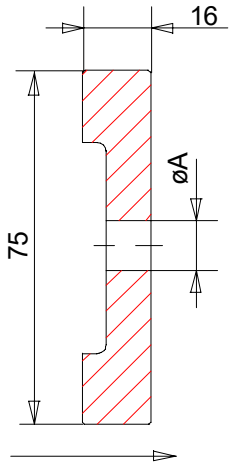
08-01-930

PED-category: I	**Orifice / restrictor, 2″, 300 bar Sycces ORIF-360 50**	**Index**	**Description**	**Date**
Fluid group: 2				01.10.06
Product line Sinorix ™				
CX ref. no. 3655099				
SAP S54476-B65-A4		VdS G306003 CE		
	97/23/EG			



direction of flow

Usage

The orifice plate must be used for pressure reduction in Sinorix ™ extinguishing systems only. It is installed between orifice plate holders fitted to the end of the manifold to reduce the pressure developed in the distribution pipework from the cylinder pressure (300 bar) to the calculated pipe pressure (normally 60 bar).

Technical data

working pressure	360bar
bursting pressure	1080bar
operating temperature range	-20°C / +50°C
serial no	week/year
weight	0.3 kg
material	steel EN10027-2: grade 1.4305

Orifice diameter range

orifice holder inlet side	orifice holder outlet side	orifice diameter range A
2″	1¼″	3 … 27.5 mm
2″	1½″	3 … 31.5 mm
2″	2″	3 … 41.0 mm
2″	2½″	3 … 43.5 mm
2″	3″	3 … 43.5 mm

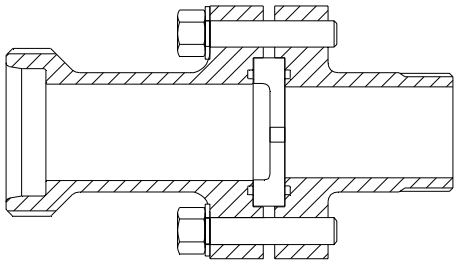
Safety warning
This product information is exclusively intended for specialized operators with the experience in designing, mounting, installing, commissioning, maintaining and retrofitting fire extinguishing systems. The user must ensure that the part is not abused an only used within its design limits and that all danger to life and limb of the operator, or third parties, is avoided. Moreover, compliance must be ensured with accident prevention regulations and national regulations. The user must also ensure that all persons the equipment have read and understood these product information.

Installation instructions

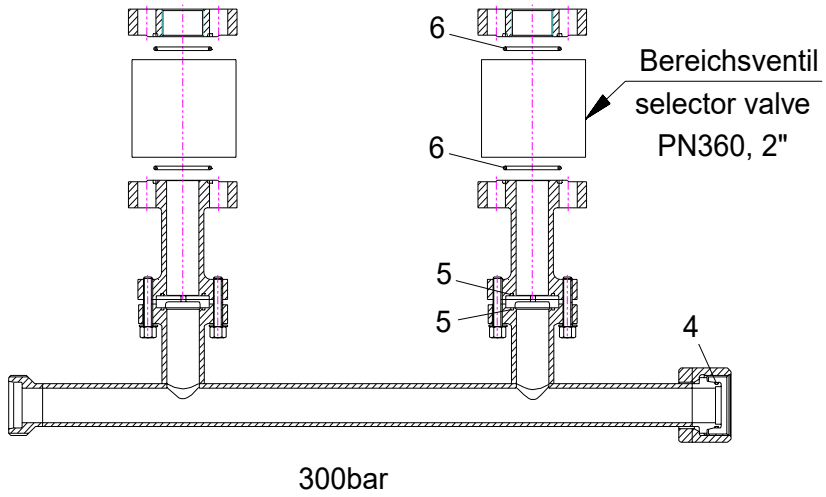
Requirements

- The orifice plate must be installed in the correct direction of flow.
- The orifice plate must be located by the two orifice holders.
- The inlet side “orifice holder“ is mounted at the end of the manifold.
- The outlet side “orifice holder“ is mounted in front of the low pressure distribution pipework (single zone) or in front of the selector valve (multi zone).

Single zone system

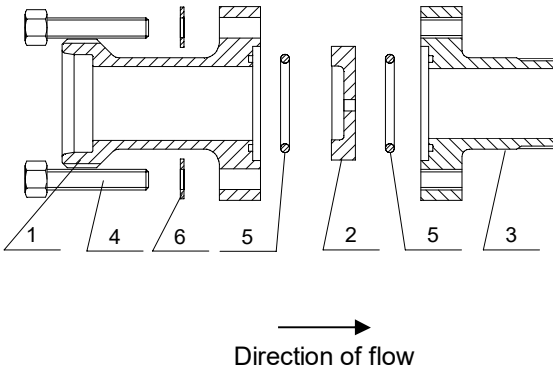


Multi zone system



Procedure

1. Check that the O-rings are fitted to the orifice holders and are free from any damage.
2. Lubricate the O-rings. Use petroleum jelly (Vaseline) or similar grease.
3. Install the orifice plate between the orifice holders, in the direction of flow (marked on the orifice plate) as shown in the following drawing.



