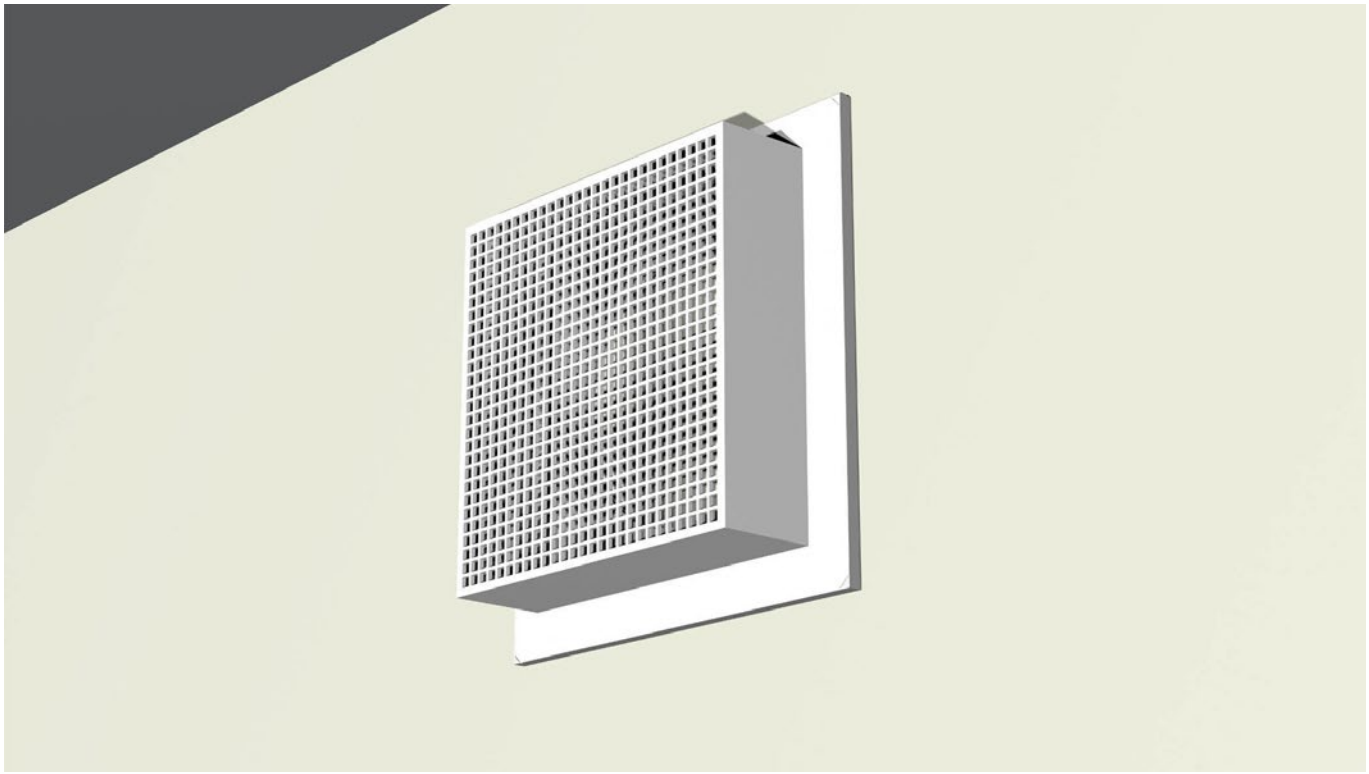
ROE

ROBUST Exhaust register



QUICK FACTS

- Robust design
- Easy installation
- Large throttling range
- Large natural attenuation
- Lockable setting
- Standard colour White RAL 9003
  - 5 alternative standard colours
  - Other colours upon request

AIR FLOW - SOUND PRESSURE ROOM (Lp10A) *)						
ROE Size	25 dB(A)		30 dB(A)		35 dB(A)	
	l/s	m³/h	l/s	m³/h	l/s	m³/h
100	9	32	17	61	33	119
125	18	65	33	119	45	162
160	20	72	35	126	75	270
200	24	86	38	137	79	284

Data applies to ROE at a total pressure drop of 100 Pa.

