

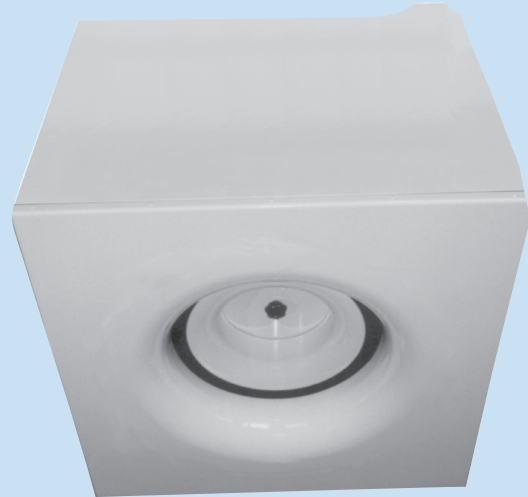
VDP

high inductive adjustable swirl diffuser



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1 SWIRL DIFFUSERS



Design:

Swirl diffuser VDP is a unique outlet system with high primary induction within the plenum box and an adjusting device for variable air flow geometry. The main components are the round or square plenum box with an inner, cylindrical swirl element, an adjustable control nozzle (deflection vane) and the rounded outlet diffuser. The swirl diffuser can only be used with a plenum box. The VDP is produced in various formats and finishes, depending on the constructional and technical conditions and requirements (see page 5).

Function:

The internal, cylindrical swirl element generates a highly inductive circulation airstream in the box, resulting in an under pressure in its centre. Thus due to the negative pressure the room air enters the box causing mixing with the supply air, as a result supply air temperature differential is greatly reduced. This effect is further increased through the secondary air induction at the edges of the discharge, so that almost isothermal conditions are achieved

within a short distance from the diffuser. The generated swirl stream itself is flat and extremely stable and is formed independently from the installation conditions (flush with ceiling or freely suspended). By means of the manual or motor-driven adjustable deflection vane, which is positioned in the centre of the diffuser, the air stream can be set from horizontal to vertical.

The swirl diffuser is therefore especially suitable for use in rooms with a height above 3 meters for alternative heating or cooling modes as well as for adapting the air flow penetration depth at variable flow rates or temperature differentials.

Material:

plenum box made and swirl element made from galvanized steel, coated in matt black, outlet diffuser and deflection vane made from aluminium, powder coated in white paint (RAL 9010).

VDP

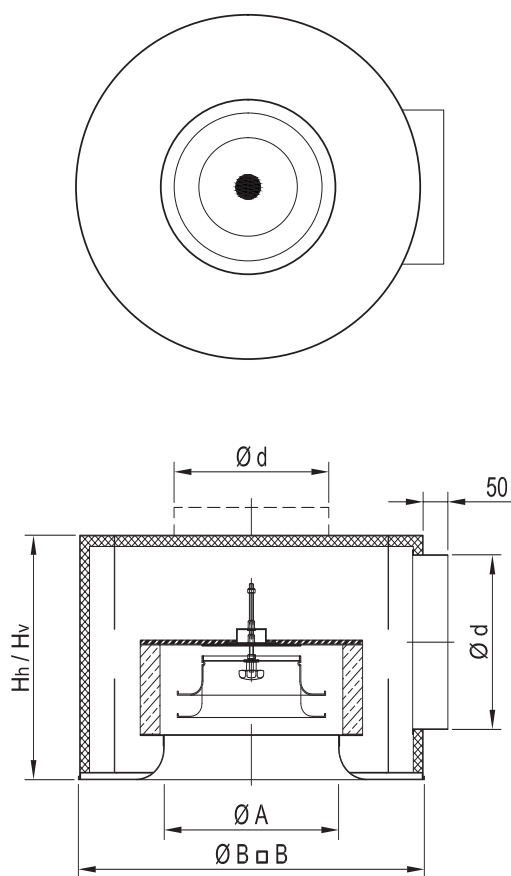
high inductive adjustable swirl diffuser



dimensions:

