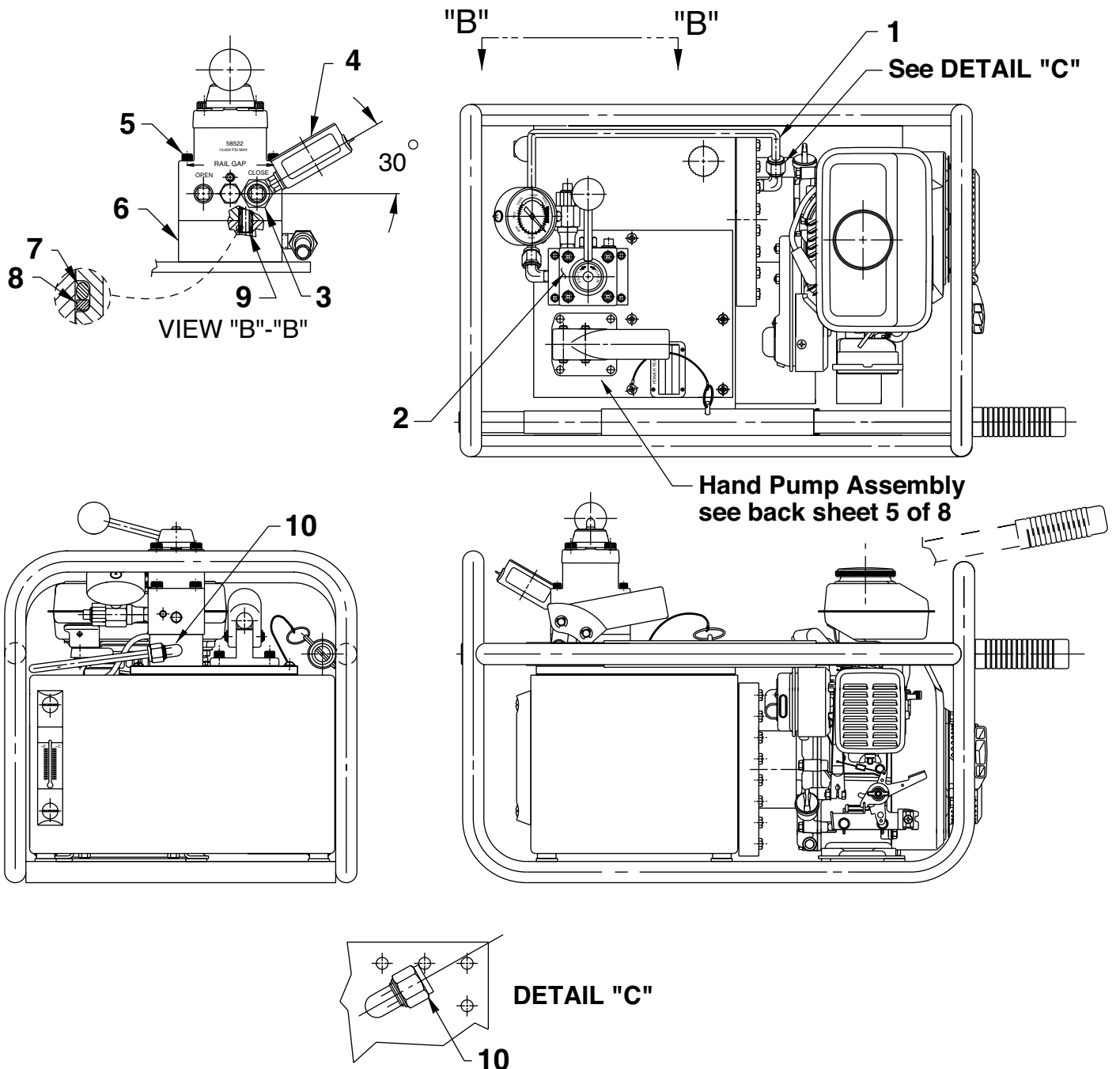
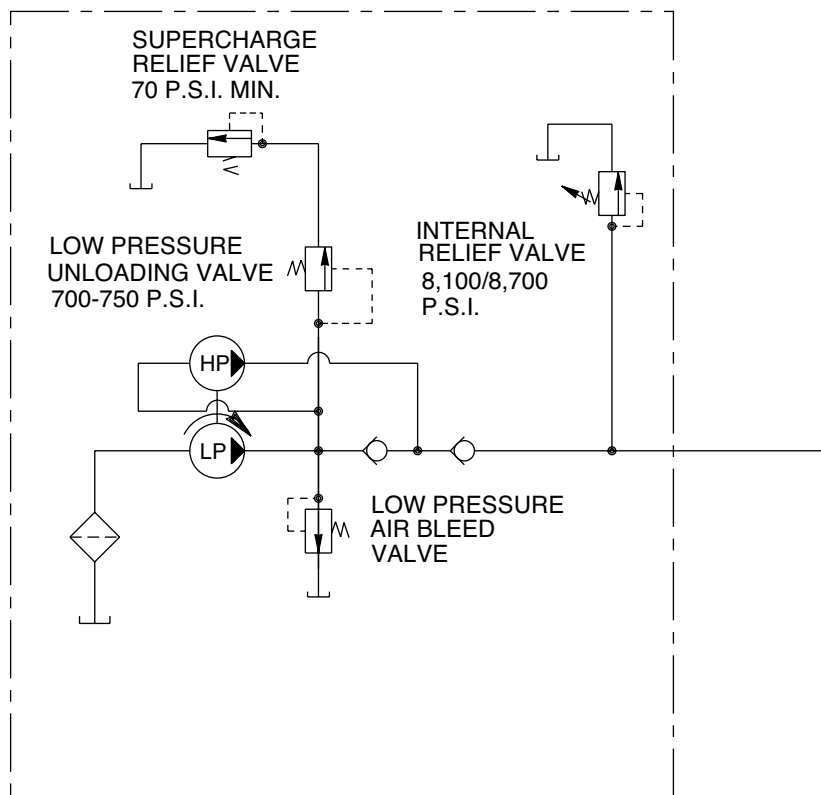