**) L_{p10A} = Sound pressure incl. A-filter with 4 dB room attenuation and 10 m^2 room absorption area.*

Technical description

Design

The register consists of five parts; attachment plate, mounting frame, outer cone, inner cone and protective cage. The mounting frame includes a nipple connection to the connecting duct and a bayonet fitting to the terminal. The outer cone has a sealing strip against the mounting frame. The inner cone, which is suspended on a thread spindle inside of the outer cone, is adjustable and lockable. The control valve is protected by a heavy duty cage, which is attached to the underlying attachment plate. This prevents the terminal from being opened.

Materials and surface treatment

The register is made of sheet steel. The mounting frame is made of galvanized sheet steel. The complete register is powder 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.

Planning / Installation

Holes are made according to the connecting duct dimensions. Mark up holes for the attachment plate and drill in the wall structure. The mounting frame is placed in the attachment plate and is pressed into the connecting duct. The attachment plate is fixed to the building structure and the mounting frame is fixed. The exhaust register is twisted into the mounting frame. Perform commissioning (see commissioning). When commissioning has been completed secure the protective cage using the supplied steel pop rivets. See Figure 1.

Commissioning

The inner cone is turned clockwise to increase the pressure drop and anticlockwise to reduce it. The position of the cone is locked using the locking nut at the rear of the register. The K-factor is stated on the product label. The K-factors are also stated in the current K-factor guide. This is available at www.swegon.com.

The terminal is adjusted by pressure measurement or air flow measurement. Use a "measuring hook" for the pressure measurement or a suitable air flow meter to measure the air flow. See Figure 2.

Maintenance

The diffuser is cleaned if necessary with tepid water and a detergent or with a vaccuum cleaner. Access to the duct system is possible by drilling out the steel pop rivets, and turning the control valve anticlockwise out of the bayonet fitting.

Environment

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

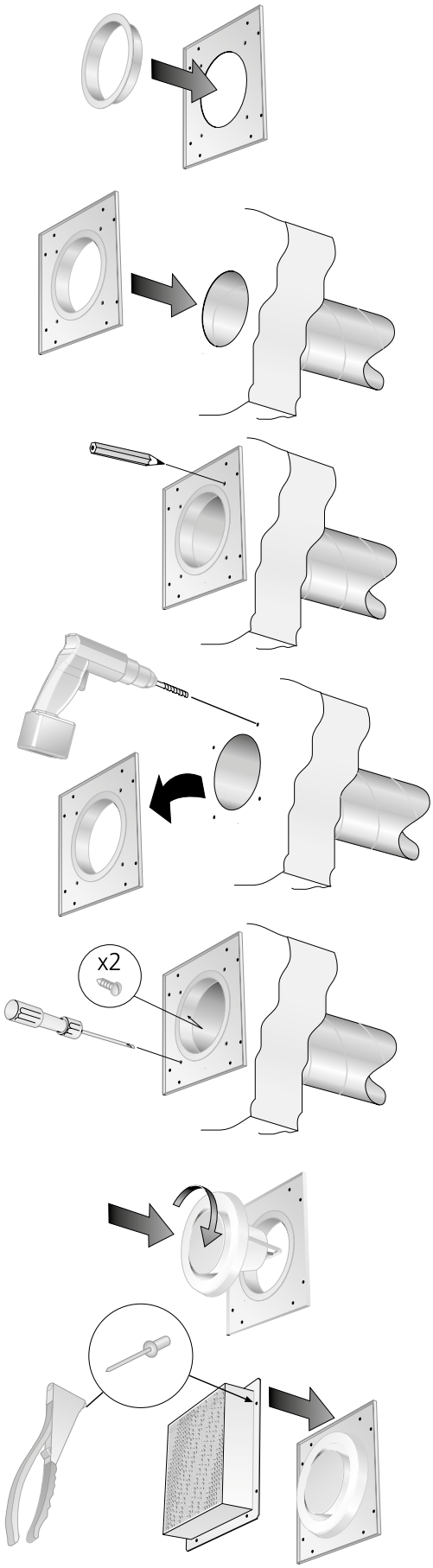


Figure 1. Installation.

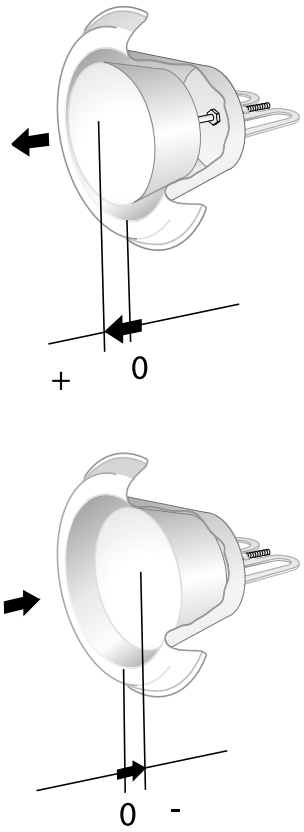


Figure 2. Commissioning.

