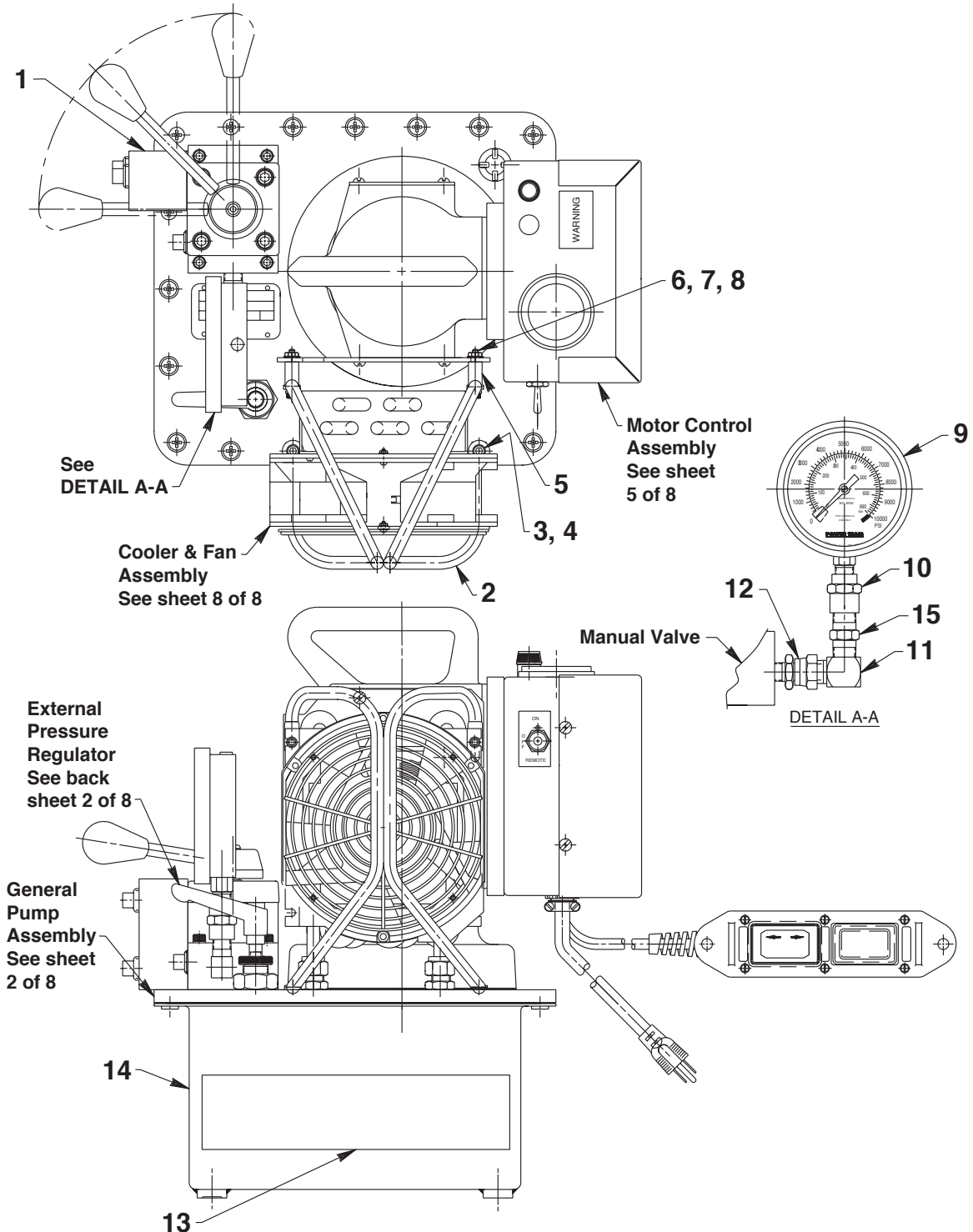
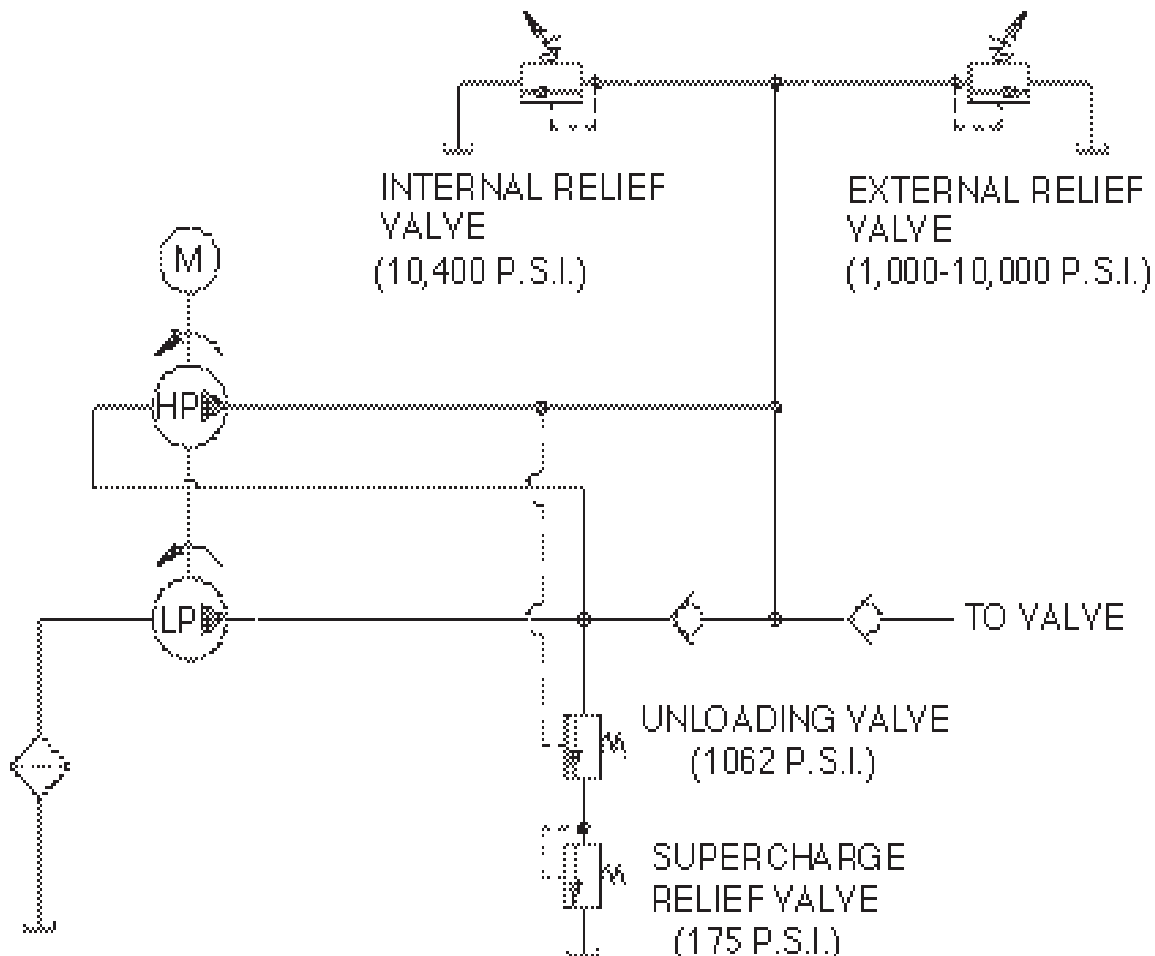


