

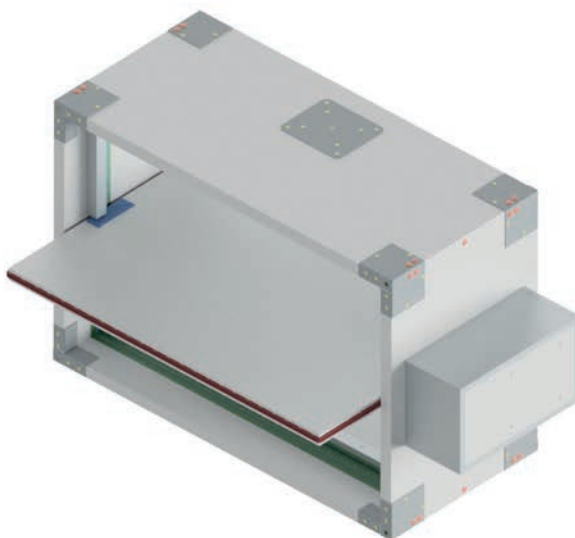
A large, stylized graphic element in the bottom left corner, consisting of a white 'L' shape with a red arrow pointing towards the bottom right, set against a red background.

FIRE VENTILATION SYSTEMS FIRE DAMPERS AND FIRE VALVES

> mcr FID B | Single-blade smoke control dampers for multi-compartment fire ventilation systems



downloadable models
on the website
under the designer zone tab



CE
2434-CPR-0031



» EIS120, E₆₀₀ 120

- » Fire resistance class: EI120 ($v_{ed} h_{od} i \leftrightarrow o$)S1500C₁₀₀₀₀MAmulti.
- » Certificate of constancy of performance 2434-CPR-0031. Dampers certified for compliance with EN 12101-8.
- » Dampers rated under EN 13501-4 and tested under EN 1366-10.
- » Smoke control dampers resistance independent of airflow direction and installation side.
- » The structure of the partition reduces acoustic noise and hydraulic resistance in the system.
- » MA feature (the damper blade can change its position during a fire).

1.1 | Application

The mcr FID B smoke control dampers are intended for installation in manually or automatically operated fire ventilation systems. mcr FID B dampers are used in fire ventilation systems or in mixed fire and comfort ventilation systems. When installed, these devices prevent the propagation of fire, smoke and fire gases to adjacent areas. Admissible flow velocity in the connected duct is 12 m/s. During normal operation, the fire damper blade is in the open or closed position, depending on its function. The fire damper blade in the fire compartment is opened, whereas in other areas the blades remain closed. The damper blade may change its position during a fire (MA feature), depending on the needs of the rescue teams and the fire scenario.

1.2 | Design

reinforcing corners

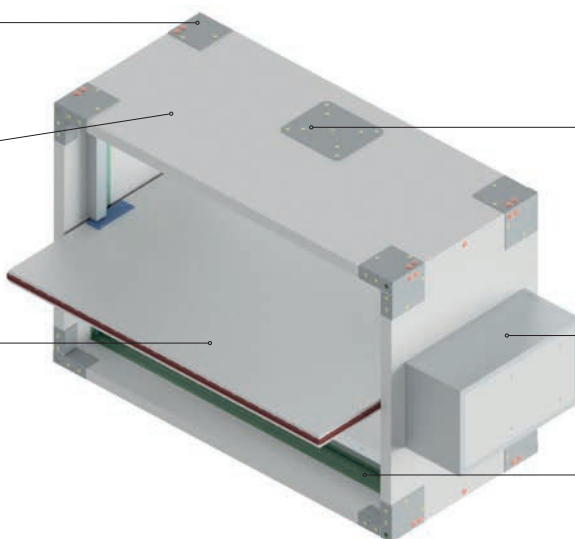
casing

damper blade

inspection access

trigger and control mechanism
in a guard casing
(e.g. actuator without return spring)

