Installation, Operation & Maintenance

Aquestia
Directing the Flow

DOROT Control Function DI(S)

Control Function DI(S) 2W Pressure Differential Sustaining	
Applicable Series:	Sizes:
S300, S500, S100	1½" - 14" / 40-350mm

1. Function Description

Automatic, pilot-operated Pressure Differential Sustaining Control Valve. The valve will regulate to maintain a set pressure differential between the upstream and downstream. Should the differential fall below the requested value, the valve will close drip-tight.

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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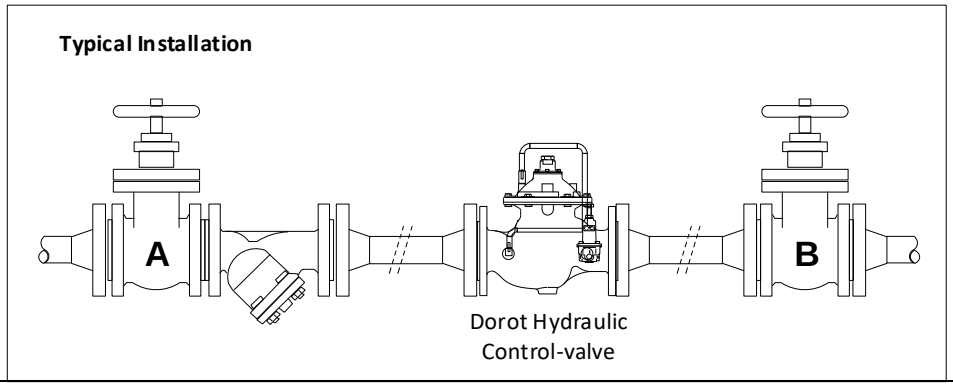
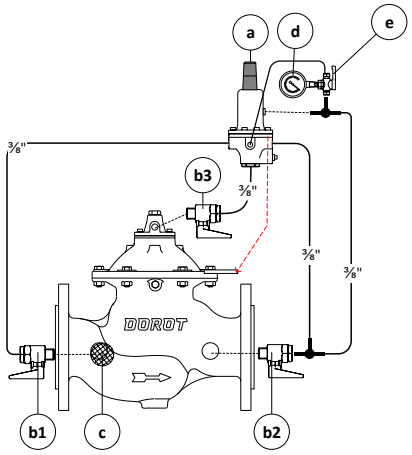


4. Installation

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. For maintenance considerations, it is recommended that manual isolation valves (gate or butterfly) are installed, both sides with a strainer between the upstream isolation valve and the valve inlet (as shown in the diagram above).
d. Flush pipeline upstream of the valve, before assembly of the control valve.

5. Control Trim Design



Main Parts

a. Pressure Differential Sustaining Pilot Valve: Model CXSD
b. Isolation Ball Valve
c. Self-flushing, Inline Control Filter
d. Pressure Gauge
e. ¼" Selector Valve

6. Commissioning & Adjustment

a. Open ball valves [b1, b2, b3].
b. Start the pump or open isolation valve [A].
c. Bleed air out of the control chamber (refer to 'Air Bleed Procedure' below).
d. Unscrew cap on the CXSD pilot valve.
e. Turn adjustment bolt clockwise to **increase** the pressure differential.
f. Turn adjustment bolt counter-clockwise to **reduce** the pressure differential.
g. ***Adjust slowly and wait for a response.***
h. Replace the cap on the CXSD pilot valve to prevent leakage.

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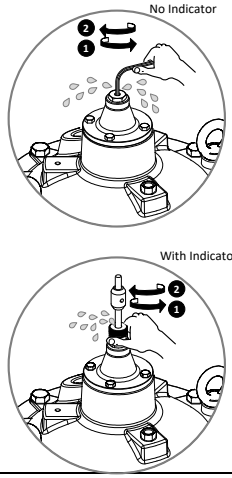
Air Bleed in S-300/500 Valves

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

a. The valve can be opened manually by closing Ball Valve [b1] while Ball Valve [b2] is opened.
b. The valve can be set in a fixed position for maintenance of control circuit, by closure of valve [b3].

ⓘ Return valve(s) [b3] to "open" position after maintenance is completed.

8. Maintenance

a. Inspect valve performance by checking pressure gauge(s) periodically.
b. No special maintenance it required.

9. Troubleshooting

General check list	Ball valves [b]	All must be open when operated
	Schematic diagram	Verify that piping is consistent with the schematic diagram
	Release air trapped in the control chamber	
	Filter	Check and clean