

# Fire Damper BSK-RPR

with general building supervisory approval Z-41.3-681



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## Fire Damper BSK-RPR

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## Fire Damper BSK-RPR

### Description

Shut-off dampers against fire and smoke in ventilation ducts - fire dampers - are used for the automatic locking of fire lobbies in ventilation and air conditioning systems. They constitute unregulated construction products according to Building Regulation List B Part 2 and are subject to approval. The "General and Special Conditions" of the general building supervisory approval Z-41.3-681 in its current form, the mounting and operating instructions and the common standards and guidelines must be observed in connection with this technical documentation.

For maintenance, servicing, retrofitting, etc., it may be necessary to provide on-site inspection openings in suspended ceilings, shaft walls, etc. They must be built in in sufficient numbers and size.

- Housing made of galvanised sheet steel, optionally:
  - Housing made of stainless steel material no. 1.4301 or 1.4571
  - Housing with powder coating in RAL 9010
  - Housing with DD PU painting
- Model with plug connection (-S) or flanged connection (-F) to DIN EN 12220 and DIN 24154-1, respectively.
- Shut-off damper made of silicate fire protection boards, cold and hot leakage requirements according to DIN EN 1366-2 are met by circumferential lip and intumescent seals.
- Horizontal and vertical position of the damper leaf possible
- Thermal release via fusible link 72°C or 98°C, optionally with electric or magnetic trigger devices.
- Connection of a smoke trigger device with general building supervisory approval (e.g. SCHAKO RMS-L, see catalogue Air, Part 2, subregister 09.e) in connection with suitable electric or magnetic release devices to the fire damper is possible; the propagation of fire and smoke is effectively prevented and the requirements of the Model Building Regulation (MBO) are fulfilled. Optimal detection and switching operations by addition of the SCHAKO KOMES bus system (see catalogue Air, Part 2, subregister 09.c) possible.
- Application: max. 1000 Pa operating pressure at  $v_{\text{face}}$  10 m/s, mounting position independent of the air flow direction.

### Quality assurance

Regular, legally required self-monitoring and external monitoring carried out by the materials testing institute MPA Baden-Württemberg guarantee highest quality. Manufacture according to EN ISO 9001 certified QM procedure.

### Note regarding smoke extraction

Fire damper BSK-RPR with spring return actuator can be used for cold gas purge ( $t_{\text{duct}} < 72^{\circ}\text{C}$  and  $t_{\text{surroundings}} < 50^{\circ}\text{C}$ ).

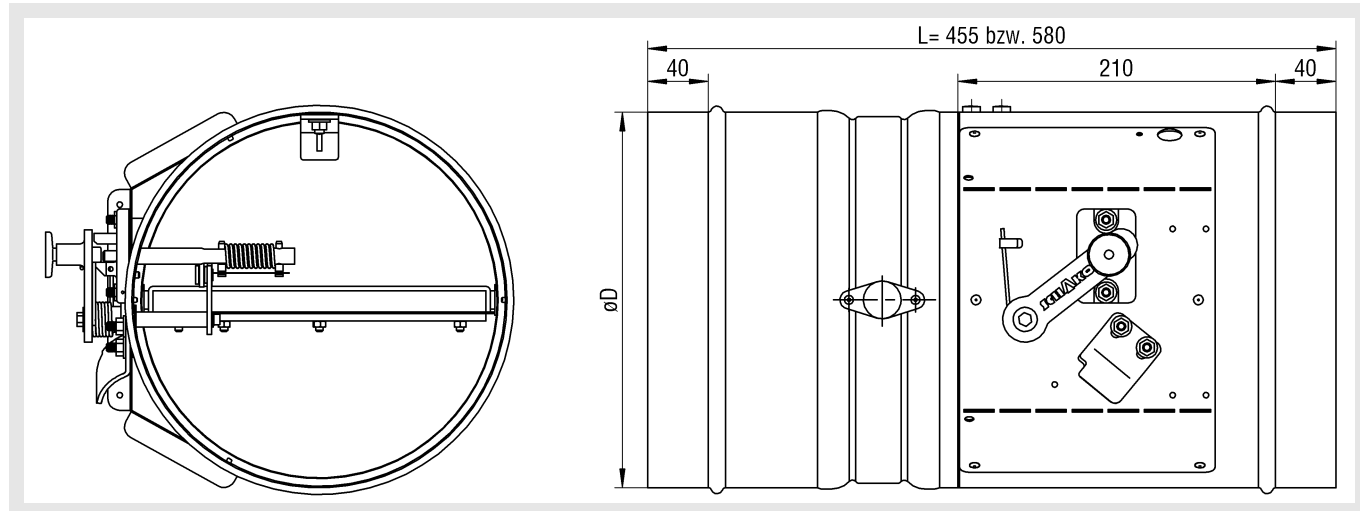
Opening/actuating the BSK-RPR after a thermal release is only possible by an approval in each individual case. This approval is granted by the competent supreme building authority, country-specific deviations being possible. Once the approval has been given, a gas purge of up to about  $t_{\text{duct}} < 140^{\circ}\text{C}$  is possible.

# Fire Damper BSK-RPR

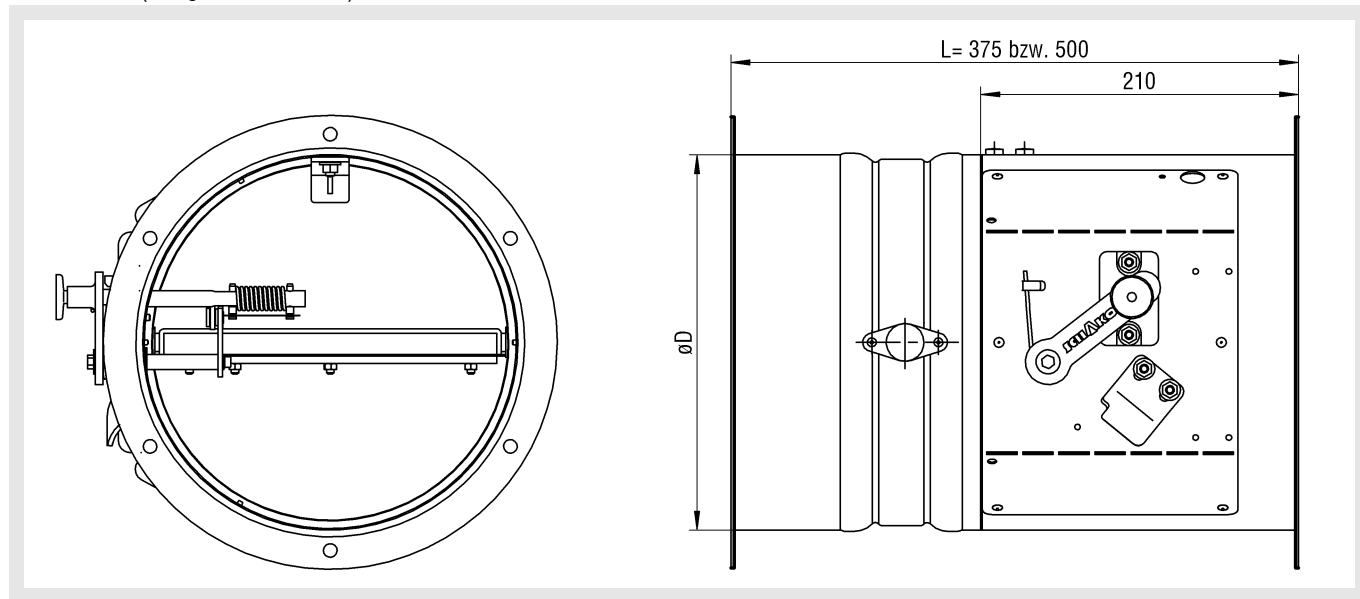
## Models and dimensions

### Dimensions

#### BSK-RPR-S (plug connection)



#### BSK-RPR-F (flanged connection)

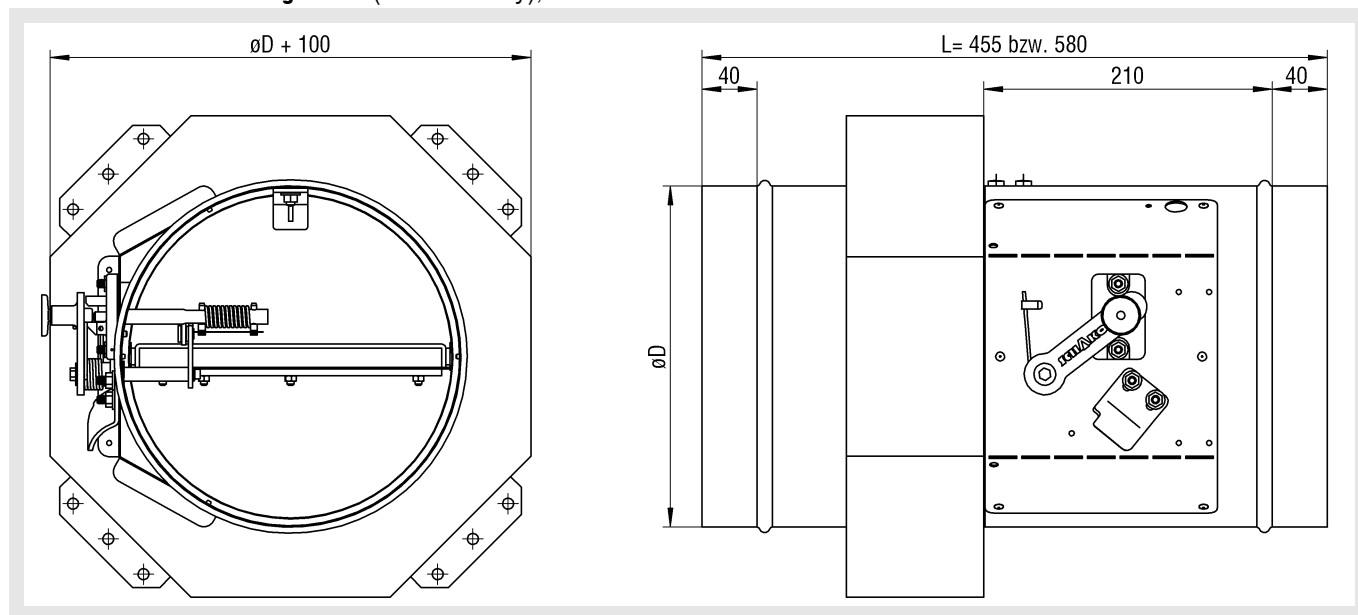


#### Available sizes

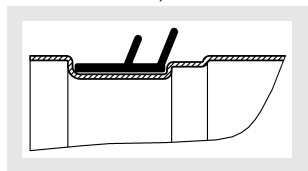
$\varnothing D$	L	
	BSK-RPR-S	BSK-RPR-F
100		
125		
140	455	375
160		
180	580	500
200		
224		
250		

## Fire Damper BSK-RPR

**BSK-RPR-S with mounting frame** (model -S only), must be mounted ex works



With model -S, connection with rubber lip seal as accessory



## Application range

According to the local regulations regarding ventilation systems (directive regarding the fire protection requirements of ventilation systems), the BSK-RPR-... is designed for vertical and horizontal installation in ventilation ducts.

The BSK-RPR-... has fire resistance class K90 when installed in the room-room-enclosing components listed below if provided with ventilation ducts (non-flammable and flammable) on both sides or with ventilation ducts on one side and a protective grating on the other side.

