



LESLIE
CONTROLS, INC.

A subsidiary of CIRCOR International, Inc.
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**INSTALLATION, OPERATING,
AND MAINTENANCE INSTRUCTIONS**
PARTS LIST

30/4.5.7
Rev.1

STEAM PILOT OPERATED PRESSURE REGULATOR
CLASSES GPS-1EP
GPS-4EP

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1. INSTALLATION

1.1. Equipment

The GPS or GPK-4EP valve assembly consists of three subassemblies:

- GPS or GPK regulator
- VP or VPS externally-mounted pressure pilot
- interconnection tubing kit

Pressure pilot and tubing kit installation are described in this manual. Refer to the appropriate GPK or GPS regulator manual for main regulator installation.

A 1/4-inch sensing line (not supplied) is required to complete installation. The line is used to monitor downstream pressure.

1.2. GPS/GPK Installation

Installation of the GPK-1EP or GPK-4EP main regulator is the same as standard GPS/GPK installation except for the connection of the downstream sensing control. Refer to the appropriate equipment manual for main regulator installation.

Sufficient space must be provided for removal of the main regulator diaphragm cover and bottom cap, and installation/removal of the pilot and pilot-related tubing. Minimum space requirements are given in Table 1.

Table 1 - Dimensions and Clearance Requirements

VALVE SIZE	1	1½	2	3	4
PIPE RUN (FEET)					
Inlet	1¾ - 5	1¾ - 5	3 - 5	3 - 5	3 - 5
Outlet	3 - 5	3 - 5	4 - 8	4 - 8	4 - 8
WIDTH (INCHES)					
Flange - Flange	8½	9½	11½	12½	14½
Cover	8 ⁵ / ₈	10¼	10¼	16	16
At pilot	11¾	14	14	16¾	16¾
HEIGHT (INCHES)	20½	22 ¹ / ₆	22 ¹ / ₆	27	29¼
CLEARANCE (INCHES)					
Above	2	2	2	2	2
Below	6¾	7½	7½	9½	11¾
WEIGHT (POUNDS)	65	80	88	268	298.5

1.3. VP / VPS Pilot Installation (Figure 1 - Tubing Connections)

The pilot is mounted using the 1/4" pipe fittings included in the tubing kit. Figure 1 illustrates the mounting assembly. The fittings form the main regulator line and provide the primary support for the pilot. Table 2 identifies all tubing connections.

