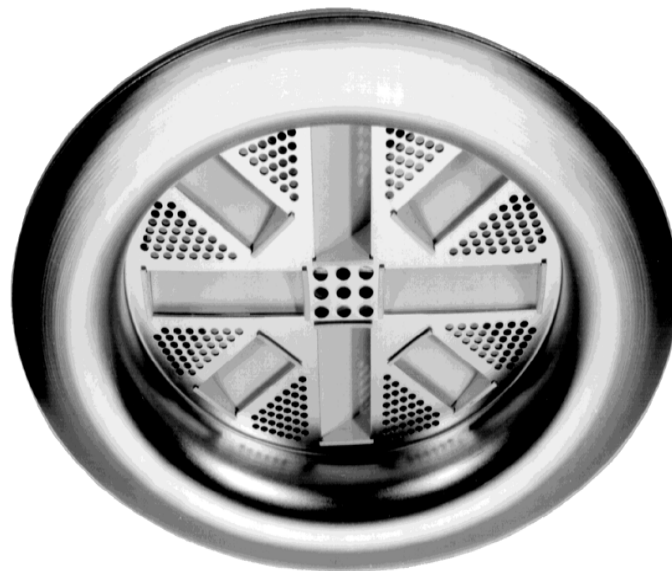




Ceiling Swirl Diffuser

DQJ-SL



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Ceiling Swirl Diffuser DQJ-SL

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Ceiling Swirl Diffuser DQJ-SL

Description

The ceiling swirl diffuser type DQJ-SL is particularly suitable for use in rooms up to a height of 4 m. The blades can be adjusted to achieve a horizontal or a vertical throw pattern. Thus, this ceiling swirl diffuser ensures optimum air distribution in the cooling and heating modes.

Individual areas can be shielded by setting the blades to a certain position. This may become necessary if there are obstacles in the air jet path.

The adjustable blades have the shape of support profiles. This aerodynamically favourable shape of the blades and the absence of sharp edges allow a low-noise function. A subsequent adjustment of the blades on-site in the built-in state is also possible.

The laminar flow exiting through the perforated plate is deflected by the air jet created by the blades to achieve the required throw directions. The optimised ratio between the perforations and the blades ensures a stable jet path in both horizontal and vertical air patterns. The stable air jet allows the diffuser to be used in VAV systems ranging from 100 to 40%, without impairing its function. Unless stated otherwise in the order, the high-induction multi-directional throw will be set.

The **perforation in the faceplate increases the free cross-section** compared with swirl diffusers without perforation. This results in a **substantial increase in the air output per diffuser**. The reason for this is that, depending on the diffuser size, the throughput through the diffuser is increased by up to 50% at the same noise level, thus **requiring fewer diffusers**.

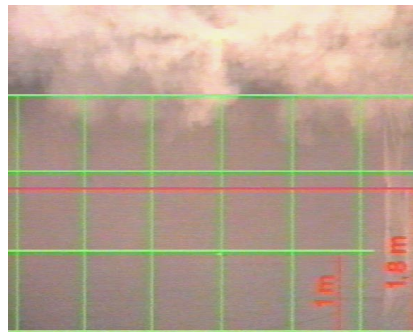
A volumetric flow meter can be integrated in the connection piece of the plenum box at an extra charge. The measurement error of the volumetric flow meter is $\pm 5\%$ at a connecting piece velocity of 2-5 m/s and a straight flow pattern of at least $1 \times D$. The measurement is carried out with integrated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

To allow duct cleaning robots to access from the room side, in the ROB version of the plenum boxes SAK / SRK, the diffusion plate, the throttle damper (if built in) and the volumetric flow meter can be removed.

Smoke test

Ceiling Swirl Diffuser DQJ-SL 250

Cooling mode



Air jet direction:	100% horizontal
Supply air volume	200 m ³ /h
Temperature difference:	-8 K

Heating mode



Air jet direction:	100% vertical
Supply air volume	200 m ³ /h
Temperature difference:	+10 K

Ceiling Swirl Diffuser DQJ-SL

Construction

Faceplate

- Sheet steel painted to RAL 9010 (white)
- Sheet steel painted to a different RAL colour (at an extra charge)

Blades

- Plastic, RAL colour 9010 (white) or RAL 9005 (black)
- Aluminium painted to the RAL colour of the faceplate (blades cannot be adjusted subsequently)

Accessories

Plenum box (-SRK)

- Galvanised sheet steel, with integrated perforated straightener (supply air model only) and fixing lugs.

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)

- Sheet steel painted to RAL 9010 (white)

ROB version (-ROB)

- Removable diffuser plate, throttle damper and volumetric flow meter

Volumetric flow meter (-VME)

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

Internal insulation (-li)

- Thermal insulation inside the plenum box

External insulation (-la)

- Thermal insulation on the outside of the plenum box

Fastening

Screw mounting (-SM)

- Only possible in combination with the panelled cover plate (-PA). Screws must be provided on-site.

Concealed mounting (-VM, standard)

- fastened to the plenum box type SRK-Z by means of a pole brace and an Allen screw DIN EN ISO 4762 M6. A separate counter pole brace for fastening the ceiling swirl diffuser must be fitted when ordered without a plenum box.

Ceiling Swirl Diffuser DQJ-SL

Models and dimensions

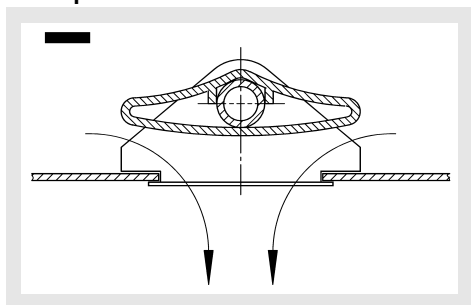
Throw pattern

Blade setting options

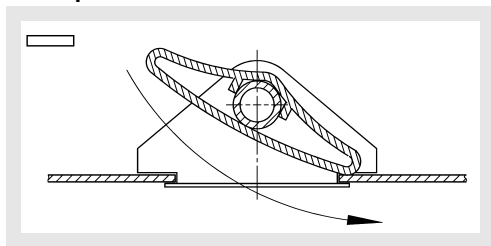
- vertical throw - all blades in position 1
- "increased" horizontal multi-directional throw - all blades in position 2
- "high-induction" horizontal multi-directional throw

The high-induction multi-directional throw is set ex works.

