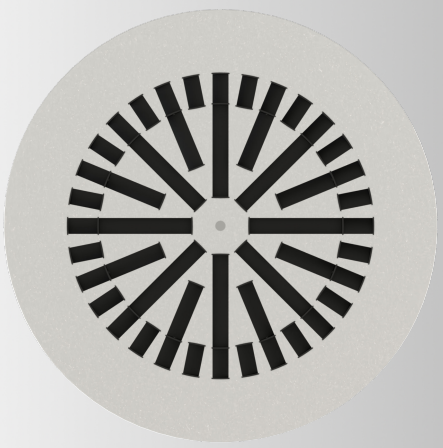


DQJF

Swirl diffuser

SCHAKO KG
Steigstraße 25-27
D-78600 Kolbingen

+49 (0) 7463-980-0
info@schako.de
schako.com

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DESCRIPTION

The swirl diffuser type DQJF is an air diffuser that is particularly suitable **for suspended use** in industrial halls and comfort rooms with high air change rates. Unlike conventional swirl diffusers, the built-in **blades can also be adjusted at a later stage**. This modification can be necessary, for example, if obstacles obstruct the air jet or if high air velocities occur in areas where this is not desired.

The air jet can be deflected from the horizontal to the vertical direction by adjusting individual blades. This can be important, for example, if the air jet is to be directed towards a certain point for heating. For example, are pillars in the way, adjust the blades to move the air around those. In difficult cases the adjusting must be determined by trial and error. The return air model is not equipped with blades.

Variable volumetric flow (with L_{WA} approx. 50 dB(A))

NW	310	400	500	600	800
V_{min} (m³/h)	100	100	200	300	500
V_{max} (m³/h)	350	450	800	1200	2000

The air diffuser is suitable for systems with variable volumetric flow. A stable air jet is guaranteed by the high outflow velocities, thus ensuring that the air jet does not become detached abruptly from the ceiling at small volumetric flows. The minimum and maximum volumetric flows are shown in the above table.

Construction

- Faceplate
  - Sheet steel (-SB)
    - painted in RAL colour 9010 (white) (-9010)
    - painted to a different RAL colour, freely selectable (-xxxx) (always with 4 digits)
  - galvanised sheet steel, without paint (-SV-0000)
  - stainless steel V2A, painted in the colour sand silver (-V2-SAND)
- Blades
  - without blades (-00000, only possible for return air)
  - made of plastic material:
    - similar to RAL colour 9005 (black) (-L9005).
    - similar to RAL colour 9006 (grey) (-L9006).
    - similar to RAL colour 9010 (white) (-L9010).
  - made of aluminium, painted to a freely selectable RAL colour (-Axxxx) (subsequent adjustment of blades is not possible).
- Blade fixing
  - Painted sheet steel (for -SB / -AL model).
  - Stainless steel V2A, 1.4301 (for -V2 model).
- Blade holder
  - Aluminium ducts / plastic for -V2.
- Pole brace fastening (only with concealed mounting)
  - Plastic / stainless steel for -V2.
- Pole brace holder (only with concealed mounting)
  - Galvanised sheet steel / stainless steel for -V2.
- concealed mounting pole brace (only with concealed mounting)
  - Aluminium / stainless steel for -V2.

Model

DQJF-R-SR...-with round faceplate, circular blade pattern

...-Z-... -for supply air, with air deflection blades

...-A-... -for return air, without air deflection blades

...-PT-... -With divided air deflection blades (standard) (for supply air only, only possible with NW 500 to NW 800)

...-PS-... -With continuous air deflection blades (for supply air only, only possible with NW 310 and NW 400)

...-P0-... -without blades (only for return air)

Accessories

- Plenum box (-SKF), in round design, with mounting brackets:
  - Type of air:
    - Supply air (-Z)
    - Return air (-A) (inside painted to RAL colour 9005 [black])
  - Fastening:
    - Screw mounting (-SM, standard, screws must be provided on site, only with standard faceplate size)
    - Concealed mounting (-VM)
  - Material / paint:
    - Sheet steel (-SB)
      - Painted in RAL colour 9010 (white) (-9010)
      - Painted to a different RAL colour, freely selectable (-xxxx) (always with 4 digits)
    - Galvanised sheet steel, without paint (-SV-0000)
    - Stainless steel V2A, painted in the colour sand silver (-V2-SAND)
  - Damper:
    - Without damper (-DK0) (standard)
    - With damper (-DK2), in the connection spigot, with cable-operated adjustment, made of galvanised sheet steel, adjustable, for simple air volume regulation
  - Rubber lip seal:
    - Without rubber lip seal (-GD0)
    - With rubber lip seal (-GD1) on the connection spigot
  - Volumetric flow meter:
    - without volumetric flow meter (-VME0) (standard)
    - With volumetric flow meter (-VME1), in the plenum box at the connection spigot. Holder made of galvanised sheet steel. Connections made of aluminium
  - Insulation:
    - Without insulation (-I0)
    - With internal insulation (-Ii), thermal insulation inside the plenum box
  - Height of box:
    - Standard height of box (-KHS)
    - Height of box in mm, can be freely selected (-xxx) (minimum height [KHS] with spigot position S1 / S2 / S3 = spigot diameter + 122 mm, but at least 220 mm, minimum height [KHS] with spigot position S0 at least 250 mm)
  - Spigot diameter:
    - Standard spigot diameter (-SDS)
    - Spigot diameter in mm, freely selectable (-xxx) (always with 3 digits)
  - Spigot position:
    - 1 spigot from above (-S0, standard)
    - 1 lateral spigot on the box (-S1)
    - 2 lateral spigots, offset by 90° (-S2)
    - 2 lateral spigots, offset by 180° (-S3)
- Cover (-A0 / -AD)
  - without cover (-A0) (standard)
  - with 1/4 cover (-AD)
    - only supply air version possible
    - galvanised sheet steel
    - for 1- or 2-sided shielding

