

**Damper  
BDEP**  
TECHNICAL DATA



## MANUALLY OPERATED DAMPER

### CONSTRUCTION

The BDEP damper is designed for shutting off and adjusting the air flow in circular ducting systems.

The damper is available in the following versions with respect to tightness class in accordance with EN1751:2014.

- BDEP-1** Adjusting damper to tightness class 0
- BDEP-4** Adjusting and shut-off damper to tightness class 4 (size 008 class 3)

### DESCRIPTION

The damper consists of a cylindrical casing and a damper blade. The blade is manually operated and is equipped with a graduated scale for presetting the damper blade angle.

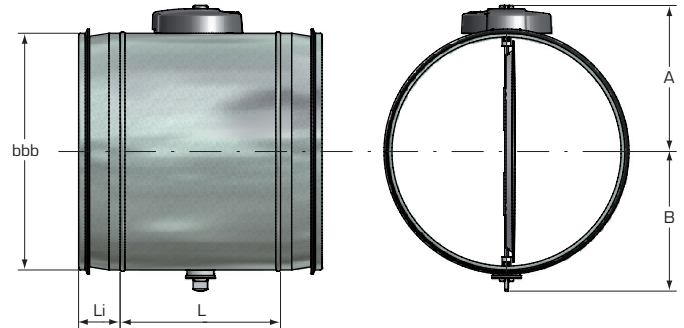
On dampers up to and including size 031, a knob is provided for adjusting the damper blade angle, on larger sizes a lever is provided. The blade angle can be locked by means of a screw.

Size 040 - 063 dampers are suitable as standard for ducts with 50 mm thick external insulation. For sizes 008 - 031 there is snap-on extension handle BDEZ-06 available for ordering when insulation is needed. Model 2 is suitable for 100 mm external insulation.

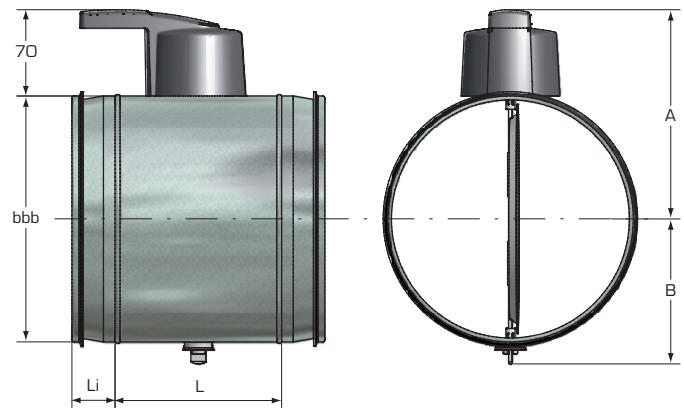
Air tightness class C in accordance with EN1751:2014.

### DIMENSIONS AND WEIGHTS

#### BDEP-a-bbb-1, sizes 008 - 031



#### BDEP-a-bbb-1, sizes 040 - 063



Size bbb	L (mm)	A (mm)	B (mm)	Li (mm)	Weight (kg)
-008	135	80	40	35	0.30
-010	135	90	50	35	0.34
-012	135	100	65	35	0.42
-016	135	120	100	35	0.46
-020	135	140	120	35	0.82
-025	125	165	145	35	1.2
-031	125	195	175	35	1.5
-040	160	270	220	60	2.7
-050	160	320	270	60	3.9
-063	160	385	335	60	5.2

## MANUALLY OPERATED DAMPER

### PRODUCT CODE

**Damper**

**BDEP-a-bbb-c**

#### Version (a)

1 = adjusting damper to tightness class 0

4 = adjusting and shut-off damper to tightness class 4 (size 008 class 3)

#### Size (bbb)

008 - 063

#### Model (c)

1 = standard

2 = with motor bracket & extension handle (suitable for 100 mm external insulation)

3 = with extension handle

### ACCESSORIES

#### Extension handle

for sizes 008-031 with 50 mm external insulation



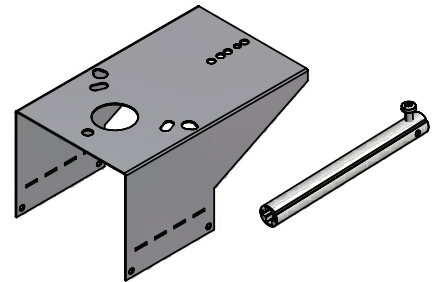
**BDEZ-06**

#### Accessories kit

for modification to direct-acting motor (008-063).