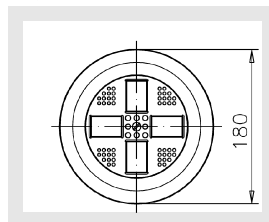
Blade position 1



Blade position 2

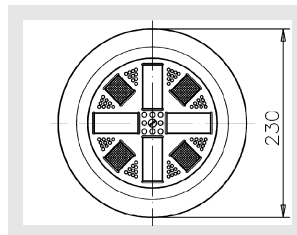


DQJ-SL 125

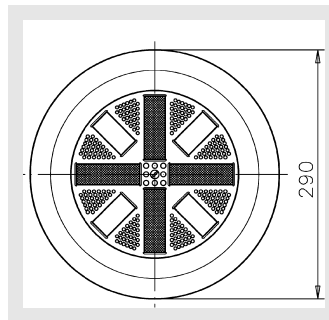


DQJ-SL 125 only available with vertical or increased horizontal multi-directional throw.

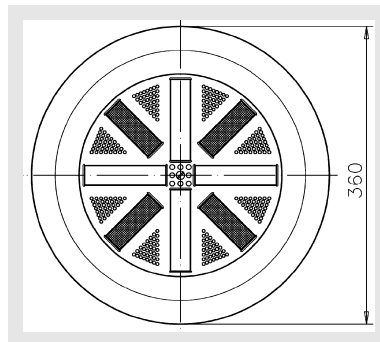
DQJ-SL 160



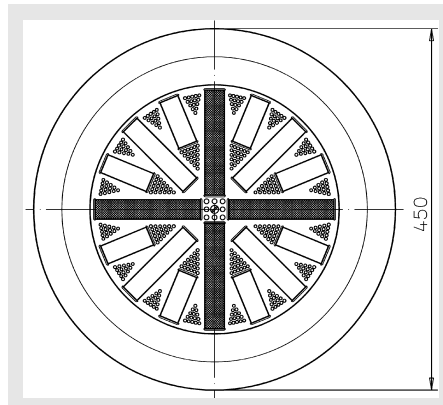
DQJ-SL 200



DQJ-SL 250



DQJ-SL 315

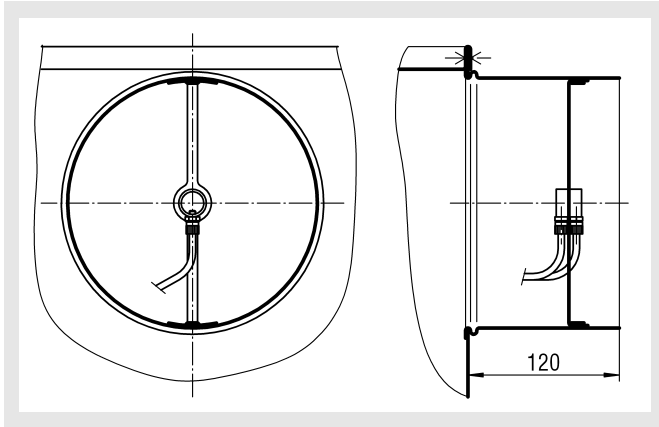


Ceiling Swirl Diffuser DQJ-SL

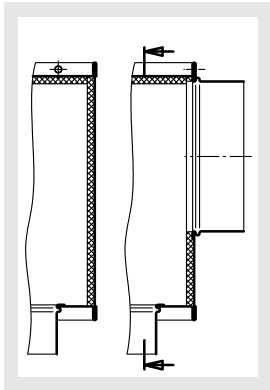
Dimensions of accessories

at an extra charge:

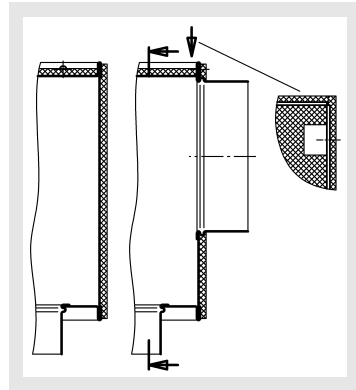
Volumetric flow meter (-VME)



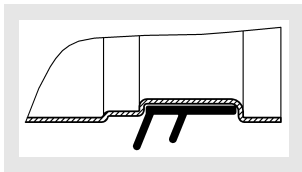
Insulation for SRK
internal (-li)



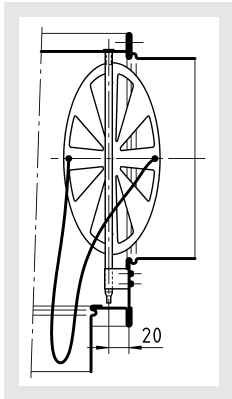
external (-la)