- In or on massive walls of fire resistance class F90 and a minimum thickness of 100 mm.
- In or on massive ceilings of fire resistance class F90 and a minimum thickness of 100 mm.
- In or on lightweight partition walls according to DIN 4102-4, Table 48, with metal post and lining on both sides of fire resistance class F90 and a minimum thickness of 100 mm.
- In or on lightweight partition walls with metal post and lining on both sides of fire resistance class F90 and a minimum thickness of 100 mm, if a valid general building supervisory test certificate (abP) is available for the partition walls.
- In or on lightweight partition walls with metal post and lining on one side of fire resistance class F90 and a minimum thickness of 125 mm.

- Outside of massive walls, with horizontal and vertical mounting position, if the BSK-RPR-S has been connected to the fire-resistant wall with a mounting frame by means of a ventilation duct free of openings with a proven fire resistance period of 90 minutes.

When installed in massive walls/ceilings of lower fire resistance class than F90, the BSK-RPR has the same fire resistance class as the above component to be protected.

The use of the BSK-RPR-... without connecting ventilation ducts using protective gratings (overflow/continued flow) is not allowed. An approval must be obtained in each individual case by the building owner or a person authorized by him from the supreme building authority of the respective federal state.

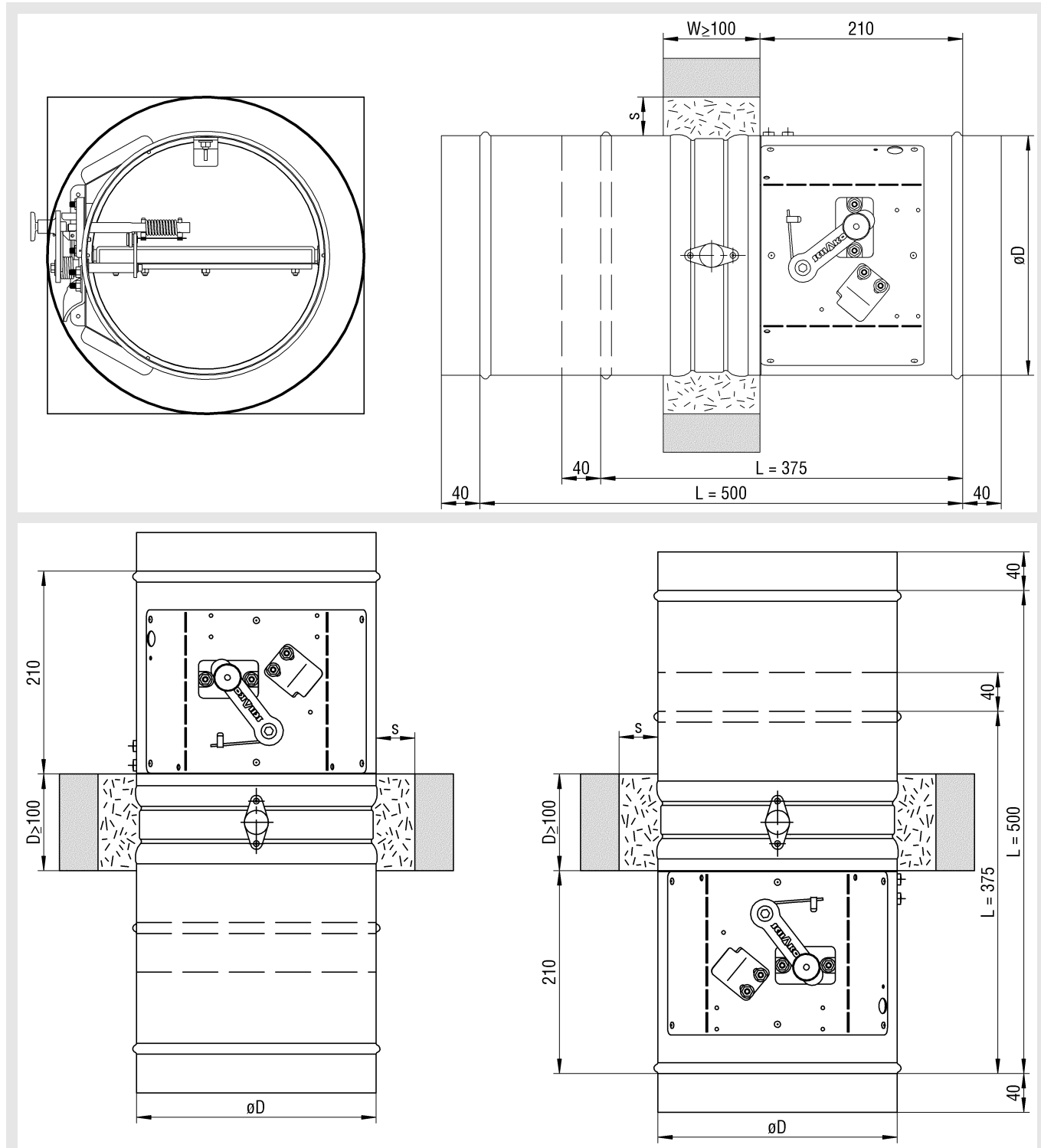
## Fire Damper BSK-RPR

### Installation details

#### Installation in/on massive walls and ceilings

#### Installation in massive walls and ceilings

With fire resistance duration F30, F60, F90, including shaft walls, shafts, ducts and fire walls.



Circumferential gaps  $s$  must be filled with mortar of group II or III (DIN 1053) or with concrete. For gypsum wall boards, gypsum or gypsum mortar can also be used.

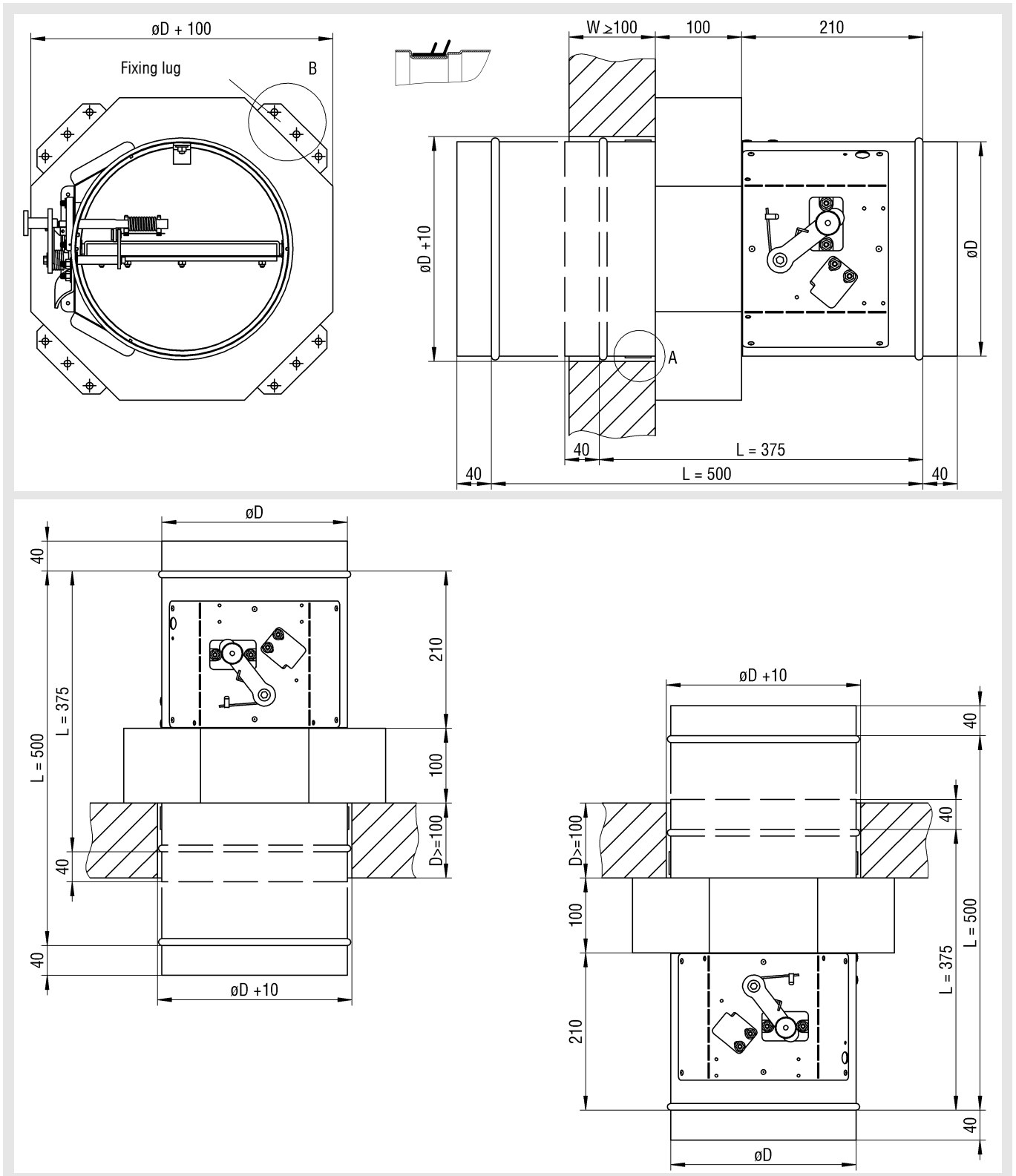
$s_{\min} = 40 \text{ mm}$  (in general  $s_{\text{general}} = 60 \text{ mm}$ , for easier mortar lining)

If during the construction of the wall/ceiling, the shut-off damper is installed, the gaps "s" can be omitted. Installation openings may be round or square.

## Fire Damper BSK-RPR

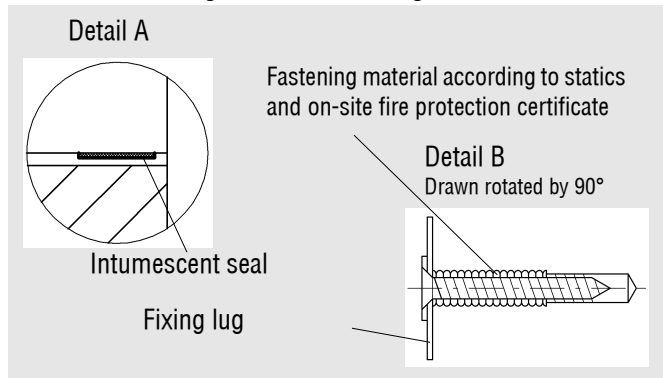
### Installation in massive walls and ceilings

For fastening to massive walls, only approved fastening materials (dowels, etc.) must be used. For fastening, the medium bores of the fixing lugs are used, i.e., 4 per shut-off damper.