sealing system

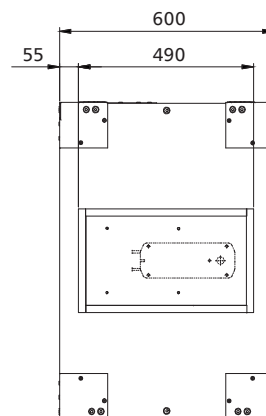
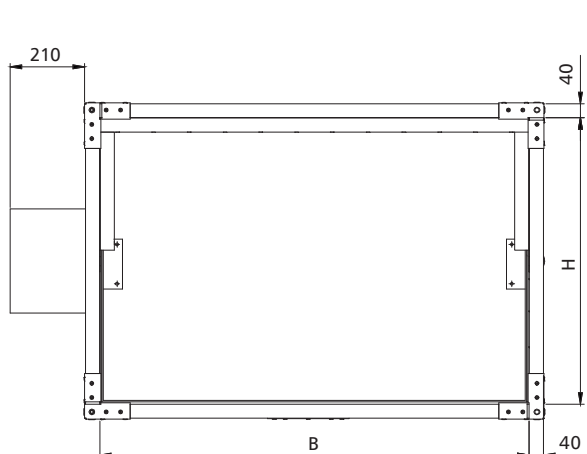


mcr FID B smoke control dampers consist of a casing with a rectangular cross-section composed of fire-proof boards, a moving damper blade and an actuator, which is activated remotely. Special design casing with impregnated fire-proof boards are used in chemically aggressive environments. The casing total length is 600 mm. The damper blade is made of a fire-proof panel. The inner side of the fire damper casing is equipped with a sealing system. Stop profiles are attached to the inner casing surface, limiting the rotating motion of the damper blade. As a standard, the damper is equipped with an inspection access, located on one of the sides of the damper. At the corners of the casing, there are steel reinforcements with a rivet nut system, enabling the installation of masking grilles and frames for connecting steel ventilation ducts.

mcr FID B | Single-blade smoke control dampers for multi-compartment fire ventilation systems

1.3 | Versions

1.3.1 | Closing and opening with an actuator



dimensions in [mm]

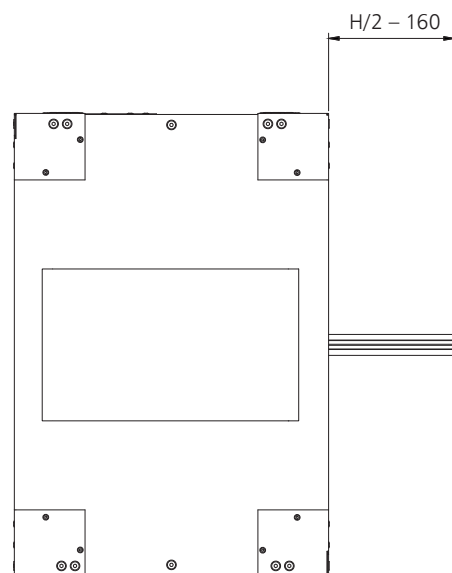
During normal operation, the damper blade of the fire damper remains open or closed. In the case of fire, the damper blade in the compartment where the fire occurs opens and the damper blades in the remaining compartments are closed – the blades are operated remotely by supplying power. The mcr FID B dampers are equipped with a trigger and control mechanism in the form of a BE, BEE, BEN, MLE, ME series axial actuator, supplied with 24 V AC/DC or 230 V AC voltage. Actuators are equipped with limit switches used to monitor the position of the damper blade. Dampers with BE, BEE, BEN, MLE or ME actuators can be opened/closed by supplying voltage to the actuator terminals.

1.4 | Dimensions

rectangular dampers:

- » nominal width B: from 200 mm to 1200 mm
- » nominal height H: from 200 mm to 800 mm
- » maximum single damper cross-section surface up to 0.96 m²
- » the design of the damper ensures that its damper blade, regardless of the dimensions of the BxH damper, does not protrude beyond the device casing on one side.

Apart from the standard dimensions, fire dampers may be manufactured with intermediate dimensions (at 1 mm increments within the given ranges).



dimensions in [mm]

