



COMBIDQJ

Combined ceiling diffuser for supply air and return air

Contents

Function and use	2
Models.....	2
Processing	3
Models.....	3
Dimensions and views	4
Accessories	4
Technical data	5
Legend	8
Order code	9
Order code	10
Specification text	11

Function and use

COMBIDQJ is a combined ceiling diffuser for supply air and return air.

The square air diffuser consists of an outer area for introducing the supply air into the room and an inner area for extracting the return air. The introduction of the supply air is carried out by means of high induction via blades arranged in a circular pattern and is suitable for VAV systems with variable volumetric flows.

The base of this diffuser is the SCHAKO ceiling swirl diffuser type DQJ. The diffuser is suitable for cooling mode up to -10K.

The faceplate is made of sheet steel with high-quality powder coating in the colour RAL 9010 (white). The plenum box consists of galvanised sheet steel with fixing lugs with cylindrical return air pipe arranged inside, heat-insulated outside and an outer supply air chamber with two connection pipes for supply and return air provided on opposite sides.

The diffuser is connected to the plenum box via concealed screw mounting.

The use of the COMBI series diffusers reduces the number of air diffuser installation points required in the ceiling system. This achieves a uniform circulation of supply air and return air to and from the room. The insulation of the return air element in the COMBI box minimises the thermal losses.

Models



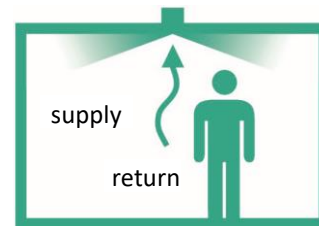
Discreet and reliable in function

Combined ceiling diffuser for supply air and return air, stable horizontal air throw pattern and good room flushing. With concealed screw mounting.

PERFORMANCE DATA

COMBIDQJ	400	500	600	625
V_{zu} (m³/h)	190	260	420	420
L_{WA} [dB(A)]	35	35	35	35

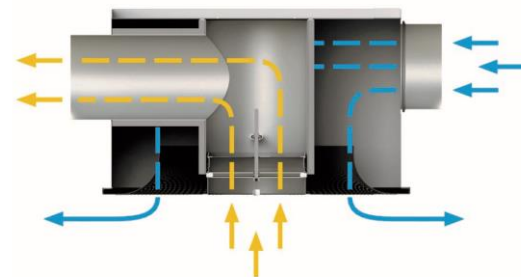
AIR THROW PATTERN



CEILING

Horizontal throw

FUNCTIONAL DIAGRAM



Processing

BLADES - Plastic, similar to RAL colour 9010 (white) or RAL 9005 (black, STANDARD)

FACEPLATE- Sheet steel painted to RAL 9010 (white-STANDARD)

PLENUM BOX (-SAKC) made of galvanised sheet steel with two lateral connecting pieces and fixing lugs

FACEPLATE FASTENING by means of concealed screw mounting

Attention: The max. torque of the fastening screw is 0.4 Nm

Accessories

RUBBER LIP SEAL (-GD1), only both connecting pieces (supply and return air)

DAMPER (-DK2) with cable-operated adjustment, only both connecting pieces (supply and return air)

Models

COMBIDQJ 400

$V_{ZU/AB}$ [m³/h]	L_{WA} [dB(A)]	Δp_t Zuluft [Pa]	Δp_t Abluft [Pa]
135	25	12	18
175	30	19	22
190	35	23	38
235	40	34	58

COMBIDQJ 500

$V_{ZU/AB}$ [m³/h]	L_{WA} [dB(A)]	Δp_t Zuluft [Pa]	Δp_t Abluft [Pa]
185	25	11	18
220	30	15	28
260	35	21	39
300	40	28	52

