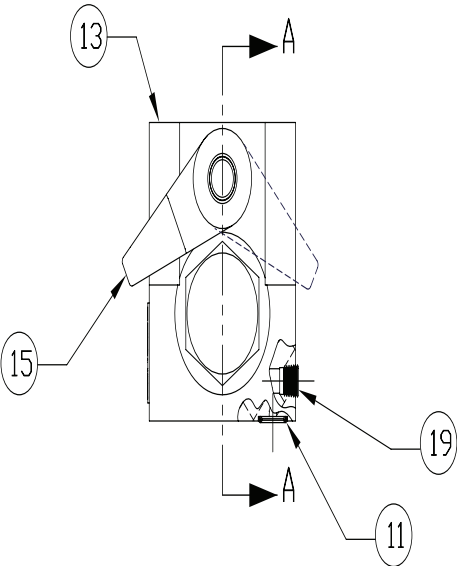
**Parts List continued**

|    | <b>PART NO.</b> | <b>DESCRIPTION</b>                                    | <b>QTY.</b> |
|----|-----------------|-------------------------------------------------------|-------------|
| 1  | 46048           | STEM                                                  | 1           |
| 2  | 209383          | DECAL, PATENT                                         | 1           |
| 3  | 11127           | FITTING, PLUG 3/8 NPTF W/SEALANT                      | 1           |
| 4  | 46086           | ROTOR OPEN CENTER POSI-CHECK                          | 1           |
| 5  | 61343           | CAP, VALVE                                            | 1           |
| 6  | 251563          | SEAL, SHEAR                                           | 4           |
| 7  | 250056          | PIN, SPRING SLOTTED .22 X .94                         | 1           |
| 8  | 10375           | BALL, 1/4" DIA STEEL                                  | 1           |
| 9  | 250042          | STUD, HANDLE                                          | 1           |
| 10 | 64572           | BODY, VALVE                                           | 1           |
| 11 | 15095           | SPRING COM OD.248IDX.XXXR80L.480MW                    | 1           |
| 12 | 10268           | O-RING (-012) 0.364ID x 0.070 NITRILE 70              | 5           |
| 13 | 14972           | FITTING, PLUG 1/4 PTF FLUSH                           | 2           |
| 14 | 10444           | SPRING COM ODX.XXXID.203R4.0L.406MW                   | 1           |
| 15 | 213674          | V RING, .79 X .55 X .22 L                             | 1           |
| 16 | 11863           | WASHER, BACKUP 0.500 x0.375 (-012)                    | 4           |
| 17 | 214801          | WASHER, SPACER 0.730 x0.510                           | 1           |
| 18 | 211911          | KNOB, BALL                                            | 1           |
| 19 | 11228           | BEARING, THRUST - 1.92 x 1.25 x .078                  | 1           |
| 20 | 11227-1         | WASHER, THRUST-BEARING                                | 1           |
| 21 | 15892           | O-RING (-924) 1.720ID x 0.118 NITRILE 90              | 1           |
| 22 | 10496           | PIN, SPRING SLOTTED .31 X 1.00                        | 1           |
| 23 | 15130           | FITTING, PLUG 1/16 PTF FLUSH                          | 2           |
| 24 | 15911           | SCREW, BUTTON 1/4-20 X 0.63 (TORQUE TO 60/80 FT. LBS) | 1           |
| 25 | 14874           | WASHER, PLAIN 0.700 x0.500 x0.032 COPR                | 1           |
| 26 | 305975          | SCREW, VALVE 1/2-20 X 0.88 (TORQUE TO 30/35 FT. LBS)  | 1           |
| 27 | 21975           | WASHER, SPRING 0.490 x0.350                           | 4           |
| 28 | 10378           | BALL, 3/8" DIA STEEL                                  | 1           |
| 29 | 46057           | STEM, END                                             | 1           |
| 30 | 11013           | SCREW, SHC 5/16-18 X 1.00 (TORQUE TO 300/320 FT. LBS) | 4           |