**MODEL B  
 HYDRAULIC PUMP**

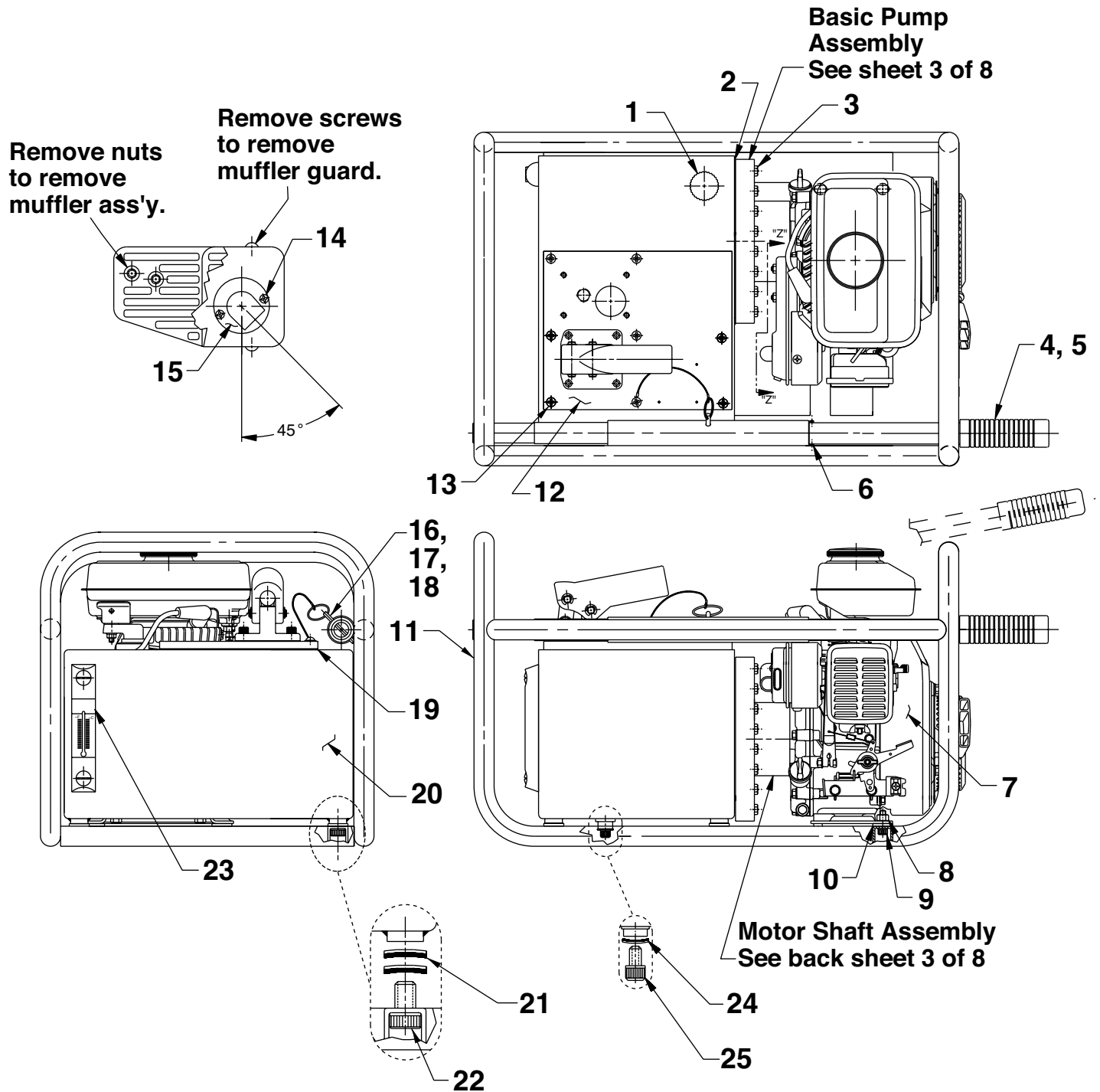


Item No.	Part No.	No. Req'd	Description
1	252139	1	Oil Tube
2	58776	1	Manual Valve (See sheet 7 of 8)
3	9670	1	Tee Adapter Fitting
4	9040	1	Gauge
5	251962	4	Cap Screw (1/4-20 UNC x 4-1/4 Lg.)
6	421283	1	Manifold Body
7	10268	2	O-ring (1/2 x 3/8 x 1/16)
8	11863	2	Backup Washer (1/2 x 3/8 x 1/16)
9	21094	1	Bushing
10	10665	2	Elbow
	214269	2	Tube Nut
	214270	2	Tube Sleeve