**MODEL D**  
**ELECTRIC TWO-STAGE HYDRAULIC PUMP**

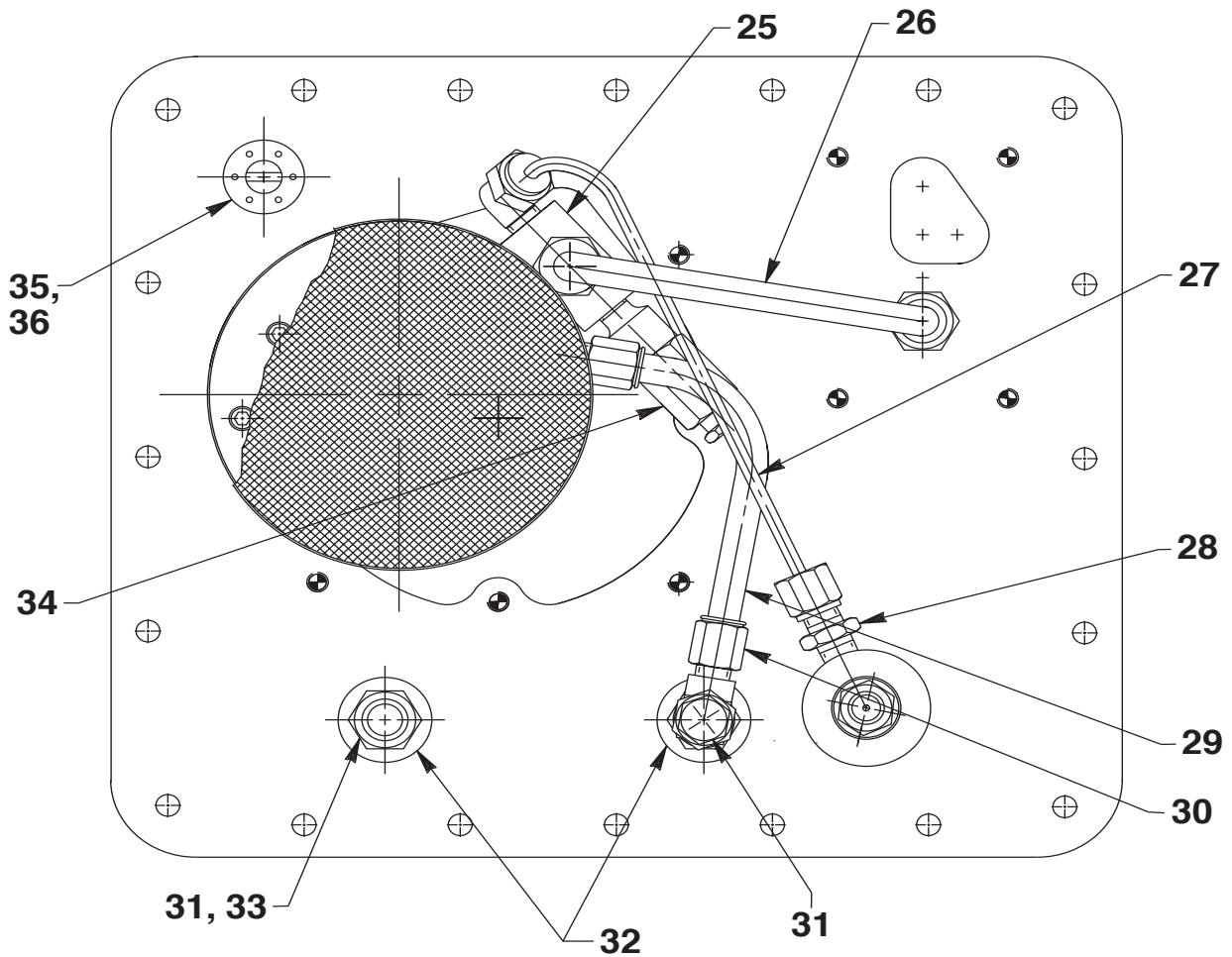
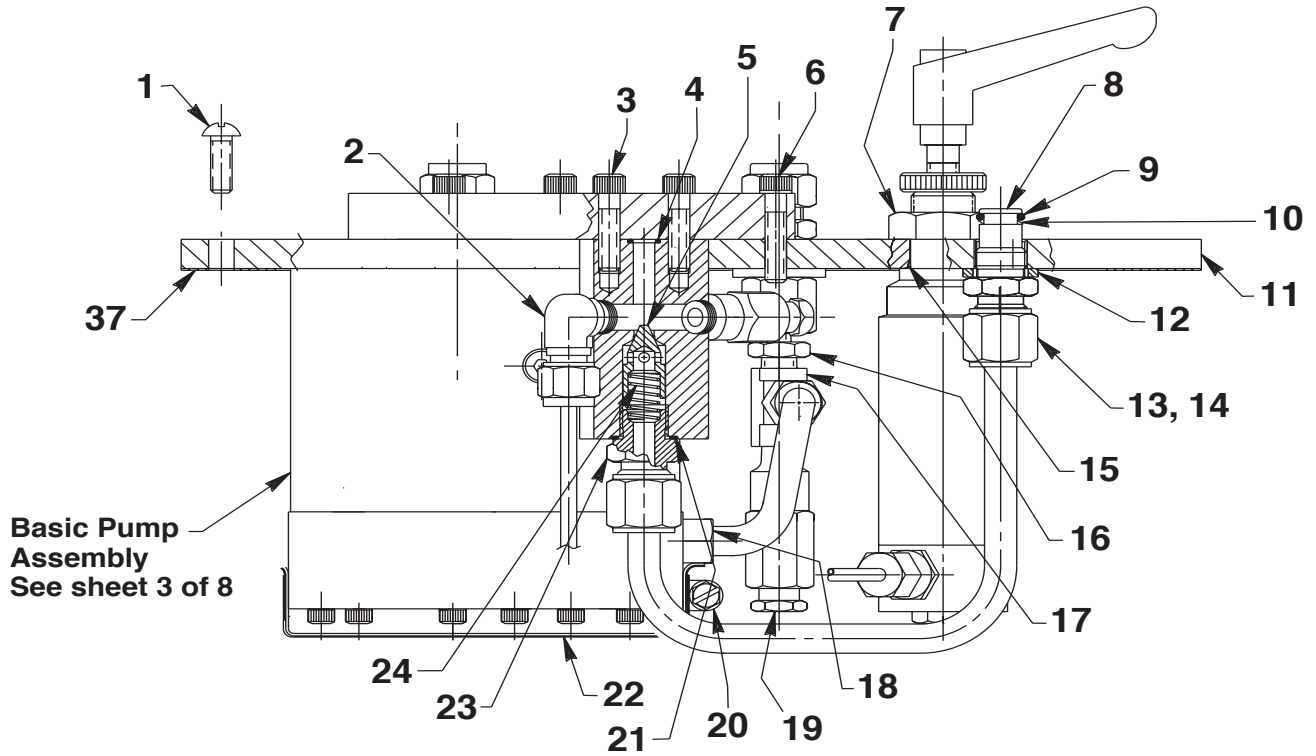


