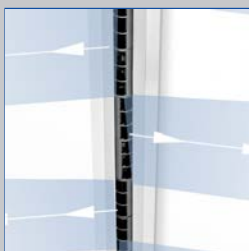


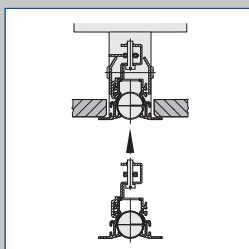
# Slot diffusers for ceiling installation Type VSD50



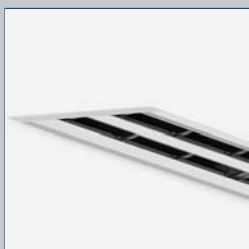
Plenum box  
with damper blade (optional)



Alternating  
horizontal air discharge



Concealed screw fixing



Installation  
in continuous ceilings



## With wide diffuser face for larger volume flow rates

Slot diffusers with 50 mm nominal width, with adjustable air control elements

- Nominal length from 600 to 1950 mm, 1 or 2 slots
- Volume flow rate range 20 – 120 (l/s)/m or 72 – 432 (m³/h)/m
- Diffuser face made of extruded aluminium sections
- For variable and constant volume flows
- Suitable for continuous linear arrangement
- High induction results in a rapid reduction of the temperature difference and airflow velocity
- Individually adjustable air control elements to meet individual local requirements

### Optional equipment and accessories

- Exposed diffuser face available in RAL CLASSIC colours
- Diffuser face with extended border
- Damper blade for volume flow rate balancing, can be adjusted through the diffuser face
- Concealed screw fixing that simplifies installation of the diffuser after the ceiling has been completed
- Symmetric and asymmetric plenum boxes, with or without lining
- End plates, end angles, corner sections

### Type

VSD50

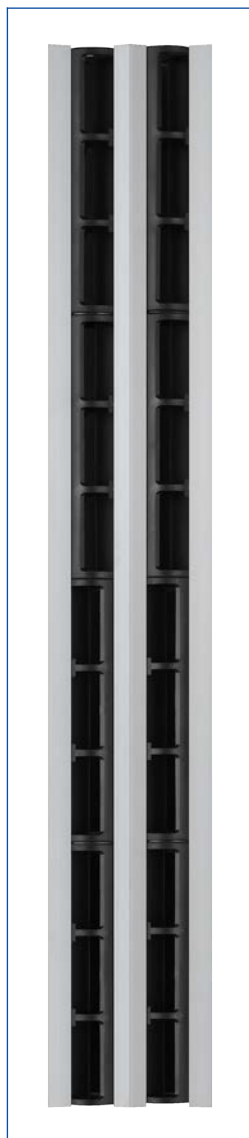
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### Variants

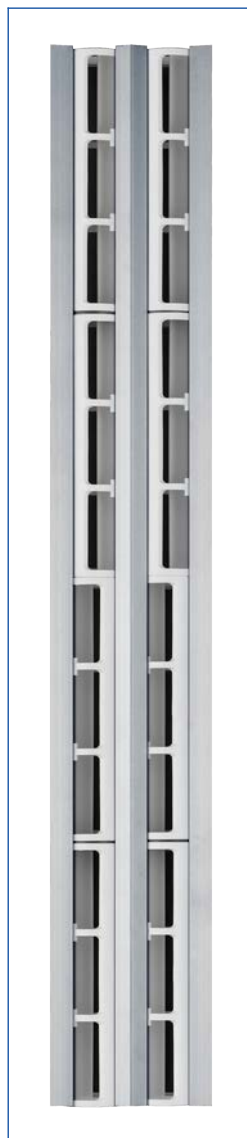
Product examples

**VSD50-2**



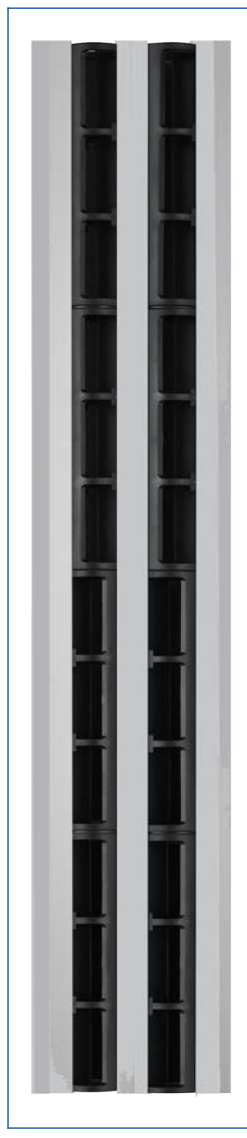
Diffuser face without extended border, black air control elements

**VSD50-2/.../WW**



Diffuser face without extended border, white air control elements

**VSD50-2/.../B00**



Diffuser face with extended border, black air control elements

**VSD50-2/.../B00/.../WW**



Diffuser face with extended border, white air control elements

**VSD50-1-AK**



Nominal length up to 1500 mm: one spigot

**VSD50-1-AK**



Nominal length 1650 – 1950 mm: two spigots

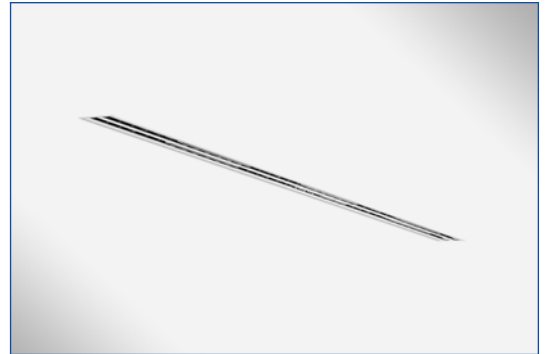
### Installation examples

**VSD50-1/.../B00,  
installation in continuous ceilings**



Anodised, E6-C-0, natural colour

**VSD50-2/.../B00/P1-RAL 9010,  
installation in continuous ceilings**



Powder-coated RAL 9010, pure white

### Description

#### Application

- Type VSD50 slot diffusers are used as supply air or extract air devices in comfort zones
- Air discharge is one-way or alternating horizontal, or alternating angled; turbulent flow (mixed flow ventilation)
- High induction results in a rapid reduction of the temperature difference and airflow velocity (supply air variant)
- For variable and constant volume flows
- For supply air to room air temperature differences from –10 to +10 K
- For room heights up to 4 m (lower edge of suspended ceiling)
- For suspended ceilings; suitable for restricted ceiling voids due to the low overall height of the plenum box
- Suitable for continuous linear arrangement

#### Variants

- VSD50-\*: 1 or 2 slots
- VSD50-\*F: Diffuser face only
- VSD50-\*E: Corner section
- VSD50-...: Diffuser face without extended border
- VSD50-.../B00: Diffuser face with extended border
- VSD50-...: Black air control elements
- VSD50-.../WW: White air control elements

#### Plenum box and diffuser face fixing

- AK: Plenum box and clamp fixing
- DK: Plenum box with lining and clamp fixing
- AS: Plenum box and concealed screw fixing
- DS: Plenum box with lining and concealed screw fixing
- AA: Asymmetric plenum box and clamp fixing

#### Nominal sizes

- $L_N$ : 600, 750, 900, 1050, 1200, 1350, 1500, 1650, 1800, 1950 mm
- Diffuser face available in intermediate sizes from 300 to 2550 mm, in increments of 1 mm

#### Attachments

- M: Damper blade for volume flow rate balancing
- C1, C2: Two end plates
- C5, C6: Two end angles

### Accessories

- Lip seal

### Useful additions

- EP: Two end plates
- EW: Two end angles
- To be ordered separately for continuous linear runs

### Special characteristics

- Individually adjustable air control elements to meet individual local requirements
- High induction results in a rapid reduction of the temperature difference and airflow velocity
- Diffuser face has been optimised for maximum volume flow rate at low sound power levels
- Suitable for continuous linear arrangement

### Parts and characteristics

- Diffuser face with individually adjustable air control elements
- Plenum box for horizontal duct connection
- Concealed screw fixing (facilitates installation of the diffuser face) or clamp fixing
- Connecting pins and alignment plates to connect and align slot diffusers for a continuous linear arrangement

### Construction features

- Spigot suitable for circular ducts to EN 1506 or EN 13180
- Spigot with groove for lip seal (if accessory lip seal has been ordered)

### Materials and surfaces

- Diffuser face made from extruded aluminium sections
- Air control elements made of plastic, UL 94, V-0, flame retardant
- Plenum box made of galvanised sheet steel
- End plate and end angle made of aluminium
- Lip seal made of rubber
- Lining is mineral wool
- Diffuser face with anodised finish, E6-C-0, natural colour
- P1: Powder-coated, RAL CLASSIC colour
- Air control elements similar to RAL 9005, black
- WW: Air control elements similar to RAL 9010, white

### Mineral wool

- To EN 13501, fire rating class A1, non-combustible
- RAL quality mark RAL-GZ 388
- Biosoluble and hence hygienically safe according to the German TRGS 905 (Technical Rules for Hazardous Substances) and EU directive 97/69/EG
- Faced with glass fibre fabric as a protection against erosion through airflow velocities of up to 20 m/s
- Inert to fungal and bacterial growth

### Installation and commissioning

- Preferably for rooms with a clear height up to 4.0 m
- Flush ceiling installation
- Horizontal duct connection
- Diffusers with a shorter plenum box as well as non-active diffusers require a rear blanking plate; length of blanking plate =  $L_1 - L_3$
- For a continuous linear arrangement connect the diffusers with connecting pins and alignment plates
- If necessary, carry out volume flow rate balancing with the damper blade

### Standards and guidelines

- Sound power level of the air-regenerated noise measured according to EN ISO 5135

### Maintenance

- Maintenance-free as construction and materials are not subject to wear
- Inspection and cleaning to VDI 6022

