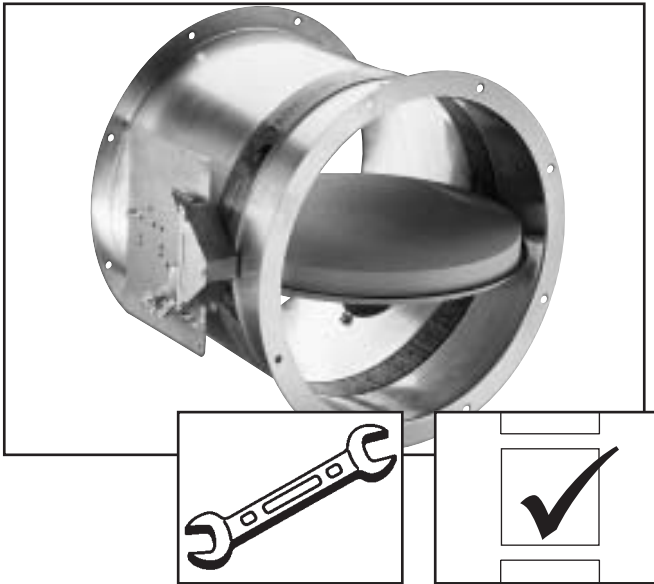


Assembly, commissioning and maintenance instructions for fire dampers type FKR-01-K90 · FKR-02-K90

MI-4/8/EN/7



MI-4/8/EN/7 Assembly, Commissioning and Maintenance Instructions for the installation of Type FKR-01-K90 · FKR-02-K90 Fire Dampers. Approval number Z-41.3-322

- in solid walls and ceilings
- in gypsum wall blocks
- in lightweight partition walls with metal supports

Fire dampers are components that require approval. A General Building Inspectorate Licence is needed for submission to the building owner.

Attention!

- The functional reliability must be guaranteed by the owner or operator.**
The functional reliability of the fire dampers must be checked during and after commissioning at regular intervals. If two successive tests after an interval of 6 months show no defects that are detrimental to the function the tests need only be performed annually. The general maintenance guidelines required by DIN 31051 in conjunction with DIN EN 13306 must be complied with.
- Wall and ceiling installations must be according to standards and/or the manufacturer's specifications and the data in the General Building Inspectorate Licence.
- Before installation:
 - check the fire damper for damage incurred during transport
 - check the correct functioning
 - check the approval nos.: and comply with the assembly, commissioning and maintenance instructions
- After installation:
 - remove transportation lock / installation protection (used depending on size)
- Work may only be carried out by qualified employees.
- Observe the general safety and accident prevention regulations.
- Release mechanism and electrical actuator must be accessible.
- Access panels may have to be provided in the adjacent ventilation ducting for maintenance work depending on the location.
- Spare parts according to spare parts list EP/4/7/EN/...



Points of lubrication: Only lubricate if necessary. Resin and acid-free oil and grease are the only forms of lubrication to be used.



Do not reach into the marked area when the fire damper (FD) is in use as there is risk of injury.

Table of Contents:

Assembly instructions

- Installation and assembly sequence for solid walls and ceilings as well as in gypsum wall blocks Page 2
- Installation and assembly sequence for installation in lightweight partition walls with metal supports Page 4
- Connection of ventilation ducts and cover grilles Page 6

Instructions for inspection, maintenance and repairs

- I. Basic construction with fusible link Page 8
- II. Basic construction with additional release by solenoid or electro magnet Page 10
- II. Electric actuator Page 12
- Weight table Page 14

Commissioning and maintenance report (available on request)

Enclosure

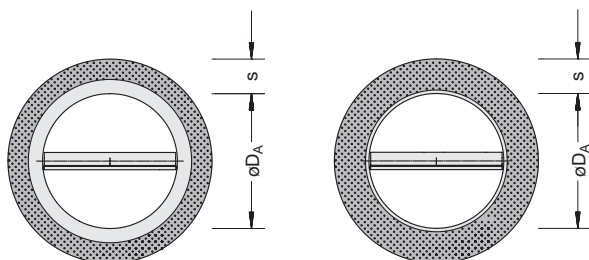
Assembly, commissioning and maintenance instructions for fire dampers type FKR-01-K90 · FKR-02-K90

MI-4/8/EN/7

Figure 1.1

Type FKR-01-K90

Type FKR-02-K90



s = min. 60 mm all around the perimeter

Duct openings can be square if required.
The minimum distance between the two FD's is 70 mm.

Installation in solid walls and ceilings as well as gypsum wall blocks

Installation – with wall or ceiling situations the casing can be rotated through 360° around the axis along the duct, thus any external controls can be positioned for maximum access – in masonry walls in accordance with DIN 1053 with minimum thickness of 115 mm, in concrete walls with a minimum thickness of 100 mm, in aerated concrete walls and lightweight concrete walls with a minimum thickness of 100 mm, in walls made of gypsum wall blocks in accordance with DIN 18163 for gross densities $\geq 0.6 \text{ kg/dm}^3$ with a minimum thickness of 100 mm and in ceilings made of concrete or aerated concrete with a minimum thickness of 100 mm.

 = mortar, concrete, or gypsum mortar

Fire resistance class K90 in conjunction with ventilation ducts that are connected on both ends and are made of non-combustible materials, or with a ventilation duct at one end and cover grille at the other or cover grilles at each end.

For installation in walls made of gypsum wall blocks, the connection of ventilation ducts is only allowed with flexible connectors or using flexible ventilation ducts.