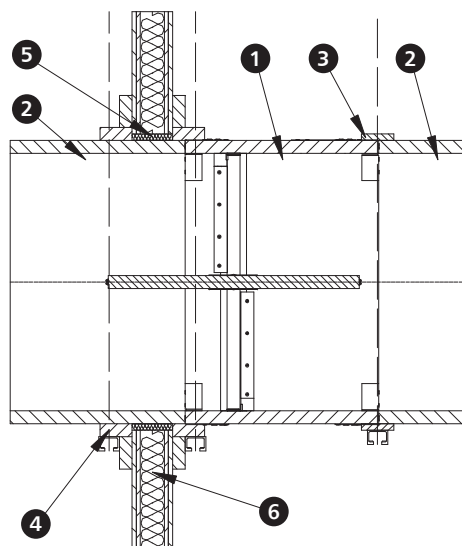
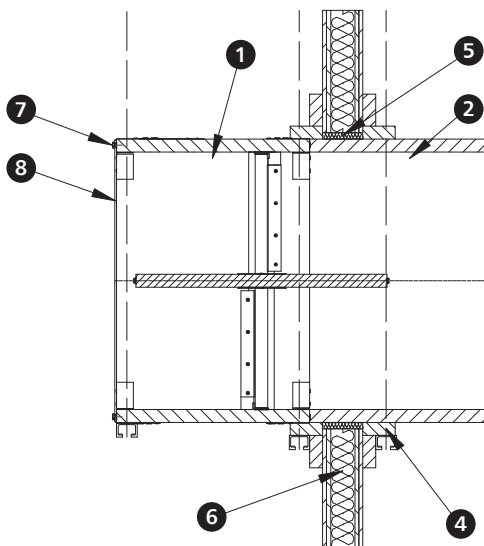
mcr FID B | Single-blade smoke control dampers for multi-compartment fire ventilation systems

1.5 | Installation

The mcr FID B rectangular dampers are rated as EI120(v_{ed} h_{od} $i \leftrightarrow o$)S1500C_{10,000} MA multi if installed on fireproof ducts rated according to EN 1366-8 and EN 1366-9.

The mcr FID B rectangular dampers are rated E₆₀₀ 120 (v_{ed} $i \leftrightarrow o$)S1500 C₁₀₀₀₀ MA single in single-zone fire ventilation systems.

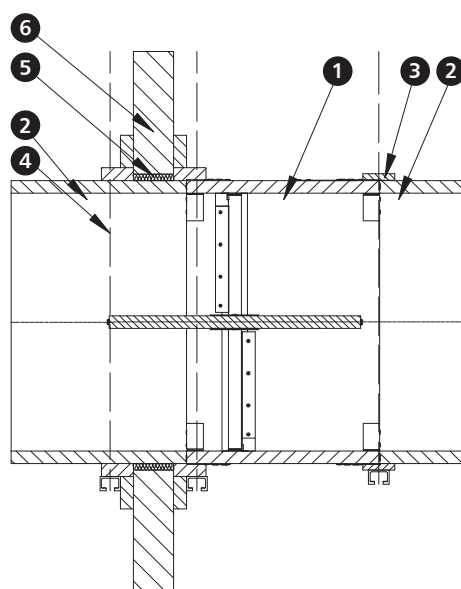
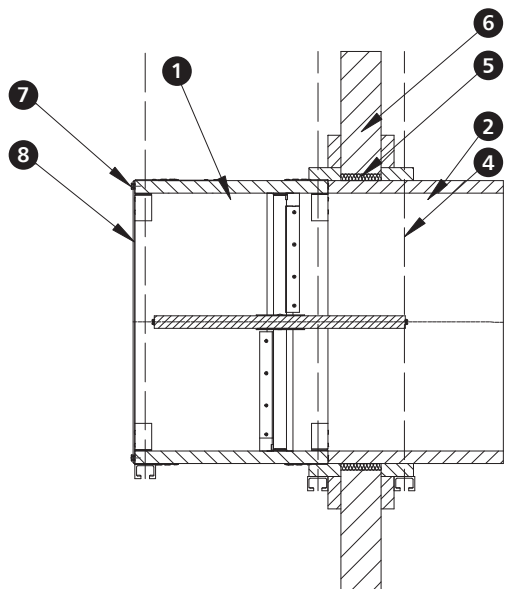
1.5.1 | Damper installation in light walls (plasterboard)



1. mcr FID B BxH smoke damper
2. multi-compartment smoke extract duct – e.g. made of fire-proof boards
3. a strip of fire-proof board along the entire length of the BxH side
4. system of installation hangers ensuring operational stability

5. fireproof duct installation penetration system
6. plasterboard wall
7. M10 x 20 bolt
8. MWB system grille (optional)

