

VDP

high inductive adjustable swirl diffuser



1.7

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

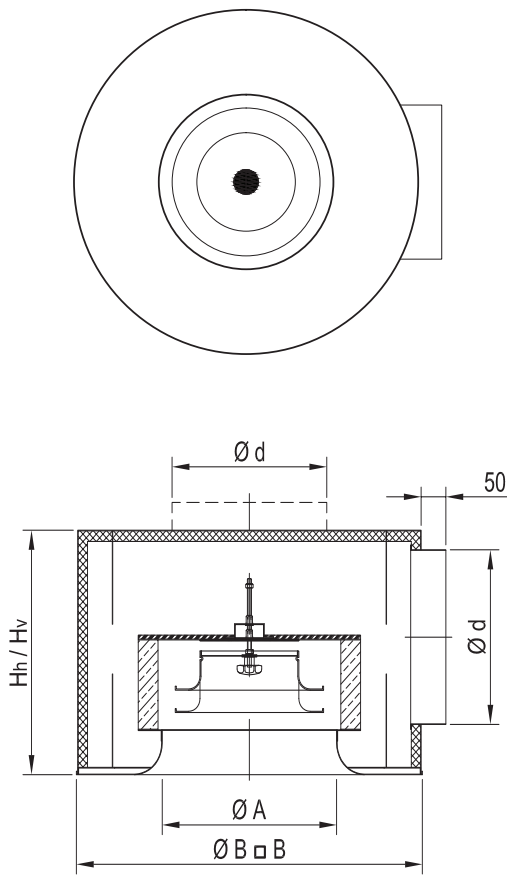
high inductive adjustable swirl diffuser



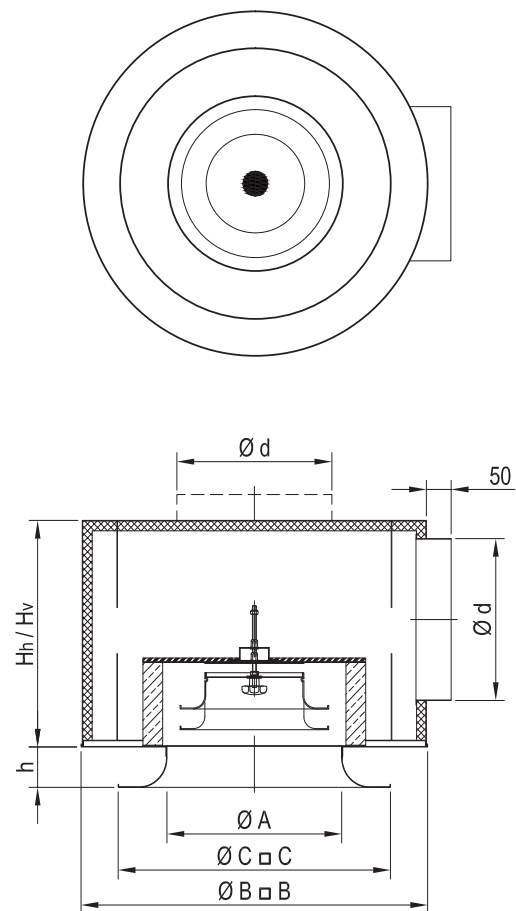
dimensions:

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]
16	159	123	350	350	240	600 / 625	275	275	60
20	199	148	400	400	300	600 / 625	300	300	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

