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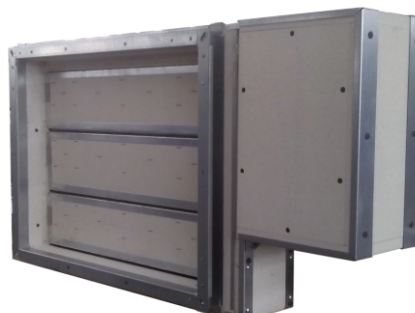
Application of BRK-J/EI90/M/HOT multi-blade smoke control damper

Type:

- **BRK-J/EI90/M/HOT** - Multi-blade smoke control damper

The multi-blade smoke control dampers can be connected to a smoke extract duct system certified conform EN 1366-8 and/or in/on a wall bounding a fire compartment, where it serves for a controlled exhaust of the smoke and hot gases.

The multi-blade smoke damper can operate at High Operational Temperatures as well. Can be opened and closed within 30 minutes operating at temperature conditions below 400°C (HOT).



Certification of BRK-J/EI90/M/HOT multi-blade smoke control damper

The harmonized conditions of construction materials distribution are summarized by EU regulation 305/2011/EU. At the same time 305/2011/EU repeals the former Council Directive 89/106/ECC. According the regulation the buildings must be designed and constructed so as not to endanger the safety of persons, domestic animals and property, to not harm the environment and also deals with the products CE marks.

Since 1st of July 2013 fire protection equipments can be distributed only with CE marks.

CE mark means that there is harmonized standard or there is a European Technical Assessment (ETA) and the product was examined conform the harmonized standard and the manufacturer gives Declaration of Performance (DoP) attached to the product.

Under the terms of the above law the former certificate of compliance is replaced by the evaluation and control of performance constancy of the construction products. Therefore the former Supplier's Declaration of Conformity is replaced by the Declaration of Conformity of Performance. The edition of the Declaration of Performance is exclusively the task and responsibility of the producer, that is justified by signing as well.

The **Declaration of Performance** - conform the harmonized European Technical Assessments - expresses the technical performances of the product relating the relevant characteristics. This declaration includes the exact name of the product, its basic function, application, the numbers of the applied harmonized standards, the name and possible identification number of the accredited testing organisation, the installation modes of the multi-blade fire damper.

Standards and norms:

- The prerequisite of CE mark is to comply with **EN 12101-8:2011**: Smoke and heat control systems - Part 8: Smoke control dampers. This standard includes the basic requirements of multi-blade fire dampers and shutters.
- The standard mentioned above prescribes a furnace test regarding the fire resistance in accordance with standard **EN 1366-10:2000**: Fire resistance tests for service installations - Part 10: Smoke control dampers
- Fire resistance classification is made according to **EN 13501-4:2007+A1:2010**: Fire classification of construction products and building elements. Classification using data from fire resistance tests on components of smoke control systems
- B casing leakage class according to **EN 1751**.
- And all locally relevant regulations must be observed.

The manufacturer is supposed to get done the compliance assessment regarding the products manufactured in the European Union, to prepare technical documentation, to issue a Declaration of Performance and provide the product with the CE marking.

The BRK-J/EI90/M/HOT type multi-blade smoke control dampers manufactured by AEROPRODUKT Zrt. have the necessary European Union licences and correspond the above mentioned international norms.

Fire resistance classification of BRK-J/EI90/M/HOT multi-blade smoke control damper

CERTIFICATE OF CONSTANCY OF PERFORMANCE:

- 1391-CPR-0161/2014

Classification in fire resistant class:

- EI90 (v_{edw} - h_{odw} - i ↔ o) S1000C₁₀₀₀₀ HOT400/30 AA multi

Internal size in leaf direction (B): 200 – 1000 mm

Internal size perpendicular on leaf (H): 150 – 1050 mm
150 mm steps

Mounting width: 200 mm

Jelmagyarázat:

Integrity:

E

Insulation:

I

Fire resistance class

tt (90)

Suitability for vertical installation - duct and wall -:

v_{edw}

Suitability for horizontal installation t - duct and wall -:

h_{odw}

Can be applied inside and outside the

fire space respectively in both directions

i ↔ o

Leakage - indicates the suitability of use up to these underpressures -:

S1000

Cyclic test:

C₁₀₀₀₀

High Operational Temperature:

HOT

Automatic activation:

AA

Multi compartment:

multi

BRK-J/EI90/M/HOT

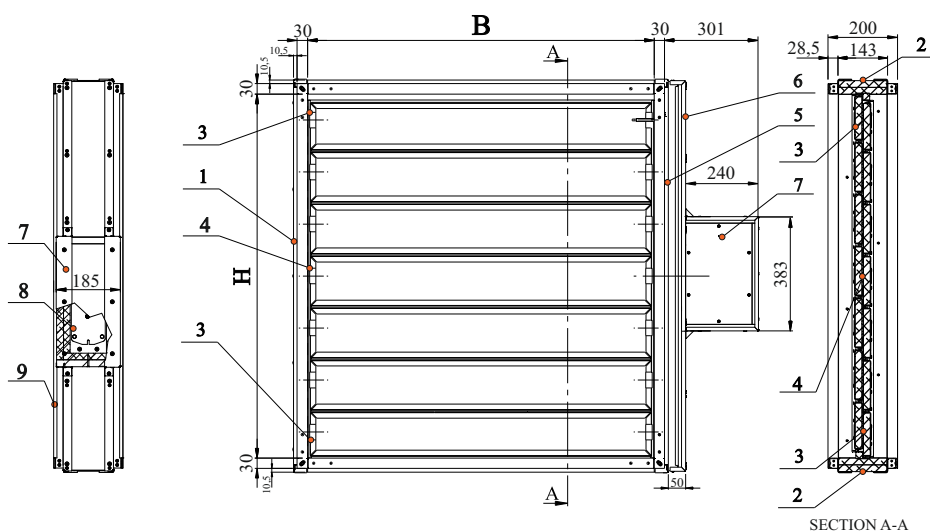
Multi-blade smoke control damper



Main characteristics of BRK-J/EI90/M/HOT multi-blade smoke damper

Main features	Prescriptions of standard EN 12101-8	Prescription	Performance criteria	Conform	
Tűzállósági osztályozás					
- Integrity	4.1.1 a) 4.4.1	E	MSZ EN 1366-10, MSZ EN 13501-4, MSZ EN 1751	It keeps continuously its separating function, without having fire-raising effect respectively the leakage trough the damper can not exceed the value of 360 m3/(h*m ²) > the ability of the damper to maintain its opening when subjected to the fire test > there has been no cracks and openings at the connection of damper > the suitability for use of the damper at an under pressure, measured at ambient	passed
- Insulation	4.1.1 b) 4.4.1	EI	MSZ EN 1366-10, MSZ EN 13501-4	It keeps continuously its separating function, without exceeding the temperature on the protected side a) with more than 140 °C the initial average temperature or b) on any place (including the thermocouple) with more than 180 °C the initial average temperature (expressed in minutes)	passed
- Leakage	4.1.1 c) 4.4.1	EI ... S	MSZ EN 1366-10, MSZ EN 13501-4	The leakage through the fire damper can not exceed 200 m3/(h*m ²) - measured with 5 minutes after the fire test.	passed
- Mechanical stability	4.1.1 d)	-	MSZ EN 1366-10, MSZ EN 1361-1	There has been no mechanical failure	passed
- Maintenance of cross section	4.1.1 e)	-	MSZ EN 1366-10, MSZ EN 1363-1	There has been no cross-section reduction	passed
Operational reliability					
- High Operational Temperature	4.1.1 f) and 4.4.1	MSZ EN 1366-10	operating at 400 °C for 30 min	passed	
- Operating durability	4.4.2.2	operation test cycle	10 000 + 2 x 100 cycle	passed	
- Opening - closing test	4.2.2.1 és 4.2.2.2	open-close test	End of cycle in less than 120 seconds	passed	
- Corrosion protection	5.3 / A enclosure	according to EN 60068-2-52	no corrosion during the test	passed	

The dimensions of BRK-J/EI90/M/HOT multi-blade smoke damper



- | Item | Denomination |
|------|-------------------------|
| 1 | drive opposite side |
| 2 | lower-upper side |
| 3 | blades - intermediate |
| 4 | blade - driving |
| 5 | drive side |
| 6 | drive casing |
| 7 | motor protection casing |
| 8 | actuating motor |
| 9 | connection frame |

Sizes series, mass, and effective surface of BRK-J/EI90/M/HOT multi-blade smoke control damper

H/B	200	300	400	500	600	700	800	900	1000
150	21	24	26	28	30	33	35	37	39
300	27	30	33	36	39	42	45	48	51
450	32	36	40	44	47	51	55	59	62
600	34	42	47	51	56	60	65	69	74
750	43	48	54	59	64	69	75	80	85
900	49	55	61	67	73	79	85	91	96
1050	56	62	69	76	83	89	96	103	109

Mass of BRK-J/EI90/M/HOT multi-blade smoke control damper [kg]

H/B	200	300	400	500	600	700	800	900	1000
150	0,010	0,015	0,020	0,026	0,031	0,036	0,042	0,047	0,052
300	0,029	0,045	0,060	0,076	0,092	0,108	0,123	0,139	0,155
450	0,048	0,074	0,101	0,127	0,153	0,179	0,205	0,231	0,257
600	0,068	0,104	0,141	0,177	0,214	0,250	0,287	0,323	0,360
750	0,087	0,134	0,181	0,228	0,274	0,321	0,368	0,415	0,462
900	0,106	0,163	0,221	0,278	0,335	0,393	0,450	0,507	0,564
1050	0,125	0,193	0,261	0,328	0,396	0,464	0,531	0,599	0,667

Effective surface of BRK-J/EI90/M/HOT multi-blade smoke control damper - A_{eff} [m²]

Construction of BRK-J/EI90/M/HOT multi-blade smoke control damper

HOUSING

The housing of the damper is made of 4 double-walled, fireproof calcium silicate sides, that are assembled with rivets using corner braces. The connecting frame is made of galvanized steel.