### Technical data

Nominal length	600, 750, 900, 1050, 1200, 1350, 1500, 1650, 1800, 1950 mm
Number of slots	1, 2
Neck extension	0, 25, 50, 75, 100, 125 mm
Minimum volume flow rate	20 – 40 (l/s)/m or 72 – 144 (m³/h)/m
Maximum volume flow rate, with $L_{WA} \cong 50$ dB(A)	70 – 120 (l/s)/m or 252 – 432 (m³/h)/m
Supply air to room air temperature difference	–10 to +10 K

### Function

#### Functional description

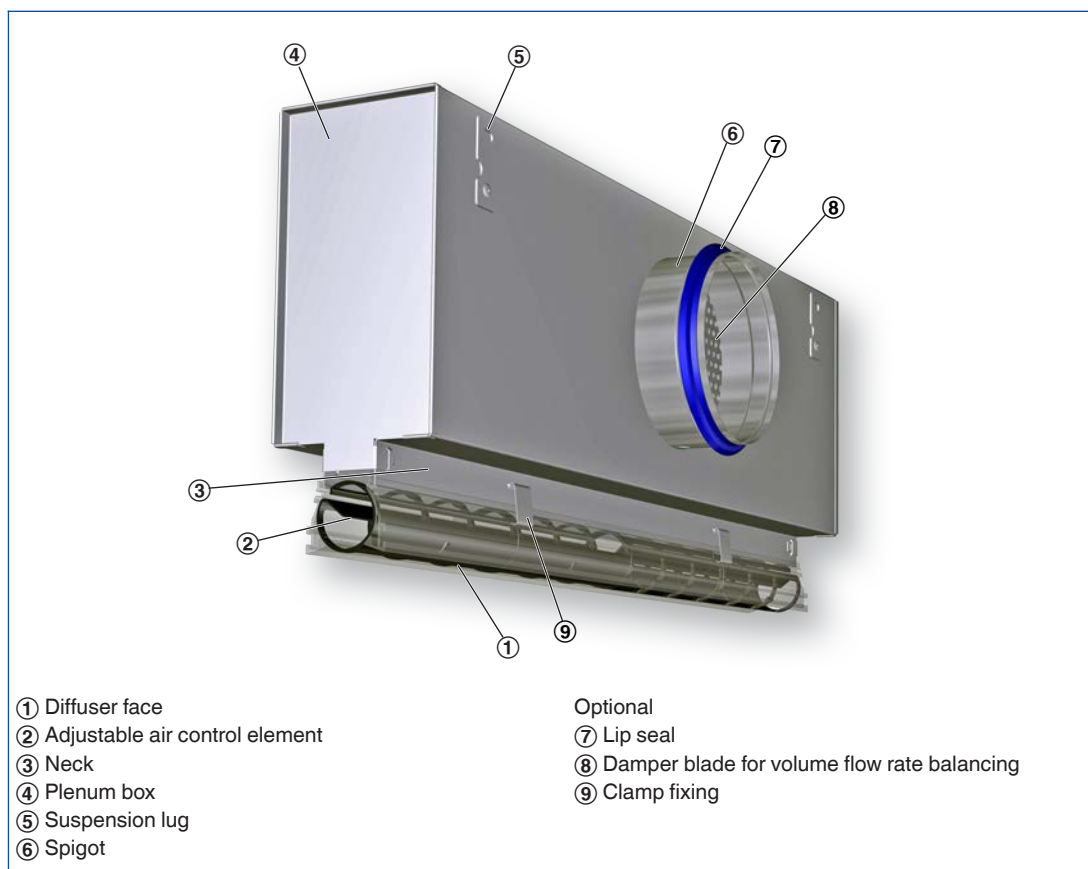
Slot diffusers direct the air from air conditioning systems into the room, either horizontally or at an angle. The resulting airflow induces high levels of room air, thereby rapidly reducing the airflow velocity and the temperature difference between supply air and room air. The result is a mixed flow ventilation in comfort zones, with good overall room ventilation, creating only very little turbulence in the occupied zone.

Type VSD50 slot diffusers have adjustable air control elements. The air pattern can be adjusted to meet different local requirements. Air discharge is one-way or alternating horizontal. Heating mode with angled air discharge is also possible. The supply air to room air temperature difference may range from  $-10$  to  $+10$  K.

A damper blade (optional) simplifies volume flow rate balancing for commissioning.

To give rooms an aesthetic, uniform look, Type VSD50 diffusers may also be used for extract air.

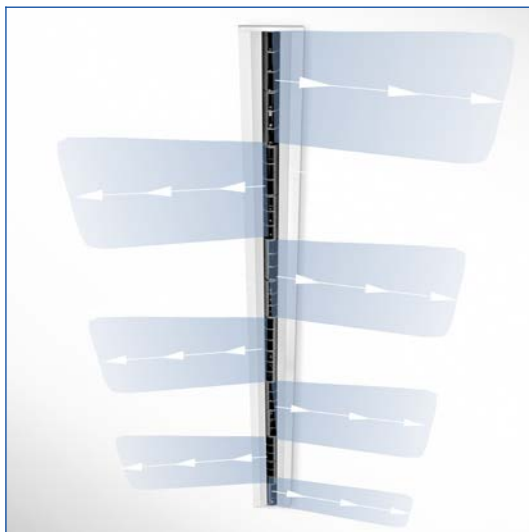
#### Schematic illustration of the VSD50 with clamp fixing



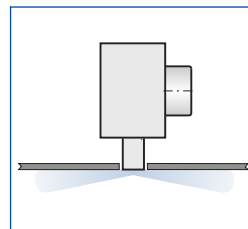
### Air patterns

These are only schematic diagrams to illustrate the setting of the air control elements.

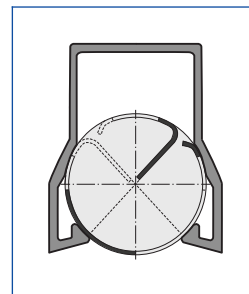
### Alternating horizontal air discharge



### Alternating horizontal (WH)



### Setting of the air control elements

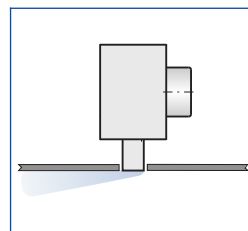


Alternating air control elements (300 mm) as shown

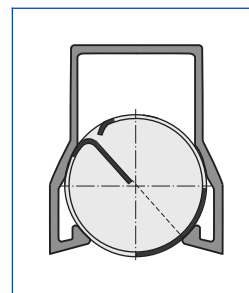
### One-way horizontal air discharge to the left



### One-way horizontal left (HL)



### Setting of the air control elements

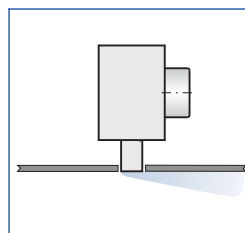


All air control elements as shown

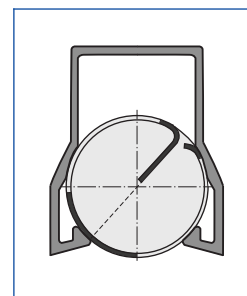
One-way horizontal air discharge to the right



One-way horizontal right (HR)

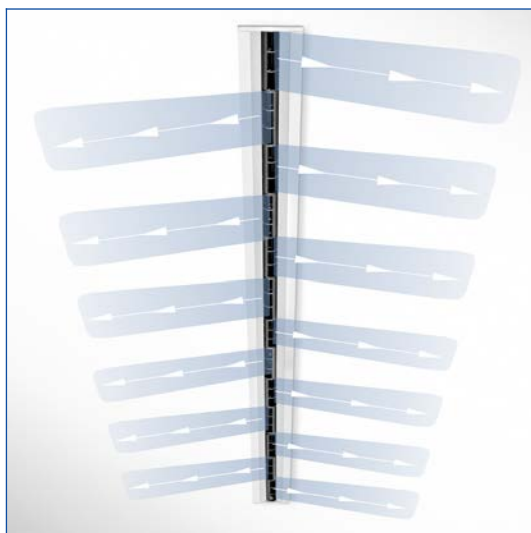


Setting of the air control elements

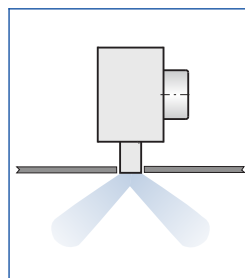


All air control elements as shown

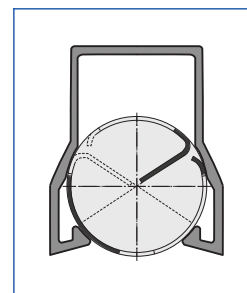
Alternating angled air discharge



Alternating angled (WS)



Setting of the air control elements



Alternating air control elements (150 mm) as shown



### Order code

### VSD50

VSD50 – 1 – AK – M – L / 900x123x25 / C2 / B00 / P1 – RAL ... / WS / WW

1 2 3 4 5 6 7 8 9 10 11

#### 1 Type

**VSD50** Slot diffuser

#### 2 Number of slots

1

2

#### 3 Connection

**F** Diffuser face only

**E** 90° corner section only  
Plenum box

**AK** With clamp fixing

**DK** With lining and clamp fixing

**AS** With concealed screw fixing

**DS** With lining and concealed screw fixing

**AA** Asymmetric and with clamp fixing

Diffusers with a shorter plenum box  
as well as non-active diffusers require  
a rear blanking plate

Length of blanking plate =  $L_1 - L_3$

#### 4 Damper blade for volume flow rate balancing

No entry: none

**M** With (only AK, DK, AS, DS and AA)

#### 5 Accessories

No entry: none

**L** With lip seal

#### 6 Nominal size [mm]

Nominal length  $L_N$

600

750

900

1050

1200

1350

1500

1650

1800

1950

Specify D and Y only for AK,  
DK, AS, DS and AA  
Up to  $L_N$  1500 with one spigot,  
from  $L_N$  1650 with two spigots  
spigot diameter D