VDP

high inductive adjustable swirl diffuser

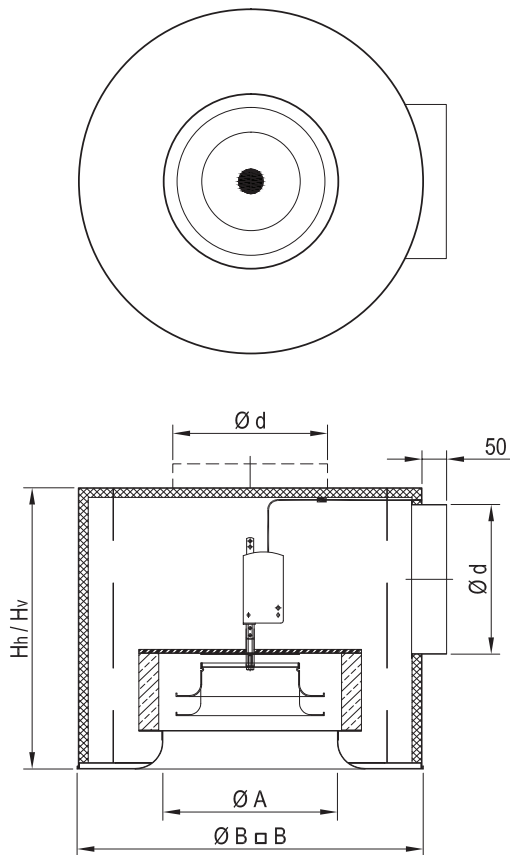


1.7

dimensions:

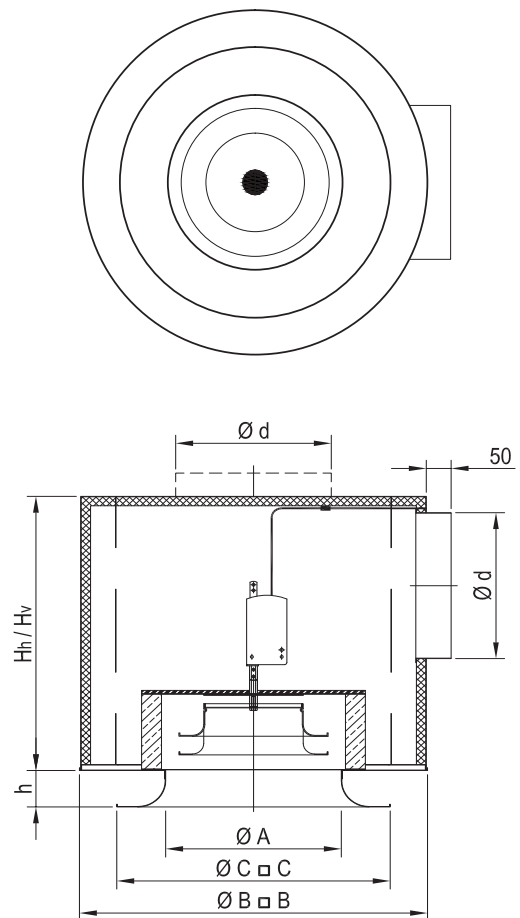
VDP - ...EM - 1

with integrated outlet diffuser



VDP - ...EM - 2

with removed outlet diffuser



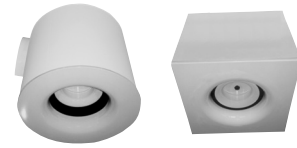
size	$\varnothing A$ [mm]	$\varnothing d$ [mm]	$\varnothing B$ [mm]	$\square B$ [mm]	$\varnothing C$ [mm]	$\square C$ [mm]	H_h [mm]	H_v [mm]	h [mm]
16	159	123	350	350	240	600 / 625	425	425	60
20	199	148	400	400	300	600 / 625	450	450	70
25	249	198	600	600	380	600 / 625	500	500	80
31	314	248	600	600	490	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
 H_h = Height in horizontal spoigt, H_v = Height in vertical spoigt