## Fire Damper BSK-RPR

### Detail for fastening to wall and ceiling



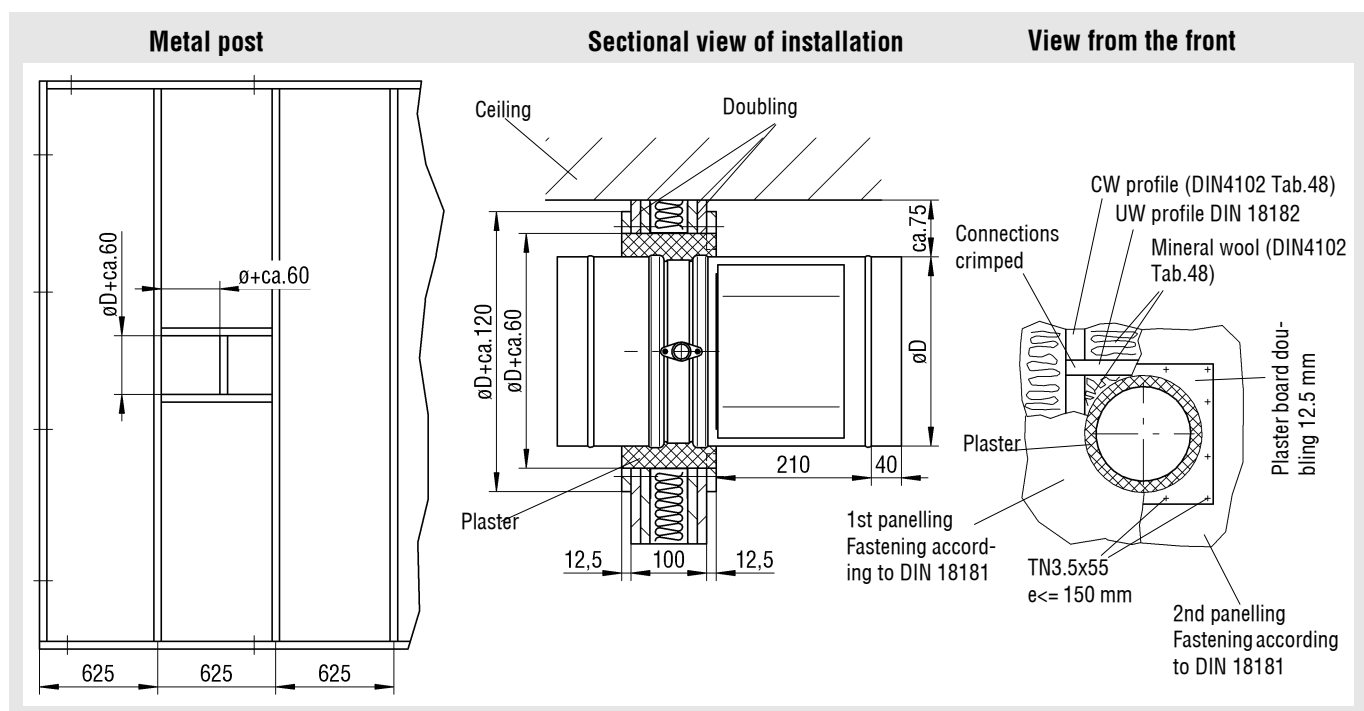
### Mounting sequence

- 1.) Assembly of the massive wall
- 2.) Drill core hole bore  $\varnothing D + 10$ .
- 3.) Place 4 dowels
- 4.) Slide in shut-off damper + screw it down.

### Installation in/on lightweight walls with metal post and panelling on both sides

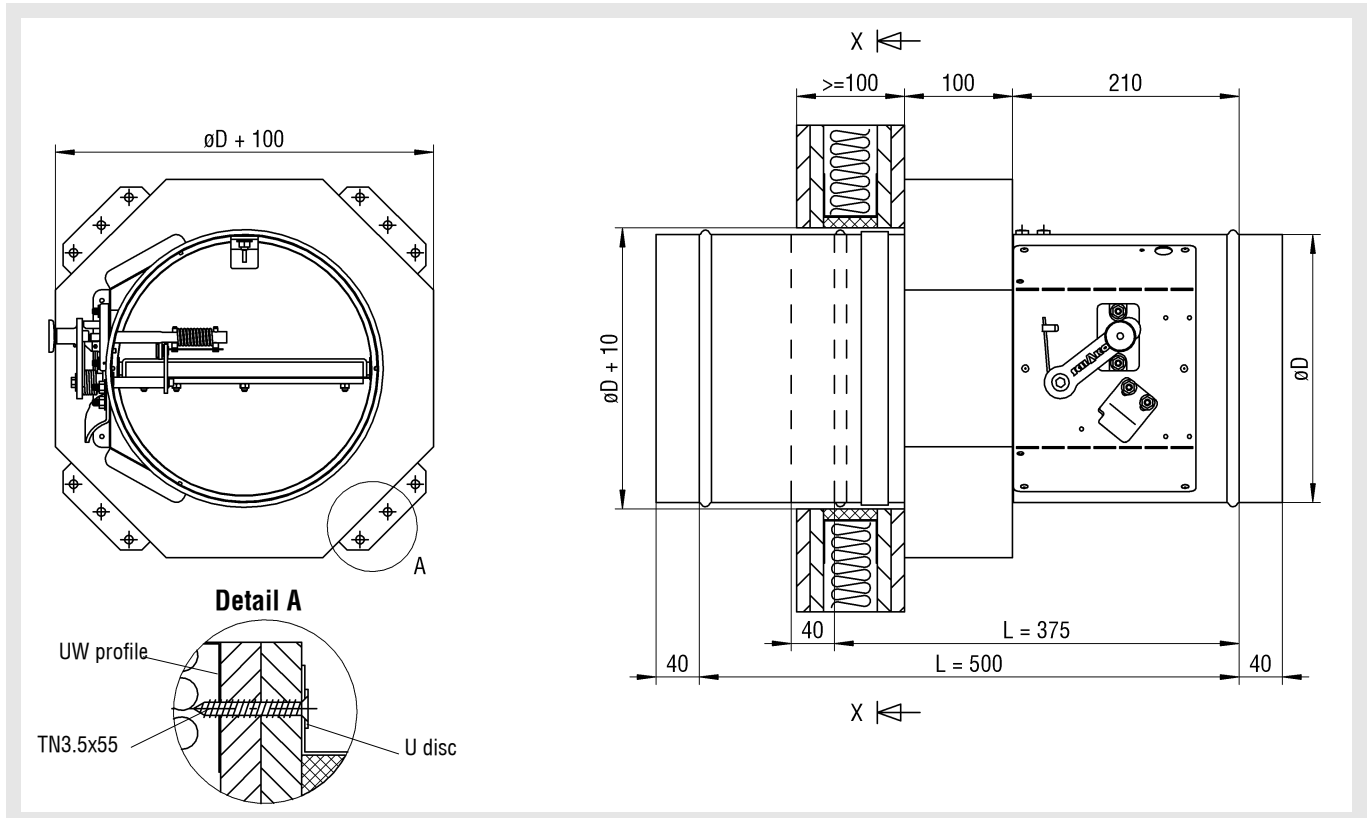
#### Installation in lightweight walls with metal post (wet installation)

Installation in lightweight walls according to DIN 4102-4 Tab.48 with horizontal or vertical damper leaf. No additional suspensions or fixings are allowed, any mounting aids must be removed. Installation of flexible connection pieces required on both sides (alternatively: flexible ventilation duct made of aluminium)

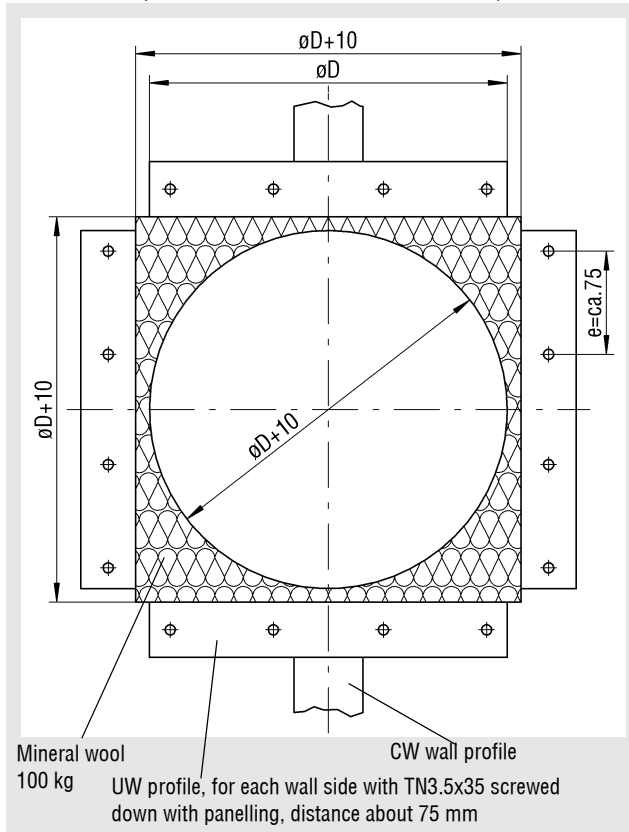


# Fire Damper BSK-RPR

Installation in lightweight walls with metal post with mounting frame (dry stone)



## Section X-X (metal post area without panelling)



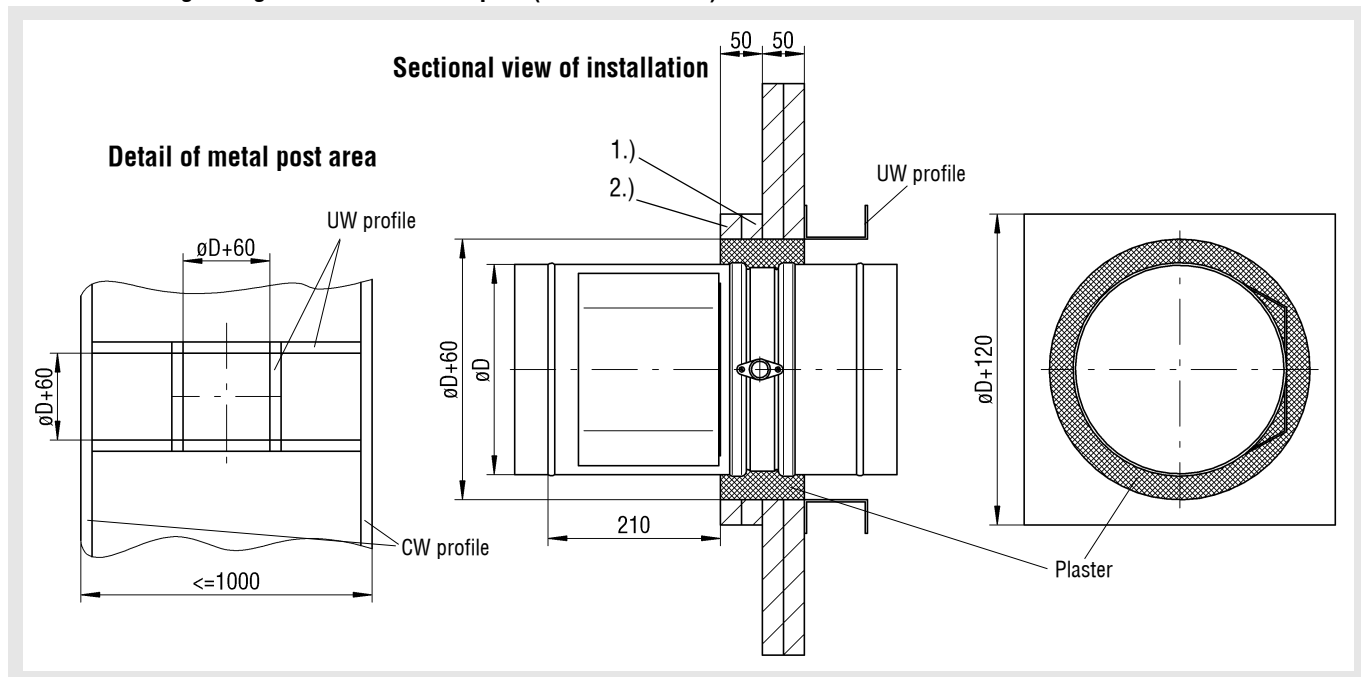
## Mounting sequence

- 1.) Assembly of the lightweight partition wall
- 2.) Cut out installation opening  $\varnothing D + 10$
- 3.) Refill circumferentially with wand wool
- 4.) Slide in UW metal post profiles and screw them down
- 5.) Introduce mineral wool into the metal post area according to the metal post dimensions
- 6.) Cut out mineral wool with knife according to the installation opening
- 7.) Slide in shut-off damper and screw it down.

