

Air through perfection

# Volume control damper

# VCD



**ACP**  
Airflow regulation dampers

## Volume control damper VCD



### Description

VCD is a rectangular aluminum damper with opposable blades.

The rectangular damper is mounted on the sections of rectangular duct or wall.

### Technical specifications

#### Characteristics

The damper is made by manual or electric drive.

According to EN 1751 the damper is class 2 sealing.

The width of the blade is 100 mm and is not adjustable.

The blades are parallel to the length.

The product is provided with a sealing gasket positioned on the frame and blades.

The manual operation system has a locking element.

The operating handle/servomotor operates the opening/closing of the blades by means of a 12 x 12 mm shaft.

Mounting the servomotor on the support plate is easy.

Dimensional limits: LxH int = min 200x110 mm and max 2800x2010 mm (with stiffening)

## Materials

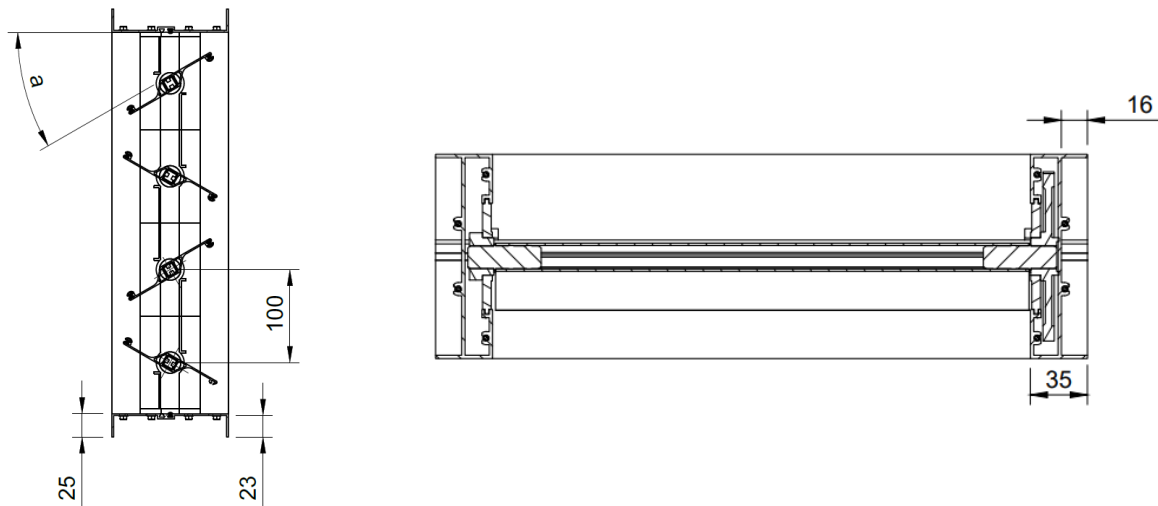
The product is made of natural extruded aluminum profiles (frame, drive mechanism and blade) with gears and polypropylene accessories.

The gasket is made of TPE and PP.

## Maintenance

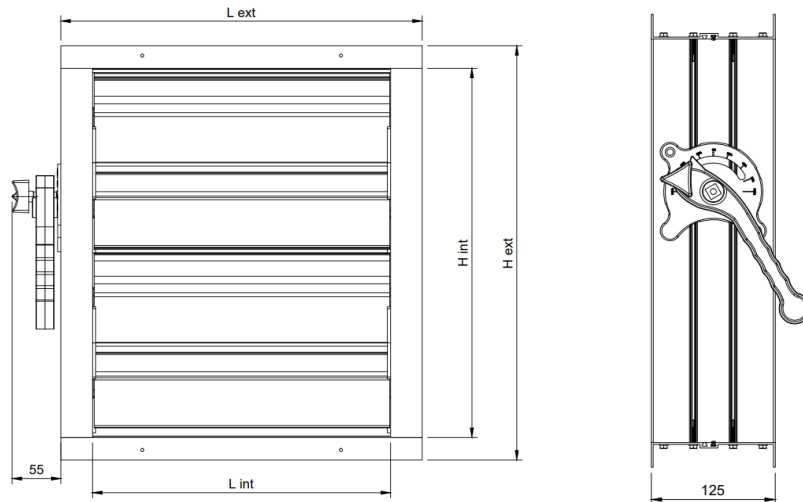
The damper does not require maintenance. The operating system must be checked in the open/closed positions at least once a year.