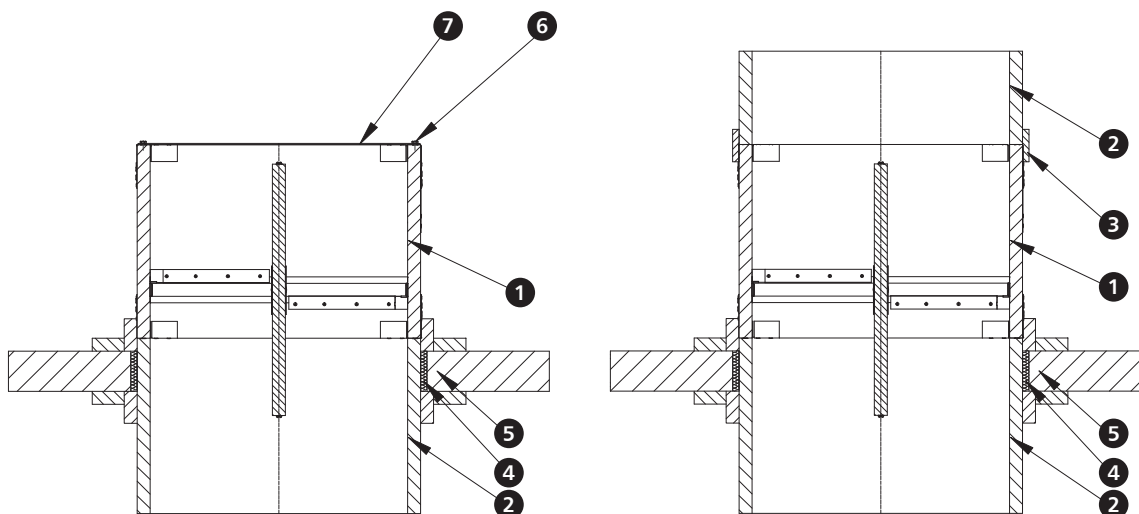
1.5.2 | Damper installation in solid walls



1. mcr FID B BxH smoke damper
2. multi-compartment smoke extract duct – e.g. made of fire-proof boards
3. a strip of fire-proof board along the entire length of the BxH side
4. system of installation hangers ensuring operational stability

5. fireproof duct installation penetration system
6. solid wall
7. M10 x 20 bolt
8. MWB system grille (optional)

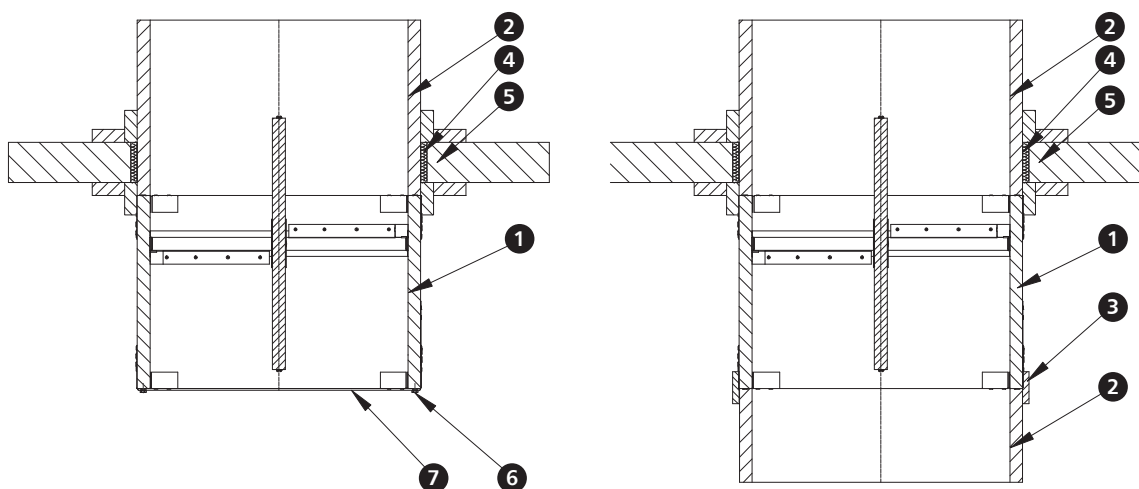
1.5.3 | Installation of damper in floor slabs – damper above the floor slab



- 1. mcr FID B BxH smoke damper
- 2. multi-compartment smoke extract duct – e.g. made of fire-proof boards
- 3. a strip of fire-proof board along the entire length of the BxH side