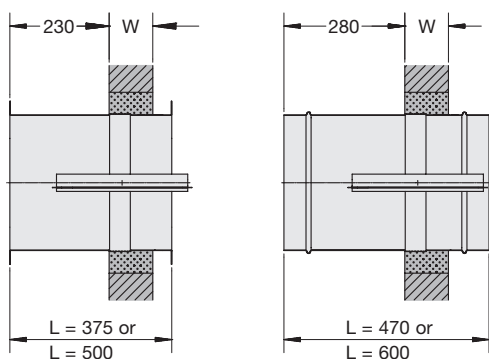
Figure 1.2

Type FKR-01-K90

W = 100 - 240 mm

Type FKR-02-K90

W = 100 - 240 mm



Wall installation · Ceiling installation

Figure 1.1 Duct opening

Figure 1.2 Wall installation

Wall thickness W = 100 - 240 mm

Figure 1.3 Ceiling installation, fixed to the ceiling slab

Ceiling thickness D = 100 - 240 mm

Figure 1.4 Ceiling installation, hanging from the ceiling slab

Ceiling thickness D = 100 - 240 mm

Figure 1.3

Type FKR-01-K90

D = 100 - 240 mm

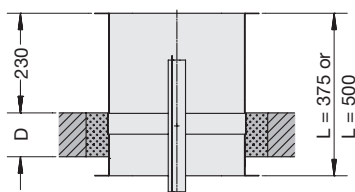
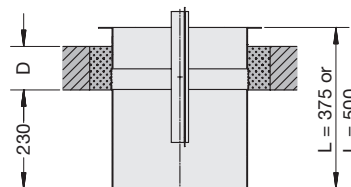


Figure 1.4

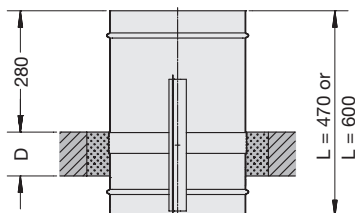
Type FKR-01-K90

D = 100 - 240 mm



Type FKR-02-K90

D = 100 - 240 mm



Type FKR-02-K90

D = 100 - 240 mm

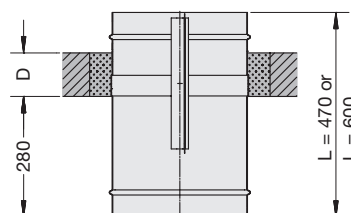
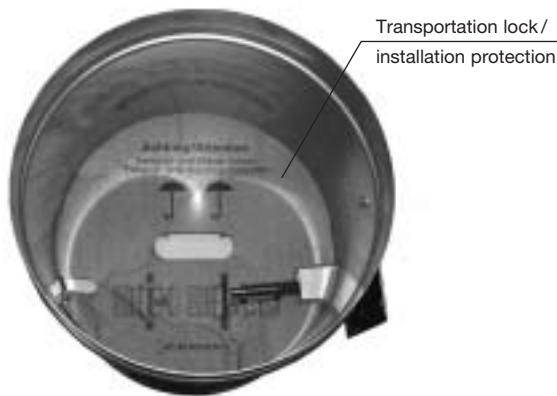
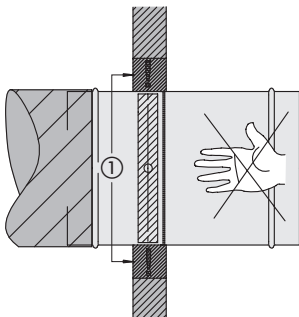


Figure 1.5

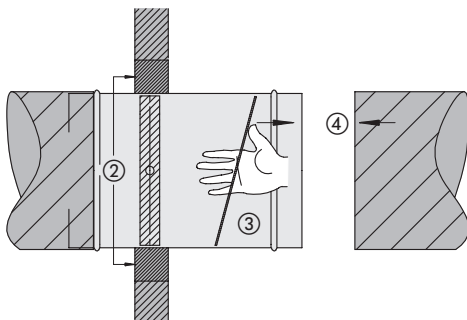


Type FKR-02-K90 shown

Step ①



Steps ② to ④



Assembly sequence for installation in solid walls and ceilings as well as gypsum wall blocks

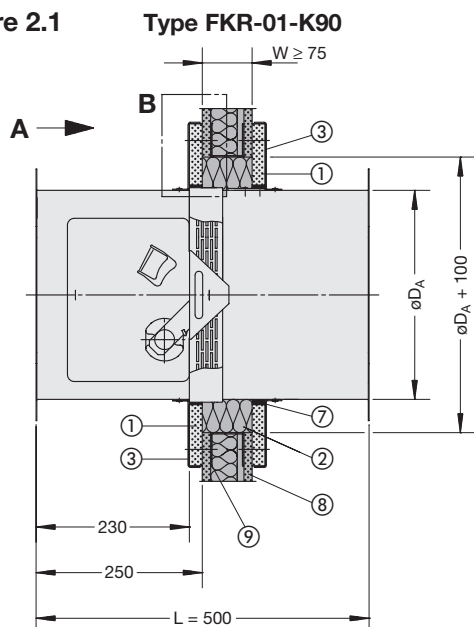
- Attention! Avoid deformation of the casing and contamination of the associated components during installation, as this can lead to a damper malfunction.**
- Transportation/installation protection is used to safeguard the fire damper casing against deformation during installation, see figure 1.5
- Cover the actuator side so that the mechanism does not become wet and is not contaminated when filling in with wet mortar
- If ducting is not fitted before mortaring in then covers should be fitted to both ends of the FD casing
- Push the FD into the wall or ceiling opening, step ①
- Fill the gap “s” with mortar from group II or III, DIN 1053, with concrete or gypsum based mortar, step ②
 - The gap “s” can be omitted if the FD is installed in the wall or ceiling when it is built
 - In order to guarantee an adequate filling, the gap “s” should be ≥ 60 mm
- Remove transportation lock/installation protection, step ③
- Connect ventilation duct, where applicable, step ④
- Carry out inspection of the FD, as described on pages 8 – 13

Figure 1.5 Detail: transportation lock/installation protection

Assembly, commissioning and maintenance instructions for fire dampers type FKR-01-K90 · FKR-02-K90

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Figure 2.1



The minimum distance between the two FDs is 200 mm.