BLADES

The double-walled, overlapping damper blades with steel bracing are placed with 150 mm step. The louvers have the same movement direction. The louvers are embedded in a heat resistant bush that is extruded in the double-walled house.

COLD LEAKAGE - P profile

The "cold" leakage (20 °C) of the house is ensured by the heat stabilized, customized rubber profile placed on the lower and upper gap closings, on the side panels respectively on the out- and inside edges of the leaves.

BLADE DRIVING:

The blade driving consists of a rod that is connected to all the blades. The blade driving is placed inside the casing, outside the airflow.

WARM LEAKAGE

The "warm" leakage of the damper (in safety position) is ensured by the foaming sealant sunked the side panels and placed on the edge of the damper leaves that are closing due to heat effect.

CONNECTION FRAME

The installation depth of the BRK-J/EI90/M/HOT smoke control damper with the connection frame is 200 mm. The connection to the ductwork system is done with a 30 mm MEZ flange that has 4 pcs (ø9,1x19 mm) oval holes on the corners.

Actuating of BRK-J/EI90/M/HOT multi-blade smoke control damper

When the ventilation system is working the BRK-J/EI90/M/HOT multi-blade smoke control damper are closed default. In case of fire in the same time with the disabling of the ventilation system the smoke exhaust is started and according to this the dampers open automatically. The damper actuating motors operate in OPEN-CLOSE mode with integrated end-switchers. The operation time of the electrical wiring must be dimensioned for at least 30 minutes or protected correspondingly. The control of the motor must be provided by the fire protection system.

The damper actuating motors are placed perpendicularly to the air flow in an insulated casing and the wiring is made with an incombustible cable.

Applied types:

BELIMO types

smoke control damper with BLE 24 motor
smoke control damper with BLE 230 motor
smoke control damper with BE 24 motor
smoke control damper with BE 230 motor

Notation

F2
F3
F4
F6

GRUNER types

smoke control damper with 342-024-15 motor
smoke control damper with 362-024-20 motor
smoke control damper with 382-024-40 motor
smoke control damper with 342-230-15 motor
smoke control damper with 362-230-20 motor
smoke control damper with 382-230-40 motor

Notation

F2
F3
F4
F5
F6
F7

BRK-J/EI90/M/HOT

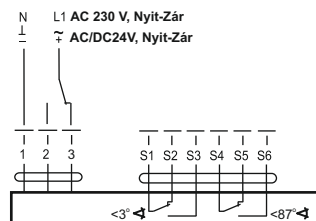
Multi-blade smoke control damper



Actuating of BRK-J/E90/M/HOT multi-blade smoke control damper with BELIMO motor

H/B	200	300	400	500	600	700	800	900	1000
150									
300									
450									
600									
750									
900									
1050									

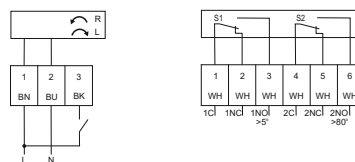
- ☐ BELIMO motors type BLE
☐ BELIMO motors type BE



MOTOR TYPE	BLE 24	BLE 230	BE 24	BE 230
Nominal voltage	AC 24 V, 50/60 Hz DC 24 V	AC 230 V, 50/60 Hz	AC 24 V, 50/60 Hz DC 24 V	AC 230 V, 50/60 Hz
Power consumption:				
- in operation	7,5 W	5 W	12 W	8 W
- at rest	< 0,5 W	< 1 W	0,5 W	0,5 W
Power consumption for wire sizing	9 VA (Imax 2,7 A @ 5 ms)	12 VA (Imax 6 A @ 5 ms)	18 VA (Imax 8,2 A @ 5 ms)	15 VA (Imax 7,9 A @ 5 ms)
Protection class	III	II	III	II
Degree of protection	IP 54			
Running time				
- motor	< 30 mp / 90°	< 30 mp / 90°	< 60 mp / 90°	< 60 mp / 90°
Torque				
- motor	15 Nm	15 Nm	40 Nm	40 Nm
Temperature				
- normal duty			-30 °C ... 50 °C	
- non-operating			-40 °C ... 80 °C	

Actuating of BRK-J/E90/M/HOT multi-blade smoke control damper with GRUNER motor

H/B	200	300	400	500	600	700	800	900	1000
150									
300									
450									
600									
750									
900									
1050									



- ☐ GRUNER motors type 342
☐ GRUNER motors type 362
☐ GRUNER motors type 382



MOTOR TYPE	342-024	342-230	362-024	362-230	382-024	382-230
Nominal voltage	AC 24 V, 50/60 Hz DC 24 V	AC 230 V, 50/60 Hz	AC 24 V, 50/60 Hz DC 24 V	AC 230 V, 50/60 Hz	AC 24 V, 50/60 Hz DC 24 V	AC 230 V, 50/60 Hz
Power consumption:						
- in operation	7 W	7 W	4 W	3 W	8 W	8,5 W
- at rest	1,5 W	1,5 W	1,5 W	1,5 W	1,5 W	1,5 W
Power consumption for wire sizing	9,5 VA	12 VA	6 VA	7 VA	10 VA	15,5 VA
Protection class	III	II	III	III	III	II
Degree of protection	IP 54					
Running time						
- motor	< 30 mp / 90°	< 30 mp / 90°	< 60 mp / 90°	< 60 mp / 90°	< 60 mp / 90°	< 60 mp / 90°
Torque						
- motor	>15 Nm	>15 Nm	>20 Nm	>20 Nm	>40 Nm	>40 Nm
Temperature						
- normal duty			-30 °C ... 50 °C			
- non-operating			-30 °C ... 80 °C			

Installation and mounting of BRK-J/EI90/M/HOT multi-blade smoke control damper

Installation:

The A BRK-J/EI90/M/HOT multi-blade smoke control damper can be installed in concrete wall, lightweight wall, ceiling and outside the wall in air ductwork.

- The installation depth of the BRK-J/EI90/M/HOT multi-blade smoke control damper with the connection frame is 200 mm. The connection to the ductwork system is done with a 30 mm MEZ flange that has 4 pcs ($\varnothing 9,1 \times 19$ mm) oval holes on the corners.
- In the case of installation within a solid wall the required minimal wall width is 100 mm (density ≥ 500 kg/m³)
- In case of installation within a ceiling the required minimal wall width is 150 mm (density ≥ 600 kg/m³)
- In case of installation within a lightweight wall the required minimal wall width is 100 mm
- Minimal distance from the load-bearing elements: 75 mm
- Minimal distance between two dampers: 200 mm

In plasterboard walls, traditional walls (brick, concrete) the damper can be build up or concreted, respectively with fire protection HILTI or other equivalent material. The latter installation mode is favourable because thus thermal expansion of the metal parts of the damper in case of fire is easier. This way the stretching of the damper can be avoided.

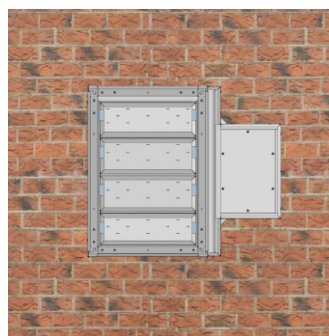
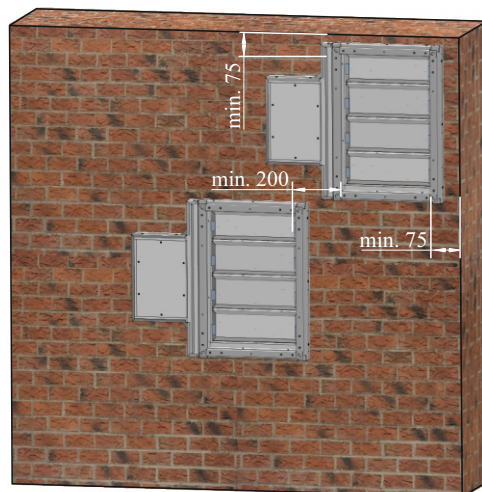
In case of installing of BRK-J/EI90/M/HOT multi-blade smoke control damper on the face of a wall a supporting structure must be fixed and the break-through the wall must be filled with thermal insulation material. The thermal insulation can be done with HILTI or other equivalent materials.

Recommended thermal insulation materials for different installation modes:

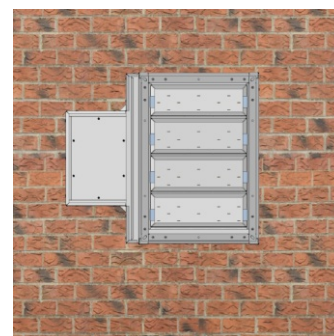
- HILTI fire protection board –CFS-CT B 1S Weichschott
- HILTI fire protection coating CFS-CT
- HILTI acryl fire protection paste CFS-SACR
- CONLIT Ductrock 90 mineral wool fire protection board
- ROCKWOOL Steprock HD mineral wool board
- PROMATECT-H fire protection board
- PROMASTOP-P fire protection paste

The direction of the airflow is independent from the point of view of operation, but it is advisable to place the servomotor and the control unit on the opposite side with the expected fire.

