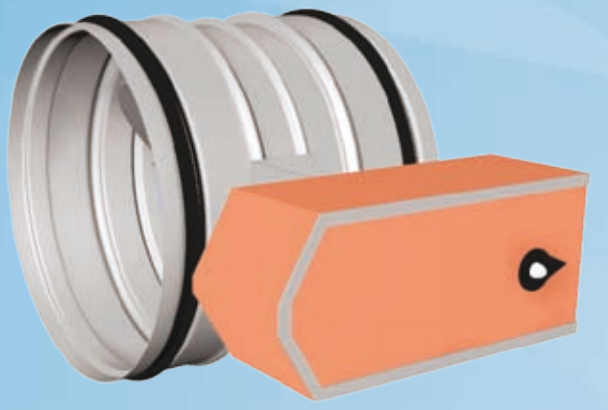
PTR

Smoke Damper

20/PTR/7000/0106/EN



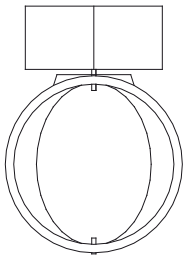
- Prevention of spread of fire and smoke in circular ducts
- Galvanised steel design
- Silicon and thermal expansion graphite seals
- Temperature resistance of materials up to 900°C; silicon seals up to 300 °C
- Spring return actuator
- Damper has a position indicator
- Classification of tightness EN 1751 class 4
- Classification of casing leakage EN 1751 class C
- Inlet and outlet spigots equipped with integral gasket

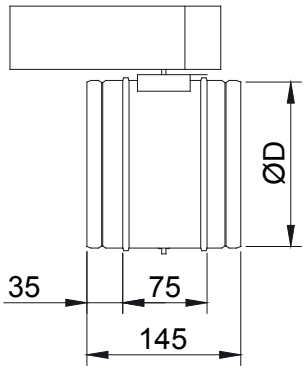
MATERIAL AND FINISHING

PART	MATERIAL
Casing	Galvanised steel
Blade	Galvanised steel
Blade gaskets	Silicon and graphite
External gaskets	MS-polymer