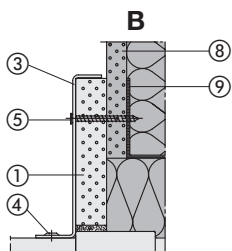
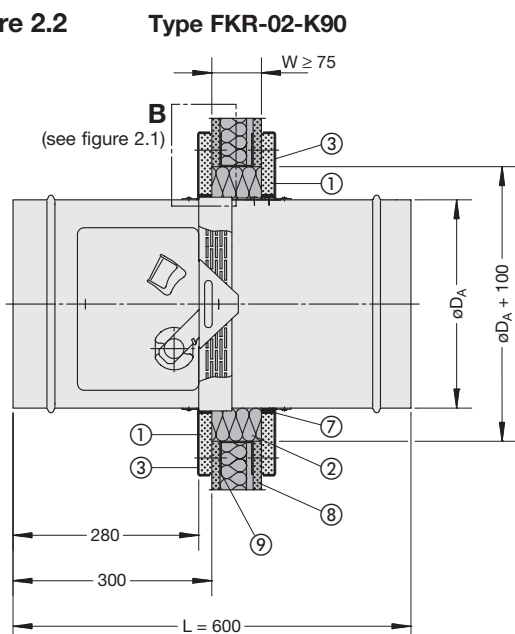


Figure 2.2



The minimum distance between the two FDs is 200 mm.

Installation in lightweight partition walls with metal supports

Installation – with wall situations the casing can be rotated through 360° around the axis along the duct, thus any external controls can be positioned for maximum access – in lightweight construction and installation walls \geq F30 with metal supports.

Fire resistance class K30 in conjunction with ventilation ducts that are connected on both ends and are made of non-combustible materials, or with a ventilation duct at one end and cover grille at the other or cover grilles at each end.

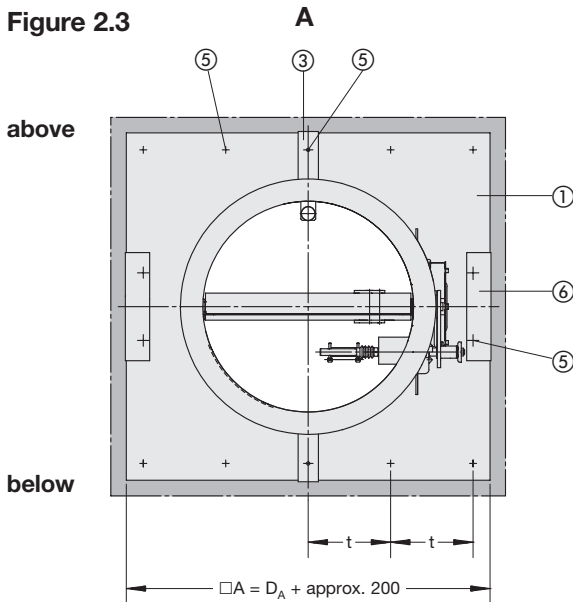
The connection of the ventilation ducts is only allowed with flexible connectors or using flexible ventilation ducts.

- ① Panels, Promatect-H or Supalux-M, approx. 20 mm thick
- ② Insulation layer, mineral wool, material class A, melting point \geq 1000°C, $\rho \geq$ 100 kg/m³
- ③ Cover plates (above and below), galv. sheet steel, approx. 30 mm wide
- ④ Steel-pop-rib
- ⑤ Plaster board screws, spacing \leq 200 mm, distance depends on the thickness of the wall
- ⑥ Angle, galv. sheet steel, 36 x 20 x 160 x 1.25 mm thick
- ⑦ Joint filler, gypsum plaster
- ⑧ Partition wall (wall construction according to the specification of the manufacturer)
- ⑨ Metal supports (according to the wall construction)

Figure 2.1 Wall thickness $W \geq$ 75 mm
Type FKR-01-K90 – dry wall installation

Figure 2.2 Wall thickness $W \geq$ 75 mm
Type FKR-02-K90 – dry wall installation

Figure 2.3

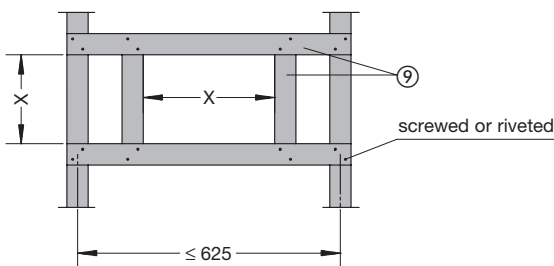


shown type FKR-01-K90

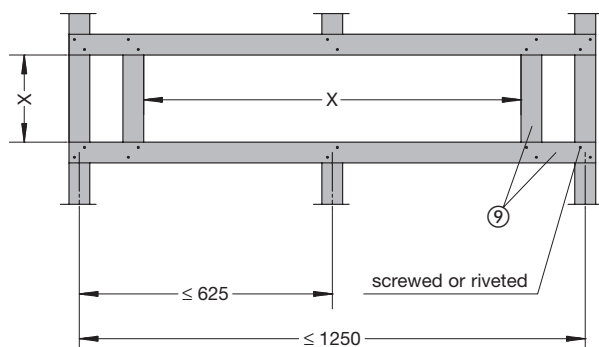
$t \leq 200 \text{ mm}$

Figure 2.4

shown 1 partial detail – NW 200 to NW 450



shown 2 partial detail – NW 200 to NW 710



$X = \varnothing D_A + 100$

Assembly sequence for dry installation in lightweight partitions with metal supports

- Attention! Avoid deformation of the casing and contamination of the associated components during installation, as this can lead to a damper malfunction.**
- Partition construction according to table 48 of DIN 4102, part 4 (edition – March 1994), during construction the fire damper should be installed as shown in the test certificate; the support framework should be completed according to figure 2.4.
- Fix panels, item ① of the installation kit, using coarse thread screws item ⑤ see figure 2.3, distance $t \leq 200 \text{ mm}$ (with screw pitch a function of the thickness of the wall)
- Drill pilot holes $\varnothing 4.1 \text{ mm}$ for coarse thread screws, item ⑤
- Hollow space between the installation kit and the FD is to be filled with joint filler
- Arrange the angle, item ⑥, according to figure 2.3, and fix with the coarse thread screws, item ⑤
- Arrange cover plates (above and below), item ③, according to figure 2.3, and fix with the coarse thread screws, item ⑤; additionally fix steel-pop-rivets, item ④, to the FD casing, see figure 2.1
- Drill pilot holes $\varnothing 4,1 \text{ mm}$ for coarse thread screws, item ⑤, and steel pop rivets, item ④
- Carry out inspection of the FD, as described on pages 8 – 13