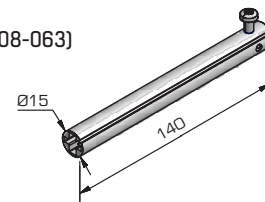
Kit includes BDEZ-39 motor mounting bracket and BDEZ-40 motor adapter.

**BDEZ-42**



#### Motor adapter

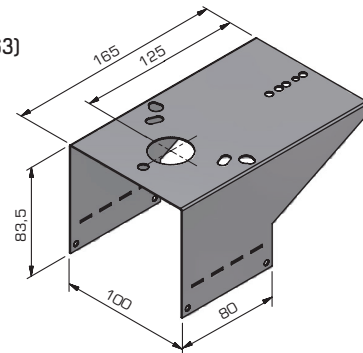
for direct-acting motor (008-063)



**BDEZ-40**

#### Motor bracket

universal (008-063)



**BDEZ-39**

## MOTORIZED DAMPER

### CONSTRUCTION

The damper is available in the following versions with respect to the tightness classes in accordance with in accordance with EN 1751: 2014.

Adjusting dampers, tightness class 0

**BDEP-10** Motor mounting bracket, universal  
Motor shaft  $\varnothing 15$ , excl. motor

**BDEP-13** Type LM..A ON/OFF motor

**BDEP-18** Type LF motor with spring return

**BDEP-19** Type SM..A ON/OFF motor

Shut-off dampers, tightness class 4 (size 008 class 3)

**BDEP-40** Motor mounting bracket, universal  
Motor shaft  $\varnothing 15$ , excl. motor

**BDEP-43** Type LM..A ON/OFF motor

**BDEP-46** Type SF motor with spring return

**BDEP-48** Type LF motor with spring return

**BDEP-49** Type SM..A ON/OFF motor

### DESCRIPTION

The following is applicable to the motorized versions:

The type LM..A and SM..A motors are reversible ON/OFF units. The motor will automatically stop when the adjustable stop on the damper or the motor is reached.

The motor is provided with overload protection which eliminates the necessity of limit switches. The adjustable stop on the motor is set to a 90° opening angle on delivery.

The type SM230A and SM24A as well as the LM230A and LM24A motors can be switched out by means of a switch on the motor casing.

The type SF motor is a reversible ON/OFF unit with a pretensioned return spring which operates on a loss of power supply. The spring is retensioned when the supply is restored. The unit is delivered with the motor preset to close the damper on loss of power.

The type LF motor is a smaller, simpler and lighter damper motor with spring-return. It is suitable for actuating dampers with small dimensions.

Full details of damper motors are available from Belimo, [www.belimo.ch](http://www.belimo.ch).

### PRESSURE DROP AND SOUND DATA

#### Version

aa = 10, 13, 18 and 19, see the charts for BDEP-1, on page 6-7

aa = 40, 43, 46, 48 and 49, see the charts for BDEP-4, on page 6-7

### PRODUCT CODE

#### Damper

**BDEP-aa-bbb-cccc**

#### Version (aa)

see above

#### Size (bbb)

008 - 063 (depending on motortype)

