Installation, Operation & Maintenance

Aquestia
Directing the Flow

DOROT Control function Flow Level (FL)

Control function Flow Level (FL) **Modulating Float Valve Using 70400 Pilot**	
Applicable Series:	Sizes:
S300, S100, S500	1½" - 40" / 40-1000mm

1. Function Description

Dorot Series 300 Modulating Float Valve ('30-FL') is activated by the pressure of the pipeline. The valve will modulate to maintain a steady, predetermined level in the reservoir and will keep a drip-tight closed position, in cases where the water level is higher than the Float Pilot location.

2. Technical Features

- Media: Water; natural, non-aggressive fluids
- Pressure rating: PN16 or PN25 (250psi or 360 psi) per specific valve-model
- Temp. range:
  S300: 2 – 80°C (35 - 176°F)
  S500/S100: 2 – 60°C (35 - 140°F)
- Flow velocity for continuous operation: 0.05 – 5.5 m/sec (0.3 – 18 ft/sec)
  Max. flow velocity for intermittent operation: 8 m/sec (26 ft/sec)

Notes:

- In case the designed/actual operating conditions are not suitable for the above defined standard features, please contact Aquestia Applications-Engineering.
- Refer to specific valve model publications for further details.

3. Safety Guidelines

- Injury or damage to the system/surroundings may occur if installation, commissioning, operation or maintenance instructions are not followed correctly, or if applicable codes of practice and regulations are ignored.
- Dorot valves are designed for use in fresh water-systems. Please consult Aquestia Applications-Engineering in case other media is to be used.
- Be sure to depressurize the valve, prior to any disassembly of valve or control-trim parts.
- Electrical works (e.g. connection of solenoid-valves, limit-switches etc.), must be executed by a certified electrician.
- Errors in the layout-design, installation or operation may affect valve performance and may be a risk to the system and operators/users. Please note, the system layout, installation and commissioning of valves is the responsibility of the system designer, installer and/or user.
- In any case of doubt and prior to taking any further action, please contact Aquestia representative for assistance.

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4. Installation

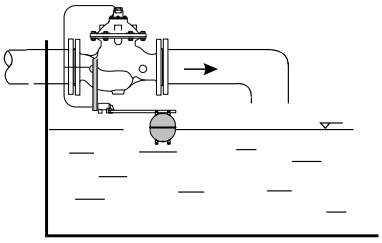


Fig 1

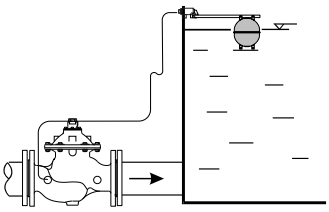
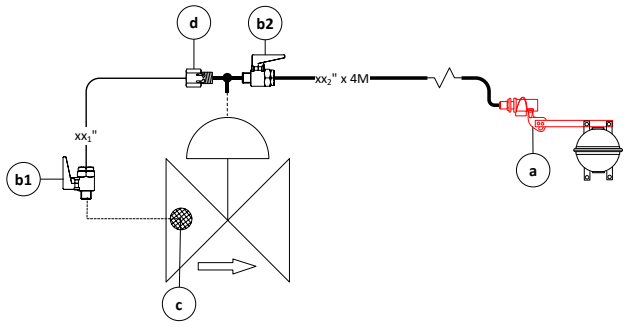


Fig 2

a. The valve can be installed in any position, although installation with the bonnet facing up is recommended for ease of maintenance.
b. Flow direction should match the engraved arrow on the bonnet.
c. Flush pipeline, upstream the valve, before assembly of the control-valve.
d. Two methods of installing the system:
   - Fig. 1- The valve is located above the water level. The pilot is attached to the valve by a bracket. It is advisable to throttle the pipe outlet when installation is above the water level, to both reduce noise and increase flow rate.
   - Fig. 2- Separate installation of valve and pilot. The pilot is connected to the tank wall or a suspension rod (not supplied).

5. Control-trim Design



	Valve size range	Pipe size
xx_1''	1.5''-4''	⅜''
	6''-40''	½''
xx_2''	1.5''-4''	⅜''
	6''-12''	½''
	14''-40''	1''

Main Parts

a. Level Control Float-activated Pilot Model, 70-400
b. Isolation Ball Valve
c. Self-flushing, Inline Control Filter
d. Orifice
   *Up to 14'' 1.5 mm, 16'' and above 3 mm

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6. Commissioning & Adjustment

a. Close the valve by closing the water source.
b. Connect the pilot to the water tank.
c. The pilot should be connected to the tank at the water height required.
d. Connect the pilot to the 2W ball valve [b2], using the xx 2" pipe/tube.
e. Open the water to fill the tank.

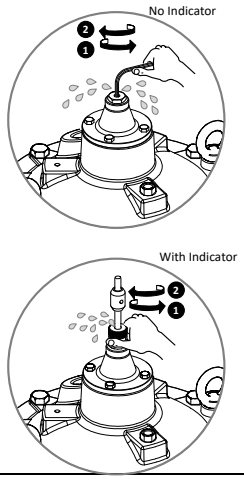
ⓘ Charging the downstream system must be done slowly to prevent pressure surges

Air bleed in S-300/500 valves

This should be done with the control chamber pressurized (main valve closed)

Using the supplied Allen key – open air-bleed-screw at the top of the bonnet and reclose it when only water, (no air) is discharged (refer to diagram on the right).

In cases where an indicator rod exists – using hand force only – release and tighten the round nut at the top of the indicator guide.



7. Manual Activation

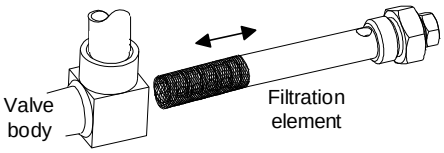
ⓘ Note that

The valve can be closed manually by closing the ball valve [b2]

ⓘ Return the valves [b] to "OPEN" position after maintenance is completed.

8. Maintenance

a. Inspect and clean the inline filter [c] as water quality dictates. This service should be performed every few months.
b. During this operation, the main valve must be isolated from external pressure, by closure of up- and downstream isolation valves [A, B].
c. Inspect valve performance by checking water level in the tank periodically.



Extraction of screen element, filter

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9. Troubleshooting		
General check list	Ball valves [b]	All must be open when operated
	Schematic diagram	Verify that the piping is consistent with the schematic diagram
	Release air trapped in the control chamber	
	Filter	Check and clean
	System adjustment	Verify that the pilot valve is adjusted correctly
Valve fails to open	Pressure is too low	Increase pressure
	Pilot vent is clogged	Clean pilot vent
Valve fails to close	Diaphragm is leaking	Replace diaphragm if needed