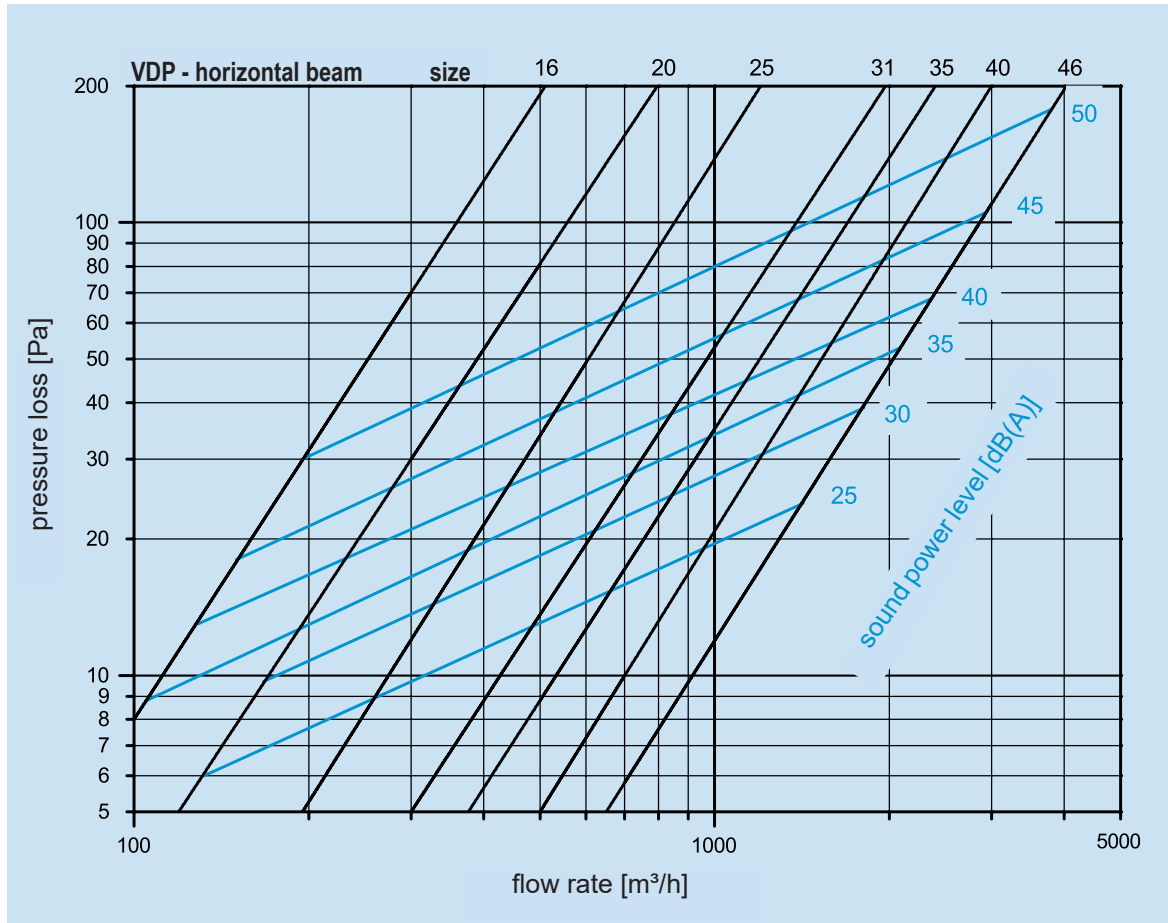
1 SWIRL DIFFUSERS

VDP

high inductive adjustable swirl diffuser



flow data - horizontal beam

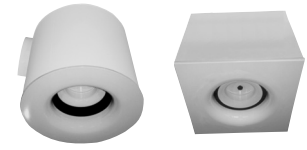


quick selection

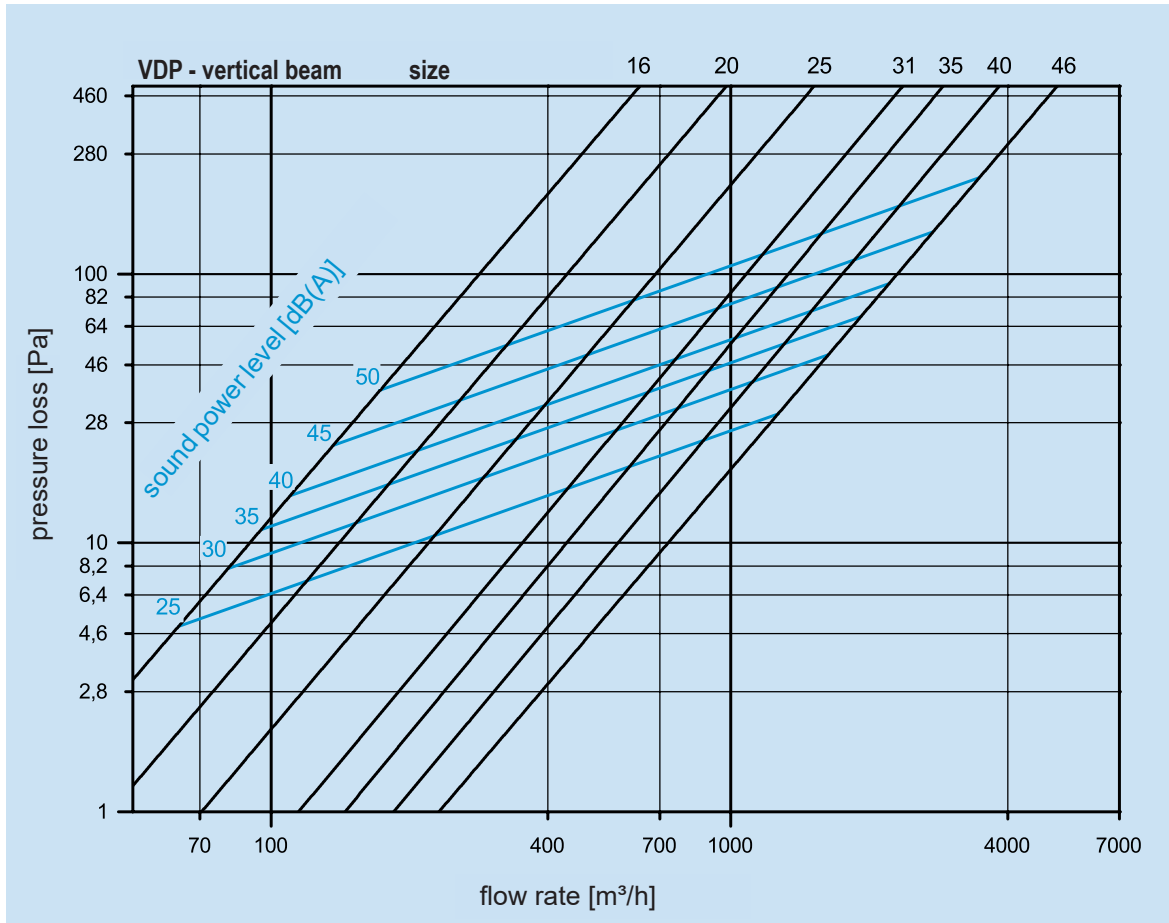
size	$L_{WA} = 30$ dB		$L_{WA} = 35$ dB		$L_{WA} = 40$ dB		$L_{WA} = 45$ dB		working range Vmin [m³/h]
	V [m³/h]	Δp [Pa]	V [m³/h]	Δp [Pa]	V [m³/h]	Δp [Pa]	V [m³/h]	Δp [Pa]	
20	168	10	232	18	278	26	365	44	100
25	328	14	374	19	441	26	530	38	280
31	622	21	722	28	842	57	1040	57	560
35	848	25	974	33	1130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

VDP

high inductive adjustable swirl diffuser



flow data - vertical beam

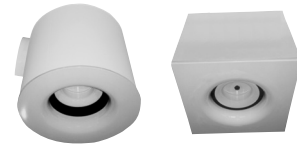


quick selection

size	$L_{WA} = 30$ dB		$L_{WA} = 35$ dB		$L_{WA} = 40$ dB		$L_{WA} = 45$ dB		working range Vmin [m ³ /h]
	V [m ³ /h]	Δp [Pa]	V [m ³ /h]	Δp [Pa]	V [m ³ /h]	Δp [Pa]	V [m ³ /h]	Δp [Pa]	
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

VDP

high inductive adjustable swirl diffuser



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

Manufacturer SLT · Lenzfeld 8 · D - 49811 Lingen (Ems)
Tel. +49(0)591/97337-0 · Fax +49(0)591/97337-50 · info@slt-lingen.de

Type VDP

Quantity pcs.

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