## Technical drawing

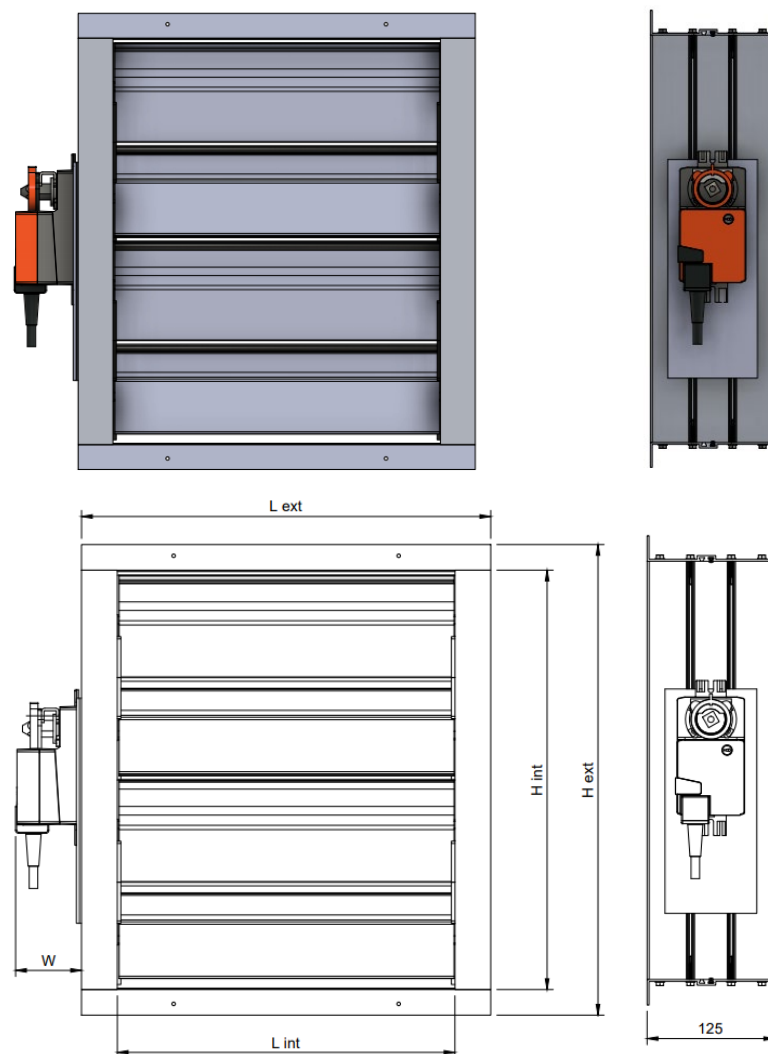


## Manually operated damper (VCD)





### Electrically operated damper (VCD-S)



The servomotor mounted on the VCD-S is ordered separately.

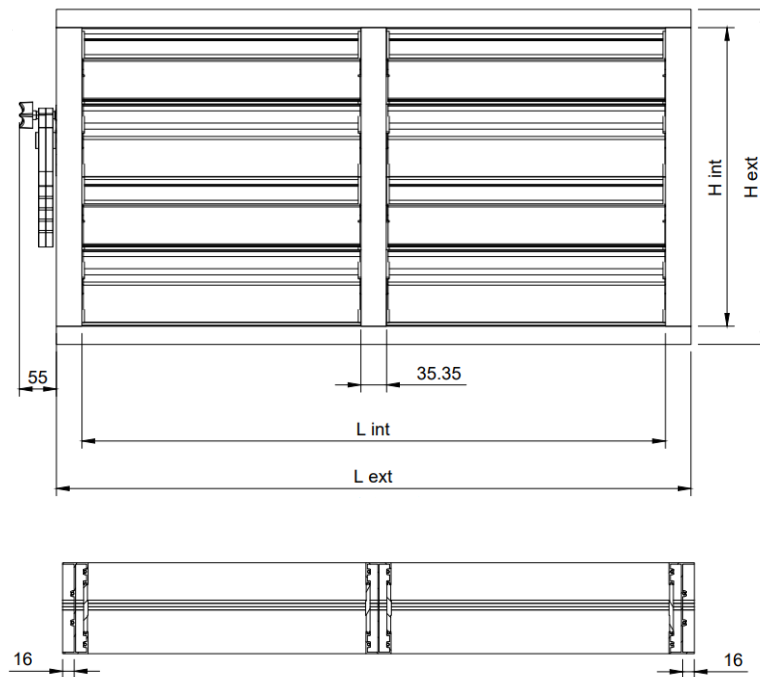
The W dimension is given by the servomotor.

