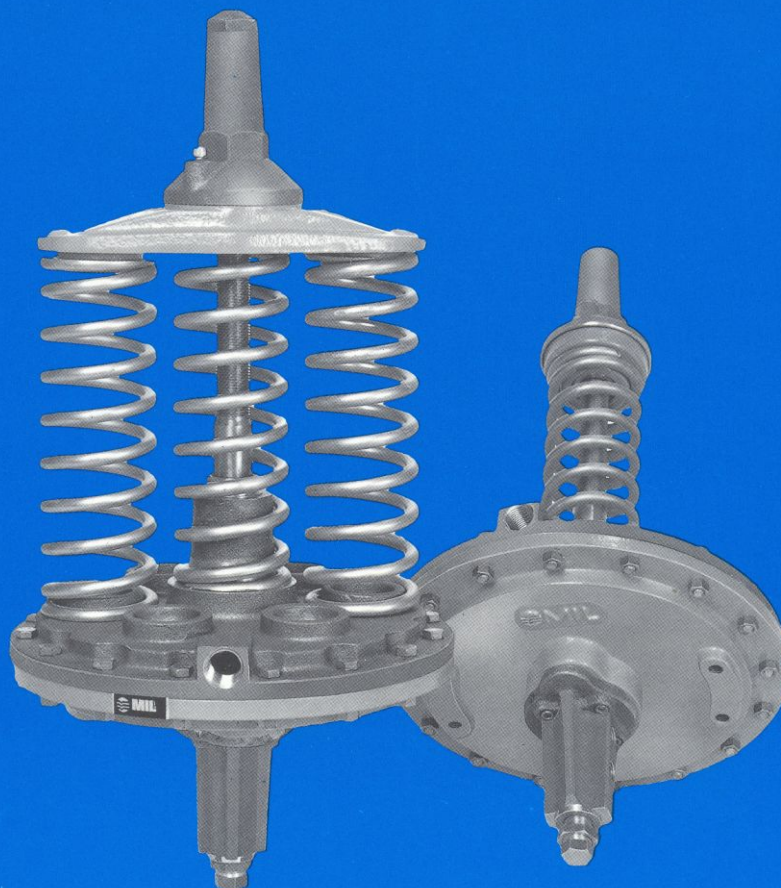




ALTITUDE PILOT VALVE SERIES PC4

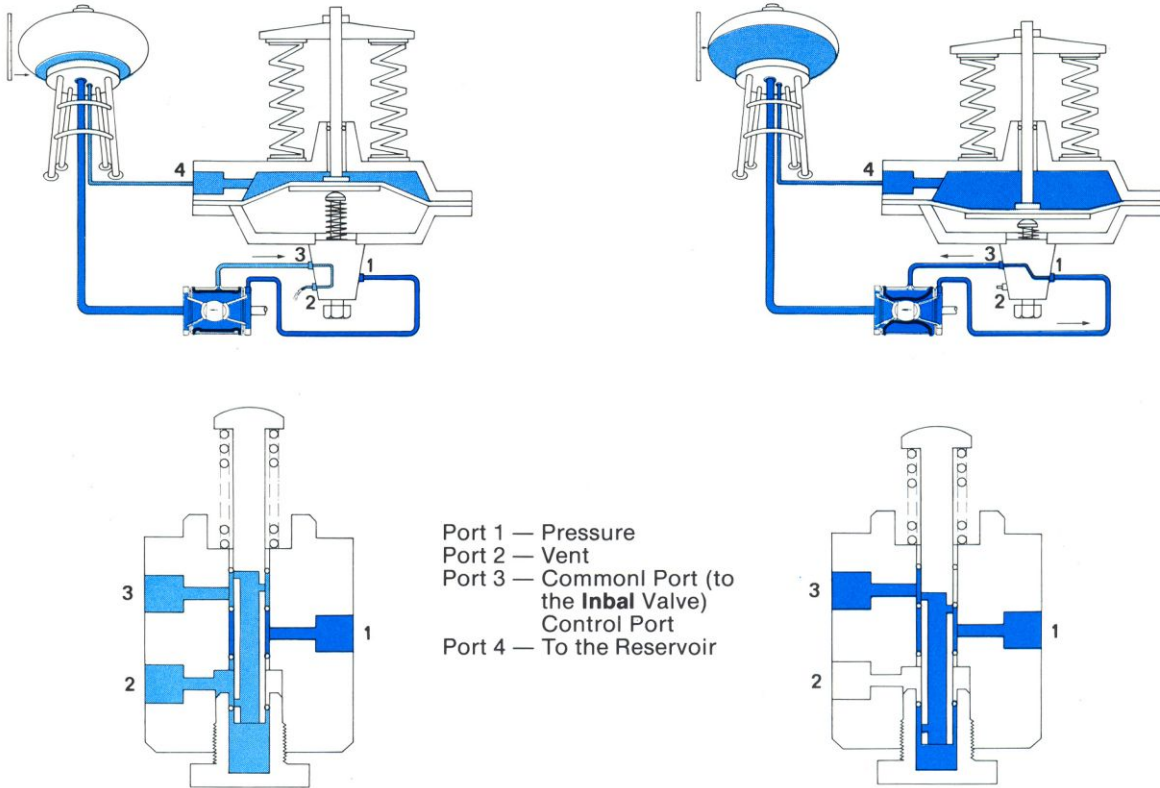


The **Inbal** model PC4 is a direct acting, multi spring type, adjustable spring loaded, 3-way body, diaphragm actuated pilot valve with remote reservoir static head sensing. There are seven altitude ranges available up to 70 meters (226 feet) determined by the number of the springs assembled. The combinations of the number of the

springs are shown in the table in the last page. The adjustment of the high shutoff point is made by the spring adjusting cup (1). The adjustment of the re-opening level is made by the re-opening adjusting screw (22). The level differential range for each spring combination is specified in the following table (see last page).



Principle of Operation



The head of the water column in the reservoir is lower than the set point of the spring, ports (2) and (3) are interconnected. The pressure of the **Inbal** valve control space is relieved to the atmosphere and the **Inbal** valve opens to fill up the reservoir.