Fastening

- Screw mounting (-SM)
  - Lateral, by means of raised countersunk head tapping screws DIN ISO 7049 pitch 3.9 x 13 (on site), only possible with standard faceplate size
- Concealed mounting (-VM)
  - Pole brace fixing (at an extra charge) only possible in combination with a plenum box (-SKF)

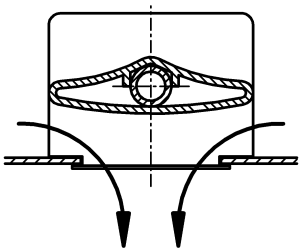
Attention!

We would like to point out that for cleaning stainless steel models, only suitable cleaning materials may be used!

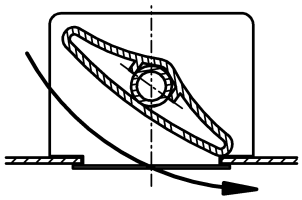
Air throw pattern

Air throw pattern "A" : all blades in position 2 (standard)
Air throw pattern "C" : without blades (only possible for return air)
Air throw pattern "V" : all blades in blade position 1 (heating mode only)

Blade position 1



Blade position 2



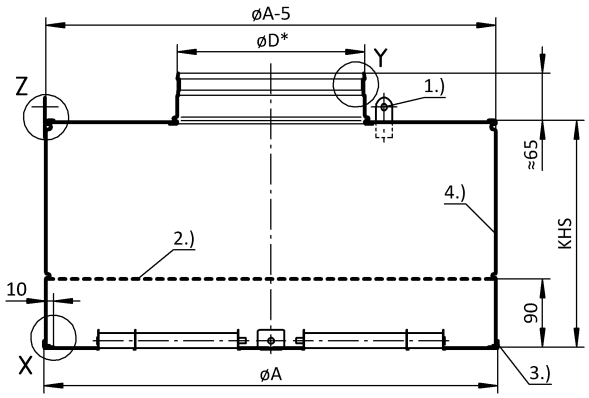
Construction subject to change. No return possible.

MODELS AND DIMENSIONS

Dimensions

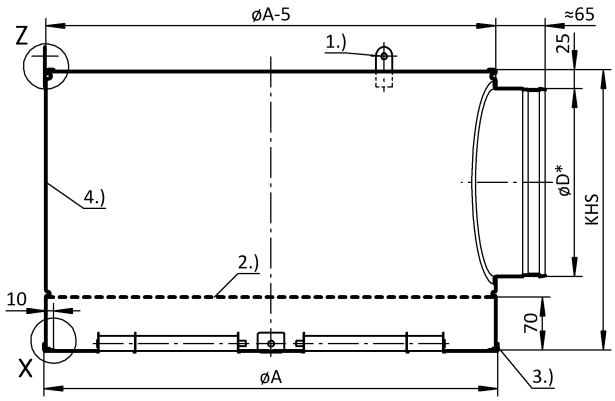
DQJF-R-SR-...-SKF-...-S0 (for supply air and return air)

with plenum box, 1 spigot from above (standard)



DQJF-R-SR-...-SKF-...-S1 (for supply air and return air)

with plenum box, 1 lateral spigot on the box



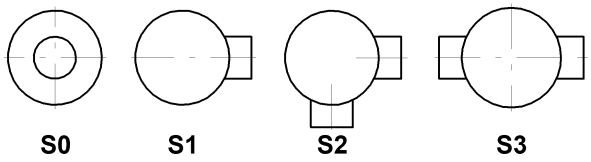
*external

Available sizes

NW	øA	øD	KHS	
			With -S0	With -S1 / -S2 / -S3
310	410	158	250	280
400	500	158	250	280
500	600	248	300	370
600	700	248	300	370
800	900	353	350	475

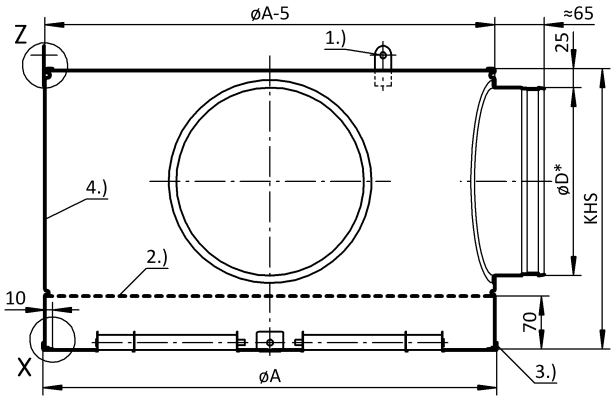
- Minimum height [KHS] with spigot position S0 at least 250 mm
- Minimum height [KHS] with spigot position S1 / S2 / S3 = spigot diameter + 122 mm, but at least 220 mm