**123** 1 slot

**158** 1 or 2 slots

**198** 2 slots

Neck extension Y

No entry: 0

**25**

**50**

**75**

**100**

**125** (only AK, DK and AA)

#### 7 End pieces

No entry: without

Both ends with end angles factory fitted

**C1** to profile 000

**C2** to profile B00

Both ends with end plates factory fitted

**C5** to profile 000

**C6** to profile B00

To be ordered separately

for slot diffusers for linear arrangement

#### 8 Extended border

No entry: without (only AK, DK, AA)

**B00** With extended border

#### 9 Exposed surface

No entry: anodised, E6-C-0, natural colour

**P1** Powder-coated,  
specify RAL CLASSIC colour

Gloss level

RAL 9010 50 %

RAL 9006 30 %

All other RAL colours 70 %

#### 10 Air pattern

No entry: alternating horizontal (WH)

**WS** Alternating angled

**HL** Horizontal left  
(opposite direction from spigot)

**HR** Horizontal right (same direction as spigot)

#### 11 Colour of air control elements

No entry: similar to RAL 9005, black

**WW** Similar to RAL 9010, white



Order example

VSD50-1-AK-M-L/900×123/C1/B00/P1-RAL 9010/WS/WW

Number of slots	1
Connection	Plenum box with clamp fixing
Damper blade for volume flow rate balancing	With
Accessories	Lip seal
Nominal size / spigot diameter	900 × 123 mm
Neck extension	Without
End pieces	End angles
Extended border	With
Exposed surface	RAL 9010, pure white, gloss level 50 %
Air pattern	Alternating angled
Colour of air control elements	White

Useful additions

VSD50

VSD50 – 1 – EW / B00 / P1 – RAL ...				
1	2	3	4	5

1 Type

VSD50 Slot diffuser

2 Number of slots

1

2

3 End pieces

EP Two end plates

EW Two end angles

4 Extended border

000 Profile without extended border

B00 Profile with extended border

**VSD50-1, supply air, alternating horizontal air discharge**

Quick sizing tables provide a good overview of the volume flow rates and corresponding sound power levels and differential pressures.

The maximum volume flow rates apply to a sound power level of approx. 50 dB (A) with damper blade position 0°.

Exact values for all parameters can be determined with our Easy Product Finder design programme.

### Quick sizing – sound power level and total differential pressure

Nominal length	$\dot{V}$		Damper blade position											
			0°				45°				90°			
			D = 123		D = 158		D = 123		D = 158		D = 123		D = 158	
			$\Delta p_t$	$L_{WA}$	$\Delta p_t$	$L_{WA}$	$\Delta p_t$	$L_{WA}$	$\Delta p_t$	$L_{WA}$	$\Delta p_t$	$L_{WA}$	$\Delta p_t$	$L_{WA}$
	l/s	m³/h	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)
600	11	38	4	<15	3	<15	5	<15	4	<15	7	<15	4	<15
600	25	90	19	31	17	28	25	32	20	28	36	32	24	28
600	40	144	49	45	44	42	65	46	50	42	91	46	60	42
600	50	180	77	52	69	49	101	53	78	49	143	54	93	50
750	15	54	5	<15	4	<15	7	15	5	<15	11	15	7	12
750	30	108	20	33	17	29	28	33	20	29	43	34	25	29
750	40	144	35	41	30	37	50	42	35	37	77	42	45	38
750	55	198	65	51	56	47	94	52	66	48	145	53	85	48
900	15	54	4	<15	3	<15	6	<15	4	<15	10	<15	5	<15
900	35	126	20	34	17	30	32	34	21	30	53	35	28	31
900	50	180	41	44	33	41	65	45	42	41	107	46	58	41
900	65	234	70	53	56	49	110	54	71	49	181	55	97	50
1050	20	72	6	17	4	<15	9	17	6	<15	16	18	8	<15
1050	40	144	22	35	17	31	37	36	22	32	64	37	32	32
1050	55	198	41	45	31	41	70	45	42	41	120	46	60	42
1050	70	252	66	52	50	48	113	53	68	49	195	55	98	50
1200	25	90	7	20	5	17	13	21	8	17	24	21	11	17
1200	40	144	19	33	13	29	34	34	19	29	61	34	29	30
1200	55	198	35	42	25	38	64	43	36	39	114	44	54	39
1200	75	270	64	52	47	48	118	53	67	48	212	54	101	49
1350	25	90	7	19	5	15	13	19	7	15	23	20	11	15
1350	45	162	21	34	14	30	40	35	21	31	74	36	34	31
1350	65	234	43	45	29	41	83	46	44	42	154	47	70	42
1350	80	288	65	52	44	48	126	53	67	48	233	54	106	49
1500	30	108	8	22	6	18	17	22	9	18	32	23	14	19
1500	50	180	23	36	15	31	47	37	24	32	89	37	39	33
1500	70	252	45	46	29	41	92	47	47	42	174	48	77	43
1500	85	306	66	52	43	47	135	53	69	48	256	55	113	49
1650	30	108	5	18	4	<15	7	18	5	<15	11	19	6	<15
1650	50	180	13	31	11	28	20	32	13	28	31	33	18	28
1650	75	270	29	43	24	40	44	44	30	40	70	45	39	40
1650	100	360	51	52	43	49	78	53	52	49	124	54	69	50
1800	35	126	6	20	5	17	9	21	6	17	15	21	8	17
1800	58	210	16	34	13	30	25	35	16	31	40	36	22	31
1800	82	294	30	44	25	40	48	45	31	41	79	46	42	41
1800	105	378	50	52	41	48	79	53	51	49	130	54	70	50
1950	35	126	5	19	4	16	8	20	5	16	14	20	7	16
1950	60	216	15	34	12	30	24	34	15	30	41	35	21	31
1950	85	306	30	44	23	40	49	45	30	41	82	46	42	41
1950	110	396	49	52	39	48	81	53	51	49	137	55	71	50

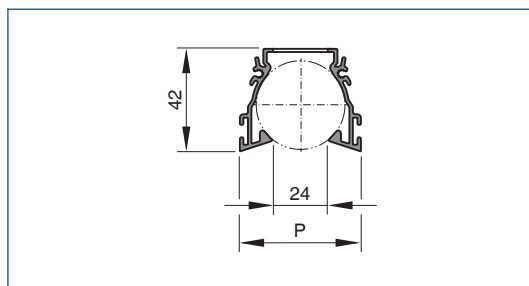
VSD50-2, supply air,  
alternating horizontal  
air discharge

### Quick sizing – sound power level and total differential pressure

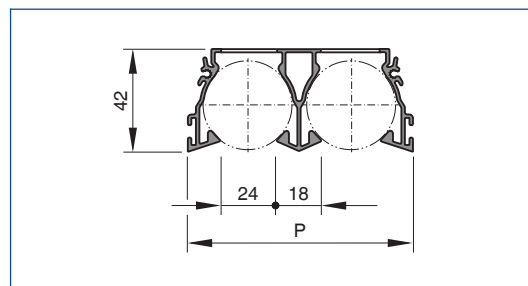
Nominal length	$\dot{V}$		Damper blade position											
			0°				45°				90°			
			D = 158		D = 198		D = 158		D = 198		D = 158		D = 198	
			$\Delta p_t$	$L_{WA}$	$\Delta p_t$	$L_{WA}$	$\Delta p_t$	$L_{WA}$	$\Delta p_t$	$L_{WA}$	$\Delta p_t$	$L_{WA}$	$\Delta p_t$	$L_{WA}$
	l/s	m³/h	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)
600	25	90	5	17	5	<15	8	17	6	<15	11	17	7	<15
600	45	162	17	32	15	29	24	33	18	29	37	33	23	29
600	65	234	35	43	31	40	50	44	37	40	76	45	47	41
600	85	306	60	52	52	49	85	53	62	49	130	54	80	50
750	30	108	6	18	5	<15	9	18	6	<15	14	19	8	15
750	50	180	15	31	12	28	24	32	16	28	39	33	22	29
750	80	288	38	45	31	42	61	46	41	42	100	47	56	43
750	100	360	60	53	49	49	95	54	63	50	156	55	88	51
900	35	126	6	19	5	16	10	19	6	16	18	20	9	16
900	60	216	17	34	13	30	30	34	18	30	52	35	27	31
900	85	306	34	44	26	40	60	45	37	41	104	46	55	42
900	110	396	57	52	44	49	100	53	61	49	174	55	91	50
1050	40	144	7	20	5	17	12	21	7	17	22	21	11	17
1050	65	234	17	33	12	30	32	34	18	30	58	35	29	31
1050	90	324	32	43	23	39	61	44	35	40	110	45	55	41
1050	120	432	57	52	41	48	108	53	62	49	196	55	98	50
1200	45	162	7	21	5	18	14	22	8	18	27	23	13	18
1200	70	252	17	33	12	30	34	34	19	30	64	35	31	31
1200	100	360	35	44	24	40	70	45	38	41	131	46	63	42
1200	130	468	58	52	40	48	118	54	64	49	222	55	106	50
1350	50	180	8	22	5	19	17	23	9	19	32	24	15	19
1350	80	288	20	35	13	31	43	36	22	32	82	37	38	33
1350	110	396	38	45	25	41	80	46	42	42	155	47	72	43
1350	140	504	61	52	40	48	130	54	68	50	250	56	116	51
1500	55	198	9	23	6	19	20	24	10	20	38	25	17	20
1500	90	324	23	37	15	33	52	38	26	34	102	39	46	35
1500	125	450	45	47	28	43	100	48	50	44	196	50	89	45
1500	150	540	65	53	40	49	144	54	72	50	282	56	128	51
1650	60	216	5	21	4	18	9	22	6	18	15	22	8	18
1650	95	342	13	34	11	31	22	35	14	31	37	36	20	31
1650	135	486	26	45	21	41	44	46	28	42	75	47	41	42
1650	175	630	44	53	35	49	74	54	47	50	126	56	68	51
1800	65	234	6	22	4	19	10	23	6	19	17	23	9	19
1800	105	378	14	36	11	32	25	36	16	32	44	37	23	33
1800	145	522	27	45	21	42	48	46	29	42	83	47	44	43
1800	185	666	44	53	34	50	78	54	48	50	135	56	71	51
1950	70	252	6	23	5	19	11	24	6	20	19	24	10	20
1950	110	396	14	36	11	32	26	36	16	32	47	37	24	33
1950	150	540	27	45	20	41	48	46	29	42	86	47	44	43
1950	190	684	43	52	32	49	78	54	46	50	138	55	71	51