## Product specifications

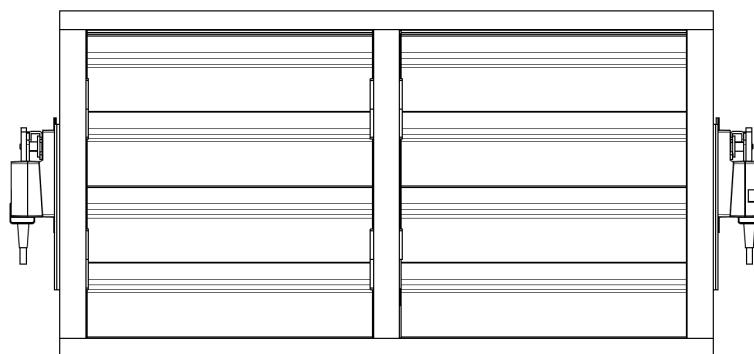
### Dimensional limits of execution

Dimensional limits: LxH int = min 200x110 mm and max 2800x2010 mm (with stiffening).

Regardless of the type of drive (manual or electric), the dampers with L int > 1400 mm are made with a stiffening system according to the drawing below.



Electrically operated dampers with an area  $\geq 4$  sqm require 2 servomotors according to the drawing.



## Accessories

The product can be delivered with Belimo servomotor. The servomotor is selected according to the damper size, supply voltage, safety function and other technical specifications mentioned in the project.

### Belimo servomotor



| Dampers [m²] | Actuator type     | Supply voltage<br>AC/DC 24V | Torque | Running time 90° |
|--------------|-------------------|-----------------------------|--------|------------------|
| up to 1 m²   | Belimo LM 230A    | 230 V                       | 5 Nm   | 150 s            |
|              | Belimo LM 230A-S  |                             |        |                  |
|              | Belimo LM 230A-SR |                             |        |                  |
|              | Belimo LM 24A     | 24 V                        |        |                  |
|              | Belimo LM 24A-S   |                             |        |                  |
|              | Belimo LM 24A-SR  |                             |        |                  |
| up to 2 m²   | Belimo NM 230A    | 230 V                       | 10 Nm  | 150 s            |
|              | Belimo NM 230A-S  |                             |        |                  |
|              | Belimo NM 230A-SR |                             |        |                  |
|              | Belimo NM 24A     | 24 V                        |        |                  |
|              | Belimo NM 24A-S   |                             |        |                  |
|              | Belimo NM 24A-SR  |                             |        |                  |
| up to 4 m²   | Belimo SM 230A    | 230 V                       | 20 Nm  | 150 s            |
|              | Belimo SM 230A-S  |                             |        |                  |
|              | Belimo SM 230A-SR |                             |        |                  |
|              | Belimo SM 24A     | 24 V                        |        |                  |
|              | Belimo SM 24A-S   |                             |        |                  |
|              | Belimo SM 24A-SR  |                             |        |                  |

The required torque depending on the size of the damper is given in the table below. Dampers with H int >> L int requires a servomotor with higher torque.