#### Motor voltage (ccc)

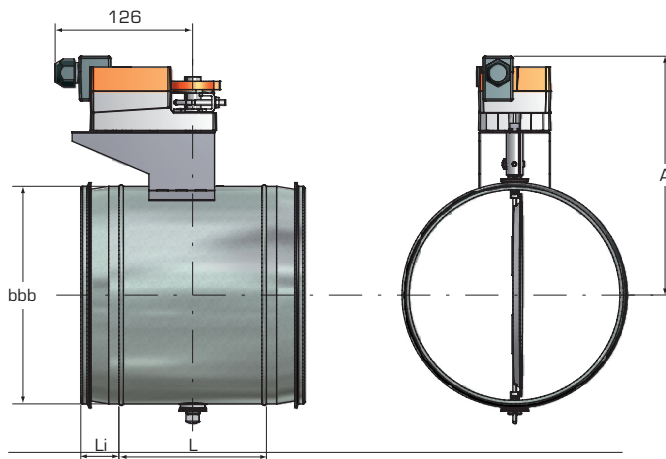
024 = with motor, 24 V

230 = with motor, 230 V

000 = without motor, versions aa = 10, 40

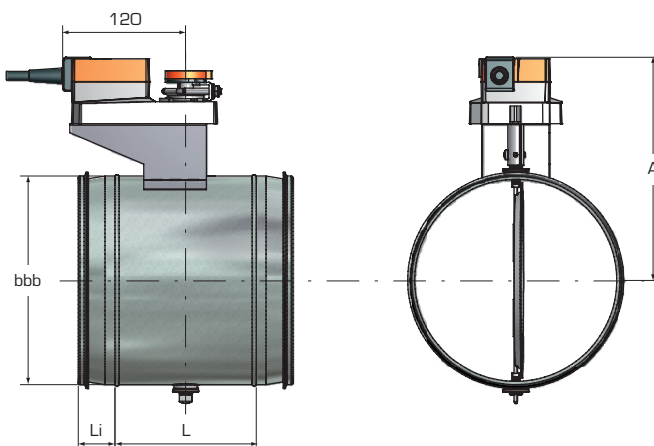
### DIMENSIONS AND WEIGHTS

#### Type LM..A Belimo motor, versions aa = 13 and 43



Size bbb	L (mm)	A (mm)	Li (mm)	Weight (kg)
-008	135	160	35	1.10
-010	135	170	35	1.20
-012	135	180	35	1.30
-016	135	200	35	1.45
-020	135	220	35	2.0
-025	125	245	35	2.4
-031	125	280	35	2.8

#### Type SM..A Belimo motor, versions aa = 19 and 49

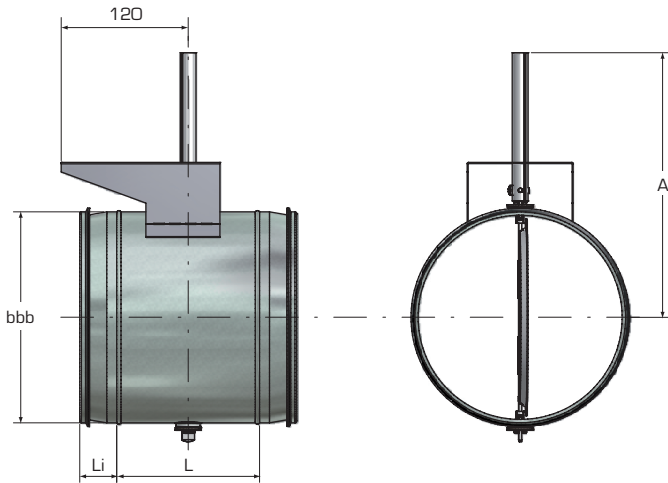


Size bbb	L (mm)	A (mm)	Li (mm)	Weight (kg)
-040	160	315	60	4.1
-050	160	365	60	5.5
-063	160	430	60	6.5