COMBIDQJ 600/625

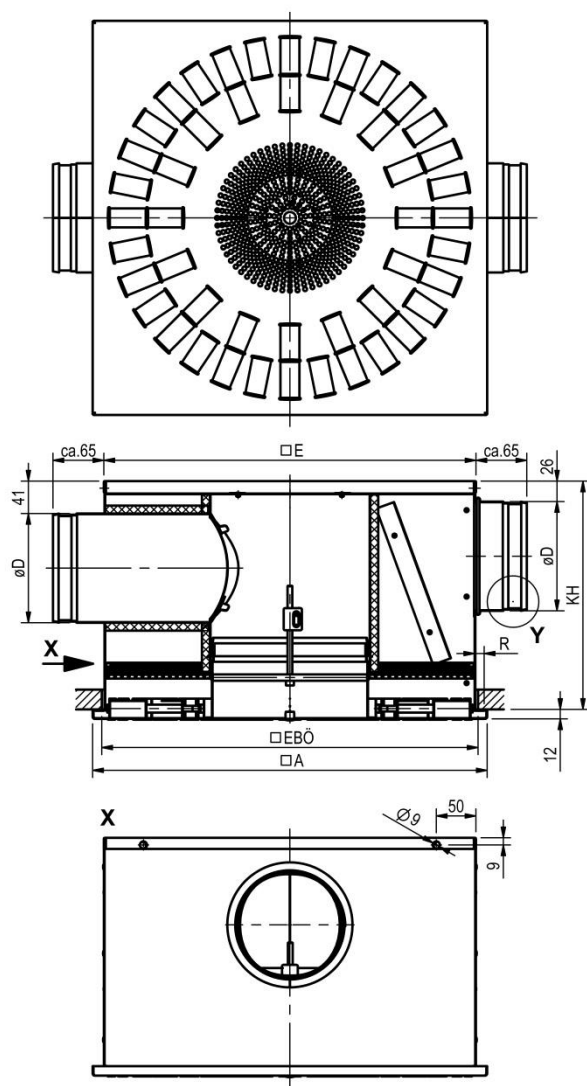
$V_{ZU/AB}$ [m³/h]	L_{WA} [dB(A)]	Δp_t Zuluft [Pa]	Δp_t Abluft [Pa]
320	25	9.5	21
370	30	13	28
420	35	17	36
490	40	25	49

Dimensions and views

COMBIDQJ – Dimensions

all dimensions in mm

COMBIDQJ – Views



COMBIDQJ – Available sizes

Size	□A	□E	øD	KH	□EBÖ	R
400	398	370	123	270	375	12
500	498	470	138	290	475	12
600	598	570	198	350	575	12
625	623	570	198	350	575	24

Accessories

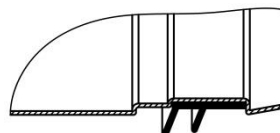
COMBIDQJ - ACCESSORIES

Rubber lip seal (-GD1)

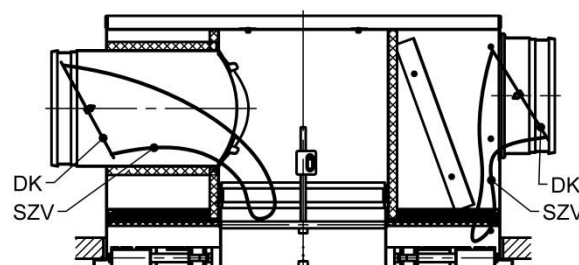
Damper (-DK2)