**420468**  
**(VALVE, AUTOMATIC/MANUAL (2 POSITION 3-WAY))**



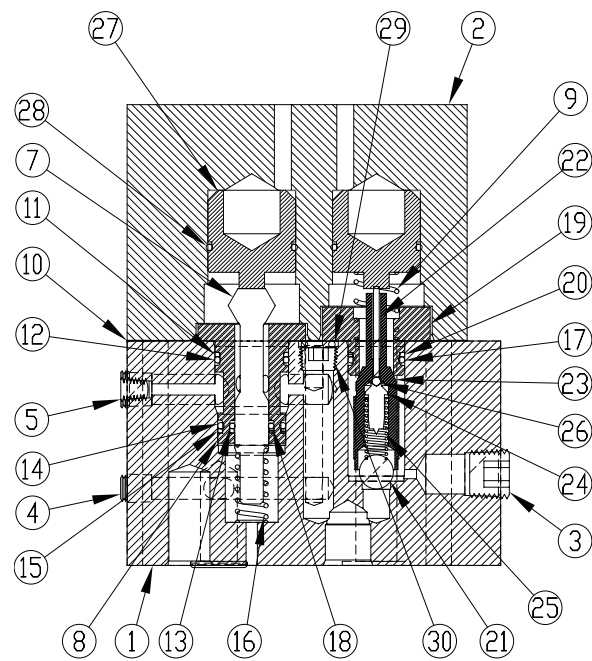
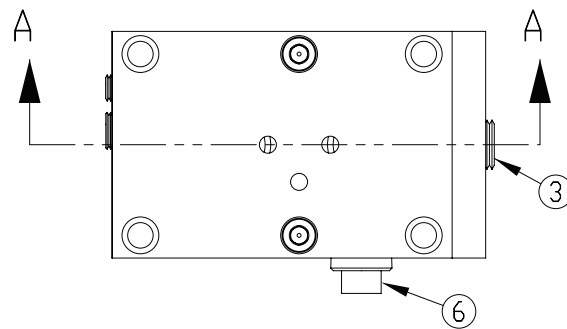
SECTION A-A



**Parts List continued**

|    | <b>PART NO.</b> | <b>DESCRIPTION</b>                                             | <b>QTY.</b> |
|----|-----------------|----------------------------------------------------------------|-------------|
| 1  | 11127           | FITTING, PLUG 3/8 NPTF W/SEALANT                               | 1           |
| 2  | 10267           | ORING(-011) 0.301 x 0.07 x 0.441IN NBR70                       | 1           |
| 3  | 22068           | BUSHING                                                        | 1           |
| 4  | 10556           | SCREW, SET 1/4-20 X 0.25 KNURLED CUP (TORQUE TO 50/60 FT. LBS) | 2           |
| 5  | 214990          | SCREW, RESTRICTOR 12-24 X 0.31                                 | 1           |
| 6  | 12347           | SPRING COM OD.245IDX.XXXR52L1.530MW                            | 1           |
| 7  | 12391           | WASHER, BACKUP 0.690 x0.560 (-015)                             | 2           |
| 8  | 11088           | RING, RETAIN INT 0.31 X .010                                   | 1           |
| 9  | 214946          | FITTING, PLUG 1-1/6-12 ORB                                     | 1           |
| 10 | 250987          | DECAL, TRADENAME POWER TEAM 9610A                              | 1           |
| 11 | 10268           | O-RING (-012) 0.364ID x 0.070 NITRILE 70                       | 2           |
| 12 | 10302           | O-RING (-016) 0.614ID x 0.070 NITRILE 70                       | 1           |
| 13 | 64294           | BODY, VALVE                                                    | 1           |
| 14 | 11863           | WASHER, BACKUP 0.500 x0.375 (-012)                             | 1           |
| 15 | 213109          | HANDLE, RELEASE VALVE                                          | 1           |
| 16 | 12745           | O-RING (-912) 0.924ID x 0.116 NITRILE 90                       | 2           |
| 17 | 10425           | SPRING COM ODX.XXXIDX.XXXR7.6L.780MW                           | 1           |
| 18 | 12392           | WASHER, BACKUP 0.750 x0.630 (-016)                             | 1           |
| 19 | 15130           | FITTING, PLUG 1/16 PTF FLUSH                                   | 1           |
| 20 | 350491          | SCREW, REL VLV 3/8-16 X 3.38                                   | 1           |
| 21 | 20771           | POPPET                                                         | 1           |
| 22 | 15085           | WASHER, BACKUP 0.438 x0.312 (-011)                             | 1           |
| 23 | 351909          | POPPET                                                         | 1           |
| 24 | 11284           | O-RING (-015) 0.551ID x 0.070 NITRILE 70                       | 2           |
| 25 | 350164          | FITTING, PLUG 1-1/6-12 ORB                                     | 1           |