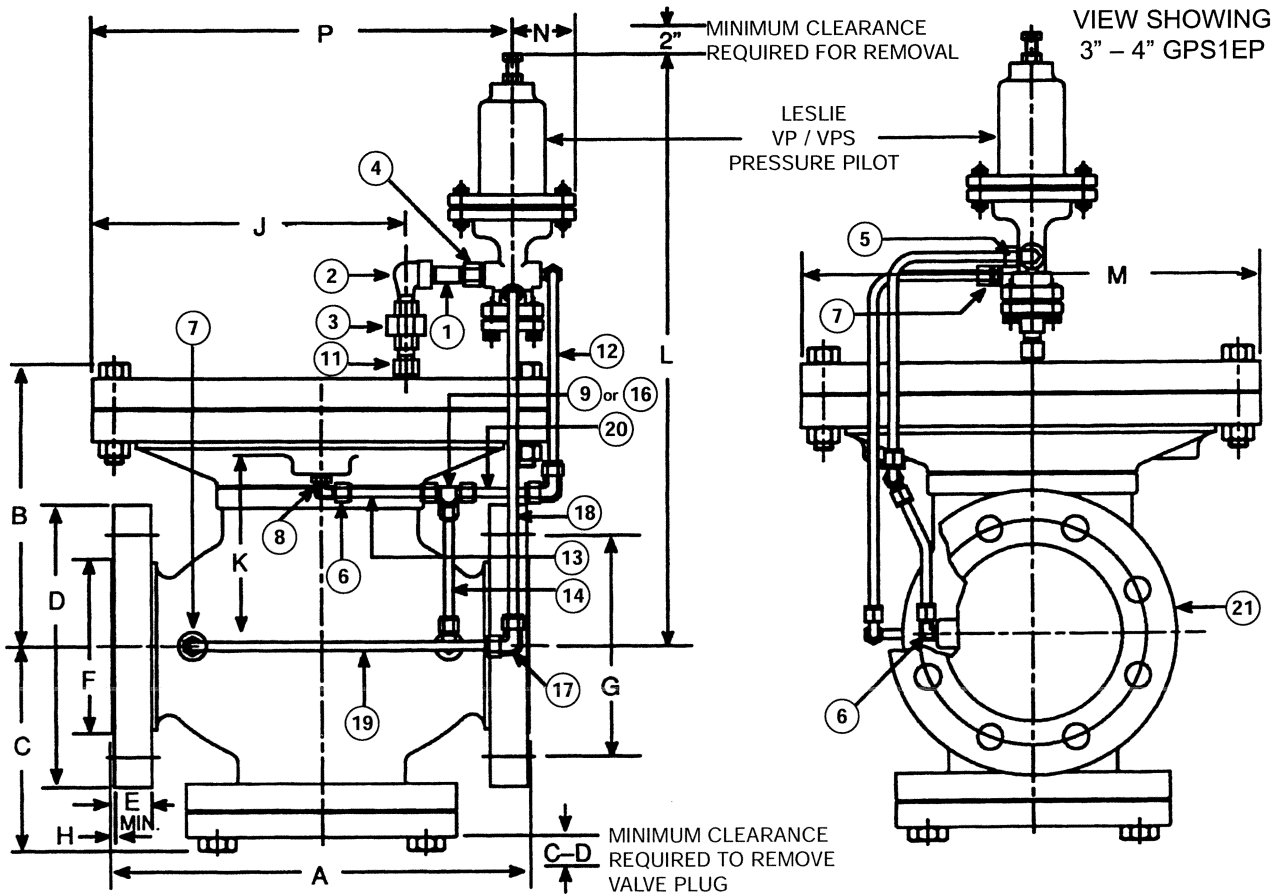
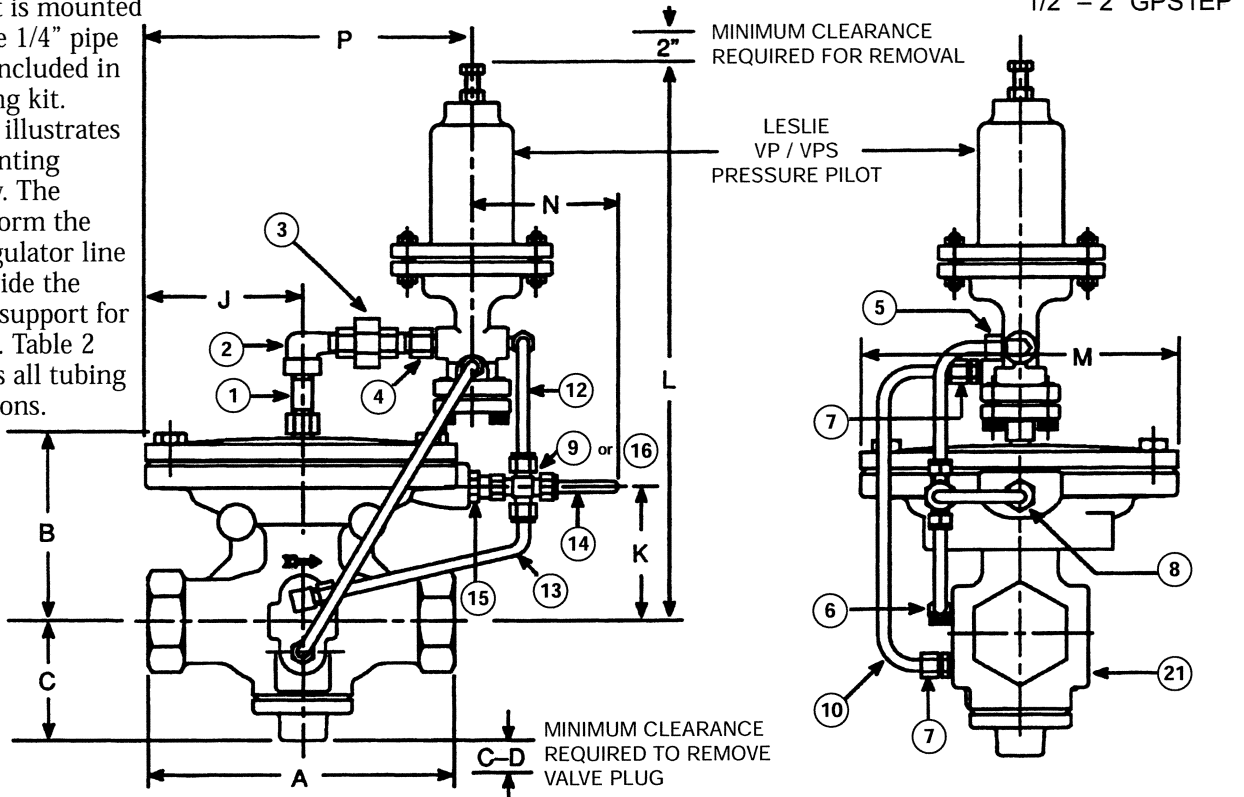