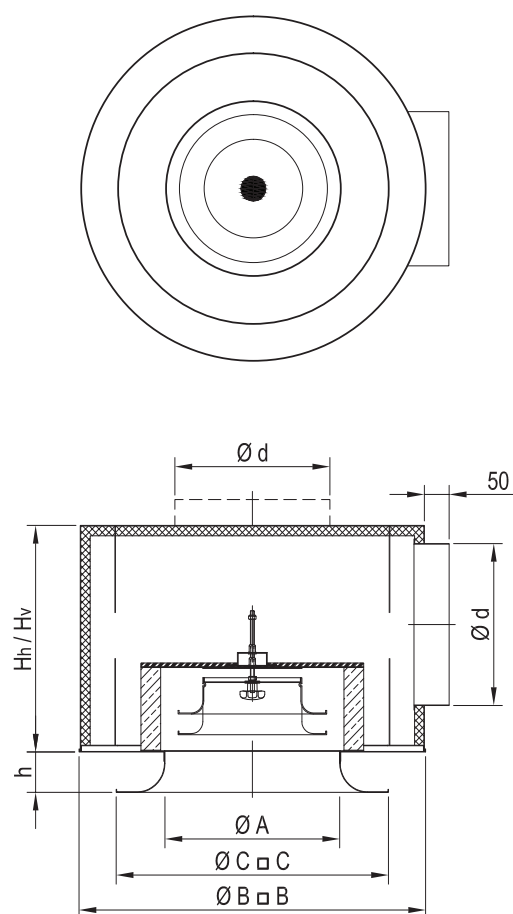
VDP - ...M - 1

with integrated outlet diffuser



VDP - ...M - 2

with removed outlet diffuser



| size | Ø A [mm] | Ø d [mm] | Ø B [mm] | □ B [mm] | Ø C [mm] | □ C [mm] | Hh [mm] | Hv [mm] | h [mm] |
|------|-------------|-------------|-------------|-------------|-------------|-------------|------------|------------|-----------|
| 20 | 199 | 148 | 400 | 400 | 300 | 600 / 625 | 350 | 350 | 70 |
| 25 | 249 | 198 | 600 | 600 | 380 | 600 / 625 | 350 | 350 | 80 |
| 31 | 314 | 248 | 600 | 600 | 490 | 600 / 625 | 400 | 400 | 80 |
| 35 | 349 | 313 | 700 | 700 | 550 | 600 / 625 | 450 | 450 | 80 |
| 40 | 399 | 348 | 800 | 800 | 625 | 600 / 625 | 500 | 500 | 80 |
| 46 | 459 | 398 | 900 | 900 | 662 | 600 / 625 | 600 | 600 | 80 |

the indicated dimensions are outer dimensions and can be varied depending on requirements and within limits in function
Hh = Height in horizontal spoigt, Hv = Height in vertical spoigt

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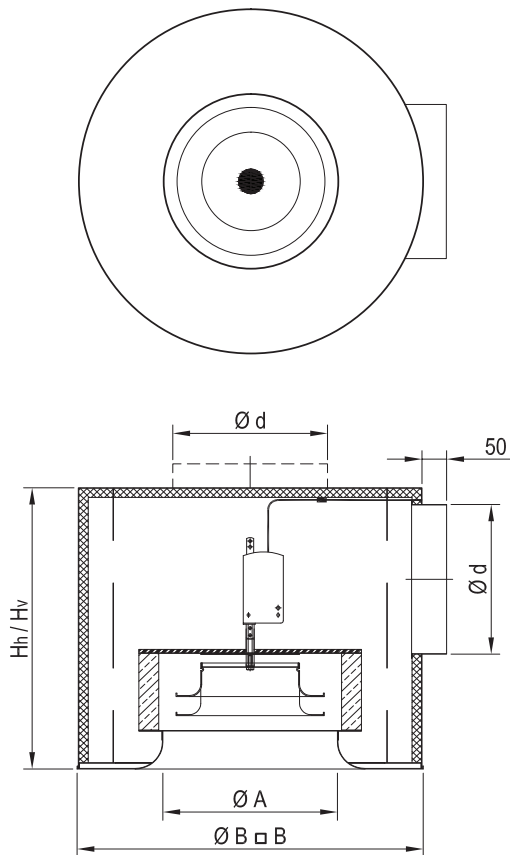


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dimensions:

