

Altitude control, 3-way metal pilot-valve

The 31-10A is a 3-way, diaphragm actuated, spring-loaded pilot-valve that is designed for the control of pressure-operated hydraulic valves. The pilot valve operates as a selector between the common port and the two other ports. The pilot valve will vent or pressurize the control chamber of the main valve to open or to close, as a factor of the regulated pressure value. The pilot valve will block all ports, thus maintaining the main valve position, when the water-level is lower than the closing level and higher than the opening-level. The 31-10A pilot-valve is made of sturdy, high-quality materials and has an enlarged diaphragm for high sensitivity to pressure variation at the sensor port, so that even a very slight rise or fall of water level causes immediate change of the pilot valve position. The distance between the high and low water level is adjustable.

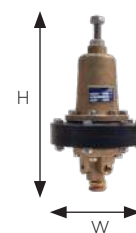
Features

- A 3-way pilot valve designed for level control in elevated water-reservoirs
- Delayed action: opens at low-level and closes at high-level
- Operating under two possible positions - high/low level
- Unique adjustable differential between opening and closing levels
- Can be used with any hydraulic control valve of any size
- Fully vents the control chamber to open (no hydrostatic head on the valve's chamber) - minimize pressure losses
- Pressure-Balanced: level set-value is not effected by changes in the supply pressure
- Wide regulation range
- Accurate and easy to adjust
- Simple design
- Can be activated by hydraulic or pneumatic pressure



Typical applications

- Altitude control valves - AL
- Optional: High sensitivity pressure reducing - PR
High sensitivity pressure sustaining - PS

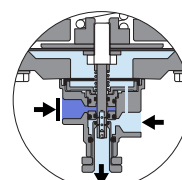


Technical data

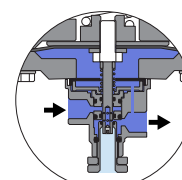
General		
Pressure rating	25 bar / 360 psi	
Pressure adjustment range	1 - 60 mt / 1.4 - 90 psi	
Differential adjustment	0.6 - 5.5 mt / 2 - 18 ft	
Fluid temperature	60°C max. / 140°F max.	
Weight	2.1 Kg. / 4.6 lbs.	
Materials	Standard	Optional*
Body and bonnet	Brass	SST
Diaphragm housing	POM	Brass, SST
Elastomers	EPDM	NBR
Internal parts	SST	
Spring	SST	

* other materials available upon demand

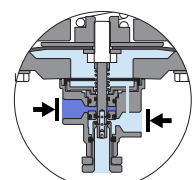
Dimensions	
H (Height) max.	193 mm / 7.6"
W (Width)	125 mm / 4.9"
Port Connections	
1, 2, 3	NPT 1/4"
4	NPT 1/8"



Low pressure



High pressure



Required pressure

Installation

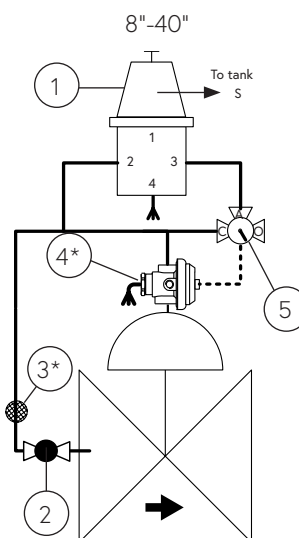
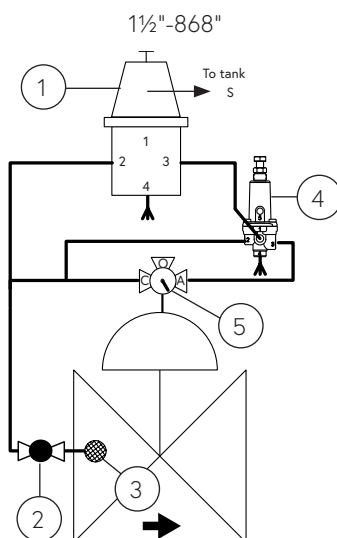
Main components

#	Description	#	Description
1	Altitude-control pilot-valve, model 31-10A	4	Pilot valve model 31-10R, used as relay**
2	Isolation ball valve	5	SY3 - 3-pos selector valve (SY6 for 6"/150mm)
3	Self flushing, inline control-filter*	6	2" Relay valve

* ½", Y pattern, line filter ** Relay-valve, model 66-213

Connections

Port	Altitude
1	Sensing
2	Upstream
3	Valve control chamber
4	Vent



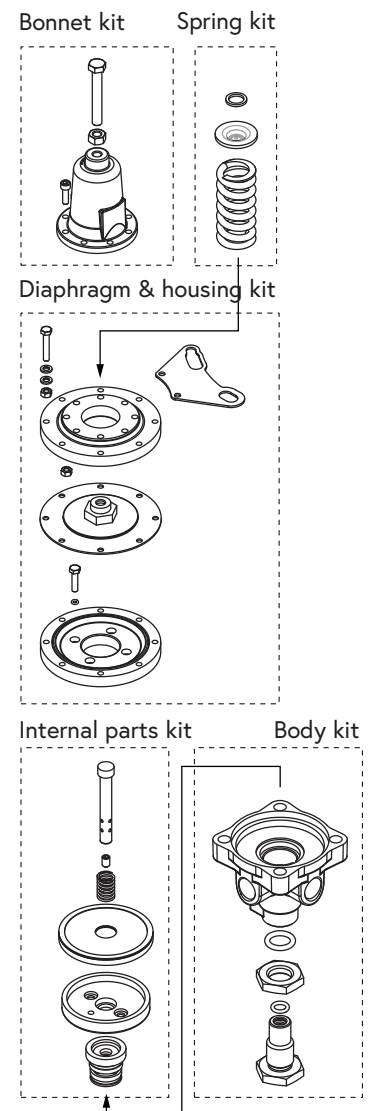
Sample drawing. Consult Dorot for the assembly design to fit your needs.

Springs adjustment range

Spring number	Color	Meter	psi
47 (Std.)	Green	1 - 40	1.45 - 58
50	Red	3 - 60	4.3 - 87
42	Yellow	1 - 20	1.45 - 29

Adjustment: Turn the adjusting screw clockwise to increase the set point

Spare parts



Catalogue numbers

Description	Catalogue number
Bonnet kit	661023110A
Spring 47 - Green	SPR001070+0051705652
Spring 50 - Red	SPR001073+0051705651
Spring 42 - Yellow	SPR001065+0051705653
Diaphragm and housing kit	660683110A
Internal parts kit	661203110A
Body kit	661013110A