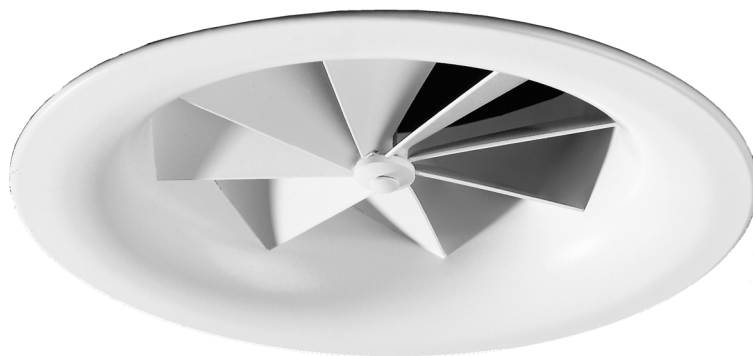




# Swirl Diffuser

## DHV



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## Swirl Diffuser Model DHV

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## Swirl Diffuser Model DHV

### Description

The ceiling swirl diffuser type DHV is suitable for rooms up to 4 m high without causing draughts. A high induction is ensured by a special design of the **fixed swirl impellers**. This increased induction causes the temperature difference and velocity to be rapidly reduced. The supply air enters the room horizontally. This diffuser was designed **especially for cooling and isothermal supply air pattern** and is suitable for constant and variable volumetric flows from 100% to 40%.

A volumetric flow meter (-VME) can be integrated in the connection piece of the plenum box at an extra charge. The measurement error of the volumetric flow meter is  $\pm 5\%$  at a connecting piece velocity of 2-5 m/s and a straight flow pattern of at least  $1 \times D$ . The measurement is carried out with integrated diffuser. By adjusting the throttle damper (-DK), the required air volume of each diffuser can be set quickly and correctly.

For plenum boxes SRK, the ceiling diffuser must be removed, before the damper can be adjusted. Alternatively, a cable-operated adjustment can be ordered at an extra charge, which allows the damper to be adjusted on the room side even with mounted diffuser.

With the ROB version (-ROB), the diffuser plate and, if built in, the throttle damper, and the volumetric flow meter can be removed from the plenum box type SRK to allow duct cleaning robots to be inserted from the room side.

### Construction

#### Swirl diffuser

- Aluminium painted to RAL 9010 (white, for DHV-Q/R, sizes  $\varnothing$  125-400).
- Plastic RAL 9010 (white, only for DHV-K, size  $\varnothing$  125-250).
- Sheet steel painted to RAL 9010 (white, size  $\varnothing$  100).

#### Swirl impellers

- Painted aluminium, 9010 (white, only for DHV-Q/R, sizes  $\varnothing$  125-400).
- Plastic RAL 9010 (white, only for DHV-K, size  $\varnothing$  125-250).
- Painted sheet steel RAL 9010 (white, size  $\varnothing$  100)

### Model

- |       |  |
|-------|--|
| DHV-Q | - with square faceplate and inlet nozzle |
| DHV-R | - with round faceplate and inlet nozzle  |
| DHV-K | - with round faceplate and inlet nozzle  |

### Accessories

#### Plenum box (-SRK)

- Housing made of galvanised sheet steel with integrated perforated straightener and fixing lugs
- VM pole brace made of aluminium and plastic

#### Throttle damper (-DK)

- Damper made of galvanised sheet steel
- Damper fastening made of plastic
- with cable-operated adjustment (-SZV) (at an extra charge)

#### Rubber lip seal (-GD)

- Special rubber

#### Panelled cover plate (-PA) (-DHV-Q only)

- Sheet steel painted to RAL 9010 (white)

#### Volumetric flow meter (-VME)

- Mounting made of galvanised sheet steel
- Measuring sensor made of plastic
- Aluminium connections

#### Transition piece (-ÜS)

- Untreated aluminium with integrated perforated straightener.

#### Internal insulation (-li)

- Thermal insulation inside the plenum box

#### External insulation (-la)

- Thermal insulation on the outside of the plenum box

### Fastening

#### Concealed mounting (-VM, standard)

- Counter pole brace on site (without plenum box or transition piece).
- with pole brace fixing (with plenum box or transition piece).

#### Clamp fastening (-KB)

- only for flexible duct connection (without plenum box)

#### Screw mounting (-SM)

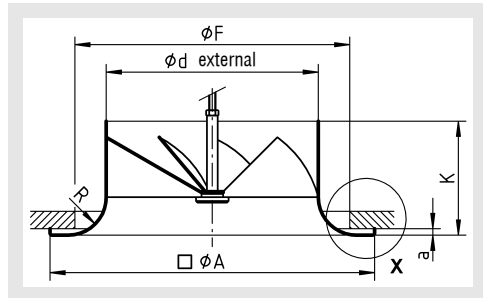
- only for flexible duct connection (without plenum box)
- Number of slotted shallow-raised countersunk-head tapping screws: DHV-Q with 4 screws (on-site), DHV-R/K with 3 screws (on-site).

# Swirl Diffuser Model DHV

## Models and dimensions

### Dimensions

DHV (VM, without plenum box)



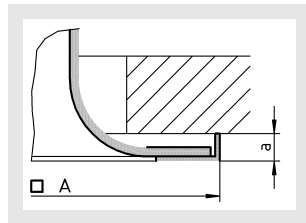
Attention: Counter pole brace on-site!

### Available sizes

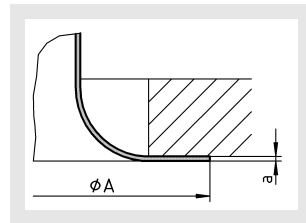
Size	$\phi d$	$\square/\phi A$	$\phi F$	K	R	a		
						DHV-Q	DHV-R	DHV-K
100	98	155	128	50	15	6	1	-
125	123	185	144	63	17		5	3
160	158	240	184	80	20			
200	198	300	254	105	35			
250	248	380	324	130	45			
315	313	490	419	170	60		-	-
400	398	630	545	220	80	12	8	-