Spigot position



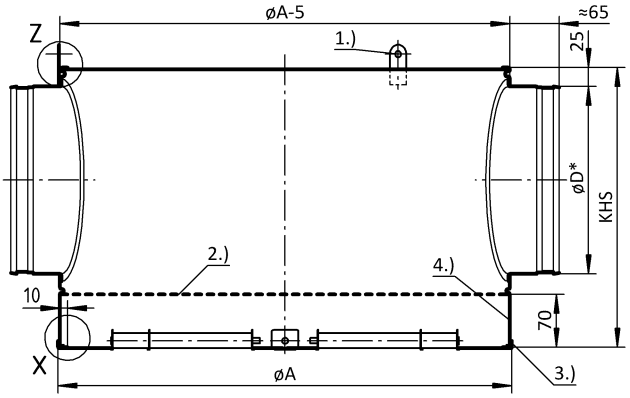
DQJF-R-SR-...-SKF-...-S2 (for supply air and return air)

with plenum box, 2 spigots offset by 90°



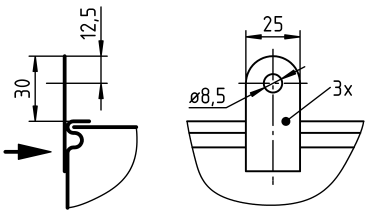
DQJF-R-SR-...-SKF-...-S3 (for supply air and return air)

with plenum box, 2 spigots offset by 180°



Fixing lugs

Detail Z



1.) 3 mounting brackets
2.) Perforated plate FQ = 46%
3.) Slotted shallow-raised countersunk-head tapping screws DIN ISO 7049 pitch 3.9 x 13 (on site)
4.) For the return air version inside painted to RAL colour 9005 (black)

KHS = Height of plenum box standard

For detail X and Y, see page 6.

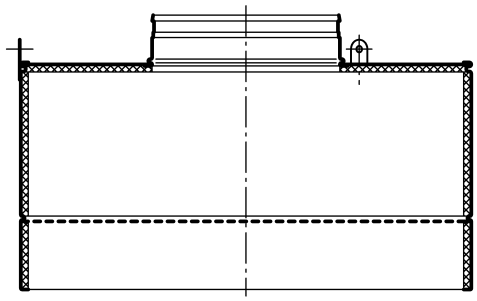
Construction subject to change. No return possible.

DIMENSIONS OF ACCESSORIES

Insulation (-I0/-Ii), for SKF

- without insulation (-I0) (standard)
- with internal insulation (-Ii)

with box insulation inside (-Ii)

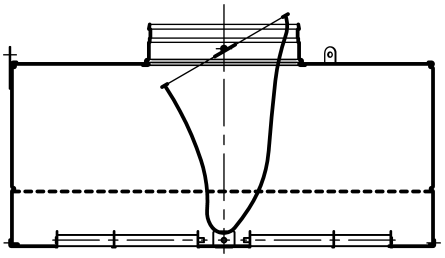


Damper (-DK0/-DK2), for SKF

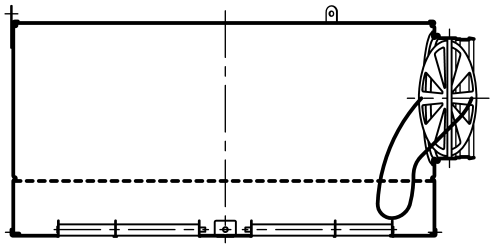
- Without damper (-DK0) (standard)
- with damper and cable-operated adjustment (-DK2)

with damper (-DK2)

SKF-...-DK2-...-S0



SKF-...-DK2-...-S1 / -S2 / -S3



Rubber lip seal (-GD0 / -GD1), for SKF

- without rubber lip seal (-GD0) (standard)
- with rubber lip seal (-GD1)

with rubber lip seal (-GD1)

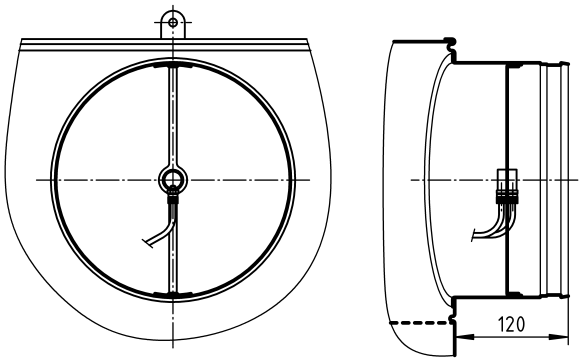
Detail Y



Volumetric flow meter (-VME0/-VME1), for SKF

- without volumetric flow meter (-VME0) (standard)
- with volumetric flow meter (-VME1)

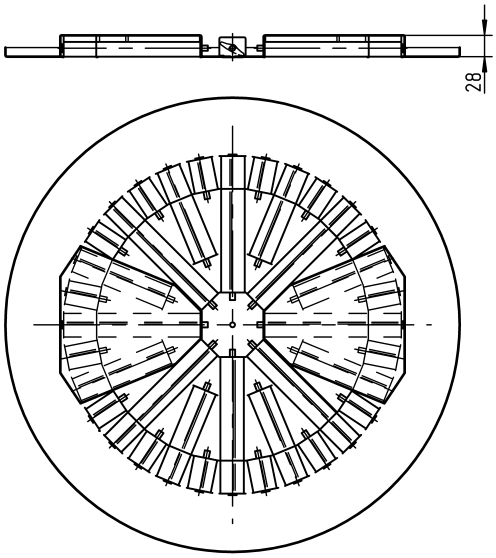
with volumetric flow meter (-VME1)



Cover (-A0 / -AD)

- without cover (-A0) (standard)
- with 1/4 cover (-AD) (only possible for supply air model)

with 1/4 cover (-AD)



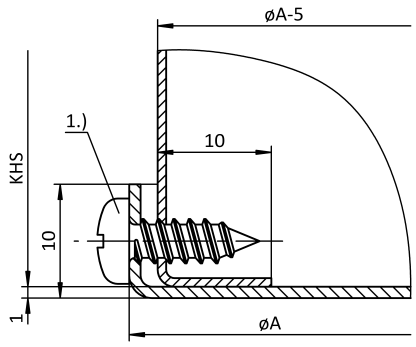
Number of covered blades

NW	Number of blades
310	3
400	3
500	5
600	5
800	5

Number of covered blades (x2) for two-sided shielding.