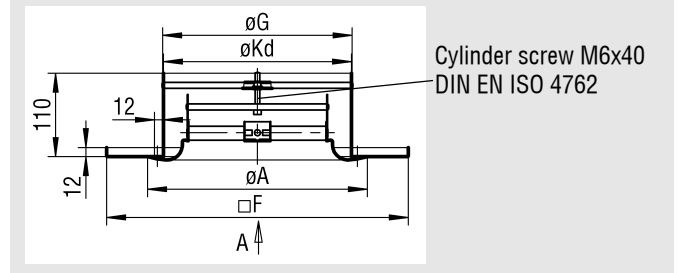
Rubber lip seal (-GD)
Detail X



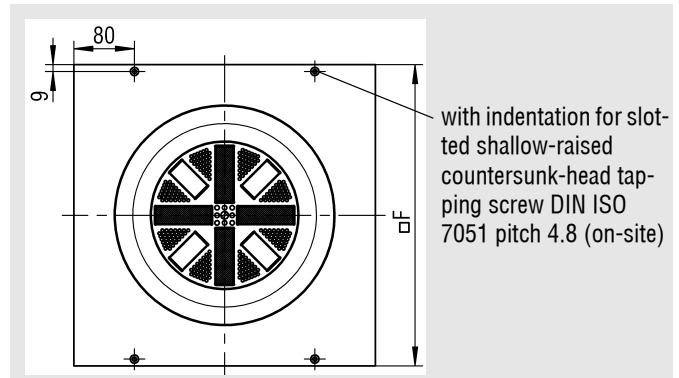
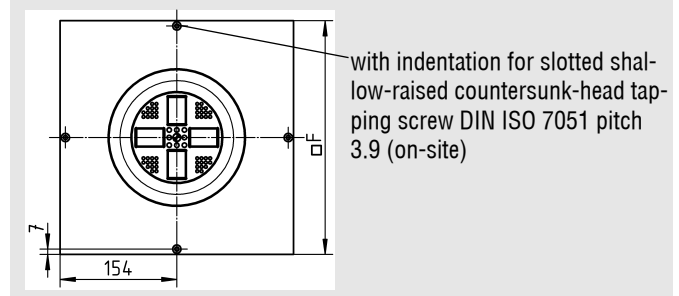
Damper (-DK) with cable-operated adjustment (-SZV)



Panelled cover plate (-PA)



View A
PA 310



Available sizes

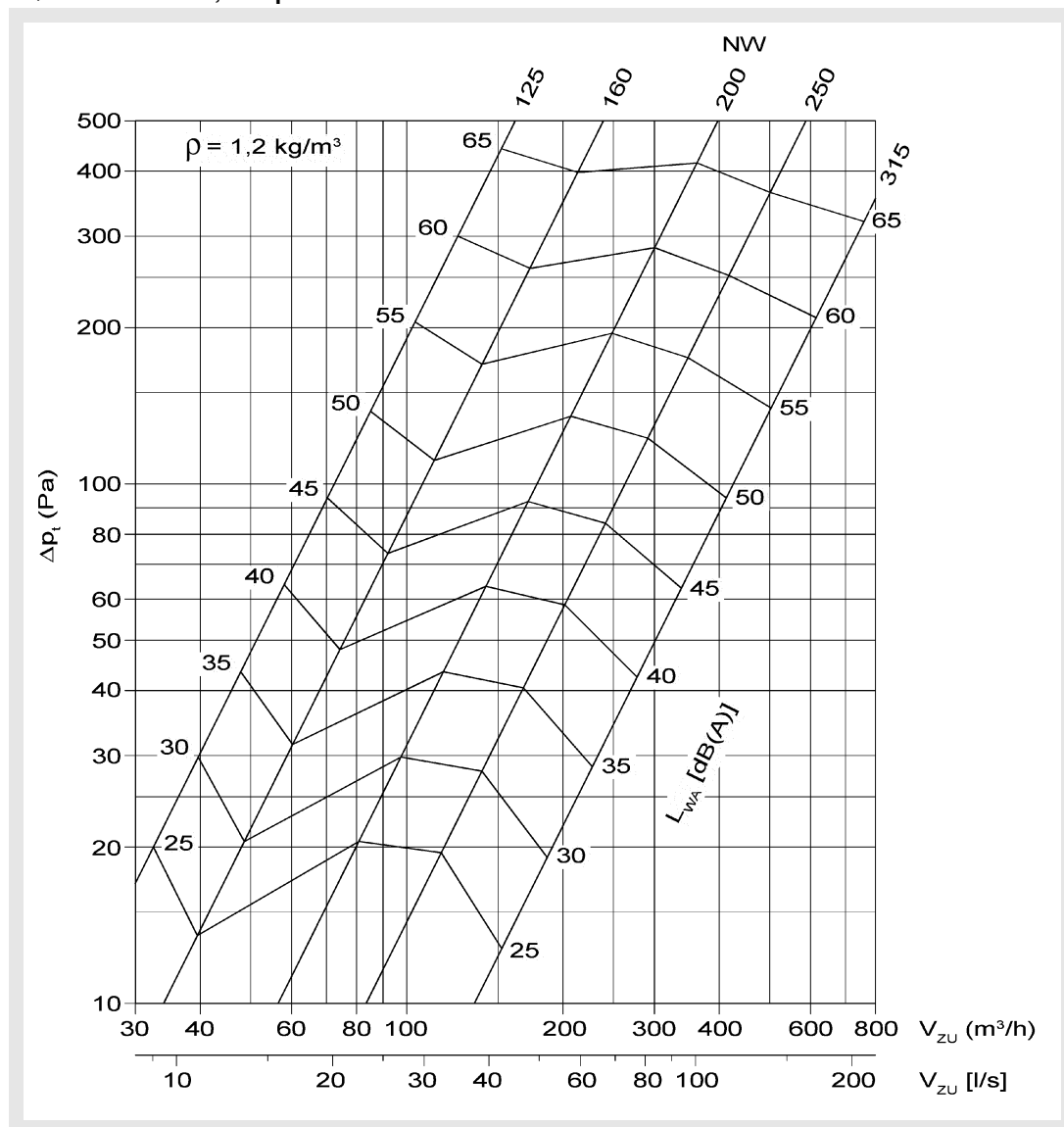
NW DQJ-SL	PA	□F	øA	øG	øKd
125 - 160	310	308	180	150	148
125 - 250	400	398	230	200	198
125 - 315	500	498	290	250	248
	600	598	360	315	313
	625	623	450	400	398

Ceiling Swirl Diffuser DQJ-SL

Technical Data

Pressure loss and noise level

DQJ-SL with SRK-Z, damper "CLOSED"



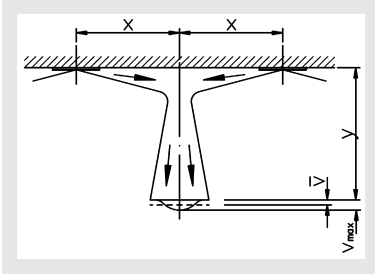
Damper "OPEN"