## HYDRAULIC SCHEMATIC

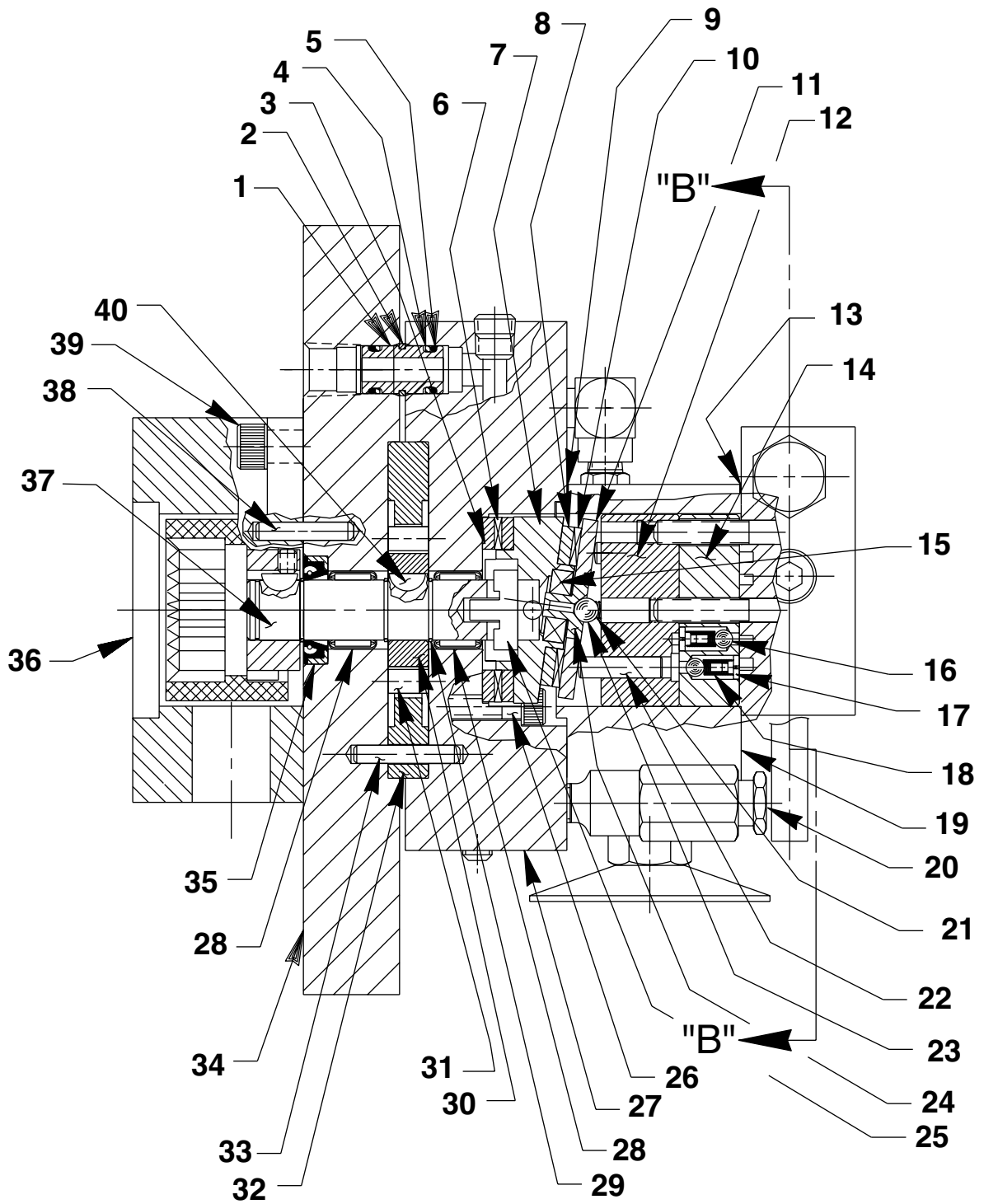


# SPECIAL PUMP W/O VALVE



<b>Item No.</b>	<b>Part No.</b>	<b>No. Req'd</b>	<b>Description</b>
1	<b>252298</b>	1	Plug
2	<b>421243</b>	1	Gasket (Note: Apply a bead of silicon gasket sealer on the sealing surfaces at assembly.)
3	<b>10019</b>	28	Cap Screw (1/4-20 UNC x 1-1/4 Lg.; Apply #242 Loctite)
4	<b>351227</b>	1	Handle
5	<b>11390</b>	1	Flex Grip Handle
6	<b>10973</b>	1	Pin (Note: Position pin with equal distance showing on each side of handle.)
7	<b>251506</b>	1	Gas Engine
8	<b>13116</b>	4	Locknut
9	<b>11013</b>	4	Cap Screw (5/16-18 x 1" Lg.)
10	<b>251384</b>	4	Rubber Bushing
11	<b>65150YE3</b>	1	Frame Weldment
12	<b>65152</b>	1	Pump only w/o handle (See back sheet 5 of 8)
13	<b>10177</b>	8	Machine Screw (1/4-20 UNC x 3/4 Lg.)
14	<b>13532</b>	2	Screw (#8-32 x 3/8 Lg.)
15	<b>251505</b>	1	Muffler Deflector
16	<b>14949</b>	1	Terminal
17	<b>251447</b>	.66 ft.	Aircraft Cable
18	<b>251723</b>	1	Quick Release Pin
19	<b>421260</b>	1	Gasket
20	<b>65151YE3</b>	1	Reservoir
21	<b>252092</b>	8	Rubber Bushing (Note: Stack 2 washers, with metal side up, under each reservoir leg as shown.)
22	<b>213836</b>	4	Cap Screw (1/2-20 UNF x 3/4 Lg.)
23	<b>350431</b>	1	Fluid/Temperature Gauge
24	<b>19779</b>	1	Seal Washer (Note: Place washer metal side against screw head as shown.)
25	<b>10412</b>	1	Cap Screw (3/8-16 x 1/2 Lg.)

# BASIC PUMP ASSEMBLY



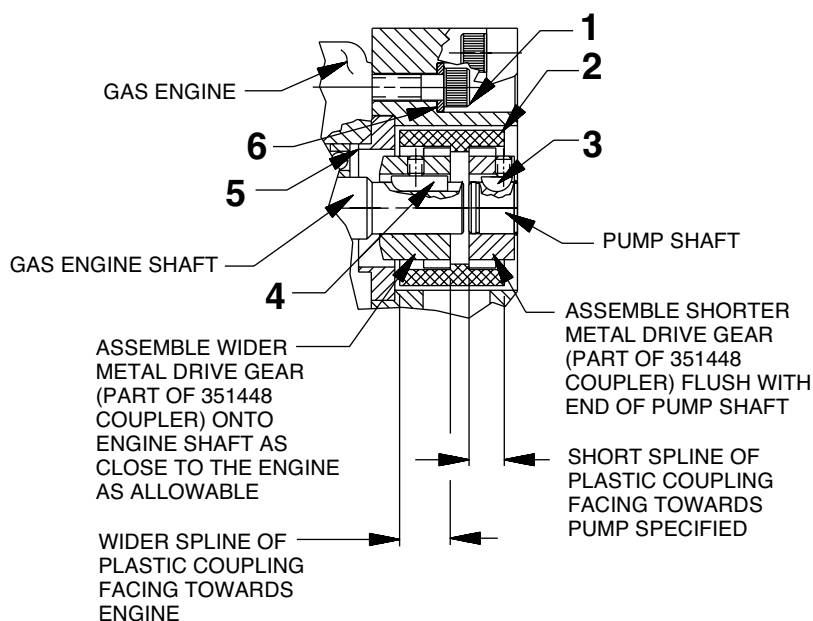
Item No.	Part No.	No. Req'd	Description
1	21094	1	Bushing
2	251124	1	Retaining Ring (External)
3	11227	2	Bearing Race
4	*11863	2	Backup Washer (1/2 x 3/8 x 1/16)
5	*10268	2	O-ring (1/2 x 3/8 x 1/16)
6	*11228	1	Thrust Bearing
7	350487	1	Angle Plate
8	15432	1	Bearing Race
9	*202691	1	Upper Gasket
10	*15431	1	Needle Bearing
11	23548	1	Top Plate
12	41006	1	Barrel
13	*202690	1	Lower Gasket
14	41007	1	Valve Head
15	11814	1	Ball Bearing
16	12223	4	Ball (3/16 Dia.)
17	24549	4	Ball Guide
18	10445	4	Compression Spring (5/32 OD x 3/4 Lg.)
19	350442	1	Spacer
20	21278-80	1	Relief Valve Assembly (Set at 8,100/8,700 PSI)
21	10361	1	Compression Spring (1/4 OD x 1" Lg.)
22	20775	2	Piston (7/32 Dia.)