Table 2 - Connections

Part No.	Part Name	Connects to (1/2 - 2 inch main regulators)	Connects to (3 - 4 inch main regulators)
1	1/4 inch NPT Schedule 80 x 2 inch nipple	main regulator pressure loading adapter on top of diaphragm cover.	1/4 inch NPT street elbow (2)
			1/4 inch x 1/8 inch NPT adapter (4)
2	1/4 inch NPT street elbow	1/4 inch NPT Schedule 80 x 2 inch nipple (1)	1/4 inch NPT Schedule 80 x 2 inch nipple (1)
		1/4 inch male / female union (3)	1/4 inch male / female union (3)
3	1/4 inch male / female union	1/4 inch NPT street elbow	1/4 inch NPT street elbow
		1/4 inch x 1/8 inch NPT adapter	1/4 inch NPT male adapter (11)
4	1/4 inch x 1/8 inch adapter	Pilot diaphragm line connector.	Pilot diaphragm connector.
		1/4 inch male / female union (3)	1/4 inch NPT Schedule 80 x 2 inch nipple (1)
5	Orificed tube fitting	Pilot bleed port.	Pilot bleed port.
		Upper bleed tube (12)	Upper bleed tube (12)
6	1/4 inch male elbow	main regulator pressure sensing port.	main regulator pressure sensing port.
		tubing	tubing
7	1/4 inch NPT connector	Pilot connector	Upper inlet tube (18)
		main regulator inlet.	Lower inlet tube (19)
			tubing
8	3/8 inch x 1/4 inch NPT reducing bushing	main regulator 3/8 inch downstream pressure connection on body (21)	main regulator 3/8 inch downstream pressure connection on body (21)
		Union tee (9) or union (16)	Union tee (9) or union (16)
9	Union tee	Upper bleed tube (12)	
		Lower bleed tube (13)	Lower bleed tube (13)
		Bypass tube (14)	Bypass tube (14)
		3/8 inch NPT plug (15)	Middle section bleed tube (20)
10	Inlet tube	1/4 inch NPT male connectors (7)	
11	1/4 inch NPT male adapter		Pressure loading connection on top of diaphragm cover
			1/4 inch male / female union (3)
12	Upper bleed tube	Orificed tube fitting (5)	Orificed tube fitting (5)
		Union tee (9) or union (16)	Elbow
13	Lower bleed tube	Union tee (9) or union (16)	Union tee (9) or union (16)
		1/4 inch NPT male elbow (6)	1/4 inch NPT male elbow (6)
14	Bypass tube	Union tee (9) or union (16)	Union tee (9) or union (16)
		Union tee (9) or union (16)	Body (21) connector
15	3/8 inch NPT plug	Union tee (9) or union (16)	
		main regulator body (21) 3/8 inch downstream pressure connection	
16	Union	See (9)	See (9)
17	Union elbow		Upper inlet tube (18)
			Lower inlet tube (19)
18	Upper inlet tube		1/4 inch NPT male connector
			Union elbow (17)

Table 2 - Connections (continued)

Part No.	Part Name	Connects to (1/2 - 2 inch main regulators)	Connects to (3 - 4 inch main regulators)
19	Lower Inlet tube		Union elbow (17)
			Body (21)
20	Middle section bleed tube		Elbow
			Union tee (9) or union (16)
21	Body	1/4 inch NPT male elbow (6)	1/4 inch NPT male elbow (6)
		1/4 inch NPT male connector (7)	1/4 inch NPT male connector (7)
		3/8 inch x 1/4 inch reducing bushing (8)	3/8 inch x 1/4 inch reducing bushing (8)
		3/8 inch NPT plug (15)	

1.4. Control Pipe Installation

The control pipe is connected between the pilot and the downstream point where minimum turbulence is present as described in the following steps and illustrated in figure 2. The control pipe shall be 1/4" pipe or 1/4" ID tubing.

- a. Install outlet pressure gauge of appropriate range in the downstream sensing line at least four pipe diameters from the main regulator outlet or point of enlargement if an expander pipe is configured into the system.
- b. Install sensing line at 15° angle between pilot and downstream sensing line. Angle is required to avoid condensate pockets.
- c. It is recommended that a stop valve be installed in the sensing line.

2. STARTUP AND OPERATION

2.1. Principles of Operation

Both the main regulator and the pilot valve are NORMALLY CLOSED due to initial fluid pressure applied to the main regulator internal seat spring.

The pilot opens when the pilot adjusting spring is compressed. With the pilot open, fluid flows into the diaphragm chambers of both units.

Flow through the pilot bleed port is restricted by the orificed restriction tube fitting (figure 1, no. 5) allowing pressure to increase over the pilot diaphragm and opening the main regulator.

As the main regulator opens, downstream pressure is sensed by the pilot via the downstream sensing line.

Pressure builds under the pilot diaphragm until it balances downward pressure from the pilot adjusting

spring. As pressure increases, pressure over the main regulator diaphragm is throttled.

Main regulator diaphragm loading pressure finds a balance between the main regulator seat spring and inlet pressure from the pilot to provide the main regulator delivery (output) pressure.

NOTE

One 1" and larger main regulators, the bypass between the main regulator outlet and the underside of the main regulator diaphragm improves system response to sudden and large flow changes.

2.2. Start Up

- a. Fill the delivery system and raise fluid pressure to slightly LESS THAN the required normal pressure.
- b. Turn pilot adjusting screw (figure 2, no. 1) counter-clockwise to relieve compression on the pilot adjusting spring (figure 2, no. 5).
- c. Crack the outlet stop valve. Open the sensing line stop valve.

<p>CAUTION</p> <p>Drain condensate from main regulator inlet line before opening inlet stop valve.</p>

- d. Crack the inlet stop valve. Blow down strainer.
- e. Turn the pilot adjusting screw clockwise to compress the adjusting spring until the main regulator opens and the required pressure registers on the main regulator outlet pressure gauge.
- f. Alternately choke down on the bypass and open the main regulator outlet stop valve until the main regulator output is at the required level.

3. TROUBLESHOOTING.

Troubleshooting procedures are given in Table 3.