Figure 2.3 Detail A – Cladding and fixing

Figure 2.4 Metal support construction – without cladding

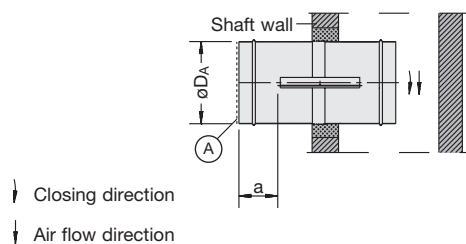
Assembly, commissioning and maintenance instructions for fire dampers type FKR-01-K90 · FKR-02-K90

MI-4/8/EN/7

Figure 3.1

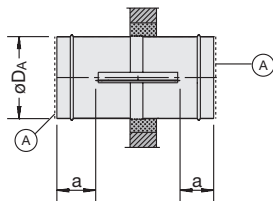
Ref. No. 1 *

- in wall shafts; cover grilles on the drive end



Ref. No. 2 *

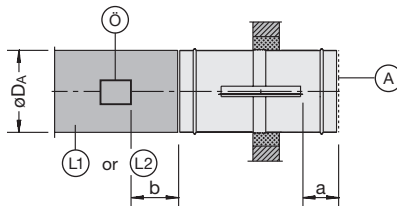
- both ends with cover grilles



Warning! For this application, the approval of the General Building Inspectorate is now required.

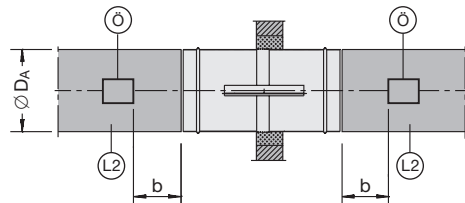
Ref. No. 3 *

- with non-combustible ventilation duct on one end and cover grille on the other end



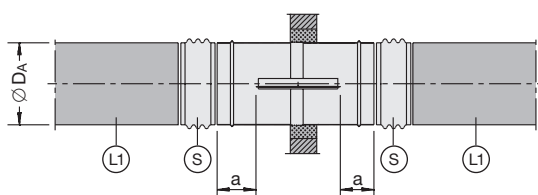
Ref. No. 4 *

- on both ends with flexible, non-combustible ventilation ducts



Ref. No. 5 *

- on both ends with flexible connectors and non-combustible ventilation ducts



Connection of Ventilation Ducts and Cover Grilles

According to the General Building Approval fire dampers may only be connected to ventilation ducts that are unable to exert any significant force on the fire damper or wall or ceiling on account of ductwork layout – particularly when ducts heat up in the event of fire. If this is not possible the installation must be carried out according to figures 1.1 to 1.4 with flexible connectors made of B2 material, to DIN 4102, according to figure 3.1, Ref. No. 5.

When fire dampers are installed in walls made of gypsum blocks and in lightweight partitions, see figures 2.1 and 2.2, ventilation ducts can only be connected using flexible connectors, see figure 3.1 Ref. No 5.

When using L2 ventilation ducts, the use of flexible connectors is not necessary.

- (A) Cover Grilles
- (L1) Ventilation ducting made of non-combustible materials
- (L2) Flexible, non-combustible ventilation ducts (ducts made of steel or aluminium)
- (S) Flexible connectors made with B2 materials according to DIN 4102 or aluminium flexible ducts according to DIN 24146-1, flexible length ≥ 100 mm when installed
- (O) Opening, for example for a ventilation grille, mesh size max. 20 mm

“a” 50 mm = minimum distance between the open damper blade edge and the cover grille or the flexible connectors. For larger dampers, extension pieces are necessary, see figures 3.2 to 3.5

“b” $> 1.5 \cdot d$

No cover grille necessary for (O) “opening”

“b” $< 1.5 \cdot d$

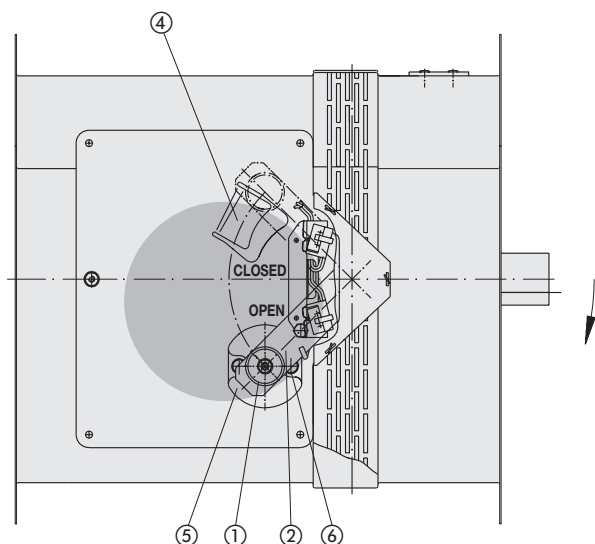
Cover grille (mesh size max. 20 mm) made of non-combustible materials is necessary for (O) “opening”

„d“ is the largest internal diameter

* Fire resistance class K90 in walls or ceilings with a fire resistance class min. F90

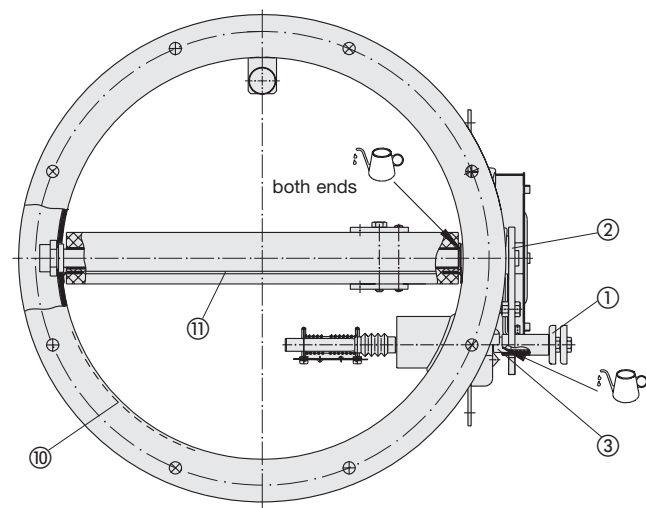
Figure 3.1 Connection of ventilation ducts and cover grilles