Reservoir sensing pressure as the water level rises. When the sensing pressure increases to the set point of the PC4 pilot control spring the control shifts interconnecting port (1) and (3). This pressurises the **Inbal** valve control space and the **Inbal** valve closes.

Re-opening Adjustment



Turning the re-opening adjusting screw (22) clockwise to increase the shut-off and re-opening level differential.

Turning the re-opening and adjusting screw (22) counter clockwise to decrease the shutoff and re-opening level differential.

ALTITUDE PILOT VALVE SERIES PC4

Product Features

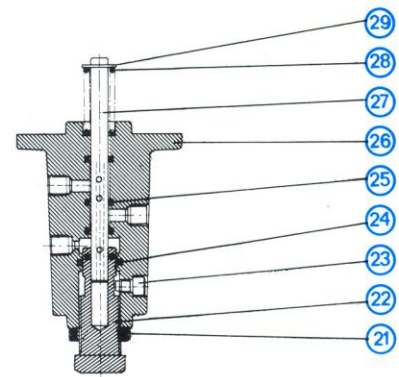
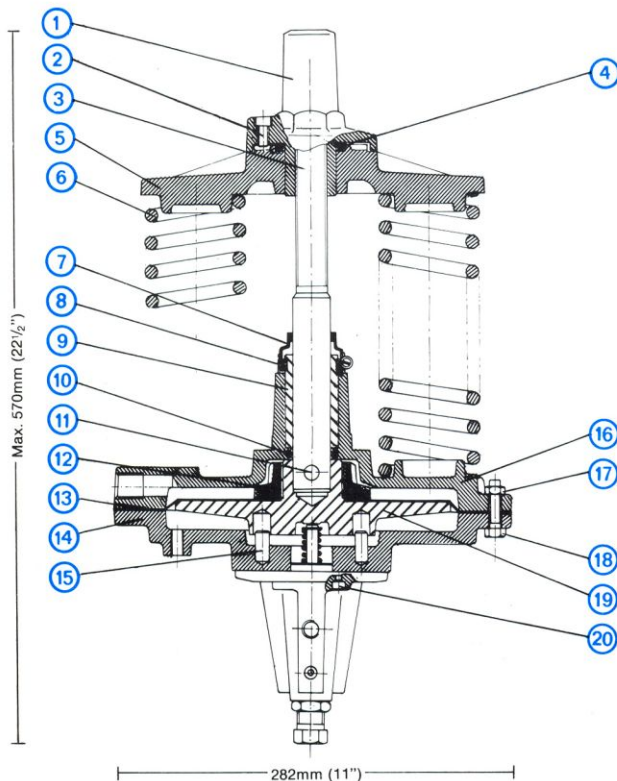
- ★ Very accurate and sensitive in operation.
- ★ The availability of any springs combination allow the selection of the ideal spring force to the specific liquid head.
- ★ Adjustment of the re-opening level eliminates the use of an additional pilot.
- ★ Wet parts made of non-corrosive materials. dry parts - epoxy coating. Springs - nylon coating.

- ★ Rubber cover to protect the pilot shaft.
- ★ Easy assembling of the desired spring combination.
- ★ Thrust ball bearing for easy adjustment of shutoff point.
- ★ Trouble free operation under normal operating conditions.