| H int<br>[mm] | Torque [Nm] |     |     |     |     |     |     |     |      |      |      |
|---------------|-------------|-----|-----|-----|-----|-----|-----|-----|------|------|------|
|               | L int [mm]  |     |     |     |     |     |     |     |      |      |      |
|               | 200         | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 | 1100 | 1400 |
| 110           | 5 Nm        |     |     |     |     |     |     |     |      |      |      |
| 210           |             |     |     |     |     |     |     |     |      |      |      |
| 310           |             |     |     |     |     |     |     |     |      |      |      |
| 410           |             |     |     |     |     |     |     |     |      |      |      |
| 510           |             |     |     |     |     |     |     |     |      |      |      |
| 610           |             |     |     |     |     |     |     |     |      |      |      |
| 710           | 10 Nm       |     |     |     |     |     |     |     |      |      |      |
| 810           |             |     |     |     |     |     |     |     |      |      |      |
| 910           |             |     |     |     |     |     |     |     |      |      |      |
| 1010          |             |     |     |     |     |     |     |     |      |      |      |
| 1010          |             |     |     |     |     |     |     |     |      |      |      |

## Functional parameters

| Discharge area $A_k$ [m <sup>2</sup> ] |            |       |       |       |       |       |       |       |       |       |       |
|----------------------------------------|------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| H int<br>[mm]                          | L int [mm] |       |       |       |       |       |       |       |       |       |       |
|                                        | 200        | 300   | 400   | 500   | 600   | 700   | 800   | 900   | 1000  | 1100  | 1400  |
| 110                                    | 0.016      | 0.024 | 0.036 | 0.047 | 0.056 | 0.067 | 0.073 | 0.085 | 0.095 | 0.104 | 0.129 |
| 210                                    | 0.030      | 0.050 | 0.067 | 0.087 | 0.101 | 0.121 | 0.138 | 0.159 | 0.178 | 0.197 | 0.251 |
| 310                                    | 0.047      | 0.079 | 0.105 | 0.134 | 0.159 | 0.184 | 0.210 | 0.238 | 0.263 | 0.290 | 0.371 |
| 410                                    | 0.062      | 0.104 | 0.141 | 0.173 | 0.210 | 0.245 | 0.279 | 0.315 | 0.351 | 0.386 | 0.492 |
| 510                                    | 0.079      | 0.130 | 0.173 | 0.216 | 0.261 | 0.301 | 0.350 | 0.393 | 0.435 | 0.480 | 0.610 |
| 610                                    | 0.099      | 0.155 | 0.209 | 0.260 | 0.311 | 0.359 | 0.415 | 0.470 | 0.521 | 0.575 | 0.729 |
| 710                                    | 0.110      | 0.180 | 0.242 | 0.300 | 0.361 | 0.424 | 0.483 | 0.539 | 0.607 | 0.668 | 0.849 |
| 810                                    | 0.128      | 0.205 | 0.269 | 0.341 | 0.416 | 0.484 | 0.552 | 0.619 | 0.693 | 0.761 | 0.969 |
| 910                                    | 0.134      | 0.219 | 0.312 | 0.386 | 0.466 | 0.543 | 0.621 | 0.700 | 0.778 | 0.856 | 1.080 |
| 1010                                   | 0.159      | 0.255 | 0.335 | 0.431 | 0.518 | 0.604 | 0.690 | 0.777 | 0.864 | 0.949 | 1.215 |

| a   | V [m/s]           | 1   | 2   | 3   | 4   |
|-----|-------------------|-----|-----|-----|-----|
| 0°  | NR [dB(A)]        | <30 | <30 | 38  | 43  |
|     | $\Delta P_t$ [Pa] | <5  | <5  | <5  | <5  |
| 40° | NR [dB(A)]        | 39  | 54  | 60  | 69  |
|     | $\Delta P_t$ [Pa] | 18  | 65  | 102 | 175 |