Figure 4



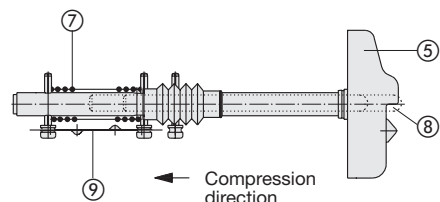
Damper blade shown in **OPEN** position

Figure 5



Damper blade shown in **OPEN** position

Figure 6



I Basic construction with fusible link

Inspection before and after commissioning

- Check fire damper for damage
- Operate manual release – close damper blade
 - Pull disk, item ①, in drive arm, item ②
 - Release and allow item ② to rotate
 - The damper blade must close automatically
 - The drive arm, item ②, must lock in the **CLOSED** position behind the catch plate, item ④
- Check the release mechanism
 - Hold the hand lever, item ②, in the initial position
 - With the drive arm, item ②, in the initial position pull the disc, item ①
 - The damper blade must automatically close
- Open damper blade
 - Pull disk, item ①, and move drive arm item ② to the initial position
 - Open damper blade
 - The spring loaded pin, item ③, engages behind the release mechanism, item ⑤
- Check the release mechanism
 - Conduct the manual release, as described above
 - Remove the mounting screws (2 off) from item ⑥ and pull out the release mechanism, item ⑤, from the front
 - Compress the coil spring against the pins, item ⑦, by pushing the operating rod, item ⑧, as shown in figure 6, until the fusible link can be removed
 - After releasing the coil spring, item ⑦, slide the operating rod, item ⑧, in and out ensuring it moves easily
 - Check fusible link, item ⑨
 - Refit the release mechanism, item ⑤ (without the fusible link, item ⑨)

- Figure 4 FD basic construction, side view shown: type FKR-01-K90
Damper blade shown in **OPEN** position
- Figure 5 FD basic construction, front view show: type FKR-01-K90
Damper blade shown in **OPEN** position
- Figure 6 Release mechanism

Figure 7.1

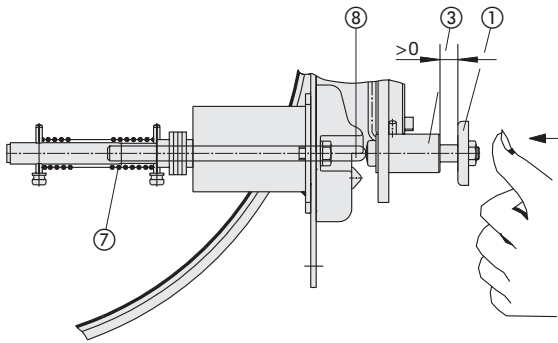


Figure 7.2

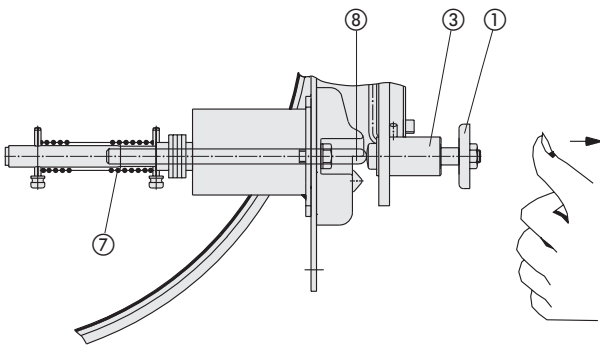


Figure 8

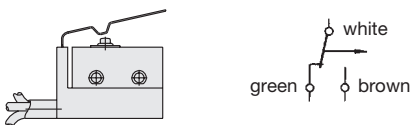
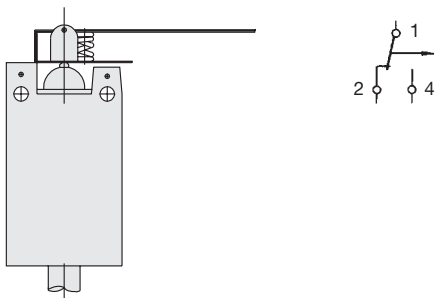


Figure 9



Simulation of a thermal release

Figure 7.1 1. Step


Figure 7.2 2. Step

Figure 8 Limit switch standard construction

Figure 9 Limit switch explosion-proof rated

- Functional test to simulate a thermal release
 - Open the damper blade
 - Press the spring-loaded pin, item ③, using the disc, item ①, against the operating rod, item ⑧, as shown in figure 7.1
 - The coil spring, item ⑦, is compressed
 - Release the disc, item ①; the coil spring, item ⑦, must push the connecting rod, item ⑧, far enough out, as shown in figure 7.2, that the mechanism releases and the damper automatically closes
 - Remove the release mechanism item ⑤, as described on page 8
 - Compress the coil spring, item ⑦
 - Refit the fusible link, item ⑨, as shown in figure 6
 - Reinstall the release mechanism, item ⑤
- Internal casing inspection
 - Remove the inspection cover, item ⑩
 - The internal part of the casing can now be inspected, introduce a light source and check the parts that are directly visible
 - Check the parts not directly visible with a suitable optical device
 - Open the damper blade
 - Repeat the visual inspection
 - Conduct any necessary cleaning, care must be taken not to damage the circumferential seal, item ⑪
 - Refit the inspection cover, item ⑩, including the associated seal

Maintenance

- During the inspection, remove any contaminants
- If necessary, lubricate the locations that are indicated with an "oil can" 

Overhaul

- Replace fusible link
- Replace release mechanism
- Replace limit switch
- Other repair work may only be carried out after consulting the manufacturer

Instructions for electrical wiring

Electrical connection work must only be carried out by qualified trades people.