Table 3 – Troubleshooting

SYMPTOM	PROBABLE CAUSE(S)	ACTION TO TAKE
Valve fails to open or sagging delivery pressure.	1. Adjusting spring is misaligned, hung-up, or out of adjustment.	Visually inspect spring for proper seating or damage. Readjust spring if required.
	2. Clogged strainer.	Clean strainer.
	3. Inlet stop valve(s) not fully open.	Fully open inlet stop valve(s).
	4. Open elbow fitting is installed instead of orificed elbow fitting in pilot.	Remove tube from fitting and verify that elbow fitting contains 3/32-inch diameter restricted orifice. Install correct fitting.
	5. Diaphragm port fitting is clogged or diaphragm broken.	Remove pilot at union and turn off 1/4-inch piping from the diaphragm port adapter. Insure that orifice and all parts of the diaphragm line are clear. Blow out line if necessary. Apply air or water to confirm main regulator is fully operational. (Refer to main regulator documentation for test procedure.) If equipment is NOT operational, a. remove diaphragm cover b. inspect diaphragm c. if damaged, replace diaphragm d. reassemble equipment.
	6. Downstream sensing line clogged.	Remove, inspect sensing line. Blow out if necessary. Reinstall line.
Valve fails to close or overriding delivery pressure	1. Adjusting spring is misaligned, hung-up, or out of adjustment.	Visually inspect spring for proper seating or damage. Readjust or replace as necessary.
	2. Orifice elbow fitting clogged.	Remove tube from elbow and inspect. Blow out if necessary. Reinstall tube.
	3. Foreign particles on pilot pressure plate prevents closure.	Remove pilot spring chamber and inspect pressure plate. Clean pressure plate with approved solvent. Reinstall spring chamber.
	4. Foreign matter in main regulator or pilot seating area.	Close stop valves and 1/4-inch valve in downstream sensing line. Remove bleedport tube to allow pilot to exhaust to atmosphere. Crack inlet stop valve and allow steam to issue from pilot's orificed elbow fitting. Release adjusting spring compression; pilot should close tightly. a. Steam blowback from main regulator bleed line indicates main regulator is held open. Refer to main regulator documentation to remove foreign matter in main regulator. b. Steam escaping from pilot orifice indicates problem with pilot. (1) Reconnect bleed line and place pilot into operation. (2) Open, close pilot to wash obstruction from seat area. (3) If obstruction remains, disassemble and clean pilot (see SCHEDULED MAINTENANCE). (4) Reassemble pilot.
Erratic regulation	1. Partial clogging of bleedport orificed elbow fitting.	Remove bleed tube and inspect. Blow out if necessary. Reinstall bleed tube.

4. SCHEDULED MAINTENANCE

4.1 Maintenance Schedule

Inspect the equipment after the first few days of operation and at least once every six months thereafter to maintain the equipment in best operating condition. Inspection steps are given below.

- a. Inspect all joints for leakage. If leakage is observed, tighten connections.
- b. Shut down equipment. Remove upper bleed tube (figure 1, no. 12) from the orificed restriction elbow (5) and check for dirt. Clean out tube.
- c. Loosen and remove nuts (figure 2, no. 7) on diaphragm bolts (10) securing pilot spring chamber (3) to pilot body (21). Inspect pilot pressure plate (6) for presence of foreign material. Clean pressure plate.
- d. Press down on pilot plate spring (6). Verify that the pilot stem (12) travels freely up and down. If binding is observed, disassemble the pilot (paragraph 4.2) and inspect the stem. Replace stem if damaged. If dirt or other foreign material is obstructing travel, clean parts and reassemble (paragraph 4.3 e.).
- e. Place equipment into service (paragraph 2).

4.2. VP, VPS Pilot Disassembly and Assembly (figure 2).

Table 4 lists disassembly and assembly instructions for the VP and VPS pilots.

Table 4 – Disassembly, Assembly Instructions

STEP	DISASSEMBLY	ASSEMBLY
1	Shut down system.	If removed during disassembly, install new bushing (11) into body (21).
2	Loosen adjusting nut (2) and turn out adjusting screw (1) from spring chamber (3).	If removed during disassembly, turn seat ring (13) into body (21).
3	Loosen and remove upper diaphragm nuts (7) from diaphragm bolts (10) securing spring chamber (3) to body (21).	Slide stem (12) into body (21) through blind flange (18) opening.
4	Lift spring chamber off body (21).	Install new steam screen (14) into body (21) through blind flange (18) opening.
5	Remove top spring button (4), adjusting spring (5), and lower spring button (4).	Install new gasket (19) on blind flange (18). Secure blind flange to body (21) by inserting blind flange bolts (16) through blind flange and into body. Tighten securely.
6	Remove pressure plate (6) and diaphragm (9).	Install valve spring (22) over stem (12). Follow with pusher plate (23).
7	Loosen and remove diaphragm screw (8) and pusher plate (23). Remove valve spring (22).	Install diaphragm screw (8) on stem (12) and tighten. Place new gasket (9) over stem. Follow with pressure plate (6).
8	Loosen and remove blind flange bolts (16) securing blind flange (18) to body (21). Remove blind flange.	Install lower spring button (4) on stem (12). Place adjusting spring (5) on lower spring button. Follow with upper adjusting spring (4).
9	Loosen and remove gasket (19) and steam screen (14).	Place spring chamber (3) on body (21). Align bolt holes. Insert diaphragm bolts (10) through body and spring chamber. Install diaphragm nut (7) on diaphragm nuts. Tighten securely.
10	Slide stem (12) out bottom of body (21).	Start system according to START UP instructions (paragraph 2.2.).
11	If damage is suspected, turn out seat ring (13).	Adjust pilot by turning adjusting screw (1) into body (21) to increase compression on adjusting spring (5). When pilot is correctly adjusted, tighten locknut (2) to hold adjusting screw in position.
12	If damage is suspected, slide bushing (11) out of body (21).	Test equipment for leaks.

