

DCP

VARIZON® Circular low velocity air diffusers with adjustable spread pattern



QUICK FACTS

- Adjustable spread pattern and affected area
- Suitable for all types of room
- Measurement outlet
- Cleanable
- Concealed fixing
- Standard colour White RAL 9003
 - 5 alternative standard colours
 - Other colours upon request

DCP Size	AIR FLOW - SOUND PRESSURE ROOM (Lp10A) *)					
	25 dB(A)		30 dB(A)		35 dB(A)	
	l/s	m³/h	l/s	m³/h	l/s	m³/h
125	58	206	68	245	80	288
160	90	324	110	396	120	432
200	130	468	150	540	180	648
250	180	648	215	774	250	900
315	275	990	325	1170	375	1350
400	400	1440	470	1692	525	1890
500	600	2376	700	2520	800	2880
630	900	3240	1100	3960	1200	4320

Data for the DCP + regulator REG are shown in a separate table.

*) L_{p10A} = Sound pressure incl. A-filter with 4 dB room attenuation and 10 m² room absorption area.

Technical description

Design

The DCP is a complete, circular displacement unit for floor installation. The body consists of top and bottom plates and an air diffusion plate which is equipped with a number of adjustable nozzles. The top plate has a circular inlet. The diffusion plate has an inspection hatch for access to the duct system. There are two perforated panels on the exterior of the body, attached with screws. These are concealed behind a removable aluminium profile. The measurement outlet is placed behind one of the removable aluminium profiles.

Materials and surface treatment

The displacement unit is manufactured in galvanized sheet steel and aluminium profiles. It is coated.

- Standard colour:
 - White semi-gloss, lustre 40, RAL 9003/NCS S 0500-N
- Alternative standard colours:
 - Silver gloss, lustre 80, RAL 9006
 - Grey aluminium gloss, lustre 80, RAL 9007
 - White semi-gloss, lustre 40, RAL 9010
 - Black semi-gloss, lustre 35, RAL 9005
 - Grey semi-gloss, lustre 30, RAL 7037
- Non-painted finish and other colours available on request.

Customization

In addition to the standard sizes, these displacement units are available in special dimensions, with reinforced front panels etc. The duct covers, regulator units and plinths can also be supplied in different dimensions. Please contact your nearest sales representative for further information.

Accessories

Regulator:

REG - combination unit with damper and sound attenuator.

Duct cover:

DCPT 1. For attractive concealment of the regulator unit and the connecting circular duct.

Plinth:

DCPT 2 - for the aesthetic installation of the displacement unit on the floor.

Decorative top:

DCPT 3. Removable top board in different materials and dimensions. Used as the termination on the top of the diffuser when the air diffuser is connected to the duct system via the floor. Please contact your nearest sales representative for further information.



Project planning

It is possible to modify the affected area by adjusting the nozzles behind the perforated front panel. This does not affect the air flow, pressure drop or sound level. This flexibility simplifies any future changes in the furnishing of the room etc.

Installation

The terminal is fastened in place to the floor through the inside. If the plinth is used, this is first fastened in place to the floor using screws and then fastened to the terminal using blind rivets. The regulator unit, which has rubber seals on the connection nipples, is pushed into the inlet on the terminal. The telescopic duct cover is fixed in position using the connecting duct. If the terminal is connected from the underside there is no reason for using the duct cover. If the duct casing is used for the duct connection from below, an assembly fixture is required between the air diffuser and ceiling. As a suggestion, spiral duct of the same dimension as the diffuser connection can be used as the assembly fixture between the air diffuser and ceiling.

Commissioning

The measurement outlet is positioned on the side of the displacement unit behind the aluminium profile. The k-factor of the unit is marked on one side of the measurement outlet. The k-factor can also be found on our Internet site in the relevant k-factor guide. It is recommended that the REG regulator is used to control the air volume. See Figure 2.