FASTENING METHODS

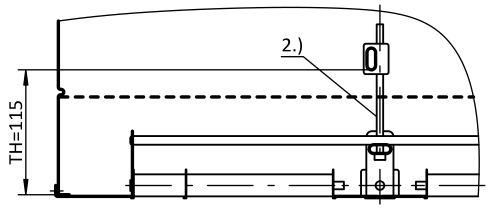
Screw mounting (-SM)



1.) Slotted shallow-raised countersunk-head tapping screws DIN ISO 7049 pitch 3.9 x 13 (on site)

Concealed mounting (-VM)

Pole brace fixing (at an extra charge) only possible in combination with a plenum box (-SKF).

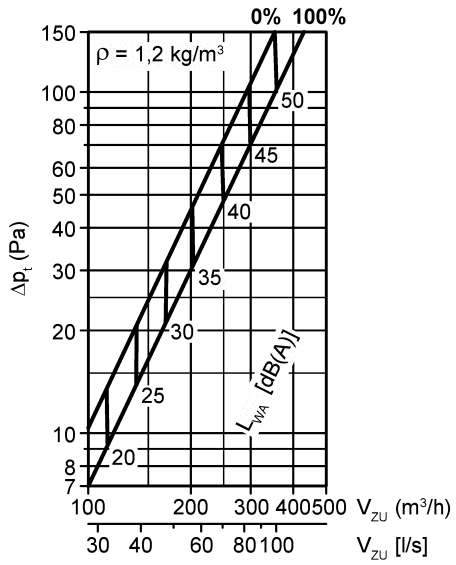


2.) M6 x 120

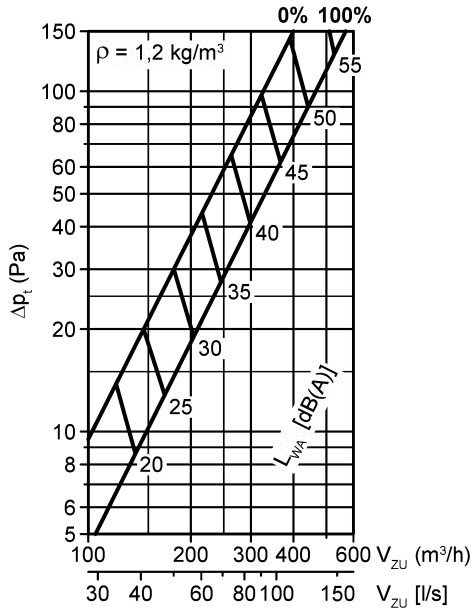
TECHNICAL DATA

Pressure loss and noise level

DQJF-...-Z-...-310-...-PS-...

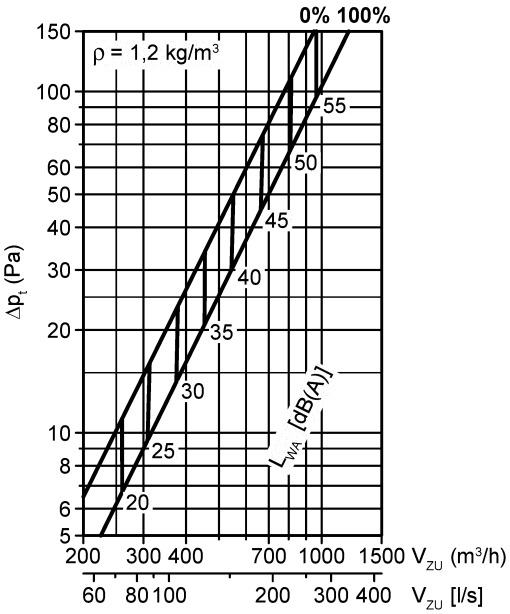


DQJF-...-Z-...-400-...-PS-...

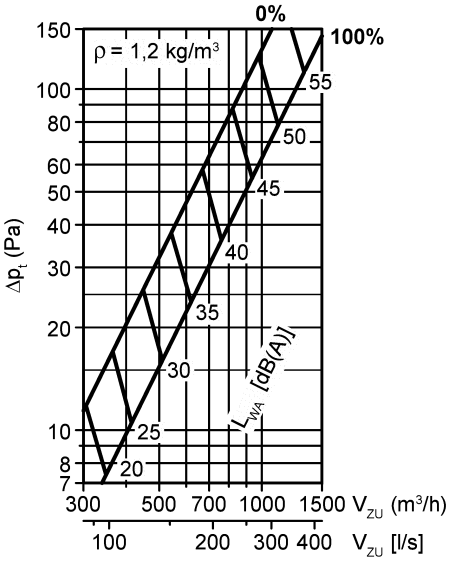


0% = Damper CLOSED
100% = Damper OPEN

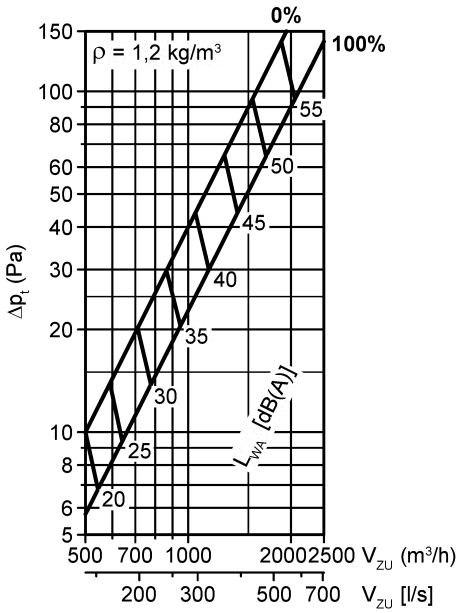
DQJF-...-Z-...-500-...-PT-...