### Profiles

#### VSD50-1/.../000

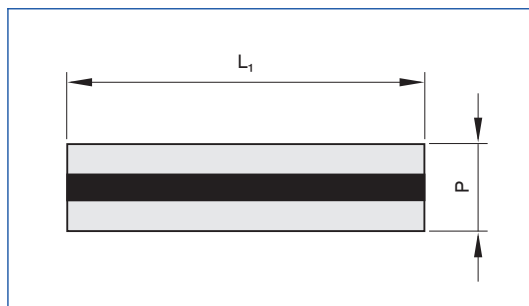


#### VSD50-2/.../000



### Diffuser face

#### Diffuser face VSD...-\*/-F



### Dimensions

Variant	000
	P
	mm
VSD50-1	50
VSD50-2	92

### Dimensions

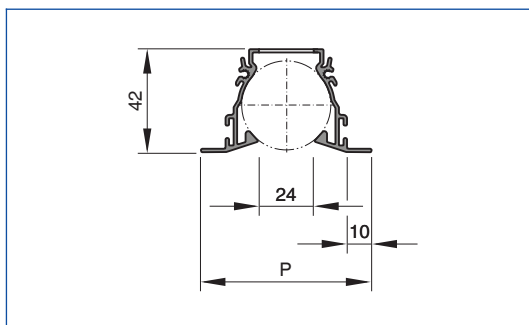
Nominal length	VSD50-1		VSD50-2		
	A <sub>eff</sub>	A <sub>eff</sub> WS	A <sub>eff</sub>	A <sub>eff</sub> WS	L <sub>1</sub>
	m <sup>2</sup>				mm
600	0.0053	0.0060	0.0106	0.0121	600
750	0.0066	0.0076	0.0133	0.0151	750
900	0.0080	0.0091	0.0159	0.0181	900
1050	0.0093	0.0106	0.0185	0.0211	1050
1200	0.0106	0.0121	0.0212	0.0241	1200
1350	0.0119	0.0136	0.0238	0.0272	1350
1500	0.0133	0.0151	0.0265	0.0302	1500
1650	0.0146	0.0166	0.0291	0.0332	1650
1800	0.0159	0.0181	0.0318	0.0362	1800
1950	0.0172	0.0196	0.0344	0.0392	1950

A<sub>eff</sub>: One-way horizontal and alternating horizontal air discharge

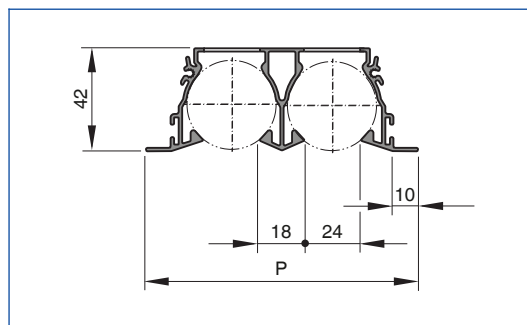
A<sub>eff</sub> WS: Alternating angled air discharge

Profiles

VSD50-1/.../B00

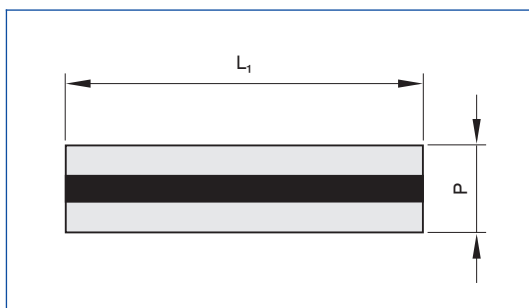


VSD50-2/.../B00



Diffuser face

Diffuser face VSD...-F



Dimensions

Variant	B00
	P
	mm
VSD50-1	70
VSD50-2	112

Dimensions

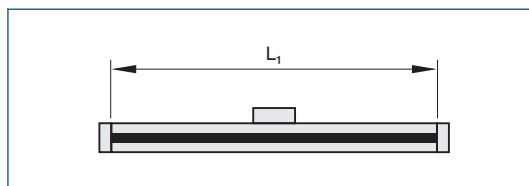
Nominal length	VSD50-1		VSD50-2		
	A <sub>eff</sub>	A <sub>eff</sub> WS	A <sub>eff</sub>	A <sub>eff</sub> WS	L <sub>1</sub>
	m <sup>2</sup>				mm
600	0.0053	0.0060	0.0106	0.0121	600
750	0.0066	0.0076	0.0133	0.0151	750
900	0.0080	0.0091	0.0159	0.0181	900
1050	0.0093	0.0106	0.0185	0.0211	1050
1200	0.0106	0.0121	0.0212	0.0241	1200
1350	0.0119	0.0136	0.0238	0.0272	1350
1500	0.0133	0.0151	0.0265	0.0302	1500
1650	0.0146	0.0166	0.0291	0.0332	1650
1800	0.0159	0.0181	0.0318	0.0362	1800
1950	0.0172	0.0196	0.0344	0.0392	1950

A<sub>eff</sub>: One-way horizontal and alternating horizontal air discharge

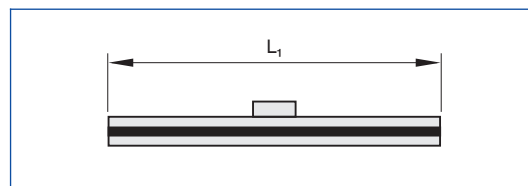
A<sub>eff</sub> WS: Alternating angled air discharge

### End pieces

#### End pieces on both ends

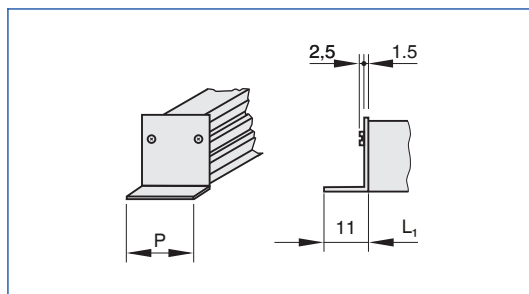


#### Without end piece



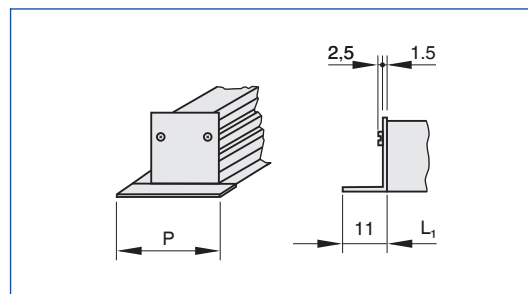
### End angles

#### End angle C1



Profile without extended border

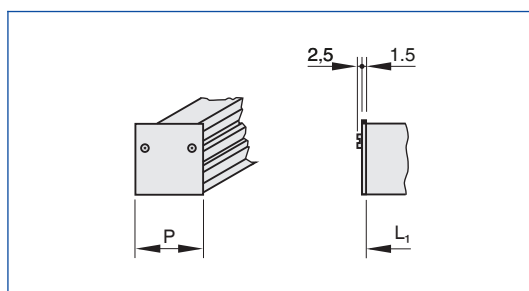
#### End angle C2



Profile with extended border

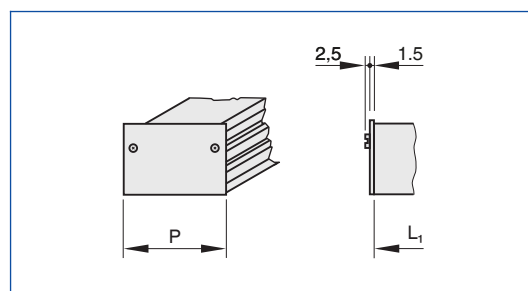
### End plate

#### End plate C5



Profile without extended border

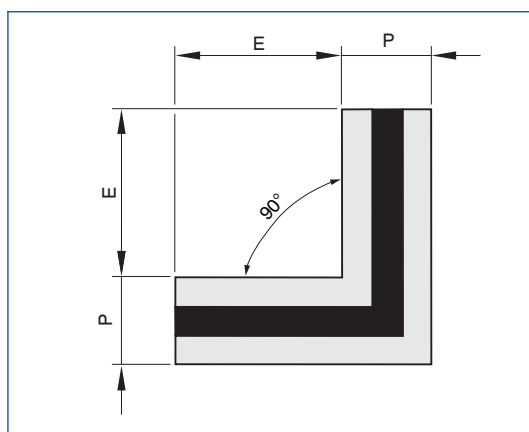
#### End plate C6



Profile with extended border

### Corner section

#### Corner section VSD...-E

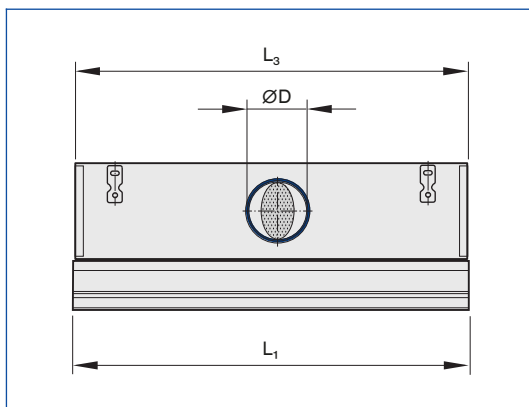


### Dimensions

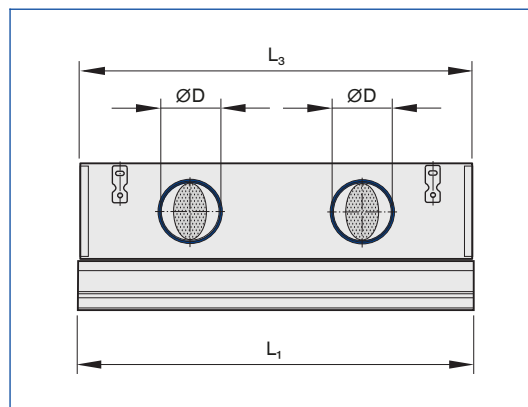
Variant	000		B00	
	P	E	P	E
	mm			
VSD50-1	50	120	70	110
VSD50-2	92	120	112	110

