



LESLIE
CONTROLS, INC.

A subsidiary of CIRCOR International, Inc.
12501 Telecom Drive • Tampa, FL 33637-0906

**INSTALLATION, OPERATING,
AND MAINTENANCE INSTRUCTIONS**
PARTS LIST

30/4.5.3.1 Rev.1

GPK-1T, GPK-2TC, GPK-2T AND GPK-4T
PRESSURE REDUCING VALVES SIZES
1/2" THROUGH 4"

For TROUBLE FREE OPERATION and TIGHT SHUT-OFF
carefully follow the MAINTENANCE PROCEDURES outlined in this INSTRUCTION.

HOW TO IDENTIFY YOUR VALVE TYPE

GPK-1 T— Fitted with three (3) stainless steel diaphragms.

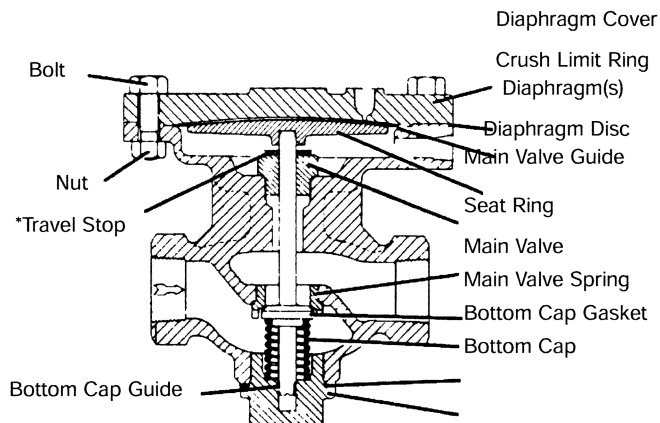
GPK-2T—This is a converted GPK-1T fitted with a SUPER-FLEX diaphragm and a metal spacer ring to control diaphragm crush.

GPK-4T— As" - 1As" sizes only with Super G body design and resilient seat.

NOTE: If you wish to take advantage of the long-life expectancy of the new SUPERFLEX diaphragm, your GPK-1T can be easily converted to either a GPK-2TC or GPK-2T during your valve maintenance period.

DISASSEMBLY

1. Remove bolts and nuts from diaphragm cover and lift off cover. Take out diaphragm(s) and diaphragm disc. Remove spacer ring if used.
2. Remove bottom cap and bottom cap gasket, main valve and spring.
3. To remove seat ring, place seat ring wrench over lugs of ring and strike end of wrench with a hammer several times while holding wrench in place to loosen seat ring for removal.
4. Clean diaphragm disc, diaphragm cover and main body diaphragm seating surface including the rounded portion below diaphragm face. Cleaning is important as a diaphragm life can be decreased if diaphragm is allowed to flex over any rough or scaled areas. A rotary wire brush is excellent for cleaning these surfaces. Check diaphragm cover air connection making sure it is not plugged.
5. Clean and polish seat ring threads and flat face, bottom cap gasket face and threads, main valve guide in main body and main valve guide bushing in bottom cap (Bottom cap bushings are removable in 1/2" through 2" sizes). To polish main valve and guides, place them in a lathe and spin rapidly. Use 320 Aluminum Oxide cloth as polishing agent.



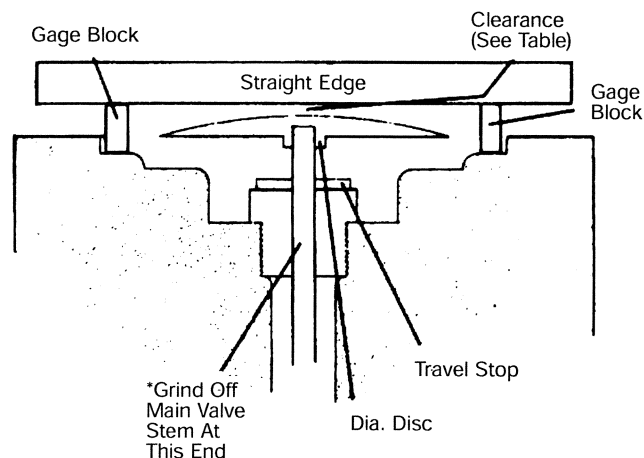
*1/2" through 2" GPK-2TC and GPK-2T do not have a travel stop.