## MOTORIZED DAMPER

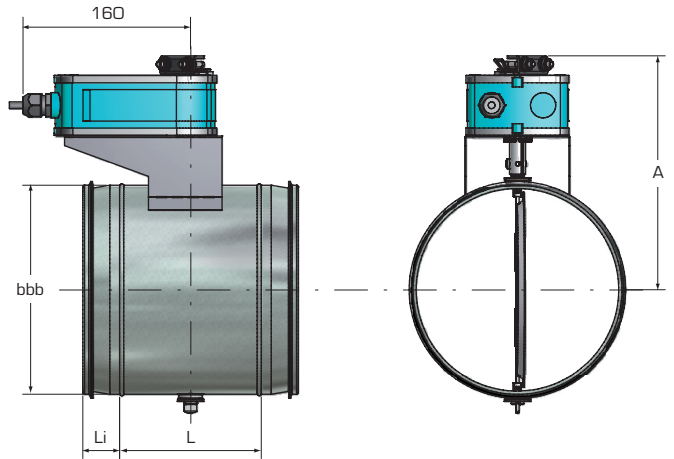
### DIMENSIONS AND WEIGHTS

Damper with motor bracket, universal excl. motor, code suffix aa = 10 and 40



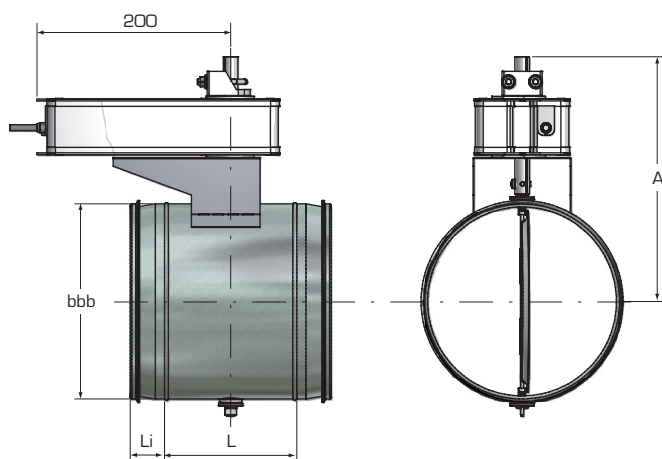
Size bbb	L (mm)	A (mm)	Li (mm)	Weight* (kg)
-008	135	205	35	0.60
-010	135	215	35	0.65
-012	135	225	35	0.75
-016	135	245	35	1.0
-020	135	265	35	1.2
-025	125	290	35	1.6
-031	125	325	35	2.0
-040	160	365	60	3.7
-050	160	415	60	5.0
-063	160	480	95	6.0

Type LF Belimo motor, versions aa = 18 and 48



Size bbb	L (mm)	A (mm)	Li (mm)	Weight (kg)
-008	135	185	35	2.1
-010	135	195	35	2.2
-012	135	210	35	2.3
-016	135	225	35	2.6
-020	135	245	35	2.8
-025	125	270	35	3.2
-031	125	305	35	3.6

Type SF Belimo motor, versions aa = 46

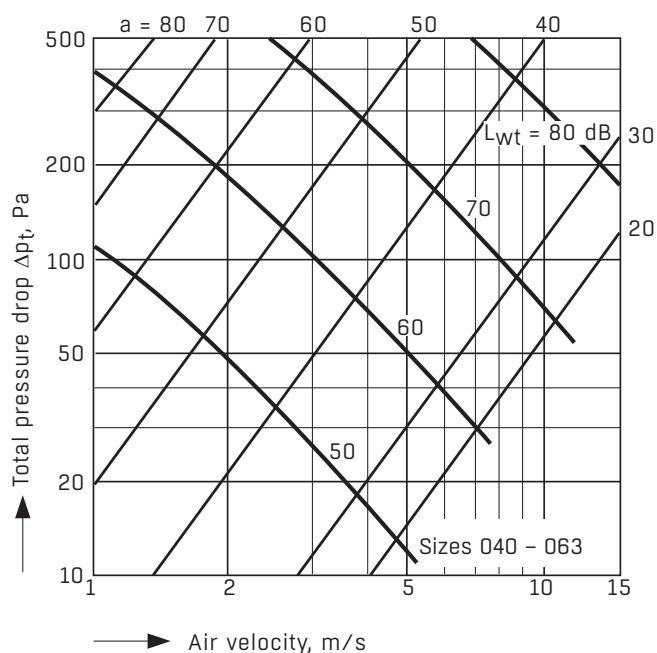
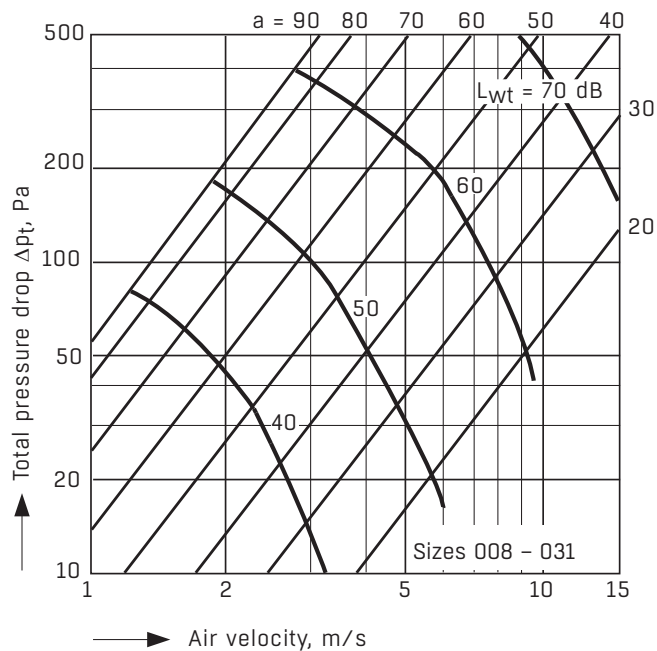