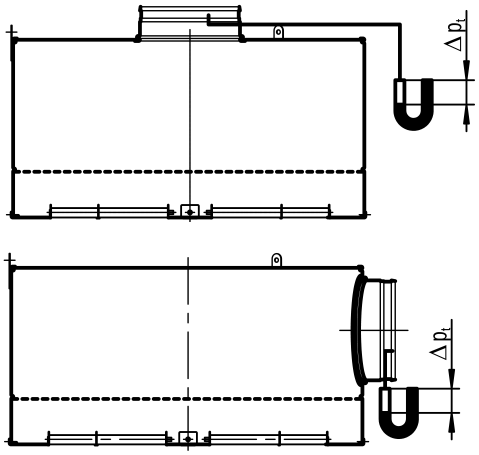
DQJF-...-Z-...-600-...-PT-...



DQJF-...-Z-...-800-...-PT-...



0% = Damper CLOSED
100% = Damper OPEN

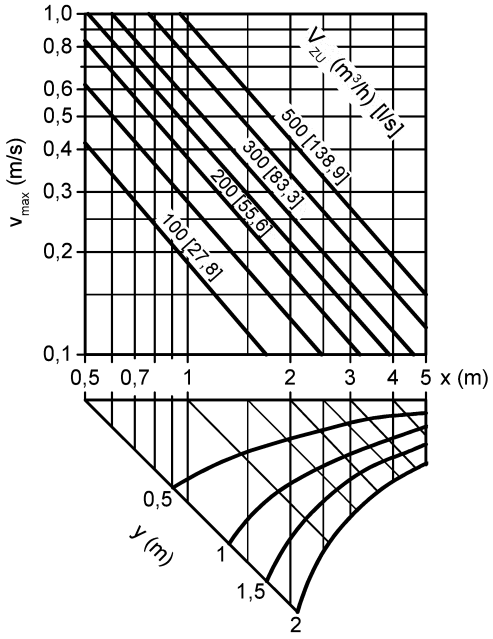


For technical data, pressure loss and noise level for return air, see Technical documentation DQJ.

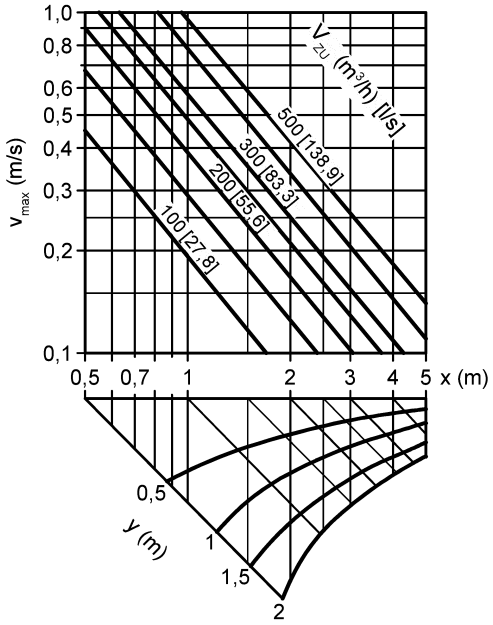
Maximum end velocity of jet

Air throw pattern "A", without coanda effect (supply air)

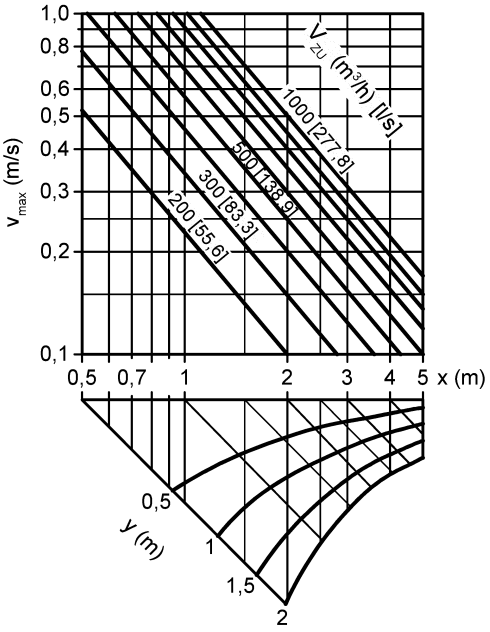
DQJF-...-310-...-A-...



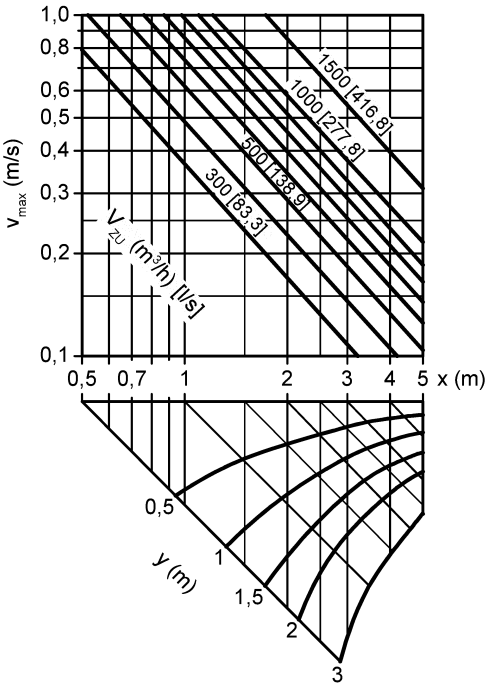
DQJF-...-400-...-A-...



