

DVC

Quadrant shaped low velocity air diffuser with adjustable spread pattern



QUICK FACTS

- Adjustable spread pattern and affected zone
- Suitable for all types of rooms
- Air volume measuring point
- Cleanable
- Concealed fastening
- Standard colour White RAL 9003
 - 5 alternative standard colours
 - Other colours upon request

AIR FLOW - SOUND PRESSURE ROOM (Lp10A) *)						
DVC Size	25 dB(A)		30 dB(A)		35 dB(A)	
	l/s	m ³ /h	l/s	m ³ /h	l/s	m ³ /h
125	48	173	59	212	70	252
160	78	281	92	331	110	396
200	125	450	150	540	170	612
250	168	605	200	720	240	864
315	300	1080	350	1260	400	1440
400	410	1476	490	1764	580	2088

Data for the DVC with 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 DVC is a complete, quadrant shaped displacement unit for corner installation. The body consists of a rear section with top and bottom plates and an air distribution plate equipped with a number of adjustable air deflectors. The top plate has a circular inlet socket. The distribution plate has an access hatch for access to the duct system. The perforated front plate is fastened to the unit with concealed screws, behind the removeable aluminum side strips. The airflow measuring point is placed behind one of the side strips.

Materials and surface treatment

The displacement unit is manufactured in galvanized sheet steel and aluminum profiles. It is powder coated with paint.

- 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.

Special versions

In addition to the standard sizes, these displacement units are available in special dimensions, with reinforced front plates, etc. The duct covers, regulator units and bases 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

DVCT 1d. For the installation of the regulator unit and the connecting circular duct.

Base:

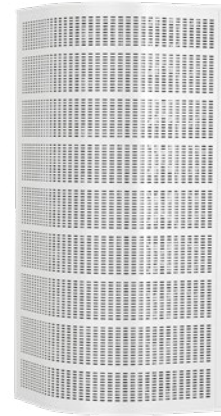
DVCT 2. For the installation of the displacement unit on the floor.

Decorative top:

DVCT 3. Removable top board in different materials and dimensions. Can be used when duct cover is not utilized. Please contact your nearest sales representative for further information.

Planning

It is possible to modify the affected area by adjusting the deflectors behind the perforated front plate. 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 attached to the wall using angle brackets and screws. The base is screwed into place on the underside of the unit. The telescopic duct cover is attached to the wall using the wall brackets, the screws being concealed by the side strips. The regulator, which has a circular connection spigot with a rubber seal, is pressed into the inlet socket of the unit.

Commissioning

The measuring point is positioned on the side of the displacement unit behind the aluminum profile. The k-factor of the unit is stated next to the measurement outlet. The k-factor can also be found on our website in the relevant k-factor guide. It is recommended that the REG regulator is used to regulate the air flow. 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 plate and the access hatch. See figure 2.