### Plenum boxes

#### VSD50, L<sub>N</sub>: 600 – 1500



#### VSD50, L<sub>N</sub>: 1650 – 1950



### Dimensions

Nominal length	L <sub>1</sub>	L <sub>3</sub>
	mm	
600	600	595
750	750	745
900	900	895
1050	1050	1045
1200	1200	1195
1350	1350	1345
1500	1500	1495
1650	1650	1645
1800	1800	1795
1950	1950	1945

### Number of spigots and spigot diameter

Nominal length	VSD50-1		VSD50-2	
	ØD			
	mm			
600 – 1500	1 × 123	1 × 158	1 × 158	1 × 198
1650 – 1950	2 × 123	2 × 158	2 × 158	2 × 198





VSD50-1-AS

### Variant

- Slot diffuser with plenum box for concealed screw fixing
- Concealed screw fixing only with profile B00 (with extended border)

### Useful additions

- EP: Two end plates
- EW: Two end angles
- To be ordered separately for continuous linear runs

### Parts and characteristics

- Plenum box for horizontal duct connection
- Concealed screw fixing
- Damper blade (optional)
- Lip seal (optional)

### VSD50-\*-AS

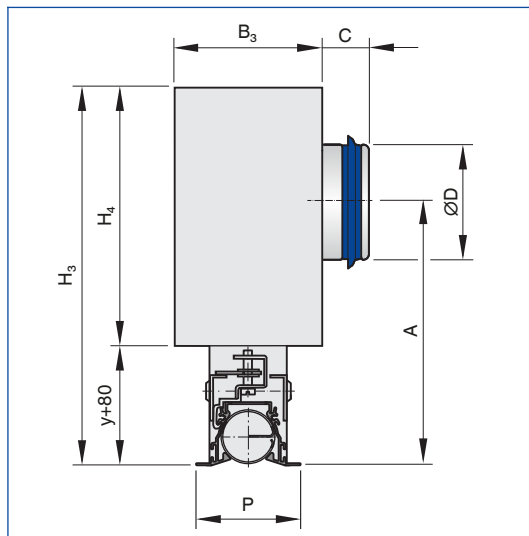


Illustration shows VSD50-1-AS-L/.../B00

### Dimensions

Variant	B00
	P
	mm
VSD50-1	70
VSD50-2	112

### Dimensions

Variant	y = 0		y = 25		y = 50		y = 75		y = 100		B <sub>3</sub>	H <sub>4</sub>	ØD	C
	H <sub>3</sub>	A	H <sub>3</sub>	A	H <sub>3</sub>	A	H <sub>3</sub>	A	H <sub>3</sub>	A				
	mm													
VSD50-1/... × 123	267	174	292	199	317	224	342	249	367	274	100	187	123	46
VSD50-1/... × 158	267	174	292	199	317	224	342	249	367	274	100	187	158	48
VSD50-2/... × 158	307	194	332	219	357	244	382	269	407	294	138	227	158	48
VSD50-2/... × 198	307	194	332	219	357	244	382	269	407	294	138	227	198	48

Y: Neck extension, resulting neck lengths 80, 105, 130, 155, 180 mm

### Weight

Nominal length	VSD50-1	VSD50-2
	m	
	kg	
600	4.0	5.0
750	5.0	6.1
900	5.9	7.2
1050	6.9	8.3
1200	7.8	9.4
1350	8.7	10.5
1500	9.7	11.6
1650	10.6	12.7
1800	11.5	13.8
1950	12.5	14.9

### Variant

- Slot diffuser with plenum box for concealed screw fixing
- Plenum box with lining
- Concealed screw fixing only with profile B00 (with extended border)

### Useful additions

- EP: Two end plates
- EW: Two end angles
- To be ordered separately for continuous linear runs

### Parts and characteristics

- Plenum box for horizontal duct connection
- Concealed screw fixing
- Thermal and acoustic insulation (lining)
- Damper blade (optional)
- Lip seal (optional)

### VSD50-\*-DS

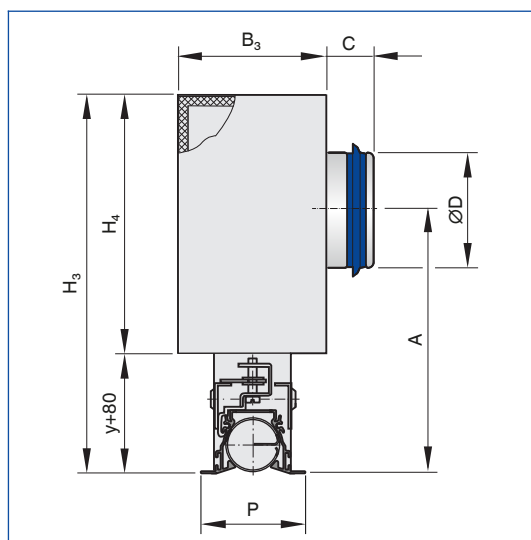


Illustration shows VSD50-1-DS-L/.../B00

### Dimensions

Variant	B00
	P
	mm
VSD50-1	70
VSD50-2	112

### Dimensions

Variant	y = 0		y = 25		y = 50		y = 75		y = 100		B <sub>3</sub>	H <sub>4</sub>	ØD	C
	H <sub>3</sub>	A	H <sub>3</sub>	A	H <sub>3</sub>	A	H <sub>3</sub>	A	H <sub>3</sub>	A				
	mm													
VSD50-1/... × 123	287	174	312	199	337	224	362	249	387	274	138	207	123	46
VSD50-1/... × 158	287	174	312	199	337	224	362	249	387	274	138	207	158	48
VSD50-2/... × 158	327	194	352	219	377	244	402	269	427	294	176	247	158	48
VSD50-2/... × 198	327	194	352	219	377	244	402	269	427	294	176	247	198	48

Y: Neck extension, resulting neck lengths 80, 105, 130, 155, 180 mm

### Weight

Nominal length	VSD50-1	VSD50-2
	m	
	kg	
600	4.9	6.0
750	6.1	7.3
900	7.2	8.6
1050	8.3	10.0
1200	9.5	11.3
1350	10.6	12.6
1500	11.7	13.9
1650	12.9	15.3
1800	14.0	16.6
1950	15.1	17.9



VSD50-1-AK

### Variant

- Slot diffuser with plenum box for clamp fixing

### Useful additions

- EP: Two end plates
- EW: Two end angles
- To be ordered separately for continuous linear runs

### Parts and characteristics

- Plenum box for horizontal duct connection
- Damper blade (optional)
- Lip seal (optional)

### VSD50-\*-AK

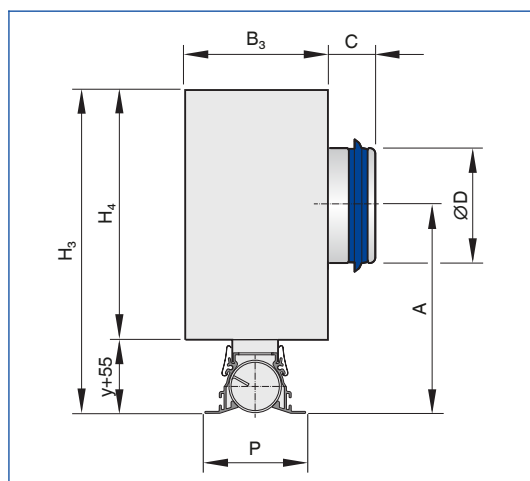


Illustration shows VSD50-1-AK-L/.../B00

### Dimensions

Variant	000	B00
	P	
	mm	
VSD50-1	50	70
VSD50-2	92	112

### Dimensions

Variant	y = 0		y = 25		y = 50		y = 75		y = 100		y = 125		B <sub>3</sub>	H <sub>4</sub>	ØD	C
	H <sub>3</sub>	A	H <sub>3</sub>	A	H <sub>3</sub>	A	H <sub>3</sub>	A	H <sub>3</sub>	A	H <sub>3</sub>	A				
	mm															
VSD50-1/... × 123	242	149	267	174	292	199	317	224	342	249	367	274	100	187	123	46
VSD50-1/... × 158	242	149	267	174	292	199	317	224	342	249	367	274	100	187	158	48
VSD50-2/... × 158	282	169	307	194	332	219	357	244	382	269	407	294	138	227	158	48
VSD50-2/... × 198	282	169	307	194	332	219	357	244	382	269	407	294	138	227	198	48

Y: Neck extension, resulting neck lengths 55, 80, 105, 130, 155, 180 mm

### Weight

Nominal length	VSD50-1	VSD50-2
	m	
	kg	
600	3.4	4.3
750	4.2	5.3
900	5.0	6.3
1050	5.8	7.2
1200	6.6	8.2
1350	7.4	9.2
1500	8.2	10.1
1650	9.0	11.1
1800	9.8	12.1
1950	10.6	13.0

### Variant

- Slot diffuser with plenum box for clamp fixing
- Plenum box with lining

### Useful additions

- EP: Two end plates
- EW: Two end angles
- To be ordered separately for continuous linear runs

### Parts and characteristics

- Plenum box for horizontal duct connection
- Concealed screw fixing
- Thermal and acoustic insulation (lining)
- Damper blade (optional)
- Lip seal (optional)