ACCESSORIES - DIMENSIONS

Rubber lip seal (-GD1), only both connecting pieces
Detail Y



Damper (-DK2) with cable-operated adjustment, only both connecting pieces

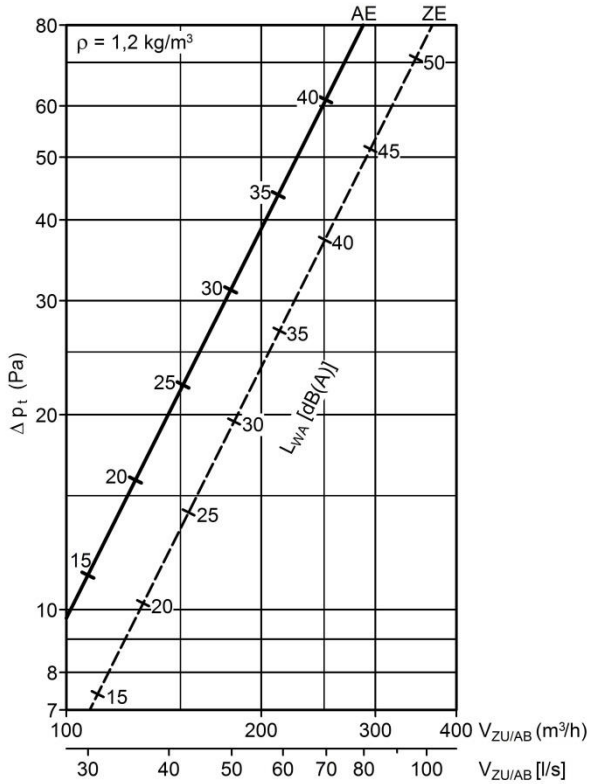


SZV = cable-operated adjustment

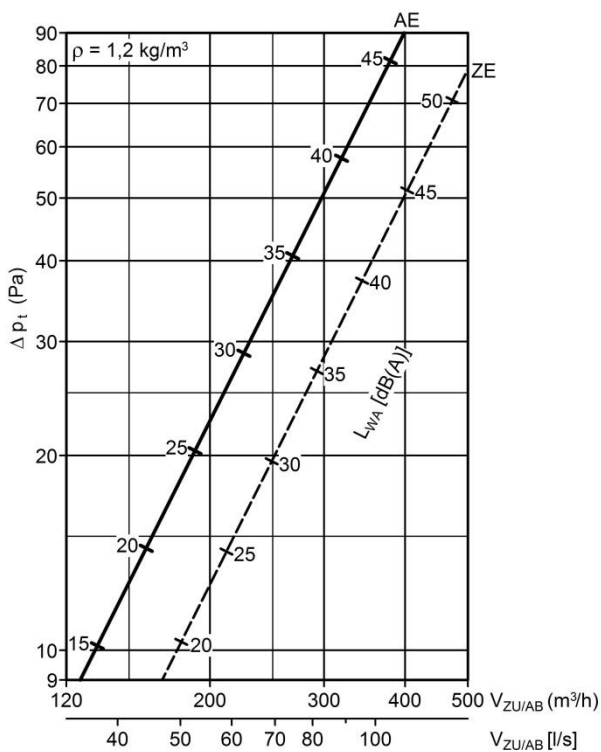
Technical data

Pressure loss and noise level

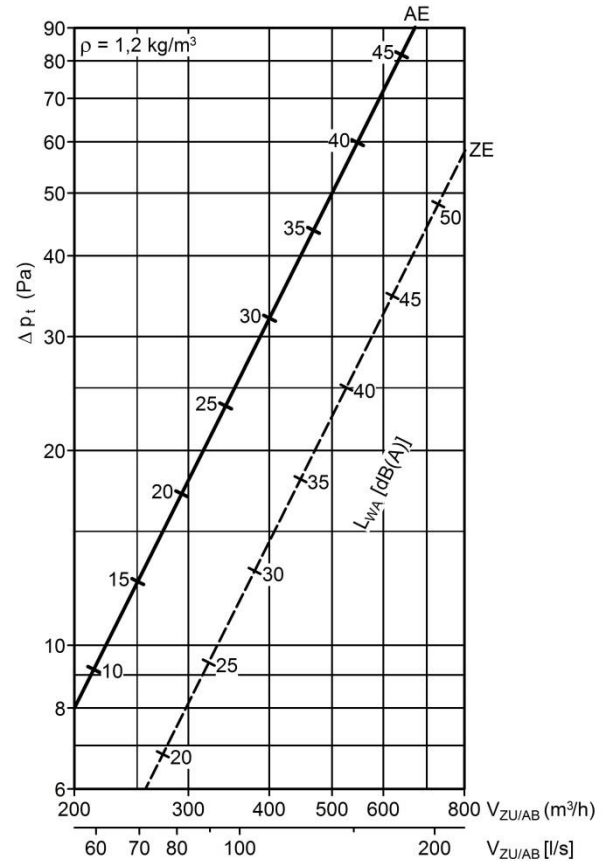