Maintenance

The displacement unit can be cleaned when necessary using luke warm water with added detergent. The duct system is accessed by removing the perforated front panel and the inspection hatch. See Figure 2.

Environment

The Declaration of construction materials is available at www.swegon.com.

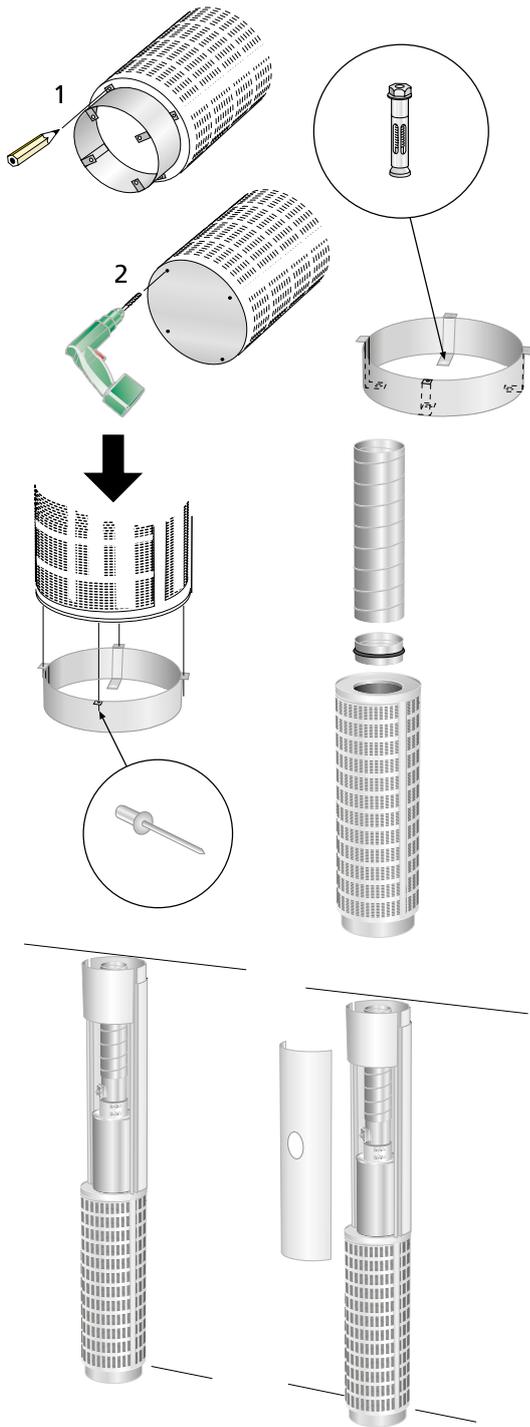


Figure 1. Installation.

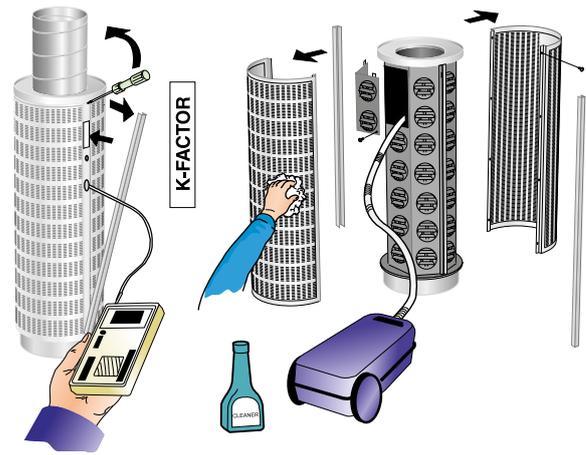


Figure 2. Commissioning. Maintenance.

Sizing

- Sound pressure level dB(A) applies to rooms with 10 m² equivalent sound absorption area.
- Sound attenuation (ΔL) below is shown in the octave band. Orifice attenuation is included in the values.
- Recommended maximum under temperature 6 K.
- For calculating the width of the affected area, air velocities in the zone of occupation or sound levels in rooms with other dimensions, please refer to our calculation programme ProAir web, which is available at www.swegon.com.