4.3. Lapping In and Cleaning Pilot Parts

a. Disassemble equipment according to instructions in table 4.

CAUTION

Use only 400 grit compound when lapping seats and valve surfaces. Damaged surfaces should be refaced before lapping.

b. Position bushing (11) and seat ring (13) in pilot body (21). Replace stem (12) to its normal position. Do not install spring (4).

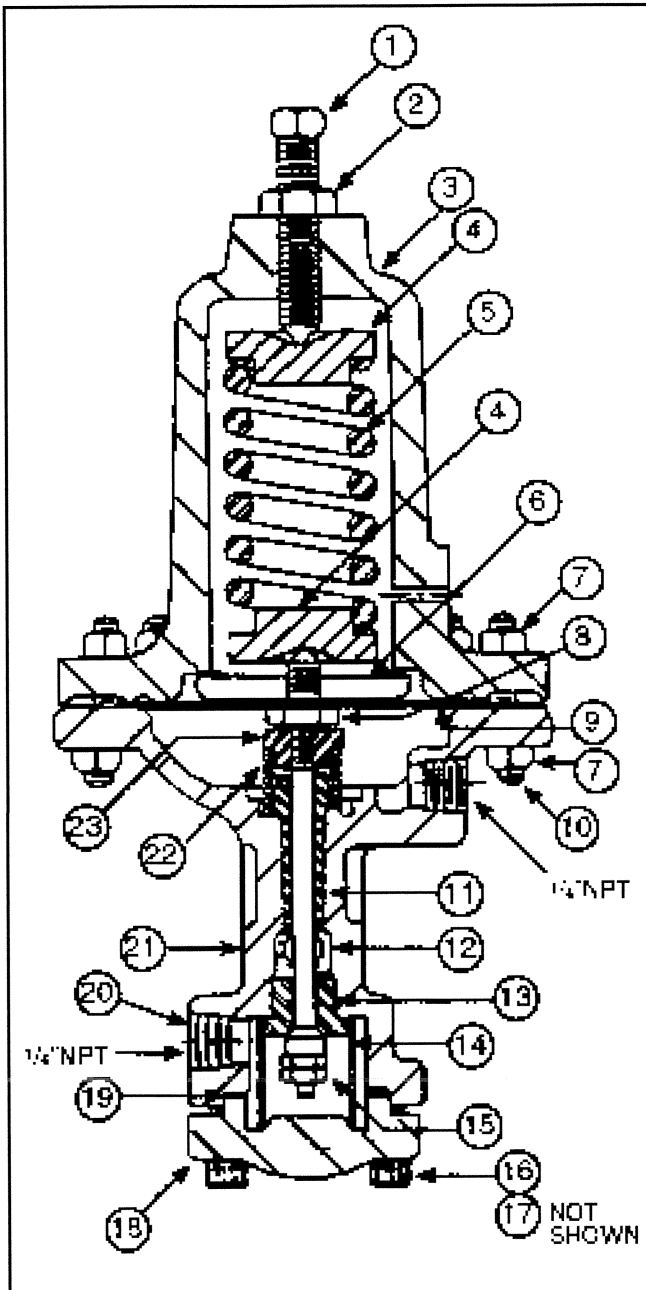
c. Apply 400 grit lapping compound to the disc at the bottom of the stem (12).

d. Place the blade of a small flat head screwdriver into the slot in the stem (12). Rotate the stem until lapping compound is evenly distributed over the seat ring (13).

WARNING

Solvent is flammable and gives off poisonous fumes. Use solvent only in well ventilated areas and away from open flames.

e. When lapping is completed, separate parts. Clean all pilot parts with Varisol or equivalent solvent.



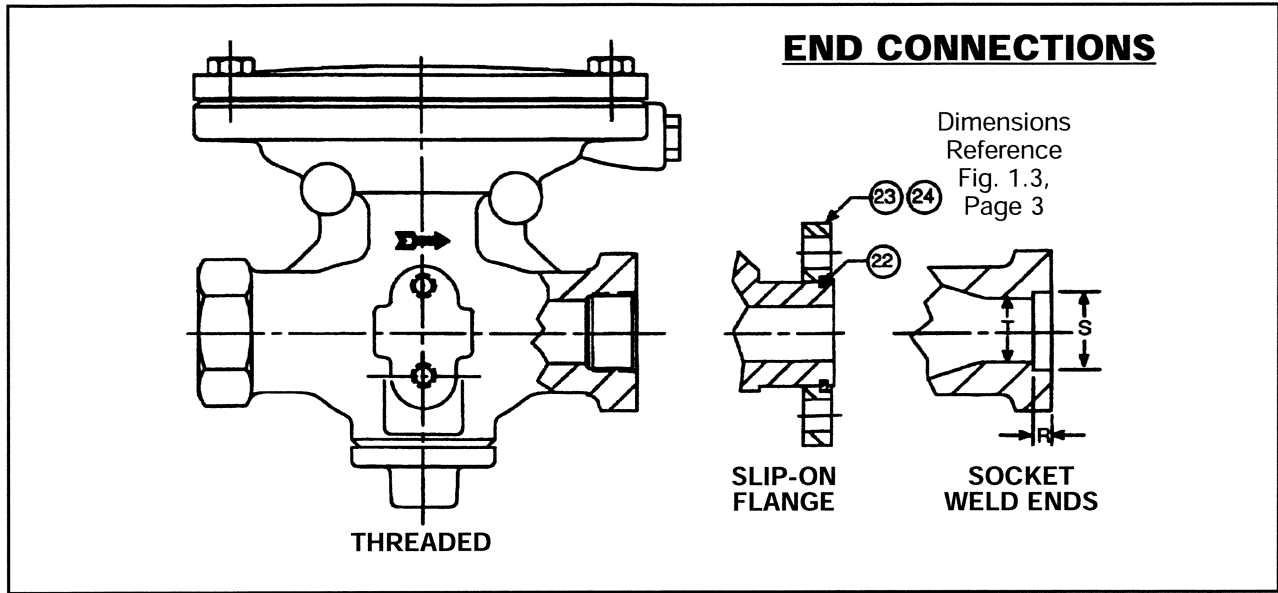
**Parts List
LESLIE CLASS
VP and VPS
PRESSURE PILOT**