DIMENSIONS

NS	ØD
100	99
125	124
160	159
200	199
250	249
315	314

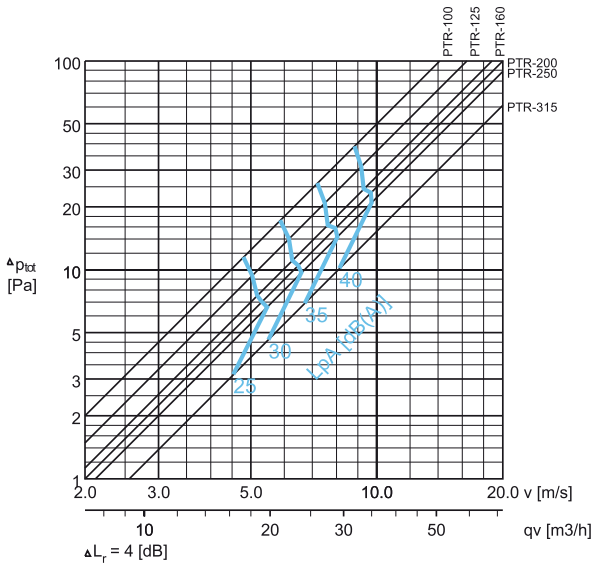


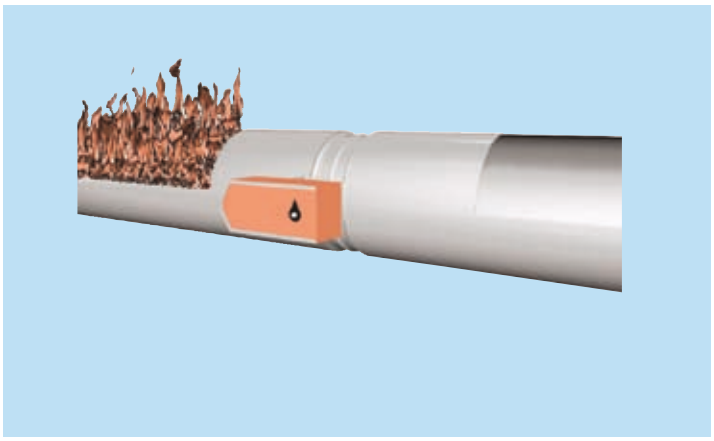


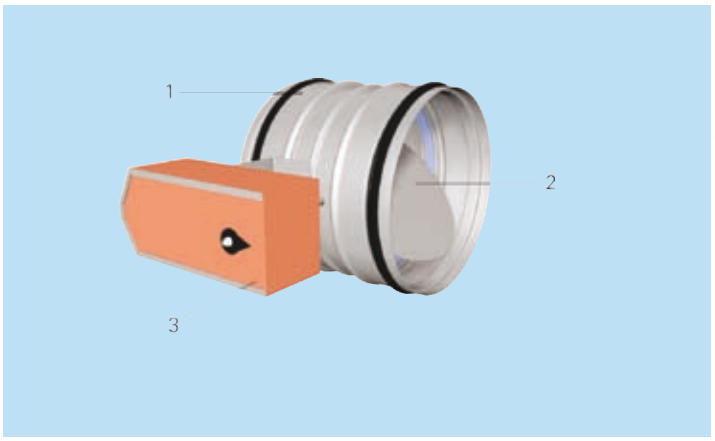
PRODUCT MODELS

Option	M2	M3
Type	Spring return	Spring return
Model	BF24 (Belimo)	BF230 (Belimo)
Power supply	24 VAC +-20%, 50/60 Hz	220-240 VAC, 50/60 H
Optional power supply	24 VDC +- 10%	
Note	24 V power supply by safety-isolating transformer	

Pressure drop and sound data







Function

The smoke damper prevents the spread of fire and smoke in circular ducts. The smoke damper shuts a ductwork branch off in order to prevent the propagation of flue gases in the ventilation system.

Operation in the closed position

The airflow leakage through the damper is very limited. The tightness conforms to EN 1751 class 4. Construction materials resist a temperature of up to 900°C; silicon seals resist up to 300°C.

Operation in the open position

The blade position is parallel to the airflow direction resulting in negligible pressure loss.
The smoke damper should be opened before starting the fan, especially if the operating pressure is high.
The spring return actuator keeps the damper in its normal operating simultaneously tensioning the return spring.
If the power supply is interrupted, the spring turns the damper to the closed position.

Suggested specifications

The casing and blade of the fire damper shall be made of galvanised steel.
The smoke damper shall have a double seal system design in order to ensure low leakage while the damper is closed at temperatures up to 900°C.
The tightness of the smoke damper in the closed position shall conform to EN 1751 class 4.
The casing leakage shall conform to EN 1751 class C.

Installation

The damper is fixed to the duct with rivets or screws. Ensure that the rivet does not prevent the operation of the PTR. The positions of the rivet and screws must be at least 10 mm from the duct end.
The damper is delivered with an actuator, which can be connected according to the instructions.

CODE	DESCRIPTION
1	Casing
2	Blade
3	Actuator

Product code

PTR-D

D = Diameter of duct connection
100, 125, 160, 200, 250, 315

Specifics and accessories

MO = Actuator type
M2 BF24, 24 VDC spring return motor
M3 BF230, 230 V spring return motor

Code example

PTR-100, MO=M2

UTR

Rectangular Smoke Damper

- Prevents the spread of fire and smoke in ventilation ducts
- Galvanised steel design
- Silicon and thermal expansion graphite seals
- Damper position indicator
- Temperature resistance of materials up to 900 °C; silicon seals up to 300 °C
- Classification of tightness EN 1751 Class 3
- Classification of casing leakage EN 1751 Class C

Product models and Accessories

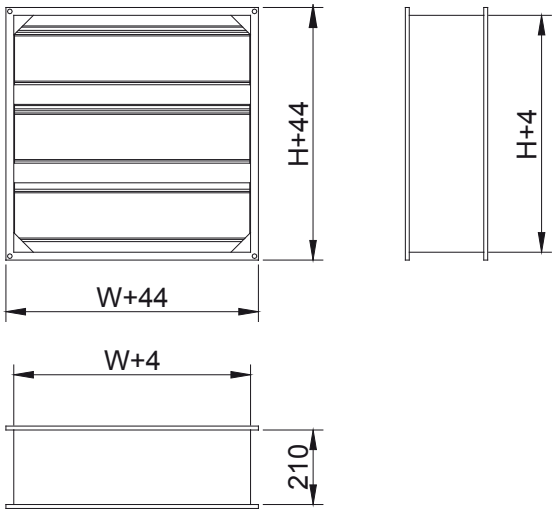
- Model with stainless steel (AISI 316) design
- Circular duct connections
- Spring return actuator with 24-VAC/VDC or 230-VAC power supply