L_{WA} -2 dB

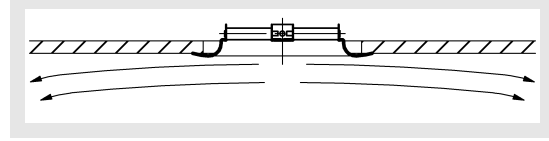
Δp_t -10 Pa

Ceiling Swirl Diffuser DQJ-SL

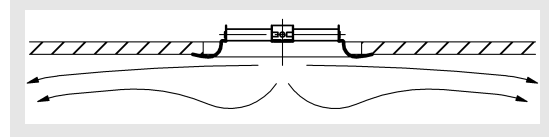
Maximum end velocity of jet



increased horizontal multi-directional throw

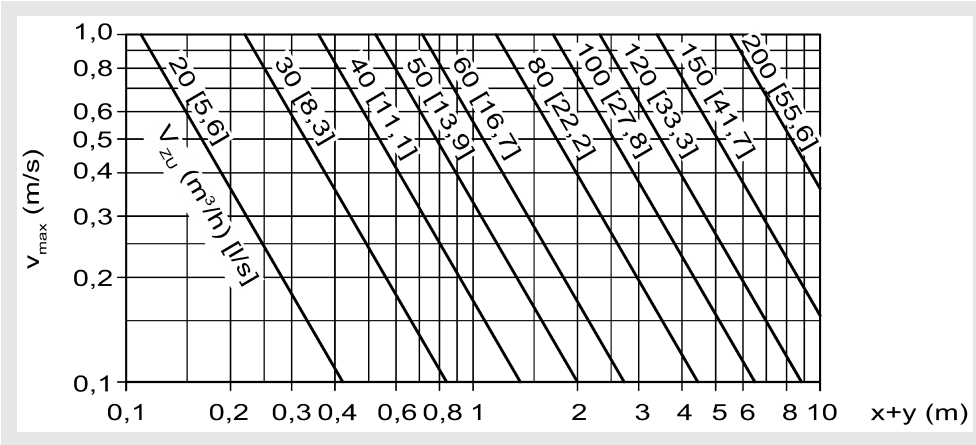


high-induction horizontal multi-directional throw

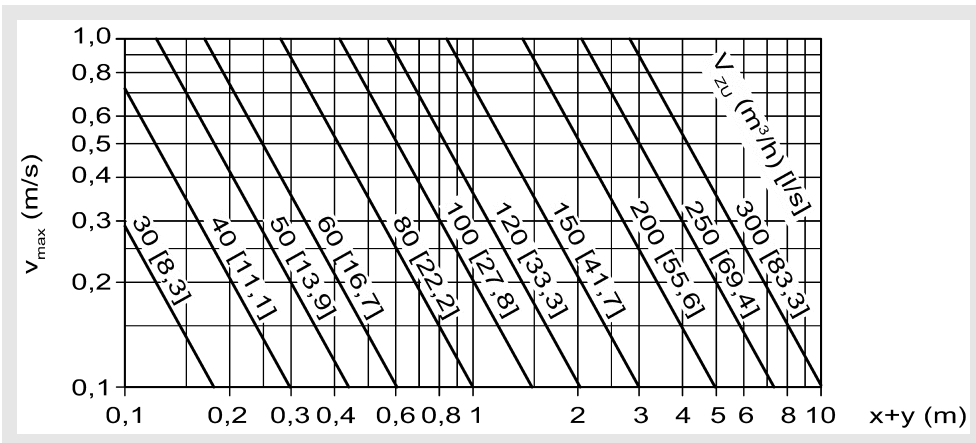


$$V_{\text{max increased}} = V_{\text{max high ind}} \times 1.5$$

(isothermal), increased horizontal multi-directional throw DQJ-SL 125

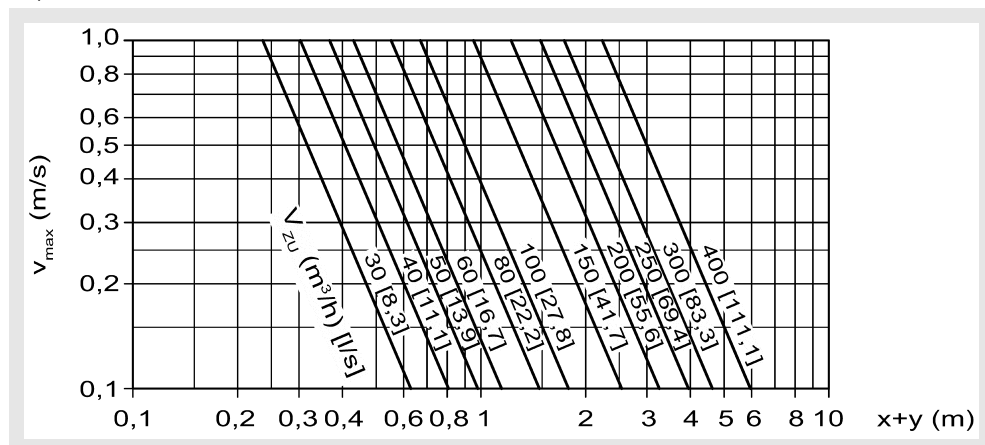