Item No.	Part No.	No. Req'd	Description
23	10375	1	Steel Ball (1/4 Dia.)
24	23547	1	Bearing Top Plate
25	200397	1	Key
26	10854	4	Cap Screw (1/4-20 UNC x 1-3/4 Lg.; Torque to 110/120 in. lbs.)
27	58773	1	Pump Body
28	12192	2	Needle Bearing
29	12178	3	Retaining Ring
30	24632	1	Rotor
31	12193	8	Roller
32	350500	1	Pump Ring (Adjust for minimum flow.)
33	211843	1	Dowel Pin
34	65117	1	Cover Plate
35	*12194	1	Oil Seal
36	420818-1	1	Engine Mounting Plate (Note: Assemble metal drive gear, outer plastic coupling, and set screw onto pump shaft as specified [see Assembly Instructions] before placing this part. Locate sight hole as shown.)
37	202875	1	Shaft
38	211843	1	Dowel Pin
39	10030	4	Cap Screw (5/16-18 UNC x 3/4 Lg.)
40	12179	1	Woodruff Key

Part numbers marked with an asterisk (\*) are contained in Repair Kit No. 301008.

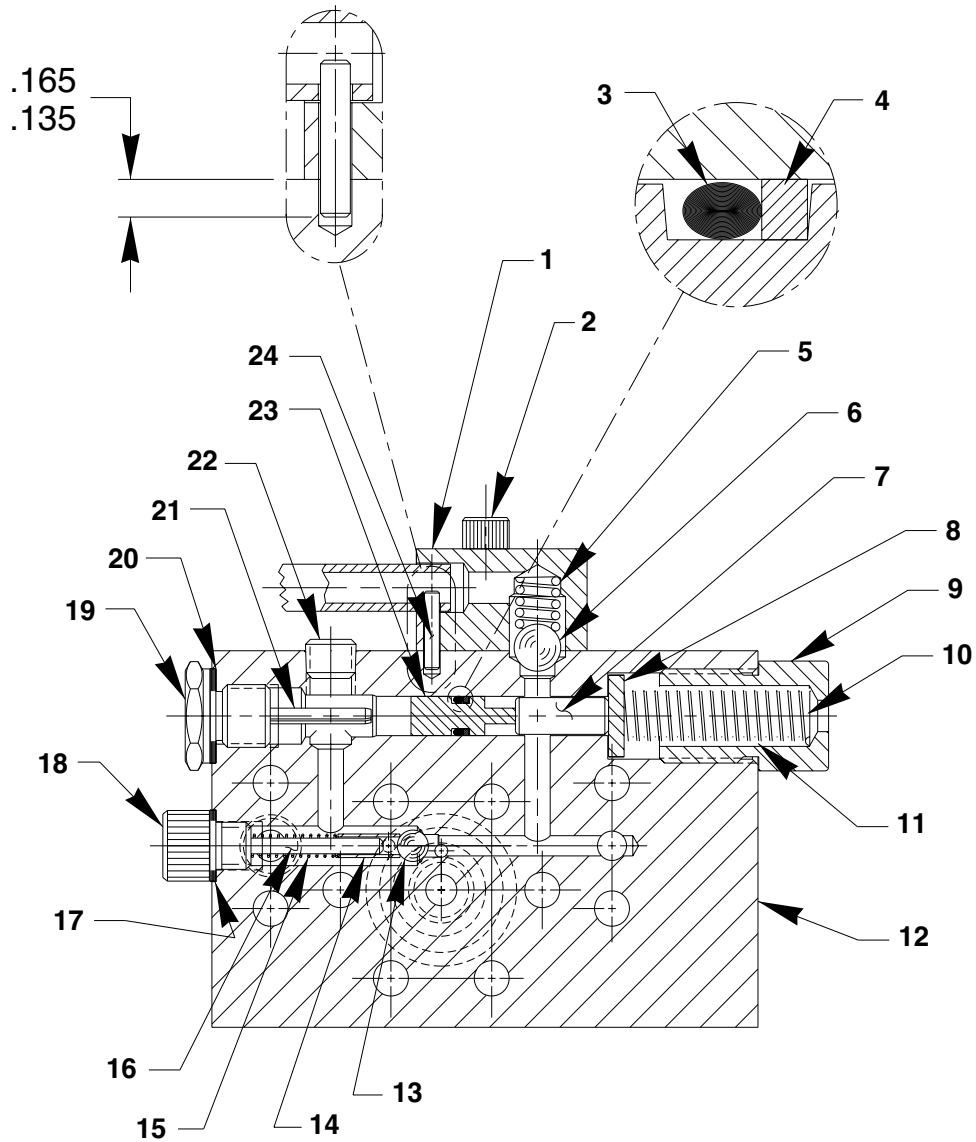
## ASSEMBLY INSTRUCTIONS FOR COUPLING 351448

Assemble metal drive gears (with set screws secured with Loctite 222 or equivalent) onto shafts as shown. Place outer plastic coupling as specified.



Item No.	Part No.	No. Req'd	Description
1	251502	4	Cap Screw
2	351448	1	Coupling
3	12179	1	Woodruff Key
4	251235	1	Special Key
5	251473	1	Adapter Pilot
6	10246	4	Lockwasher

## SECTION B-B



## SECTION B-B

Item No.	Part No.	No. Req'd	Description	Item No.	Part No.	No. Req'd	Description
1	350501	1	Valve Body	12	64308	1	End Plate
2	10020	1	Cap Screw (1/4-20 UNC x 1-1/4 Lg.)	13	10375	1	Steel Ball (1/4 Dia.)
3	*10265	1	O-ring (5/16 x 3/16 x 1/16)	14	201998	1	Sleeve
4	*15174	1	Backup Ring	15	14431	1	Compression Spring (3/16 OD x 3/4 Lg.)
5	10362	1	Compression Spring (3/8 OD x 3/4 Lg.)	16	12571	1	Pin
6	10378	1	Steel Ball (3/8 Dia.)	17	*12042	1	Copper Washer (9/16 x 3/8 x 1/32)
7	250800	1	Dowel Pin (Note: Install with radius end of pin towards piston [Item #23].)	18	29690	1	Screw (Torque to 175/185 in. lbs.)
8	214692	1	Disk	19	250743	1	Ball Stop (torque to 440/460 in. lbs.)
9	308430	1	Unloading Valve Fitting	20	*14874	1	Copper Washer (.700 x 1/2 x 1/32)
10	16470	1	Compression Spring (19/64 OD x 1-3/4 Lg.)	21	11566	1	Roll Pin
11	214694	1	Compression Spring (1/2 OD x 2-1/8 Lg.)	22	10427	2	Pressure Plug (1/8 NPTF)
				23	250954	1	Piston
				24	11560	1	Pin

