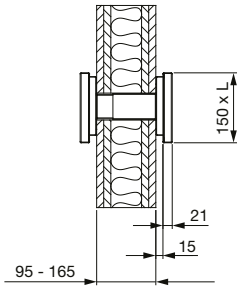
VSR-N – through wall valve square



Type	L [mm]
VSR-N 400	400
VSR-N 600	600
VSR-N 800	800
VSR-N 1000	1000

hole size = (L – 95) × 60 mm

Technical parameters

The VSR-N is a square through-wall valve designed for direct wall installation. The VSR-N consists of two square face panels with sound insulation that are mounted on both sides of the wall. These are connected using the perforated wall extensions supplied. This solution provides an excellent sound attenuation value.

- high flow rate
- neutral design
- front panels with silencers
- for installation in wall thicknesses 95–165 mm

Maintenance

The faceplates can be removed to allow cleaning of the valve internals. The visible parts of the valve can be cleaned in the normal way (with a duster).

Materials and surfaces

Installation brackets – galvanised steel
face panels – galvanised steel
Standard finish – powder coated
Standard colour – RAL 9010

Example of order execution

V S R - N – a a a

type
size

Characteristics

wall area [m²] / number of valves [–]

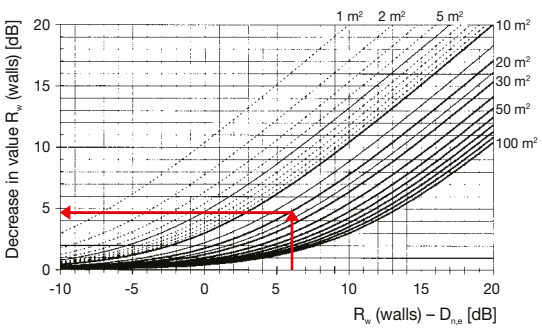
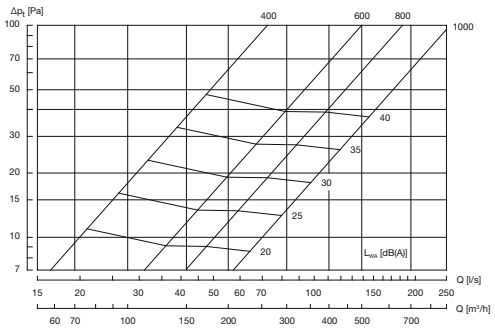


diagram for valve sizing



For a rough estimate it is possible for calculus. use directly the R_w value of the wall

Example:		
R_w (wall)	50 dB	
$D_{n,e}$ (valve)	44 dB	R_w-$D_{n,e}$ = 6 dB
Wall area	20 m²	
Number of valves	1	20 m² / 1 = 20 m²
Resulting reduction R_w (walls):		5
R_{res} value for wall with valve		≈ 50 – 5 = 45 dB

The calculation can also be done using a general formula:

$$R_{res} = 10 \times \text{Log} \left(\frac{S}{(10\,m^2 \times 10^{-0,1 \times D_{n,e}}) + (S \times 10^{-0,1 \times R_w})} \right)$$

Where it is:

R_{res} – the resulting reduced value for the wall with the valve
S – wall area
$D_{n,e}$ – $D_{n,e}$ value of the valve
R_w – R-value of the wall without valve

VSR-N – through wall valve square

Example of calculation
If through-wall valves are sized, the drop in sound insulation properties of the wall must be determined. For this calculation, the wall area must be known, as well as the sound insulation value R. The sound insulation drop is a function of the Dn,e value of the valve. Dn,e is the R-value appropriate to the valve and is determined for a transmission area of 10 m_2 in accordance with ISO 140-10. The Dn,e value can be recalculated for other transmission areas using the table below.

Area [m^2]	10	2	1
Correction [dB]	0	-7	-10

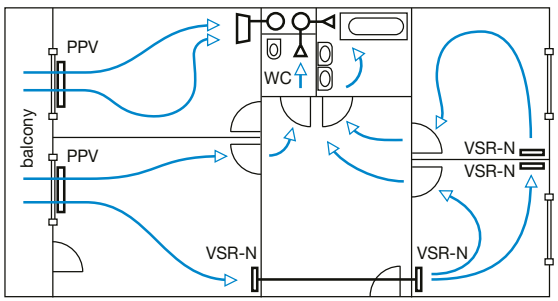
The diagram below shows the decrease in the value of the wall impermeability when using through-wall valves in the specified octave bands.

Flow
The flow rate q (l/s) and (m^3/h), the total pressure loss Pt [Pa] and the noise level L_{wa} [dB(A)] are determined for the valves on both sides of the wall.

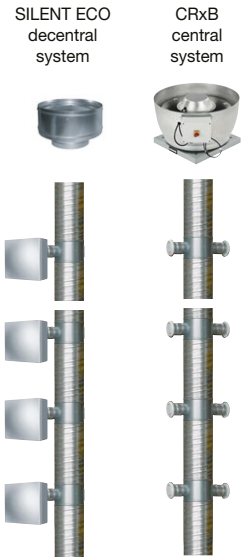
Normalized difference in $D_{n,e}$ levels

Type	$D_{n,e}$		
	wall with internal insulation 120 mm	wall with internal insulation 75 mm	solid wall without internal insulation
VSR-N 400	44	42	36
VSR-N 600	42	40	35
VSR-N 800	41	39	33
VSR-N 1000	40	38	32

Additional illustration



schematic sketch of the ventilation of a flat in residential construction using supply and passage elements



VSR-N is a pass-through element suitable for central ventilation systems with CRxB fans or for decentral systems equipped with e.g. SILENT ECO fans

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