- 4. fireproof duct installation penetration system
- 5. floor slab
- 6. M10 x 20 bolt
- 7. MWB system grille (optional)

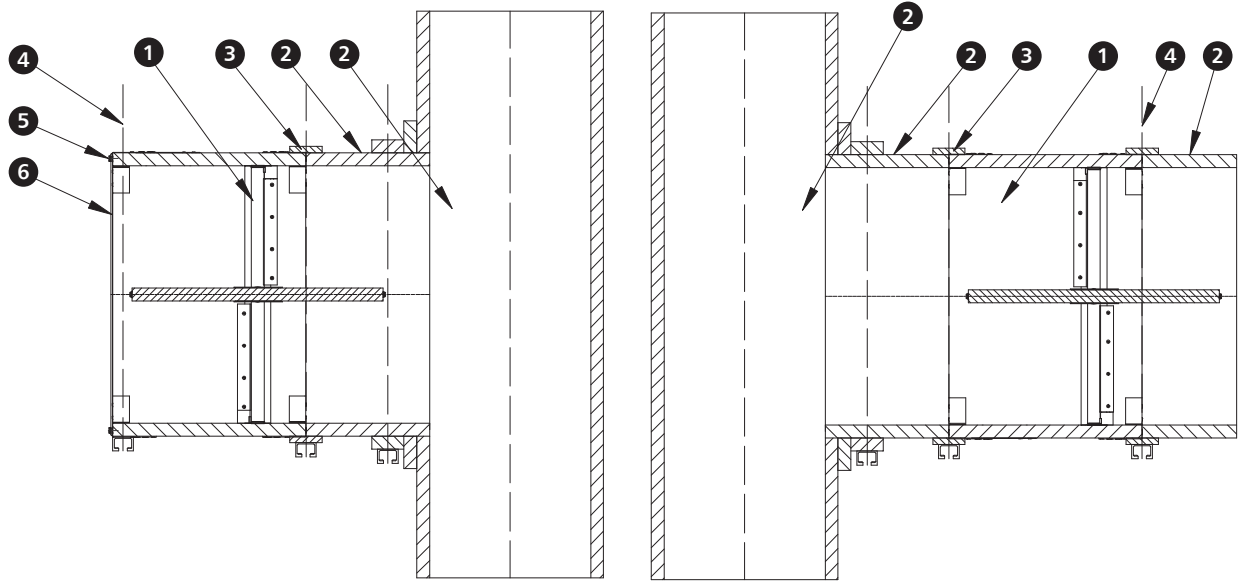
1.5.4 | Installation of damper in floor slabs – damper below the floor slab



- 1. mcr FID B BxH smoke damper
- 2. multi-compartment smoke extract duct – e.g. made of fire-proof boards
- 3. a strip of fire-proof board along the entire length of the BxH side

- 4. fireproof duct installation penetration system
- 5. floor slab
- 6. M10 x 20 bolt
- 7. MWB system grille (optional)