Item No.	Part No.	No. Req'd	Description
1	9500	1	Valve, Manual (4 Way Tandem Center; See Form No. 100623)
	59324	1	Valve, Manual (Tandem Center; See back sheet 6 of 8)
2	65888BK2	1	Roll Cage
3	10016	2	Soc. Hd. Screw (1/4-20 x 1)
4	12719	2	Plain Washer (.63 x .29)
5	253630	2	Spacer
6	250491	2	Soc. Hd. Screw (10-24 x 1-1/4)
7	11108	2	External Tooth Washer (.40 x .20)
8	10197	2	Hex Nut (10-24)
9	9052	1	Gauge (10,000 PSI 4" dia.)
10	13831	1	Fitting, Straight (1/4 NPTF)
11	10474	1	Fitting, Elbow 90° (3/8 NPTF)
12	10616	1	Fitting, Straight (1/4 NPTF)
13	309219	2	Decal, Trade Name (Power Team)
14	65795OR9	1	Steel Reservoir
15	10673	1	Straight Fitting (3/8 NPTF)

## HYDRAULIC SCHEMATIC



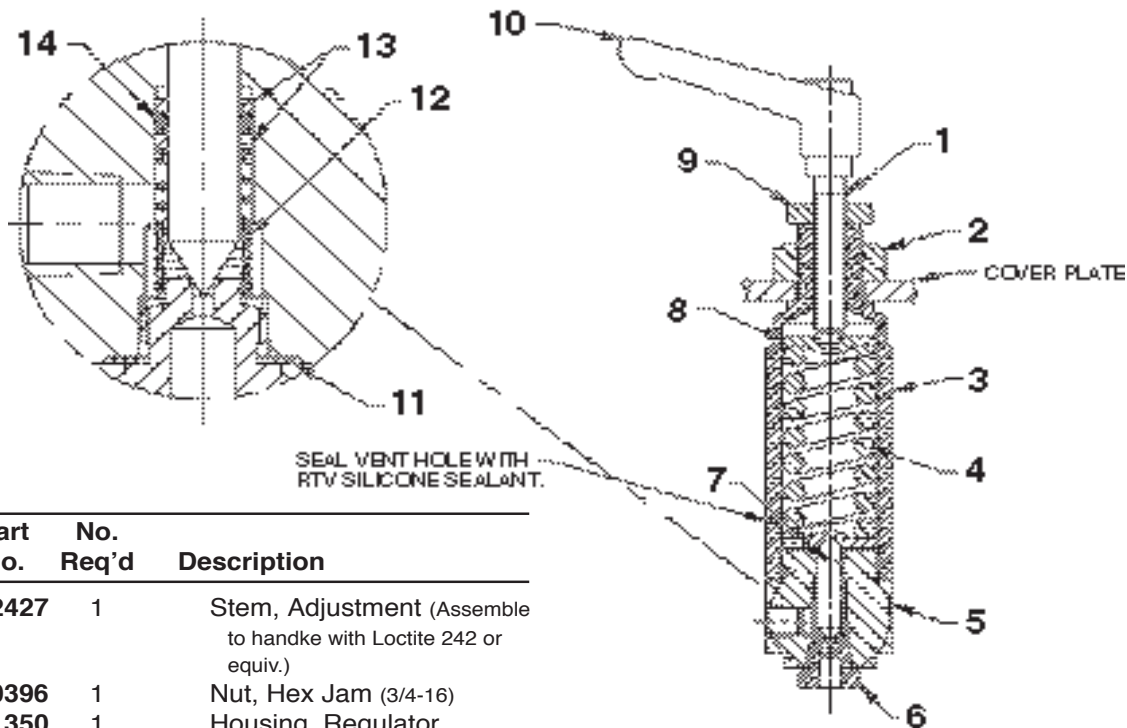
# GENERAL PUMP ASSEMBLY



Item No.	Part No.	No. Req'd	Description
1	10177	18	Mach. Screw
2	16177	1	Fitting, Elbow 90° (1/8 NPTF)
3	10015	2	Soc. Hd. Cap Screw (1/4-28 UNF X 1" Lg.; Torque to 155 in. lbs.)
4	10266	1	O-ring (3/8 X 1/4 X 1/16)
5	20771	1	Poppet
6	10016	3	Soc. Hd. Cap Screw (1/4-20 UNC X 1" Lg.)
7	421429	1	Pressure Regulator Ass'y (See below; Torque Locking Nut to 425 in. lbs.)
8	20787	1	Valve Connector
9	10268	1	O-ring (1/2 X 3/8 X 1/16)
10	11863	1	Teflon Backup Washer
11	66222WH2	1	Cover Plate
12	21484	1	Spacer
13	10430	2	Tube Sleeve
14	10431	2	Tube Nut
15	10527	1	O-ring (.81 x .64 Nitrile)
16	206324	1	Straight Fitting (1/4 NPTF)
17	19463	1	Tee Fitting (1/8 NPTF)

Item No.	Part No.	No. Req'd	Description
18	252986	2	Straight Fitting (1/8 NPTF)
19	48011-75	1	Relief Valve (Set at 50/75 PSI)
20	350995	1	Hose Clamp
21	10261	1	Copper Washer (3/4 X 19/32 X 1/32)
22	350304	1	Filter
23	20770	1	Connector (Torque to 45 ft. lbs. oiled)
24	10425	1	Compression Spring (3/8 O.D. X 3/4 Lg.)
25	20776	1	Valve Body
26	253629	1	Oil Line
27	253628	1	Pressure Regulator Tube
28	14844	1	Straight Fitting (1/8 NPTF)
29	252226	7"	Nylon Tubing
30	252986	2	Straight Fitting (1/8 NPTF)
31	252483	2	Straight Fitting (1/4 NPTF)
32	253143	2	Seal Washer
33	15426	1	Straight Fitting (1/4 NPTF)
34	21278	1	Relief Valve (Set at 10,100/10,700 PSI)
35	20937	1	Vent Cap
36	200415	1	O-ring (13/16 X 5/8 X 3/32)
37	59063	1	Gasket