## Fire Damper BSK-RPR

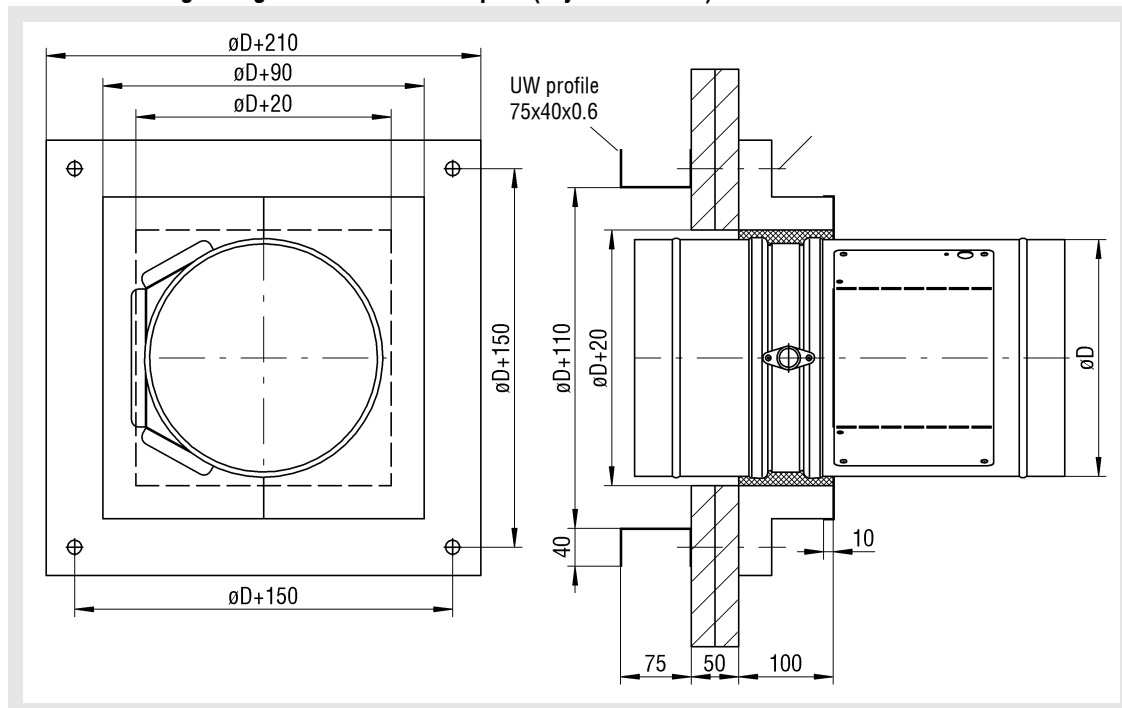
Installation in/on lightweight walls with metal post and panelling on one side (shaft walls/facing formwork)

Installation in lightweight walls with metal post (wet installation)



- 1.) Doubling with quick-mounting screws 5.1 x 80 screwed down with profile.
- 2.) Doubling with quick-mounting screws 5.1 x 110 screwed down with profile.

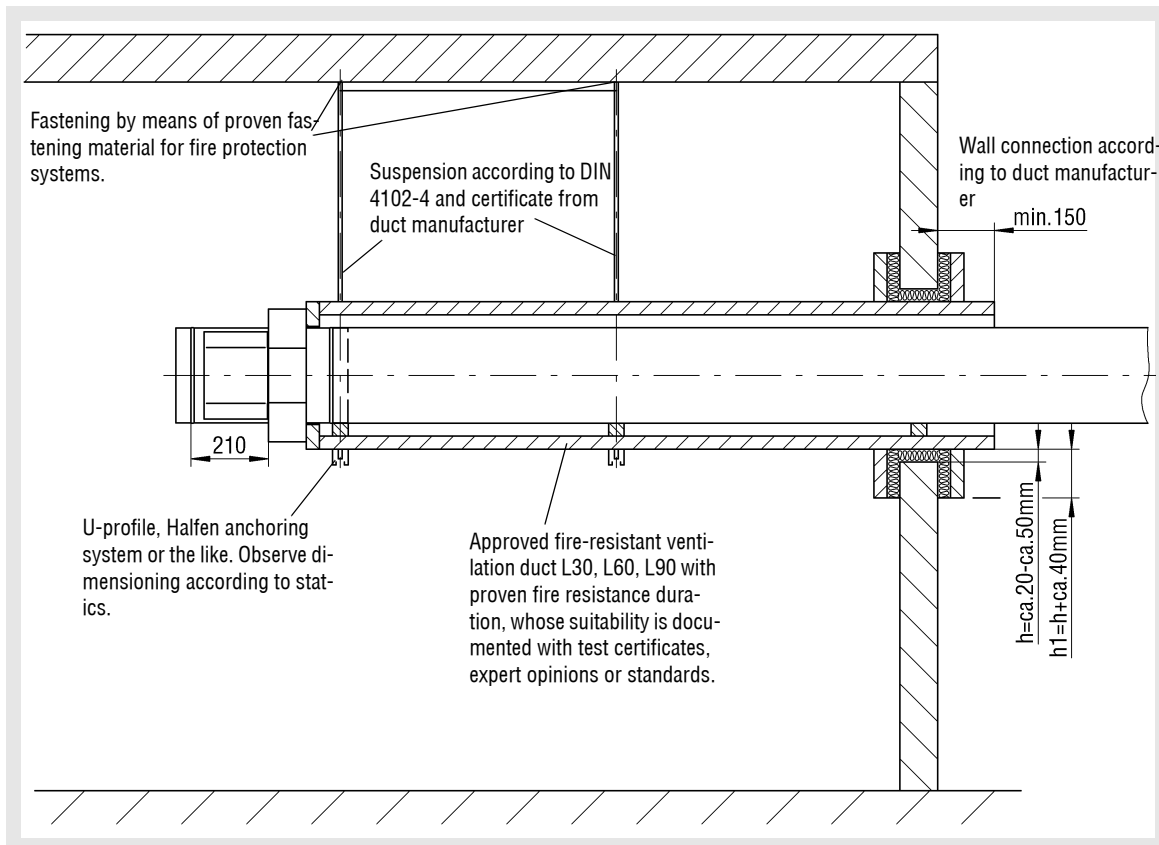
Installation in lightweight walls with metal post (dry installation)



## Fire Damper BSK-RPR

### Installation outside massive walls

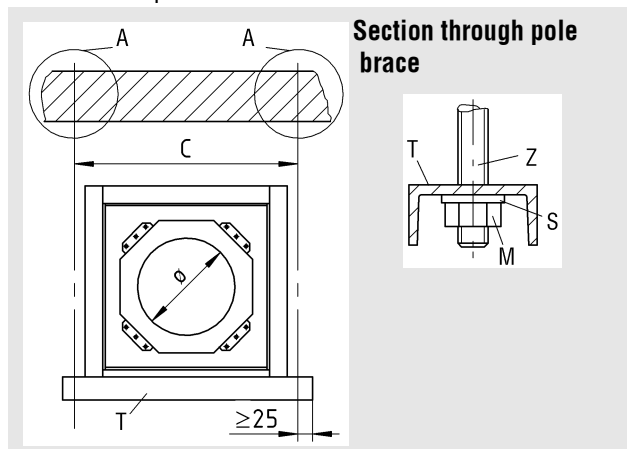
Installation outside walls with horizontal/vertical damper blade. Installation in connection with fire-resistant ventilation ducts free of openings L30, L60, L90 made of sheet steel lined with an external insulating layer of wall boards. The fire resistance duration of the ventilation duct must be proven by means of general building supervisory test certificates, expert opinions or standards. The duct must be connected to the side of the BSK-RPR opposite to the fire-resistant duct by means of a flexible connection piece (alternatively: flexible aluminium ventilation duct).



## Fire Damper BSK-RPR

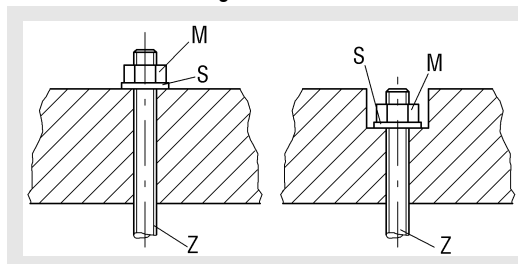
### Tensile stress limit values

Limit values of the tensile stress [N/mm<sup>2</sup>] according to DIN 4102-4 in suspensions as a function of the fire resistance class

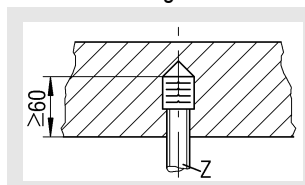


### Detail A

Continuous fastening



Dowel fastening



### Fastening materials

Dowels that are suitable according to fire protection standards must be dimensioned and built in according to the corresponding approval document or test certificate. Dowels that do not meet this standard must be made of steel, minimum size M8. The minimum mounting depth must be twice as high as requested in the approval certificate in question, but at least 60 mm deep and have a max. tensile load  $\leq 500$  N.

Suspensions must be dimensioned and manufactured according to DIN 4102-4. Suspensions and pole braces must be insulated according to fire protection regulations from suspension lengths  $L=1500$  mm (lower edge of rough ceiling to lower edge of duct), design according to manufacturers' instructions of the selected system.

The tension rod distance  $C$  must be selected such that the tension rods are situated as close as possible to the housing or the insulation.

- Z Tension rod
- T Pole brace U50 DIN 1026 or mounting rail (e.g. Hilti) dimensioned according to statics.
- S Disc DIN 125
- M Hexagon nut DIN 555
- C Tension rod distance

Stress	Dimensioning for fire resistance class	
	L30 or L60 [N/mm <sup>2</sup> ]	L90 or L120 [N/mm <sup>2</sup> ]
Tensile stress $\sigma$ in vertically arranged parts	9	6
Shear stress $\tau$ in screw resistance class 4.6 according to DIN ISO 898-1	15	10

Table "allowed loads  $F_{\text{allowed}}$  [N] for suspensions -tension rods made of threaded steel rods, for fire resistance duration 90 minutes"

Size	$A_s$ (mm <sup>2</sup> ) 1.)	$F_{\text{allowed}}$	
		per tension rod	per complete suspension
M8	36.6 mm <sup>2</sup>	220 N	440 N
M10	58.0 mm <sup>2</sup>	348 N	696 N
M12	84.3 mm <sup>2</sup>	506 N	1012 N
M14	115.0 mm <sup>2</sup>	690 N	1380 N
M16	157.0 mm <sup>2</sup>	942 N	1884 N
M20	245.0 mm <sup>2</sup>	1470 N	2940 N

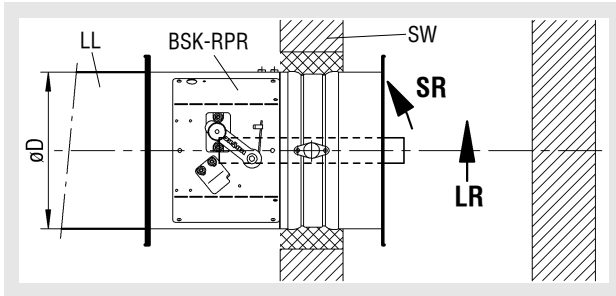
1.) Stressed cross-sections  $A_s$  according to DIN 13

## Fire Damper BSK-RPR

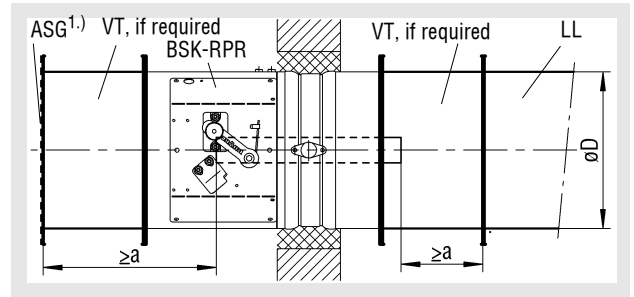
### Connection of ventilation ducts

The local regulations regarding ventilation systems (e.g. LüAr) apply. In particular, even in case of fire, no inadmissible forces may act on the shut-off damper and the space-enclosing components and impair their fire resistance period. The required bellow expansion joints must be designed as flammable, elastic connection pieces made of at least normally inflammable building materials (building material class B2 according to DIN 4102) at least 10 cm in length (in the built-in condition). Alternatively, ventilation ducts can be made of aluminium. Suspensions must be dimensioned and manufactured according to DIN 4102-4.

