


DOROT Control Function Quick Pressure Relief (QR)

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Pressure Relief Using 68-510 Pilot Valve	
Applicable Series:	Sizes:
S300, S100	300 8"-32"/200-800mm, 100 8"-24"/200-600mm

1. Function Description

The DOROT Quick Pressure Relief Valve ('QR') is activated by pressure of the pipeline. The valve opens instantly when pipeline pressure exceeds set safe level, thus relieving excess pressure on the network. When pressure levels return to normal, the valve closes slowly, at an adjustable pace.

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)
 - S100: 2 – 60°C (35 - 145°F)
- 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.

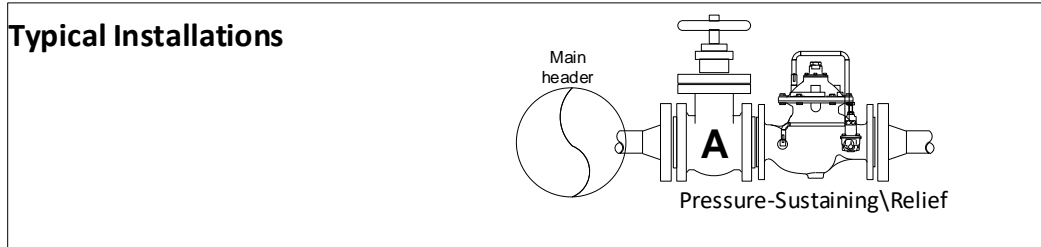
3. Safety Guidelines

- 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.

Installation, Operation & Maintenance

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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).
- Flush pipeline upstream of the valve, before assembly of the control valve.

5. Control Trim Design

<p>300 8" – 32" / 200 – 800 mm</p>	<p><u>Main Parts</u></p> <ul style="list-style-type: none"> a. Pilot Valve b. Isolation Ball Valve c. Self-flushing, Inline Control Filter d. Pressure Gauge e. Needle Valve f. 2/2 hyd. Relay Valve
<p>100 8"-18"/200-700mm 12"-14"/300-350mm (top view)</p>	<p>100 20"-24"/500-600mm</p>

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6. Commissioning & Adjustment

- Turn adjusting bolt on Pilot Valve [a] 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 downstream Isolation Valve [B] and reopen slightly (no more than 1-2 turns). Verify demand, such as an open hydrant valve in the downstream system.
- Open downstream Ball Valve [b2].
- Slowly turn adjusting bolt on Pilot Valve [a] counterclockwise, until Gauge [d] displays the required value + 0.5 bar.
- Slowly open downstream Isolation Valve.

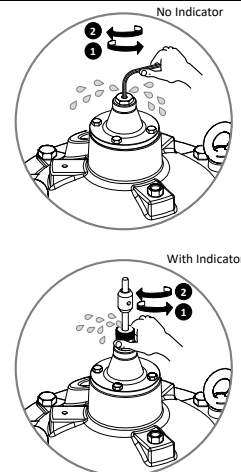
ⓘ Charging the downstream system must be done slowly to prevent pressure surges

Air bleed in S-300

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


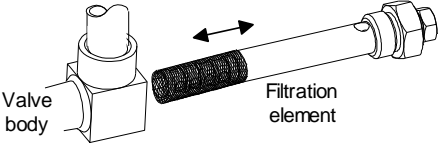
- The valve can be closed manually by closing Ball Valve [b2] while valves [b1+b3] are open.
- The valve can be set in a fixed position, for maintenance of control circuit, by closure of valves [b1 and b2] in that order. The automatic control is cancelled while valve [b3] is closed.

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

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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 upstream isolation valve [A].
- c. Inspect valve performance by checking pressure gauge levels periodically.

	 <p>Valve body Filtration element</p> <p>Extraction of screen element, filter</p>
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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
	System adjustment	Verify that the pilot valve is adjusted correctly
High upstream pressure	Foreign object stuck in the 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 the pilot valve bonnet) or defective internal seal	Replace pilot valve diaphragm-assembly

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