### VSD50-\*-DK

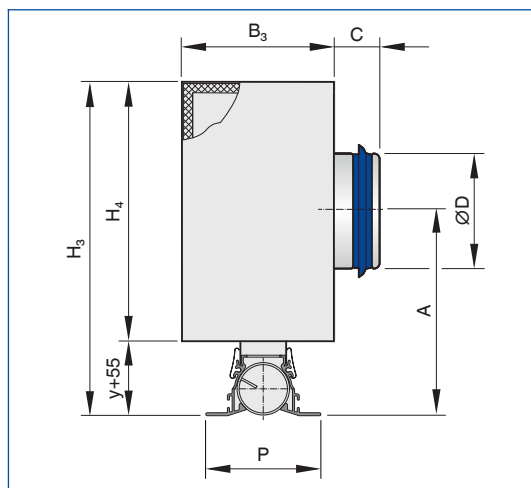


Illustration shows VSD50-1-DK-L /.../B00

### Dimensions

Variant	000	B00
	P	
	mm	
VSD50-1	50	70
VSD50-2	92	112

### Dimensions

Variant	y = 0		y = 25		y = 50		y = 75		y = 100		y = 125		B <sub>3</sub>	H <sub>4</sub>	ØD	C
	H <sub>3</sub>	A	H <sub>3</sub>	A	H <sub>3</sub>	A	H <sub>3</sub>	A	H <sub>3</sub>	A						
	mm															
VSD50-1/... × 123	262	149	287	174	312	199	337	224	362	249	387	274	138	207	123	46
VSD50-1/... × 158	262	149	287	174	312	199	337	224	362	249	387	274	138	207	158	48
VSD50-2/... × 158	302	169	327	194	352	219	377	244	402	269	427	294	176	247	158	48
VSD50-2/... × 198	302	169	327	194	352	219	377	244	402	269	427	294	176	247	198	48

Y: Neck extension, resulting neck lengths 55, 80, 105, 130, 155, 180 mm

### Weight

Nominal length	VSD50-1	VSD50-2
	m	
	kg	
600	4.4	5.4
750	5.4	6.6
900	6.4	7.8
1050	7.4	9.0
1200	8.4	10.2
1350	9.4	11.4
1500	10.4	12.6
1650	11.4	13.8
1800	12.4	15.0
1950	13.4	16.2



VSD50-1-AA

### Variant

- Slot diffuser with plenum box for clamp fixing
- Asymmetric plenum box

### Useful additions

- EP: Two end plates
- EW: Two end angles
- To be ordered separately for continuous linear runs

### Parts and characteristics

- Plenum box for horizontal duct connection
- Asymmetric plenum box
- Damper blade (optional)
- Lip seal (optional)

### VSD50-\*-AA

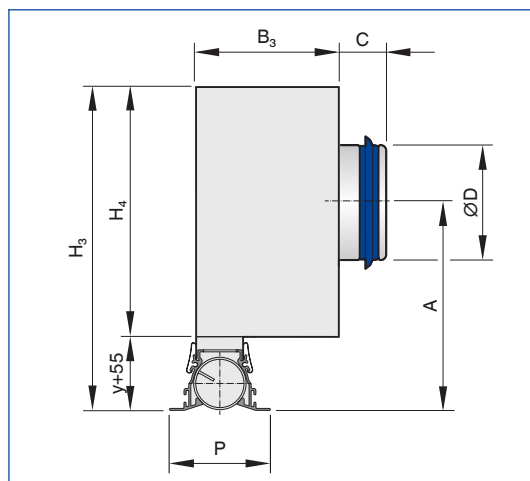


Illustration shows VSD50-1-AA-L/.../B00

### Dimensions

Variant	000	B00
	P	
	mm	
VSD50-1	50	70
VSD50-2	92	112

### Dimensions

Variant	y = 0		y = 25		y = 50		y = 75		y = 100		y = 125		B <sub>3</sub>	H <sub>4</sub>	ØD	C
	H <sub>3</sub>	A	H <sub>3</sub>	A	H <sub>3</sub>	A	H <sub>3</sub>	A	H <sub>3</sub>	A	H <sub>3</sub>	A				
	mm															
VSD50-1/... × 123	242	149	267	174	292	199	317	224	342	249	367	274	100	187	123	46
VSD50-1/... × 158	242	149	267	174	292	199	317	224	342	249	367	274	100	187	158	48
VSD50-2/... × 158	282	169	307	194	332	219	357	244	382	269	407	294	138	227	158	48
VSD50-2/... × 198	282	169	307	194	332	219	357	244	382	269	407	294	138	227	198	48

Y: Neck extension, resulting neck lengths 55, 80, 105, 130, 155, 180 mm

### Weight

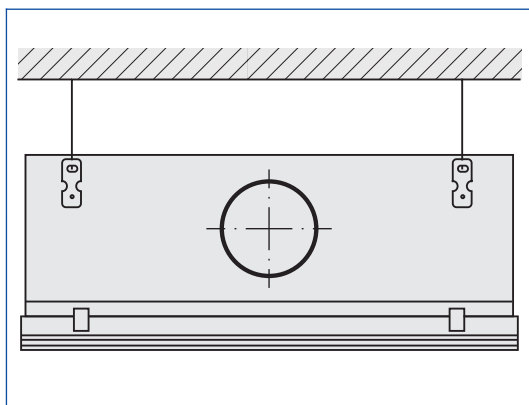
Nominal length	VSD50-1	VSD50-2
	m	
	kg	
600	3.4	4.3
750	4.2	5.3
900	5.0	6.3
1050	5.8	7.2
1200	6.6	8.2
1350	7.4	9.2
1500	8.2	10.1
1650	9.0	11.1
1800	9.8	12.1
1950	10.6	13.0

### Installation types

For more installation details see Chapter K1 – 2.3

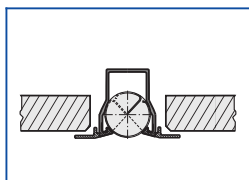
These are only schematic diagrams to illustrate installation details.

### Installation with plenum box

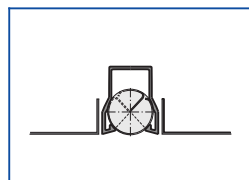


### Ceiling systems

#### Continuous ceiling



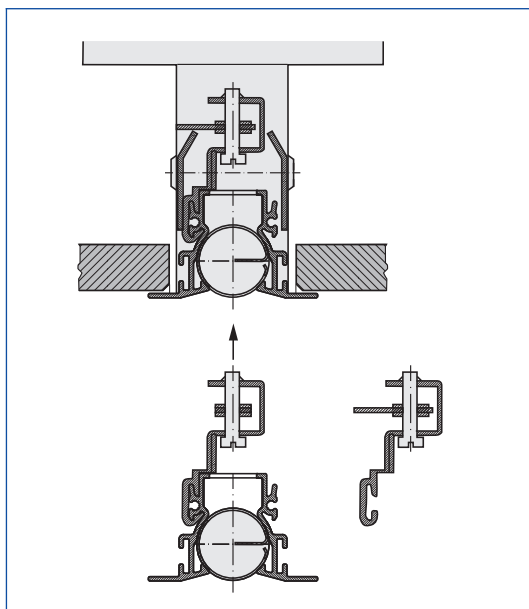
#### Panelled ceiling



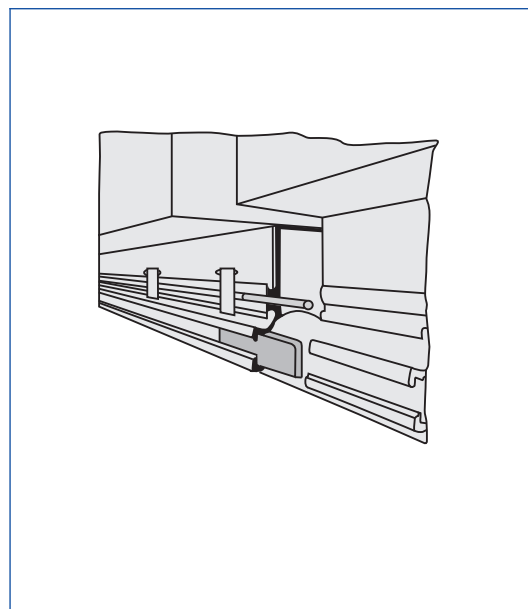
### Concealed screw fixing

#### Slot diffusers, linear run

### Concealed screw fixing



### Slot diffusers, linear run



### Standard text

This specification text describes the general properties of the product. Texts for variants can be generated with our Easy Product Finder design programme.

Slot diffusers with individually manually adjustable air control elements and an aesthetically shaped face section with one or two slots, for horizontal one-way, horizontal alternating or angled alternating air discharge. For supply air or extract air. For installation into suspended ceilings. Ready-to-install component which consists of the diffuser face with individually adjustable black or white air control elements, and of a plenum box with side entry spigot and suspension lugs.

Clamp fixing or concealed screw fixing

Spigot suitable for circular ducts to EN 1506 or EN 13180.

Sound power level of the air-regenerated noise measured according to EN ISO 5135.