COMBIDQJ-400



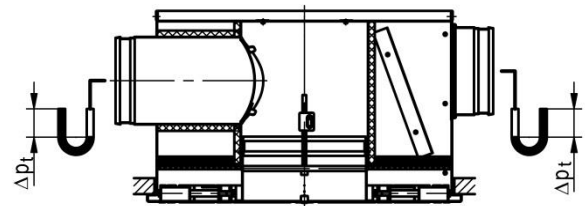
COMBIDQJ-500



COMBIDQJ-600/625

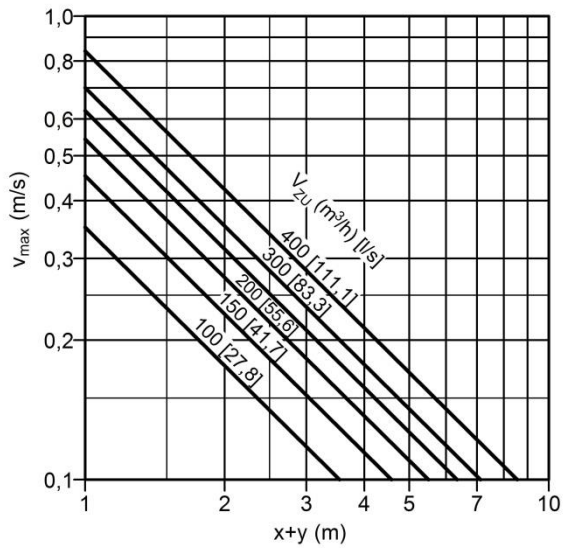


ZE = supply air unit
AE = return air unit

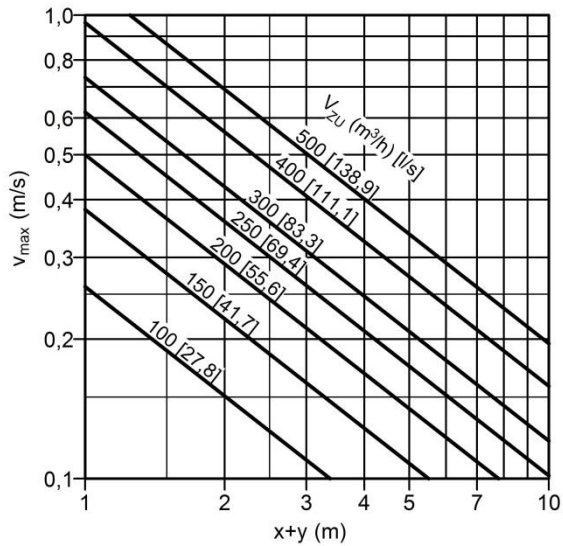


Maximum end velocity of jet

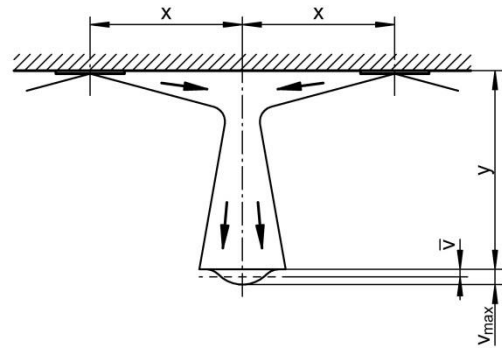
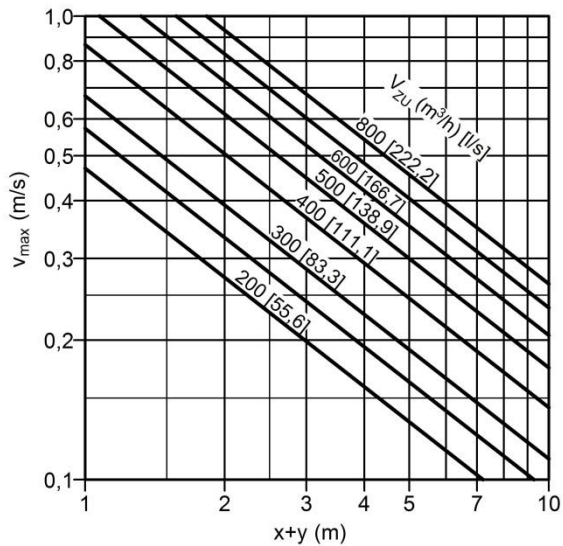
COMBIDQJ-400



