Maxifluss Rotary Plug Valves with Low-noise Trims SM 1.x ... SM 4.x

VETEC Ventiltechnik GmbH

SAMSON

Application

Valve components designed to reduce the noise level for installation into Types 72.x and 73.x Rotary Plug Valves

When controlling gases or vapors, the noise emission generated by the control valves and the attached pipeline depends on the free jet that forms at the vena contracta and its turbulent mixing zone.

The Series SM 1.x to SM 4.x Low-noise Trims represent particularly effective and cost-efficient noise-reducing features as they shorten the free jet and speed up the energy exchange in the mixing zone when controlling gases and vapors.

Special features

- Effective, reliable, and low-cost trims designed to reduce the noise level
- Face-to-face dimensions of the valve remain unchanged
- Retrofitting possible
- Effective in either direction of flow
- Adaptable to specific operating conditions

Versions

The trims are available as seat ring, cone or as a combination of seat ring and cone.

Direction of flow "flow to open" (FTO):

– **SM 1.0** · Perforated seat ring
– **SM 2.0** · Short perforated cone
– **SM 3.0** · Long perforated cone
– **SM 4.0** · Perforated seat ring plus short perforated cone

Direction of flow "flow to close" (FTC):

– **SM 1.5** · Perforated seat ring
– **SM 2.5** · Short perforated cone
– **SM 3.5** · Long perforated cone
– **SM 4.5** · Perforated seat ring plus short perforated cone

Further versions

Low-noise trims for liquids

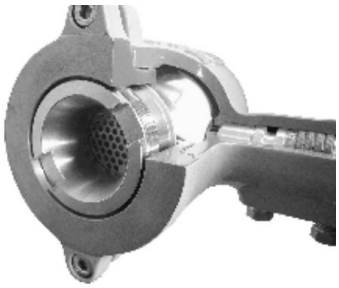

Fig. 1 · Type 72.x with SM 1.0 Low-noise Trim

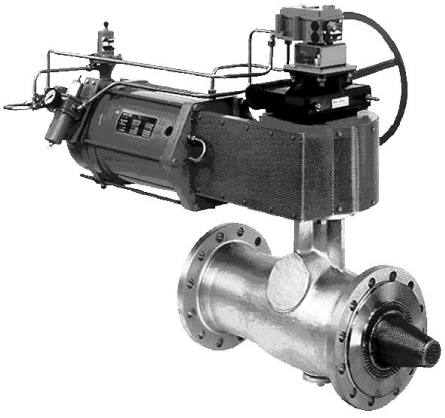

Fig. 2 · Type 72.x with SM 3.5 Low-noise Trim

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Principle of operation

The plug acts as the variable resistance that throttles the medium flow. The low-noise trims split the entering or exiting medium jet into small jets with a short free jet.

The energy exchange in the mixing zone is sped up, reducing the noise level by up to 20 dB compared to a standard valve.

Direction of flow

The process medium can flow through the Maxifluss rotary plug valves in either direction.

For gases and vapors, the preferred direction of flow is "flow to close" (**FTC**).

In special cases, the valve can also be used with direction of flow "flow to open" (**FTO**).

The Types SM x.0 and SM x.5 Low-noise Trims must be selected accordingly (refer to Figs. 4 to 11).

Effectiveness of the low-noise trims

The diagram plots the noise level (L_{pA} (dB(A)) versus the differential pressure ratio $X = \Delta p/p_1$ with and without noise-reducing valve trims.