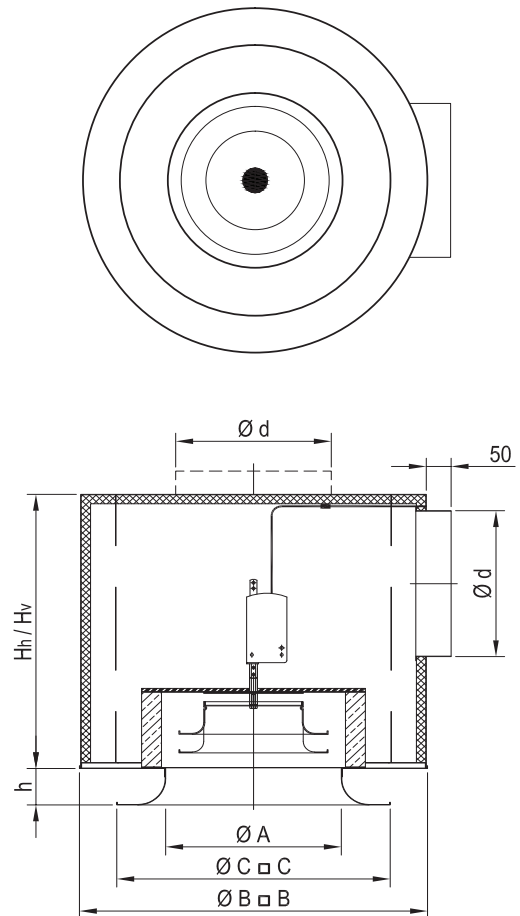
VDP - ...EM - 1

with integrated outlet diffuser



VDP - ...EM - 2

with removed outlet diffuser



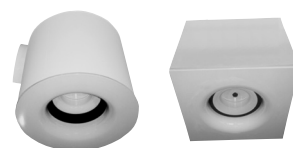
| size | ø A [mm] | ø d [mm] | ø B [mm] | □ B [mm] | ø C [mm] | □ C [mm] | Hh [mm] | Hv [mm] | h [mm] |
|------|-------------|-------------|-------------|-------------|-------------|-------------|------------|------------|-----------|
| 20 | 199 | 148 | 400 | 400 | 300 | 600 / 625 | 500 | 500 | 70 |
| 25 | 249 | 198 | 600 | 600 | 380 | 600 / 625 | 525 | 525 | 80 |
| 31 | 314 | 248 | 600 | 600 | 490 | 600 / 625 | 550 | 550 | 80 |
| 35 | 349 | 313 | 700 | 700 | 550 | 600 / 625 | 600 | 600 | 80 |
| 40 | 399 | 348 | 800 | 800 | 625 | 600 / 625 | 650 | 650 | 80 |
| 46 | 459 | 398 | 900 | 900 | 662 | 600 / 625 | 750 | 750 | 80 |

the indicated dimensions are outer dimensions and can be varied depending on requirements and within limits in function
Hh = Height in horizontal spoigt, Hv = Height in vertical spoigt