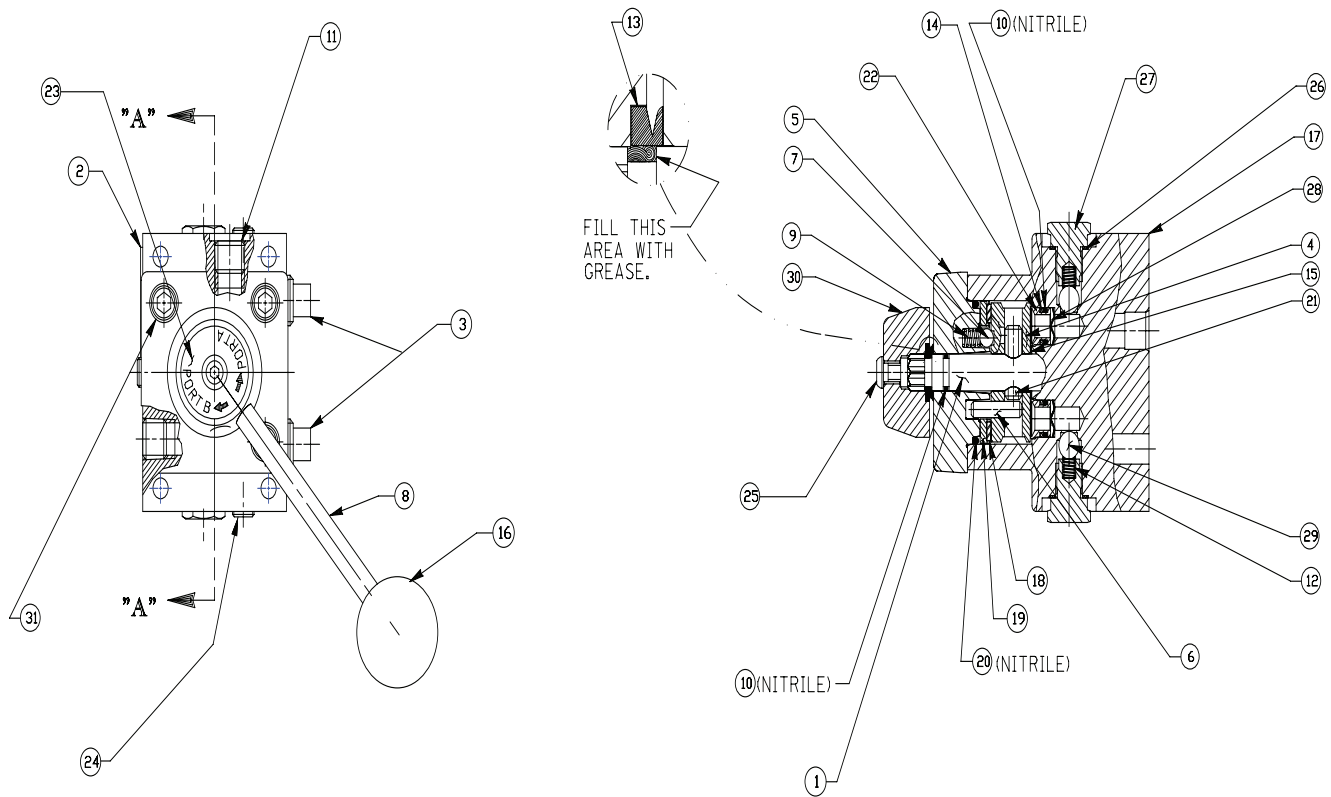
**41825**  
**(VALVE, BASIC DIRECTIONAL 3 WAY)**