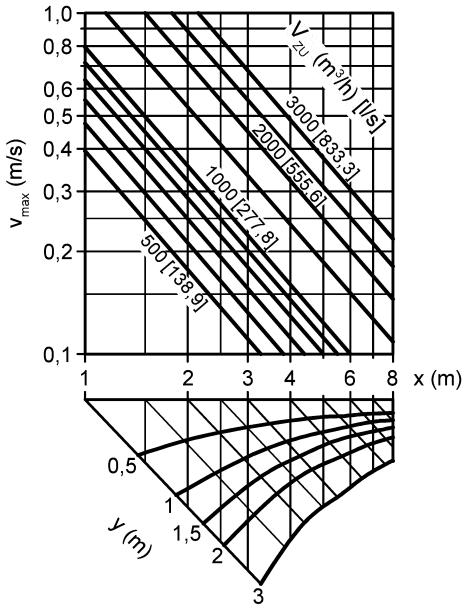
DQJF-...-500-...-A-...

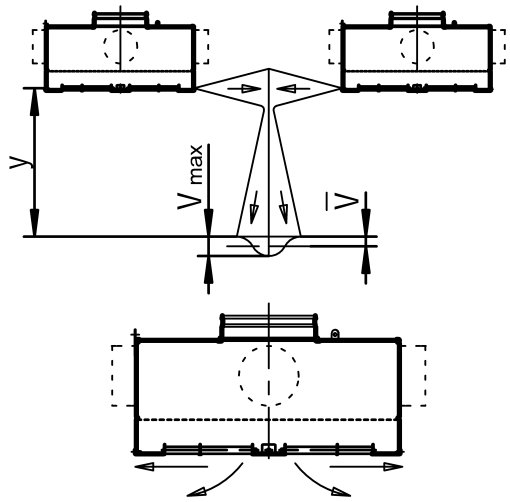


DQJF-...-600-...-A-...



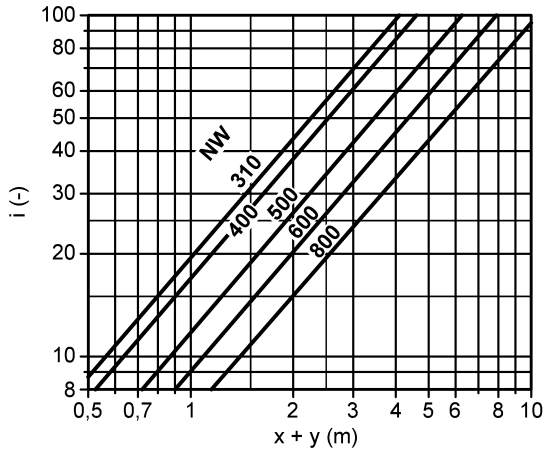
DQJF-...-800-...-A-...


1,0
0,8
0,6
0,5
0,4
0,3
0,2
0,1
v max (m/s)
V ZU (m³/h) [l/s]
3000 [833,3]
2000 [555,6]
1000 [277,8]
500 [138,9]
1
2
3
4
6
8
x (m)
0,5
1
1,5
2
3
y (m)


y
V max
l

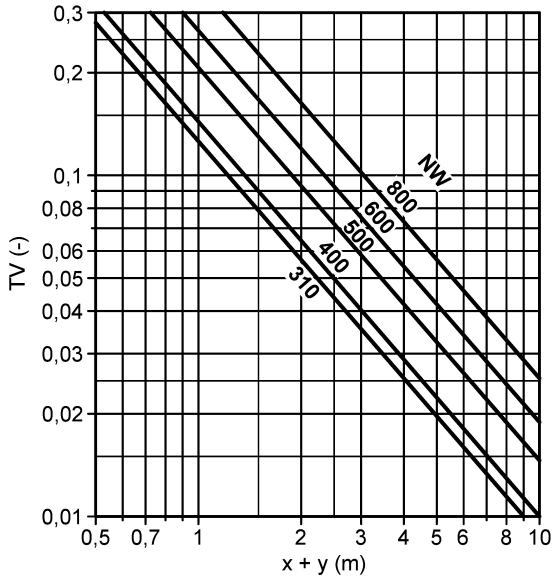
Induction ratios

Air throw pattern "A", without coanda effect (supply air)



Temperature ratios

Air throw pattern "A", without coanda effect (supply air)



LEGEND

V_{ZU}	(m^3/h)	=	Supply air volume
V_{ZU}	[l/s]	=	Supply air volume
v_{max}	(m/s)	=	Maximum end velocity of jet
x	(m)	=	Horizontal jet path
y	(m)	=	Vertical throw
x+y	(m)	=	Horizontal and vertical throw
ρ	(kg/m^3)	=	Density
Δp_t	(Pa)	=	Pressure loss
L_{WA}	[dB(A)]	=	A-weighted sound power level
i	(-)	=	Induction ratio ($i = V_X / V_{ZU}$)
TV	(-)	=	Temperature ratio ($TV = \Delta T_X / \Delta T_O$)
NW	(mm)	=	Nominal width = perforation
V_X	(m^3/h)	=	Total air jet volume at point x
V_X	[l/s]	=	Total air jet volume at point x
ΔT_X	(K)	=	Temperature difference at point x
ΔT_O	(K)	=	Temperature difference between supply air temperature and room temperature ($\Delta T_O = t_{ZU} - t_R$)
t_{ZU}	(°C)	=	Supply air temperature
t_R	(°C)	=	Room temperature