#### Installation in massive shaft walls

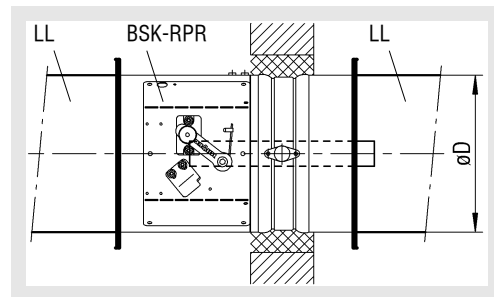


#### Installation with ventilation duct on one side and finishing protective grating

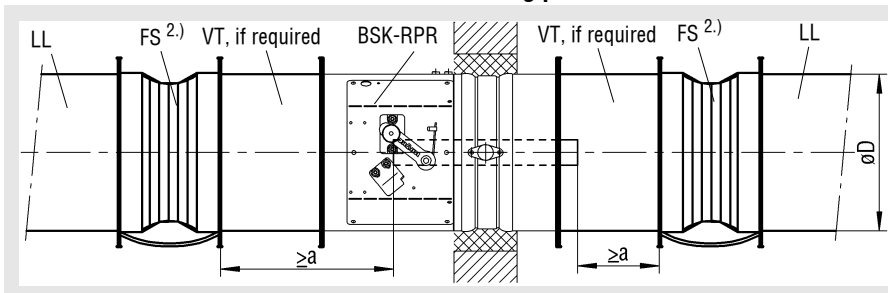


SR Closing direction  
LR Air flow direction  
SW Shaft wall

#### Installation with ventilation ducts on both sides



#### Installation on both sides with elastic connecting piece and ventilation ducts



BSK-RPR Fire damper model  
ASG Finishing protective grating type ASG 1.)  
VT Extension piece type VT  
FS Flexible connection piece type FS 2.)  
LL Ventilation duct

"a" = 50 mm: Minimum distance between the front edge of the open damper leaf and the finishing grating (ASG), flexible connection piece (FS) or the duct connection pipe (RS).

1.) made of non-flammable building materials (class A to DIN 4102), when the distance from damper housing is  $< 1.5 \times d$

2.) minimum class B 2 to DIN 4102

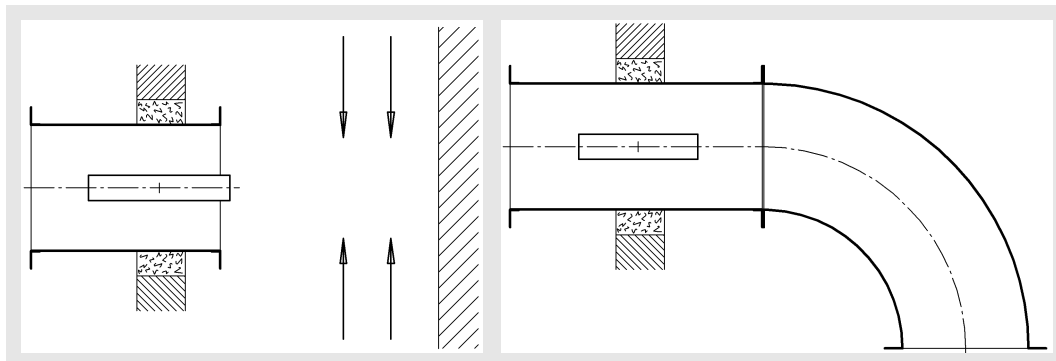
## Fire Damper BSK-RPR

### Installation note

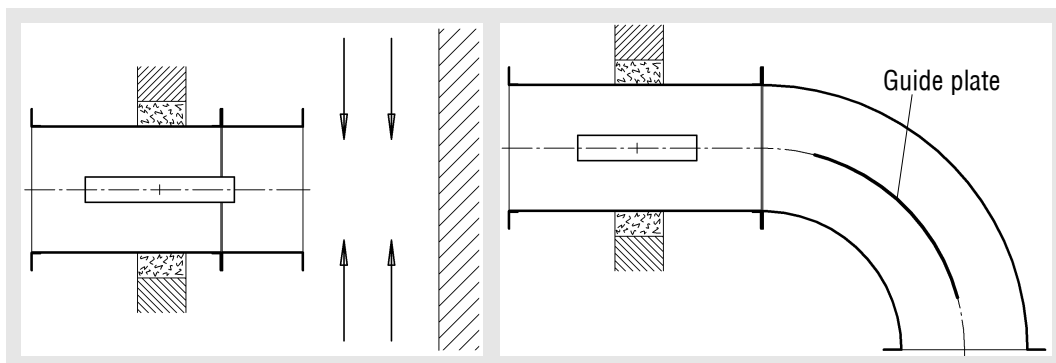
#### Air flow direction

Installation independently of the air flow direction possible.  
Make sure that a uniform air flow reaches the shut-off damper or the damper leaf. Air flow must not impair closing operation.

#### Unfavourable installation:



#### Favourable installation:



### Inspection opening

Inspection openings must be provided, according to the general building supervisory approval section 4, in the subsequent ventilation ducts in immediate proximity to the shut-off damper. They must be readily accessible.

## Fire Damper BSK-RPR

### Minimum distances

#### Minimum distances between shut-off dampers

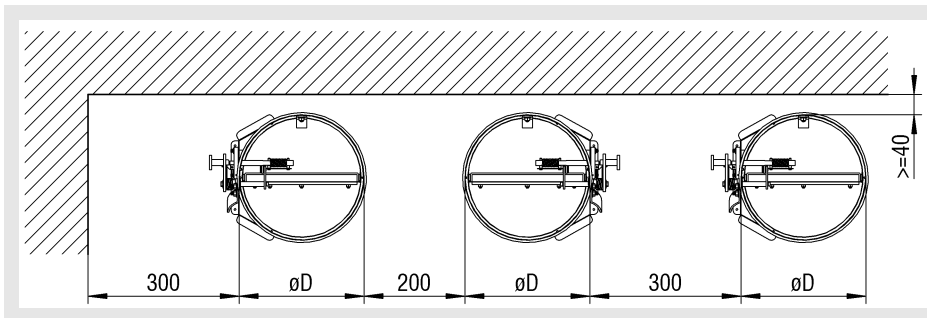
According to the general building supervisory approval Z-41.3-681, a minimum distance of 200 mm must be maintained.

Depending on the mounted parts, such as release device, electric motor, etc., between two shut-off dampers, it is recommended increasing this distance to at least 300 mm for inspection purposes.

#### Minimum distances to adjacent load-carrying components

According to the general building supervisory approval Z-41.3-681, a minimum distance of 40 mm must be maintained.

Depending on the mounted parts, such as release device, electric motor, etc., between two shut-off dampers, it is recommended increasing this distance to at least 300 mm for inspection purposes.