### Detail X

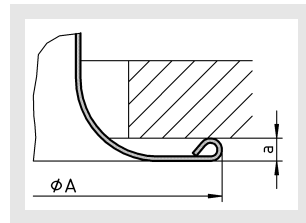
DHV-Q 100-400



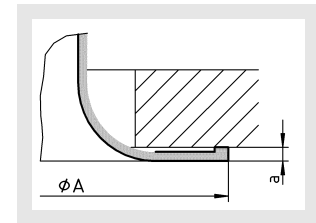
DHV-R 100



DHV-R 125-400

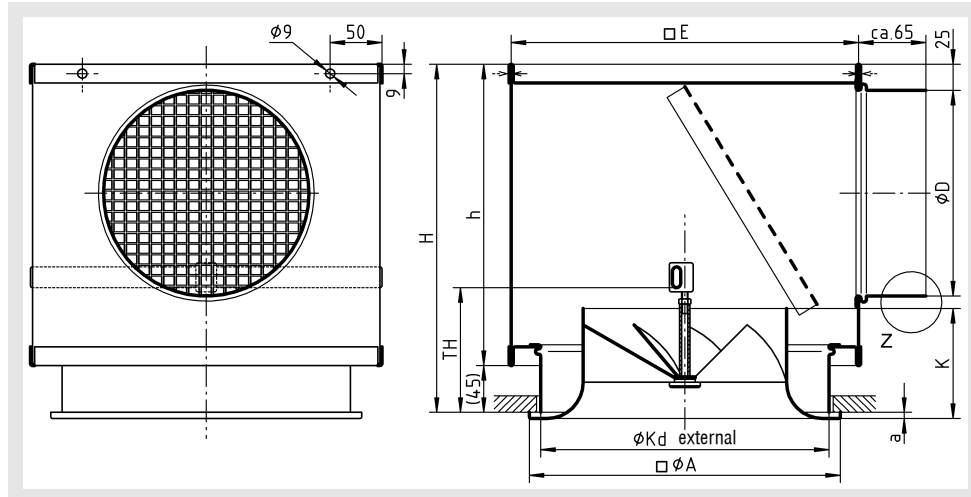


DHV-K 125-250

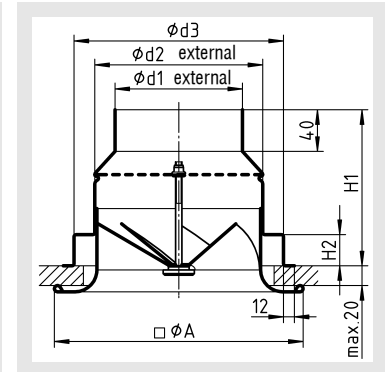


### Dimensions of accessories

Plenum box (-SRK-Z) for supply air, with VM



Transition piece (-ÜS) with VM



(size 400 upon request)

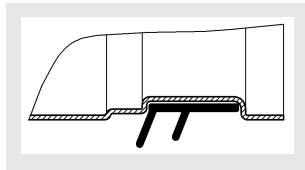
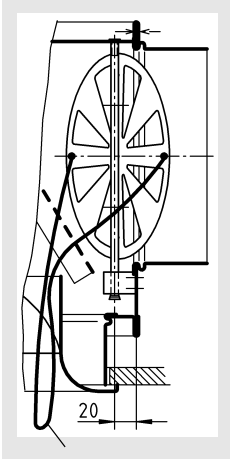
Ceiling opening with SRK:  $\phi Kd + 5$

Available sizes SRK-Z / ÜS

NW	$\square/\phi A$	K	$\phi Kd$	$\square E$	$\phi D$	H	h	TH	$\phi d1$	$\phi d2$	$\phi d3$	H1	H2	a		
														DHV-Q	DHV-R	DHV-K
100	155	50	123	245	98	230	185	90	78	102	117	120	20	6	1	-
125	185	63	158	245	123	260	215	90	98	127	147	135	25		5	3
160	240	80	198	290	158	295	250	100	123	162	202	150	30			
200	300	105	265	335	198	335	290	120	158	202	262	175	40			
250	380	130	335	405	248	385	340	150	198	252	342	200	50			
315	490	170	425	545	248	385	340	190	248	317	452	253	77		-	-
400	630	220	570	670	313	555	510	290	-	-	-	-	-	12	8	-

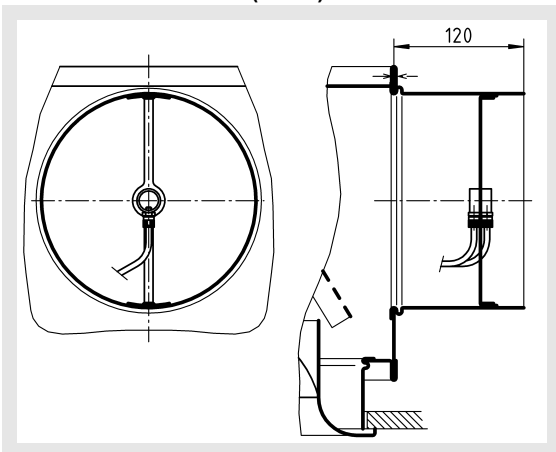
## Swirl Diffuser Model DHV

Throttle damper (-DK) Rubber lip seal (-GD)  
Detail Z

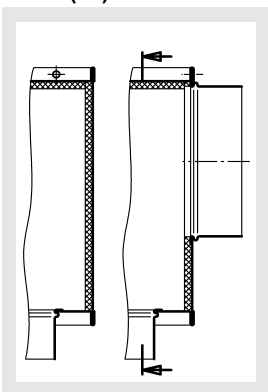


SZV = Cable-operated adjustment  
(at an extra charge)

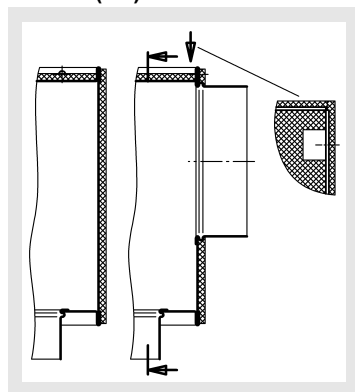
Volumetric flow meter (-VME)



Insulation for SRK  
inside(-li)

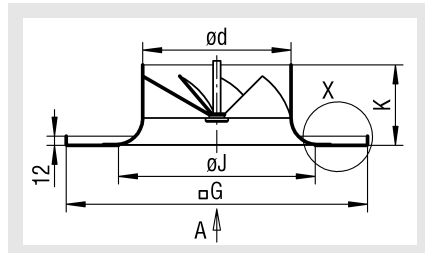


outside (-la)

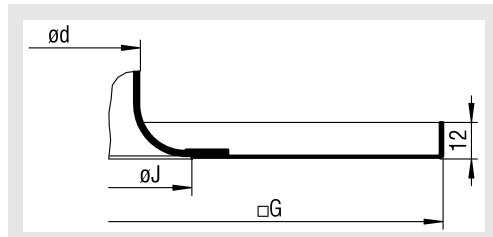


## Swirl Diffuser Model DHV

Panelled cover plate (-PA) (for DHV-Q only)



### Detail X



### Available sizes

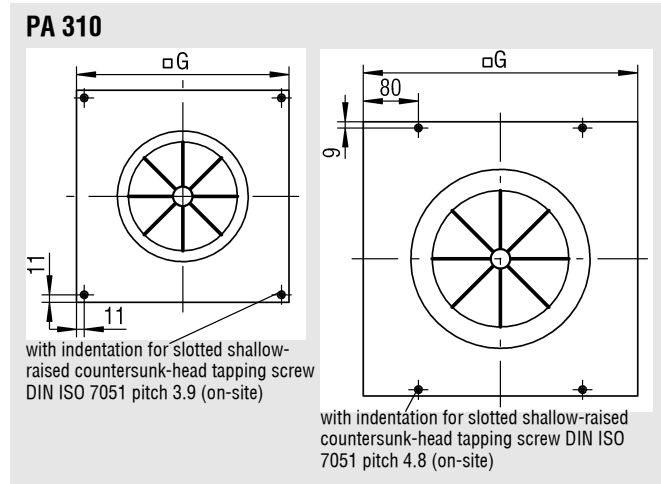
NW DHV-Q	PA	□G
100 - 160	310	308
100 - 250	400	398
100 - 315	500	498
	600	598
	625	623

(NW 400 upon request)