When ordering pilot it is essential that the pilot type, service and serial number be stated.

Item No.	Part Name	Remarks	Material
1	Adjusting Screw		Steel
2	Locknut		Steel
3	Spring Chamber	Note 1	Iron
	Spring Chamber	Note 2	Steel
4	Spring Button		Steel
5	Adjusting Spring		Steel
6	Pressure Plate	B	Steel
7	Diaphragm Nut		Steel
8	Diaphragm Screw	B	Steel
9	Diaphragm	A, B 2 Req'd	St. Steel
10	Diaphragm Bolt		Steel
11	Bushing		St. Steel
12	Stem	B	St. Steel
13	Seat Ring	B	St. Steel
14	Screen, Steam	B	Monel
15	Stem Nut	B	Steel
16	Blind Flange Bolt		Steel
17	Pipe Plug-1/8 NPT.	Not Shown	Steel
	Pipe Plug-1/8 NPT.	Not Shown	Brass
18	Blind Flange		Cast Iron
19	Gasket	A, B Note 1	Asbestos
	Gasket	A, B Note 2	Flexitalic
20	Disc	B	St. Steel
21	Body & Bushing	Note 3	Cast Iron
	Body & Bushing	Screwed	C. Steel
22	Valve Spring	A, B	Inconel
23	Pusher Plate	B	Steel

A = Recommended Spare Parts
B = These parts furnished in repair kit: Steam Screen

Note 1: Applies to Iron Pilot Bodies
Note 2: Applies to Steel Pilot Bodies
Note 3: Body is furnished complete with bushing no. 11. Bushing can be furnished separately.



THREADED & SOCKET WELD END DIMENSIONS IN INCHES AND MILLIMETERS

NOM. PIPE SIZE	A	B	C	C-D	D	E	F	G	H	J	K
1/2"	8 1/2	5 1/2	3 3/8	6 3/8	-	-	-	-	-	4 5/16	3 5/8
15MM	215.9	139.7	85.7	161.9	-	-	-	-	-	109.5	92.1
3/4"	8 1/2	5 1/2	3 3/8	6 3/8	-	-	-	-	-	4 5/16	3 5/8
20MM	215.9	139.7	85.7	161.9	-	-	-	-	-	109.5	92.1
1"	8 1/2	5 1/2	3 1/2	6 3/8	-	-	-	-	-	4 5/16	3 29/32
25MM	215.9	139.7	88.9	161.9	-	-	-	-	-	109.5	99.2
1 1/2"	9 1/2	6 1/16	4 1/2	7 1/2	-	-	-	-	-	5 1/8	4 5/16
40MM	241.3	154.0	114.3	190.5	-	-	-	-	-	130.2	109.5
2"	11 1/2	6 1/16	4 1/2	7 1/2	-	-	-	-	-	5 1/8	4 5/16
50MM	292.1	154.0	114.3	190.5	-	-	-	-	-	130.2	109.5

NOM. PIPE SIZE	L	M	N	P	R	S	T	NO. OF HOLES	BOLT HOLE	BOLT SIZE	NET WT.*
1/2"	17	8 5/8	2 1/4	9 1/8	0.855	3/8	3 5/64	-	-	-	51 lb.
15MM	431.8	219.1	57.2	231.8	21.7	9.5	13.9	-	-	-	23.2 kg
3/4"	17	8 5/8	2 1/4	9 1/8	1.065	1/2	3/4	-	-	-	53.8 lb.
20MM	431.8	219.1	57.2	231.8	27.1	12.7	19.1	-	-	-	24.5 kg
1"	17	8 5/8	2 1/4	9 1/8	1.330	1/2	6 1/64	-	-	-	60.7 lb
25MM	431.8	219.1	57.2	231.8	33.8	12.7	24.2	-	-	-	27.6 kg
1 1/2"	17 9/16	10 1/4	3 3/4	10 1/4	1.915	1/2	1 1/2	-	-	-	77 lb
40MM	446.1	260.4	95.3	260.4	48.6	12.7	38.1	-	-	-	35 kg
2"	17 9/16	10 1/4	3 3/4	10 1/4	2.406	5/8	1 15/16	-	-	-	82 lb
50MM	446.1	260.4	95.3	260.4	61.1	15.9	49.2	-	-	-	37.3 kg

All Inlet and Outlet Flange dimensions are per ANSI B16.5. *APPROXIMATE FOR GPS-1EP
 Face-To-Face dimensions are per ISA SP75.08 for 1/2" to 2" and per ANSI B16.10 for 3" and 4".