**Parts List continued**

|                                     | PART NO. | DESCRIPTION                                                         | QTY. |
|-------------------------------------|----------|---------------------------------------------------------------------|------|
| 1                                   | 50724    | BODY, VALVE                                                         | 1    |
| 2                                   | 50733    | BODY, VALVE TOP CAP                                                 | 1    |
| 3                                   | 10479    | FITTING, PLUG 1/4 NPTF                                              | 1    |
| 4                                   | 11084    | FITTING, PLUG - 1/16 NPTF x 5/16                                    | 1    |
| 5                                   | 10427    | FITTING, PLUG - 1/8 NPTF x 5/16                                     | 1    |
| 6                                   | 13273    | FITTING, PLUG 3/8 NPT PLASTIC                                       | 1    |
| 7                                   | 200542   | POPPET, HALF                                                        | 1    |
| 8                                   | 35435    | BUSHING                                                             | 1    |
| 9                                   | 11195    | SPRING COM OD.495 ID.401 R23 L.768 MW                               | 1    |
| 10                                  | 35544    | GASKET, VALVE                                                       | 1    |
| 11                                  | 16202    | WASHER, BACKUP 0.810 x0.690 (-017)                                  | 1    |
| 12                                  | 12549    | O-RING (-017) 0.676ID x 0.070 NITRILE 90                            | 1    |
| 13                                  | 10268    | O-RING (-012) 0.364ID x 0.070 NITRILE 70                            | 1    |
| 14                                  | 10302    | O-RING (-016) 0.614ID x 0.070 NITRILE 70                            | 2    |
| 15                                  | 12392    | WASHER, BACKUP 0.750 x0.630 (-016)                                  | 1    |
| 16                                  | 14484    | SPRING COM OD.370IDX.XXXR31L1.030MW                                 | 1    |
| 17                                  | 10301    | O-RING (-014) 0.489ID x 0.070 NITRILE 70                            | 2    |
| 18                                  | 11863    | WASHER, BACKUP 0.500 x0.375 (-012)                                  | 1    |
| 19                                  | 200607   | SEAT, CHECK                                                         | 1    |
| 20                                  | 12390    | WASHER, BACKUP 0.625 x0.500 (-014)                                  | 1    |
| 21                                  | 10378    | BALL, 3/8" DIA STEEL                                                | 1    |
| 22                                  | 15606    | PIN, DOWEL .06 X 1.00                                               | 1    |
| 23                                  | 35432    | POPPET, CHECK                                                       | 1    |
| 24                                  | 200602   | STOP, BALL                                                          | 1    |
| 25                                  | 10361    | SPRING COM OD.253IDX.XXXR9.4L1.025MW                                | 1    |
| 26                                  | 14443    | BALL, 3/32" DIA STEEL                                               | 1    |
| 27                                  | 200597   | PISTON                                                              | 2    |
| 28                                  | 10304    | O-RING (-020) 0.864ID x 0.070 NITRILE 70                            | 2    |
| 29                                  | 10266    | O-RING (-010) 0.239ID x 0.070 NITRILE 70                            | 1    |
| 30                                  | 15499    | PLUG,HEX SOCKET - 1/8 PTF-7/8 (DRYSEAL)                             | 1    |
| 31                                  | 10856    | SCREW, SHC 1/4-20 X 2.50 TF-7/8 (DRYSEAL) (TORQUE TO 70/80 FT. LBS) | 2    |
|                                     |          |                                                                     |      |
| <b>PARTS INCLUDED BUT NOT SHOWN</b> |          |                                                                     |      |
|                                     | 203523   | DECAL, PATENT                                                       | 1    |