The damper can be installed with horizontal or vertical shaft as well. The motor at vertical shaft position can be at the top or bottom as well.



vertical installation
horizontal axle



vertical installation
horizontal axle



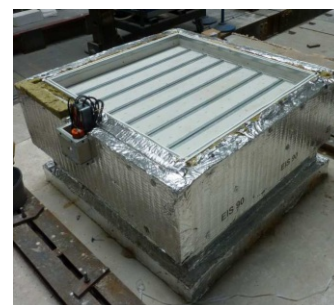
vertical installation
vertical axle



vertical installation
vertical axle



installation to air duct



outside ceiling - in air duct

BRK-J/EI90/M/HOT

Multi-blade smoke control damper



Installation and mounting of BRK-J/EI90/M/HOT multi-blade smoke control damper

In opened position the blades do not overhang the housing of the damper. Any part of the element (ex. grid louver) connected to the damper should not overhang in the housing of the damper in order to not obstruct the free movement of the blades.

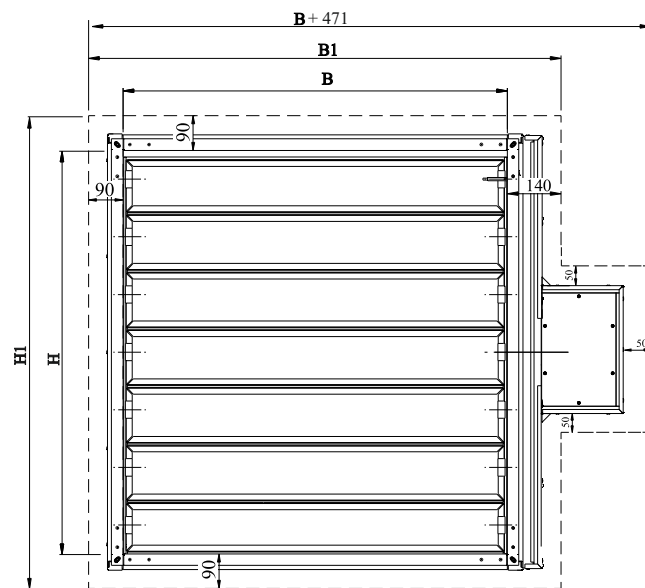
The BRK-J/EI90/M/HOT multi-blade smoke control dampers can be built in independent from the access direction of the motor. There is no need of separately right or left hand version.

The servomotor is shipped with a connection cable (approx. 1 m long, with free ends). The servomotor is equipped with protection casing in order to prevent damages. The thermal relay can be fixed on the optionally ordered extension or on the ductwork built before or after the damper. It is FORBIDDEN to make a hole on the housing of the damper in order to place the sensor!

Take care to avoid damages. If the connecting surface is not flat or the connecting frame is not rectangular, the damper can be stretched. When installing even connecting surfaces and perpendicular edges must be assured. After installing the easy move must be controlled. The damper must be installed with closed blades.

The contact with splashing or running water must be avoided, therefore it must be protected (ex. outdoors must be fitted with a protective roof against rainwater). The special fireproof material of the damper absorbs moisture. In case of excessive moisture the material gets soft, cracks can appear. These can cause the damage of the damper.

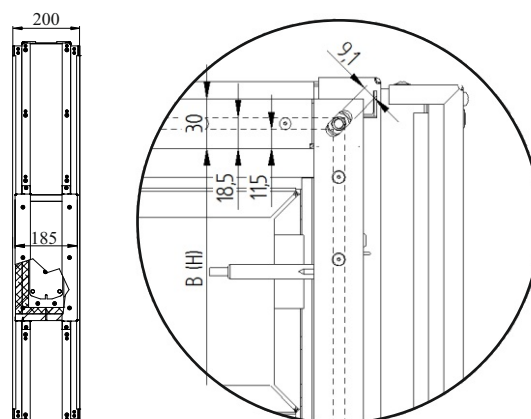
If the damper gets wet after drying it can be operated without any problem. The water resistance can be increased if we coat the fireproof insulation parts of the damper with PROMAT 2000 impregnating material.



The installation opening must be designed with the following dimensions:

$$B1 = B + 230 \text{ mm (B = width, parallel with leaf shafts)}$$

$$H1 = H + 180 \text{ mm (H = height)}$$



Measure of frame of BRK-J/EI90/M/HOT smoke control damper

Place of built in	Dimension [mm]	Method of installation	BRK-J/EI90
Within solid wall	100	Plaster, mortar or concrete	EIS90
Within solid wall	100	Fire wall (Weichschott)	EIS90
On face of solid wall		According to documentation	EIS90
Outside solid wall		According to documentation	EIS90
Within ceiling	150	Plaster, mortar or concrete	EIS90
Within ceiling	150	Fire wall (Weichschott)	EIS90
Under ceiling		According to documentation	EIS90
Outside ceiling		According to documentation	EIS90
Within lightweight wall	100	Fire wall (Weichschott)	EIS90
On face of lightweight wall		According to documentation	EIS90
Outside lightweight wall		According to documentation	EIS90

Installation modes of BRK-J/EI90/M/HOT smoke control dampers –EI90

Air pressure loss and sound power level of BRK-J/EI90/M/HOT multi-blade smoke control damper

Pressure drop:

The calculation of the pressure drop is done with the following formula:

$$\Delta p = \xi \cdot r \cdot \frac{v^2}{2}$$

Δp [Pa] - pressure loss

v [m/s] - air velocity on the nominal section of the damper

r [kg/m³] - air density

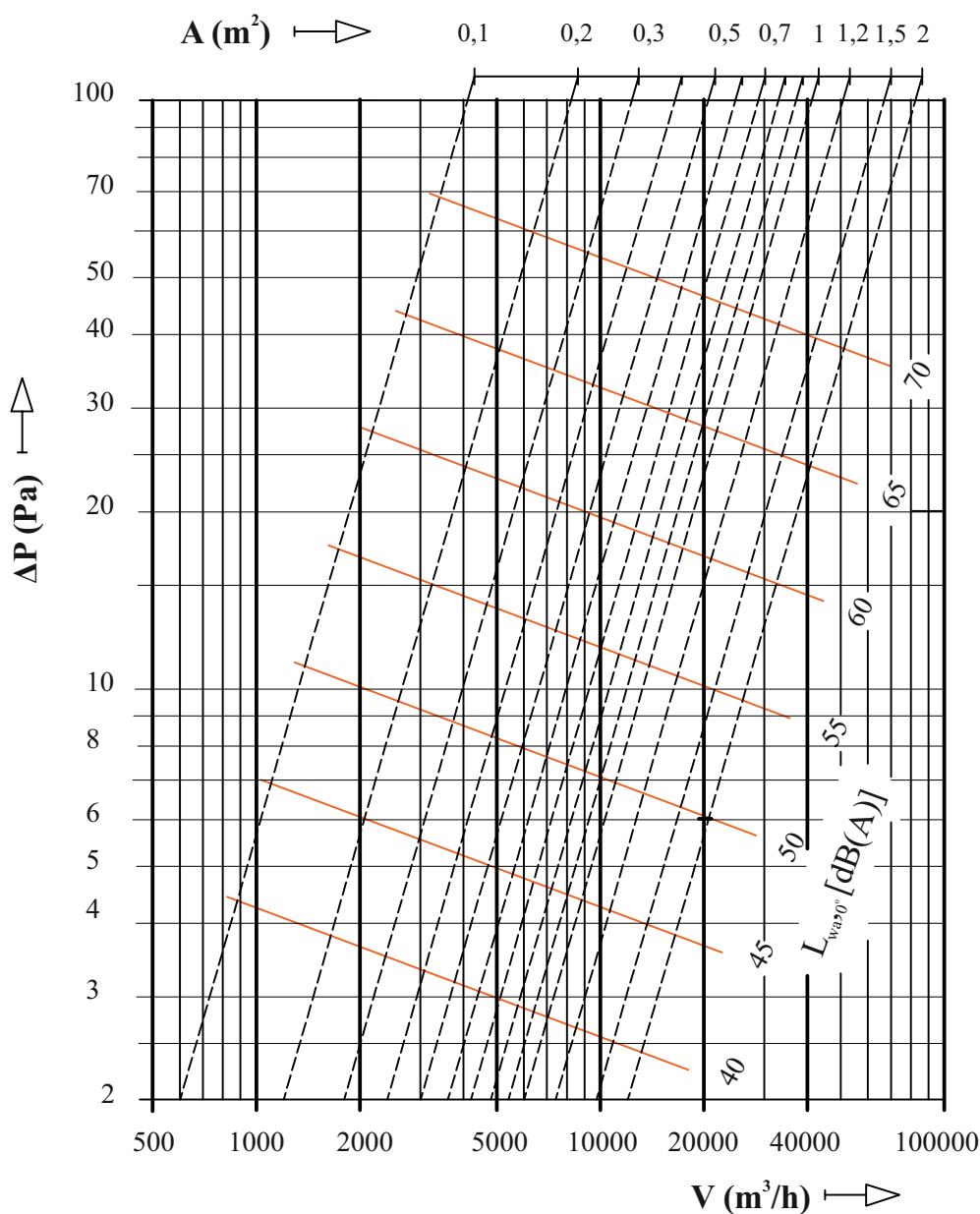
ξ [-] - resistance factor

A [m²] - free cross-section

V [m³/h] - airflow

H/B	200	300	400	500	600	700	800	900	1000
150	1,453	1,439	1,418	1,400	1,383	1,372	1,349	1,335	1,317
300	1,417	1,383	1,349	1,317	1,261	1,255	1,223	1,192	1,162
450	1,383	1,335	1,261	1,239	1,192	1,143	1,106	1,065	1,027
600	1,349	1,261	1,223	1,162	1,106	1,091	1,001	0,953	0,906
750	1,317	1,239	1,162	1,093	1,027	0,965	0,906	0,852	0,827
900	1,261	1,192	1,106	1,027	0,953	0,884	0,884	0,773	0,706
1050	1,252	1,143	1,091	0,965	0,884	0,840	0,778	0,731	0,628