6. After cleaning check all parts for erosion or damage. Replace if necessary.
7. Use a rotary wire brush and clean main body seat ring face and threads. Check for any erosion or damage to threads or flat face. All deposits must be removed from flat face as a metal to metal steam seal must be obtained between ring face and main body. Check bottom cap gasket face of main body. Gasket face must be flat and square; minor nicks should be removed with fine emery.
8. Blow out all loose scale etc. from body with air.

ASSEMBLY

1. Use a light coating of Never-Seez or similar lubricant on the first two threads only of seat ring. Blue in seat ring before final tightening making sure there is full, all-around contact between seat ring and main body flat faces. Tighten seat ring to 150 foot pounds torque. Install main valve guide and tighten.
2. FOR ALL-METAL SEATS ONLY: Place a small amount of extra fine lapping compound (Carborundum Grade CF) evenly spaced on main valve seating surface and lightly lap valve to seat ring. Remove all traces of compound from parts before reassembly.

3. Install main valve, main valve spring, bottom cap with guide bushing and bottom cap gasket. Tighten bottom cap.
4. Place travel stop washer over upper end of main valve stem followed by diaphragm disc (GPK-2T and GPK-2TC, sizes 1" through 2" do not have a travel stop).
5. Check height of disc. **IMPORTANT:** Height of diaphragm disc **MUST** be correct to obtain **TIGHT SHUT-OFF** of main valve. See Clearance Table and sketch for details. If **MINIMUM** clearance is **LESS** than that shown in Clearance Table, remove main valve and grind just enough metal from end of main valve stem to obtain proper clearance* (see view) If **MAXIMUM** clearance is **MORE** than that shown in Clearance Table, the rated travel of main valve will be reduced causing a reduction in the rated steam capacity of valve. If reduced capacity is great enough to affect system operation, a new seat ring and main valve should be installed.
6. GPK-1T Type—Replace the three diaphragms making sure the lower two leaves are those having a small bleed hole. The upper or top diaphragm is solid and does not have a bleed hole. GPK-2TC and GPK-2T Types — Replace SUPERFLEX DIAPHRAGM.
7. Loosen bottom cap sufficiently until diaphragm disc rests against main valve guide or travel stop if one is used. Place SUPERFLEX diaphragm on top of disc and center into recess of valve body. Replace diaphragm cover spacer ring on GPK-2TC only. In-stall diaphragm cover and tighten nuts evenly and securely. Retighten bottom cap.
8. If possible check valve for tight seating, using steam pressure equal to actual operating pressure before installing valve in line.
9. **BEFORE INSTALLING VALVE:** Clean strainer at in-let of valve and blow out piping including impulse pipe. Check traps for proper operation. Check pressure gages to make sure they read pressure correctly.



CLEARANCE TABLE

VALVE SIZE	GAGE BLOCK HEIGHT	MINIMUM CLEARANCE	MAXIMUM CLEARANCE
½" - 1½"	.187 + .000 - .022	.073 to .071	.100
1½" - 2"	.218 + .000 - .002	.076 to .074	.103
2½" - 4"	.312 + .000 - .002	.024 to .022	.066

To check disc height, place two gage blocks on flat of diaphragm face opposite each other. Place a straight edge across blocks and measure clearance between bottom edge of straight edge and top of diaphragm disc as shown in sketch.



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Ph: (813) 978-1000 • Fax: (813) 978-0984
www.lesliecontrols.com