# **52516** (VALVE, MANUAL 4 WAY TANDEM CTR)



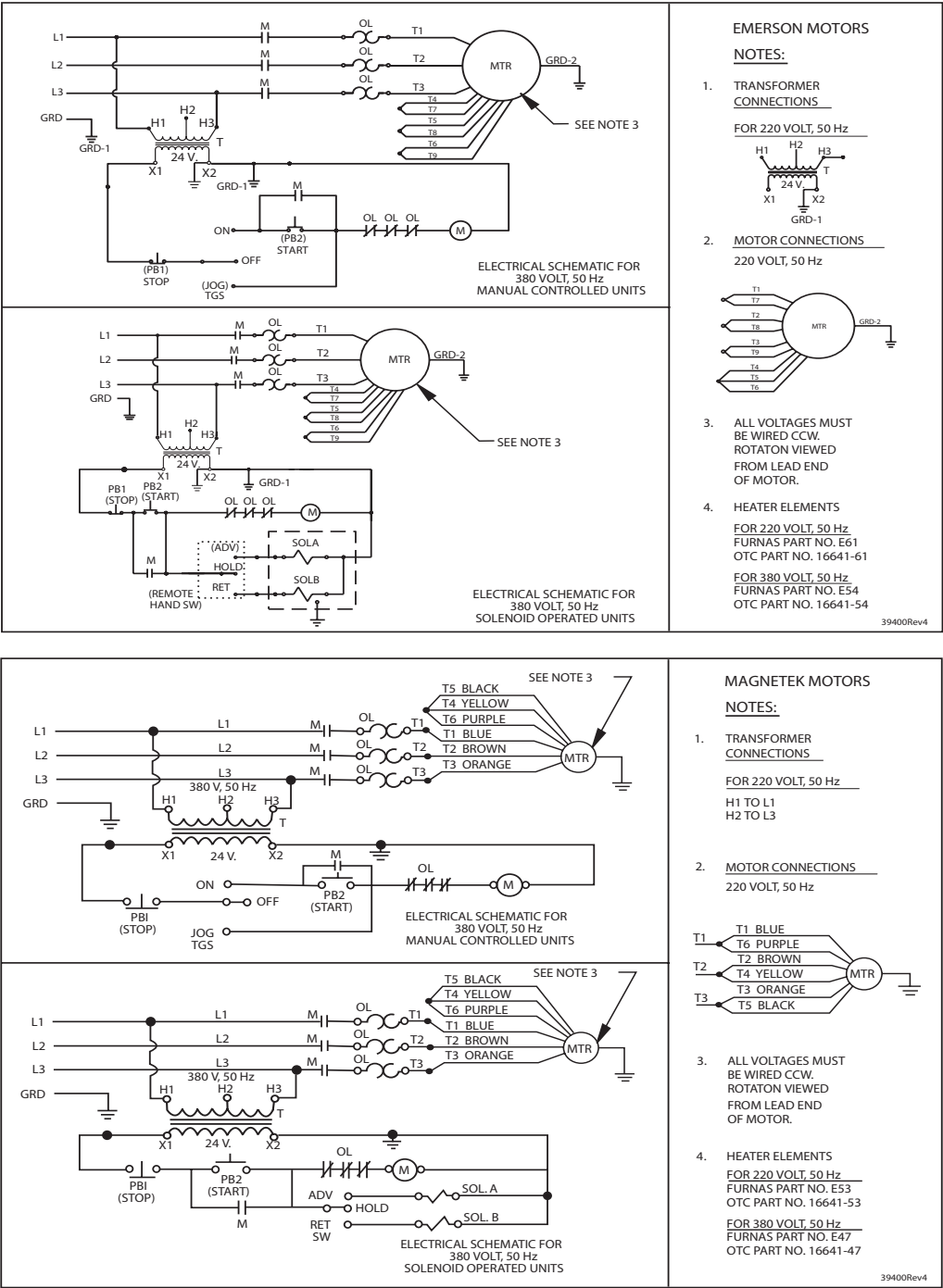
SECTION A-A

**Parts List continued**

|    | <b>PART NO.</b> | <b>DESCRIPTION</b>                                    | <b>QTY.</b> |
|----|-----------------|-------------------------------------------------------|-------------|
| 1  | 46048           | STEM                                                  | 1           |
| 2  | 209383          | DECAL, PATENT                                         | 1           |
| 3  | 11127           | FITTING, PLUG 3/8 NPTF W/SEALANT                      | 2           |
| 4  | 46086           | ROTOR OPEN CENTER POSI-CHECK                          | 1           |
| 5  | 61343           | CAP, VALVE                                            | 1           |
| 6  | 250056          | PIN, SPRING SLOTTED .22 X .94                         | 1           |
| 7  | 10375           | BALL, 1/4" DIA STEEL                                  | 1           |
| 8  | 250042          | STUD, HANDLE                                          | 1           |
| 9  | 15095           | SPRING COM OD.248IDX.XXXR80L.480MW                    | 1           |
| 10 | 10268           | O-RING (-012) 0.364ID x 0.070 NITRILE 70              | 6           |
| 11 | 14972           | FITTING, PLUG 1/4 PTF FLUSH                           | 2           |
| 12 | 10444           | SPRING COM ODX.XXXID.203R4.0L.406MW                   | 2           |
| 13 | 213674          | V RING, .79 X .55 X .22 L                             | 1           |
| 14 | 11863           | WASHER, BACKUP 0.500 x0.375 (-012)                    | 5           |
| 15 | 214801          | WASHER, SPACER 0.730 x0.510                           | 1           |
| 16 | 211911          | KNOB, BALL                                            | 1           |
| 17 | 61314           | BODY, VALVE                                           | 1           |
| 18 | 11228           | BEARING, THRUST - 1.92 x 1.25 x .078                  | 1           |
| 19 | 11227-1         | WASHER, THRUST-BEARING                                | 1           |
| 20 | 15892           | O-RING (-924) 1.720ID x 0.118 NITRILE 90              | 1           |
| 21 | 10496           | PIN, SPRING SLOTTED .31 X 1.00                        | 1           |
| 22 | 202480          | SEAL, SHEAR                                           | 5           |
| 23 | 211936          | DECAL, LABEL CONTROLS                                 | 1           |
| 24 | 15130           | FITTING, PLUG 1/16 PTF FLUSH                          | 3           |
| 25 | 15911           | SCREW, BUTTON 1/4-20 X 0.63 (TORQUE TO 60/80 FT. LBS) | 1           |
| 26 | 14874           | WASHER, PLAIN 0.700 x0.500 x0.032 COPR                | 2           |
| 27 | 305975          | SCREW, VALVE 1/2-20 X 0.88 (TORQUE TO 30/35 FT. LBS)  | 2           |
| 28 | 21975           | WASHER, SPRING 0.490 x0.350                           | 5           |
| 29 | 10378           | BALL, 3/8" DIA STEEL                                  | 2           |
| 30 | 46057           | STEM, END                                             | 1           |
| 31 | 11013           | SCREW, SHC 5/16-18 X 1.00 (TORQUE TO 300/320 FT. LBS) | 4           |