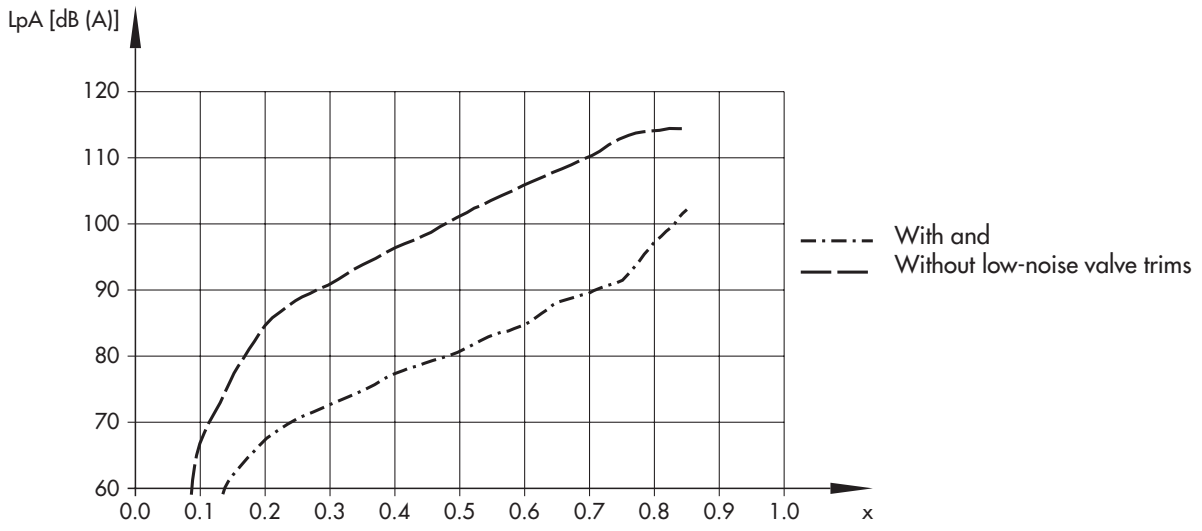

Fig. 3 · Noise level curves with and without low-noise valve trims

Specifications subject to change without notice.

FTO - flow to open

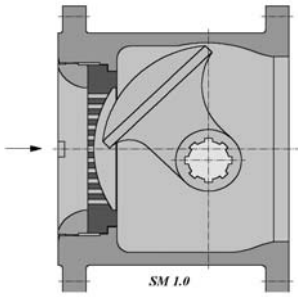

Fig. 4 · SM 1.0 - Perforated seat ring, direction of flow "V"

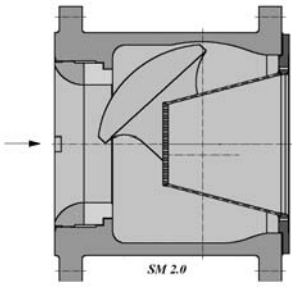

Fig. 5 · SM 2.0 - Short perforated cone, direction of flow "V"

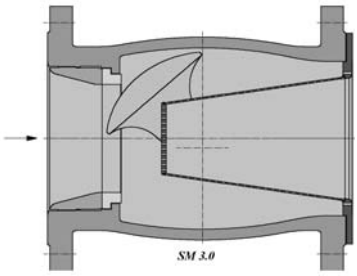

Fig. 6 · SM 3.0 - Long perforated cone, direction of flow "V"

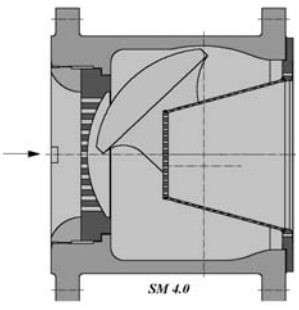

Fig. 7 · SM 4.0 - Perforated seat ring and short perforated cone, direction of flow "V"

FTC - flow to close

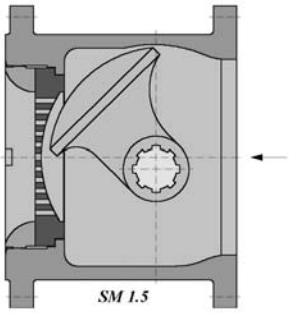

Fig. 8 · SM 1.5 - Perforated seat ring, direction of flow "H"

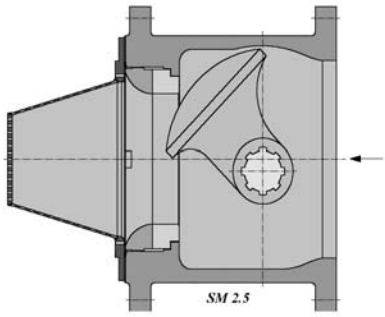

Fig. 9 · SM 2.5 - Short perforated cone, direction of flow "H"

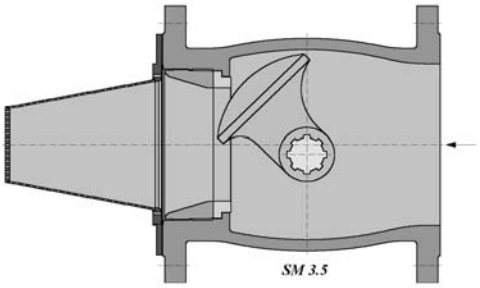

Fig. 10 · SM 3.5 - Long perforated cone, direction of flow "H"

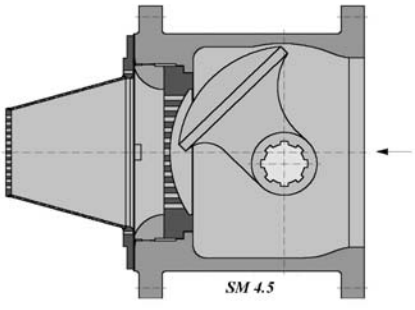

Fig. 11 · SM 4.5 - Perforated seat ring and short perforated cone, direction of flow "H"

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