DQJF ORDER CODE

01	02	03	04	05	06	07
Type	Model	Blade pattern	Air throw	Faceplate size	Material	Paint
Example						
DQJF	-R	-SR	-Z	-500	-SB	-9010

08	09	10	11	12	13
Perforation	Blades	Blade colour	Air throw pattern	Mounting	Cover
-500	-PT	-L9010	-A	-SM	-A0

All fields must be filled when ordering

Sample

DQJF-R-SR-Z-500-SB-9010-500-PT-L9010-A-SM-A0

Ceiling swirl diffuser type DQJF | round faceplate | circular blade pattern | supply air | NW500 | faceplate made of sheet steel | Faceplate painted to RAL9010 | NW 500 | blades divided | blade colour similar to RAL 9010 white | air throw pattern A | screw mounting | without cover

Order details

01 - Type

DQJF = Ceiling swirl diffuser type DQJF

02 - Model

R = round faceplate

03 - Blade pattern

SR = circular blade pattern

04 - Air throw

Z = Supply air
A = Return air

05 - Faceplate size

310 = NW 310
400 = NW 400
500 = NW 500
600 = NW 600
800 = NW 800

Note: If the faceplate is larger than the perforation, only concealed mounting is possible. The faceplate can never be smaller than the perforation!

06 - Material

SB = sheet steel (standard, only possible with paint)
SV = galvanised sheet steel
V2 = stainless steel (V2A)

07 – Paint

0000 = without paint (galvanised sheet steel only)
9010 = RAL colour white (standard)
xxxx = RAL colour can be freely selected (always with 4 digits)
SAND = painted in the colour sand silver (only for V2A)

08 - Perforation

310 = NW 310 (standard for faceplate size NW310)
400 = NW 400 (standard for faceplate size NW400)
500 = NW 500 (standard for faceplate size NW500)
600 = NW 600 (standard for faceplate size NW600)
800 = NW 800 (standard for faceplate size NW800)

09 – Blades

PT = divided blades (available from NW 500 – for supply air only)
PS = continuous blades (for supply air only, only possible with NW 310 and NW 400)
P0 = without blades (only possible for return air)

10 - Blade colour

L9005 = Blades made of plastic material similar to RAL 9005 (black)
L9006 = blades made of plastic material similar to RAL9006 (grey)
L9010 = Blades made of plastic material similar to RAL9010 (white)
Axxxx = aluminium, RAL colour can be freely selected
00000 = without blades (only possible for return air)

11 - Air throw pattern

A = all blades in position 2 (standard)
C = without blades (only possible for return air)
V = all blades in blade position 1 (heating mode only)

12 - Mounting

SM = screw mounting (standard, only possible with standard faceplate size)
VM = concealed mounting (only possible in combination with -SKF)

13 - Cover

A0 = without cover (standard)
AD = with 1/4 cover (only possible for supply air model)

SKF ORDER CODE

01	02	03	04	05	06	07
Type	Type of air	Nominal width	Fastening	Material	Paint	Damper
Example						
SKF	-Z	-500	-SM	-SV	-0000	-DK2

08	09	10	11	12	13
Rubber lip seal	Volumetric flow meter	Insulation	Height of box	Spigot diameter	Spigot position
-GD1	-VME0	-I0	-KHS	-SDS	-S1

All fields must be filled when ordering

Sample

SKF-Z-500-SM-SV-0000-DK2-GD1-VME0-I0-KHS-SDS-S1

Plenum box, round design for DQJF air diffuser I Supply air I NW 500 I With screw mounting I Galvanised sheet steel I Without paint I With damper with cable I With rubber lip seal I With volumetric flow meter I Without box insulation I Standard height of plenum box I Standard spigot diameter I 1 lateral spigot

Order details

01 - Type

SKF = Plenum box, round design, for DQJF air diffuser

02 - Type of air

Z = Supply air
A = Return air (inside painted to RAL colour 9005 [black])

03 - Nominal width

310 = NW 310
400 = NW 400
500 = NW 500
600 = NW 600
800 = NW 800

04 - Fastening

SM = screw mounting (standard)
VM = concealed mounting

05 - Material

SB = sheet steel (standard, only possible with paint)
SV = galvanised sheet steel
V2 = stainless steel (V2A)

06 – Paint

0000 = without paint (galvanised sheet steel only)
9010 = painted to RAL colour 9010 (white, standard)
xxxx = painted to a different RAL colour, freely selectable (always with 4 digits)
SAND = painted in the colour sand silver (only for V2A)

07 - Damper

DK0 = without damper (standard)
DK2 = with damper and cable-operated adjustment

08 - Rubber lip seal

GD0 = without rubber lip seal (standard)
GD1 = with rubber lip seal

09 – Volumetric flow meter

VME0 = without volumetric flow meter (standard)
VME1 = with volumetric flow meter in the connection spigot

10 - Insulation

I0 = without insulation (standard)
Ii = with box insulation inside

11 - Height of box

KHS = Height of plenum box standard
xxx = Height of box in mm, freely selectable (minimum height [KHS] with spigot position S1/S2/S3 = spigot diameter + +122 mm, but at least 220 mm, minimum height [KHS] with spigot position S0 at least 250 mm) (always with 3 digits)

12 - Spigot diameter

SDS = Spigot diameter standard
xxx = Spigot diameter in mm, freely selectable (always with 3 digits)

13 - Spigot position

S0 = spigot from above (standard)
S1 = 1 lateral spigot on the box
S2 = 2 lateral spigots, offset by 90°
S3 = 2 lateral spigots, offset by 180°

SPECIFICATION TEXTS

DQJF swirl diffuser, particularly suitable for suspended use in industrial halls, comfort rooms with high air change rates and for VAV systems with variable volumetric flows (between 40-100%). Cooling and heating modes are possible.