COMBIDQJ-500



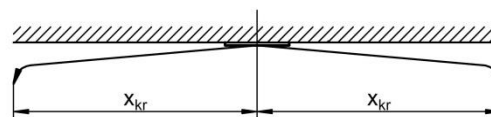
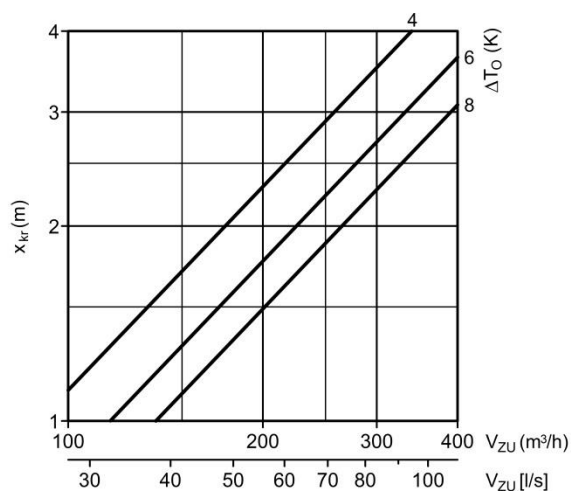
COMBIDQJ-600/625



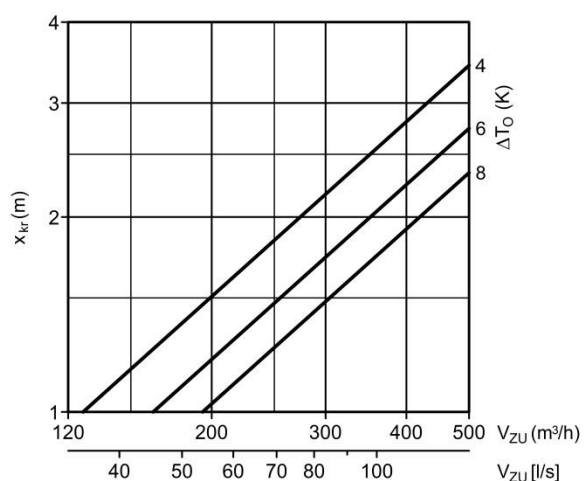
isothermal, with coanda effect / with plenum box