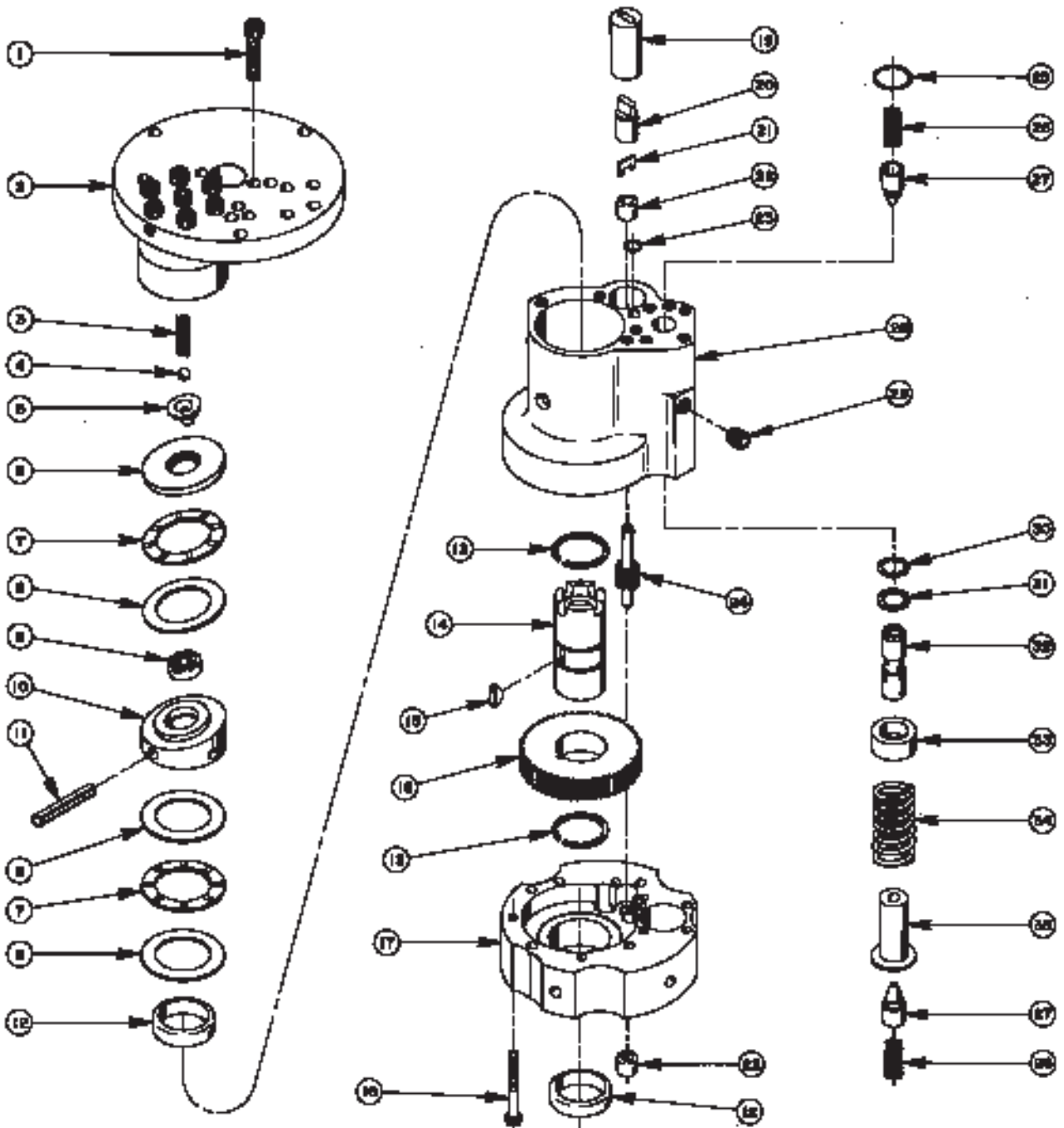
## PRESSURE REGULATOR ASSEMBLY



Item No.	Part No.	No. Req'd	Description
1	252427	1	Stem, Adjustment (Assemble to handle with Loctite 242 or equiv.)
2	10396	1	Nut, Hex Jam (3/4-16)
3	351350	1	Housing, Regulator
4	215429	1	Spring (1.1 OD x 2.5 x 0.25 ws)
5	420891	1	Body, Regulator
6	351343	1	Fitting, Seat (1/8" PTF x 1/2"; Torque to 440/460 in. lbs.)
7	309079	1	Poppet
8	215428	2	Spring, Retainer (Grease pocket [both ends] before assembling.)
9	215683	1	Nut, Reg. Locking (3/8-24)
10	252332	1	Handle, Adjustable

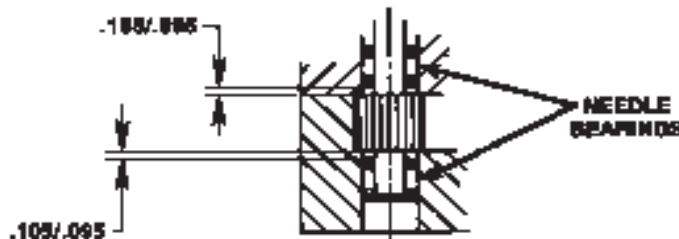
Item No.	Part No.	No. Req'd	Description
11	14874	1	Washer, Copper (.70 x .50)
12	215431	1	Spring (.39 OD x .66 x .28 ws; NOTE: Assemble closed coils of spring form towards seat fitting [Item #6])
13	215430	2	Washer, Backup (.39 x .28)
14	10266	1	O-ring (.37 x .25 Nitrile)

# BASIC PUMP ASSEMBLY



Item No.	Part No.	No. Req'd	Description
1	10020	9	Soc. Hd. Cap Screw (1/4-20 UNC X 1-1/4 Lg.; Torque to 170-180 in. lbs.)
2	351968	1	High Pressure Pump Ass'y (See sheet 4 of 8)
3	10361	1	Compression Spring (1/4 O.D. X 1" Lg.)
4	10375	1	Steel Ball (1/4" dia.)
5	23547	1	Bearing Top Plate
6	23548	1	Top Plate
7	11228	2	Thrust Bearing
8	11227	3	Bearing Race
9	11814	1	Ball Bearing
10	351004	1	Angle Plate
11	11955	1	Roll Pin (1/4" dia. X 1-3/4 Lg.)
12	11064	2	Needle Bearing
13	11261	2	Retaining Ring
14	23556	1	Shaft
15	11821	1	Woodruff Key
16	23574	1	Gear
17	65417	1	Pump End Plate
18	10001	13	Soc. Hd. Cap Screw (#10-32 UNF X 1-3/4" Lg.; Torque to 50 in. lbs.)
19	21091	1	Zinc Coupling
20	21092	1	Adapter
21	21093	1	Key
22	11198	2	Needle Thrust Bearing (See Note below)
23	10266	1	O-ring (3/8 X 1/4 X 1/16)
24	20774	1	Drive Gear
25	10303	1	O-ring (7/8 X 3/4 X 1/16)
26	10425	2	Compression Spring (3/8 O.D. X 3/4 Lg.)
27	20771	2	Poppet
28	66107	1	Pump Body
29	10427	1	Pipe Plug (1/8" NPTF)
30	10271	1	O-ring (11/16 X 1/2 X 3/32)
31	12389	1	Teflon Backup Washer (11/16 X 1/2 X 1/16)
32	20849	1	Spool
33	23255	1	Spring Guide
34	10426	1	Compression Spring (1" O.D. X 1-13/16 Lg.)
35	23256	1	Spring Guide