L_w = Sound power level

L_{p10A} = Sound pressure level dB (A)

K_{ok} = Correction for producing the L_w value in the octave band

$L_w = L_{p10A} + K_{OK}$ gives the frequency divided octave band

Sound data - DCP

Sound power level L_w (dB)

Table K_{OK}

Size	Mid-frequency (octave band) Hz							
	63	125	250	500	1000	2000	4000	8000
DCP	63	125	250	500	1000	2000	4000	8000
125	-3	2	2	2	0	-5	-13	-18
160	5	1	2	3	-1	-6	-16	-20
200	3	2	3	3	-1	-7	-16	-20
250	-8	2	3	3	-1	-8	-19	-22
315	0	4	4	3	-1	-8	-17	-19
400	6	4	5	3	-2	-9	-18	-17
500	7	5	6	3	-2	-12	-16	-20
630	10	8	7	3	-3	-13	-19	-20
Size	Mid-frequency (octave band) Hz							
	63	125	250	500	1000	2000	4000	8000
DCP + REG	63	125	250	500	1000	2000	4000	8000
125	4	7	4	0	0	-5	-11	-14
160	5	5	3	0	0	-5	-12	-15
200	5	4	3	0	-1	-4	-12	-16
250	5	4	4	1	-1	-4	-15	-20
315	2	5	3	2	-1	-6	-11	-17
400	6	5	3	-1	-2	-4	-10	-13
500	3	5	5	-1	-2	-6	-12	-14
630	3	7	6	-1	-2	-7	-13	-15
Tol. ±	2	2	2	2	2	2	2	2

Sound attenuation ΔL (dB)

Table ΔL

Size	Mid-frequency (octave band) Hz							
	63	125	250	500	1000	2000	4000	8000
DCP	63	125	250	500	1000	2000	4000	8000
125	21	16	10	5	2	3	4	5
160	19	14	8	4	3	3	4	4
200	16	12	6	2	2	3	5	4
250	15	10	5	2	2	3	4	5
315	14	9	4	1	0	1	2	2
400	10	6	4	1	1	1	1	1
500	8	4	3	1	1	1	1	1
630	6	3	2	1	1	1	0	0
Size	Mid-frequency (octave band) Hz							
	63	125	250	500	1000	2000	4000	8000
DCP + REG	63	125	250	500	1000	2000	4000	8000
125	23	18	17	20	33	31	27	22
160	20	15	14	18	31	28	24	20
200	18	13	9	14	29	28	23	21
250	16	11	7	11	26	23	18	18
315	14	10	6	14	24	21	19	21
400	13	9	5	12	25	20	18	21
500	11	7	3	11	24	20	17	20
630	10	6	2	11	23	20	17	20
Tol. ±	2	2	2	2	2	2	2	2