Size bbb	L (mm)	A (mm)	Li (mm)	Weight (kg)
-040	160	365	60	7.0
-050	160	415	60	8.3
-063	160	480	60	9.3

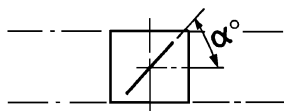
## PRESSURE DROP AND SOUND DATA

### PRESSURE DROP

#### BDEP-1 adjusting damper



$\alpha$  = blade angle



### SOUND DATA

The sound power level,  $L_w$ , emitted to the connected duct can be converted to octave bands as follows:

$$L_w = L_{wt} + K_1 + K_2$$

where  $L_{wt}$ ,  $K_1$  and  $K_2$  can be read from the tables and the charts below.

#### $K_1$ AS A FUNCTION OF SIZE

Size	008	010	012	016	020	025	031	040	050	063
$K_1$ (dB)	-2	-2	-1	0	+1	+2	+3	+4	+5	+6

#### $K_2$ AS A FUNCTION OF THE BLADE ANGLE

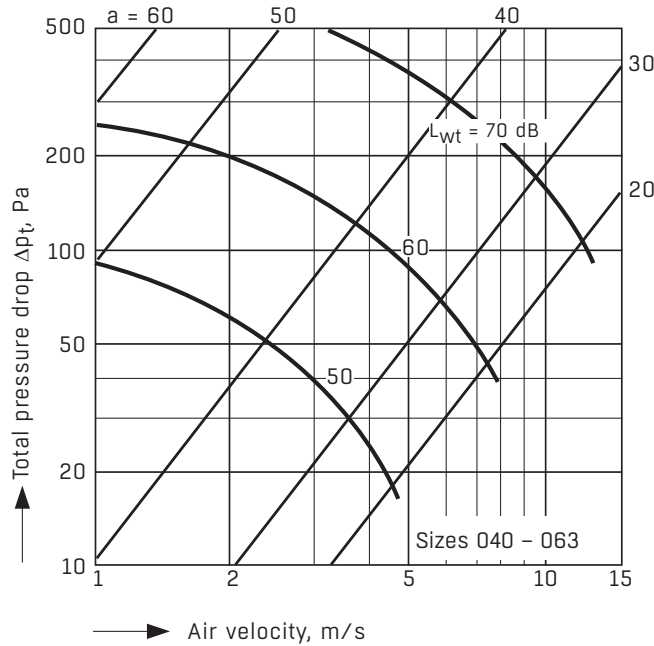
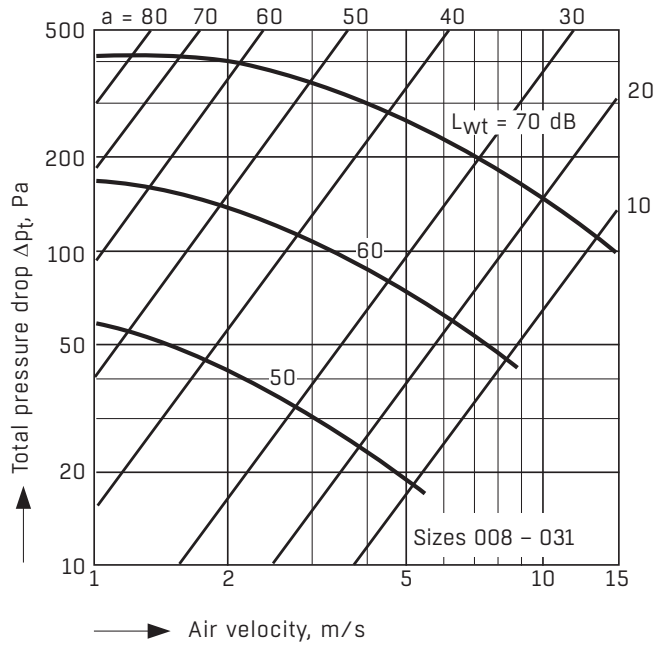
##### BDEP-1 adjusting damper