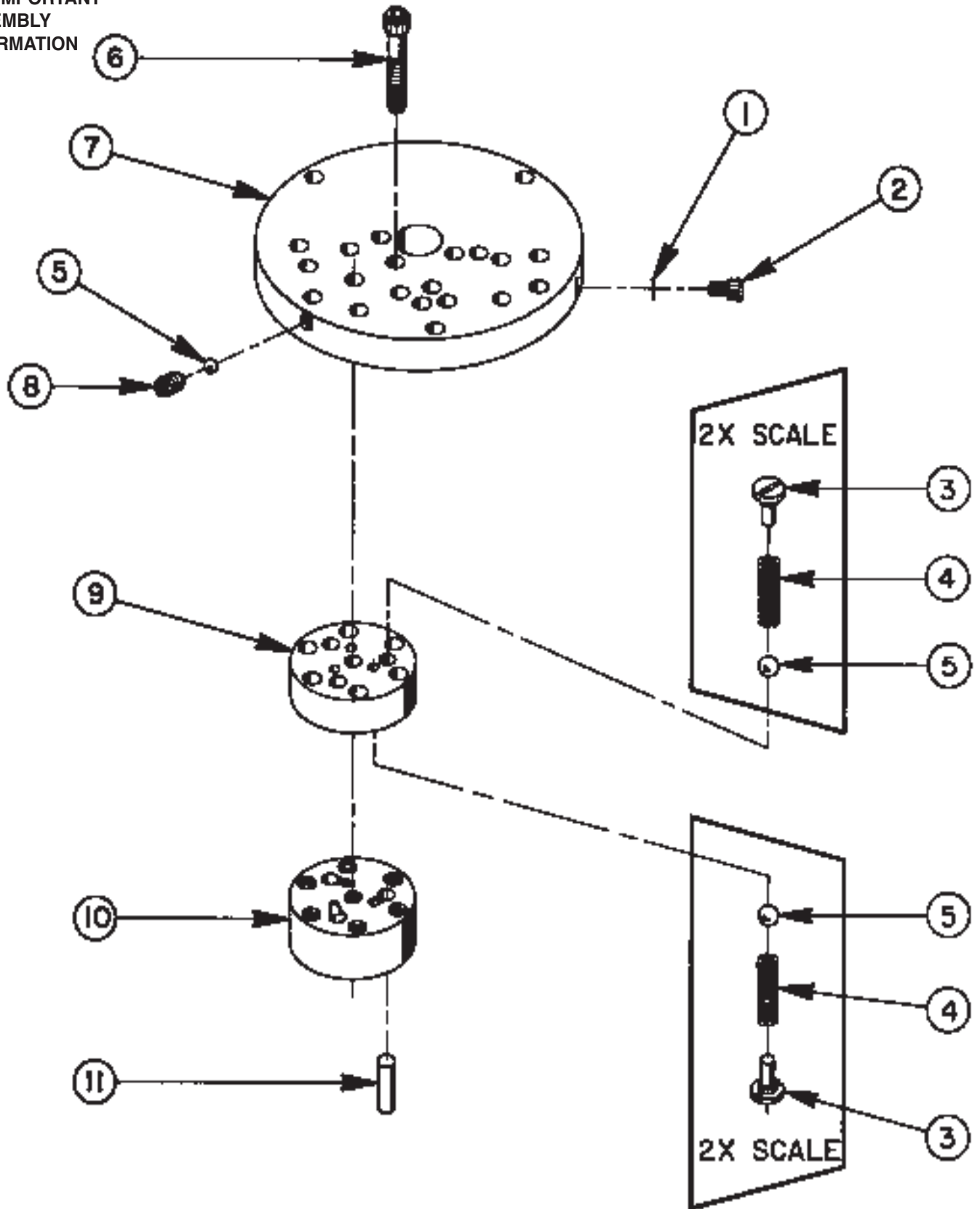
## NEEDLE BEARING INSTALLATION SPECIFICATIONS



When replacing the needle bearings on the drive gear of the basic pumps, the dimensions shown must be as specified.

# HIGH PRESSURE PUMP ASSEMBLY

SEE DIAGRAM ON  
REVERSE SIDE  
FOR IMPORTANT  
ASSEMBLY  
INFORMATION

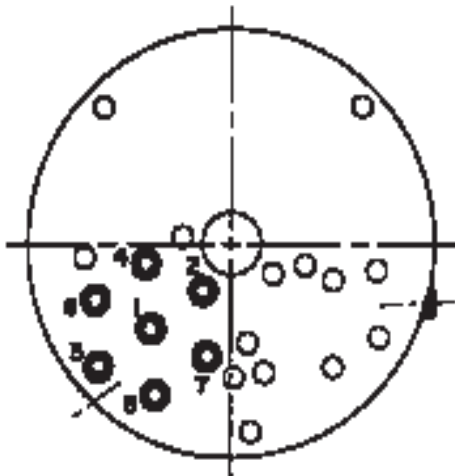


## #351968 PUMP ASS'Y

### 3 Pistons -- 9/32 Dia.

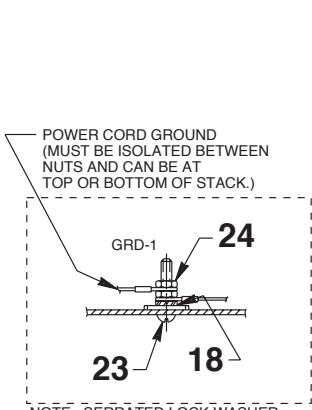
Item No.	Part No.	No. Req'd	Description
1	10442	1	Copper Washer (3/8 X 1/4 X 1/32)
2	10002	1	Soc. Hd. Cap Screw (1/4-20 UNC X 3/8" Lg.; Torque to 140/160 in. lbs.)
3	24549	6	Valve Guide
4	10445	6	Compression Spring (5/32" O.D. X 3/4" Lg.)
5	12223	7	Steel Ball
6	10023	7	Soc. Hd. Cap Screw (1/4-20 UNF X 1-1/2" Lg.; Torque to 170/180 in. lbs.; See note below)
7	66016	1	Top Plate
8	10519	1	Soc. Set Screw (1/4-20 UNC X 3/8 Lg.; Torque to 65/70 in. lbs.)
9	421473	1	Valve Head
10	41062	1	Pump Barrel
11	21628	3	Piston