Environment

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

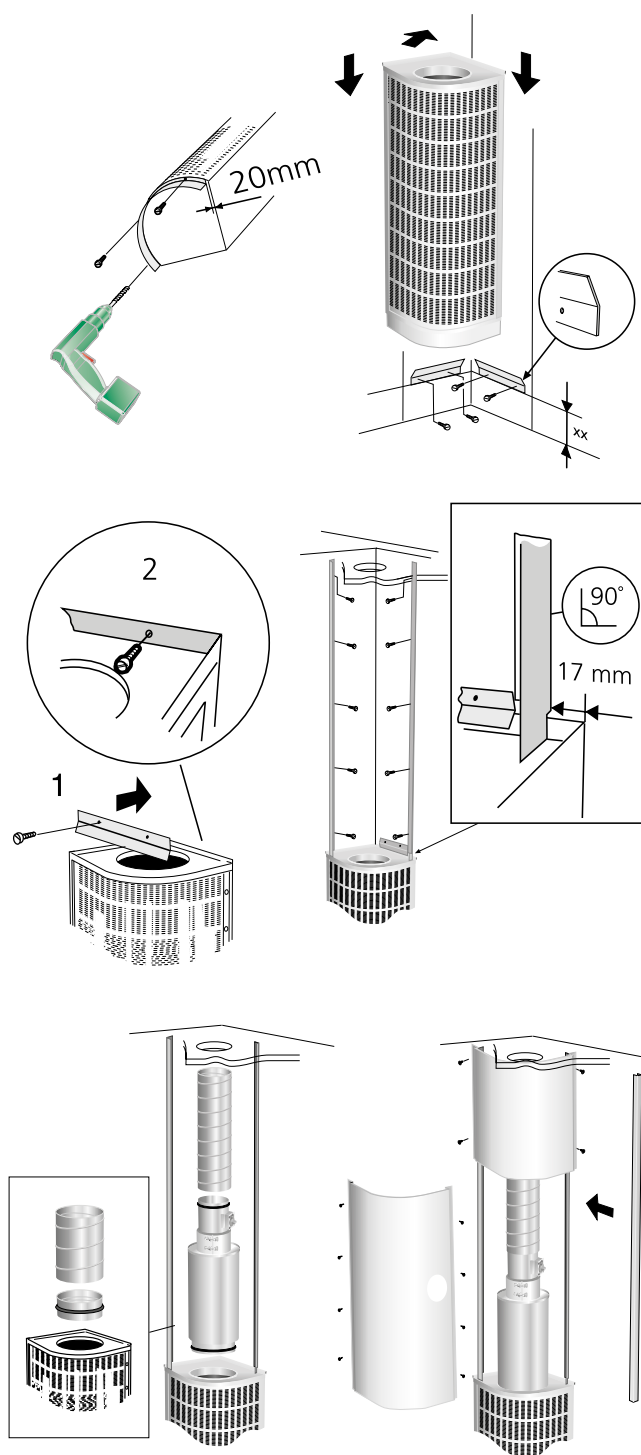


Figure 1. Installation.

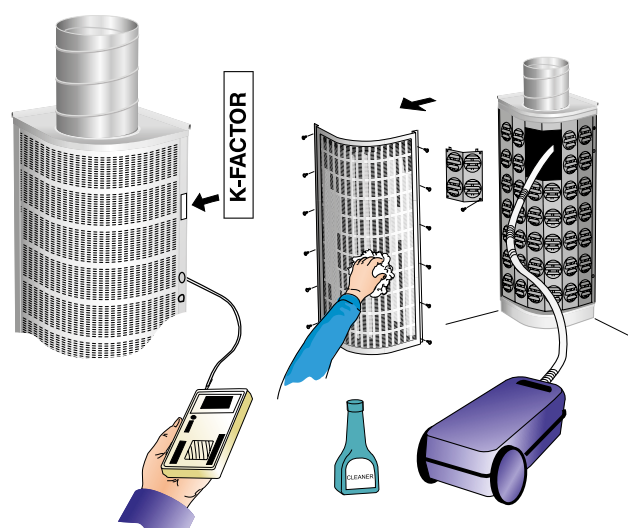


Figure 2. Commissioning, maintenance.

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 °C.
- To calculate the air stream diffusion, air velocities in the occupied zone or sound levels in rooms with other dimensions, please refer to our calculation software, which is 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

DVC

Sound power level L_w (dB)

Table K_{OK}

Size	Mid frequency (octave band) Hz							
DVC	63	125	250	500	1000	2000	4000	8000
125	5	2	6	3	-2	-8	-17	-21
160	1	2	6	2	-1	-7	-17	-20
200	7	2	6	2	-1	-8	-18	-19
250	3	2	5	2	0	-8	-18	-18
315	4	4	6	3	-1	-11	-20	-17
400	4	6	6	3	-2	-9	-17	-15
Size	Mid frequency (octave band) Hz							
DVC + REG	63	125	250	500	1000	2000	4000	8000
125	3	6	7	0	-3	-6	-13	-15
160	2	5	6	1	-1	-6	-14	-17
200	6	6	6	0	-1	-6	-13	-16
250	7	5	5	0	-1	-5	-13	-17
315	5	6	5	0	-1	-6	-12	-15
400	6	8	5	-1	-3	-5	-10	-12
Tol. ±	2	2	2	2	2	2	2	2