With round faceplate, circular blade pattern. For supply air, with central pivoting, aerodynamic radially arranged divided air deflection blades in support blade profile sections made of plastic in a colour similar to RAL 9005 (-L9005, black, standard), similar to RAL 9006 (-L9006, grey), similar to RAL 9010 (-L9010, white) or made of aluminium painted to a freely selectable RAL colour (-Axxxx, subsequent adjustment of the blades is not possible). Each blade is adjustable from the diffuser faceplate without using any special tools or dismounting the diffuser. Free cross-section, resistance and sound power level remain constant in all blade positions.

Perforation: NW 500 to NW 800

Product: SCHAKO **type DQJF-R-SR-Z-...-PT-...**

- For supply air, with central pivoting, aerodynamic radially arranged continuous air deflection blades in support blade profile sections made of plastic in a colour similar to RAL 9005 (-L9005, black, standard), similar to RAL 9006 (-L9006, grey), similar to RAL 9010 (-L9010, white) or made of aluminium painted to a RAL colour which can be freely selected (-Axxxx, subsequent adjustment of blades not possible).
  Perforation: NW 310 and NW 400
  Product: SCHAKO **type DQJF-R-SR-Z-...-PS-...**
- For return air, without air deflection blades.
  Perforation: NW 310 to NW 800
  Product: SCHAKO **type DQJF-R-SR-A...-P0-...**

Faceplate:

- Sheet steel (-SB)
  - Painted in RAL colour 9010 (white) (-9010)
  - Painted to a different RAL colour, freely selectable (-xxxx) (always with 4 digits)
- Galvanised sheet steel, without paint (-SV-0000)
- Stainless steel V2A, painted in the colour sand silver (-V2-SAND)

Faceplate size:

- Faceplate size matching the perforation (standard)
- Perforation smaller than the faceplate

Note: If the faceplate is larger than the perforation, only concealed mounting is possible. The faceplate can never be smaller than the perforation!

Air throw pattern:

- For supply air model
  - "A" (-A), all blades in position 2
  - "V" (-V), all blades in position 1 (heating mode only)
- For return air model
  - "C" (-C), without blades

Construction subject to change. No return possible.

Mounting:

- Screw mounting (-SM) (standard) (only with standard faceplate size)
  - sideways, by means of slotted shallow-raised countersunk-head tapping screws DIN ISO 7049 pitch 3.9 x 13 (on site)
- Concealed mounting (-VM)
  - Pole brace fastening with an M6 cylinder screw (according to DIN EN ISO 4762) to the plenum box (-SKF).
    Only possible in combination with a plenum box.

Accessories:

- Plenum box (-SKF), in round design, with mounting brackets
  - Type of air:
    - Supply air (-Z)
    - Return air (-A) (inside painted to RAL colour 9005 [black])
  - Fastening:
    - Screw mounting (-SM, standard, screws must be provided on site, only possible with standard faceplate size)
    - Concealed mounting (-VM)
  - Material / paint:
  - Sheet steel (-SB)
    - Painted in RAL colour 9010 (white) (-9010)
    - Painted to a different RAL colour, freely selectable (-xxxx) (always with 4 digits)
  - Galvanised sheet steel, without paint (-SV-0000)
  - Stainless steel V2A, painted in the colour sand silver (-V2-SAND)
  - Damper:
    - Without damper (-DK0) (standard)
    - With damper (-DK2), in the connection spigot, with cable-operated adjustment, made of galvanised sheet steel, adjustable, for simple air volume regulation
  - Rubber lip seal:
    - Without rubber lip seal (-GD0)
    - With rubber lip seal (-GD1) on the connection spigot
  - Volumetric flow meter:
    - without volumetric flow meter (-VME0) (standard)
    - With volumetric flow meter (-VME1), in the plenum box at the connection spigot, holder made of galvanised sheet steel, connections made of aluminium
  - Insulation:
    - Without insulation (-I0)
    - With box insulation inside (-Ii), thermal insulation at the inside of the plenum box

- Height of box:
  - Standard height of box (-KHS)
  - Height of box in mm, freely selectable (-xxx) (minimum height [KHS] with spigot position S1/S2/S3 = spigot diameter + 122 mm, but at least 220 mm, minimum height [KHS] with spigot position S0 at least 250 mm) (always with 3 digits)
- Spigot diameter:
  - Standard spigot diameter (-SDS)
  - Spigot diameter in mm, freely selectable (-xxx) (always with 3 digits)
- Spigot position:
  - 1 spigot from above (-S0, standard)
  - 1 lateral spigot on the box (-S1)
  - 2 lateral spigots, offset by 90° (-S2)
  - 2 lateral spigots, offset by 180° (-S3)
- Cover (-A0 / -AD)
  - without cover (-A0) (standard)
  - with 1/4 cover (-AD)
    - only supply air version possible
    - galvanised sheet steel
    - for 1- or 2-sided shielding