ELECTRIC SCHEMATICS FOR PUMPS

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



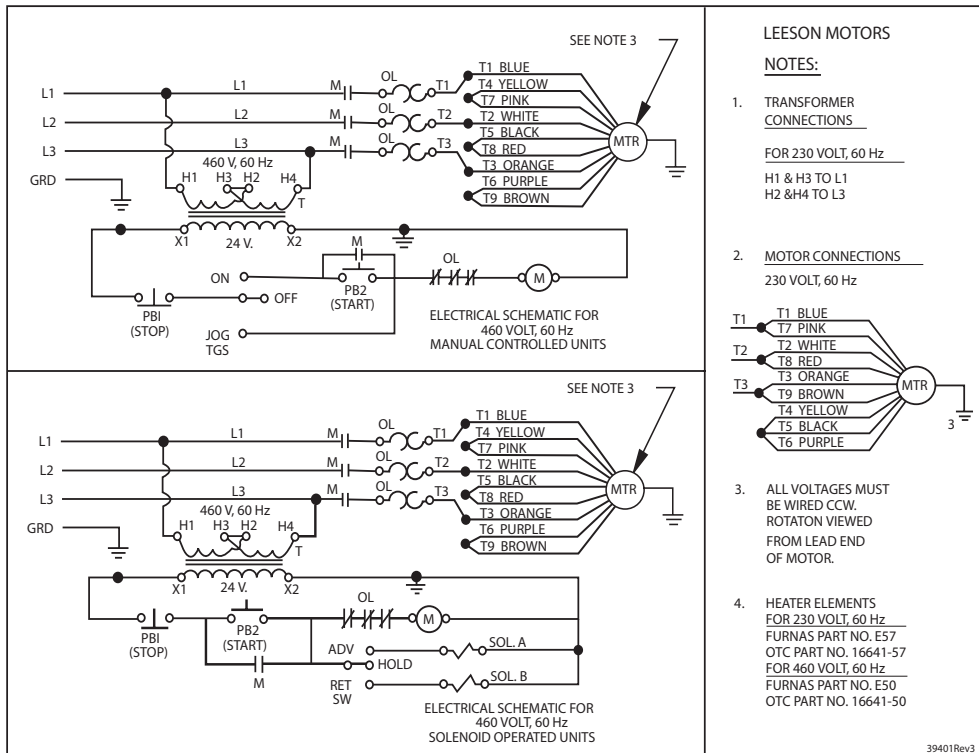
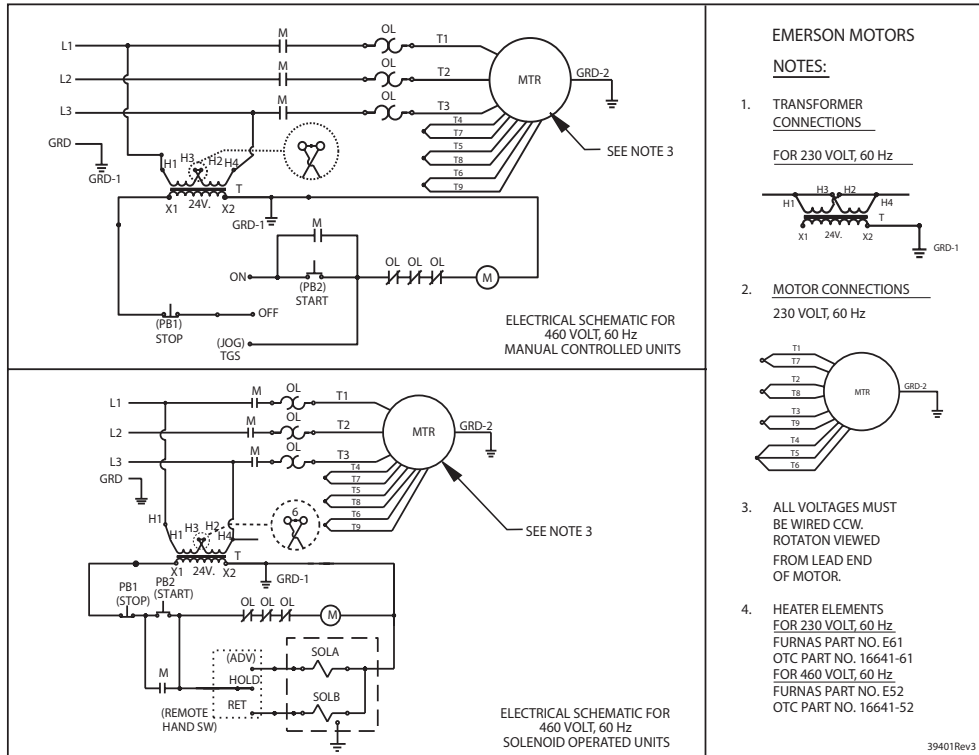
**⚠ WARNING:** To help prevent personal injury, all electrical work must be done by a qualified electrician

**NOTE:** For pumps built after January 2016, heater elements replaced by overload relay - 360022, 360135-5, 360013 and contactor - 422011.