## BOLT TIGHTENING SEQUENCE

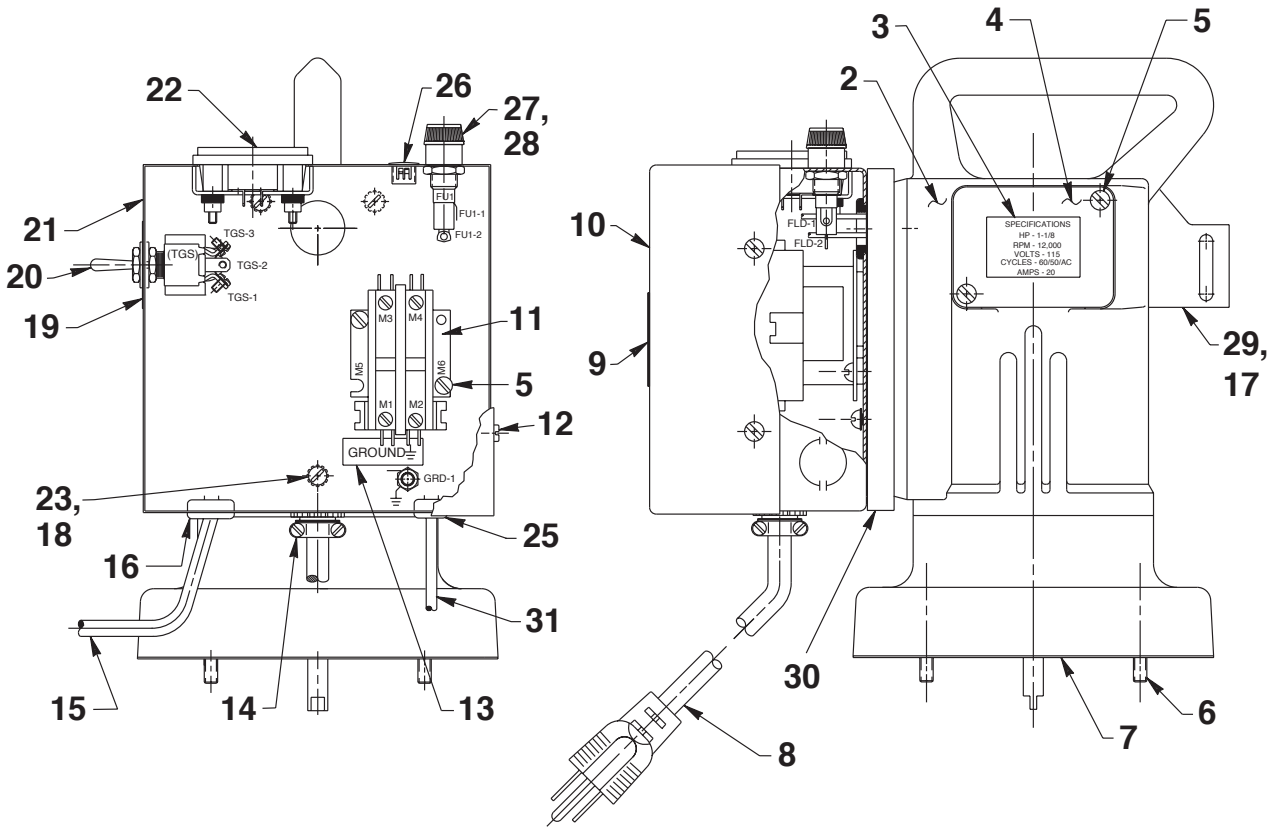
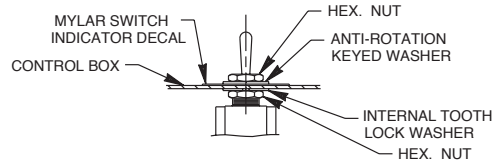
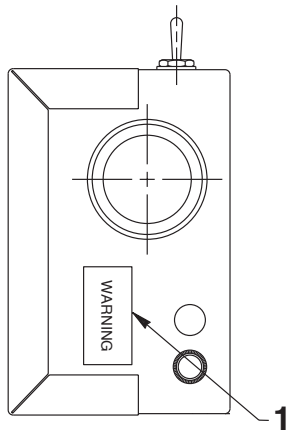


**NOTE: Assemble in sequence shown. Lubricate under head and on threads. Torque to 180 in. lbs.**

# MOTOR CONTROL ASSEMBLY



NOTE: SERRATED LOCK WASHER  
MUST BE ADJACENT TO  
METAL BOX. MORE WASHERS  
CAN BE USED IF DESIRED.

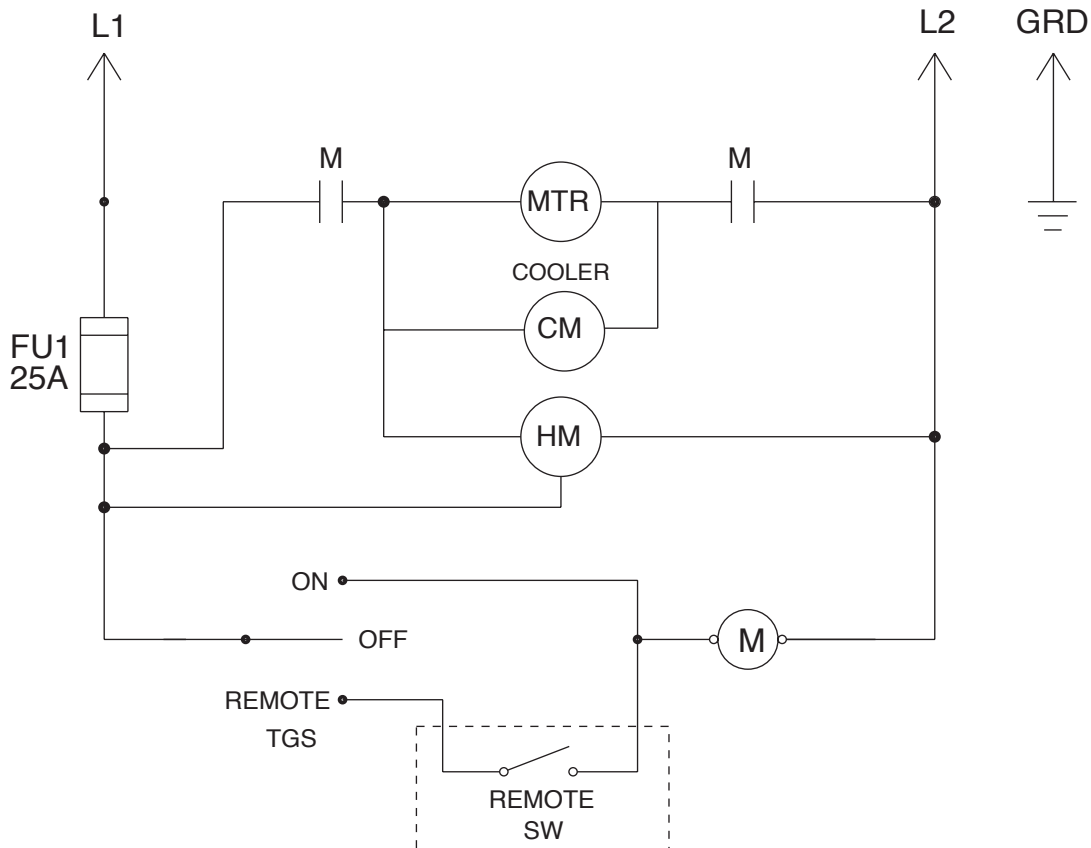


Item No.	Part No.	No. Req'd	Description
1	252305	1	Decal, Warning
2	53338	1	Motor, Basic (110/115V 50/60 Hz; See sheet 6 of 7)
3	215164	1	Decal, Specifications
4	21008	2	Cover
5	11539	4	Screw, Rnd Hd (10-24 x 1/4)
6	10022	4	Screw, Soc Hd (1/4-20 x 1-1/2)
7	30650	1	Gasket, Motor Base
8	351973	1	Cord (18" lg.; 115V.; 12/3 SJTO)
9	200188	1	Decal, Warning Important
10	43126WH2	1	Cover, Control Box
11	420718-1	1	Contactor
12	14812	4	Screw, Pan Hd (8-18 x 3/8)
13	205189	1	Decal, Label Ground
14	11203	1	Connector, Conduit
15	25017	1	Control, Hand (See Form No. 101644)