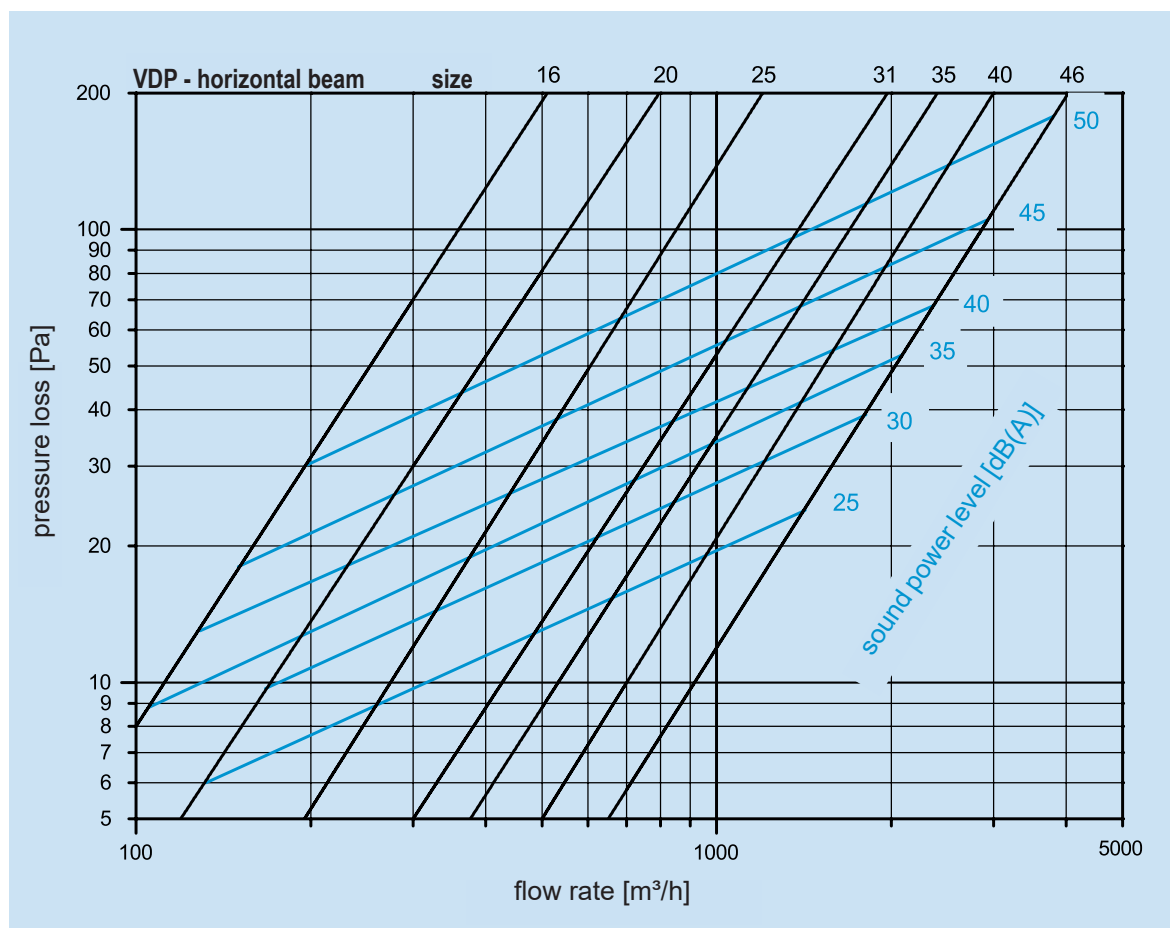
1 SWIRL DIFFUSERS

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flow data - horizontal beam

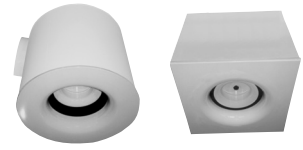


quick selection

| | $L_{WA} = 30 \text{ dB}$ | | $L_{WA} = 35 \text{ dB}$ | | $L_{WA} = 40 \text{ dB}$ | | $L_{WA} = 45 \text{ dB}$ | | working range |
|------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|----------------|
| size | V [m³/h] | Δp [Pa] | V [m³/h] | Δp [Pa] | V [m³/h] | Δp [Pa] | V [m³/h] | Δp [Pa] | Vmin [m³/h] |
| 20 | 168 | 10 | 232 | 18 | 278 | 26 | 365 | 44 | 100 |
| 25 | 328 | 14 | 374 | 19 | 441 | 26 | 530 | 38 | 280 |
| 31 | 622 | 21 | 722 | 28 | 842 | 57 | 1040 | 57 | 560 |
| 35 | 848 | 25 | 974 | 33 | 1130 | 44 | 1390 | 68 | 680 |
| 40 | 1210 | 31 | 1400 | 42 | 1600 | 54 | 1950 | 83 | 900 |
| 46 | 1790 | 39 | 2090 | 53 | 2350 | 67 | 2930 | 105 | 1200 |

