

Installation and Commissioning

G4 Pressure Regulator – ES/G4/0/006

Fig. No.		2042/3	2044	2045	2046
Material of body		Bronze	Cast Iron	Cast Steel	Cast Steel
Max. Inlet	Bar	25	13	25	42
Steam Pressure*	lb/in ²	350	190	350	600
Reduced Pressure Spring Range					
		Bar	lbf/in ²		
		0.07-0.34	1.5†		
		0.34-1.38	5-20		
		0.34-3.4	5-50		
		0.7-3.4	10-50		
		0.7-6.9	10-100		
		2.76-6.9	40-100		
		2.76-10.3	40-150		
		3.45-12.1	50-175		
		3.45-13.8	50-200		
		6.9-20.7	100-300		

*Maximum Pressure varies with temperature – see G4 brochure.

†For Low Pressure Top.

Seal Materials
Standard (Metallic)
Soft (Non-Metallic)

Size of main valve (if different from body size)	
Restricted 12mm (1/2")	
12mm (1/2")	32mm (1 1/4")
19mm (3/4")	38mm (1 1/2")

ES/G4/006 March 2001

Information, specifications and technical data contained in this document are subject to change without notice. The company does not warranty that the specifications are current and assumes no responsibility for the use or misuse thereof. The Purchaser should verify that there have been no changes to the specification prior to use.

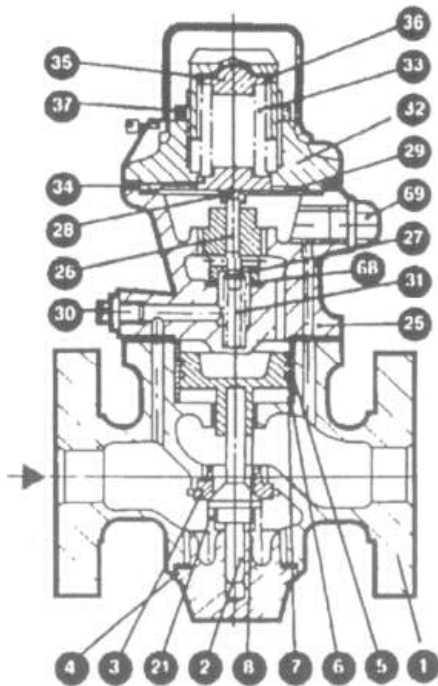
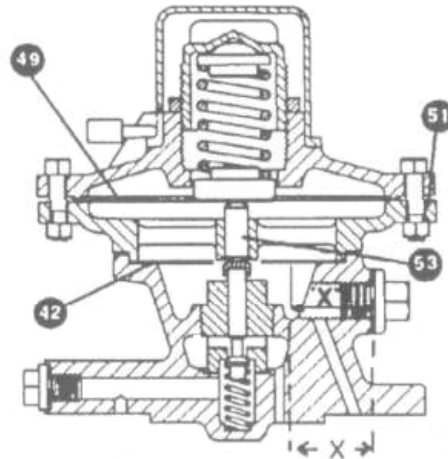


Fig. 2043 BRONZE VALVE
(Fig. 2042/4/5/6 similar)

Fig. 2042/3/4/5/6 Dimension 'X' = 30 mm.



Dimension 'X' = 30 mm

L.P. PILOT VALVE TOP

A balance pipe must always be fitted when using a Low Pressure Top assembly.

Parts List

- | | |
|------------------------|-------------------------------|
| 1. Body | 31. Pilot Valve Spring |
| *2. Main Valve | 32. Pilot Valve Top Cover |
| 3. Main Valve seat | 33. Pressure Spring |
| 4. Bottom plug / cover | 34. Bottom Spring Plate |
| 5. Piston | 35. Top spring Plate |
| 6. Piston Rings | 36. Adjusting Screw |
| 7. Piston Liner | 37. Locking Ring |
| 8. Piston Guide | *42. Diaphragm Joint |
| 21. Main Valve Spring | 49. Diaphragm (L.P. Top) |
| 25. Pilot Valve Top | 51. Adaptor flange (L.P. Top) |
| *26. Pilot Valve | 53. Push Rod (L.P. Top) |
| 27. Pilot Valve Plug | 68. Pilot Valve Copper Joint |
| 28. Pilot Valve Cap | 69. Remote Control Plug |
| 29. Diaphragm | |
| 30. H.P. Port Plug | |

* Resilient trim and joints for gas/air duty.