### Special characteristics

- Individually adjustable air control elements to meet individual local requirements
- High induction results in a rapid reduction of the temperature difference and airflow velocity
- Diffuser face has been optimised for maximum volume flow rate at low sound power levels
- Suitable for continuous linear arrangement

### Materials and surfaces

- Diffuser face made from extruded aluminium sections
- Air control elements made of plastic, UL 94, V-0, flame retardant
- Plenum box made of galvanised sheet steel
- End plate and end angle made of aluminium
- Lip seal made of rubber
- Lining is mineral wool
- Diffuser face with anodised finish, E6-C-0, natural colour
- P1: Powder-coated, RAL CLASSIC colour
- Air control elements similar to RAL 9005, black
- WW: Air control elements similar to RAL 9010, white

### Mineral wool

- To EN 13501, fire rating class A1, non-combustible
- RAL quality mark RAL-GZ 388
- Biosoluble and hence hygienically safe according to the German TRGS 905 (Technical Rules for Hazardous Substances) and EU directive 97/69/EG
- Faced with glass fibre fabric as a protection against erosion through airflow velocities of up to 20 m/s
- Inert to fungal and bacterial growth

### Technical data

- Nominal length: 600 – 1950 mm
- Number of slots: 1, 2
- Neck extension: 0, 25, 50, 75, 100, 125 mm
- Minimum volume flow rate: 20 – 40 (l/s)/m or 72 – 144 (m³/h)/m
- Maximum volume flow rate with  $L_{WA} \approx 50$  dB(A): 70 – 120 (l/s)/m or 252 – 432 (m³/h)/m
- Supply air to room air temperature difference: –10 to +10 K

### Sizing data

- $\dot{V}$  \_\_\_\_\_ [m³/h]
- $\Delta p_t$  \_\_\_\_\_ [Pa]
- $L_{WA}$  Air-regenerated noise \_\_\_\_\_ [dB(A)]



### Order options

#### 1 Type

**VSD50** Slot diffuser

#### 2 Number of slots

- ☐ 1  
☐ 2

#### 3 Connection

- ☐ **F** Diffuser face only  
☐ **E** 90° corner section only  
 Plenum box  
☐ **AK** With clamp fixing  
☐ **DK** With lining and clamp fixing  
☐ **AS** With concealed screw fixing  
☐ **DS** With lining and concealed screw fixing  
☐ **AA** Asymmetric and with clamp fixing

Diffusers with a shorter plenum box as well as non-active diffusers require a rear blanking plate  
 Length of blanking plate =  $L_1 - L_3$

#### 4 Damper blade for volume flow rate balancing

- No entry: none  
☐ **M** With (only AK, DK, AS, DS and AA)

#### 5 Accessories

- No entry: none  
☐ **L** With lip seal

#### 6 Nominal size [mm]

Nominal length  $L_N$

- ☐ **600**  
☐ **750**  
☐ **900**  
☐ **1050**  
☐ **1200**  
☐ **1350**  
☐ **1500**  
☐ **1650**  
☐ **1800**  
☐ **1950**

Specify D and Y only for AK, DK, AS, DS and AA  
 Up to  $L_N$  1500 with one spigot,  
 from  $L_N$  1650 with two spigots  
 spigot diameter D

- ☐ **123** 1 slot  
☐ **158** 1 or 2 slots  
☐ **198** 2 slots

Neck extension Y

No entry: 0

- ☐ **25**  
☐ **50**  
☐ **75**  
☐ **100**  
☐ **125** (only AK, DK and AA)

#### 7 End pieces

No entry: without  
 Both ends with end angles factory fitted  
☐ **C1** to profile 000  
☐ **C2** to profile B00  
 Both ends with end plates factory fitted  
☐ **C5** to profile 000  
☐ **C6** to profile B00  
 To be ordered separately  
 for slot diffusers for linear arrangement

#### 8 Extended border

- No entry: without (only AK, DK, AA)  
☐ **B00** With extended border

#### 9 Exposed surface

- No entry: anodised, E6-C-0,  
 natural colour  
☐ **P1** Powder-coated,  
 specify RAL CLASSIC colour

Gloss level  
 RAL 9010 50 %  
 RAL 9006 30 %  
 All other RAL colours 70 %

#### 10 Air pattern

- No entry: alternating horizontal (WH)  
☐ **WS** Alternating angled  
☐ **HL** Horizontal left  
 (opposite direction from spigot)  
☐ **HR** Horizontal right  
 (same direction as spigot)

#### 11 Colour of air control elements

- No entry: similar to RAL 9005, black  
☐ **WW** Similar to RAL 9010, white

### Order options

#### 1 Type

**VSD50** Slot diffuser

#### 2 Number of slots

- ☐ 1  
☐ 2

#### 3 End pieces

- ☐ **EP** Two end plates  
☐ **EW** Two end angles

#### 4 Extended border

- ☐ **000** Profile without extended border  
☐ **B00** Profile with extended border

# Slot diffusers

## Basic information and nomenclature



### Slot diffusers

- Product selection
- Principal dimensions
- Nomenclature
- Sizing and sizing example
- Installation information
- Commissioning

# Slot diffusers

## Basic information and nomenclature

### Product selection

	Ceiling installation				Wall installation	
	VSD15	VSD35	VSD50	VSD35-Varyset	VSD50-1-LT	VSD35-3-AZ
<b>Diffuser face</b>						
Nominal width	15 mm	35 mm	50 mm	35 mm	50 mm	35 mm
Extended border	●	●	●	●	●	●
Aluminium	●	●	●	●	●	●
<b>Diffuser fixing</b>						
Concealed screw fixing		●	●			
Clamp fixing	●	●	●	●		
Spring clip fixing					●	●
Rigid connection	●					●
<b>Air control elements</b>						
Adjustable	●	●	●	●	●	●
Plastic, black and white	●	●	●	●	●	●
<b>Air patterns</b>						
Horizontal, one-way	●	●	●	●	●	●
Alternating horizontal	●	●	●	●		
Alternating angled	●	●	●	●		
<b>Plenum box</b>						
Galvanised sheet steel	●	●	●	●	●	●
Acoustic lining (cross talk reduction)	●	●	●		●	
Neck extension		●	●			
Asymmetric		●	●			
<b>Attachments</b>						
Damper blade	●	●	●		●	●
<b>Accessories</b>						
Lip seal	●	●	●		●	●
End plate		●	●	●		
End angles	●	●	●	●		●
End seal	●					
<b>Nominal sizes</b>						
Number of slots	1	1, 2, 3, 4	1, 2	1, 2, 3, 4	1	3
Nominal length	600, 700 800, 900 1000, 1100 1200, 1300 1400, 1500	600, 750 900, 1050 1200, 1350 1500, 1650 1800, 1950	600, 750 900, 1050 1200, 1350 1500, 1650 1800, 1950	900, 1050 1200, 1350 1500	550, 1175	600, 750 900, 1050 1200
Nominal size of spigot	80	100, 125 140, 160 200	125, 160 200	125, 160 180, 200	80, 100	80
Slot diffusers, linear run	●	●	●	●		
Corner section		●	●	●		
<b>Technical data</b>						
Volume flow rate range	7 – 30 (l/s)/m	15 – 135 (l/s)/m	20 – 120 (l/s)/m	8 – 90 (l/s)/m	10 – 70 l/s	8 – 40 l/s
	25 – 108 (m³/h)/m	54 – 486 (m³/h)/m	72 – 432 (m³/h)/m	29 – 324 (m³/h)/m	36 – 252 m³/h	30 – 144 m³/h
●	Possible					
	Not possible					

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### Principal dimensions

#### $\varnothing D$ [mm]

Outside diameter of the spigot

#### $L_1$ [mm]

Length of diffuser without end pieces

#### $L_3$ [mm]

Length of plenum box

#### $P$ [mm]

Width of diffuser face – with extended border, if any

#### $B_3$ [mm]

Width of plenum box

#### $H_3$ [mm]

Height of slot diffuser with plenum box, from the lower edge of the suspended ceiling to the upper edge of the plenum box

#### $Y$ [mm]

Neck extension – The neck length results from a fixed length plus the neck extension

#### $A$ [mm]

Position of the spigot, defined by the distance of the spigot centre line to the lower edge of the suspended ceiling

#### $C$ [mm]

Length of spigot

#### $m$ [kg]

Weight

### Nomenclature

#### $f_m$ [Hz]

Octave band centre frequency

#### $L_{WA}$ [dB(A)]

Sound power level of the air-regenerated noise

#### $\dot{V}$ [m³/h] and [l/s]

Volume flow rate

#### $\Delta p_t$ [Pa]

Total differential pressure

All sound power levels are based on 1 pW.

# Slot diffusers

## Basic information and nomenclature

### Sizing with the help of this catalogue

This catalogue provides convenient quick sizing tables for slot diffusers. The tables give supply air volume flow rates for all nominal sizes. The maximum volume flow rates are for an open damper blade. A smaller opening of the damper blade results in higher sound power levels and a higher total differential pressure. The tables show values for damper blade positions 0°, 45° and 90°. Sizing data for other volume flow rates and damper blade positions can be determined quickly and precisely using the Easy Product Finder design programme.

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### Sizing example

#### Given data

$\dot{V} = 60 \text{ l/s}$  (216 m³/h)  
Slot diffuser for ceiling installation  
Maximum sound power level 40 dB(A)  
with damper blade position 45°  
Alternating angled air discharge

#### Quick sizing

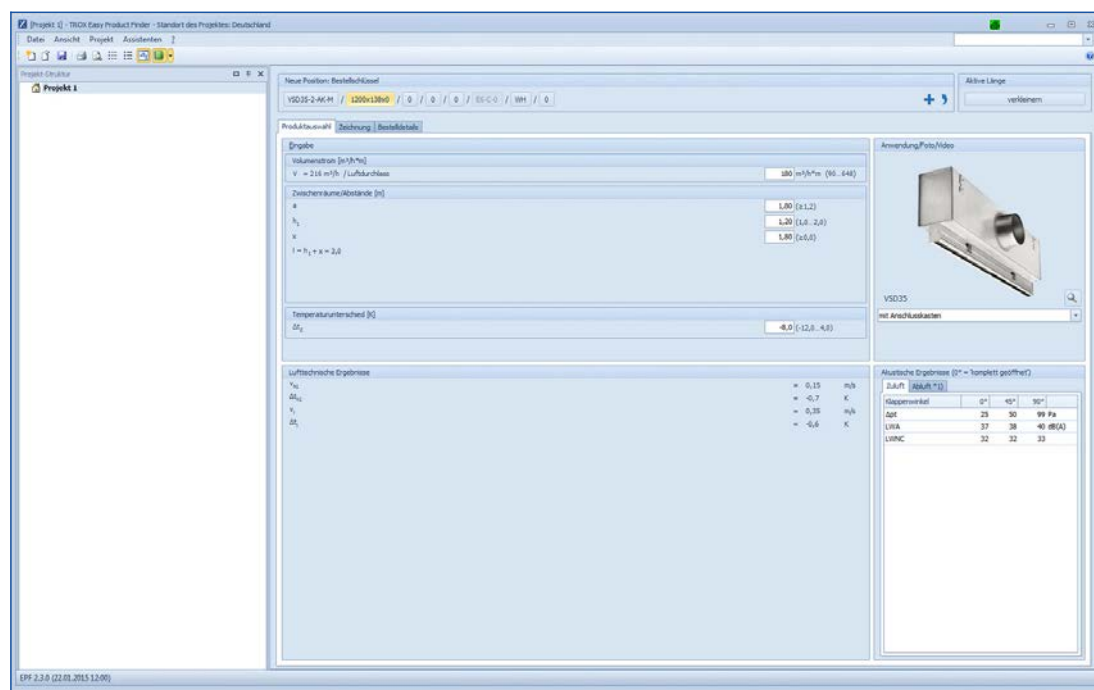
Type VSD35  
Nominal sizes: VSD35-1/1950×123,  
VSD35-2/1200×138, VSD35-1/1500×123,  
VSD35-3/600×158, VSD35-3/750×138  
Selected: VSD35-2/1200×138

### Easy Product Finder



The Easy Product Finder allows you to size products using your project-specific data.