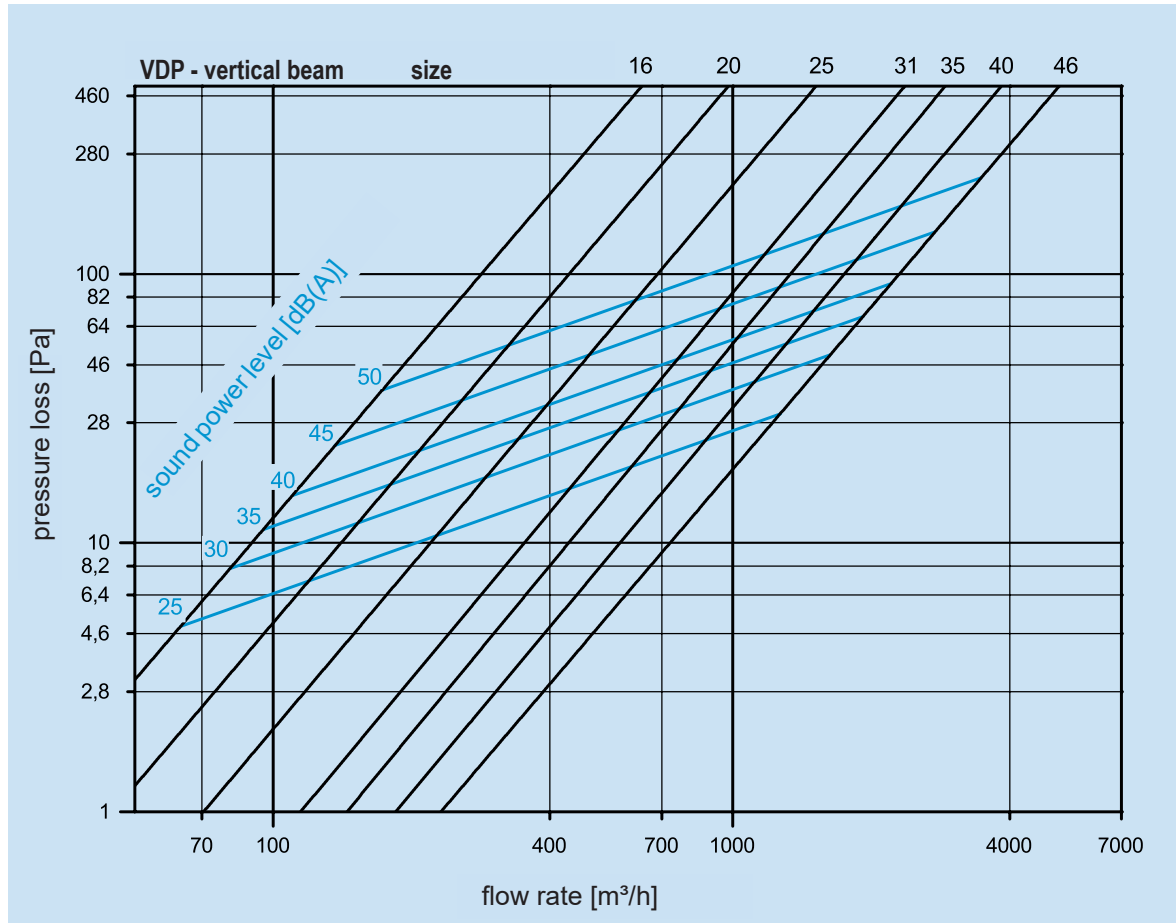
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flow data - vertical beam

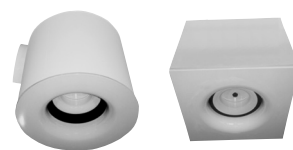


quick selection

| size | $L_{WA} = 30 \text{ dB}$ | | $L_{WA} = 35 \text{ dB}$ | | $L_{WA} = 40 \text{ dB}$ | | $L_{WA} = 45 \text{ dB}$ | | working range |
|------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|----------------|
| | V [m³/h] | Δp [Pa] | V [m³/h] | Δp [Pa] | V [m³/h] | Δp [Pa] | V [m³/h] | Δp [Pa] | Vmin [m³/h] |
| 20 | 154 | 12 | 180 | 17 | 208 | 22 | 258 | 34 | 100 |
| 25 | 288 | 17 | 339 | 24 | 390 | 32 | 483 | 49 | 280 |
| 31 | 557 | 26 | 659 | 36 | 755 | 48 | 934 | 74 | 560 |
| 35 | 750 | 31 | 881 | 43 | 1010 | 57 | 1250 | 88 | 680 |
| 40 | 1100 | 39 | 1300 | 54 | 1490 | 73 | 1840 | 111 | 900 |
| 46 | 1630 | 50 | 1920 | 69 | 2200 | 91 | 2730 | 141 | 1200 |

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Tender text:

VDP-R ☐ round swirl diffuser with primary air induction consisting of an adjustable deflection vane in manual or motor-driven finish, an inner cylindrical swirl element and integrated (1) or removed (set down) (2) outlet diffuser. Swirl element made from galvanized steel, coated in matt black. Outlet diffuser and deflection vane made from aluminium, coated in white, (RAL 9010). Other colours on request.

VDP-Q ☐ square swirl diffuser with primary air induction consisting of an adjustable deflection vane in manual or motor-driven finish, an inner cylindrical swirl element and integrated (1) or removed (set down) (2) outlet diffuser. Swirl element made from galvanized steel, coated in matt black. Outlet diffuser and deflection vane made from aluminium, coated in white, (RAL 9010). Other colours on request.

AK/H ☐ plenum box with acoustic coating and horizontal spigot made from galvanized steel.

AK/V ☐ plenum box with acoustic coating and vertical spigot made from galvanized (sheet) steel.

M ☐ with manually adjustable deflection vane

EM ☐ with motor-driven deflection vane

-1 ☐ integrated outlet diffuser

-2 ☐ removed outlet diffuser

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Type VDP

Quantity pcs.

Ordering example VDP – Q – 35 – AK/H – M – 1