The legend

$A_k$  [m<sup>2</sup>] - The free surface

$\Delta P_t$  [Pa] - Pressure loss

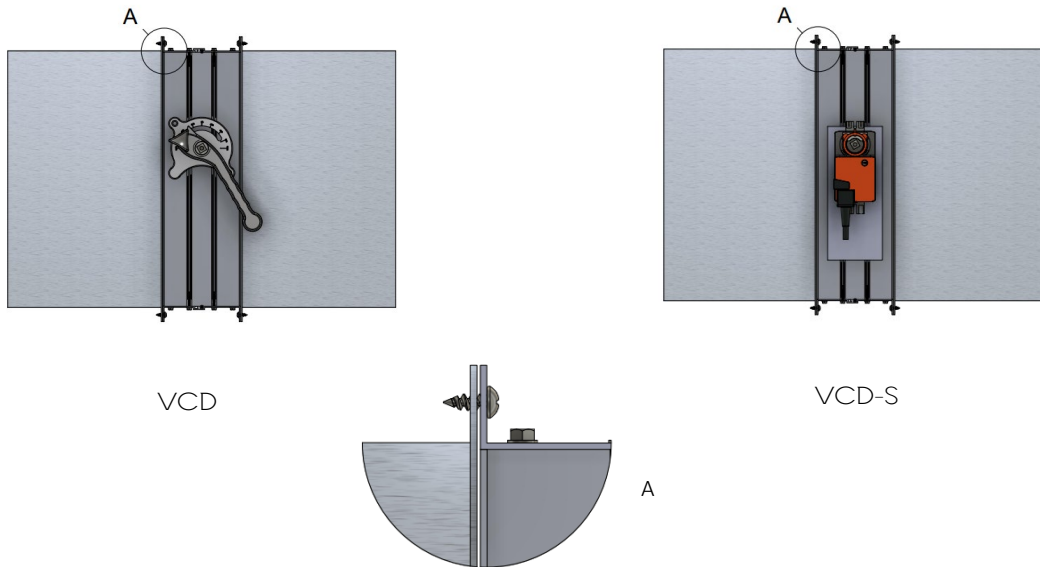
NR [dB (A)] - Noise level without room attenuation

a - The angle of the blade

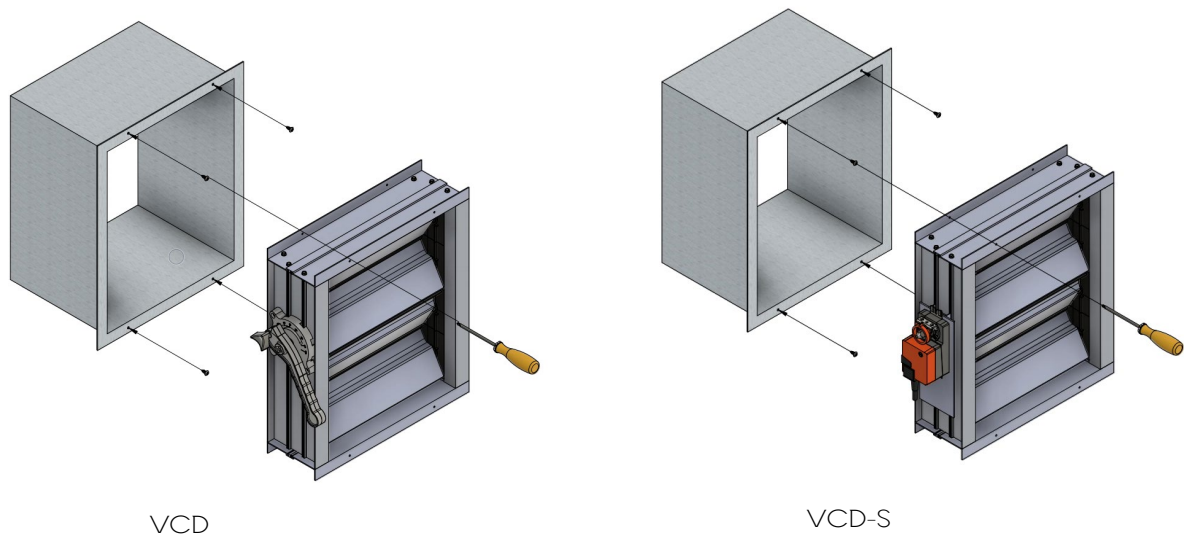
## Installation

The damper can be mounted at the end of rectangular ducts, between two sections of rectangular ducts or on the wall. Fastening is done with screws.