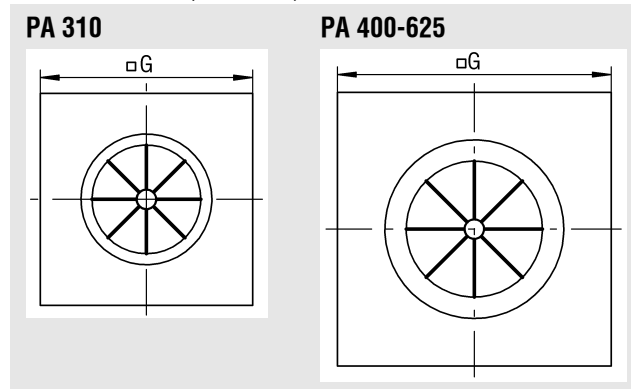
NW DHV-Q	ød	K	
100	98	50	134
125	123	63	150
160	158	80	190
200	198	105	260
250	248	130	330
315	313	170	425

(NW 400 upon request)

### View A with SM (without SRK)



### View A with VM (with SRK)



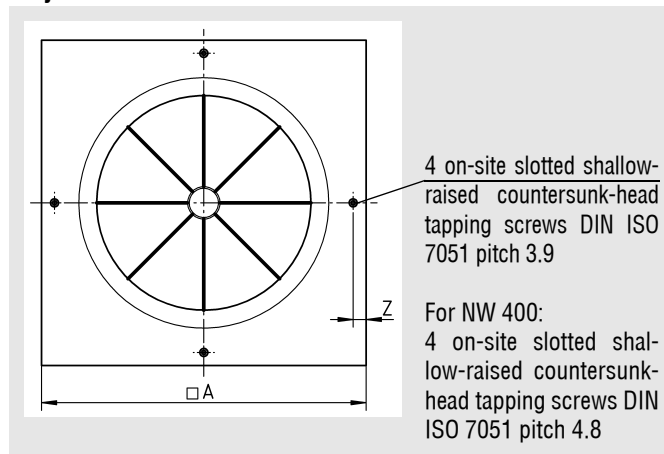
## Swirl Diffuser Model DHV

### Fastening methods

#### Screw mounting (-SM)

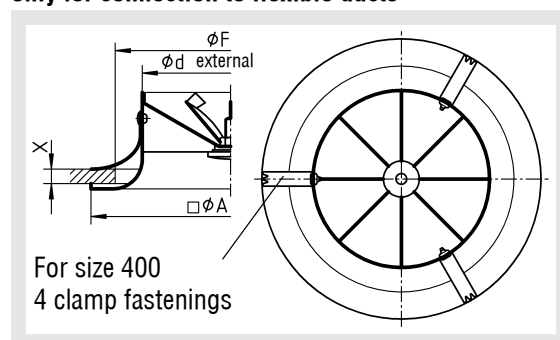
#### DHV-Q (with square faceplate)

only for connection to flexible ducts



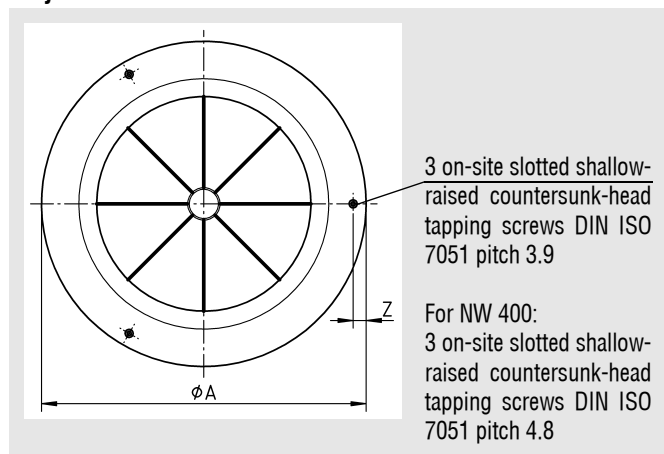
#### Clamp fastening (-KB)

only for connection to flexible ducts



#### DHV-R / DHV-K (with round faceplate)

only for connection to flexible ducts



### Available sizes

Size	$\phi d$	$\square/\phi A$	$\phi F$	Z	X
100	98	155	128	10	10 - 25
125	123	185	144	10	
160	158	240	184	15	
200	198	300	254	10	
250	248	380	324	15	
315	313	490	419	22,5	
400	398	630	545	20	

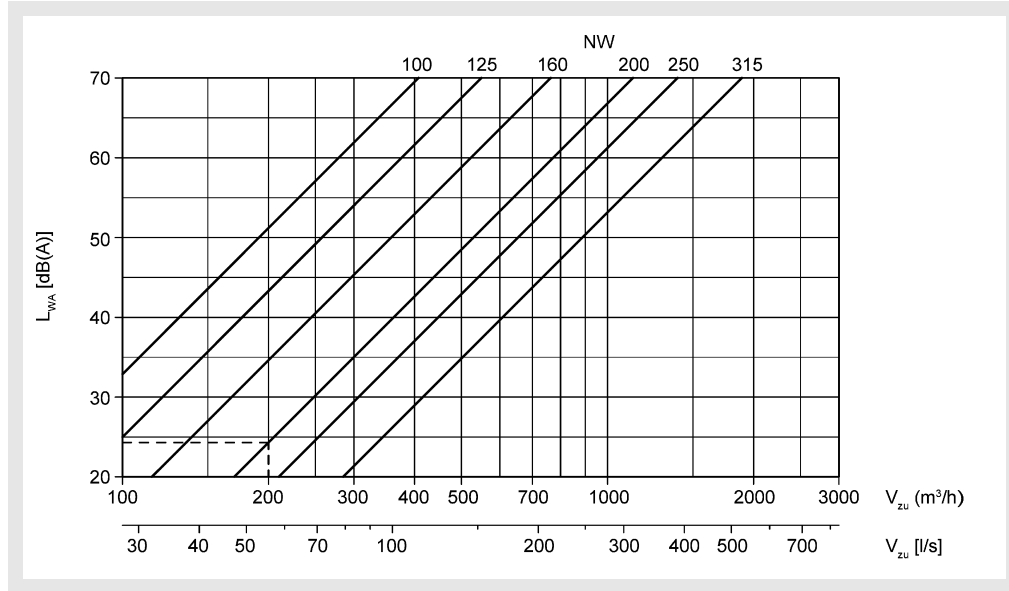
# Swirl Diffuser Model DHV

## Technical Data

### Pressure loss and noise level

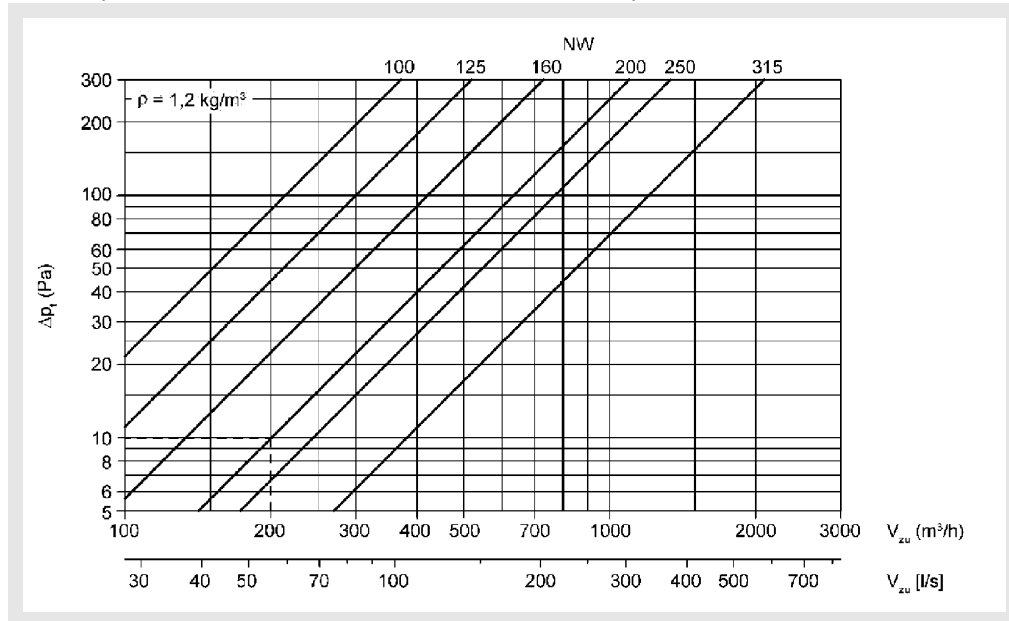
#### Sound level

DHV-... (for flexible duct connection, without plenum box)