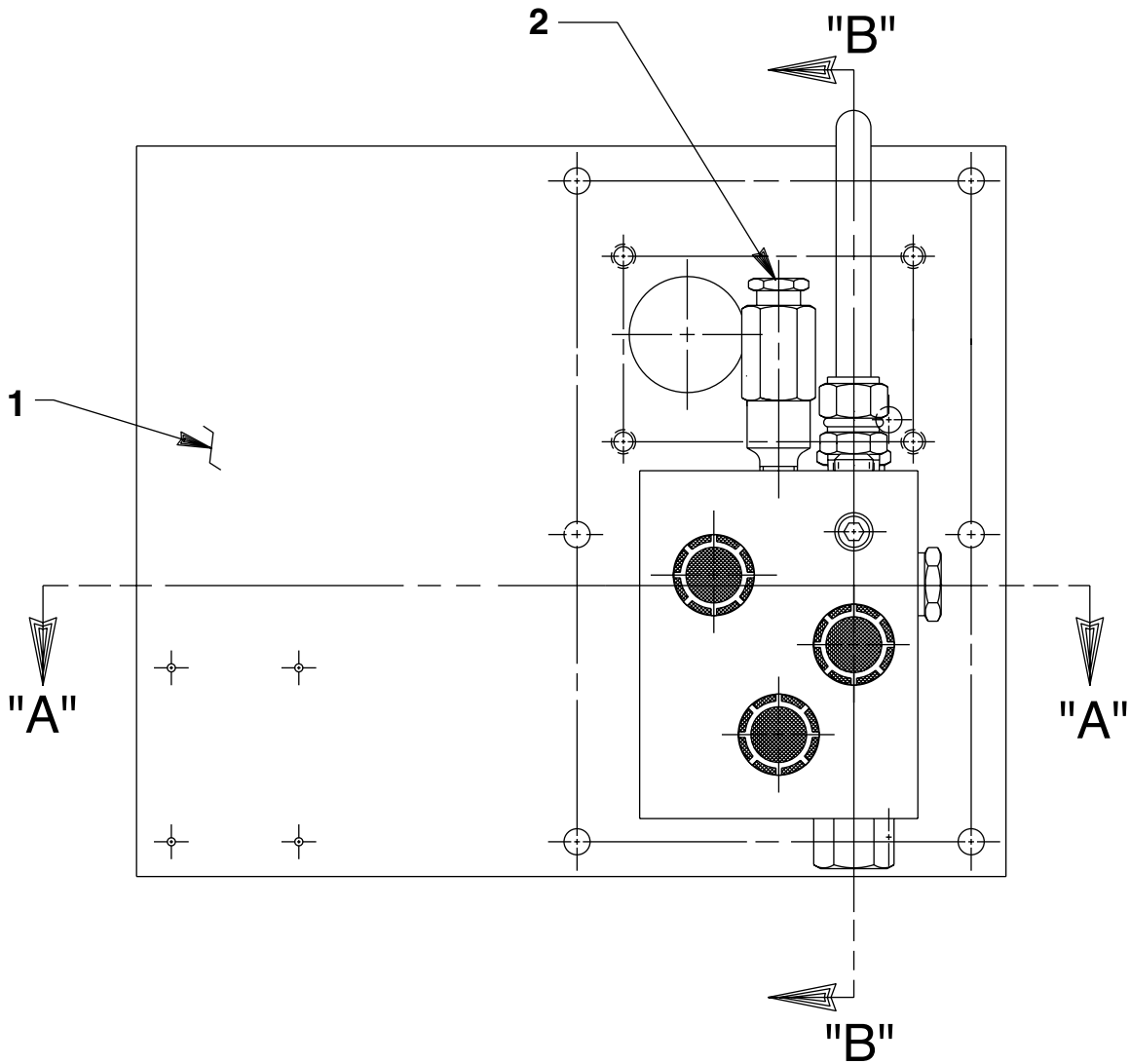
Part numbers marked with an asterisk (\*) are contained in Repair Kit No. 301008.



<b>Item No.</b>	<b>Part No.</b>	<b>No. Req'd</b>	<b>Description</b>
1	<b>15130</b>	2	Plug (1/16 NPTF)
2	<b>13229</b>	1	Street Elbow
3	<b>11956</b>	4	Cap Screw (1/4-20 UNC x 3" Lg.; Torque to 110/120 in. lbs.)
4	<b>16747</b>	7	Screw (1/4-28 UNF x 1-3/4 Lg.; Lubricate under head and on threads. Torque to 165/175 in. lbs. Torque in sequence shown.)
5	<b>*15085</b>	2	Backup Washer
6	<b>*10267</b>	2	O-ring (7/16 x 5/16 x 1/16)
7	<b>202688</b>	1	Tube
8	<b>15141</b>	1	Spring (3/16 OD x 5/8 Lg.)
9	<b>202681</b>	1	Ball Stop
10	<b>10377</b>	1	Steel Ball (5/16 Dia.)
11	<b>29682</b>	1	Strainer
12	<b>250801</b>	1	Intake tube
13	<b>306957</b>	1	Air Bleed Valve
14	<b>18841</b>	1	Pipe Connector
15	<b>350444</b>	1	Drain Tube
16	<b>350842</b>	1	Hydraulic Hose