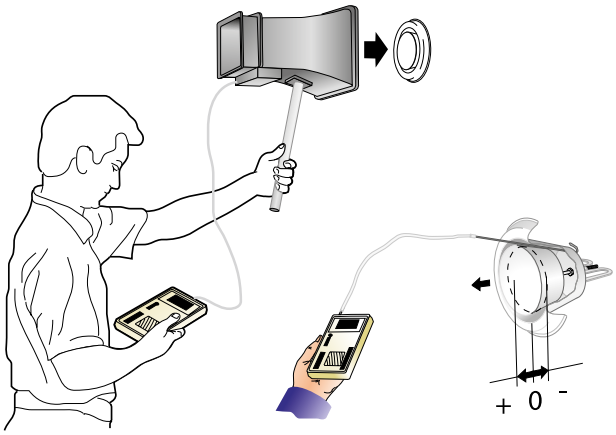


Figure 3. Commissioning.

Sizing

- Sound pressure level dB(A) applies to rooms with 10 m^2 equivalent sound absorption area.
- Sound attenuation (ΔL) below is shown in the octave band. Orifice attenuation is included in the values.
- The octave band correction value K_{OK} gives the cone's zero setting according to Figure 2.
- The attenuation ΔL is given for the cone's zero setting for sizes 100 to 160 and for size 200 at the +10 mm cone setting.

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

ROE – Extract air

Sound power level L_w(dB)

Table K_{OK}

Size	Mid-frequency (octave band) Hz							
ROE	63	125	250	500	1000	2000	4000	8000
100	-1	-4	-6	-5	-1	-1	-9	-12
125	1	-2	-1	-2	-3	0	-10	-11
160	-1	0	-2	-1	0	-5	-7	-11
200	-1	-1	-6	-6	-2	-6	-10	-15
Tol. ±	2	3	2	2	2	2	2	3

Sound attenuation ΔL (dB)
Table ΔL

Size	Mid-frequency (octave band) Hz							
ROE	63	125	250	500	1000	2000	4000	8000
100	23	18	14	12	12	14	5	6
125	21	17	12	11	12	11	7	6
160	19	14	12	11	11	14	5	7
200	15	13	11	11	13	12	7	7
Tol. ±	6	3	2	2	2	2	2	3

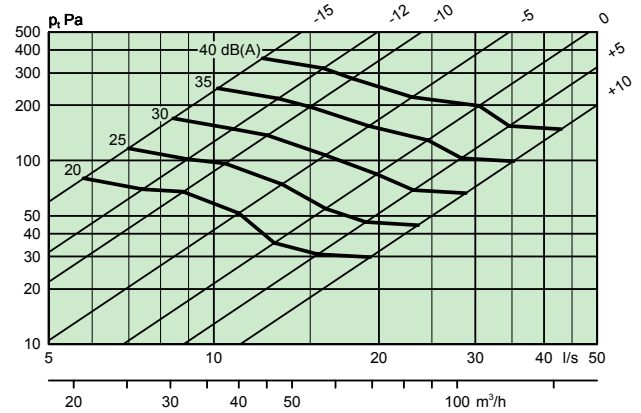
Engineering graphs

ROE – Extract air

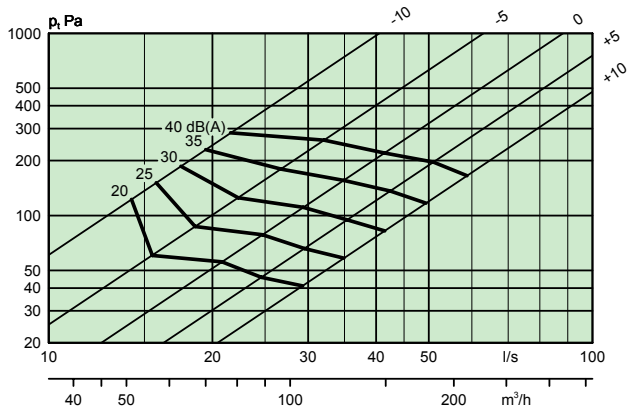
Air flow – Pressure drop – Sound level

- The diagrams show data for ROE recessed in the ceiling.
- The diagrams should not be used for commissioning.
- dB(A) applies for a normally attenuated room (4 dB room attenuation).
- dB(C) the value normally lies 6-9 dB higher than the dB(A) value. For accurate calculations, see the calculation templates in the catalogue's technical section in the chapter Acoustics.