The VDE guidelines must be complied with (VDE = Union of German Electrical Engineers)

Wiring of the limit switches

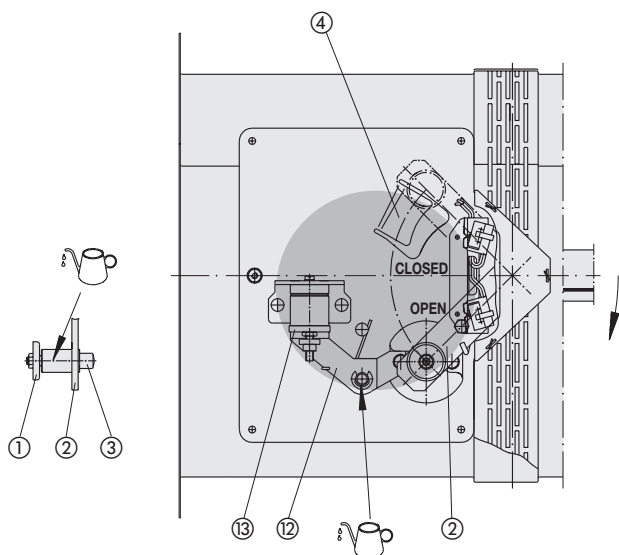
- Connect wiring to the limit switch to provide the desired indication
- Limit switch shown inactive

BUS systems e.g. pre wired control devices from TROXNETCOM can as an option be used, to achieve the required functions.

Assembly, commissioning and maintenance instructions for fire dampers type FKR-01-K90 · FKR-02-K90

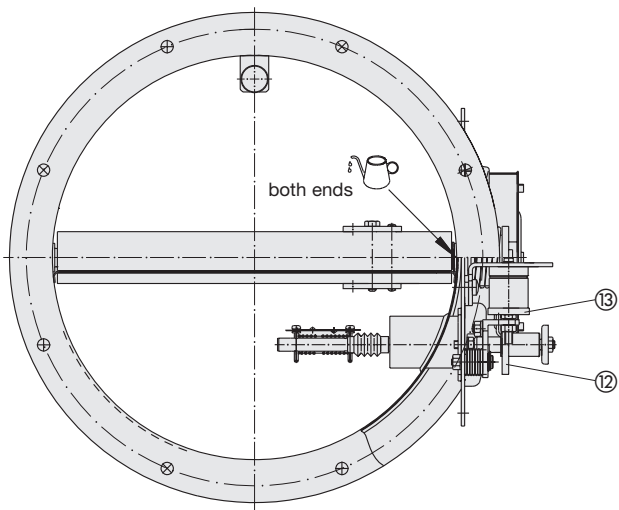
MI-4/8/EN/7

Figure 10



Damper blade shown in **OPEN** position

Figure 11



Damper blade shown in **OPEN** position

II Basic construction with additional release by solenoid or electro magnet

Inspection before and after commissioning

- Check the fire damper for damage
- Secure the FD against unintentional electrical initiated closure before beginning work
- Operate manual release – close damper blade
 - Pull disk, item ①, in drive arm, item ② in the initial position
 - Release and allow item ② to rotate
 - The damper blade must close automatically
 - The drive arm, item ② must lock in the **CLOSED** position behind the catch plate, item ④
- Check the release mechanism
 - Hold the hand lever, item ②, in the initial position
 - With the drive arm, item ②, pull the disk, item ①
 - The damper blade must automatically close
- Open damper blade
 - Pull disk, item ①, and move drive arm item ② to the initial position
 - Open damper blade
 - Engage the spring loaded pin, item ③, behind lever, item ⑫
- Additional checks: solenoid/electro magnet
 - VDE guidelines must be complied with
 - Compare the operating voltage with that specified on the solenoid/electro magnet
 - Close the solenoid circuit – operate pushbutton, item ①, page 11 – with electro magnet break the circuit with the switch, item ②, page 11
 - The damper must close automatically
 - The drive arm, item ②, must lock in the **CLOSED** position behind the catch plate, item ④
 - Rotate the lever, item ⑫, with the plate, item ⑬, towards the magnet
 - The plate, item ⑬, must adhere to the magnet (with the electrical circuit complete)
 - Pull the disk, item ①, of the drive arm, item ②
 - Open the damper blade
 - Engage the spring-loaded pin, item ③, behind the lever, item ⑫
- Inspection of the release mechanism, see page 8
- Functional test to simulate a thermal release, see page 9
- Internal casing inspection, see page 9

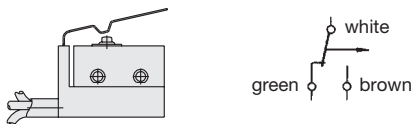
Figure 10 FD with solenoid or electro magnet, side view shown: type FKR-01-K90

Damper blade shown in **OPEN** position

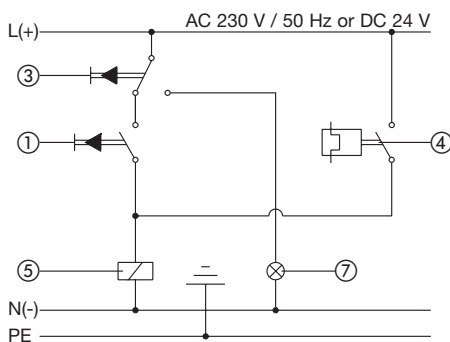
Figure 11 FD with solenoid or electro magnet, front view shown: type FKR-01-K90

Damper blade shown in **OPEN** position

Figure 12

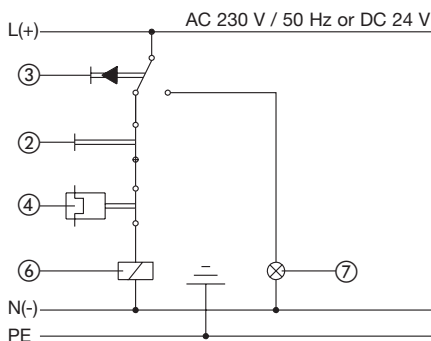


Circuit diagram – solenoid



Damper blade shown in **OPEN** position


Circuit diagram – electro magnet



Damper blade shown in **OPEN** position

- ① Electric pushbutton, supplied by others (close FD)
- ② Electric switch, supplied by others (close FD)
- ③ Electric limit switch with change-over contact (make and break power supply)
- ④ Sensor or detector, supplied by others (close FD); for release devices using the power off to close principle e.g. TROX smoke detector type RM-O/2 or RM-O-VS-D
- ⑤ Solenoid
- ⑥ Electro magnet
- ⑦ Consumer electrics supplied by others (e.g. pilot lamp for position indication)

Maintenance

- Remove any contaminants discovered during the inspection
- If necessary, lubricate the locations that are indicated with an “oil can” 