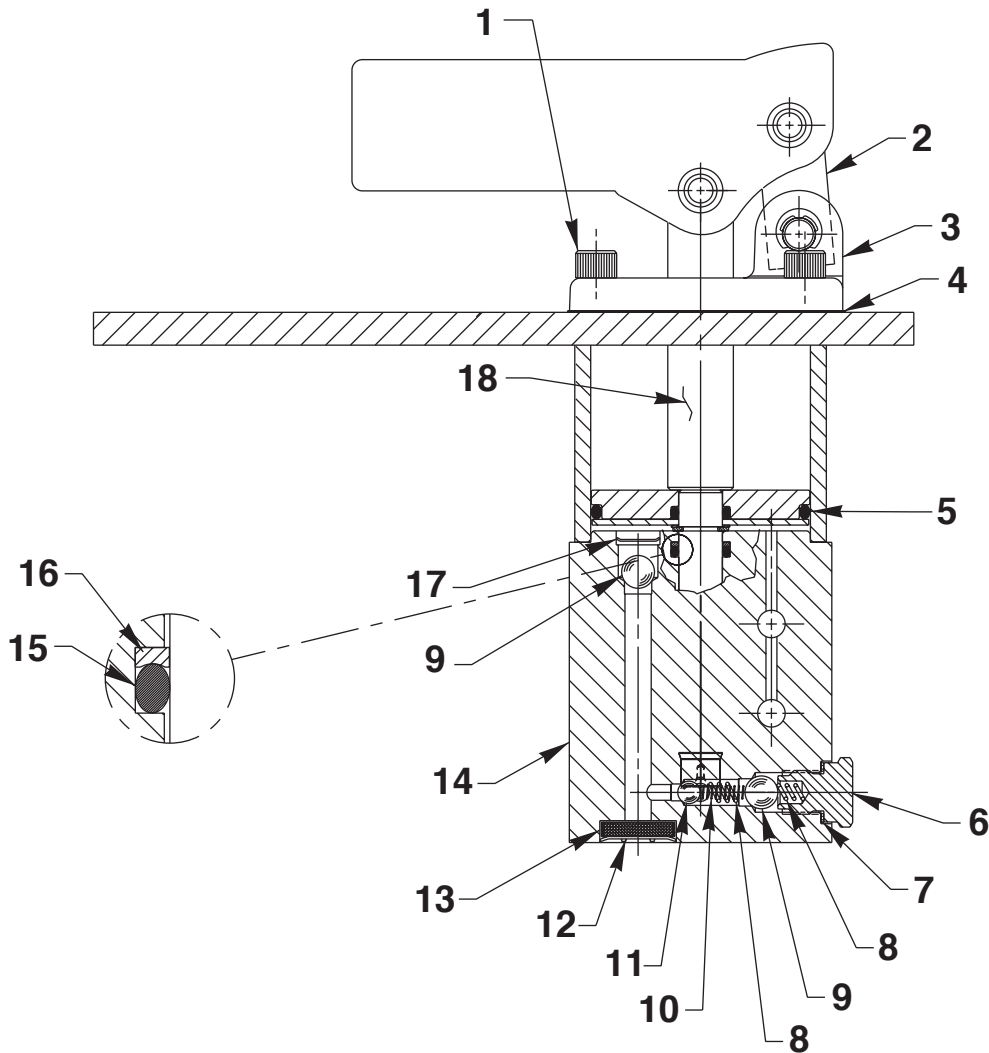
Part numbers marked with an asterisk (\*) are contained in Repair Kit No. 301008.

# HYDRAULIC HAND PUMP W/O HANDLE



Item No.	Part No.	No. Req'd	Description
1	58790	1	Cover Plate
2	21278-80	1	Relief Valve Assembly (8,100/8,700 PSI)

# HAND PUMP - SECTION A-A

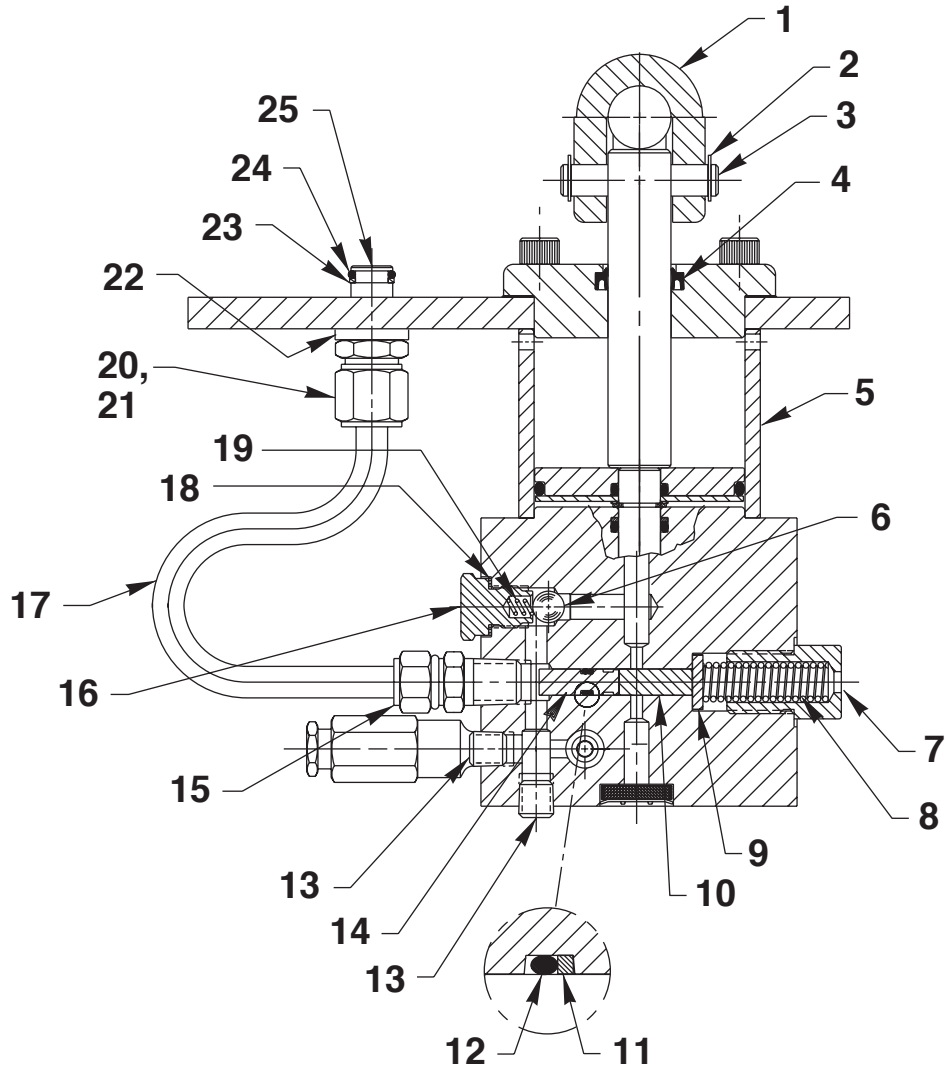


Item No.	Part No.	No. Req'd	Description
1	250671	4	Screw (5/16-24 UNF x 3-1/2 Lg.; Torque to 240/250 in. lbs. Note: in increments of 100 in. lbs.)
2	21603	1	Pivot Block
3	420978BK2	1	End Cap
4	*22143	1	End Cap Gasket
5	*10295	1	O-ring (2-1/2 x 2-1/4 x 1/8)
6	305975	1	Valve Screw (Torque to 350/270 in. lbs.)
7	*14874	1	Soft Copper Washer (.700 x 1/2 x 1/32)
8	*10444	2	Compression Spring (.25 OD x .41 x .02 WS)

Item No.	Part No.	No. Req'd	Description
9	*10378	3	Steel Ball (3/8 Dia.)
10	*211797	1	Spring (5/32 OD x 5/8 Lg.)
11	*10375	1	Steel Ball (1/4 Dia.)
12	*214586	3	Retaining Ring (Internal)
13	*214578	3	Filter (Insert screen with cupped side in.)
14	64202	1	Pump Body
15	*10271	1	O-ring (11/16 x 1/2 x 3/32)
16	*213987	1	Backup Washer (11/16 x 1/2 x 3/64)
17	*250670	2	Retaining Ring
18	*253372	1	High Pressure Piston

Part numbers marked with an asterisk (\*) are contained in Repair Kit No. 301010.