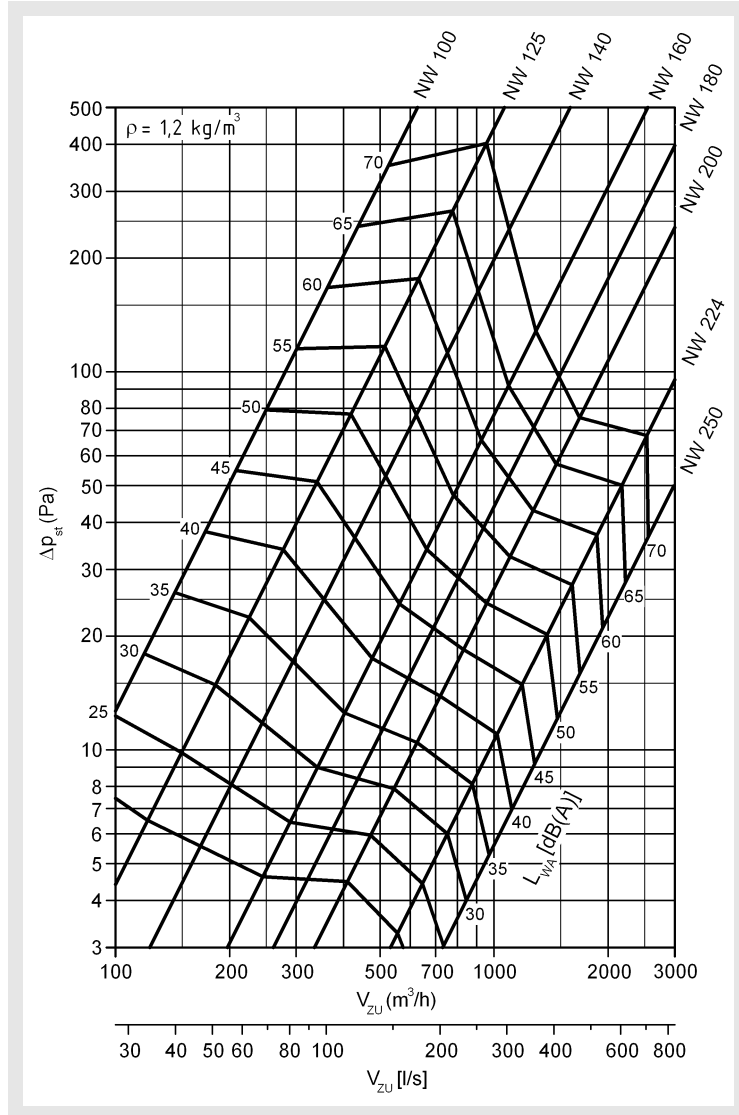
# Fire Damper BSK-RPR

## Technical data

### Pressure loss and noise level

#### Flow generated noise

#### BSK-RPR (without finishing grating)



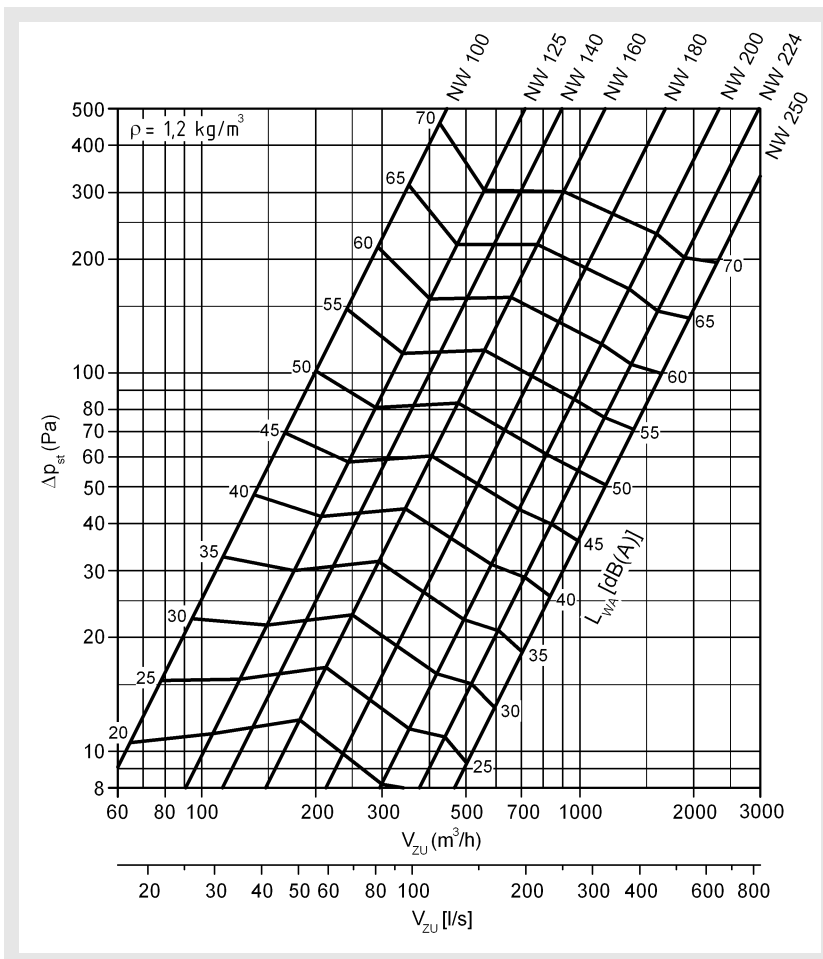
#### Application limits:

max. operating pressure of 1000 Pa at  $v_{face} \leq 10\text{m/s}$ .

# Fire Damper BSK-RPR

## Flow generated noise

BSK-RPR (with finishing protective grating ASG, on one side)

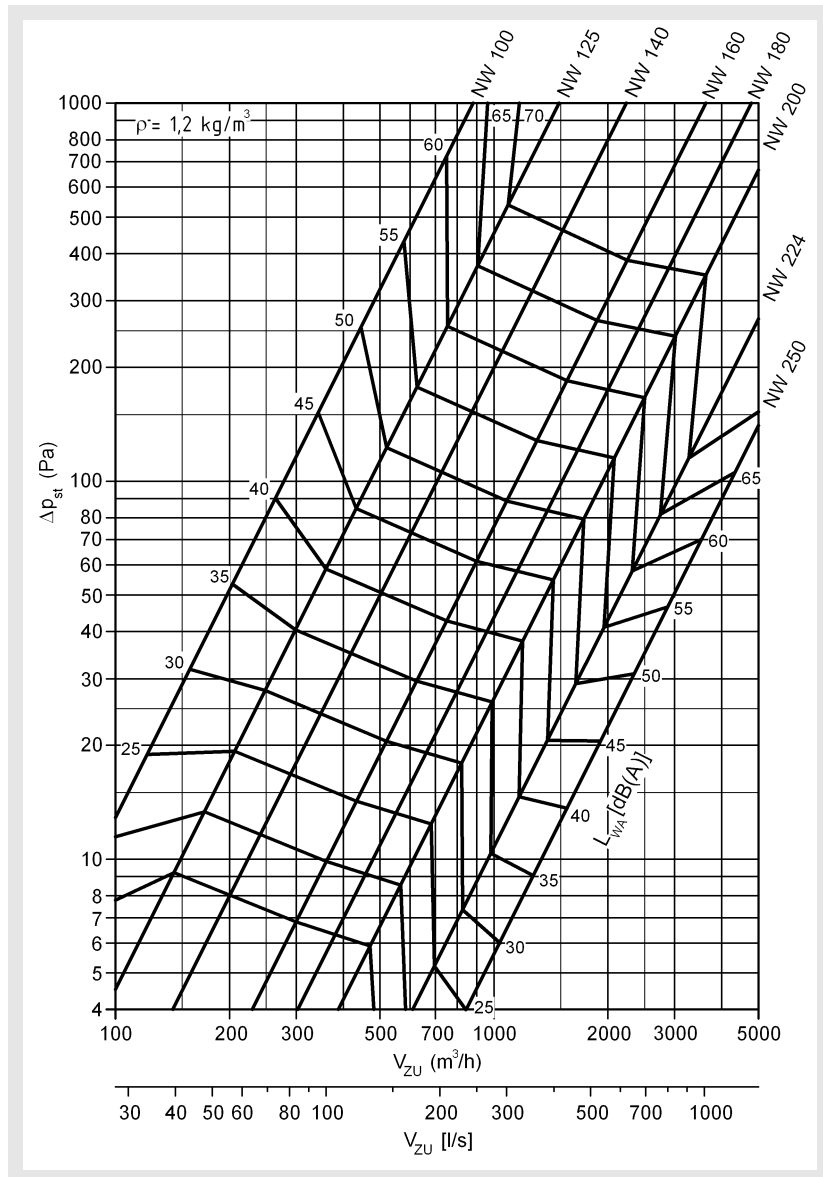


### Application limits:

max. operating pressure of 1000 Pa at  $v_{face} \leq 10\text{m/s}$ .

# Fire Damper BSK-RPR

## Radiated noise



Application limits:

max. operating pressure of 1000 Pa at  $v_{face} \leq 10 \text{ m/s}$ .

## Fire Damper BSK-RPR

### Weight table [kg]

øD	Length 455				Length 580			
	Manual release	Actuator	Manual release with mounting frame	Actuator	Manual release	Actuator	Manual release with mounting frame	Actuator
100	2,7	4,2	7,1	9,0	3,1	4,6	7,5	9,4
125	3,1	4,6	7,8	9,7	3,5	5,0	8,2	10,1
140	3,4	4,8	8,5	10,4	3,9	5,3	9,0	10,9
160	3,7	5,1	9,2	11,1	4,3	5,7	9,8	11,7
180	4,0	5,4	9,9	11,8	4,6	6,0	10,5	12,4
200	4,3	5,7	10,5	12,4	4,9	6,3	11,1	13,0
224	4,7	6,1	12,3	14,2	5,4	6,8	13,0	14,9
250	5,1	6,6	14,0	15,9	5,9	7,4	14,8	16,7

All data given are approximate

### Free cross-sections

øD [mm]	Free cross-section [m <sup>2</sup> ]
100	0,0046
125	0,0081
140	0,0107
160	0,0147
180	0,0193
200	0,0246
224	0,0317
250	0,0404

## Fire Damper BSK-RPR

### Accessories

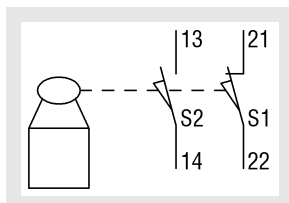
#### Accessories that are available at an extra charge:

- Model made of stainless steel material no. 1.4301 (V2A) or 1.4571 (V4A)
- Protective coating DD paint, PU-based, interior/exterior
- Powder coating
- thermal release via fusible link 98°C
- Limit switch type ES
- Electric spring return actuator model ELD-BLF, release temperatures 72°/95°C
- Electric spring return actuator model Joventa, release temperatures 72°/95°C
- Electric spring return actuator model Schischek, release temperatures 72°/95°C
- Magnet 24/230V
- Pulse magnet 24/230V
- Finishing protective grating type ASG <sup>1.)</sup>
- Extension piece type VT <sup>1.)</sup>
- Duct connection pipe type RS <sup>1.)</sup>
- Flexible connection piece type FS; PVC

<sup>1.)</sup> Standard model galvanised sheet steel, model material no. 1.4301 or 1.4571 possible. Powder coating and DD coating possible.

### Limit switch type ES

Electric limit switch for "OPEN" and/or "CLOSED" position indicators. Switching element including one NC and one NO contact each, 4 connections for M3.5 screw terminals for maximum 2mm<sup>2</sup>. 250 V AC, I<sub>e</sub> 6A, IP65 -using suitable cable screwed joints M20 (on-site)- connection/integration into LON networks via SCHAKO module LON-K-OR possible For a technical description and documents, see catalogue Air, subregister 09.c



Damper positions that can be displayed:

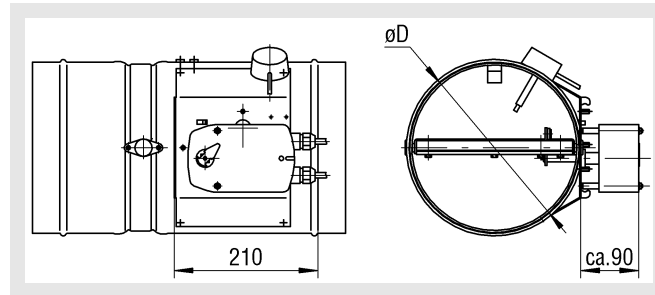
Type ES 1 Z : "CLOSED"

Type ES 1 A : "OPEN"

Type ES 2 : "OPEN" and "CLOSED"

### Electric spring return actuators

#### Model ELD-BLF



Electric spring return actuators with thermoelectric release devices BAE-72(95)B-S.

- Release temperatures 72°/95°C
- Operating position (damper "OPEN") and tensioning of the return spring by applying the supply voltage (230V AC, 24V AC/DC)
- Safety position (damper "CLOSED") through spring energy when supply voltage is interrupted or the thermal fuses Tf1 (ambient temperature) or Tf2/Tf3 (duct inside temperature) respond. A response of the thermal fuses Tf1, Tf2/Tf3 will interrupt the supply voltage permanently and irrevocably.
- Damper end positions are displayed by integrated microswitches
- Manual actuation and fixing in any position is possible in the de-energised state. It can be unlocked manually or by applying the supply voltage. Attention: safety function is only guaranteed if the actuator has been connected to the supply voltage in accordance with regulations.
- On-site function control is possible by means of the control key of BAE-72(95)B-S
- Spare parts: thermal fuse Tf2/Tf3 with baseplate (ZBAE72 or ZBAE 95); for any other damage, etc., the entire "drive/thermal release device" unit must be replaced.
- Connection/integration into LON networks via SCHAKO module LON-K possible For a technical description and documents, see catalogue Air, subregister 09.c