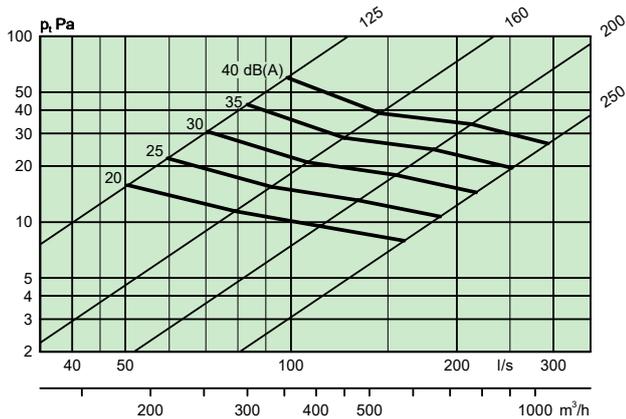
Engineering graphs

DCP

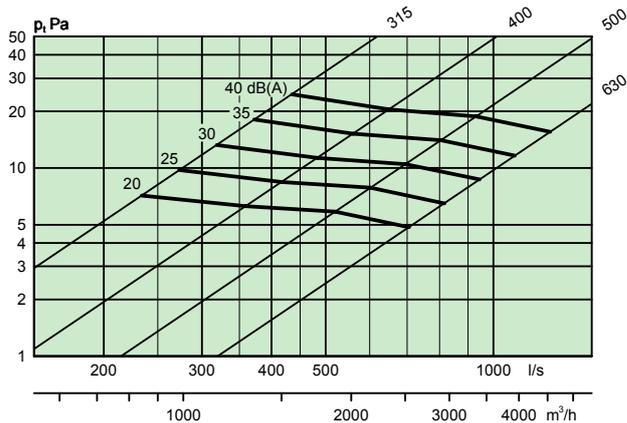
Air flow – Pressure drop – Sound level

- The graphs are not to be used for commissioning.
- The dB(C) value is normally 6-9 dB's higher than the dB(A) value.
- For data concerning the affected area, see the graph for DCP + REG combination.

DCP 125, 160, 200, 250



DCP 315, 400, 500, 630



DCP + REG

Air flow – Pressure drop – Sound level – Affected area

- The affected area refers to the distance to the isovel limit of 0.2 m/s at Δt K. Δt in this case signifies the difference between the room air temperature measured at 1.2 m above the floor and the supply air temperature, it is not the difference between the exhaust air and the supply air temperatures.
- The graphs illustrate data for the displacement unit with the regulator installed.
- The graphs are not to be used for commissioning.
- The dB(C) value is normally 6-9 dB's higher than the dB(A) value.
- ∇ =min airflow to obtain sufficient commissioning pressure.

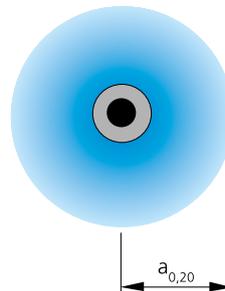
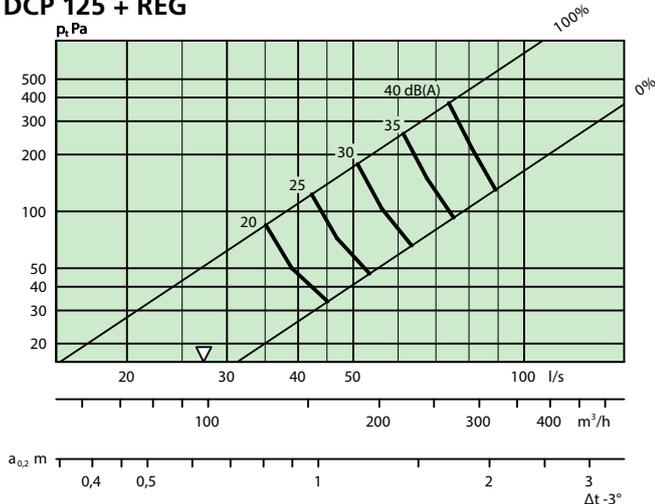
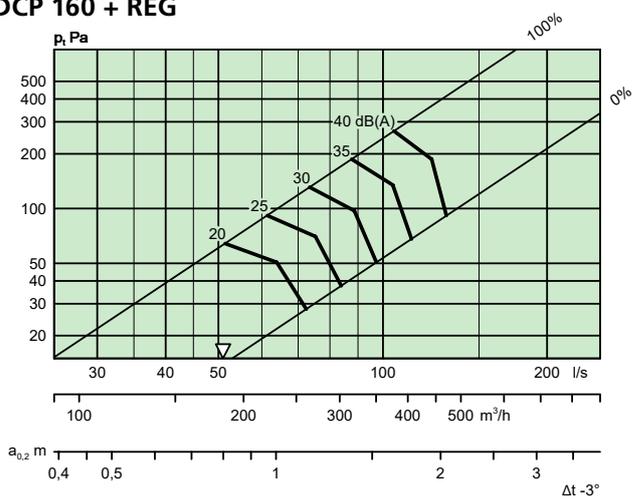


Figure 3. Affected area.