Overhaul

- Replace fusible link
- Replace release mechanism
- Replace magnet
- Replace limit switch
- Other repair work may only be carried out after consulting the manufacturer

Instructions for electrical wiring

Electrical connection work must only be carried out by qualified trades people. The VDE guidelines must be complied with (VDE = Union of German Electrical Engineers)

Wiring of the limit switches

- Connect wiring to the limit switch to provide the desired indication
- Limit switches shown inactive

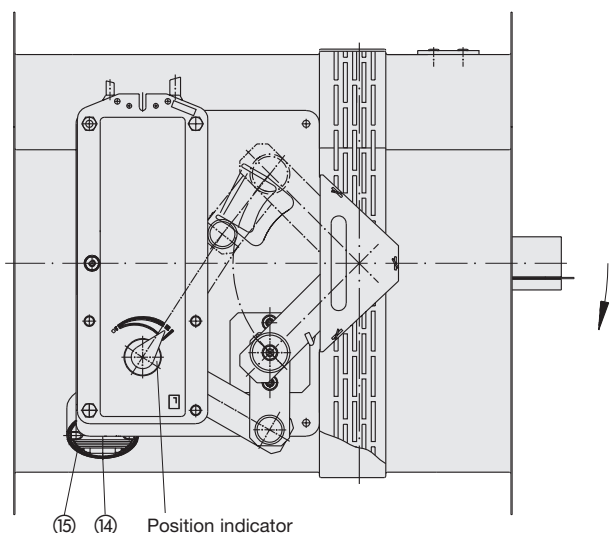
Wiring of the attached electrical components

- Compare the supply voltage with the data specified for the electrical components
- Wiring according to the circuit diagrams opposite
- Circuit diagrams show the damper blade in the **OPEN** position
- The solenoid or electro magnet, item ⑤ and item ⑥, must be wired in series with the limit switch, item ③

BUS systems e.g. pre wired control devices from TROXNETCOM can as an option be used, to achieve the required functions.

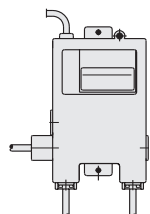
Figure 12 Limit switch standard construction

Figure 13



Damper blade shown in **OPEN** position

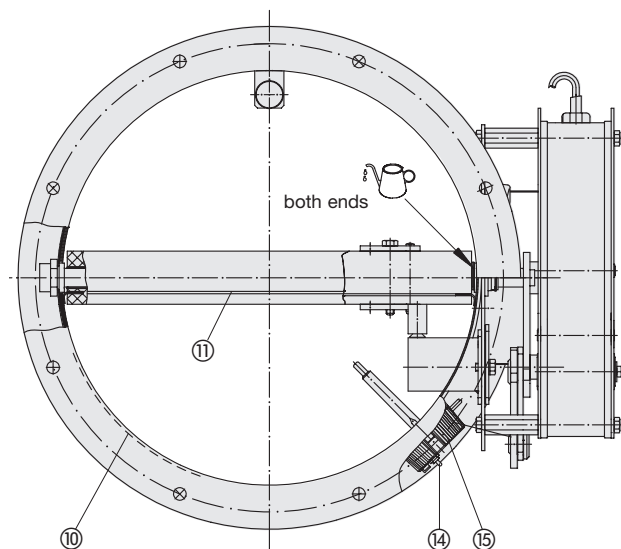
Network unit type BKN230-24-1 TR



The actuator optionally wired with the power supply

Comment:
Control unit, type BKS24-1 TR (optional), wiring by others

Figure 14



Damper blade shown in **OPEN** position

III Electric actuator

Inspection during commissioning

- Check the fire damper for damage
- Manual release – close the damper blade
 - Operate the toggle switch, item 14, of the thermo-electric release mechanism, item 15
 - The electric circuit to the actuator is interrupted
 - The damper blade must close automatically; the position must be shown by the position indicator of the electric actuator
- Internal Casing Inspection see page 9

Maintenance during commissioning


- Remove any contaminants discovered during the inspection

Inspection after commissioning (biannually or annually)

- Interrupt the electric circuit to the electrical actuator with the electric switch, item 1 page 13
- The damper blade must close automatically; the integral limit switch in the actuator signals when the **CLOSED** position is reached
- Electric circuit for the electric actuator is remade
- The damper blade must open automatically; the integral limit switch in the actuator signals when the **OPEN** position is reached

Maintenance after commissioning

(Establish maintenance intervals, based on the system technology and the operating conditions, and when the responsible parties are to conduct maintenance procedures ► “condition-based maintenance”)

- Remove any contaminations that could effect functionality e.g. in the thermal release mechanism, the sealing materials, etc.
- If necessary, lubricate the locations that are indicated with an “oil can” 

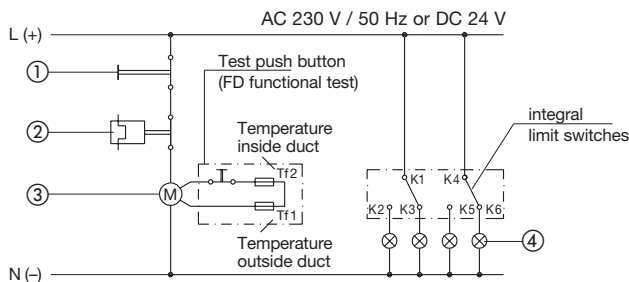
Overhaul

- Replace electric actuator
- Replace thermo-electric release mechanism
- Other repair work may only be carried out after consulting the manufacturer

Figure 13 FD with spring return actuator, side view type FKR-01-K90 shown
Damper blade shown in **OPEN** position

Figure 14 FD with spring return actuator, front view type FKR-01-K90 shown
Damper blade shown in **OPEN** position