You will find the Easy Product Finder on our website.



# Slot diffusers

## Basic information and nomenclature

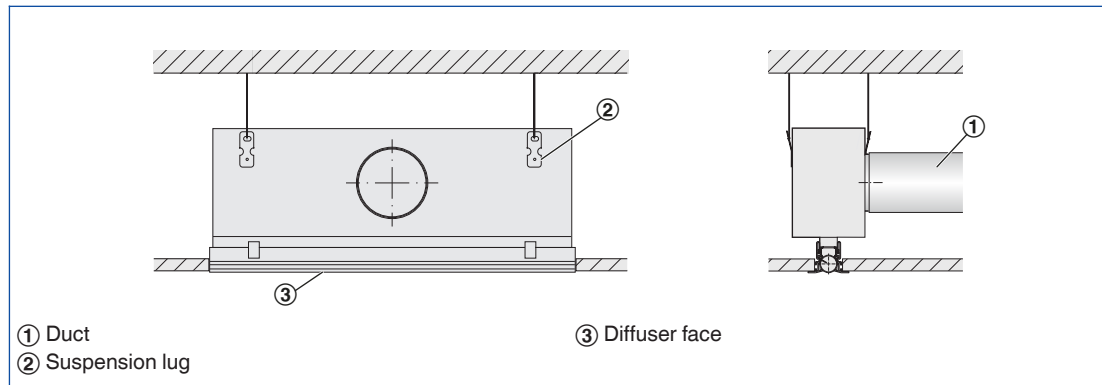
### Description

### Installation information

- Installation and making connections to be performed by others
- The optimum aerodynamic function is only achieved with flush ceiling installation
- The actual diffuser can be fixed to the plenum box in three ways: concealed screw fixing, clamp fixing or spring clip fixing

### Installation types

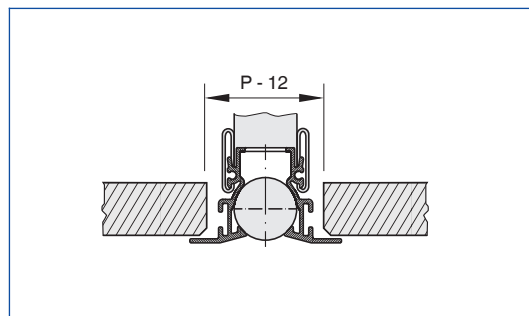
#### Installation with plenum box



- Horizontal duct connection
- Four suspension lugs
- Suspension with cords, wires or hangers, to be provided by others

### Ceiling systems

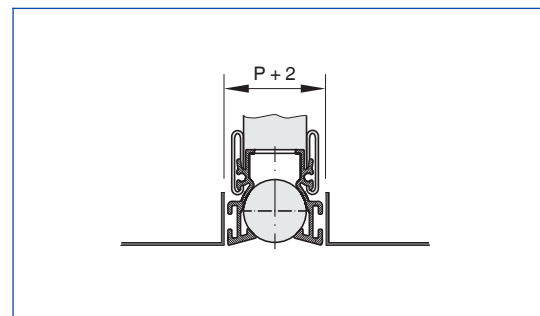
#### Continuous ceiling



##### Slot diffuser with extended border

- Fix the plenum box to the ceiling slab
- Adjust plasterboard ceiling tile as required

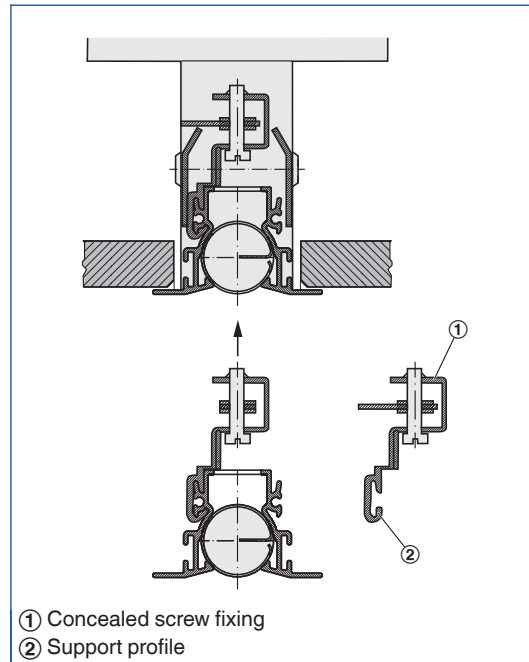
#### Ceiling panels with rectangular edges



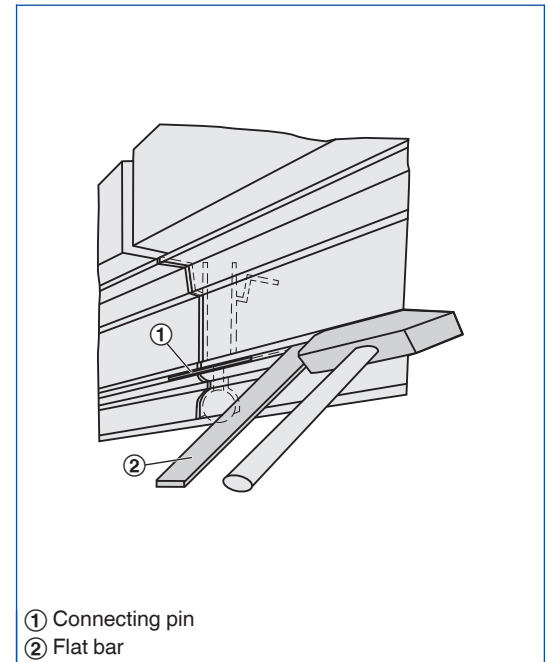
##### Slot diffuser without extended border

- Fix the plenum box to the ceiling slab
- The ceiling tile or panel of a panelled ceiling has no contact with the diffuser

### Concealed screw fixing



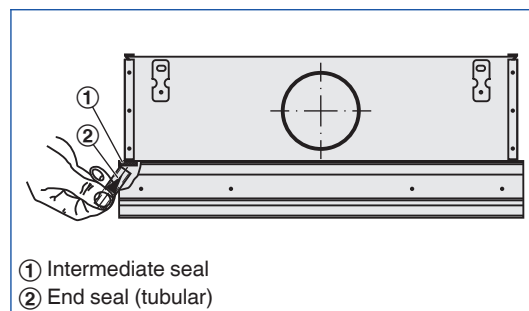
### Continuous linear arrangement



- Concealed screw fixing with plenum box AS or DS
- Each slot diffuser is supplied with four concealed screw fixings
- If a slot diffuser with factory fitted end pieces has been supplied, first remove one of the end pieces
- Grasp each screw fixing by its support profile and slide the support profile onto the diffuser
- Position the screw fixings at regular distances on the diffuser
- Turn the tab of each screw fixing lengthways such that it is parallel to the diffuser face
- Push the diffuser face into the neck of the plenum box
- Turn the tab of each screw fixing by 90° and tighten the screws
- To remove the diffuser, follow the steps in reverse order

- Each slot diffuser (without end pieces) is supplied with two connecting pins
- Connecting pins are used to align slot diffusers for linear runs
- Insert the connecting pins into a slot diffuser
- Connect the next slot diffuser to it

### End seal



#### End seal for VSD15 only

- Continuous linear runs require an end seal on each end to ensure that no air leaks
- End seals can be either factory fitted or fitted by others
- Single diffusers require end seals on both ends
- End seals are suitable only for slot diffusers without extended border



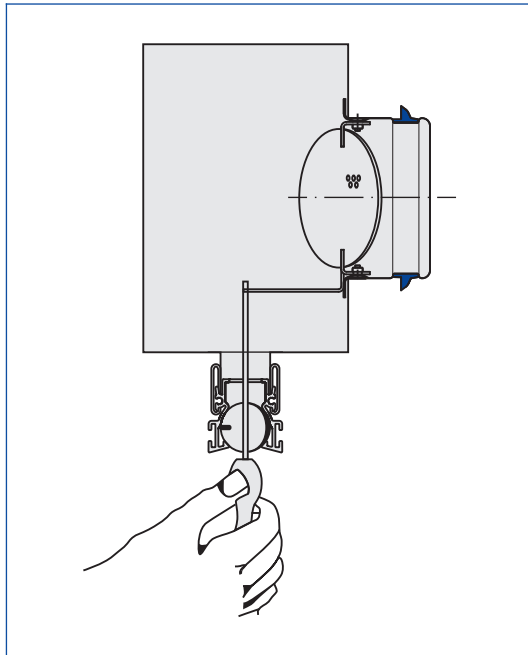
### Commissioning

#### Volume flow rate balancing

When several diffusers are connected to just one volume flow controller, it may be necessary to balance the volume flow rates.

- Slot diffuser with plenum box and damper blade (variant -M): The damper blade can be adjusted even after the diffuser face has been installed.

#### Volume flow rate balancing



- Move the damper blade near the spigot in such a way that it is possible to insert a screw driver