The leakage of the BRK-J/EI90/M/HOT multi-blade damper



Air pressure loss and sound power level of BRK-J/E90/M/HOT multi-blade smoke control damper in opened position

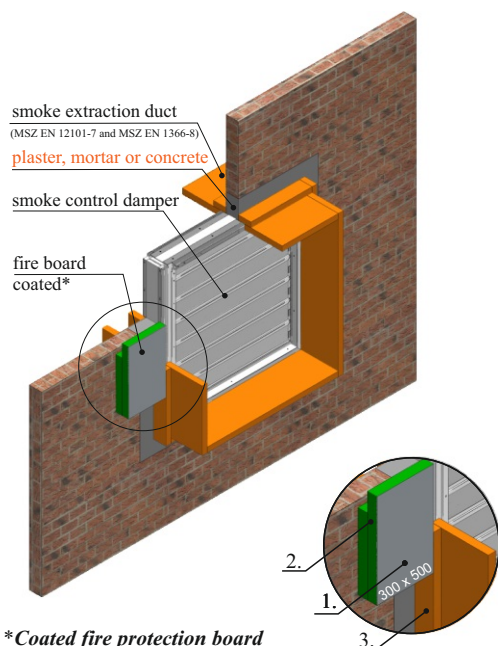
BRK-J/EI90/M/HOT

Multi-blade smoke control damper



Installation of BRK-J/EI90/M/HOT multi-blade smoke control damper within a solid wall - 100 mm

vertical installation - horizontal axle

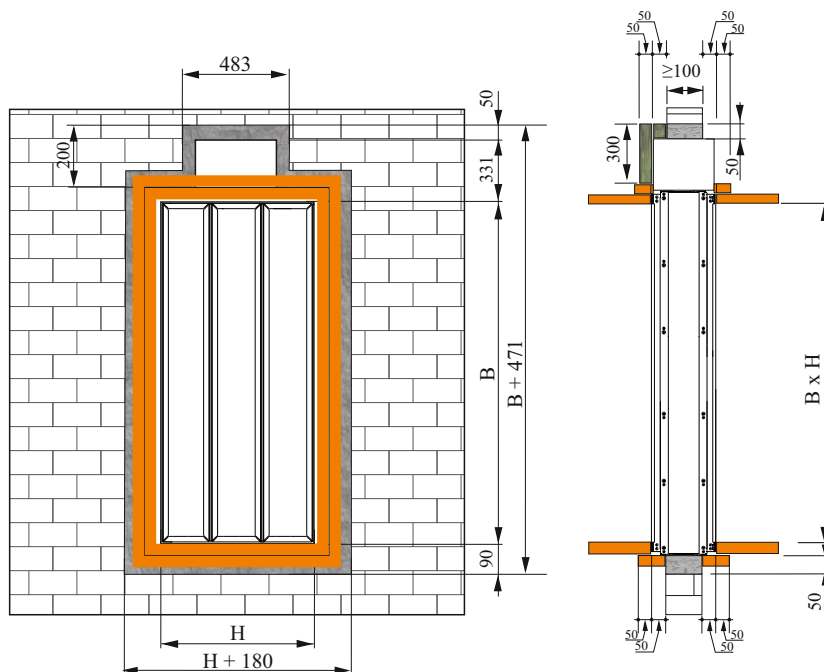


*Coated fire protection board

Materials can be used:

- 1.) HILTI fire protection board CFS-CTB 1S 140/50
- 2.) HILTI fire protection coating CFS-CT
- 3.) 40 mm thick calcium silicate board with 450 kg/m³ density, which must be glued with PROMAT K84 glue or equivalent materials

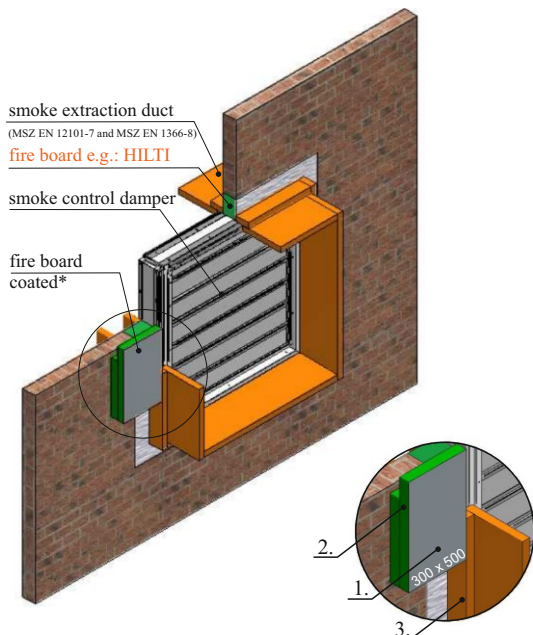
vertical installation - vertical axle



Plaster, mortar or concrete

Installation of BRK-J/EI90/M/HOT multi-blade smoke control damper within a solid wall - 100 mm

vertical installation - horizontal axle

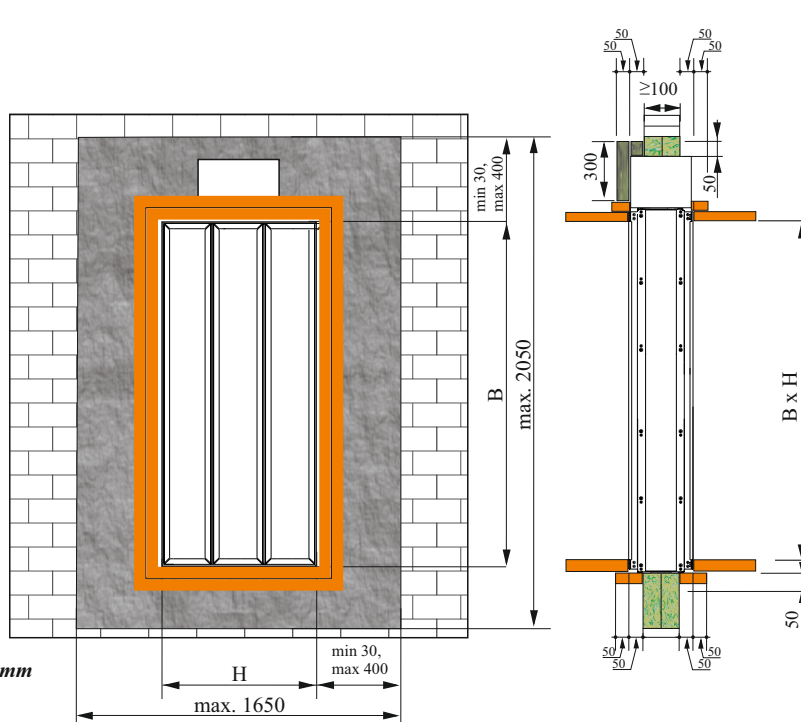


*Coated fire protection board - max. dim: 1650x2050 or 2050x1650 mm

Materials can be used:

- 1.) HILTI fire protection board CFS-CTB 1S 140/50
- 2.) HILTI fire protection coating CFS-CT
- 3.) 40 mm thick calcium silicate board with 450 kg/m³ density, which must be glued with PROMAT K84 glue or equivalent materials

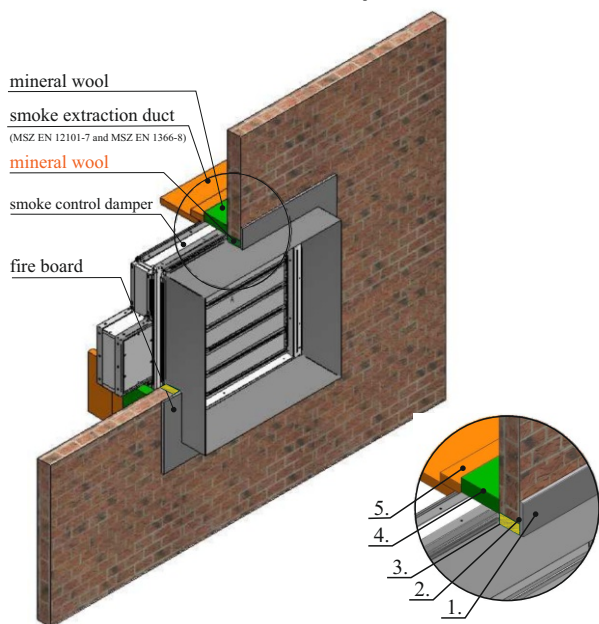
vertical installation - vertical axle



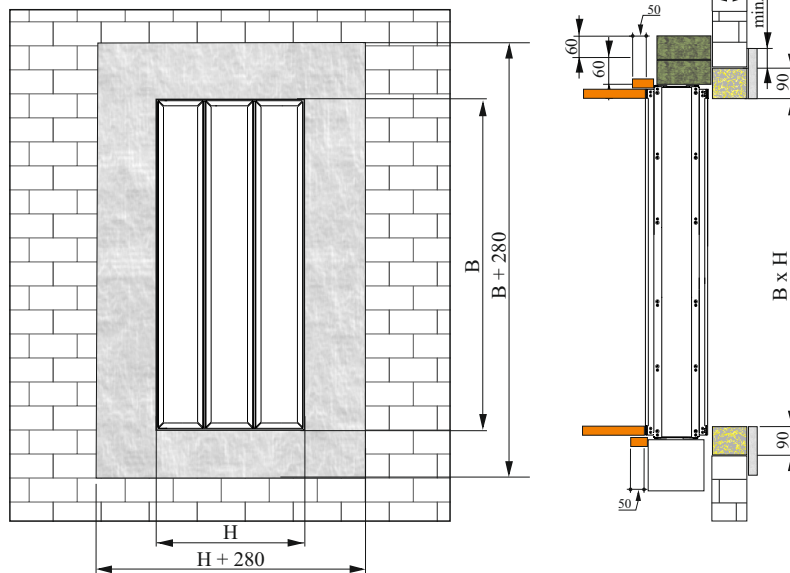
Fire protection board - dry installation without mortar -