Size	Blade angle $a^\circ$	$K_2$ (dB)						
		Octave band, mid-frequency (Hz)						
		125	250	500	1000	2000	4000	8000
008-031	20	-1	-10	-16	-18	-22	-26	-31
	30	0	-9	-15	-17	-20	-24	-30
	40	-1	-8	-13	-14	-13	-14	-21
	50	-3	-6	-11	-12	-10	-11	-17
	60	-5	-4	-8	-10	-13	-14	-19
	70	-4	-5	-8	-10	-13	-15	-21
	80	-4	-5	-9	-11	-14	-17	-23
040-063	20	0	-15	-19	-21	-25	-29	-33
	30	0	-15	-19	-21	-24	-28	-32
	40	-4	-14	-16	-15	-18	-21	-25
	50	-7	-13	-14	-11	-11	-14	-18
	60	-11	-12	-11	-6	-5	-8	-11
	70	-14	-13	-12	-6	-5	-8	-12
	80	-17	-15	-12	-5	-5	-8	-12

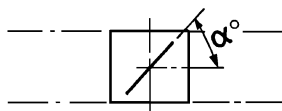
## PRESSURE DROP, SOUND DATA AND TIGHTNESS CLASS

### PRESSURE DROP

#### BDEP-4 adjusting and shut-off dampers



$\alpha$  = blade angle



### SOUND DATA

The sound power level,  $L_w$ , emitted to the connected duct can be converted to octave bands as follows:

$$L_w = L_{wt} + K_1 + K_2$$

where  $L_{wt}$ ,  $K_1$  and  $K_2$  can be read from the tables and the charts below.

#### $K_1$ AS A FUNCTION OF SIZE

Size	008	010	012	016	020	025	031	040	050	063
$K_1$ (dB)	-2	-2	-1	0	+1	+2	+3	+4	+5	+6

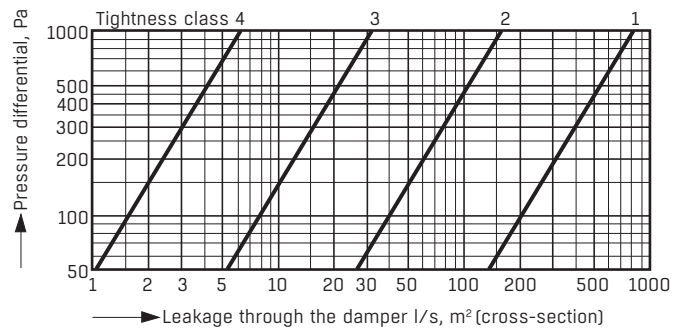
#### $K_2$ AS A FUNCTION OF THE BLADE ANGLE

##### BDEP-4 adjusting and shut-off dampers

Size	Blade angle $a^\circ$	$K_2$ (dB)						
		Octave band, mid-frequency (Hz)						
		125	250	500	1000	2000	4000	8000
008-031	10	0	-12	-15	-22	-27	-32	-37
	20	0	-9	-14	-20	-26	-30	-36
	30	-2	-7	-12	-17	-20	-23	-29
	40	-4	-7	-12	-15	-12	-8	-8
	50	-4	-6	-8	-12	-14	-17	-22
	60	-6	-4	-10	-16	-18	-22	-25
	70	-7	-2	-13	-23	-27	-35	-42
040-063	20	0	-16	-18	-24	-27	-31	-33
	30	0	-13	-16	-20	-21	-26	-29
	40	-1	-10	-13	-17	-16	-20	-24
	50	-5	-11	-12	-13	-11	-15	-19
	60	-12	-13	-13	-9	-6	-11	-13

### AIR TIGHTNESS REQUIREMENTS FOR CLOSED DAMPERS

A closed damper shall meet the requirements on max permissible leakage coefficient for air tightness class according to EN 1751:2014. There are no requirements on air tightness for dampers rated for air tightness class 0.



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