1 Orifice holder at the inlet side.
2 Orifice plate
3 Orifice holder at the outlet side
4 Screw
5 O-Ring
6 Washer

4. Tighten the screws in a diagonal sequence using an allen key or suitable hexagonal bit. Do not omit any screws.

Ensure that the correct orifice plate is fitted in the correct location. Verify that the orifice diameter and pressure rating are correct. Never fit non-drilled orifice plates.

Do not use a 300 bar orifice on a 200 bar system.

Use following supplied screws:

For DN50:

- 8 x „CX 180216 / A5Q00032057 → screw galvanized steel, M12 x 65 / 8.8
- 8 x „CX 180455 / A5Q00032075 → washer galvanized steel “, M 12

Spare O-rings:

orifice plate	Pos.5	DN 50	56.75 x 3.53 mm, NBR 70	CX 507140	A5Q00032023

Maintenance

The orifice plate itself is maintenance-free.

After an extinguishant discharge:

- Check that the orifice holder screws are tight.

Service inspection requirements:

- Check the pipework for any unauthorized modifications which may result in a change of orifice diameter.
- Check the orifice holders for any damage or corrosion.
- Check that the orifice holder screws are tight.

Warning!
Any defective parts must be replaced immediately.
The fire protection system must be isolated until such time as the defective component(s) are replaced - failure to do so may result in significant property damage and injury to personnel.

Extinguishant leakage during extingushing system discharge

Extinguishant rarely leaks from the orifice assembly. Should this occur, either an O-ring is damaged or the orifice holder screws are not fully tightened.

Warning!

- Should it be necessary to dismantle an orifice assembly, the cylinder bank must be isolated to prevent the accidental actuator of extinguishant before commencing any such work.
- Before removing any screwed fitting, ensure any closed sections of the system are vented. Always loosen the screws on the orifice holder which are furthest away from the operator first.
- On completion of any maintenance or repair work, always retighten any loosened screw connections.

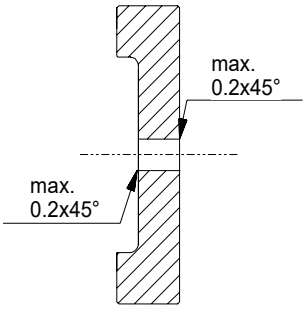
Rectification

1. Ensure that any closed section pipework is vented.
2. Remove the screws from the orifice holder.
3. Remove the orifice plate from the orifice holders. Note – it may be necessary to slacken off the manifold clamps in order to allow enough movement in the pipe sections to be able to remove the orifice plate.
4. Remove the old O-rings.
5. Clean the O-ring grooves in the orifice holders and check them for damage. Any damage must be rectified, or the orifice holders be replaced.
6. Replace the O-rings.

orifice plate	Pos.5	DN 50	56.75 x 3.53 mm, NBR 70	CX 507140	A5Q00032023

7. Reassemble the orifice holder in accordance with the installation instructions and retighten any manifold or pipe clamps which were loosened off in order to facilitate this procedure.

Drilling instructions



Requirements

- The orifice must be drilled correctly, so it corresponds with the coefficient of the VdS calculation software. Failure to drill the orifice correctly will affect the discharge time of the system and the pressure developed in the downstream pipework, which may exceed the maximum working pressure rating for the pipe and fittings.
- Orifice plates are normally supplied drilled to the correct diameter and supplied with the equipment.
- Should undrilled orifice plates be required which are drilled by the local installer, no responsibility is accepted by Siemens Switzerland Ltd, Building Technologies Group for any defect arising as a result.

Drilling procedure

1. The drilling diameter must correspond with that specified in the VdS calculation.
2. The drilling may have a surface roughness of maximum N8.
3. The drilling must be chamfered with 0.2 x 45° maximum on both sides.
4. The drilled diameter must be checked after drilling to ensure it is to the specified diameter,
   ø3 – ø 7.9 +/- 0.05 mm; ø8 – ø max. +/- 0.1 mm
5. The drilling diameter must be visibly stamped on the circumference of the orifice plate.

Warning!

If the orifice is not drilled precisely as detailed:

- The pressure after the restrictor can be significantly higher, overstressing the distribution pipework.
- The discharge time could be prolonged, delaying the achievement of the extinguishant concentration, resulting in further fire damage.
- The discharge time could be reduced, causing the protected area to be over pressurized during the discharge, resulting in structural damage.

Any of the above can lead to enormous damage.