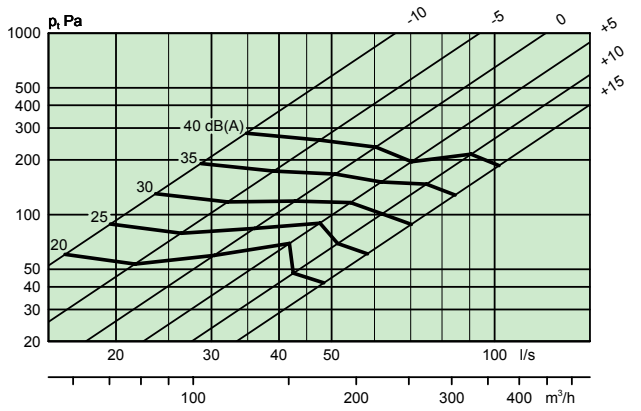
ROE 100



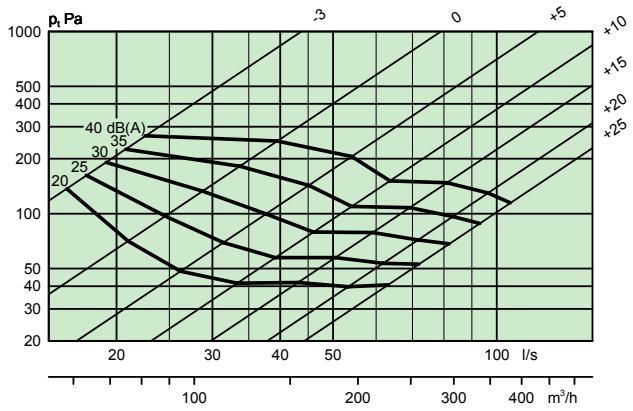
ROE 125



ROE 160



ROE 200



Dimensions and weight

ROE

Size	Dimensions (mm)						Weight (kg)
	A	B	C	ØD	Ød	E	
100	265	225	60	103	99	63	0,5
125	265	225	60	128	124	78	0,6
160	265	225	60	163	159	78	0,8
200	330	290	60	203	199	101	1,3

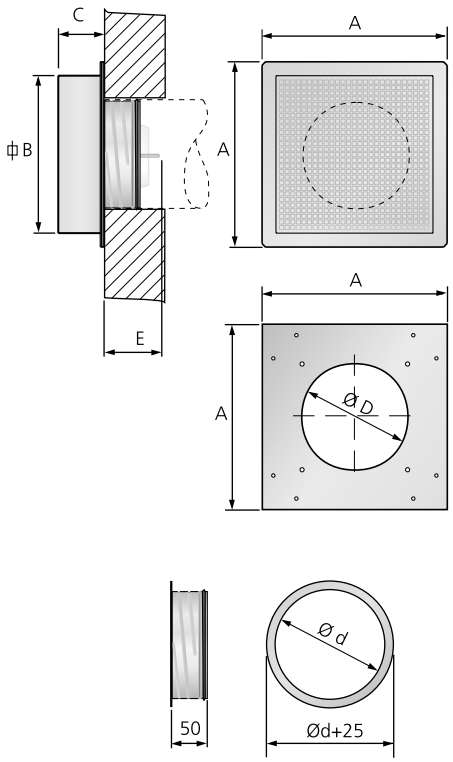


Figure 4. Dimensions, ROE.

Order key

Product

Exhaust exhaust register incl. attachment plate, mounting frame and protective cage	ROE	a	-aaa
Version:			
Size: 100, 125, 160, 200			

Specification example

Swegon's exhaust register type ROE in reinforced design with the following functions:

- Design in 1.5 mm sheet steel
- Lockable setting
- Cleanable
- Powder coated white, RAL 9003/NCS S 0500-N

Size:	ROEa	100	xx items
		125	xx items
		160	xx items
		200	xx items