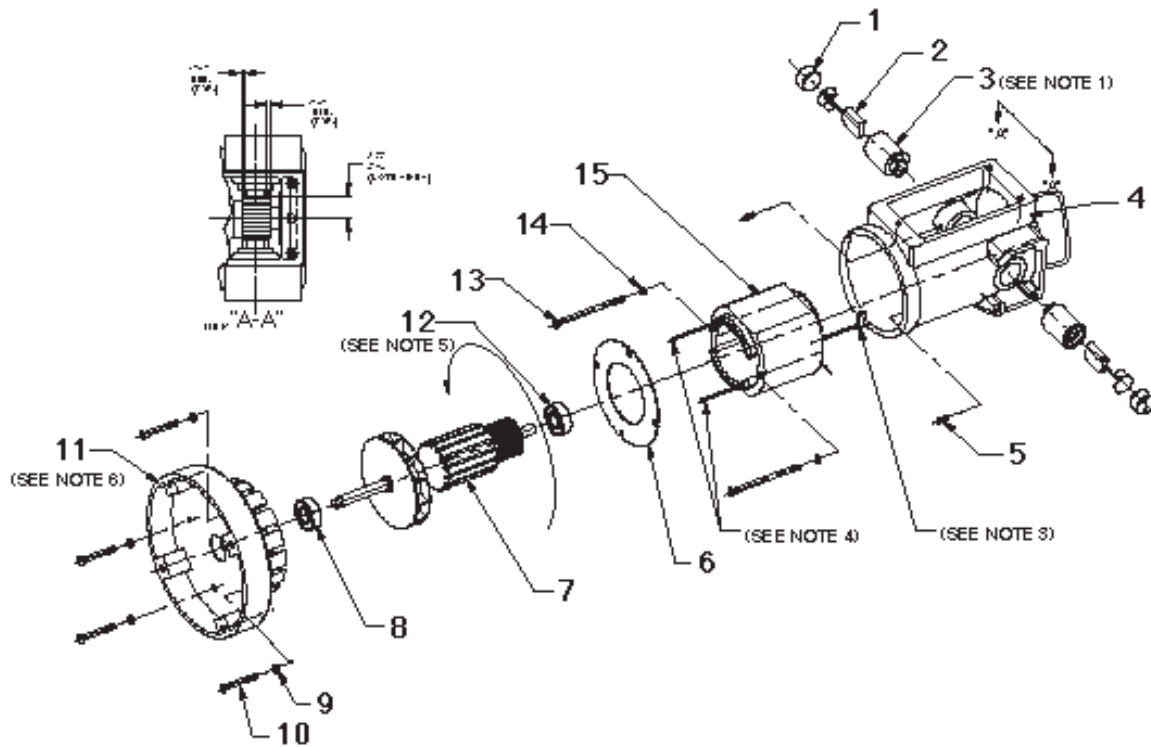
Item No.	Part No.	No. Req'd	Description
16	15993	1	Bushing, Strain Relief
17	10164	2	Screw, Rnd Hd (10-24 x 3/8)
18	11108	4	Washer, Tooth Ext (.40 x .20)
19	25802	1	Decal, Switch Indicator
20	12665	1	Switch, Toggle
21	66106WH2	1	Box, Electrical Control
22	253458	1	Meter, Hour
23	11856	4	Screw, Rnd Hd (10-24 x 1)
24	10197	2	Nut, Hex (10-24)
25	215857	1	Strain Relief Bushing
26	17782	1	Plug, Snap
27	18292	1	Holder, Fuse
28	252289	1	Fuse (25 AMP 125V)
29	352014WH2	1	Adapter Plate
30	352013WH2	1	Spacer
31	351419	1	Power Cord Set

## ELECTRICAL SCHEMATIC

115 V., 60 Hz.



## UNIVERSAL MOTOR



Item No.	Part No.	No. Req'd	Description
1	10806	2	Brush Holder Cap
2	10804	2	Brush
3	10805	2	Brush Holder
4	65479WH2	1	Motor Shell
5	10133	2	Screw (#10-24 UNC x 1/4 Lg.)
6	20786	1	Baffle Plate
7	10800	1	Armature (115 V.)
8	10439	1	Ball Bearing

Item No.	Part No.	No. Req'd	Description
9	10241	4	Lockwasher (For #10 bolt)
10	10169	4	Screw (#10-24 UNC x 2" Lg.; Torque to 20/25 in. lbs.)
11	351416WH2	1	Motor Base
12	10438	1	Ball Bearing
13	10170	2	Screw (#10-24 UNC x 3-1/4 Lg.)
14	12356	2	Washer (#10 Internal Tooth)
15	10802	1	Field (115 V.)

- Notes:**
1. Brush holders (Item #3) must be installed with slot and dimple facing the open end of the motor shell casting.
  2. Stator must be installed with part no. and date code up (must be visible through the rectangular opening in the motor shell casting).
  3. Insert flag terminals into adjacent brush holders.
  4. Line leads must be routed through the rectangular opening in the motor shell casting.
  5. Press bearings into armature and install as a unit into the motor shell casting.
  6. Casting number must be on top when the motor base casting is fastened to the motor shell casting.

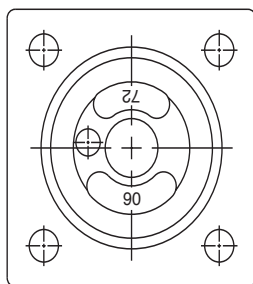


Item No.	Part No.	No. Req'd	Description
1	*211936	1	Decal, Label Control
2	10856	4	Screw, Soc Hd (1/4-20 x 1-3/4)
3	21639	1	Stud
4	211911	1	Knob, Ball
5	46057	1	Stem, End
6	15691	1	Spring (.24 OD x .63 x .04 ws)
7	10375	1	Ball (1/4" dia. steel)
8	61343	1	Cap, Valve
9	10496	1	Pin, Spring Slotted (.31 x 1.00)
10	252460	3	Seal
11	*11863	5	Washer, Backup (.50 x .38)
12	*10268	5	O-ring (.50 x .37 Nitrile)
13	14972	1	Fitting, Plug (1/4 PTF)
14	65531	1	Body, Valve
15	21975	3	Washer, Spring (.49 x .35)
16	214801	1	Washer, Spacer (.73 x .51)
17	200609	1	Tube, Drain
18	21278-57	1	Valve, Relief (Set at 5800/6400 PSI)
19	18841	1	Fitting, Straight (1/8 NPTF)
20	12891-1	1	Fitting, Straight (1/8 NPT)
21	421472	1	Rotor
22	250056	1	Pin, Spring Slotted (.22 x .94)
23	11228	1	Bearing, Needle
24	11227-1	1	Race, Bearing
25	*15892	1	O-ring (1.95 x 1.72 Nitrile)

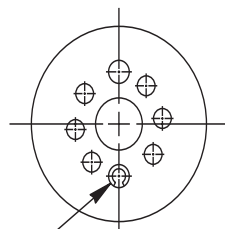
Item No.	Part No.	No. Req'd	Description
26	46048	1	Stem
27	*13943	1	O-ring (.50 x .37 Urethane)
28	15911	1	Screw, Button Hd (1/4-20 x 5/8; Torque to 60/80 in. lbs. Note: Apply Loctite No. 222 or equiv. at assembly.)
29	*213674	1	V-ring (.79 x .55 x .22 L)
30	*12099	1	O-ring (.28 x .15 Nitrile)
31	*207354	2	Washer, Backup (.28 x .16)
32	*14763	1	O-ring (.43 x .31 Urethane)
33	*14874	1	Washer, Copper (.70 x .50)
34	2008603	1	Poppet
35	2008604	1	valve, Cartridge (1/2-20 x 1-1/16; Torque to 250/280 in. lbs.)
36	11024	1	Spring (.25 OD x .68 x .03 ws)
37	10427	1	Plug 1/8 NPTF
39	15130	5	Fitting, Plug (1/16 PTF)
40	214014	1	Fitting, Plug (1/2 tube)
41	*215193	1	O-ring (.81 x .64 x Urethane)
42	214015	1	Piston
43	11127	3	Fitting, Plug (3/8 NPTF)
44	10854	3	Screw, Soc Hd (1/4-20 x 1-3/4)
45	421494	1	Body, Manifold
46	252181	1	Bushing
47	11013	4	Screw, Soc Hd (5/16-18 x 1; Torque to 300/320 in. lbs.)