Critical throw

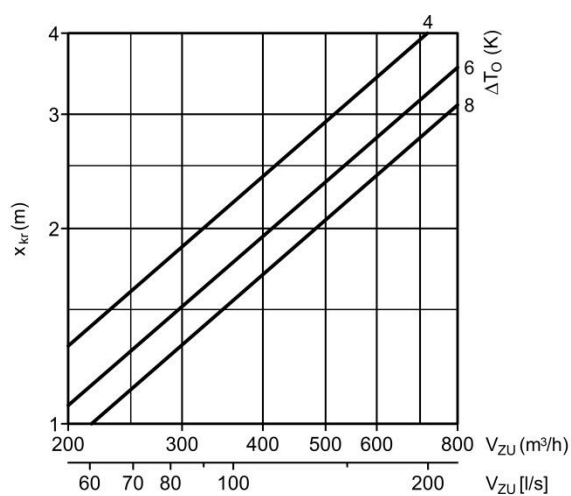
COMBIDQJ-400



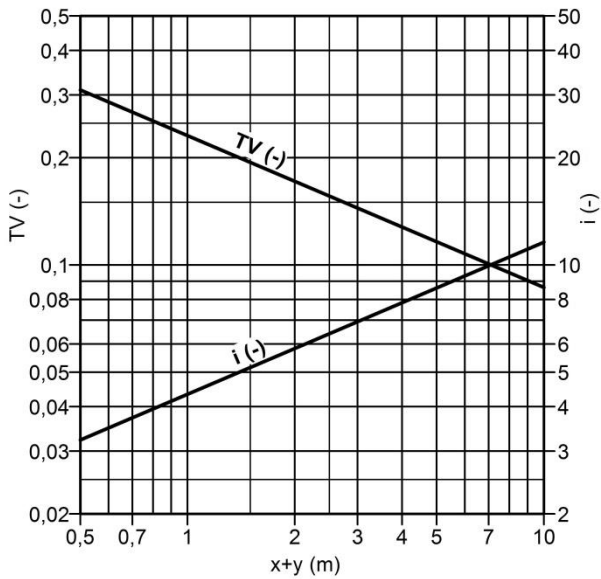
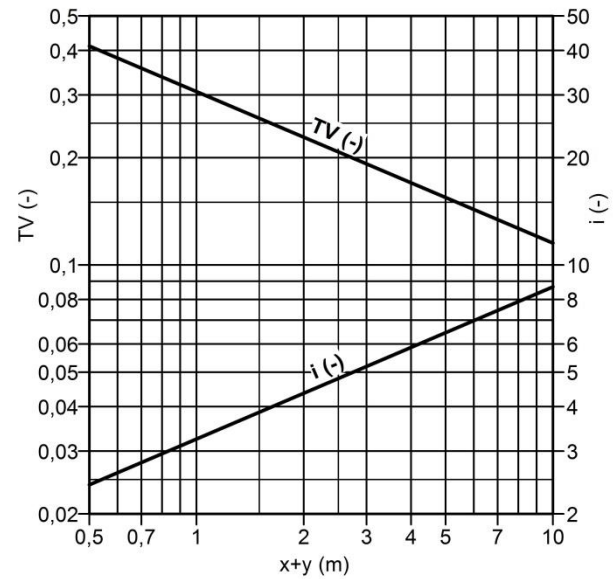
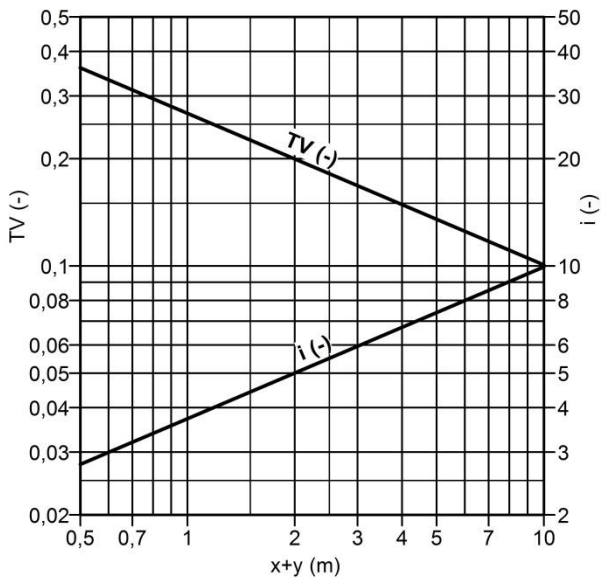
COMBIDQJ-500