Sound attenuation ΔL (dB)

Table ΔL

Size	Mid frequency (octave band) Hz							
DVC	63	125	250	500	1000	2000	4000	8000
125	21	16	8	7	8	6	4	4
160	18	13	5	6	6	3	4	5
200	15	10	4	6	4	3	3	4
250	13	8	3	5	4	3	4	5
315	12	7	3	3	1	1	1	2
400	11	6	4	1	1	1	1	1
Size	Mid frequency (octave band) Hz							
DVC + REG	63	125	250	500	1000	2000	4000	8000
125	23	18	15	21	33	30	25	22
160	19	14	12	18	32	26	22	20
200	17	12	8	15	29	28	23	21
250	14	9	5	13	26	23	18	18
315	14	9	5	14	24	20	18	19
400	13	8	5	13	24	20	19	21
Tol. ±	2	2	2	2	2	2	2	2

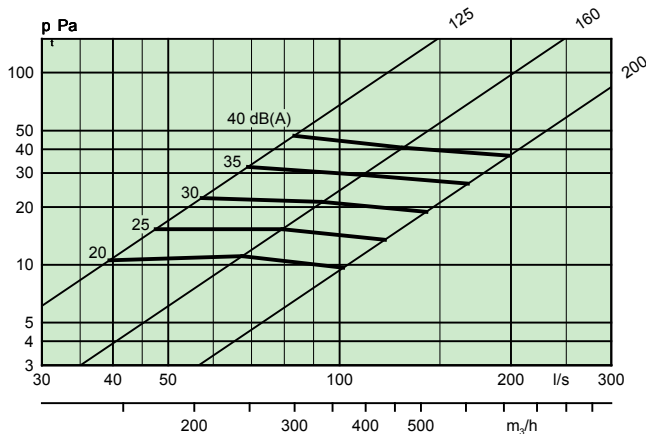
Engineering graphs

DVC

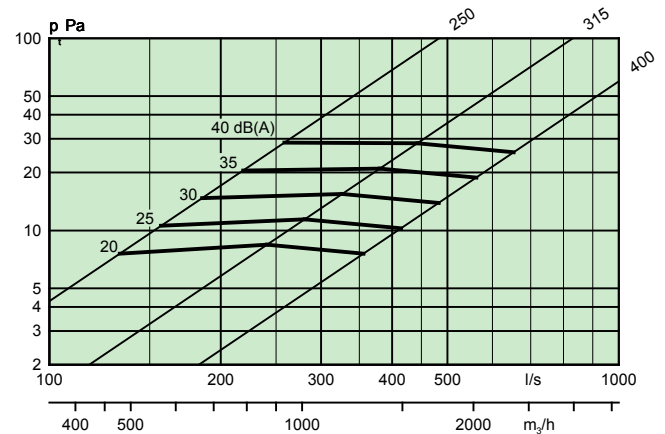
Air flow – Pressure drop – Sound level

- 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.
- The data concerning the affected area, see the graph for DVC + REG combination.

DVC 125 - 200



DVC 250 - 400



DVC + 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 3 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 diagrams illustrate data for the displacement unit with the regulator installed.
- The graphs are not to be used for commissioning.
- ∇ = min air flow to obtain sufficient commissioning pressure.