# HAND PUMP - SECTION B-B

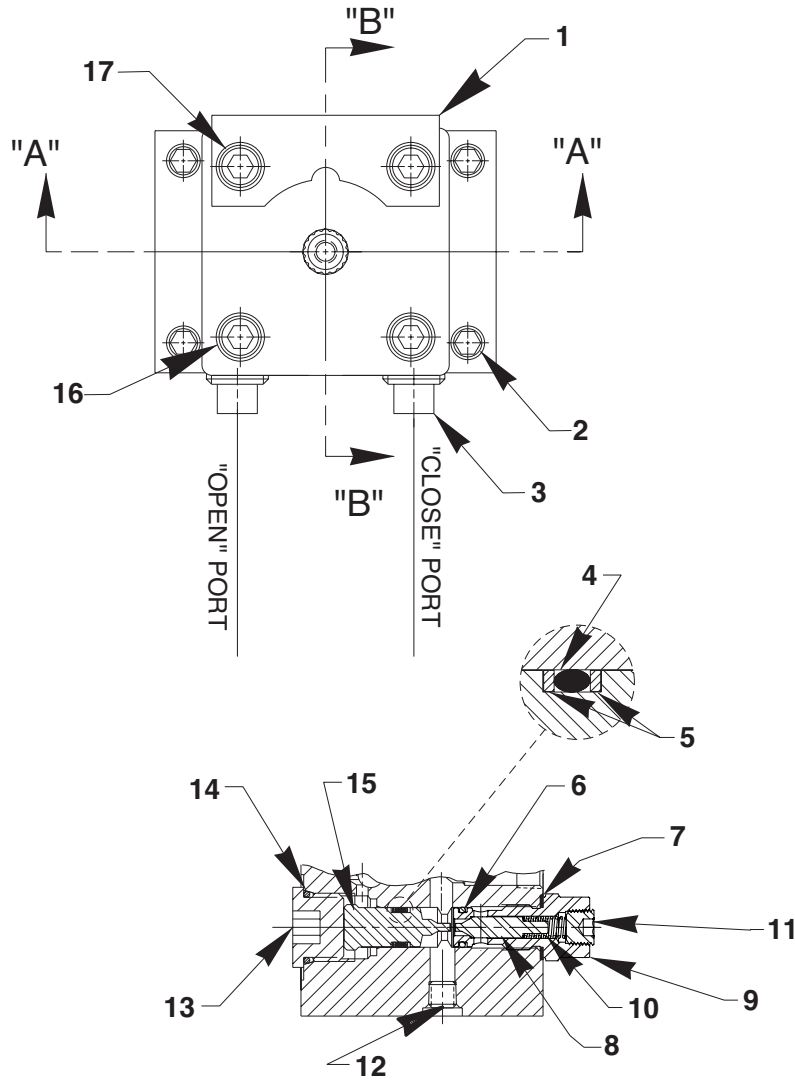


Item No.	Part No.	No. Req'd	Description
1	30701	1	Lever
2	11032	6	Retaining Ring
3	21609	3	Clevis Pin
4	*251728	1	Rod Wiper
5	350302	1	Spacer
6	*10378	1	Steel Ball (3/8 Dia.)
7	308430	1	Unloading Valve Fitting
8	10367	1	Compression Spring (1/2 OD x 2" Lg.)
9	214692	1	Disc
10	250672	1	Dowel Pin
11	*15174	1	Backup Ring
12	*10265	1	O-ring (5/16 x 3/16 x 1/16)
13	10427	2	Pressure Plug (1/8 NPTF)
14	250658	1	Unloading Valve Piston

Item No.	Part No.	No. Req'd	Description
15	10661	1	Straight Fitting
16	305975	1	Valve Screw (Torque to 350/370 in. lbs.)
17	351250	1	Oil Line
18	*14874	1	Soft Copper Washer (.700 x 1/2 x 1/32)
19	*10444	1	Compression Spring (.25 OD x .41 x .02 WS)
20	10430	1	Tube Sleeve
21	10431	1	Tube Nut (Torque to 40/50 ft. lbs.)
22	21484	1	Spacer
23	*11863	1	Backup Washer (1/2 x 3/8 x 1/16)
24	*10268	1	O-ring (1/2 x 3/8 x 1/16)
25	20787	1	Valve Connector (Torque to 20/30 ft. lbs.)

Part numbers marked with an asterisk (\*) are contained in Repair Kit No. 301010.