North American & International Color Codes:

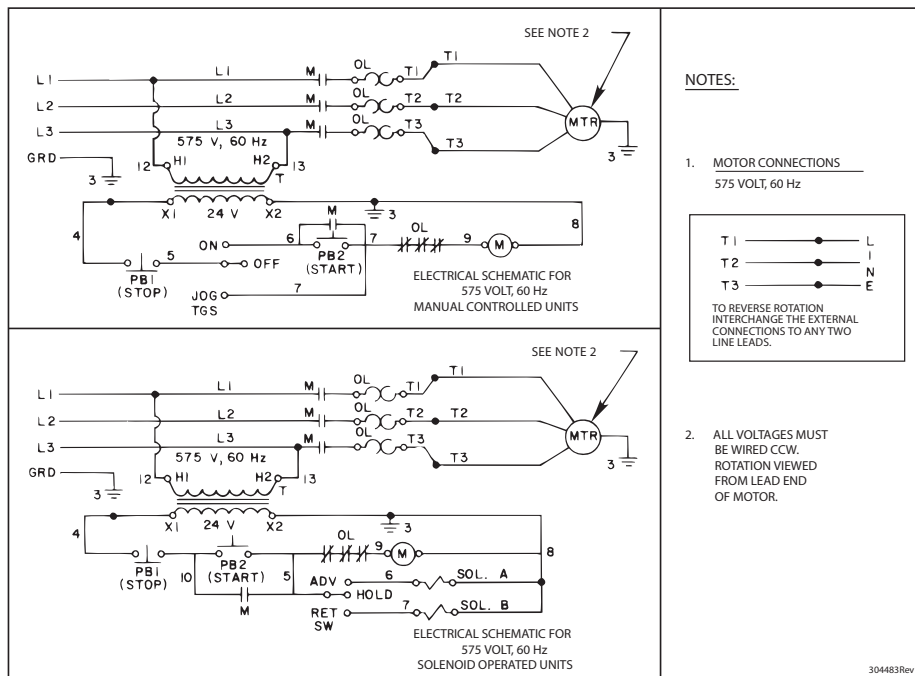
| Conductors   | North American | International |
|--------------|----------------|---------------|
| Line.....    | Black.....     | Brown         |
| Neutral..... | White.....     | Blue          |
| Ground.....  | Green.....     | Green/Yellow  |

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

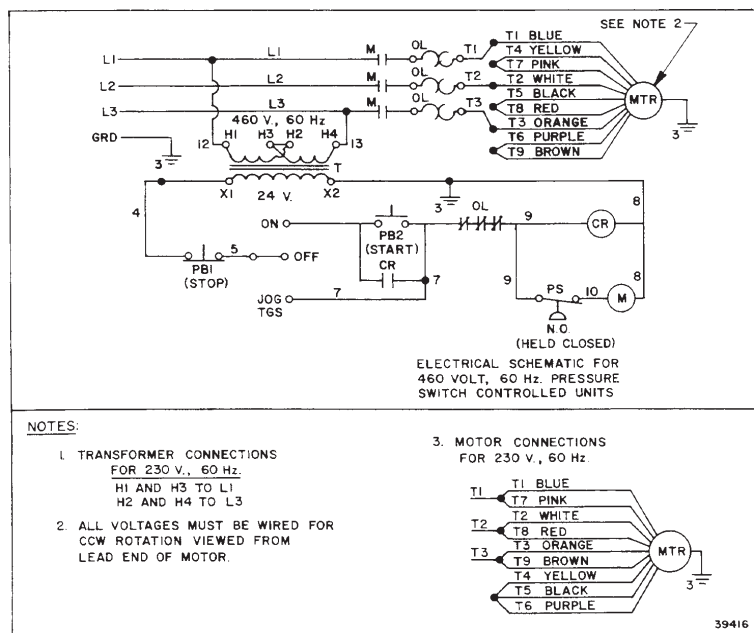


NOTE: To convert from 460 volt to 230 volt, order Voltage Conversion Kit No. 205584.  
**For pumps built after January 2016, heater elements replaced by overload relay - 360013 and contactor - 422011.**

