

DOROT Pressure Reducing (PR)

Control Function: Pressure Reducing (PR) Pressure Reducing Using 68-410/CXPR Pilot

Applicable Series:

S300, S100, S500

Sizes:

1½" - 14" \ 40-350mm

1. Function Description

Dorot Series 300 Pressure Reducing Valve ('30-PR'), is activated by the pressure of the pipeline. The valve reduces high upstream pressure to a steady, pre-determined and lower downstream pressure, regardless of fluctuations in upstream pressure or rate of flow. In cases where the downstream pressure exceeds the set 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 the specific valve model
- Temp. range:
 - S300: 2 - 80°C (35 - 176°F)
 - S500/100: 2 - 60°C (35 - 140°F)
- Flow speed for continuous operation: 0.05 - 5.5 m/sec (0.3 - 18 ft/sec)
Max. flow speed for intermittent operation: 8 m/sec (26 ft/sec)

Notes:

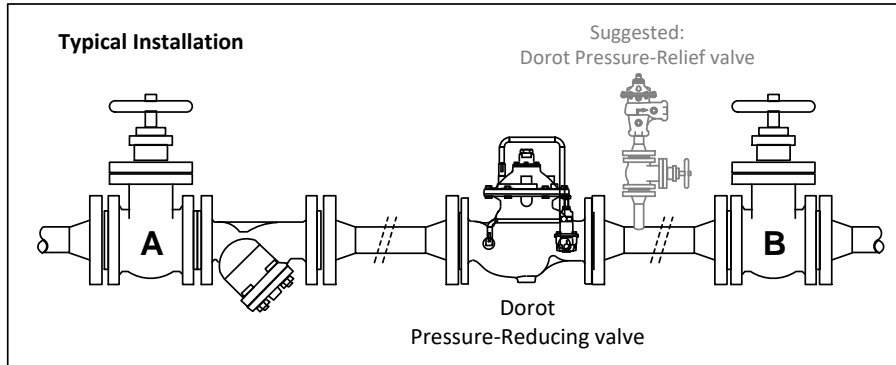
- In case the designed/actual operating conditions are not suitable for the above defined standard features, please contact Aquestia Applications-Engineering.
- Refer to specific valve model publications for further details.

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.

DOROT Pressure Reducing (PR)

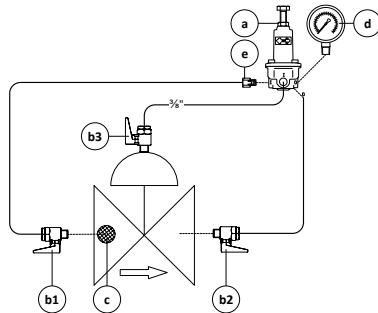
4. Installation



- The valve can be installed in any position, although installation with the bonnet facing up is recommended for ease of maintenance.
- Flow direction should match the engraved arrow on the bonnet.
- 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).
- It is advisable to add a downstream pressure relief valve. Consult Aquestia for sizing of that valve.
- Flush pipeline upstream of the valve, before assembly of the control valve.

5. Control Trim Design

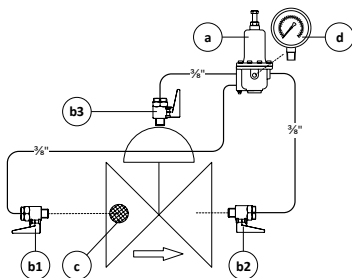
1.5" – 6" / 40 – 150 mm, 68410 Pilot



Main Parts

- Pilot valve
- Isolation ball valve
- Self-Flushing, inline control filter
- Pressure gauge
- Orifice (2mm)

8" – 14" / 200 – 350 mm, CXPR Pilot



Main Parts

- Pilot valve
- Isolation ball valve
- Self-Flushing, inline control filter
- Pressure gauge

Installation, Operation & Maintenance

DOROT Pressure Reducing (PR)

6. Commissioning & Adjustment

- Turn adjusting bolt of the pilot valve [a] counter-clockwise, all the way.
- Open ball valve [b1] and close ball valve [b2].
- Start the pump or open isolation valve [A].
- Bleed air out of the control chamber (refer to 'Air-bleed Procedure' below).
- Fully close the downstream isolation valve [B] and reopen it slightly (do not open more than 1-2 turns). Verify some type of demand, such as a hydrant valve open in the downstream system.
- Open downstream ball valve [b2].
- Slowly turn adjusting bolt of pilot valve [a] clockwise, until gauge [d] shows the required value + 0.5 bar.
- Slowly open downstream isolation valve.

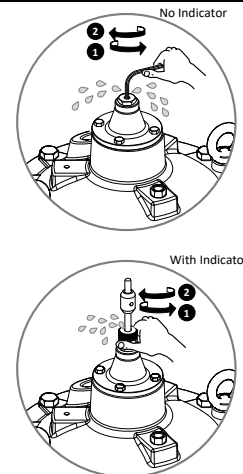
ⓘ Charging the downstream system must be done slowly, to prevent pressure surges

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 the air-bleed-screw on top of the bonnet and close it again when only water (no air), is discharged, (refer to diagram on the right).

In cases where an indicator-rod exists, (use hand-force only) to release and tighten the round nut on top of the indicator-guide.



7. Manual Activation

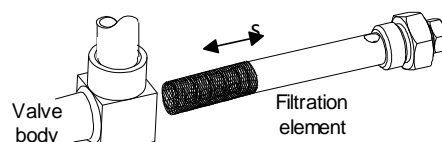
ⓘ Note that:

- The valve can be closed manually by closing ball valve [b2] while valves [b1, b3] are opened.
- The valve can be set in a fixed position, for maintenance of control circuit, by closure of valves [b3, b1 and b2] in that order. The automatic control function is cancelled while valve [b3] is closed.

ⓘ Return valves [b] to the “open” position after maintenance is completed.

8. Maintenance

- Inspect and clean the in-line filter [f] as water quality dictates. Servicing should be performed once every few months.
During this operation, the main valve must be isolated from external pressure by closing upstream and downstream isolation valves [A, B].
- Inspect valve performance by checking pressure gauges periodically.



Extraction of screen element, filter


DOROT Pressure Reducing (PR)
9. Troubleshooting

General check list	Ball valves [b]	All must be opened when operated
	Schematics	Verify that the tubing is consistent with the schematics
	Release air trapped in the control chamber	
	Filter	Check and clean
	System adjustment	Verify that the pilot valve is adjusted correctly by readjusting
Low downstream flow	Downstream pressure is too low even though the valve is open	Verify consumption can be supplied with the selected valve size
	Manual isolation valves [A] or [B] are throttled/closed	Verify all isolation valves upstream of the pressure gauge are fully opened
	Adjustment bolt of pilot valve [a] is open	Readjust (see section 2)
High downstream flow	Downstream pressure is too high	Verify there is no other pressure source in the zone
	Filter [c] and/or needle valve [f] and/or orifice [e] are clogged.	Check and clean
	Adjustment bolt of pilot valve [a] is too tight	Readjust (see section 2)
	Foreign object stuck in main valve internal-trim	Disassemble main valve, extract inner trim and flush/remove object
	Cracked main valve diaphragm	Disassemble and replace diaphragm
	Cracked pilot valve diaphragm (water flow from pilot valve bonnet) or defective internal seal	Replace the pilot valve diaphragm-assembly

Aquestia Ltd. reserves the right to make product changes without prior notice. To ensure receiving updated information on parts specifications, please contact us at info@aquestia.com.

Aquestia Ltd. shall not be held liable for any errors. All rights reserved