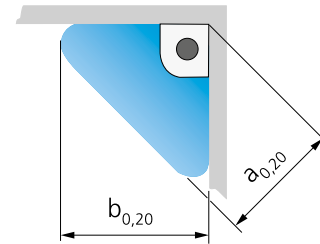
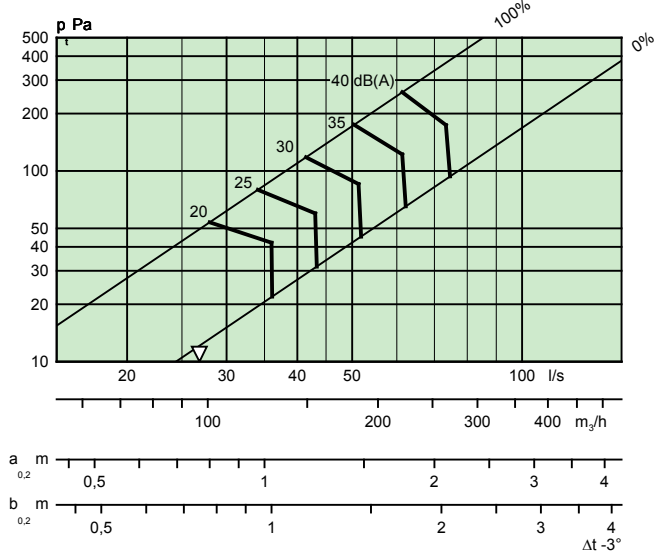
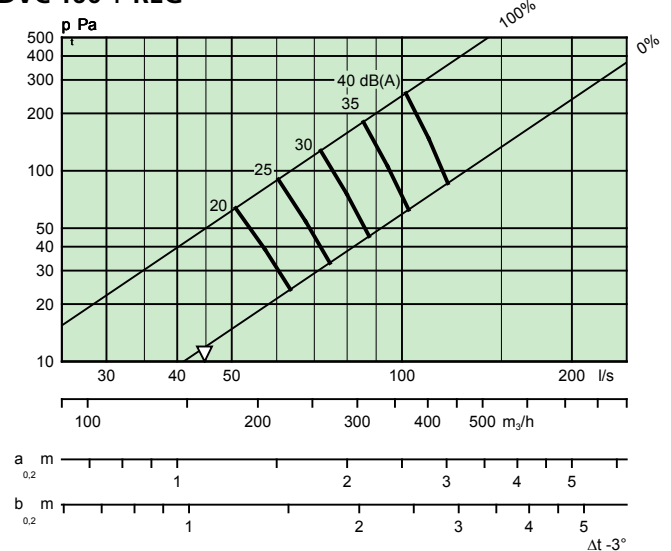


Figure 3. Affected area.