Part numbers marked with an asterisk (\*) are contained in Repair Kit No. 300571.

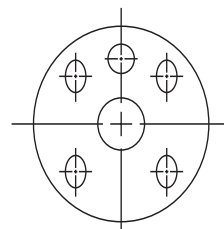
## INTERNAL ASSEMBLY ORIENTATION OF PARTS



END CAP  
BOTTOM VIEW

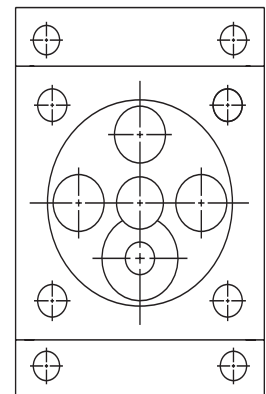


ROTOR  
TOP VIEW



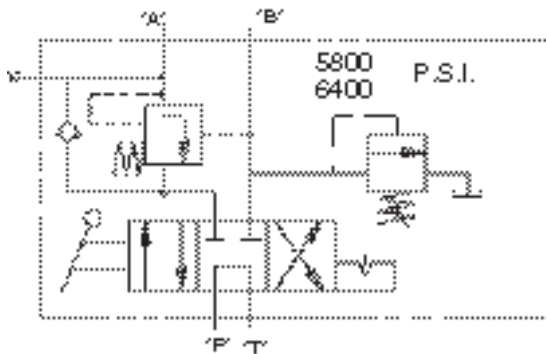
ROTOR  
BOTTOM VIEW

ROLL PIN LOCATION  
(POSITION OPENING AS SHOWN)



VALVE BODY  
TOP VIEW

## #59324 VALVE SPECIFICATIONS



### HYDRAULIC SCHEMATIC

Valve, pump mounted, manual detented, 3-position, 4-way tandem center with "B" port pressure control and release system. (2.15 to 1 ratio)

Rated Pressure: 10,000 PSI  
Case Pressure: 500 PSI  
Rated Flow: 5 GPM

### Function:

Center Position:

"A" and "B" ports blocked, pressure port to tank.

"A" Position:

Pressure to "A" port, "B" port to tank.

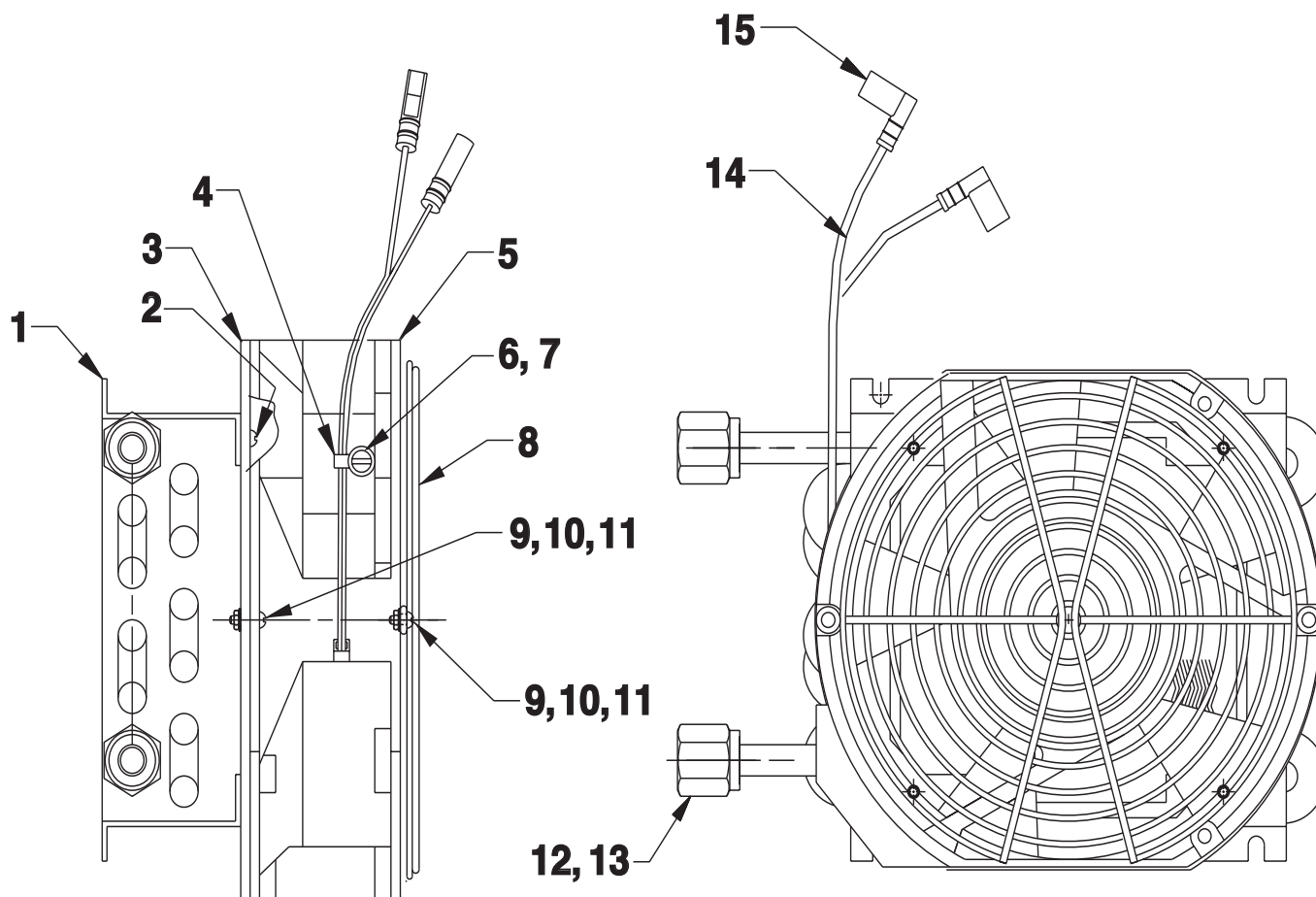
"B" Position:

Pressure to "B" port (controlled to 6400 PSI max.), "A" port to hold until pressure ratio is obtained and then releases to tank. "A" port will remain open as long as "B" port maintains pressure ratio.

### NOTE:

"A" port is blocked with "B and "P" ports open to tank during transition between valve positions. Pressure ratio is the pressure differential in the "A" and "B" ports.

## COOLER & FAN ASSEMBLY



Item No.	Part No.	No. Req'd	Description
1	421465	1	Heat Exchanger
2	10448	4	Screw (6-32 X 3/8 Lg.)
3	421449	1	Fan Mounting Bracket
4	16074	1	Cable Clamp
5	421466	1	Fan
6	14276	1	Screw (10-32 X 3/8 Lg.)
7	12355	1	Washer
8	351418	1	Fan Guard
9	16099	6	Screw (6-32 X 3/4 Lg.)
10	10195	6	Hex Nut (6-32)
11	15906	6	Washer
12	252513	2	Tube Nut Fitting
13	252514	2	Tube Sleeve
14	351419	1	Power Cord Set
15	209381	2	Quick Disconnect Terminal