### Installation between duct flanges

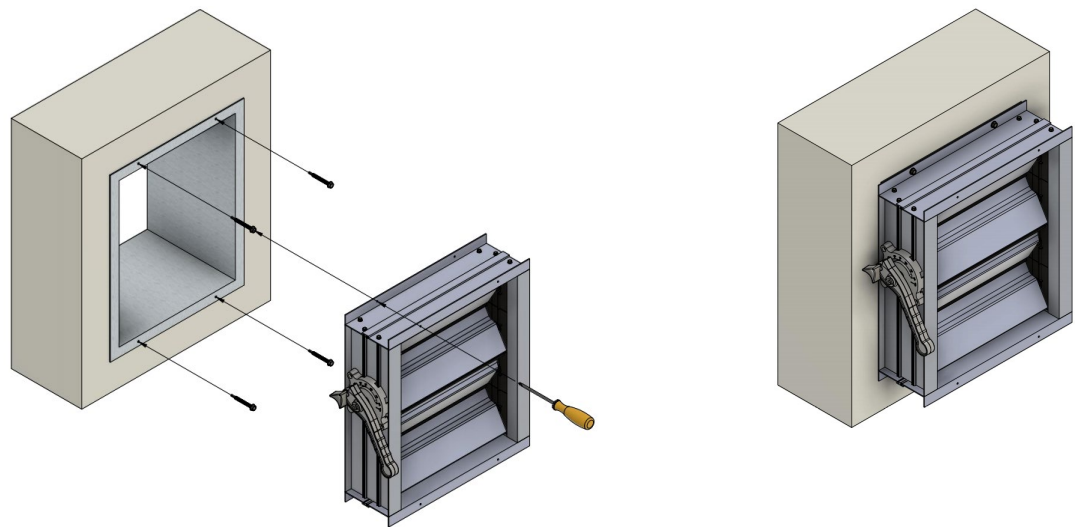


### Rectangular duct end assembly

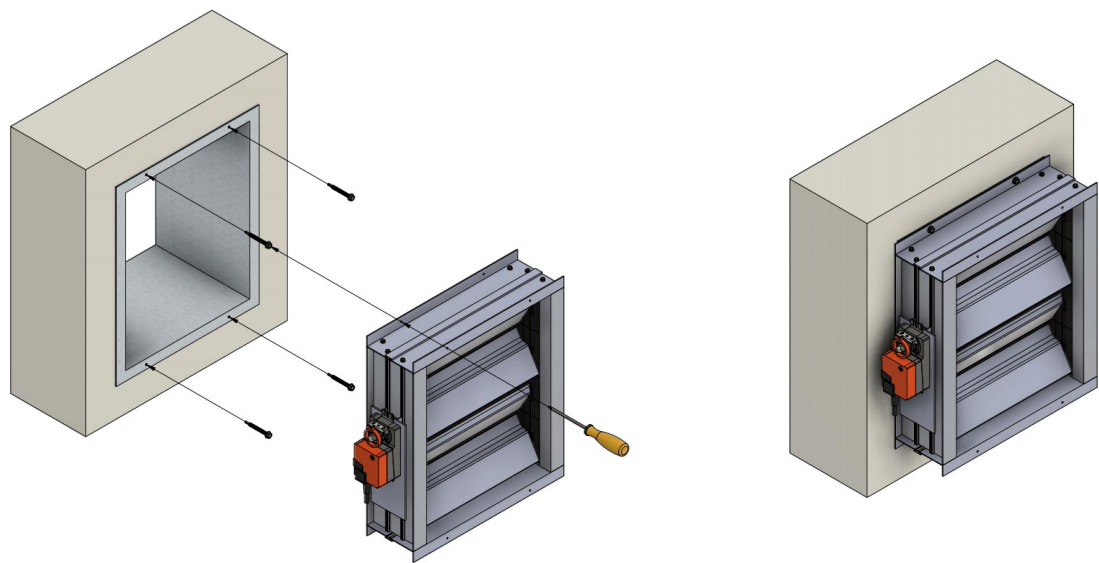


Wall mounting

VCD



VCD-S



Order code

Example on how to place an order

| Type       | Dimensions | Accessories |
|------------|------------|-------------|
| VCD        |            |             |
| VCD-S      |            |             |
| On request |            |             |
| Servomotor |            |             |