DCP 125 + REG

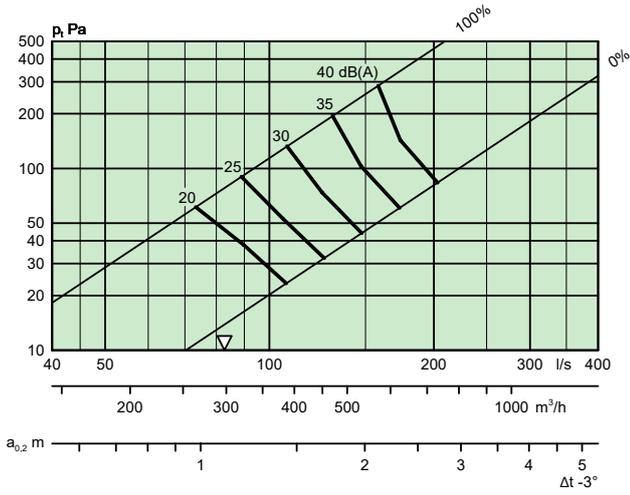


DCP 160 + REG

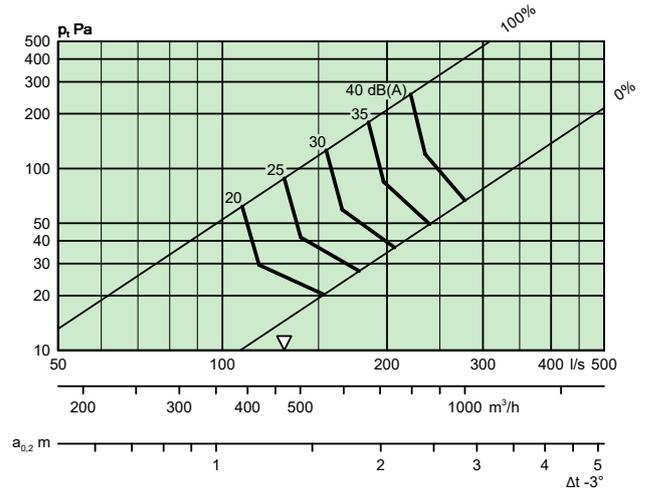


DCP

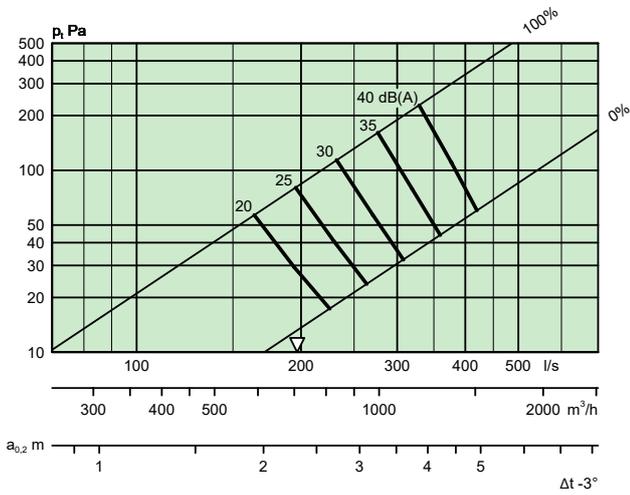
DCP 200 + REG



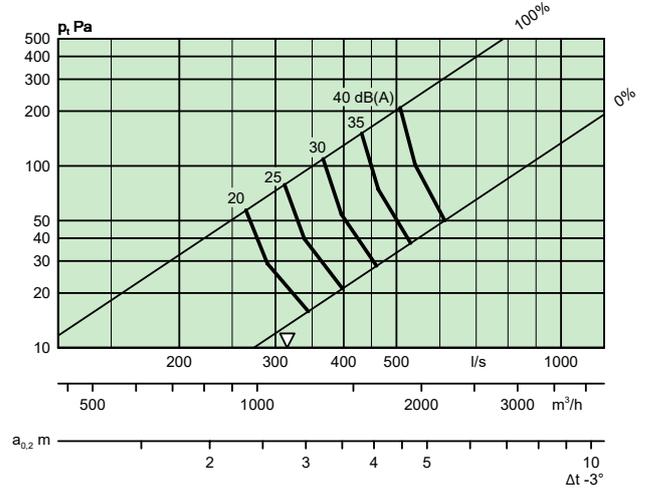
DCP 250 + REG



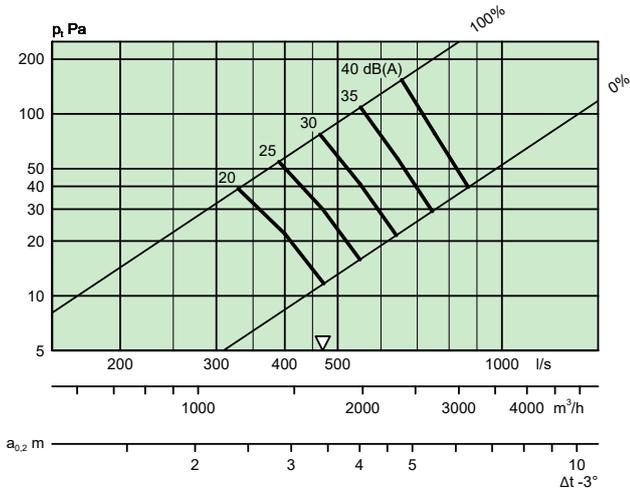
DCP 315 + REG



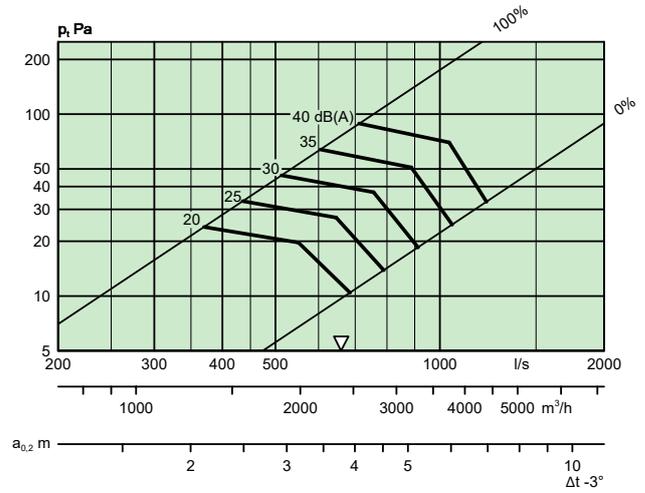
DCP 400 + REG



DCP 500 + REG



DCP 630 + REG



Dimensions and weights

DCP

Size	Dimensions (mm)			Weight (kg)
	ØA	B	Ød	
125	270	608	125	7
160	305	608	160	10
200	345	908	200	15
250	395	908	250	18
315	460	1488	315	23
400	545	1988	400	29
500	645	1988	500	36
630	775	1988	630	45

REG

Size	Dimensions (mm)			
	ØC	Ød	G	H
125	225	124	230	500
160	260	159	230	500
200	300	199	230	500
250	350	249	250	500
315	415	314	260	800
400	500	399	300	800
500	600	499	300	900
630	730	629	300	900

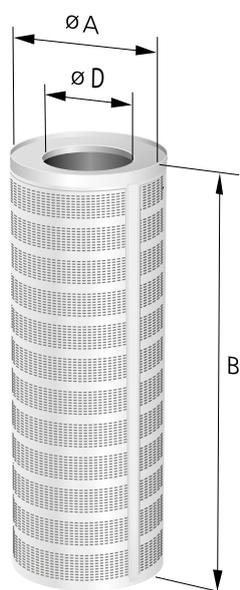


Figure 4. DCP.