Parts List

Material

- | | | | |
|--|---------------------------------------|--|-------------------------------------|
| 1. Adjusting cup - shut off level | Cast Bronze ASTM B6 2 | 12. Fastener diaphragm plate | Cast Bronze ASTM B62 |
| 2. Locking bolt | Steel | 13. Diaphragm | Neoprene, nylon fabric reinforced |
| 3. Shaft | S.S. 303 | 14. Bottom bonnet | Cast iron ASTM A48-40B Epoxy Coated |
| 4. Thrust ball bearing | S.S. 304 | 15. Diaphragm plate pins | S.S. 316 |
| 5A. Spring retainer - single spring | Cast iron ASTM A48-40B Epoxy Coated | 16. Top bonnet | Cast Bronze ASTM B62 |
| 5B. Springs retainer - two & three springs | Cast iron ASTM A48-40B Epoxy Coated | 17. Nuts | S.S. 304 |
| 5C. Springs retainer — four & five springs | Cast iron ASTM A48-40B Epoxy Coated | 18. Bolts | S.S. 304 |
| 5D. Springs retainer — six & seven springs | Cast iron ASTM A48-40B Epoxy Coated | 19. Diaphragm plate | Cast Bronze ASTM B62 |
| 6. Spring(s) | Spring steel SAE 106S-80 Nylon Coated | 20. Alen bolts | Steel |
| 7. Cover Sleeve | Rubber | 21. Locking nut | Brass commercial grade |
| 8. Ring | S.S. 304 | 22. Adjusting screw - re-opening level | Brass commercial grade |
| 9. Bushing | Phospore Bronze | 23. Alen bolt | Steel |
| 10. O-Ring | Buna N (Parker 2-120) | 24. O-Ring | Buna N (Parker 2-016) |
| 11. Shaft pin | S.S. 316 | 25. O-Rings | Buna N (Parker 2-011) |
| | | 26. Body | Cast Bronze ASTM B62 |
| | | 27. Piston | S.S. 303 |
| | | 28. Piston spring | S.S. 302 |
| | | 29. Piston spring retainer | Steel Cadmium plated |



Pilot Model	Spring Combination	Shutoff level range meter/feet	Re-opening level range below shutoff point meter/feet
PC4-1	One spring	Up to 10 m (32 ft)	0.08-1 m (0.25-3.3 ft)
PC4-2	Two springs	5 to 20 m (16-64 ft)	0.16-2 m (0.5-6.6 ft)
PC4-3	Three springs	10 to 30 m (32-97 ft)	0.25-3 m (0.8-10 ft)
PC4-4	Four springs	12 to 40 m (39-130 ft)	0.40-4 m (1.3-13 ft)
PC4-5	Five springs	18 to 50 m (58-161 ft)	0.55-5 m (1.8-16 ft)
PC4-6	Six springs	20 to 60 m (64-194 ft)	0.70-6 m (2.3-20 ft)
PC4-7	Seven springs	25 to 70 m (80-226 ft)	0.90-7 m (3-23 ft)

Installation

- ★ The **Inbal** model PC4 Altitude control is mounted securely by a sturdy bracket on the **Inbal** valve.
- ★ It is recommended that the pilot be mounted with the main spring(s) up.
- ★ The sensing line should be ½" size copper tubing.
- ★ The sensing line should slope upward toward the reservoir to self purge air out of the line. Note that the slope of the sensing line should not have high points that would entrap air.
- ★ The sensing line should not be installed into the flowing line, but to 0.3 meter (12") above the bottom of the reservoir.
- ★ By turning the adjusting screw (1), the liquid level shutoff point will be changed. Turn the adjusting nut clockwise to raise the liquid level shutoff point. Once the adjustment is completed tighten the locking bolt (2) into one of the many grooves on the spring retainer surface.
- ★ Once the shutoff level is adjusted, the re-opening level can be adjusted. Turn the adjusting screw (22) clockwise to increase the differential between shutoff and re-opening level and counter clockwise to reduce it. Once the re-opening adjustment is completed tighten the locking nut (21).

Specifications

Threaded ports: ¼" N.P.T.
 Remote sensing port: ½" N.P.T.
 Pressure rating: 16 bar (225 psi) max
 Temperature range: Water to +85°C (185° F)
 Flow factor: Kv = 0.4 CV = 0.46
 Weights:
 PC4-1: 21.5 kg (48 lb)
 PC4-2: 24.5 kg (55 lb)
 PC4-3: 25.5 kg (57 lb)
 PC4-4: 28.0 kg (63 lb)
 PC4-5: 29.0 kg (65 lb)
 PC4-6: 33.0 kg (74 lb)
 PC4-7: 34.0 kg (77 lb)

MIL LTD reserves the right to make such alterations in design, dimensions, specifications and manufacture as are deemed necessary to ensure continued improvement.



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