Installation of BRK-J/EI90/M/HOT multi-blade smoke control damper on face of a solid wall - 100 mm

vertical installation - horizontal axle



vertical installation - vertical axle

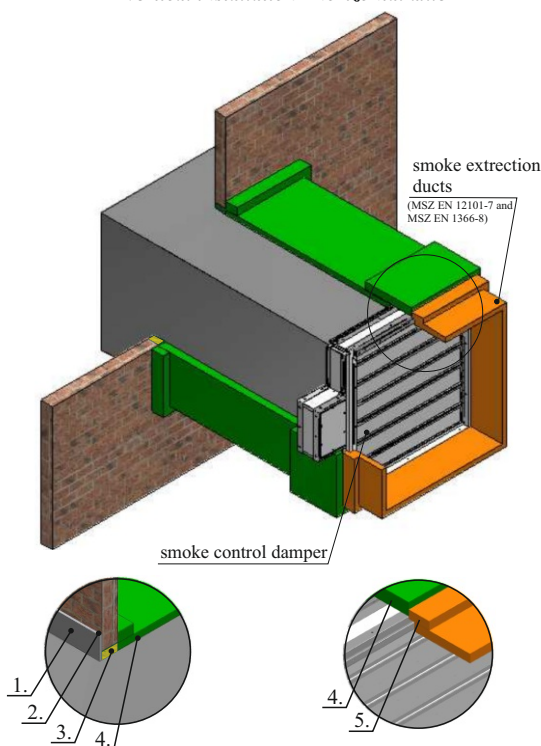


- 1.) 15 mm thick fire protection board with 870 kg/m³ density - *Promatec-H*
- 2.) with 1 mm thick fire-resistant seal - *Promastop-P*
- 3.) mineral wool board with 140 kg/m³ density - *Rockwool Steprock*

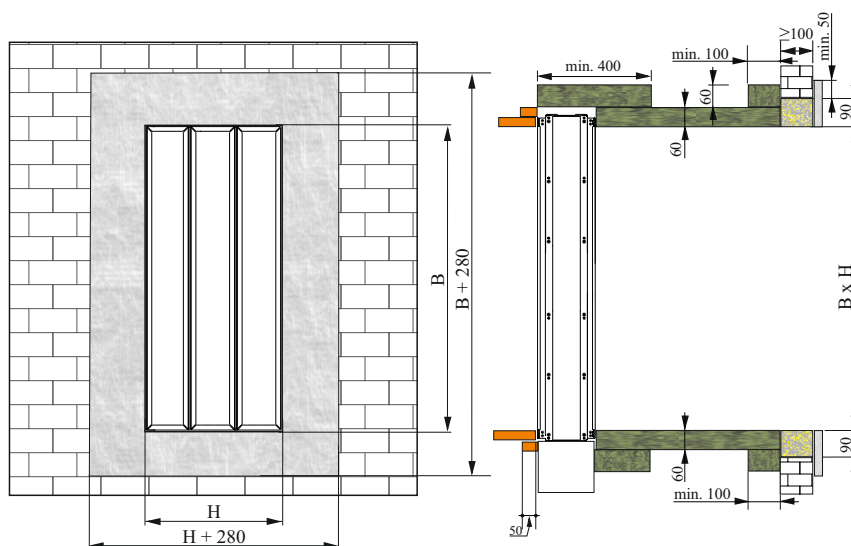
- 4.) mineral wool fire protection board coated on one side with aluminium foil for air duct isolation with fire resistance class EI90 2x60 mm thickness and 300 kg/m³ density - *Conlit Ductrock EI90*
- 5.) 40 mm thick calcium silicate board with 450 kg/m³ density or equivalent materials

Installation of BRK-J/EI90/M/HOT multi-blade smoke control damper outside solid wall in an air duct

vertical installation - horizontal axle



vertical installation - vertical axle



- 1.) 15 mm thick fire protection board with 870 kg/m^3 density - *Promatec-H*
- 2.) with 1 mm thick fire-resistant seal - *Promastop-P*
- 3.) mineral wool board with 140 kg/m^3 density - *Rockwool Steprock*

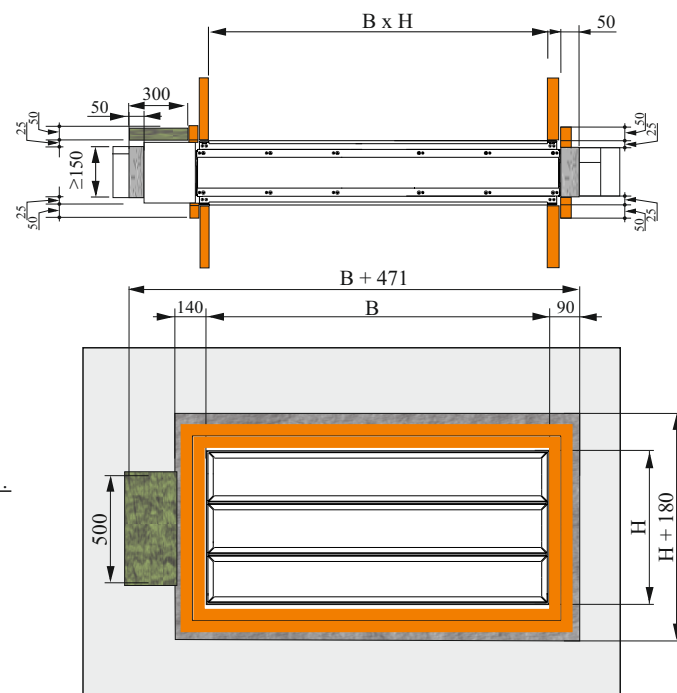
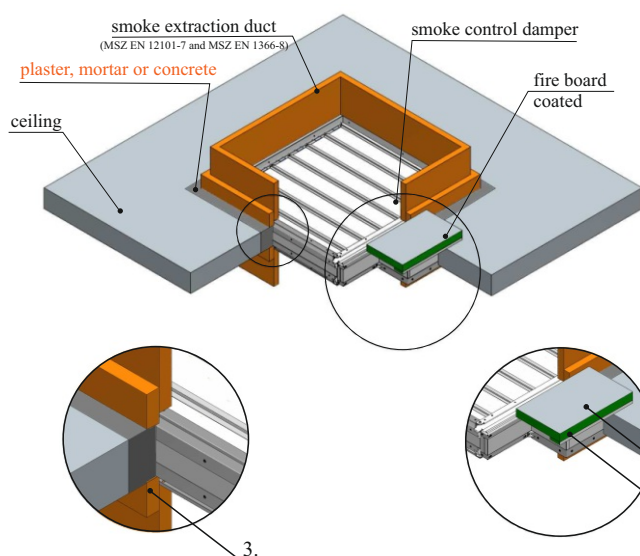
- 4.) mineral wool fire protection board coated on one side with aluminium foil for air duct isolation with fire resistance class EI90 2x60 mm thickness and 300 kg/m³ density - *Conlit Ductrock EI90*
- 5.) 40 mm thick calcium silicate board with 450 kg/m³ density or equivalent materials

BRK-J/EI90/M/HOT

Multi-blade smoke control damper



Installation of BRK-J/EI90/M/HOT multi-blade smoke control damper within a ceiling – 150 mm



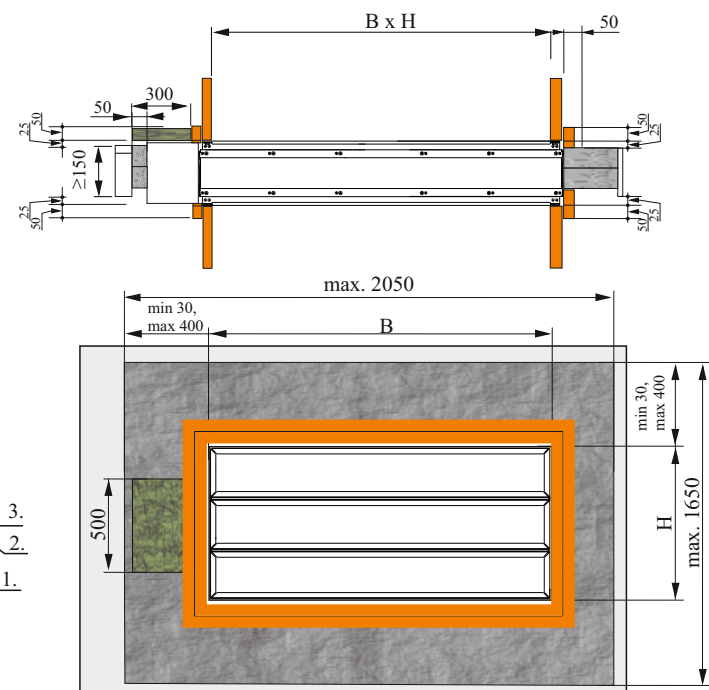
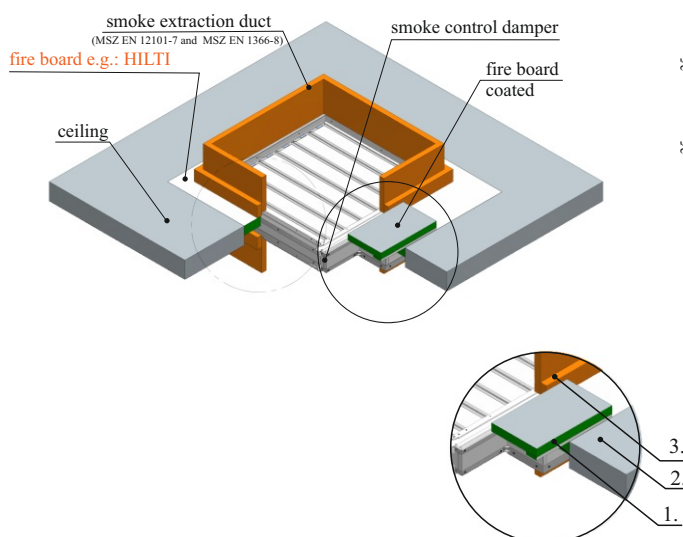
*Coated fire protection board