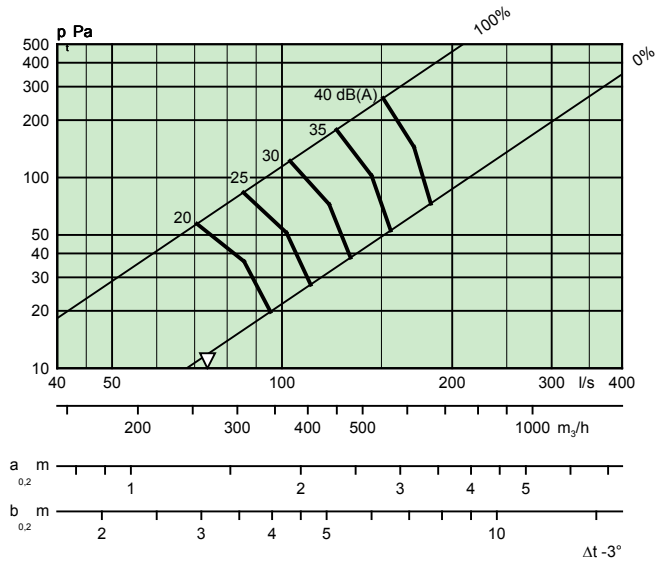
DVC 125 + REG



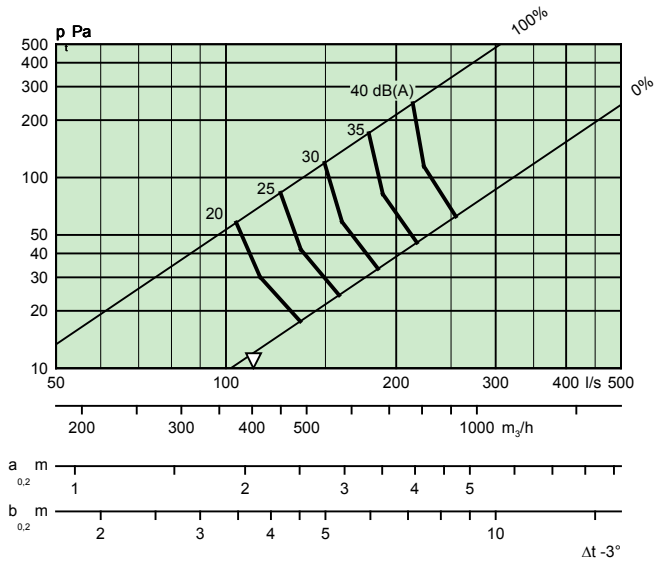
DVC 160 + REG



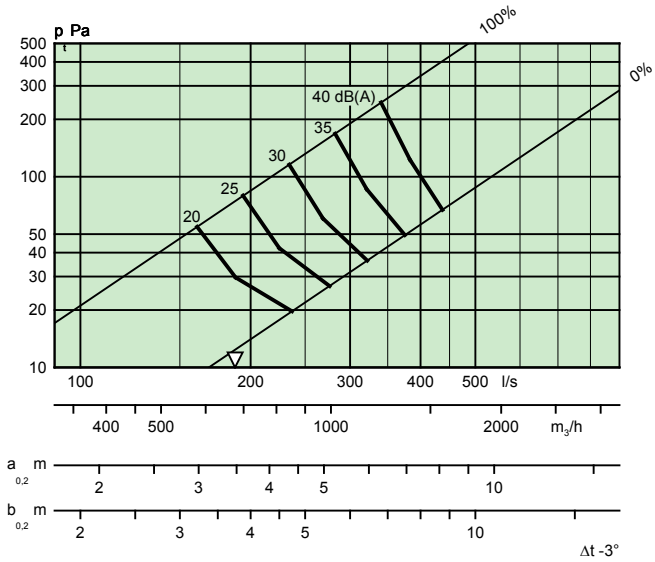
DVC 200 + REG



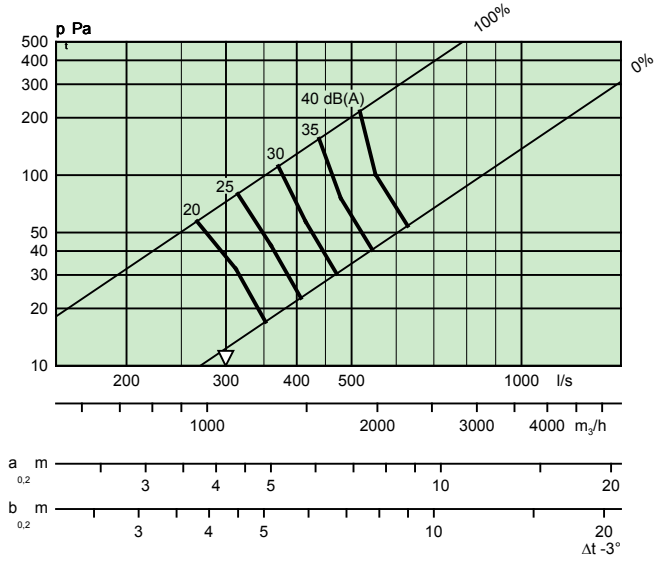
DVC 250 + REG



DVC 315 + REG



DVC 400 + REG



Dimensions and weight

DVC

Size	Dimensions (mm)				Weight (kg)
	A	B	ØD	G	
125	245	623	125	123	5
160	280	623	160	140	7
200	320	923	200	160	14
250	370	923	250	185	18
315	435	1523	315	218	23
400	520	2003	400	260	31