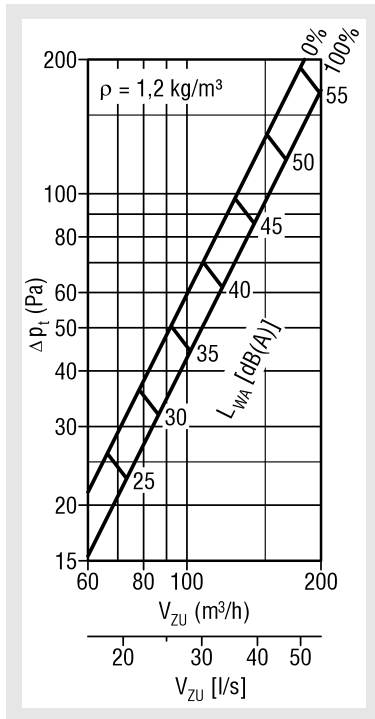
#### Pressure loss

DHV-... (for flexible duct connection, without plenum box)

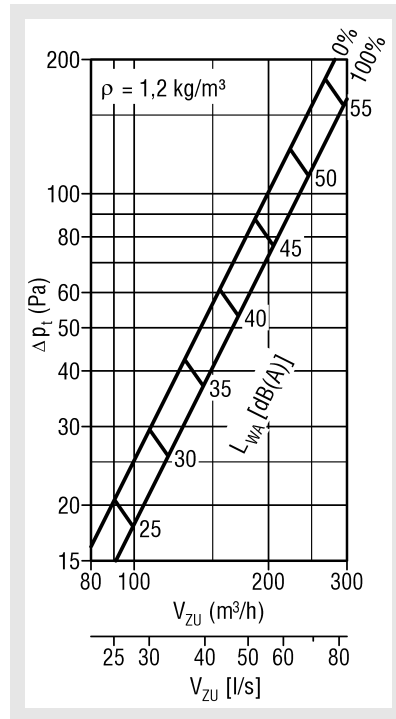


# Swirl Diffuser Model DHV

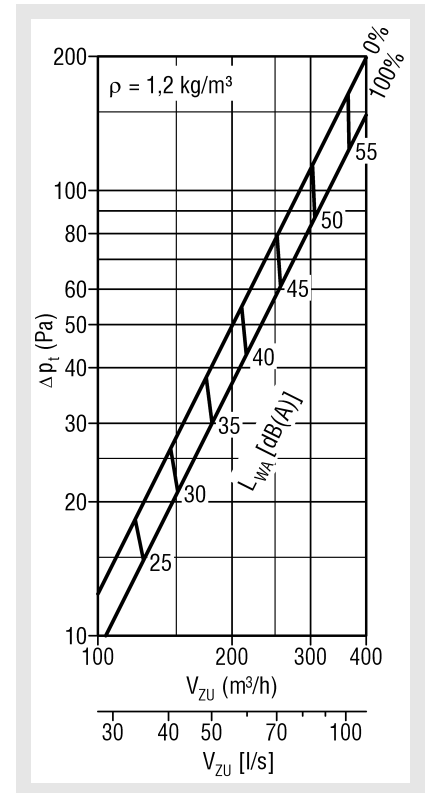
**DHV-Q-SRK 100 / DHV-R-SRK 100**



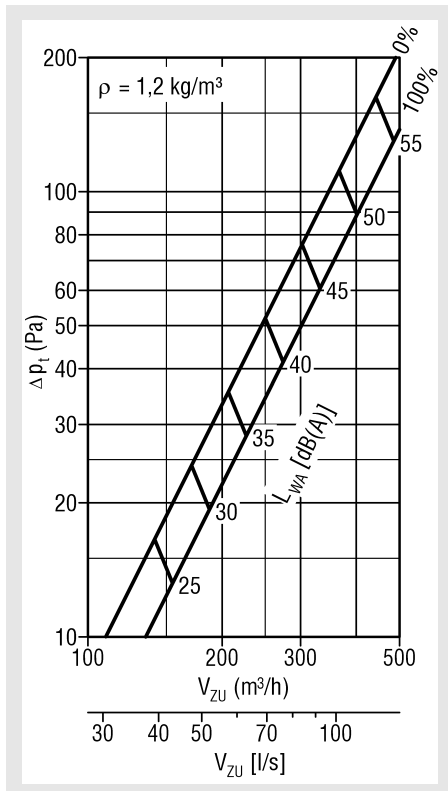
**DHV-Q-SRK 125 / DHV-R-SRK 125**



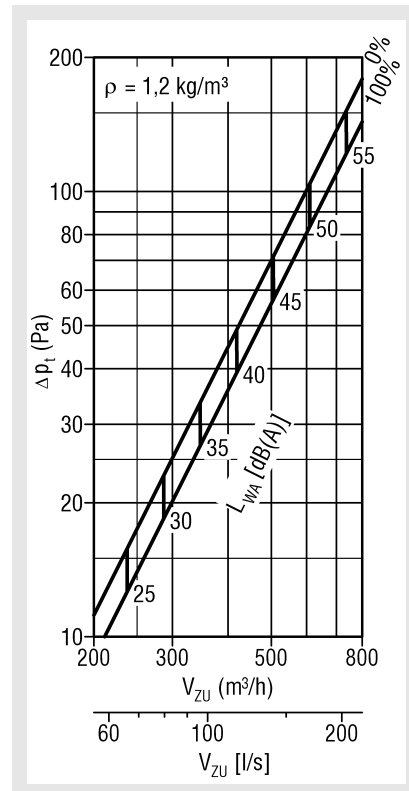
**DHV-Q-SRK 160 / DHV-R-SRK 160**



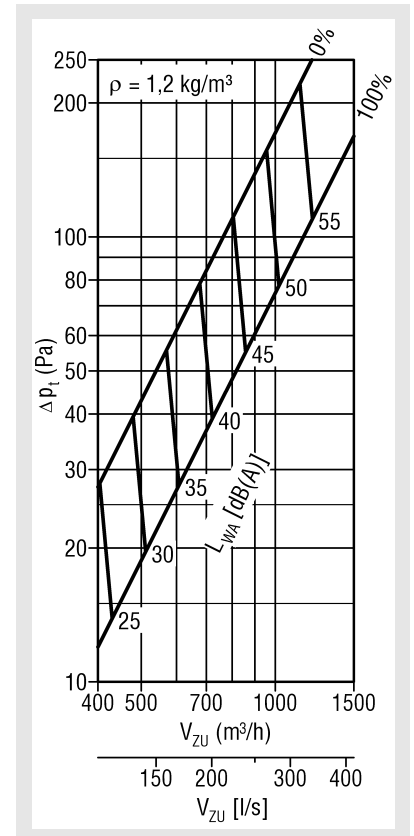