MATERIAL AND FINISHING

PART	MATERIAL	NOTE
Casing, blades	Galvanised steel	Optional stainless steel, AISI 316
Blades (envelope design)	Galvanised steel	Optional stainless steel, AISI 316
Damper blade gaskets	Silicon and thermal expansion graphite seals	
Slide bearings	Stainless steel	AISI 316
Drive shaft	Galvanised steel	Rectangular (15x15 mm) bar
Duct gasket	EPDM rubber	Circular connections

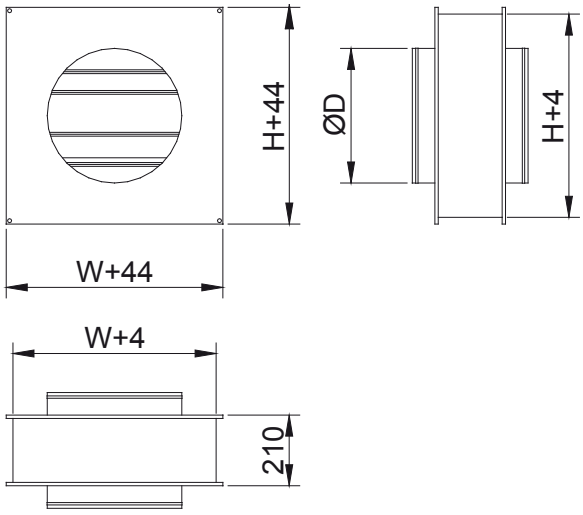
DIMENSIONS

W	H
100,200,...,2400	100,200,...,2400



Models with circular duct connections

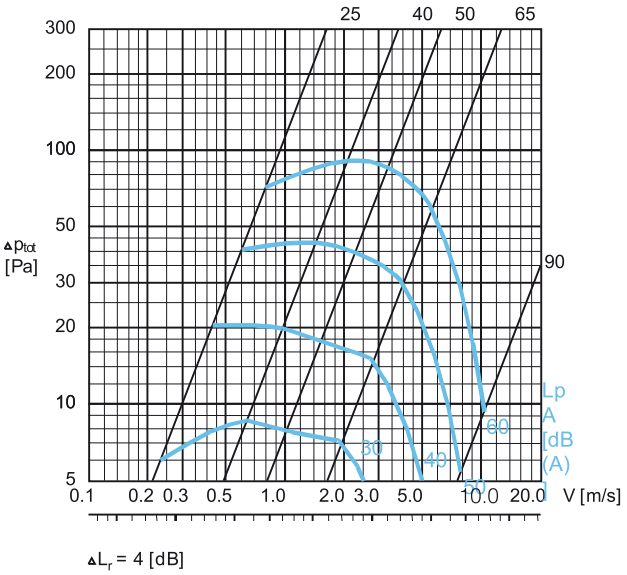
ØD	WxH
160	200x200
200	200x200
250	250x250
315	300x300
400	400x400
500	500x500
630	600x600
800	800x800
1000	1000x1000
1250	1250X1250



Pressure drop and sound data

Sound power level Lw [dB]

UTR



The sound power level L_W in each octave band is computed by adding the corresponding correction factor K_{ok} to the sound pressure level in the selection chart according to the following equation.

$L_W = L_{PA} + K_{ok} + K_A$

The correction factor K_{ok} is the average of the operating area.

A[m²]	0,10	0,12	0,25	0,30	0,40	0,50	0,60	1,0	1,6	2,0
KA /dB	-10	-9	-6	-5	-4	-3	-2	0	+2	-3

f/[Hz]	63	125	250	500	1000	2000	4000	8000
kok	11	11	9	7	5	3	-4	-10
T/dB	+/-6	+/-6	+/-5	+/-4	+/-3	+/-3	+/-3	+/-3

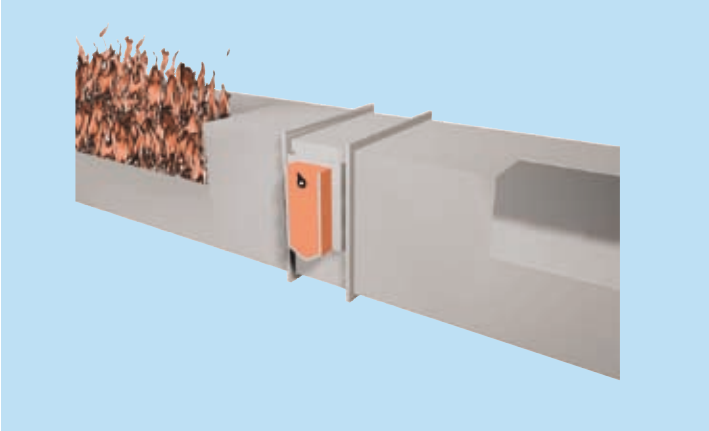
Product models

Actuator options

Power supply 24 VAC +-20 %, 50/60 Hz or 24 VDC +/- 10 %

Note: The 24-V supply must be connected through a safety-isolating transformer.