Materials can be used:

- 1.) HILTI fire protection board CFS-CTB 1S 140/50
- 2.) HILTI fire protection coating CFS-CT
- 3.) 40 mm thick calcium silicate board with 450 kg/m³ density, which must be glued with PROMAT K84 glue or equivalent materials

Plaster, mortar or concrete

Installation of BRK-J/EI90/M/HOT multi-blade smoke control damper within a ceiling – 150 mm



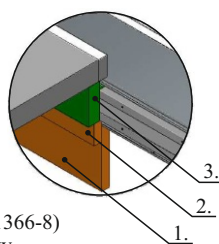
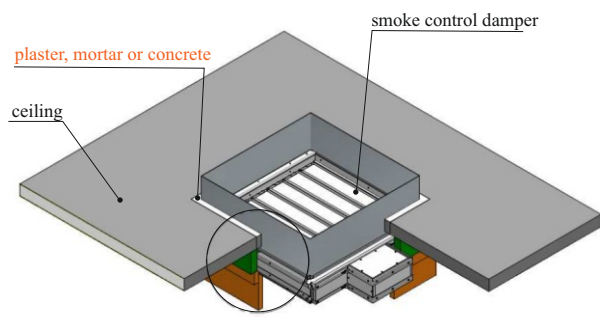
*Coated fire protection board - max. dim: 1650x2050 or 2050x1650 mm

Materials can be used:

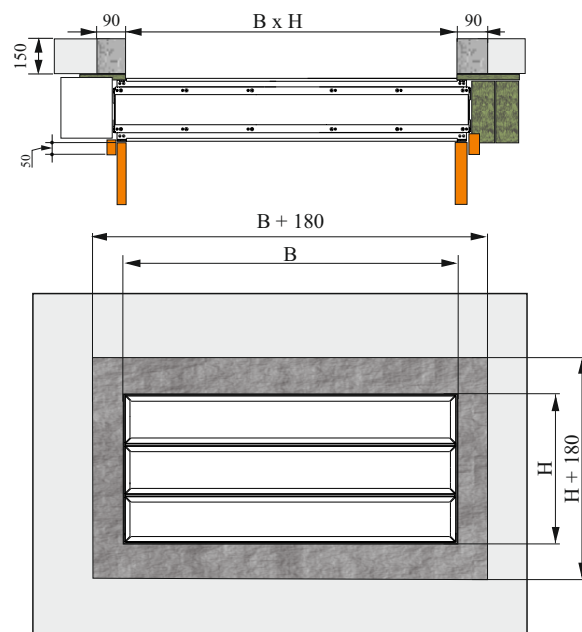
- 1.) HILTI fire protection board CFS-CTB 1S 140/50
- 2.) HILTI fire protection coating CFS-CT
- 3.) 40 mm thick calcium silicate board with 450 kg/m³ density, which must be glued with PROMAT K84 glue or equivalent materials

Fire protection board - dry installation without mortar -

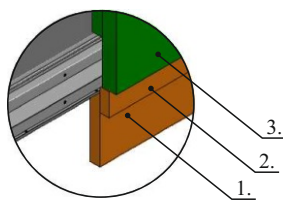
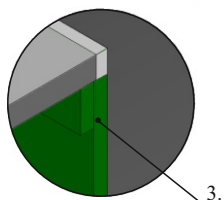
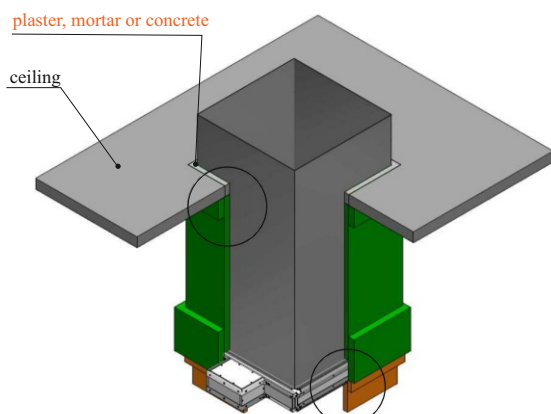
Installation of BRK-J/EI90/M/HOT multi-blade smoke control damper under ceiling – 150 mm



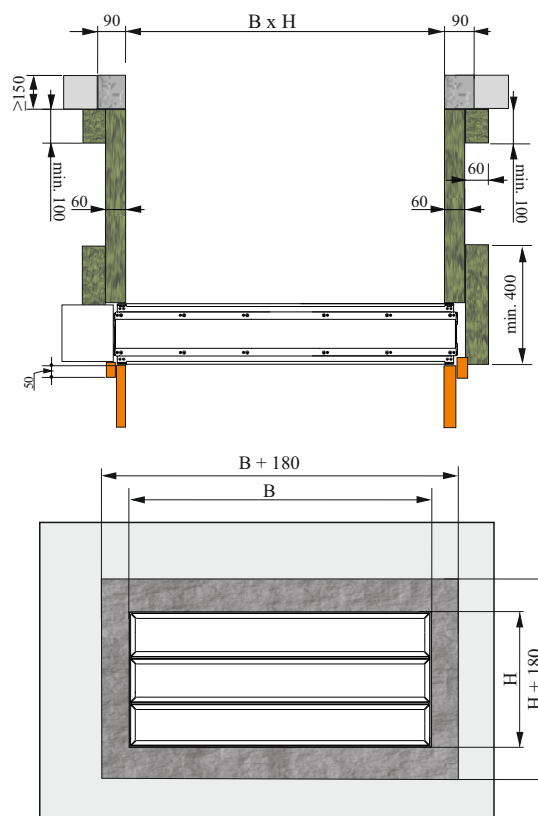
- 1.) Smoke extraction duct (MSZ EN 12101-7 and MSZ EN 1366-8)
- 2.) 40 mm thick calcium silicate board with 450 kg/m³ density, which must be glued with PROMAT K84 glue
- 3.) mineral wool fire protection board coated on one side with aluminium foil for air duct isolation with fire resistance class EI90 2x60 mm thickness and 300 kg/m³ density - Conlit Ductrock EI90



Installation of BRK-J/EI90/M/HOT multi-blade smoke control damper under ceiling in air duct



- 1.) Smoke extraction duct (MSZ EN 12101-7 and MSZ EN 1366-8)
- 2.) 40 mm thick calcium silicate board with 450 kg/m³ density, which must be glued with PROMAT K84 glue
- 3.) mineral wool fire protection board coated on one side with aluminium foil for air duct isolation with fire resistance class EI90 2x60 mm thickness and 300 kg/m³ density - Conlit Ductrock EI90



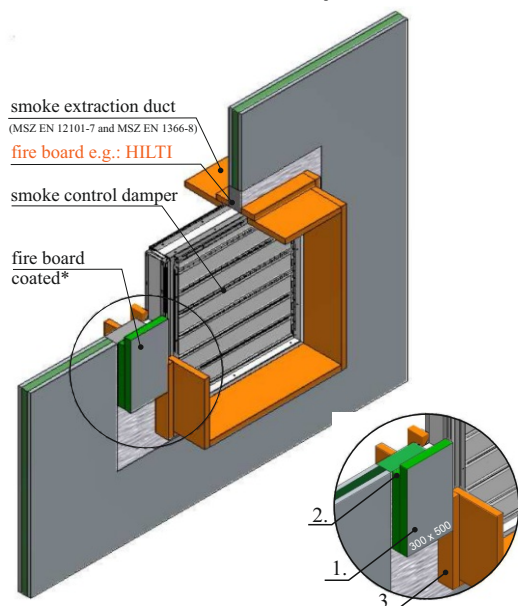
BRK-J/EI90/M/HOT

Multi-blade smoke control damper



Installation of BRK-J/EI90/M/HOT smoke control damper within a lightweight wall - 100 mm

vertical installation - horizontal axle

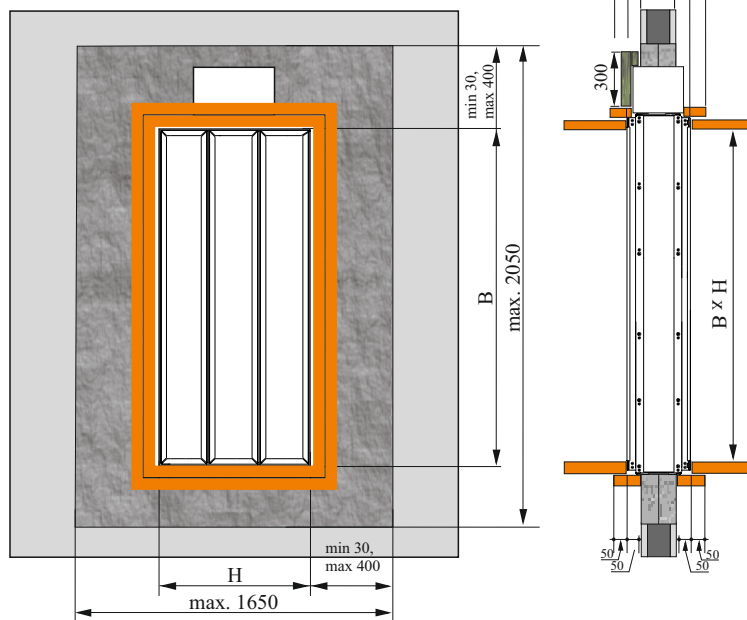


*Coated fire protection board

Materials can be used:

- 1.) HILTI fire protection board CFS-CTB 1S 140/50
- 2.) HILTI fire protection coating CFS-CT
- 3.) 40 mm thick calcium silicate board with 450 kg/m³ density, which must be glued with PROMAT K84 glue or equivalent materials

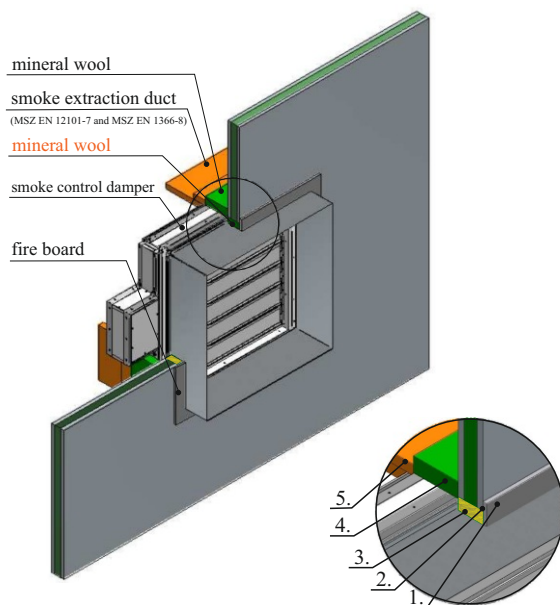
vertical installation - vertical axle



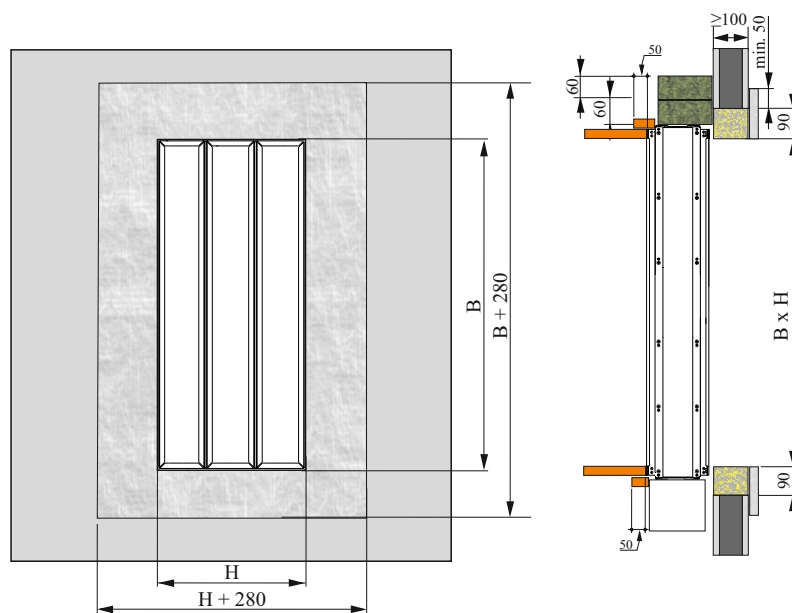
Fire protection board - dry installation without mortar -

Installation of BRK-J/EI90/M/HOT smoke control damper within a lightweight wall - 100 mm

vertical installation - horizontal axle



vertical installation - vertical axle

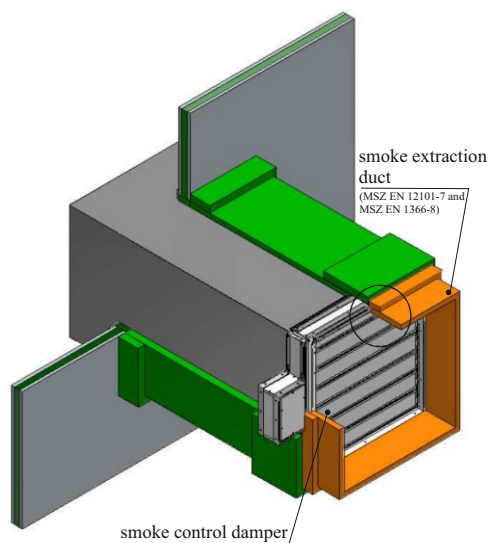


- 1.) 15 mm thick fire protection board with 870 kg/m³ density - Promatec-H
- 2.) with 1 mm thick fire-resistant seal - Promastop-P
- 3.) mineral wool board with 140 kg/m³ density - Rockwool Steprock

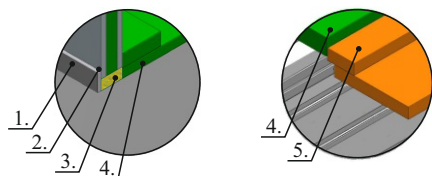
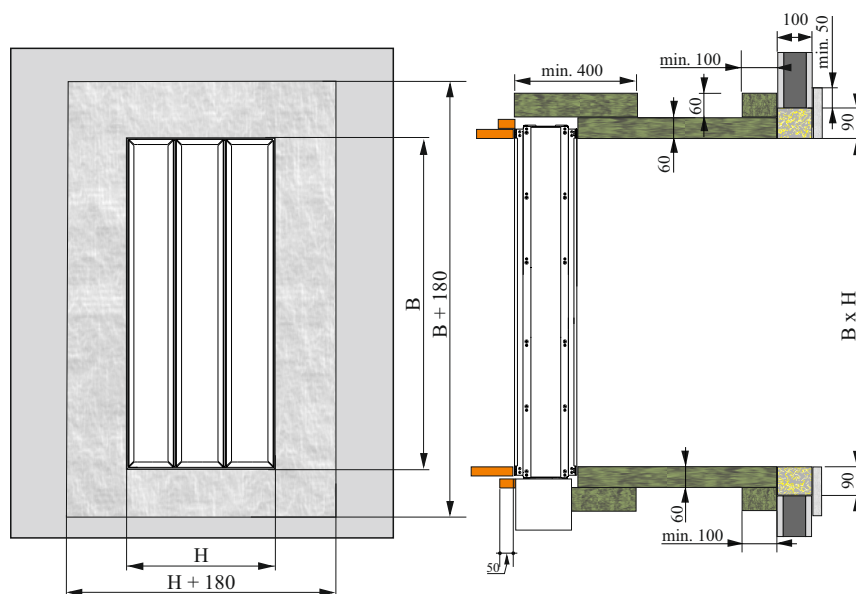
- 4.) mineral wool fire protection board coated on one side with aluminium foil for air duct isolation with fire resistance class EI90 2x60 mm thickness and 300 kg/m³ density - Conlit Ductrock EI90
- 5.) 40 mm thick calcium silicate board with 450 kg/m³ density or equivalent materials

Installation of BRK BRK-J/EI90/M/HOT smoke exhaust damper outside a lightweight wall in air duct

vertical installation - horizontal axle



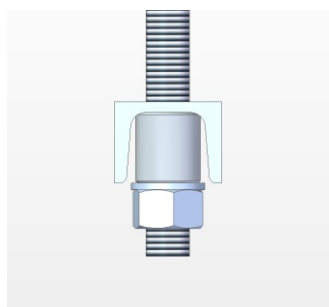
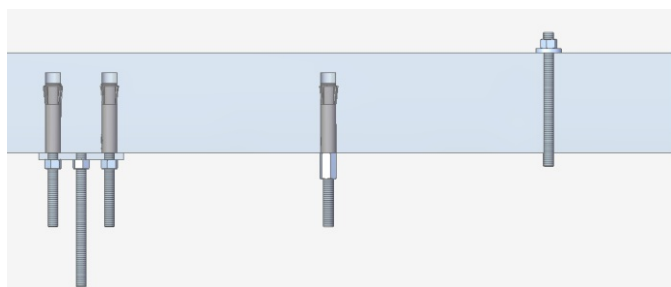
vertical installation - vertical axle



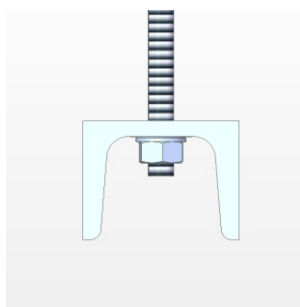
- 1.) 15 mm thick fire protection board with 870 kg/m³ density - *Promatec-H*
- 2.) with 1 mm thick fire-resistant seal - *Promastop-P*
- 3.) mineral wool board with 140 kg/m³ density - *Rockwool Steprock*

- 4.) mineral wool fire protection board coated on one side with aluminium foil for air duct isolation with fire resistance class EI90 2x60 mm thickness and 300 kg/m³ density - *Conlit Ductrock EI90*
- 5.) 40 mm thick calcium silicate board with 450 kg/m³ density or equivalent materials