Circuit diagram – Electric actuator

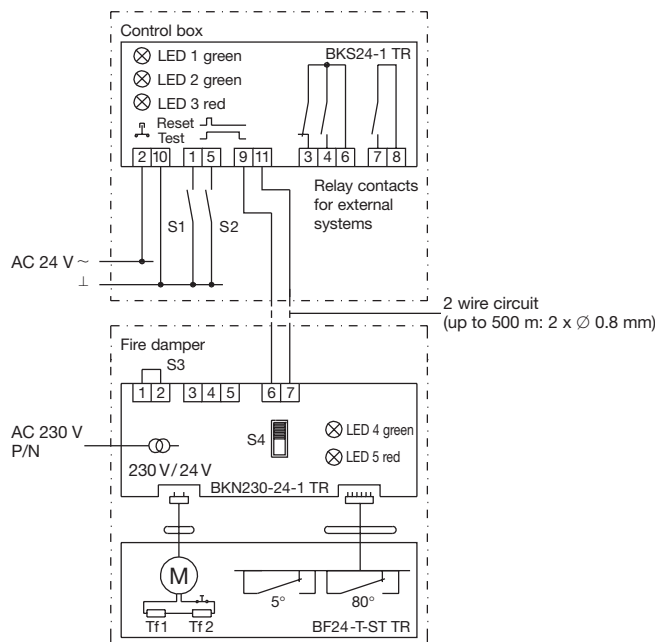


Damper blade shown in **OPEN** position

Type BF230-T TR:

To isolate from the power supply, the system must incorporate a device which disconnects the live and neutral lines (min. 3 mm contact gap).

Control and monitoring of electrical actuators connected to a network communications device or a network communications device and a control unit



(S1) Electric switch (open and close FD)

(S2) Reset/test (external)

(S3) Smoke detector (optional)

(The FD automatically closes when the concentration of smoke exceeds the threshold value); if (S3) is used, remove link 1, 2

(S4) Slide switch for functional test or operation when BKS24-1 TR is not installed directly at the FD. When operating without BKS24-1 TR, the auxiliary switches "OPEN" and "CLOSED" of the actuator are connected with the terminals 3, 4 and 5 of the BKN230-24-1 TR.

Instructions for electrical wiring

Electrical connection work must only be carried out by qualified trades people.

The VDE guidelines must be complied with (VDE = Union of German Electrical Engineers)

Wiring of the attached electrical components

- Compare the supply voltage with the data specified for the electrical components
- Wiring according to the circuit diagram opposite
- Circuit diagram shows the damper blade in the **OPEN** position

BUS systems e.g. pre wired control devices from TROXNETCOM can as an option be used, to realise the required functions.

Functional description for the control system and monitoring of electric actuators in conjunction with a network communication unit and a control unit

If the power supply is intact, the following will illuminate in the BKS24-1 TR and the BKN230-24-1 TR:

- LED 1 green with FD "OPEN"
- LED 1 green flashing, FD is opening
- LED 2 green with FD "CLOSED"
- LED 2 green flashing, FD is closing
- LED 3 and 5 red indicates a fault
- LED 4 green operating (power on actuator)

Position of the relay contacts in the BKS24-1 TR with intact power supply:

- 8-7 closed with FD "OPEN"
- 6-4 closed with FD "CLOSED"
- 6-3 closed due to faulty FD

Position of the relay contacts in the BKS24-1 TR with interrupted power supply:

- 8-7 and 6-4 open
- 6-3 closed

① Electric switch, supplied by others (open and close FD)

② Sensor or detector, supplied by others (close FD), for release devices using the power off to close principle; e.g. TROX smoke detector type RM-O/2 or RM-O-VS-D

③ Electric spring return actuator with integral limit switches and thermo-electric release mechanism (TF1 = Temperature outside duct 72°C and TF2 = Temperature inside duct 72°C)

④ Consumer electrics, supplied by others (e.g. pilot lamp for position indication)

Assembly, commissioning and maintenance instructions for fire dampers type FKR-01-K90 · FKR-02-K90

MI-4/8/EN/7

Weight table (approx. weight in kg)

NW	Type FKR-01-K90		Type FKR-02-K90	
	L = 375 mm	L = 500 mm	L = 470 mm L = 620 mm*	L = 600 mm L = 750 mm*
100*			7	8
125*			7	8
160*			7	8
180*			7	8
200	6	7	6	7
224	7	7	7	8
250	7	8	8	8
280	8	9	8	9
315	9	10	9	10
355	10	11	10	12
400	11	13	12	13
450	13	14	14	15
500	16	18	17	19
560	19	21	19	21
630	22	24	22	25
710	25	28	26	29

For release mechanisms (from Z42 – see leaflet no. 4/8/EN/7) table value + 5 kg.

* Size NW 200 fitted with reduction spigots on each end.

TROX GmbH

Heinrich-Trox-Platz
 D-47504 Neukirchen-Vluyn
 Telephone +49/28 45/2 02-0
 Telefax +49/28 45/2 02-2 65
 e-mail trox@trox.de
 www.troxtechnik.com

Commissioning and maintenance report

for fire dampers, fire protection valves and smoke extraction dampers

No.: 1

Damper or valve no. : **FD ...**
 Approval no. : **Z-41.3-322**
 General Building Inspectorate Licence from / applicable to : **July, 27, 2005 / October 01, 2009**
 Type : **FKR-01-K90**
 Release mechanism : **Basic construction I**

The following inspection, maintenance and repair work has been performed in accordance with TROX assembly, commissioning and maintenance instructions MI-4/8/EN/7, article no. E016KT1		Commissioning work carried out on: August 22, 2005	(6 months after commissioning) 1st Maintenance date: February 22, 2006	Next maintenance date: August 22, 2006	Next maintenance date: August 22, 2007
During commissioning	Inspection	<i>Ni</i>			
	Maintenance	not required			
After commissioning	Inspection		<i>Ni</i>	<i>Ni</i>	
	Maintenance (see reverse for measures)		required	not required	
	Repairs (see reverse for measures)		not required	not required	

TROX GmbH

Heinrich-Trox-Platz
D-47504 Neukirchen-Vluyn
Telephone +49/28 45/2 02-0
Telefax +49/28 45/2 02-2 65
e-mail trox@trox.de
www.troxtechnik.com

Commissioning
and maintenance report
for fire dampers, fire protection valves
and smoke extraction dampers

No.: 1

Maintenance / overhaul, carried out on: February 22, 2006

Type of maintenance :

Contaminations removed.

Au

Maintenance / overhaul, carried out on: _____

Type of _____:

Maintenance / overhaul, carried out on: _____

Type of _____:

Maintenance / overhaul, carried out on: _____

Type of _____:

Example