150# FLANGED

DIMENSIONS IN INCHES AND MILLIMETERS

NOM. PIPE SIZE	A	B	C	C-D	D	E MIN.	F	G	H	J	K
1" 25MM	8½ 215.9	5½ 139.7	3½ 88.9	6¾ 161.9	4¼ 108.0	⅝ 14.3	2 50.5	3⅛ 79.4	⅙ 1.6	4⅝ 109.5	3²⁹⁄₃₂ 99.2
1½" 40MM	9½ 241.3	6⅙ 154.0	4½ 114.3	7½ 190.5	5 127.0	1⅙ 17.5	2⅞ 73.0	3⅞ 98.4	⅙ 1.6	5⅛ 130.2	4⅝ 109.5
2" 50MM	11½ 292.1	6⅙ 154.0	4½ 114.3	7½ 190.5	6 152.4	¾ 19.1	3⅝ 92.1	4¾ 120.7	⅙ 1.6	5⅛ 130.2	4⅝ 109.5
3" 80MM	11¾ 298.5	8⅞ 225.4	6⅝ 168.3	9½ 241.3	7½ 190.5	1⅝ 23.8	5 127.0	6 152.4	⅙ 1.6	11 279.4	4⅞ 123.8
4" 100MM	13⅞ 352.4	10⅞ 257.2	7⅝ 193.7	11¼ 298.5	9 228.6	1⅝ 23.8	6¾ 157.2	7½ 190.5	⅙ 1.6	11 279.4	6¾ 157.2

NOM. PIPE SIZE	L	M	N	P	R	S	T	NO. OF HOLES	BOLT HOLE	BOLT SIZE	NET WT.*
1" 25MM	17 431.8	8⅝ 219.1	2¼ 57.2	9⅞ 231.8	– –	– –	– –	4	⅝ 15.9	½ 12.7	65 lb. 29.5 kg
1½" 40MM	17⅞ 446.1	10¼ 260.4	3¾ 95.3	10¼ 260.4	– –	– –	– –	4	⅝ 15.9	½ 12.7	80 lb. 36.4 kg
2" 50MM	17⅞ 446.1	10¼ 260.4	3¾ 95.3	10¼ 260.4	– –	– –	– –	4	¾ 19.1	⅝ 15.9	88 lb 40.0 kg
3" 80MM	20¾ 517.5	16 406.4	2¼ 57.2	10¼ 368.3	– –	– –	– –	4	¾ 19.1	⅝ 15.9	268 lb 121,8 kg
4" 100MM	21⅝ 549.3	16 406.4	2¼ 57.2	10¼ 368.3	– –	– –	– –	8	¾ 19.1	⅝ 15.9	298.5 lb 135.7 kg

**APPROXIMATE FOR GPS-1EP*

All Inlet and Outlet Flange dimensions are per ANSI B16.5.

Face-To-Face dimensions are per ISA SP75.08 for 1/2" to 2" and per ANSI B16.10 for 3" and 4".

300# FLANGED

DIMENSIONS IN INCHES AND MILLIMETERS

NOM. PIPE SIZE	A	B	C	C-D	D	E	F	G	H	J	K
1" 25MM	8½ 215.9	5½ 139.7	3½ 88.9	6¾ 161.9	4⅞ 123.8	1⅞ 17.5	2 50.8	3½ 88.9	⅞ 1.6	4⅞ 109.5	3⅞ 99.2
1½" 40MM	9½ 241.3	6⅞ 154.0	4½ 114.3	7½ 190.5	6⅞ 155.6	1⅞ 20.6	2⅞ 73.0	4½ 114.3	⅞ 1.6	4⅞ 130.2	3⅞ 109.5
2" 50MM	11½ 292.1	6⅞ 154.0	4½ 114.3	7½ 190.5	6½ 165.1	⅞ 22.2	3⅞ 92.1	5 127	⅞ 1.6	4⅞ 109.5	3 ²⁹ / ₃₂ 99.2
3" 80MM	12½ 317.5	8⅞ 225.4	6⅞ 168.3	9½ 241.3	8¼ 209.6	1⅞ 28.6	5 127.0	6⅞ 168.3	⅞ 1.6	5⅞ 279.4	4⅞ 123.8
4" 100MM	14½ 368.3	10⅞ 257.2	7⅞ 193.7	11¼ 298.5	10 254.0	1¼ 31.8	6⅞ 157.2	7⅞ 200.0	⅞ 1.6	5⅞ 279.4	4⅞ 157.2

NOM. PIPE SIZE	L	M	N	P	R	S	T	NO. OF HOLES	BOLT HOLE	BOLT SIZE	NET WT.*
1" 25MM	17 431.8	8⅞ 219.1	2¼ 57.2	9⅞ 231.8	-	-	-	4	¾ 19.1	⅞ 15.9	69 lb. 31.4 kg
1½" 40MM	17⅞ 446.1	10¼ 260.4	2¼ 95.3	10¼ 260.4	-	-	-	4	⅞ 22.2	¾ 19.1	53.8 lb. 24.5 kg
2" 50MM	17⅞ 446.1	10¼ 260.4	3¾ 95.3	10¼ 260.4	-	-	-	4	¾ 19.1	⅞ 15.9	60.7 lb. 27.6 kg
3" 80MM	20⅞ 517.5	16 406.4	2¼ 57.2	14½ 368.3	-	-	-	4	⅞ 22.2	¾ 19.1	77 lb. 35 kg
4" 100MM	21⅞ 549.3	16 406.4	2¼ 57.2	14½ 368.3	-	-	-	4	⅞ 22.2	¾ 19.1	82 lb. 37.3 kg

**APPROXIMATE FOR GPS-1EP*

All Inlet and Outlet Flange dimensions are per ANSI B16.5.