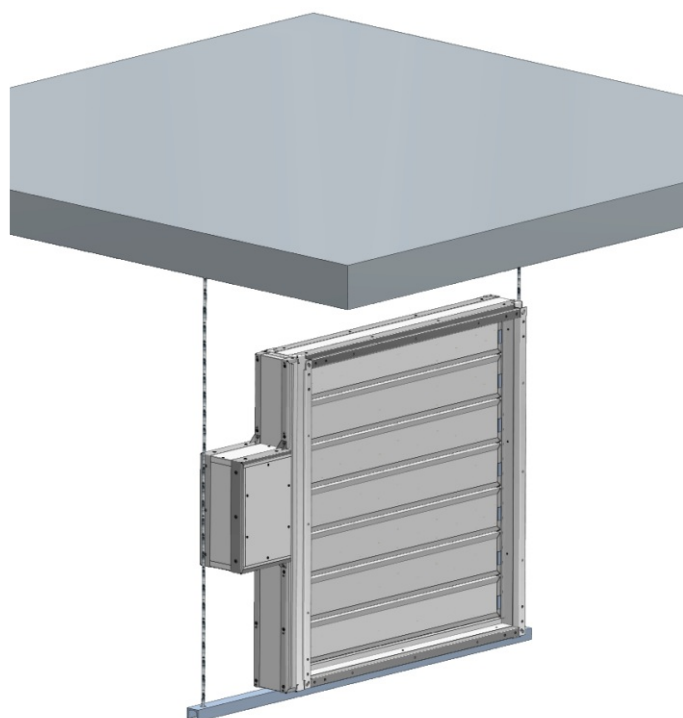
Suspending of BRK-J/EI90/M/HOT multi-blade smoke control damper



M16, M20
DIN 7349,
DIN EN ISO 8673



from M8 to M14
DIN 1026



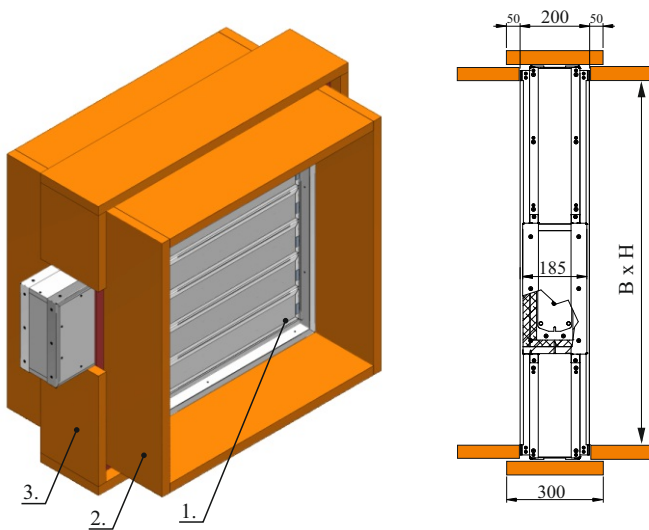
BRK-J/EI90/M/HOT

Multi-blade smoke control damper

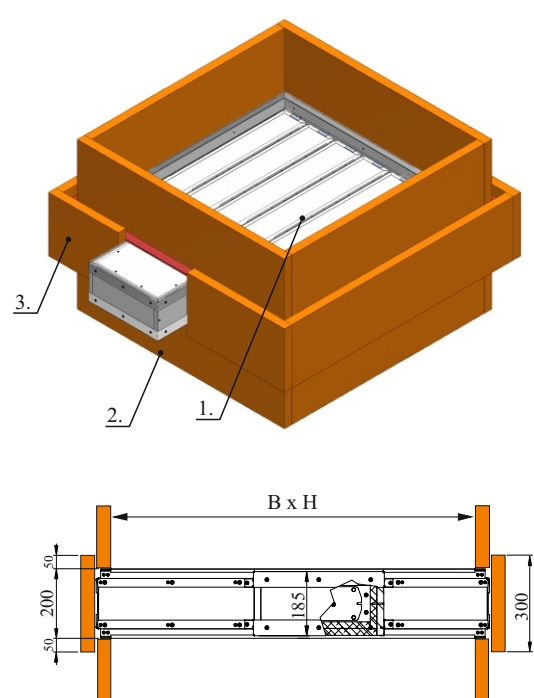


Installation of BRK-J/EI90/M/HOT smoke exhaust damper in smoke extraction duct - multi compartment

vertical air duct



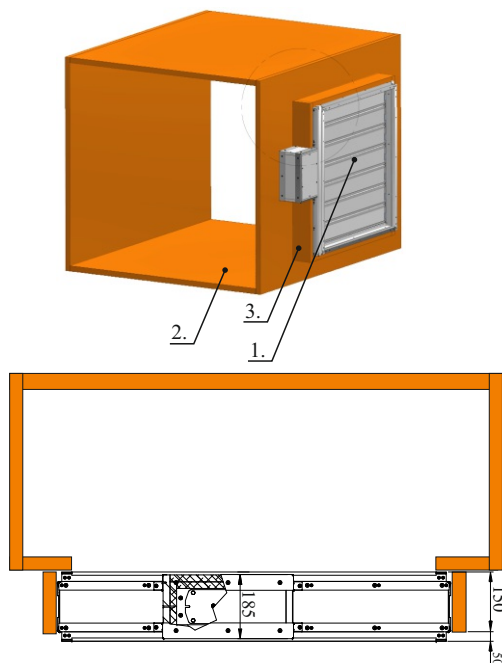
horizontal air duct



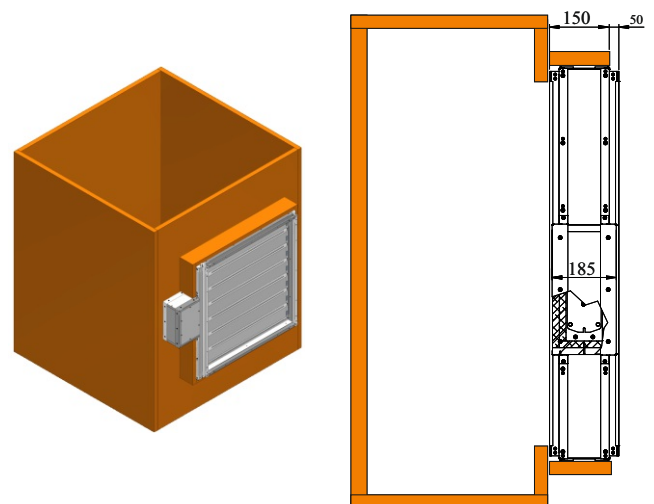
- 1.) BRK-J/EI90/M/HOT smoke control damper
- 2.) Smoke extraction duct
- MSZ EN 12101-7 and MSZ EN 1366-8-
- 3.) 40 mm thick calcium silicate board with 450 kg/m³ density, which must be glued with PROMAT K84 glue or equivalent materials

Installation of BRK-J/EI90/M/HOT smoke exhaust damper on smoke extraction duct - multi compartment

vertical air duct



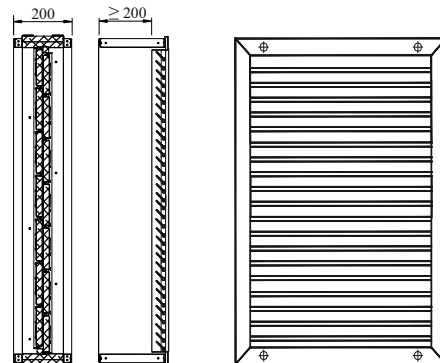
horizontal air duct



- 1.) BRK-J/EI90/M/HOT smoke control damper
- 2.) Smoke extraction duct
- MSZ EN 12101-7 and MSZ EN 1366-8-
- 3.) 40 mm thick calcium silicate board with 450 kg/m³ density, which must be glued with PROMAT K84 glue or equivalent materials

BRK-J/EI90/M/HOT multi-blade smoke control with ventilation grill


CSD-F/EV type ventilation grid can be supplied to the BRK-J/EI90/M/HOT multi-blade smoke control damper. The ventilation grid is shipped separately with the installation frame. There is need at least 200 mm distance between the damper and the ventilation grill.



The CE mark of BRK-J/EI90/M/HOT multi-blade smoke control damper.

The manufacturer or its authorized representative is responsible for displaying the CE mark. The symbol must comply with the current guidelines and must be clearly visible. The following data must be indicated:

- the manufacturers name and address
- CE mark
- the denomination of the product /type/ dimension
- level of performance or class (fire resistance class)
- actuator
- concerning harmonized standards, prescriptions
- manufacturing year / serial number

AEROPRODUKT Zrt.	6640 Csongrád Szegedi út 1. HUNGARY	 1391-CPR-0161/2014
Model / Type / Actuating:	Smoke control damper: BRK-J/EI90 ($v_{edw} - h_{odw} i \leftrightarrow o$) S1000 C₁₀₀₀₀ HOT 400/30 AAmulti + BLE 24	
Dimension / Application:		multi compartment
Serial / Production year:		2015/01
Standards:	EN 12101-8:2011, EN 1366-10:2011 This damper shall be installed as per the manufacturer's instructions!	

The maintenance and storage of BRK-J/EI90/M/HOT multi-blade smoke control damper

The surface protection of the BSK-J/EI90 multi-leaf dampers parts and the quality of the materials described in the previous paragraph assures the durable, reliable functionality. The multi-leaf fire protection damper does not require any special maintenance, but in order to assure the correct closing and sealing the continuous cleaning of the damper leafs is necessary. However the dampers are safety and stand by elements the operational check is advisable every six months. In case of an existing monitoring system this can be done from one place through the servomotors and their limit switch sensors.

The BSK-J/EI90 multi-blade dampers must be transported laid on or down (the damper leafs are parallel with the pallet). In order to prevent the damages the servomotor equipped with protection casing must be transported without overhanging the pallet, fixed with straps.

In case of several pieces –in order to save space- the dampers can be placed one on the other after rotating the servomotors turned against. The dampers can be stored indoors and should be protected from moisture and from being hit!