**DHV-Q-SRK 200 / DHV-R-SRK 200**



**DHV-Q-SRK 250 / DHV-R-SRK 250**



**DHV-Q-SRK 315 / DHV-R-SRK 315**



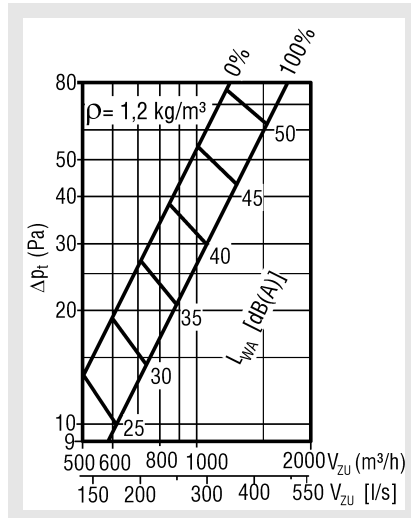
Damper position:

OPEN = 100%

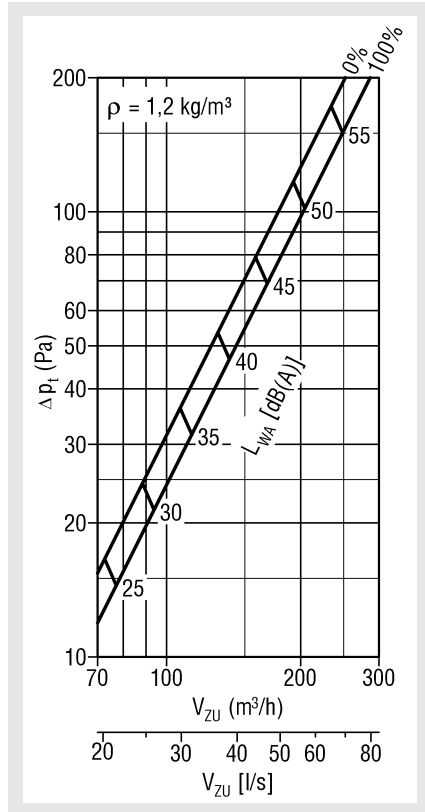
CLOSED = 0%

## Swirl Diffuser Model DHV

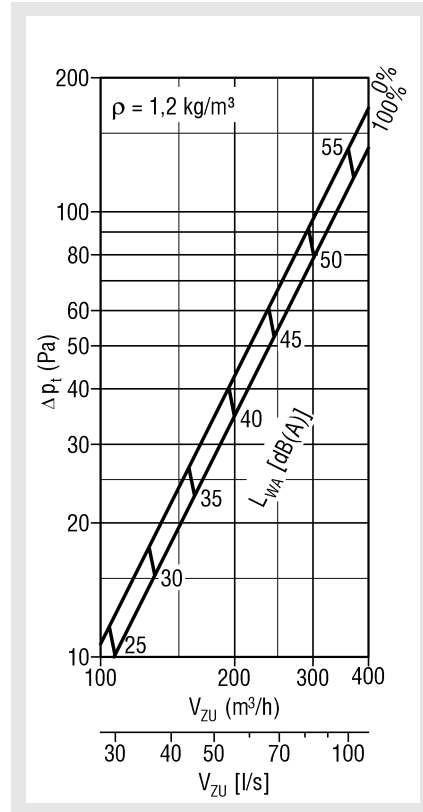
DHV-Q-SRK 400 / DHV-R-SRK 400



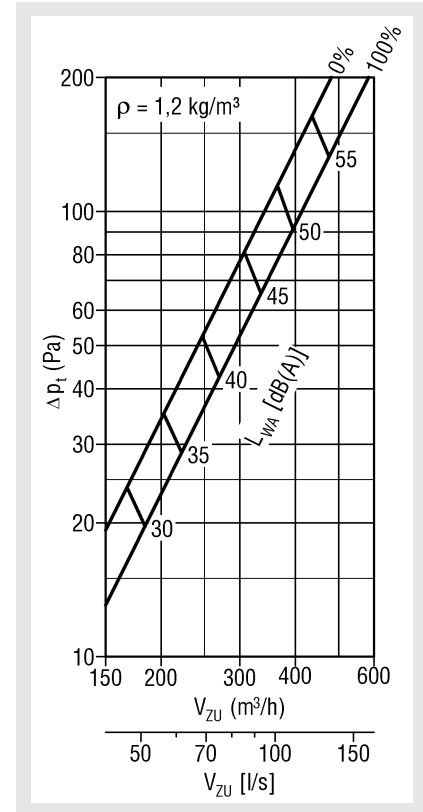
DHV-K-SRK 125



DHV-K-SRK 160

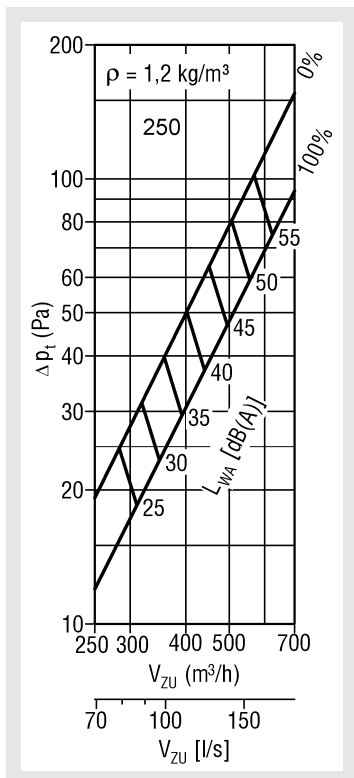


DHV-K-SRK 200



# Swirl Diffuser Model DHV

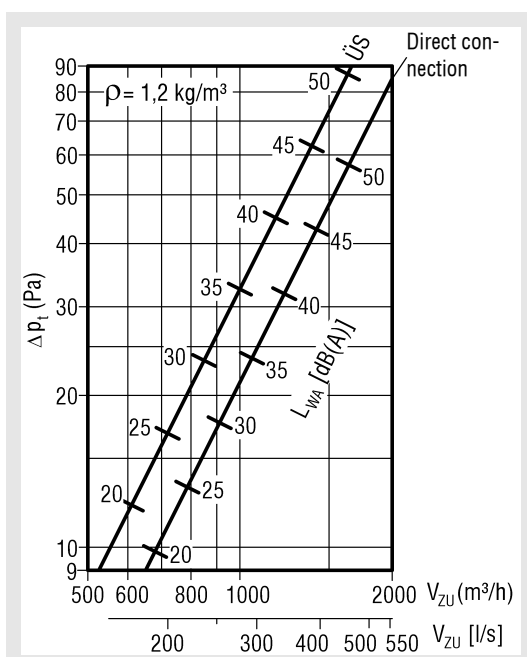
## DHV-K-SRK 250



Damper position:

OPEN = 100%

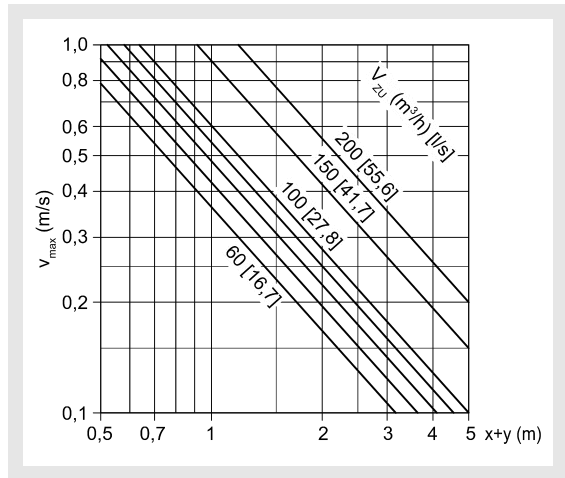
CLOSED = 0%



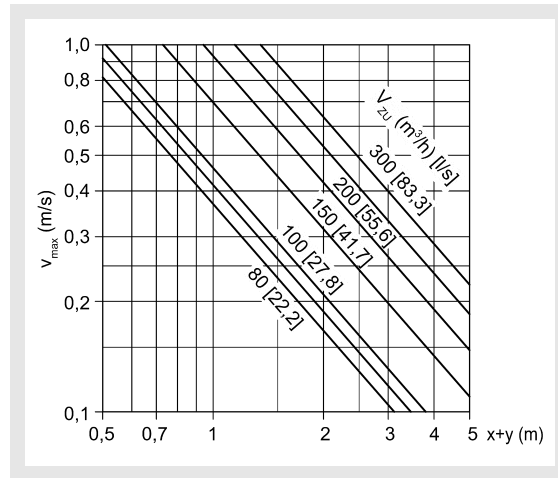
# Swirl Diffuser Model DHV

## Maximum end velocity of jet

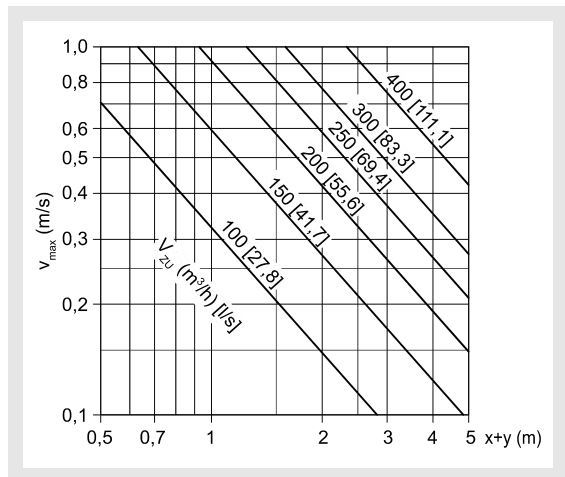
DHV 100



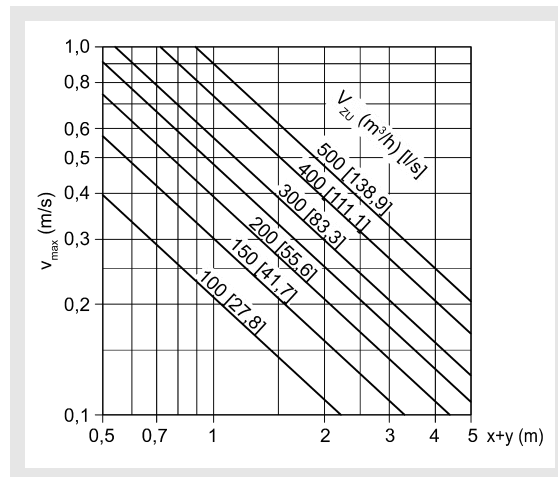
DHV 125



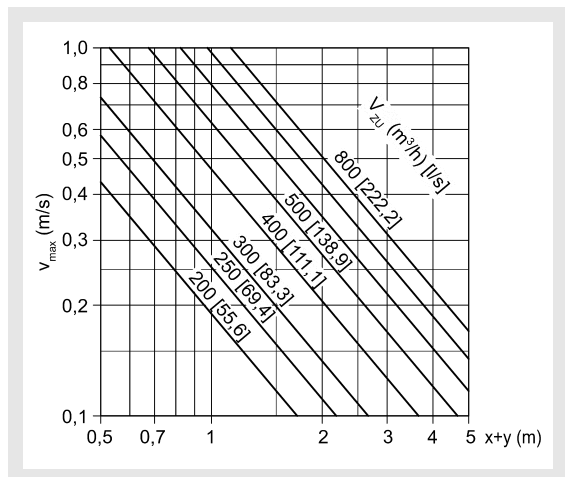
DHV 160



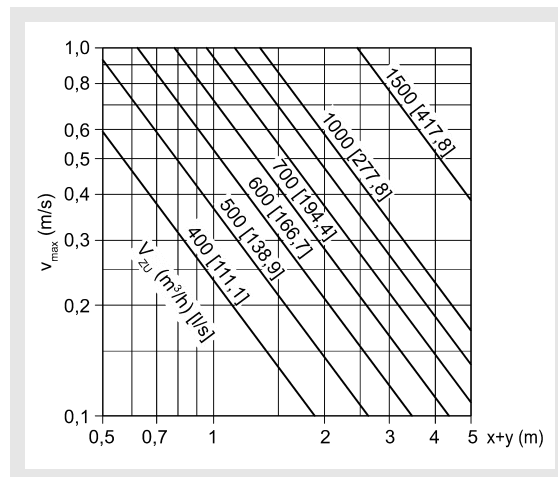
DHV 200



DHV 250

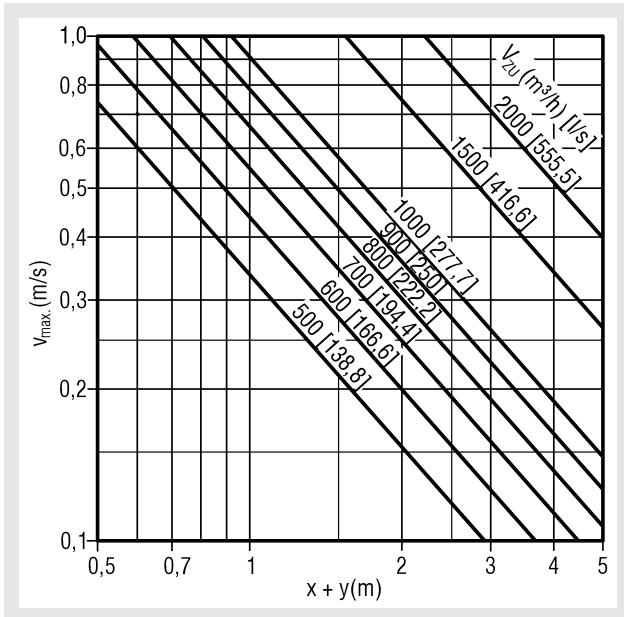


DHV 315



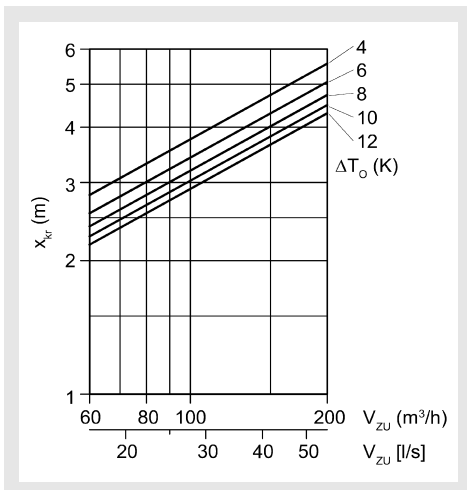
# Swirl Diffuser Model DHV

## DHV 400

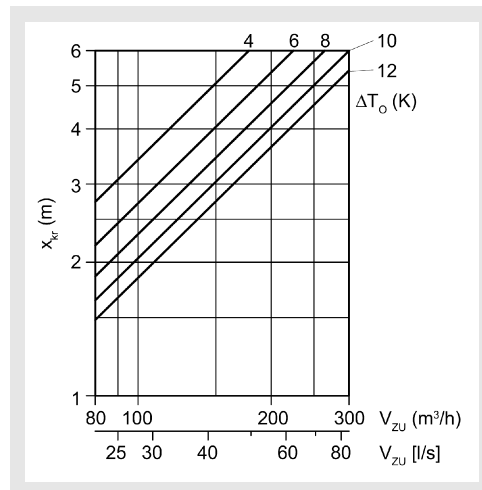


## Critical throw

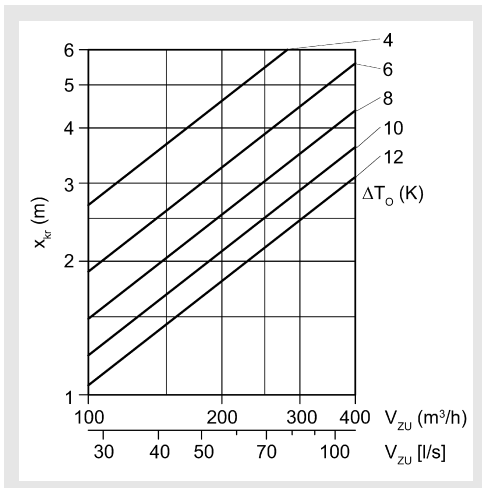
### DHV 100



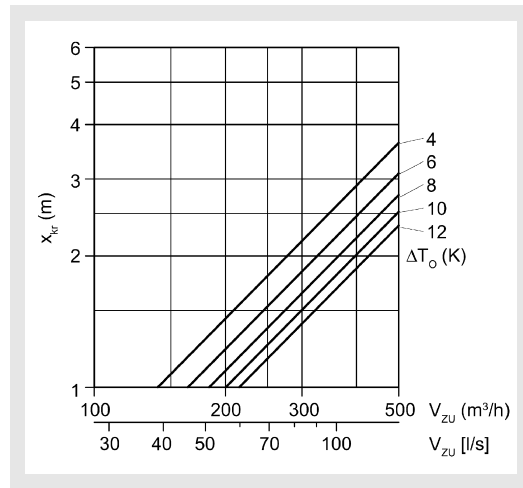
### DHV 125



### DHV 160

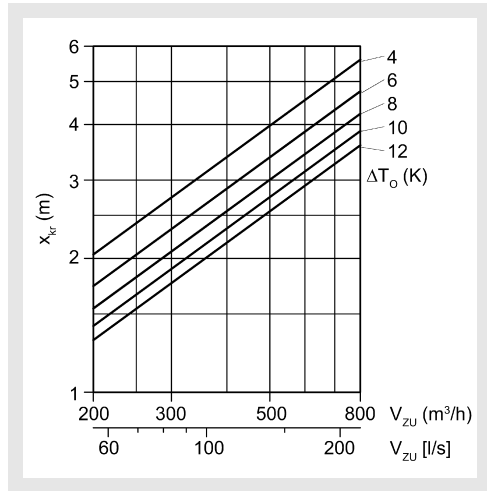


### DHV 200

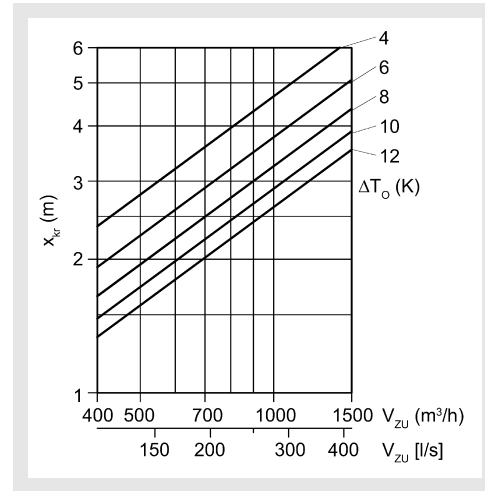


## Swirl Diffuser Model DHV

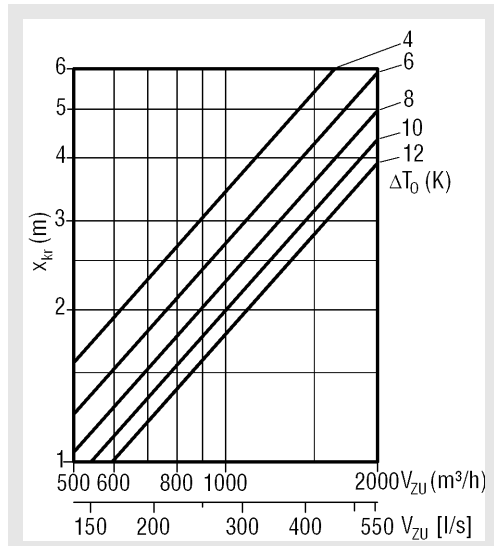
**DHV 250**



**DHV 315**



**DHV 400**

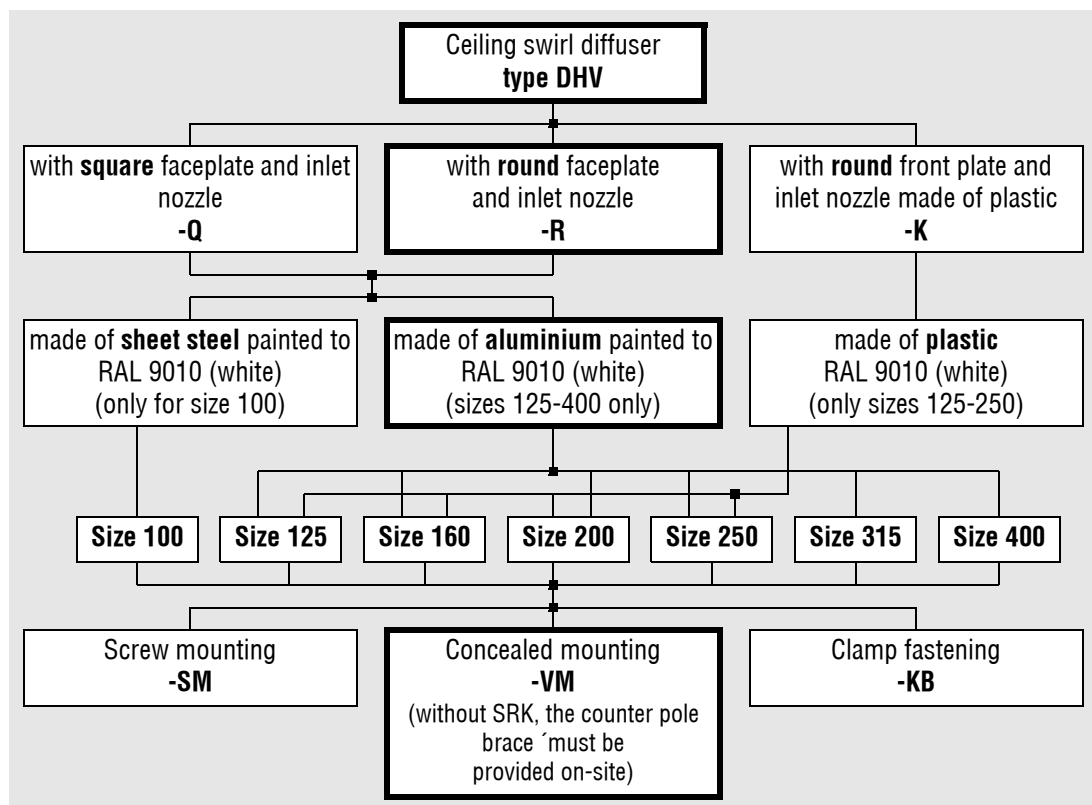


## Swirl Diffuser Model DHV

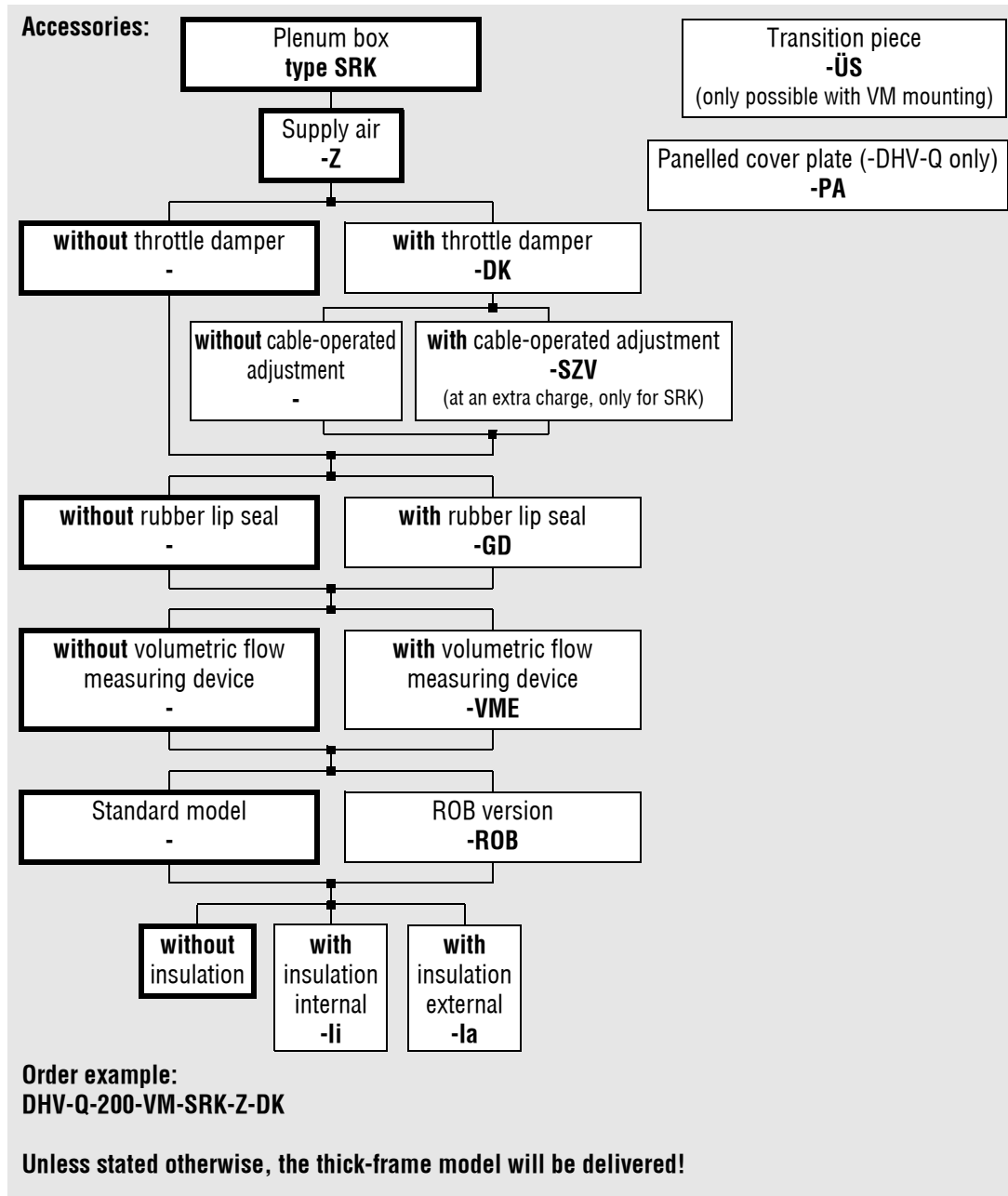
### Legend

$V_{ZU}$ (m <sup>3</sup> /h)	=	Supply air volume
$V_{ZU}$ [l/s]	=	Supply air volume