Option	RE=E1	RE=E3
Type	Spring return	Spring return
Model	BF24 (Belimo)	BF230 (Belimo)
Power supply	24 VAC +-20%, 50/60 Hz	220-240 VAC, 50/60 H
Optional power supply	24 VDC +- 10%	
Note	24 V power supply by safety-isolating transformer	



Function

The UTR smoke damper prevents the spread of fire and smoke in rectangular and circular ducts. The smoke damper shuts a ductwork branch off in order to prevent the propagation of flue gases in the ventilation system.
In the closed position, the airflow leakage through the damper is very limited. The tightness conforms to EN 1751 Class 3 requirements. The construction materials can resist temperatures of up to 900 °C; the silicon seals resist up to 300 °C.
In the open position, the blade position is parallel to the airflow direction, resulting in negligible pressure loss. The smoke damper should be opened before starting of the fan, especially if the operating pressures are high.
The spring return actuator keeps the damper in normal operation, simultaneously tensioning the return spring. If the power supply is interrupted, the spring turns the damper to closed position.

Damper sizes are conform to international standards EN 1505, EN 1506 and ISO 1707 for rectangular and circular ducts.

Installation

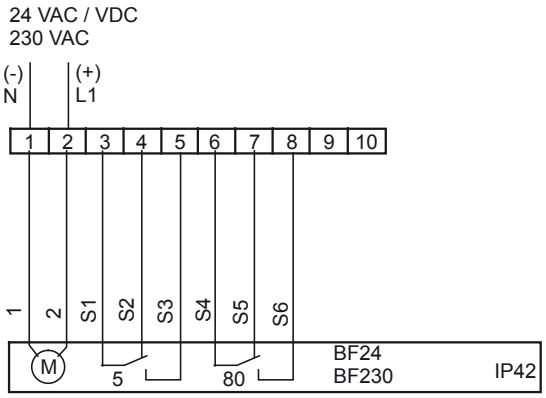
CODE	DESCRIPTION
1	Casing
2	Blade
3	Gasket
4	Actuator

Install the damper with the blades in horizontal or vertical position in the ductwork.
Fasten the damper in place in the ductwork using slip joints.

Use a seal between the flanges in order to tighten the seam.

Fasten the model with circular connections (UTR;CT=D1,D2) by riveting or screwing.

The damper is delivered with an actuator, which is connected according to the instructions.



Suggested specifications

The casing and blades shall be made of galvanised steel (or stainless steel AISI 316).
For the blade gaskets, silicon and thermal expansion graphite seals shall be used.

The drive shaft socket shall be of galvanised steel with self-lubricating slide bearings.
The bearing shall be of an alloy of polyamide and molybdenum sulphide (or stainless steel AISI 316 or stainless steel AISI 304 or bronze) - see the materials chapter - AISI 316.
The damper shall be installed in rectangular ductwork or in circular ducts where D=160...1250 mm in accordance with EN 1751.
The damper shall meet the tightness requirements for EN 1751 Class 3.
The damper shall meet the requirements for tightness of casing leakage that are specified for EN 1751 Class C.

Product code

UTR/S-W-H-D

S = Type of duct connections
- R R=Rectangular connections
- C C=Circular connections

W = Width
- S=R: 100,+50,..,2400
- S=C and D=160: 200
- S=C and D=200: 200
- S=C and D=250: 250
- S=C and D=315: 300
- S=C and D=400: 400
- S=C and D=500: 500
- S=C and D=630: 600
- S=C and D=800: 800
- S=C and D=1000: 1000
- S=C and D=1250: 1250
- S=C: 200

H = Height
- S=R: 100,+50,..,2400
- S=C: W

D = Diameter of duct connection
- S=C: 160, 200, 250, 315, 400, 500, 630, 800, 1000, 1250

Specifics and accessories

CT = Type of circular connection
- D1 1 circular connection
- D2 2 circular connections

RE = Release type
- NA Not assigned
- E1 Electric BF24-2-HL
- E3 Electric BF230-2-HL

MA = Material
- CS Steel
- AS Stainless steel, AISI 316

Code example

UTR/R-100-100, RE=NA,MA=CS