COMBIDQJ-600/625



Temperature and induction ratios

COMBIDQJ-400

COMBIDQJ-600/625

COMBIDQJ-500


Legend

A	=	diffuser dimension
E	=	plenum box dimension
D	=	diameter
KH	=	height of plenum box
EBÖ	=	installation opening
V_{ZU}	[m³/h] [l/s]	= supply air volumetric flow
V_{AB}	[m³/h] [l/s]	= return air volumetric flow
Δp_t	[Pa]	= pressure loss
L_{WA}	[dB(A)]	= A-weighted sound power level
ρ	[kg/m³]	= air density
x	[m]	= horizontal throw
y	[m]	= vertical throw
x + y	[m]	= horizontal + vertical throw
v_{max}	[m/s]	= max. End velocity of jet
v_{mittel}	[m/s]	= average end velocity of jet ($v_{mittel} = v_{max} \times 0.5$)
x_{kr}	[m]	= critical throw
ΔT_O	[K]	= temperature difference between supply air temperature and room temperature ($\Delta T_O = t_{ZU} - t_R$)
ΔT_x	[K]	= temperature difference at point x
t_{ZU}	[°C]	= supply air temperature
t_R	[°C]	= room temperature
TV	[-]	= temperature ratio ($TV = \Delta T_x / \Delta T_O$)
i	[-]	= induction ratio ($i = V_x / V_{ZU}$)
Gr	[mm]	= diffuser size

Order code

01	02	03	04
Type	Size	Blade colour	Faceplate coating
Example			
COMBIDQJ	-600	-LS9005	-9010

Order example:

COMBIDQJ-600-LS9005-9010

Combined ceiling diffuser type COMBIDQJ | size 600 | with blades similar to RAL 9005 (black) | with faceplate RAL 9010 (white)

ORDER DETAILS

01 - Type

COMBIDQJ

02 - Size

400 = faceplate 398 x 398

500 = faceplate 498 x 498

600 = faceplate 598 x 598

625 = faceplate 623 x 623

03 - Blade colour

LS9005 = similar to RAL 9005 (black) - **STANDARD**

LW9010 = similar to RAL 9010 (white)

LAXxxx = RAL colour can be freely selected (specify colour)

04 – Faceplate coating

9010 = RAL 9010 (white) - **STANDARD**

xxxx = RAL colour can be freely selected (specify colour)

Order code

01	02	03	04	05
Type	Diffuser	Size	Damper	Rubber lip seal
Example				
SAKC	-DQJ	-600	-DK2	-GD1

Order example:

SAKC-DQJ-600-DK2-GD1

Plenum box COMBIDQJ | size 600 | with damper and cable-operated adjustment for both connecting pieces | rubber lip seal for both connecting pieces

ORDER DETAILS

01 - Type

SAKC = plenum box for COMBI ceiling diffuser

02 - Diffuser

DQJ = to fit COMBIDQJ combined ceiling diffuser

NOTE:

Faceplate for SAKC-DQJ plenum box must be ordered separately.

03 - Size

400 = suitable for faceplate 398 x 398

500 = suitable for faceplate 498 x 498

600 = suitable for faceplate 598 x 598

625 = suitable for faceplate 623 x 623

04 – Damper

DK0 = without damper - **STANDARD**

DK2 = with damper, galvanised sheet steel, only both connecting pieces (supply and return air connecting pieces), with cable operated adjustment

05 - Rubber lip seal

GD0 = without rubber lip seal - **STANDARD**

GD1 = with rubber lip seal, only both connecting pieces (supply and return air connecting pieces)

Specification text

Combined ceiling diffuser for supply air and return air **type COMBIDQJ**

Consisting of a square faceplate, return air in perforated design arranged in the centre, supply air with circular blade pattern. With central pivoting, aerodynamic radially arranged air deflection blades in support blade profile sections made of plastic in a colour similar to RAL 9010 (white) or RAL 9005 (black, STANDARD). Arranged in the outer area, suitable for VAV systems with variable volumetric flows, suitable for cooling mode up to -10K. With faceplate made of sheet steel with high-quality powder coating, painted sheet steel RAL 9010 (white - STANDARD). With concealed screw mounting.

Product: SCHAKO **type COMBIDQJ**

Accessories:

- Plenum box (-SAKC) made of galvanised sheet steel with 2 lateral connecting pieces
 - with rubber lip seal on both connecting pieces (-GD1)
 - with damper and cable-operated adjustment on both connecting pieces (-DK2)