## Fire Damper BSK-RPR

**ELD-BLF 24** (BLF24-T SO)  
with connection plug

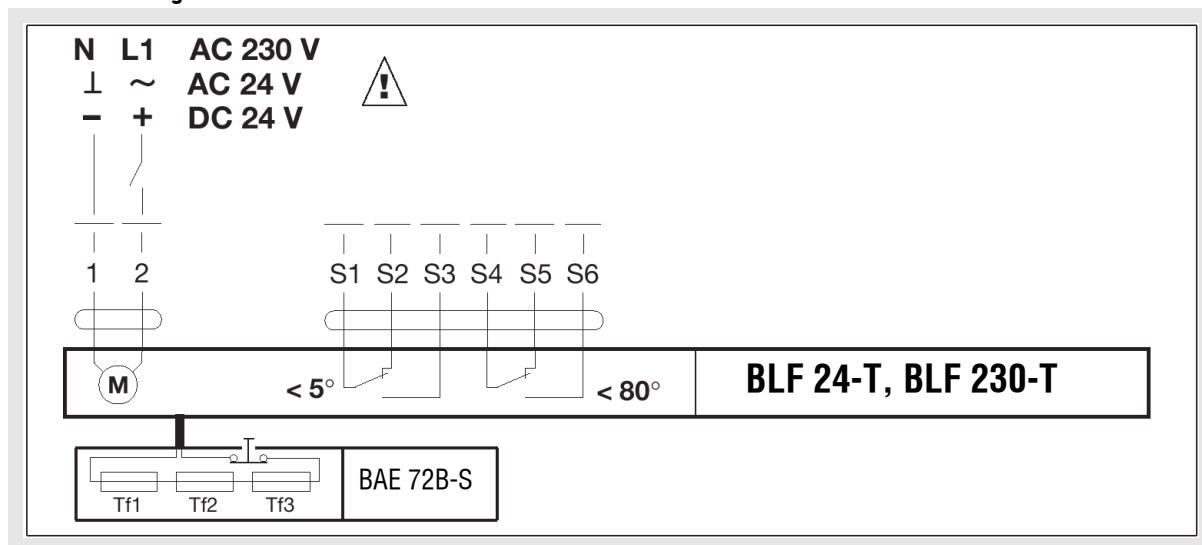
Rated voltage:	24 V AC - 50/60 Hz 24 V DC
Functional range:	19.2...28.8 V AC 21.6...28.8 V DC
Response temperature of thermal fuses:	Tf1: Duct outside temperature 72 °C Tf2+Tf3: duct inside temperature 72 °C (Art. No. ZBAE 72) Tf2+Tf3: duct inside temperature 95 °C (Art. No. ZBAE 95)
Power consumption	
- running:	5 W
- holding:	2.5 W
Dimensioning:	7 VA (I <sub>max</sub> 5.8 A @ 5 ms)
Protection class:	III Safety extra low voltage
Protection type:	IP 54
Auxiliary switch:	2 x EPU 3 (0.5) A, 250 V AC <input type="checkbox"/> , Silver contacts, gold-plated
- Switching points:	5°, 80°
Connection:	
- Actuator	cable 1 m, 2 x 0.75 mm <sup>2</sup> , halogen-free with 3-pin connector
- Auxiliary switch	cable 1 m, 6 x 0.75 mm <sup>2</sup> , halogen-free with 6-pin connector
Angle of rotation:	95° (including 5° spring pre-tension)
Damper drive:	Positive locking 12mm (8/10mm with enclosed adapter)
Torque:	Motor and spring return min. 4 Nm
Running time:	- Actuator 40...75 s (0...4 Nm) - Spring return ≈ 20 s @ -20...+50 °C / max. 60 s @ -30 °C
Direction of rotation:	selectable via L / R mounting
Position indicator:	mechanically by pointer
Ambient temperature:	
-normal operation:	-30... +50 °C
-Safety incident	Reaching the safety position is guaran- teed up to max. 75 °C
Storage temperature:	-40... +50 °C
Humidity test:	according to EN 60730-1
EMC:	CE according to 89 / 336 / EEC
Low voltage directive:	CE according to 73 / 23 / EEC
Sound power level:	Actuator max. 45 dB(A); spring ≈ 62 dB(A)
Service life:	min. 60,000 safety positions
Maintenance:	maintenance-free
Weight:	1630 g

**ELD-BLF 230** (BLF230-T SO)  
without connection plug

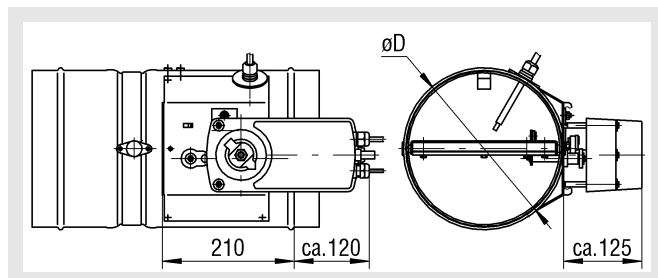
Rated voltage:	230 V AC - 50/60 Hz
Functional range:	
Response temperature of thermal fuses:	Tf1: Duct outside temperature 72 °C Tf2+Tf3: duct inside temperature 72 °C (Art. No. ZBAE 72) Tf2+Tf3: duct inside temperature 95 °C (Art. No. ZBAE 95)
Power consumption	
- running:	5 W
- holding:	3 W
Dimensioning:	7 VA (I <sub>max</sub> 150 mA @ 10 ms)
Protection class:	II protective insulation
Protection type:	IP 54
Auxiliary switch:	2 x EPU 3 (0.5) A, 250 V AC <input type="checkbox"/> , Silver contacts, gold-plated
- Switching points:	5°, 80°
Connection:	
- Actuator	Cable 1 m, 2 x 0.75 mm <sup>2</sup> , halogen-free
- Auxiliary switch	Cable 1 m, 6 x 0.75 mm <sup>2</sup> , halogen-free
Angle of rotation:	95° (including 5° spring pre-tension)
Damper drive:	Positive locking 12 mm (8/10 mm with added adapter)
Torque:	Motor and spring return min. 4 Nm
Running time:	- Actuator 40...75 s (0...4 Nm) - Spring return ≈ 20 s @ -20...+50 °C / max. 60 s @ -30 °C
Direction of rotation:	selectable via L / R mounting
Position indicator:	mechanically by pointer
Ambient temperature:	
-normal operation:	-30... +50 °C
-Safety incident	Reaching the safety position is guaran- teed up to max. 75 °C
Storage temperature:	-40... +50 °C
Humidity test:	according to EN 60730-1
EMC:	CE according to 89 / 336 / EEC
Low voltage directive:	CE according to 73 / 23 / EEC
Sound power level:	Actuator max. 45 dB(A); spring ≈ 62 dB(A)
Service life:	min. 60,000 safety positions
Maintenance:	maintenance-free
Weight:	1730 g

## Fire Damper BSK-RPR

### Connection diagram ELD-BLF



#### Model Joventa

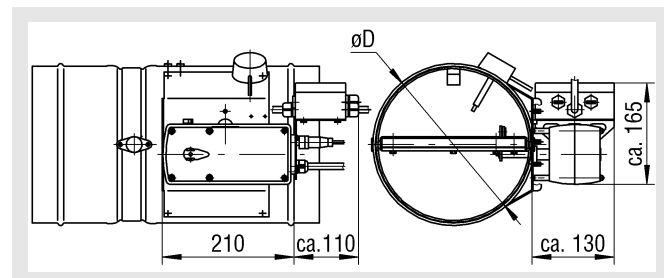


The electric spring return actuators of the JOVENTA SECURITY FIRE series have been especially developed for motorising fire dampers.

The drive takes the damper to the operating position while tensioning the integrated spring. When the power supply is interrupted, the damper is immediately taken to the safety position by the stored spring energy (damper closed). Manual fixing is automatically cancelled when the drive is operated electrically.

Technical data and further information on request.

#### Model Schischek



The spring return actuator takes the damper to the operating position while tensioning the integrated spring. When the power supply is interrupted, the damper is immediately taken to the safety position by the stored spring energy (damper closed).

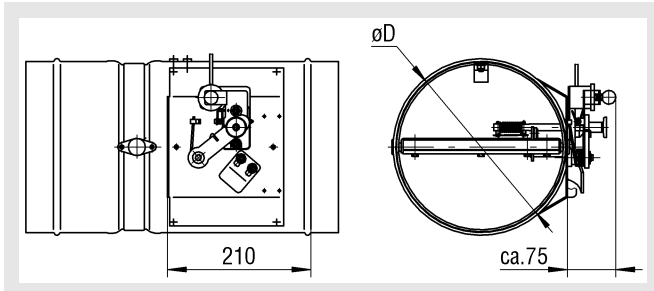
Technical data and further information on request.

## Fire Damper BSK-RPR

### Magnetic triggers

The trigger rocker of the trigger device is held on one side by the anchor plate of a magnet or pulse magnet. On the other side of the release rocker, the lock bolt of the hand lever is arrested. When the magnet is triggered by interrupting the power supply, the release rocker is tilted by a leg spring attached laterally such that the lock bolt of the hand lever is released, closing the damper. The pulse magnet is triggered by a short current pulse, which results in the anchor plate being released by the magnet.

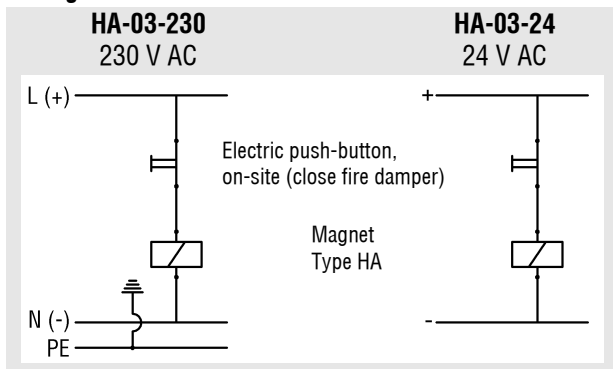
### Magnet HA-24V / HA-230V



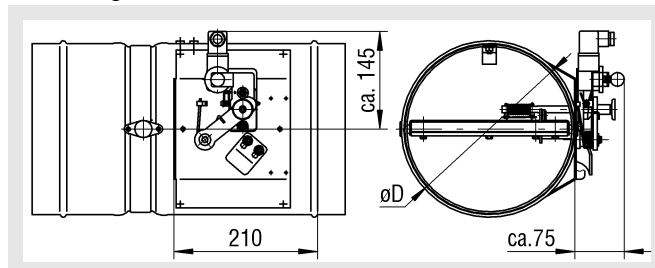
### Functional principle:

Magnets consist of an electromagnetic adhesion system. The magnetic circuit, which is open in the switched-on state, allows ferromagnetic workpieces to be held. The shut-off damper is closed by interrupting the power.

### Wiring note:



### Pulse magnet IM-24V / IM-230V

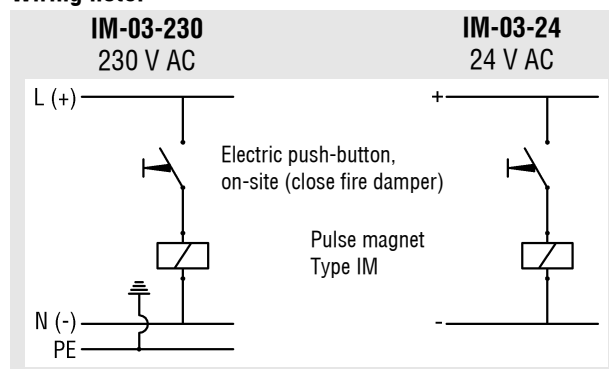


### Functional principle:

Pulse magnets (permanent electric magnets) consists of a permanently magnetic adhesion system for holding ferromagnetic workpieces and an excitation winding, which neutralises the magnetic field at the adhesion surface in the switched-on state, thus allowing the workpieces to be removed or loads to be set down. Owing to the built-in permanently magnetic adhesion system, which is effective in the currentless state of the device, these pulse magnets are preferably used wherever long adhesion times are required and the device is only switched on for a short period or occasionally.

The shut-off damper is closed by "briefly" applying a voltage (pulse).