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

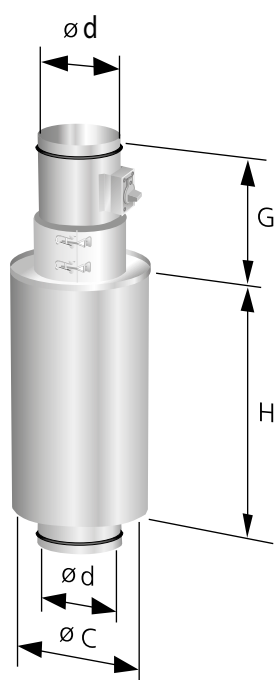


Figure 4. Regulator unit REG

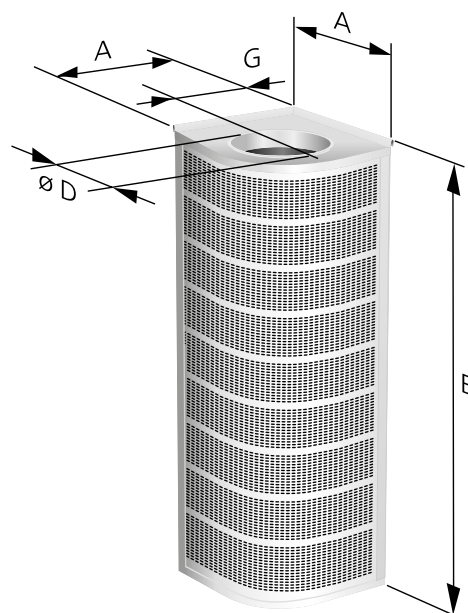


Figure 5.DVC.

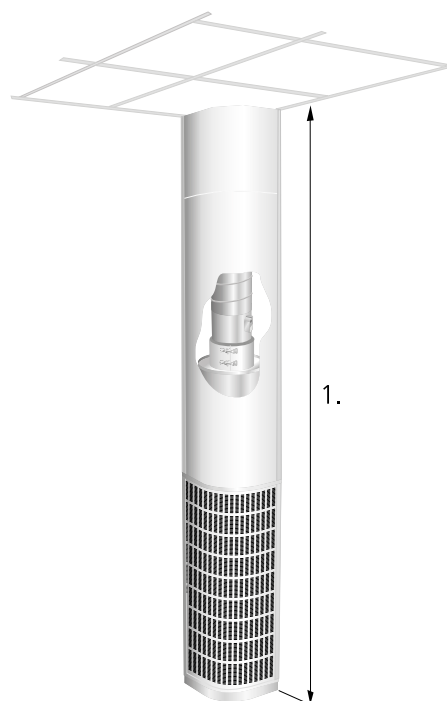


Figure 6.DVC with duct cover and base.
1. Size 125-315: 2750. Size 400: 2850-3200

Order key

Product designation

Quadrant shaped displacement unit	DVC	e	aaa
Version:			
Size: 125, 160, 200, 250, 315, 400			

Accessories

Cover	DVCT 1	d	aaa
Version:			
Size: 125, 160, 200, 250, 315, 400			

Specify special lengths, state the total room height.

Base	DVCT 2	a	aaa	-70
Version:				
Size: 125, 160, 200, 250, 315, 400				
Height mm.				

Specify special heights in bold text.

Decorative top	DVCT 3	a
Version:		

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

Regulator unit	REG	b	aaa
Version:			
Size: 125, 160, 200, 250, 315, 400			

Specification example

Swegon VARIZON® quadrant shaped displacement unit of type DVC with regulator unit REG, with the following functions:

- Adjustable spread pattern and affected area
- Air volume measuring point
- Concealed fastening
- Cleanable
- Powder coated in white paint, RAL 9003/NCS S 0500-N

Size:	DVCe aaa	xx items
Accessories		
Cover plate:	DVCT 1d aaa	xx items
Base:	DVCT 2a aaa-70	xx items
Regulator unit:	REGb aaa	xx items