# MANUAL VALVE

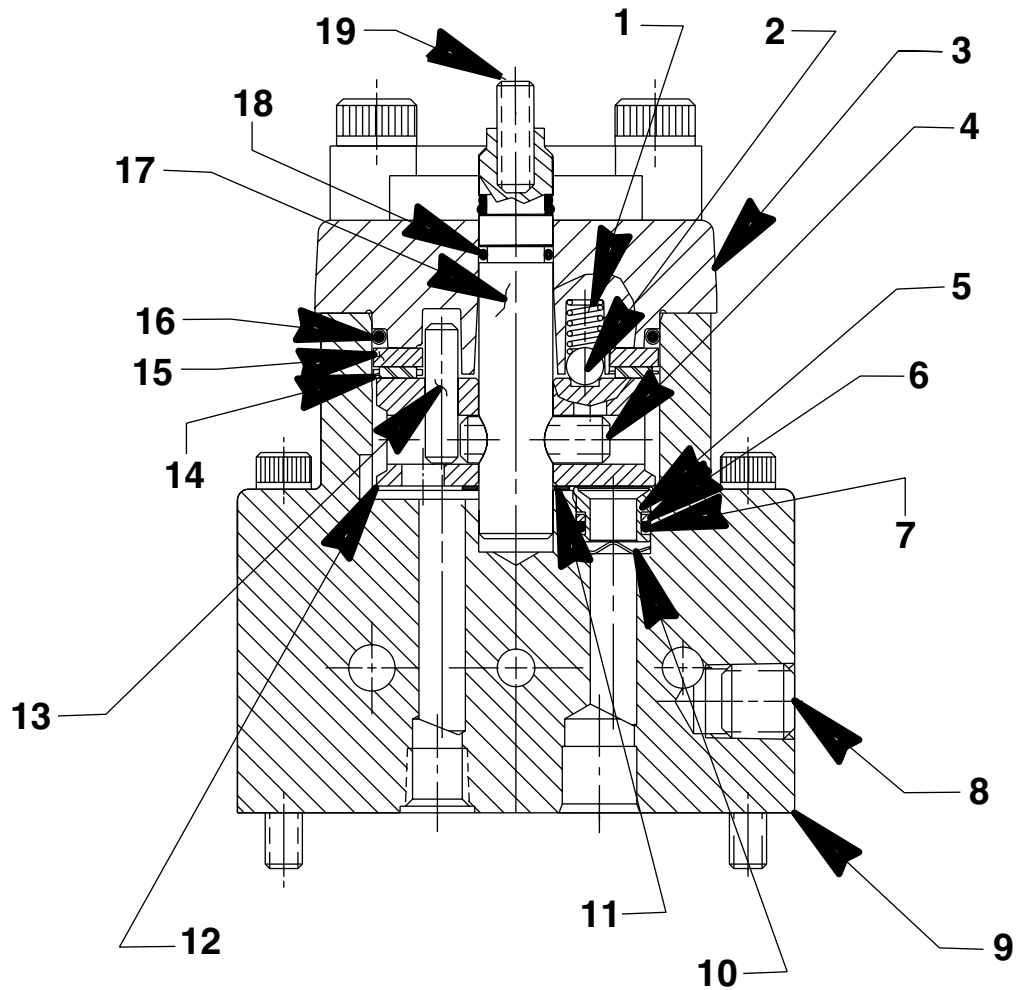


Item No.	Part No.	No. Req'd	Description
1	350982	1	Bracket
2	10856	4	Cap Screw (1/4-20 UNC x 2-1/2 lg.)
3	11127	2	Pressure Plug (3/8 NPTF)
4	*10267	1	O-ring (7/16 X 5/16 X 1/16)
5	*15085	2	Backup Ring
6	*14763	1	O-ring (7/16 X 5/16 X 1/16)
7	*14874	1	Soft Copper Washer (.700 X 1/2 X 1/32)
8	2008603	1	Poppet
9	2008604	1	Valve Cartridge (Torque to 250/280 in. lbs.)

Item No.	Part No.	No. Req'd	Description
10	11024	1	Compression Spring (1/4 O.D. X 5/8 Lg.)
11	10427	1	Plug 1/8 NPTF
12	15130	4	Plug (1/16 NPTF)
13	214014	1	O-ring Plug (Note: Discard rubber o-ring.)
14	*215193	1	O-ring (13/16 X 5/8 X 3/32)
15	251592	1	Piston
16	11013	2	Cap Screw (Torque to 300/320 in. lbs.)
17	10948	2	Cap Screw (Torque to 300/320 in. lbs.)

Part numbers marked with an asterisk (\*) are contained in Repair Kit No. 301007.

# MANUAL VALVE - SECTION A-A

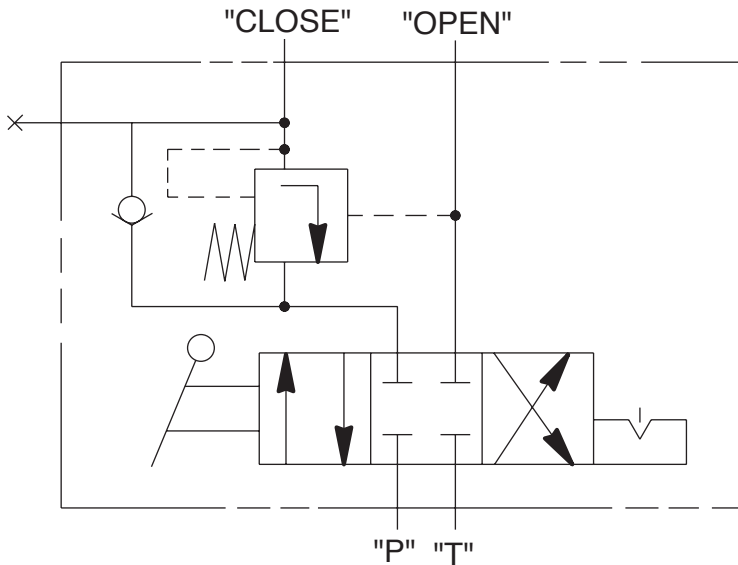


Item No.	Part No.	No. Req'd	Description
1	15691	1	Compression Spring (1/4 OD x 5/8 Lg.)
2	10375	1	Steel Ball (1/4 Dia.)
3	61343	1	Valve Cap
4	10496	1	Pin
5	202480	3	Seal
6	*11863	3	Backup Washer (1/2 x 3/8 x 1/16)
7	*10268	3	O-ring (1/2 x 3/8 x 1/16)
8	14972	1	Pipe Plug (1/4 NPTF)
9	64651	1	Valve Body
10	21975	3	Spring Washer

Item No.	Part No.	No. Req'd	Description
11	214801	1	Spacer Washer
12	306032	1	Rotor
13	250056	1	Pin
14	11228	1	Thrust Bearing
15	11227-1	1	Bearing Race
16	*15892	1	O-ring (1.956 x 1.720 x .118)
17	46048	1	Stem
18	*13943	1	O-ring (1/2 x 3/8 x 1/16)
19	10139	1	Set Screw (Note: Apply Loctite 242 or equivalent and torque to 50/60 in. lbs.)

Part numbers marked with an asterisk(\*) are contained in Repair Kit No. 301007.

# SPECIFICATIONS



**HYDRAULIC SCHEMATIC**

Valve, Manual mounted, manual detented, 3-position, 4-way closed center with "OPEN" port release system. (5.3 to 1 ratio)

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

**FUNCTION:**

**Center Position:** All parts blocked.

**"CLOSE" Position:** Pressure to "CLOSE" port; "OPEN" port to tank.

**"OPEN" Position:** Pressure to "OPEN" port.

"CLOSE" port to hold until pressure ratio is obtained and then releases to tank.

"CLOSE" port will remain open as long as "OPEN" port maintains pressure ratio.

NOTE: "CLOSE" port is blocked with "OPEN" and pressure ports open to tank during transition between valve positions. Pressure ratio is the pressure differential in the "CLOSE" and "OPEN" ports.

## INTERNAL ASSEMBLY ORIENTATION OF PARTS