### Wiring note:



### Magnetic trigger:

Trigger time min. 1.5 s

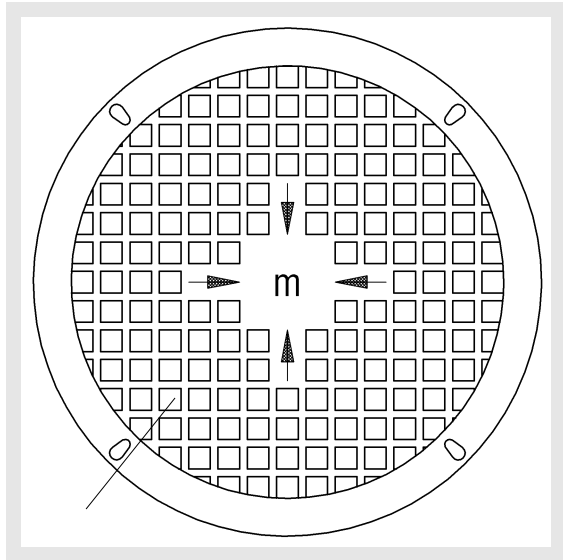
When using pulse magnets for triggering, the operating voltage may be applied during a short period only.

## Fire Damper BSK-RPR

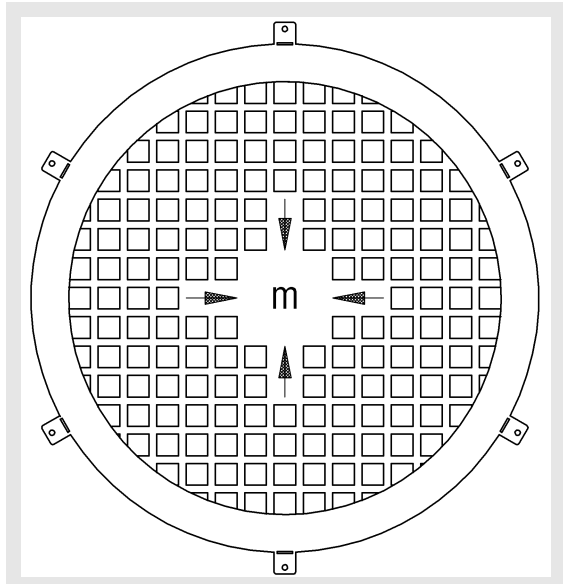
### Finishing protective grating type ASG

- Wire or punch grid with a mesh width of  $\leq 20$  mm
- Intended use: to be fitted for one-sided connection
- Remember that the minimum distance to the open damper blade  $a_{\min}$  is 50 mm, if necessary, use extension piece type VT

### ASG-RF for BSK-RPR-F



### ASG-RS for BSK-RPR-S



### Extension piece type VT-...

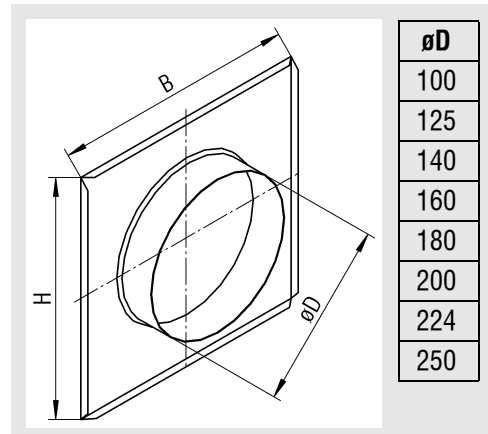
#### Extension piece type VT-R

Extension piece made of profiled sheet steel, L=160 mm  
Intended use: for large wall/ceiling thicknesses

#### Extension piece type VT-RF

Extension part made of profiled sheet steel with connection flanges, plug-in type, L=160 mm  
Intended use: for large wall/ceiling thicknesses

### Duct connection piece



- Round duct connection piece with connection plate
- Intended use: connection/transition of fire damper to rectangular ducts
- When ordering, please specify øD, B and H.

## Fire Damper BSK-RPR

### Flexible connection piece type FS...

The required equipotential bonding must be carried out on-site according to VDE regulations. The fire dampers must not be subject to mechanical stress under any circumstances.

Intended use: to avoid that inadmissible forces act on installed fire dampers or space-enclosing components -even in case of fire-. The local regulations regarding ventilation systems apply. In addition, flexible connection pieces must be mounted in the following mounting situations:

- on both sides:
  - in walls according to DIN 1053 when  $d_{\text{wall}} < 100$  mm
  - in lightweight walls with metal post
- on one side:
  - when installed "away from/outside walls" on the side opposite to the fire-resistant duct

Alternatively, flexible ventilation ducts made of aluminium can be used instead of the flexible connection pieces.

### Flexible connection piece type FS-RS

Flexible connection piece consisting of elastic intermediate piece made of polyester fabric PVC-coated on both sides, building material class B2 to DIN 4102, with welded lip seals (tightness degree to DIN 24194/VDI 3803/EN1886 B; temperature-resistant from  $-20^{\circ}$  to  $80^{\circ}\text{C}$ ). Flexible part of the connecting piece (polyester fabric) must have a length  $L_{\text{min}}$  of 100 mm when mounted.

### Flexible connection piece type FS-RF

Flexible connection piece consisting of profiled connection flanges with elastic intermediate piece made of polyester fabric PVC-coated on both sides, building material class B2 to DIN 4102, with welded lip seals (tightness degree to DIN 24194/VDI 3803/EN1886 B; temperature-resistant from  $-20^{\circ}$  to  $80^{\circ}\text{C}$ ). Flexible part of the connection piece (polyester fabric) must have a length  $L_{\text{min}}$  of 100 mm when mounted.

### Legend

$V_{\text{ZU}}$	( $\text{m}^3/\text{h}$ ) [l/s]	= Supply air volume
$\Delta p_{\text{st}}$	(Pa)	= Static pressure difference
$L_{\text{WA}}$	[dB(A)]	= A-weighted sound power level
$v_{\text{face}}$	(m/s)	= Face velocity, relative to $A_{\text{face}}$
$\rho$	( $\text{kg}/\text{m}^3$ )	= Density

## Fire Damper BSK-RPR

### Specification texts

Fire dampers of fire resistance class K90 or EI90 ( $v_e, h_o, i < \rightarrow 0$ )S to DIN EN 13501-3, tested in accordance with DIN EN 1366-2, for locking fire lobbies in ventilation and air conditioning systems.

Housing made of galvanised sheet steel, with moulded-on plug connections (model -S) or with connection flanges to DIN EN 12200 (model -F) Replaceable damper leaf made of abrasion-resistant mineral wall board. Wear-resistant elastomer seal on the damper leaf and intumescent seal to meet the cold and hot leakage requirements according to DIN EN 1366-2.

Installation:

- with horizontal or vertical damper leaf axis, position-independent
- into massive walls and ceilings, into lightweight partition walls with metal post according to DIN 4102-4 Tab.48
- into lightweight partition walls with metal post and panelling on one side (shaft walls) or both sides; walls with general building supervisory test certificate
- with mounting frame (accessories) for dry installation for the following mounting situations: on massive walls, on/under massive ceilings, away from/outside massive walls, on lightweight partition walls with metal post according to DIN 4102-4 Tab.48, on lightweight partition walls with metal post and panelling on one side or both sides (walls with general building supervisory test certificate)

Any accessories that may be required for the respective mounting situation (flexible connection pieces, suspensions, pole braces, etc.) are listed in separate positions of the specification.

For connection to ventilation ducts (one- or two-sided), any air flow direction Connection to smoke detectors with general building supervisory approval possible.

Product: SCHAKO **type BSK-RPR-S(F)**

**General building supervisory approval no. Z-41.3-681**

Dimensions

Diameter: ..... mm  
 Length: Model -S 455/580 mm  
 Model -F 375/500 mm

### Alternative designs or accessories

("select as required")

- Moulded-on plug connection (model -S) with additional lip seal
- Mounting frame (for dry installation)
- Model made of stainless steel material no. 1.4301 (V2A)
- Model made of stainless steel material no. 1.4571 (V4A)
- Housing with protective coating two-component paint, PU-based
  - inside
  - outside
- Thermal release with mechanical fusible link release temperature 98°C
- Electric limit switch for "OPEN" and/or "CLOSED". position indicators, switching element containing one NC and one NO contact:
  - Type ES 1 Z: "CLOSED"
  - Type ES 1 A: "OPEN"
  - Type ES 2 : "OPEN" and "CLOSED"
- Electric spring return actuator with thermo-electric release device BAE-72(95)B-S - release temperature 72°C (95°C) - and integrated micro switches for indicating the damper end positions.
  - Type ELD-BLF (230V, 24V DC/AC)
- Magnet (230V, 24V DC)
- Pulse magnet (230V, 24 DC)

**Finishing grating type ASG-RF (-RS)**, for installation with ventilation duct connection on only one side, wire or punch grid, galvanised sheet steel, mesh width  $\leq 20$  mm, minimum distance  $a_{min} = 50$  mm from the open damper leaf must be taken into account, if necessary, use extension piece type VT.

Product: SCHAKO Finishing grating **type ASG-RF (-RS)**

Dimensions

Diameter: ..... mm

- Extra charge for protective coating two-component paint, PU-based
- Extra charge for powder coating in RAL 9010
- Extra charge for model:
  - Material No. 1.4301 (V2A)
  - Material no. 1.4571 (V4A)

## Fire Damper BSK-RPR

**Extension piece type VT-RF**, for installation with large wall/ceiling thicknesses; to maintain the minimum distance  $a_{\min} = 50$  mm from the open damper leaf when fitting finishing grating type ASG-RF or flexible connection piece type FS-RF. Extension piece made of profiled galvanised sheet steel with connection flanges, L=160 mm

Product: SCHAKO extension piece **type VT-RF**

Dimensions

Diameter: ..... mm

- Extra charge for protective coating two-component paint, PU-based
  - inside
  - outside
- Extra charge for model:
  - Material No. 1.4301 (V2A)
  - Material no. 1.4571 (V4A)

**Extension piece type VT-RS**, for installation with large wall/ceiling thicknesses; to maintain the minimum distance  $a_{\min} = 50$  mm from the open damper leaf when fitting finishing grating type ASG-RS or flexible connection piece type FS-RS. Extension piece made of profiled galvanised sheet steel with connection flanges, L=160 mm

Product: SCHAKO extension piece **type VT-RS**

Dimensions

Diameter: ..... mm

- Extra charge for protective coating two-component paint, PU-based
  - inside
  - outside
- Extra charge for model:
  - Material No. 1.4301 (V2A)
  - Material no. 1.4571 (V4A)

**Flexible connection piece type FS-RF**, consisting of profiled connection flanges - galvanised sheet steel - with elastic intermediate piece made of polyester fabric PVC-coated on both sides, building material class B2 to DIN 4102, with welded lip seals (tightness degree to DIN 24194/VDI 3803/EN1886 B; temperature-resistant from -20° to 80°C). Flexible part of the connection piece (polyester fabric) must have a length  $L_{\min}$  of 100 mm when mounted.

The required equipotential bonding must be carried out on-site according to VDE regulations. The fire dampers must not be subject to mechanical stress under any circumstances.

Product: SCHAKO Flexible connection piece **type FS-RF**

Dimensions

Diameter: ..... mm

- Extra charge for model with connection flanges:
  - Material No. 1.4301 (V2A)
  - Material no. 1.4571 (V4A)

**Flexible connection piece type FS-RS** consisting of polyester fabric PVC-coated on both sides, building material class B2 to DIN 4102, with welded lip seals (tightness degree to DIN 24194/VDI 3803/EN1886 B; temperature-resistant from -20° to 80°C). Flexible part of the connection piece (polyester fabric) must have a length  $L_{\min}$  of 100 mm when mounted.

The required equipotential bonding must be carried out on-site according to VDE regulations. The fire dampers must not be subject to mechanical stress under any circumstances.

Product: SCHAKO Flexible connection piece **type FS-RS**

Dimensions

Diameter: ..... mm