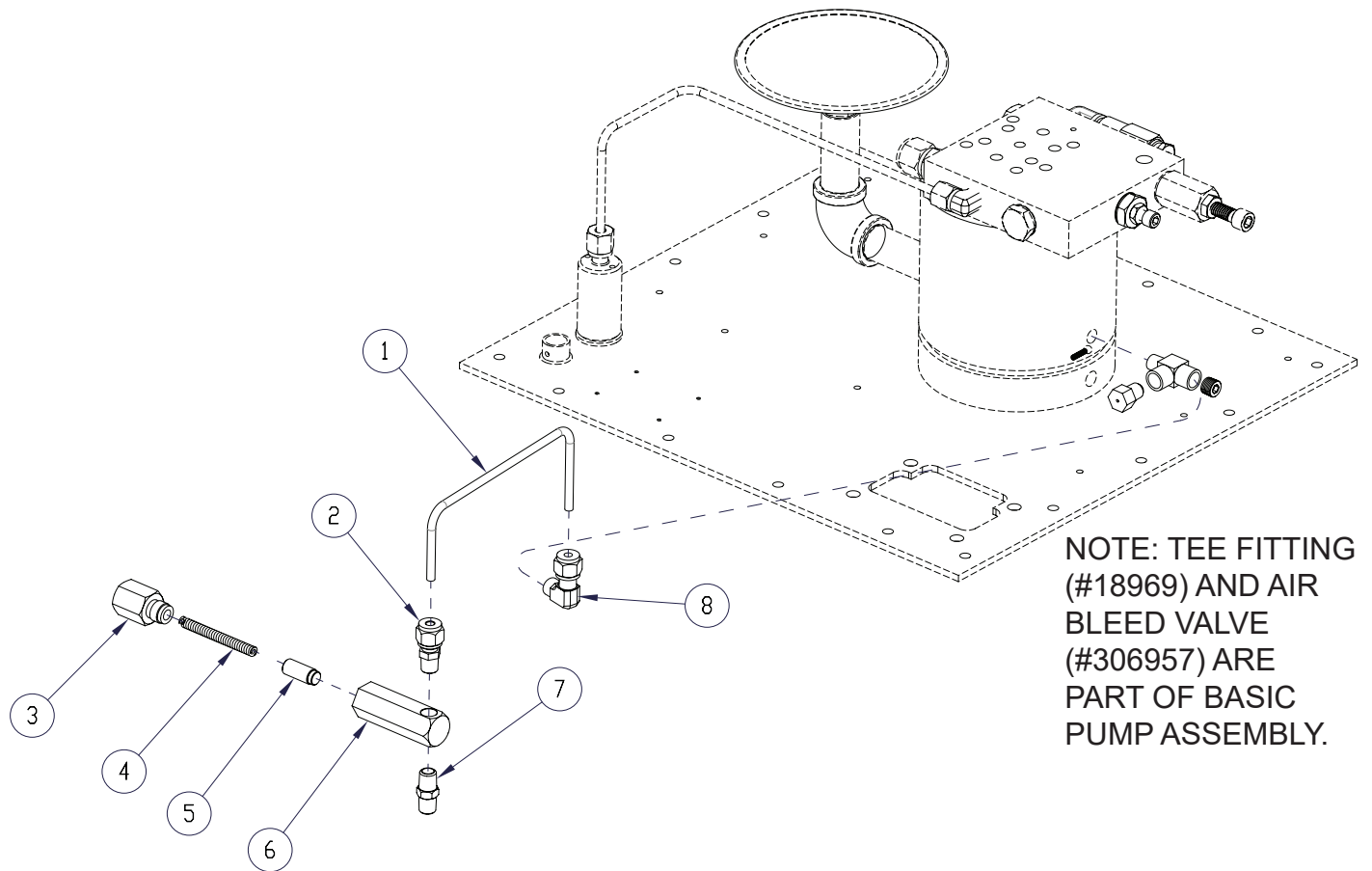
## ELECTRICAL SCHEMATICS FOR MANUAL AND SOLENOID OPERATED UNITS, 575 VOLT, 60 CYCLE



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



## OPTIONAL PILOT OIL LINE/ACCUMULATOR ASSEMBLY



| ITEM | PART NO. | DESCRIPTION                                | QTY. |
|------|----------|--------------------------------------------|------|
| 1    | 200405   | OIL LINE                                   | 1    |
| 2    | 11173    | CONNECTOR                                  | 1    |
| 3    | 202121   | SPRING RETAINER (TORQUE TO 50/70 IN. LBS.) | 1    |
| 4    | 16499    | COMPRESSION SPRING                         | 1    |
| 5    | 21945    | PLUNGER                                    | 1    |
| 6    | 21944    | CYLINDER BODY                              | 1    |
| 7    | 11421    | PIPE NIPPLE                                | 1    |
| 8    | 11278    | CONNECTOR                                  | 1    |
|      | 21943    | ACCUMULATOR (CONSISTS OF ITEMS 3,4,5, & 6) | 1    |