(isothermal), high-induction horizontal multi-directional throw DQJ-SL 160

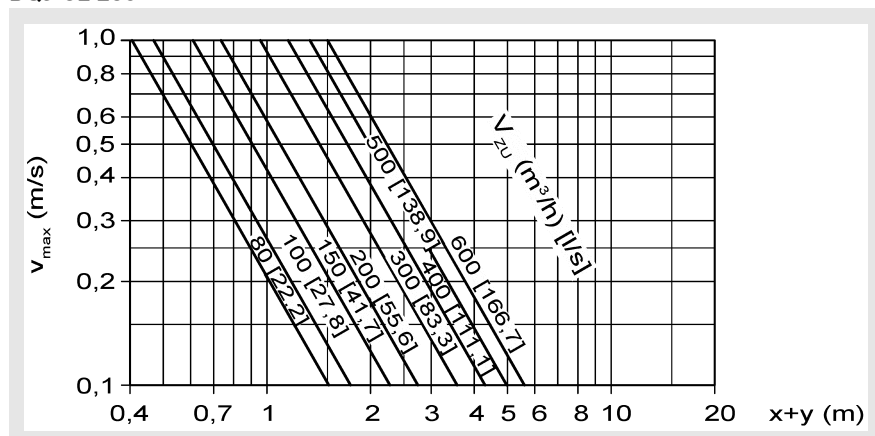


Ceiling Swirl Diffuser DQJ-SL

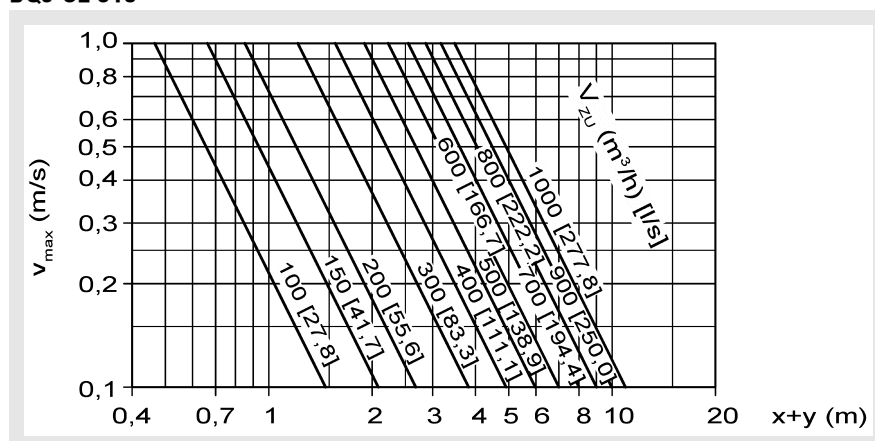
(isothermal), high-induction horizontal multi-directional throw
DQJ-SL 200



(isothermal), high-induction horizontal multi-directional throw
DQJ-SL 250



(isothermal), high-induction horizontal multi-directional throw
DQJ-SL 315

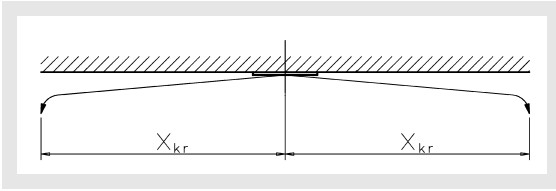


Ceiling Swirl Diffuser DQJ-SL

Critical throw

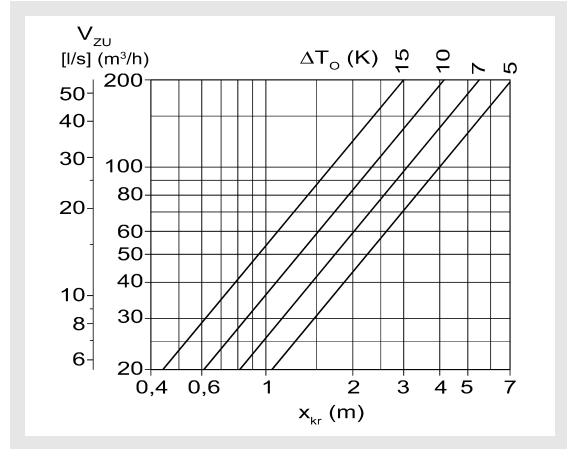
(Cooling mode)