Face-To-Face dimensions are per ISA SP75.08 for 1/2" to 2" and per ANSI B16.10 for 3" and 4".

PARTS LISTS, GPS-IEP & VARIANTS

*When ordering parts, give: size, class, part name and part reference number from Table below.
Use part number only to locate part on drawing.*

PART NO.	PART NAME	MATERIAL	MATERIAL SPECIFICATION	QTY.	1/2"	3/4"	1"	1-1/2"	2"	3"	4"
1	1/4 NPT-SCH 80 x 2" Nipple	Steel	Commercial	1	72141	72141	72141	72141	72141	72141	72141
2	1/4 NPT Street Elbow	Brass	Commercial	1	72142	72142	72142	72142	72142	72142	72142
3	1/4 NPT Male/Female Union	Malleable Iron	Commercial	1	72143	72143	72143	72143	72143	72143	72143
4	1/4 NPT x 1/8 NPT Adapter	Brass	Commercial	1	72144	72144	72144	72144	72144	72144	72144
5	Orificed Tube Fitting	Brass	SAE CA 377 or Equiv.	1	72145	72145	72145	72145	72145	72145	72145
6	1/4 NPT Male Elbow	Brass	Commercial	(Note 1)	18610	18610	18610	18610	18610	18610	18610
7	1/4 NPT Male Conn.	Brass	Commercial	(Note 2)	12839	12839	12839	12839	12839	12839	12839
8	3/8 x 1/4 NPT Red. Bushing	Brass	Commercial	1	-	-	-	72156	72156	72156	72156
9	Union Tee	Brass	Commercial	1	-	-	-	72157	72157	72157	72157
10	Inlet Tube	Copper	Annealed, ASTM-B75	1	72382	72382	72382	72384	72384	-	-
11	1/4 NPT Male Adapter	Brass	ASTM-B16	1	-	-	-	-	-	65394	65394
12	Bleed Tube, Upper	Copper	Annealed, ASTM-B75	1	72385	72385	72385	72387	72387	72394	72394
13	Bleed Tube, Lower	Copper	Annealed, ASTM-B75	1	72389	72389	72389	72389	72389	72392	72393
14	By-Pass Tube	Copper	Annealed, ASTM-B75	1	72388	72388	72388	72388	72388	72390	72391
15	3/8 NPT Plug	Steel	Commercial	1	07175	07175	07175	-	-	-	-
16	Union	Brass	Commercial	1	72245	72245	72245	-	-	-	-
17	Union Elbow	Brass	SAE CA 377	1	-	-	-	-	-	72410	72410
18	Inlet Tube, Upper	Copper	Annealed, ASTM-B75	1	-	-	-	-	-	72396	72397
19	Inlet Tube, Lower	Copper	Annealed, ASTM-B75	1	-	-	-	-	-	72411	72412
20	Bleed Tube, Mid. Sec.	Copper	Annealed, ASTM-B75	1	-	-	-	-	-	72413	72419
21	Body, Threaded	Cast Steel	ASTM-A216 GR. WCB	1	7128503	7127703	7128803	7129103	7150003	-	-
21	Body, S.O. Flg. (Note 4)	Cast Steel	ASTM-A216 GR. WCB	1	-	-	7128903	7129303	7149803	-	-
21	Body, 150# Flg.	Cast Steel	ASTM-A216 GR. WCB	1	-	-	-	-	-	7150703	7150503
21	Body, 300# Flg.	Cast Steel	ASTM-A216 GR. WCB	1	-	-	-	-	-	7150803	7150603
21	Body, S.W.E	Cast Steel	ASTM-A216 GR. WCB	1	7226603	7226803	7227003	7227203	7227403	-	-
22	Retaining Ring	Steel	AISI 1018	2	-	-	71471	71472	71473	-	-
23	S.O. Flg., 150#	Steel	Commercial	2	-	-	71474	71476	71478	-	-
24	S.O. Flg., 300#	Steel	Commercial	2	-	-	71475	71477	71479	-	-
	Tube Kit Compl.(Notes 3&5)	(Note 3)	(Note 3)	(Note 3)	71453	71453	71453	71454	71454	71455	71415

NOTE 1: Quantity is 1 for 1/2" through 2" sizes. Quantity is 2 for 3" and 4" sizes.

NOTE 2: Quantity is 1 for 1/2", 3/4", 1", 3" and 4" sizes. Quantity is for 1-1/2" and 2" sizes.

NOTE 3: Tube Kit Complete consists of part numbers 1 through 20. Refer to individual part numbers for material, material spec, and quantities.

NOTE 4: Replacement Body, Retaining Ring (part number 22) and Slip-on Flanges (part number 23 or 24), must be ordered separately.

NOTE 5: All tube fittings use 5/16 O.D. tube.

NOTE 6: For all parts except Body, Retaining Ring and Slip-on Flange, see drawing number 30/4.4.2.2.



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