Spares Packs Available

- a. Routine Service Pack – comprising a set of joints, piston rings, diaphragm and P.V. Cap.
- b. Complete Repair Pack – comprising 'a' plus complete P.V. assembly, main valve, seat and spring.
- c. P.V. Top assembly complete.
- d. Individual parts other than those covered by (a) or (b).

When ordering spares, please quote:

1. Size and type of regulator.
2. Serial number.
3. Description and reference number of part (where applicable).

This label gives basic advice for installing and setting the G4. Further information is available on request:-

1. G4 technical catalogue.
2. G4 Installation and Maintenance.
3. G4 Station Design.

Our comprehensive service offers co-operation at every stage of a contract and an after sales service which pays immediate attention to maintenance needs, sending expert engineers to ensure 100% efficiency in valve operation.

Operation

The reduced pressure is controlled by the lift (or opening) of the main valve (2) which is opened by steam supplied to the piston (5) from the pilot valve (26). It is closed by the main valve spring (21). The pilot valve opening (and hence the piston pressure) is determined by the combination of the reduced pressure on the underside of the diaphragm (29) and the adjusting spring (33) load. The reduced pressure is therefore accurately maintained despite variations of inlet pressure or capacity. NOTE: Although the word steam is used, remarks on this label apply equally to air or gas.

Installation

1. Ensure the valve is installed in the correct direction of flow. See diagram for inlet side.
2. A Balance Pipe should be fitted if the reduced pressure is 10% or less of the inlet (steam duty only). It is important that the lower relay port is blanked off without obscuring the upper port (see dimension 'X' marked on the drawing). The pipe should be connected to a smooth flow point downstream of the regulator and should drain in this direction. Fit a union close to the regulator and a stop valve near the main. The hole for the balance pipe is tapped $\frac{3}{4}$ " B.S.P. 'Parallel'.
3. A strainer (of full pipe size) should be fitted about 10 pipe diameters upstream.
4. The Relief Valve should be of adequate size and arranged to discharge safely. The discharge pipe must be drained.
5. Piping must be properly supported and lined to avoid strain. Joints must be positioned correctly and pipework blown through to clear any dirt. All

pipework should be adequately trapped to prevent flooding of the reducing valve by condensate.

6. Pressure Gauges should be provided upstream and downstream at the regulator.

Commissioning – How To Set a G4

1. Remove all load from the adjusting spring by rotating the screw (36) anticlockwise.
2. With the downstream isolating valve open, 'just crack' the upstream isolating valve.
3. Screw down the adjusting screw a small amount to allow small flow through the regulator.
4. When the condensate has cleared, shut the downstream isolating valve. Pressure should rise to a low value and remain constant. Open upstream valve fully.
5. Carefully screw down the adjustment step by step until the desired pressure is achieved. (If the first setting is too high, remove the load and vent the outlet by opening and closing the isolating valve.)
6. The regulator may be set 'on flow' but this is less precise than the 'dead-end' procedure outlined above.

Adjustment etc.

1. Check joints for leaks and tighten the nuts or bolts as necessary.
2. In new or altered pipe systems, we strongly recommend that the bottom cover should be dismantled after about a week, and any accumulated dirt removed from the main valve and seat. Also clean the line strainer.
3. We recommend an annual internal examination and cleaning of the regulator.
4. 'Standout' of the pilot valve is important and is checked by placing a straight-edge across the diaphragm joint (spring chamber and diaphragm removed). The cap on the pilot valve should be in line. Correct by filing stem or inserting a shim.
5. Diaphragm joint must be free of graphite to avoid any effect on the stainless steel diaphragm.

Installation and maintenance should only be carried out by experienced engineering personnel.

Failure to adhere to these instructions will invalidate CE approval.