high-induction horizontal multi-directional throw

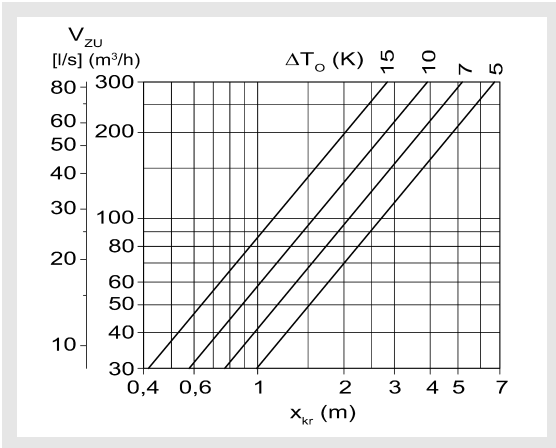


increased horizontal multi-directional throw = diagram value x 1.25

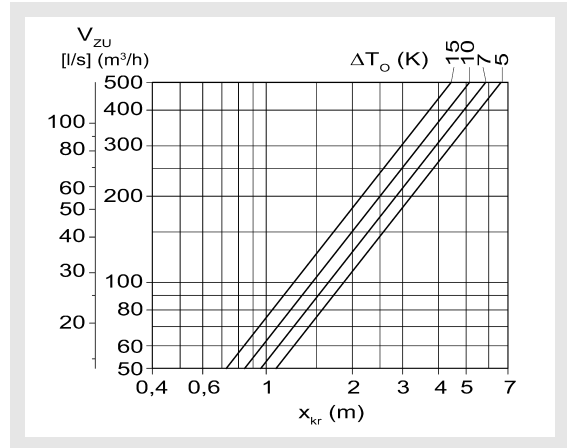
DQJ-SL 125



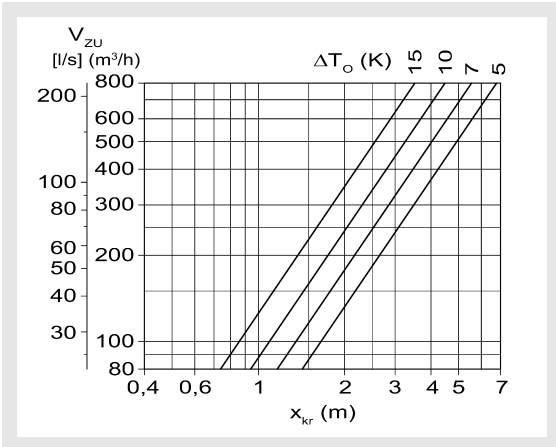
DQJ-SL 160



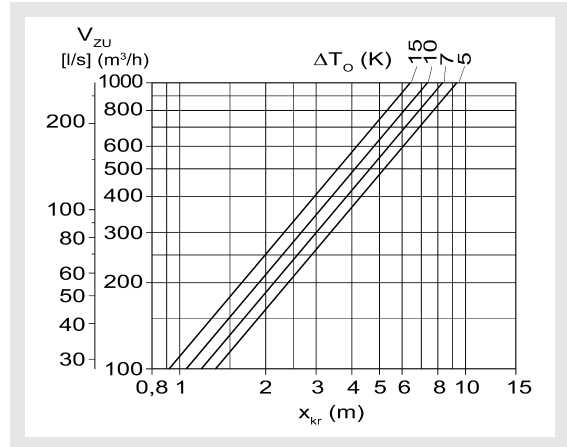
DQJ-SL 200



DQJ-SL 250



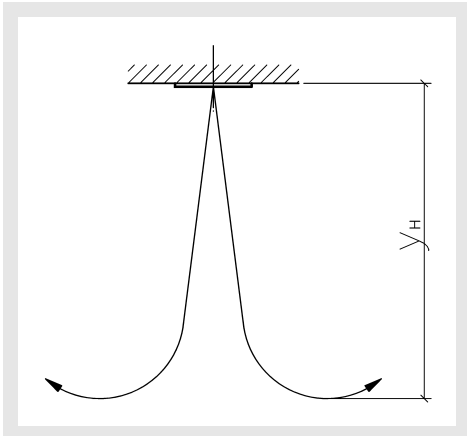
DQJ-SL 315



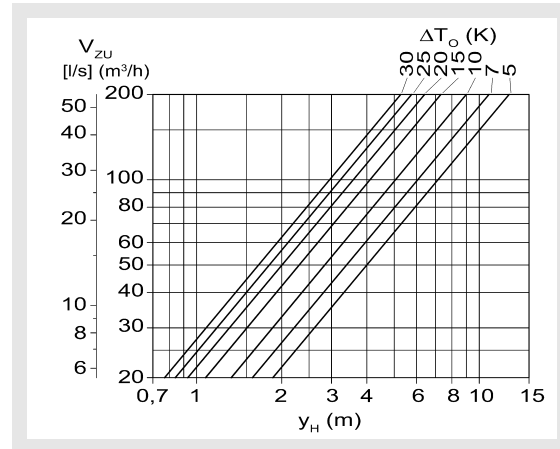
Ceiling Swirl Diffuser DQJ-SL

Maximum penetration

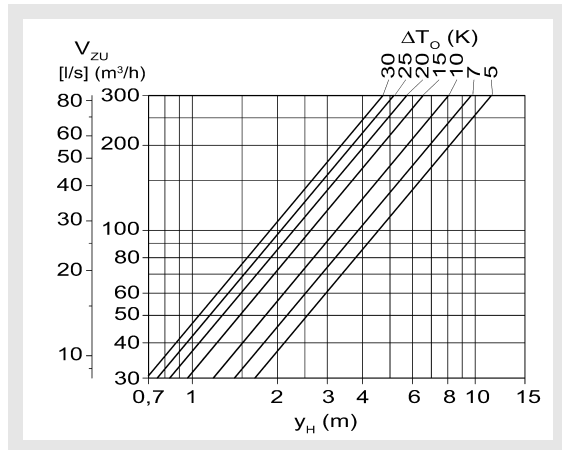
Heating mode



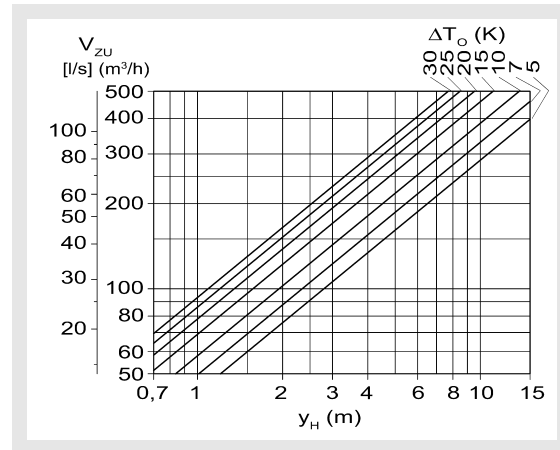
DQJ-SL 125



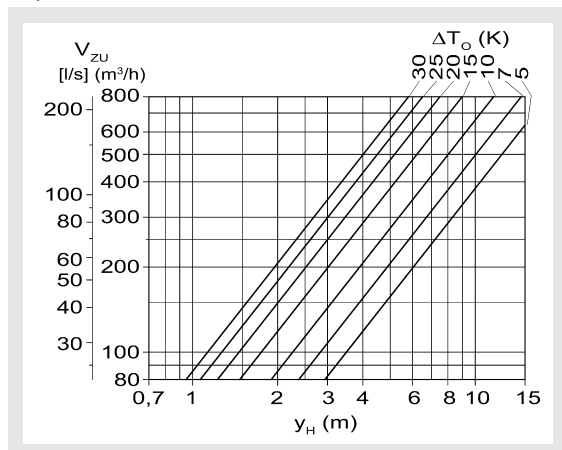
DQJ-SL 160



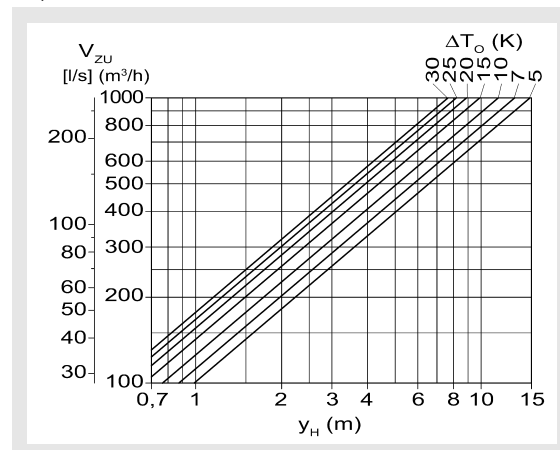
DQJ-SL 200



DQJ-SL 250

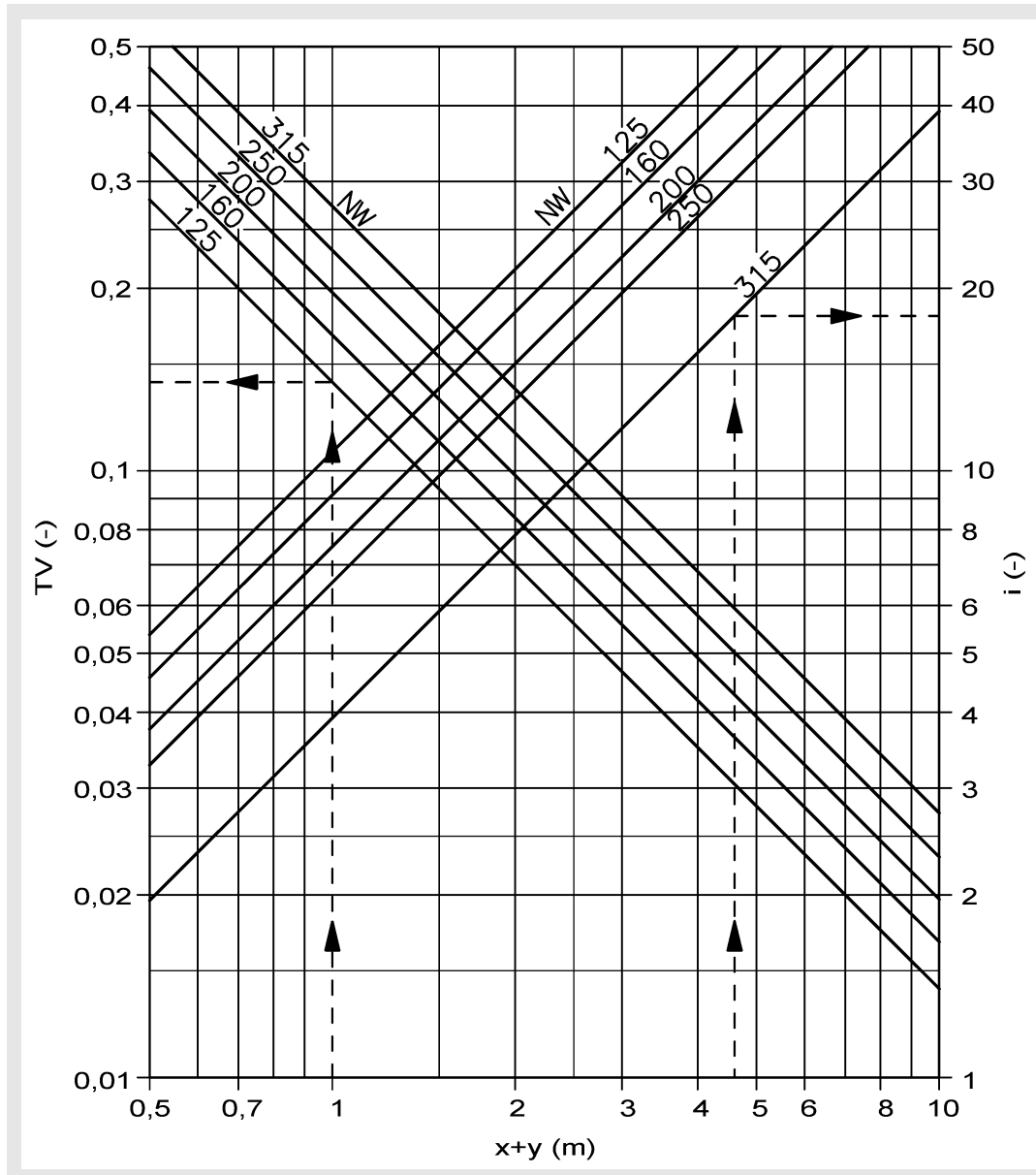


DQJ-SL 315



Ceiling Swirl Diffuser DQJ-SL

Temperature and induction ratios

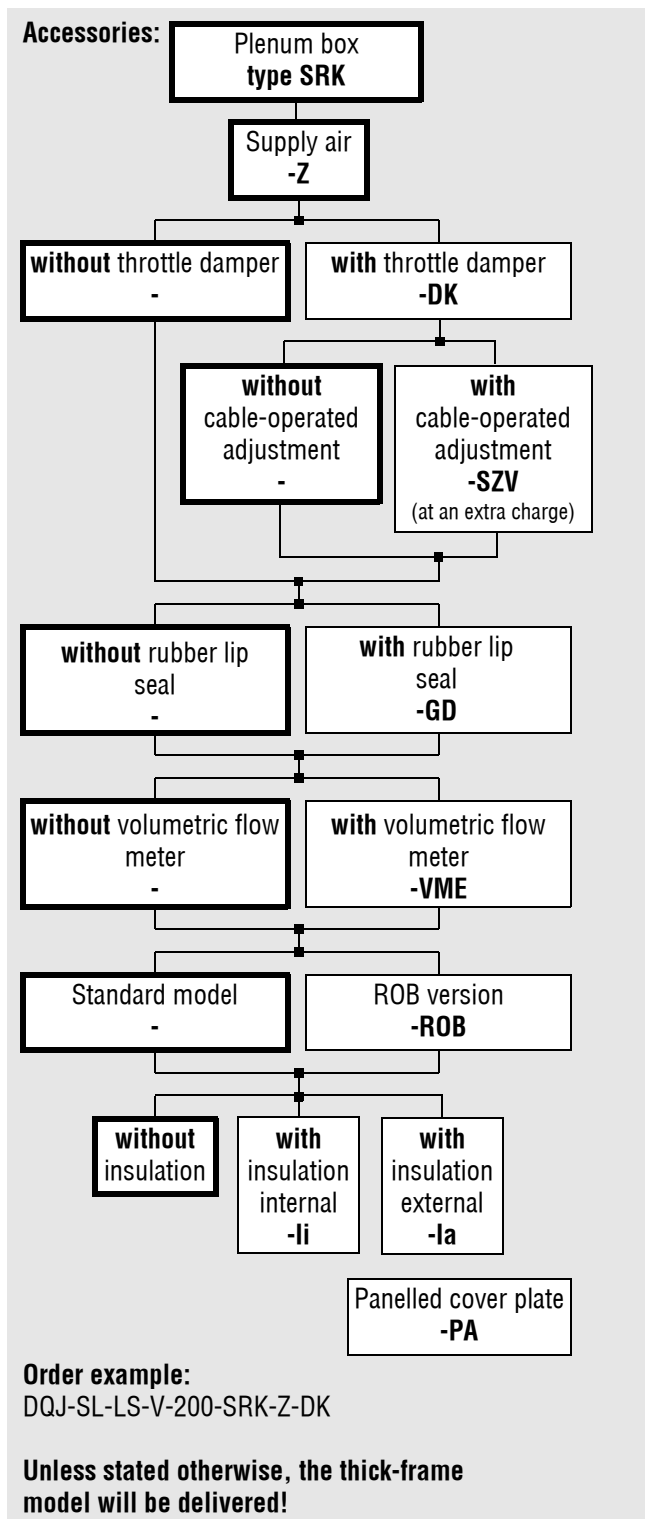
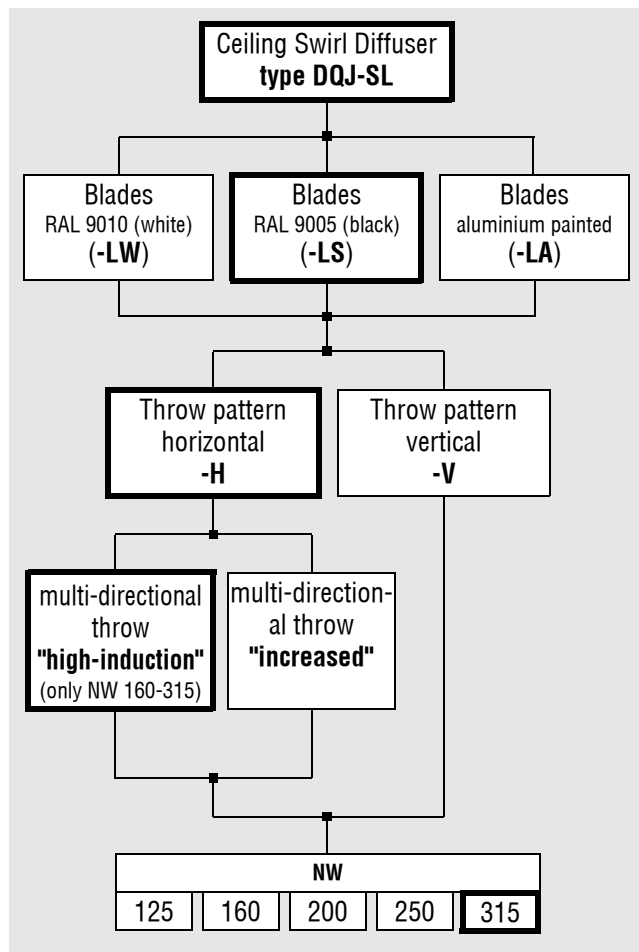


Legend

V_{ZU}	(m^3/h)	= Supply air volume	"i"	(-)	= Induction ratio ($i = V_X / V_{ZU}$)
V_{ZU}	[l/s]	= Supply air volume	y_H	(m)	= Maximum penetration in heating mode
ΔT_0	(K)	= Temperature difference between supply air temperature and room temperature ($\Delta T_0 = t_{ZU} - t_R$)	x_{kr}	(m)	= Critical throw
t_{ZU}	($^{\circ}C$)	= Supply air temperature	v_{max}	(m/s)	= Maximum end velocity of jet