$L_{WA}$ [dB(A)]	=	A-weighted sound power level
$\Delta p_t$ (Pa)	=	Pressure loss
$\rho$ (kg/m <sup>3</sup> )	=	Density
$v_{max}$ (m/s)	=	Maximum end velocity of jet
$x+y$ (m)	=	horizontal + vertical throw
$x_{kr}$ (m)	=	Critical throw
$\Delta T_0$ (K)	=	Temperature difference between supply air temperature and room temperature ( $\Delta T_0 = t_{ZU} - t_R$ )
$t_{ZU}$ (°C)	=	Supply air temperature
$t_R$ (°C)	=	Room temperature
NW (mm)	=	Nominal value

### Order details



## Swirl Diffuser Model DHV



## Swirl Diffuser Model DHV

### Specification texts

Ceiling swirl diffuser **type DHV-Q** for flexible duct connection, with square faceplate and inlet nozzle, size 100 made of sheet steel painted to RAL 9010 (white), size 125 - 400 made of aluminium painted to RAL 9010 (white). Inlet comprises fixed nozzle-like swirl impellers

Product: SCHAKO **type DVH-Q**

- with round faceplate and inlet nozzle, size 100 made of sheet steel RAL painted to 9010 (white) size 125 - 400 made of aluminium painted to RAL 9010 (white).

Product: SCHAKO **type DVH-R**

- with round faceplate made of plastic painted to RAL 9010 (white, only sizes 125 - 250 available)

Product: SCHAKO **type DVH-K**

Fastening methods:

- with concealed mounting (-VM, standard):
  - Counter pole brace on-site (without plenum box or transition piece)
  - with pole brace fixing (with plenum box or transition piece)
- with screw mounting (-SM), only for flexible duct connection (without plenum box)
- with clamp fastening (-KB) only for flexible duct connection (without plenum box)

Accessories:

- Plenum box (-SRK-Z) made of galvanised sheet steel and fixing lugs, with lateral connection pipe.
  - with damper (-DK) in plenum box for easy air volume regulation.
    - with cable-operated adjustment (-SZV), adjustable from below.
  - with volumetric flow meter (-VME) in connection pipe
  - with ROB version(-ROB): removable diffuser plate, perforated sheet damper and volumetric flow meter.
  - with rubber lip seal (-GD)
  - with thermal insulation
    - internal (-li)
    - external (-la)
- Transition piece (-ÜS), made of untreated aluminium, with internal counter pole brace for concealed mounting (VM), for ceiling panels up to 20 mm thick.
- Panelled cover plate (-PA) made of sheet steel painted to RAL 9010 (white) (-DHV-Q only)