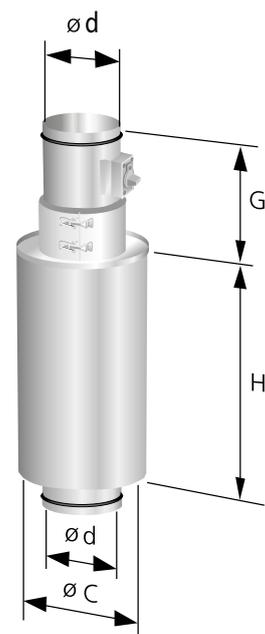


Figure 5. Regulator unit REG.

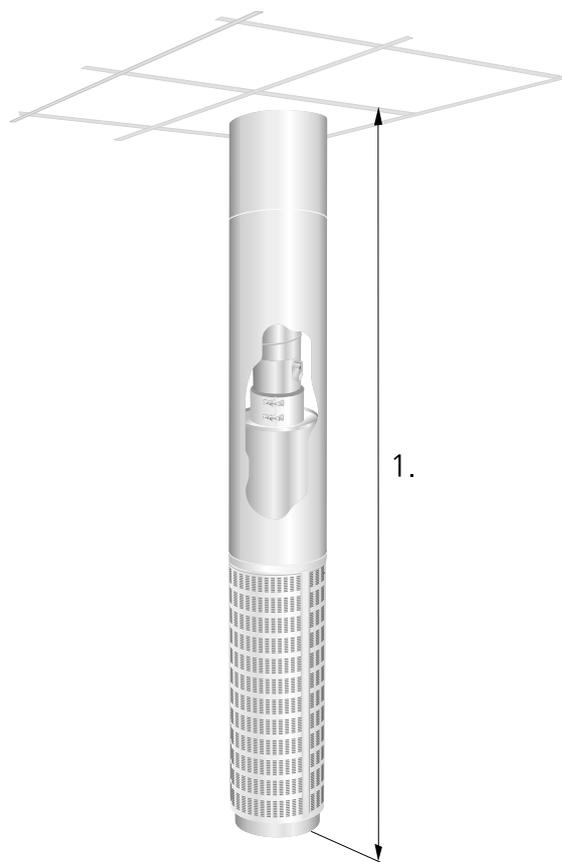


Figure 6. DCP with duct cover and plinth.

1. Size 125-315: 2400-2750.

Size 400, 500, 630: 2805-3200.

If other lengths are required always state the total room height.

Ordering key

Product

Circular displacement unit DCP e -aaa

Version:

Size:

125, 160, 200, 250
315, 400, 500, 630

Accessories

Duct cover DCPT 1 a -aaa - (bbb)

Version:

Size:

125, 160, 200, 250
315, 400, 500, 630

Specify special lengths, state the total room height.

Plinth DCPT 2 b -aaa 70

Version:

Size:

125, 160, 200, 250
315, 400, 500, 630

Height mm

Height in mm. specify special heights in bold print

Regulator unit REG b -aaa

Version:

Size:

125, 160, 200, 250
315, 400, 500, 630

Decorative top DCPT 3 a

Version:

Please contact your nearest sales representative for further help with the design of the product.

Specification example

Swegons VARIZON® Circular displacement unit of type DCP, having the following functions:

- Adjustable spread pattern and affected area
- Measurement outlet
- Concealed fixing
- Cleanable
- Powder coated in white paint, RAL 9003/NCS S 0500-N

Size: DCPe aaa xx items

Accessories:

Duct cover: DCPT 1a aaa xx items

Plinth: DCPT 2b aaa - 70 xx items