t_R	($^{\circ}C$)	= Room temperature	v	(m/s)	= Average end velocity of jet ($v = 0,5 \times v_{max}$)
x	(m)	= Horizontal throw	Δp_t	(Pa)	= Pressure loss
y	(m)	= Vertical throw	L_{WA}	[dB(A)]	= A-weighted sound power level
$x+y$	(m)	= horizontal + vertical throw	ρ	(kg/m^3)	= Density
TV	(-)	= Temperature ratio ($TV = \Delta T_X / \Delta T_0$)	NW	(mm)	= Nominal value
V_X	(m^3/h)	= total air jet volume at point x	ΔT_X	(K)	= Temperature difference at point x
V_X	[l/s]	= total air jet volume at point x			

Ceiling Swirl Diffuser DQJ-SL

Order details



Order example:
DQJ-SL-LS-V-200-SRK-Z-DK

Unless stated otherwise, the thick-frame model will be delivered!

Ceiling Swirl Diffuser DQJ-SL

Specification texts

Ceiling swirl diffuser type DQJ-SL in round design Particularly suitable for comfort rooms and for VAV systems having variable volumetric flows (between 40 and 100%). Cooling and heating modes are possible. Consisting of a perforated faceplate made of sheet steel provided with a high-quality powder coating in a RAL colour (RAL 9010, white, standard), with central pivoting, aerodynamic and radial fitted deflection blades, which are individually adjustable (without any tools) from the diffuser side without dismantling the diffuser, in support profile design made of plastic in RAL 9010 (white), RAL 9005 (black) or aluminium, painted individually or to the same RAL colour as the faceplate (subsequent adjustment of blades not possible). Free cross-section, resistance and sound power level constant in all blade positions. Throughput of up to 50% higher volumetric flows possible with identical sound power and comparable size compared with swirl diffusers without perforation. Fastening by concealed mounting (VM), made of aerodynamic aluminium profile.

Product: SCHAKO type **DQJ-SL**

Throw patterns:

- vertical throw
- high-induction horizontal multi-directional throw (only sizes 160 - 315)
- increased horizontal multi-directional throw

Accessories:

- with plenum box (-SRK-Z) made of galvanised sheet steel with lateral connection piece and fixing lugs.
 - with a throttle damper (-DK) adjustable at the front side in the plenum box for air volume regulation
 - with cable-operated adjustment (-SZV)
 - with volumetric flow meter (-VME)
 - with ROB version (-ROB), removable diffuser plate, throttle damper and volumetric flow meter.
 - with rubber lip seal (-GD), made of special rubber, at the connection pipe.
 - with thermal insulation
 - internal (-li)
 - external (-la)
- Panelled cover plate (-PA) made of sheet steel painted to RAL 9010 (white) with screw mounting (-SM).