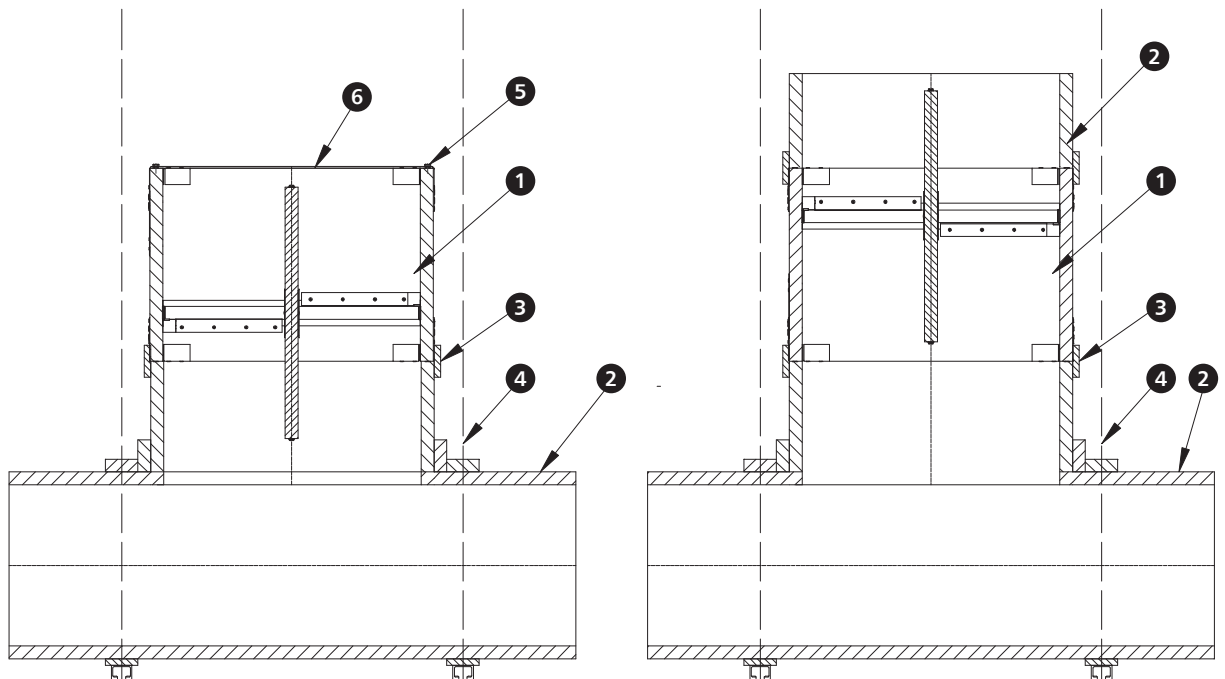
1.5.5 | Damper installation on horizontal ducts



- 1. mcr FID B BxH smoke damper
- 2. multi-compartment smoke extract duct – e.g. made of fire-proof boards
- 3. a strip of fire-proof board along the entire length of the BxH side

- 4. installation hangers system
- 5. M10 x 20 bolt
- 6. MWB system grille (optional)

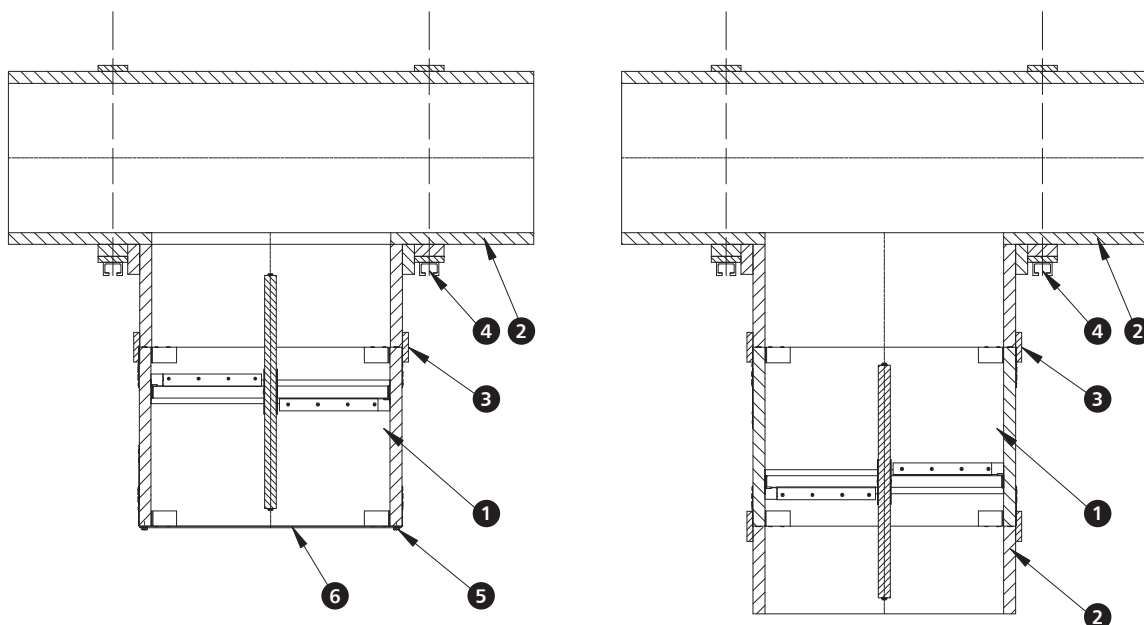
1.5.6 | Damper installation on vertical ducts



- 1. mcr FID B BxH smoke damper
- 2. multi-compartment smoke extract duct – fire-proof board
- 3. a strip of fire-proof board along the entire length of the BxH side

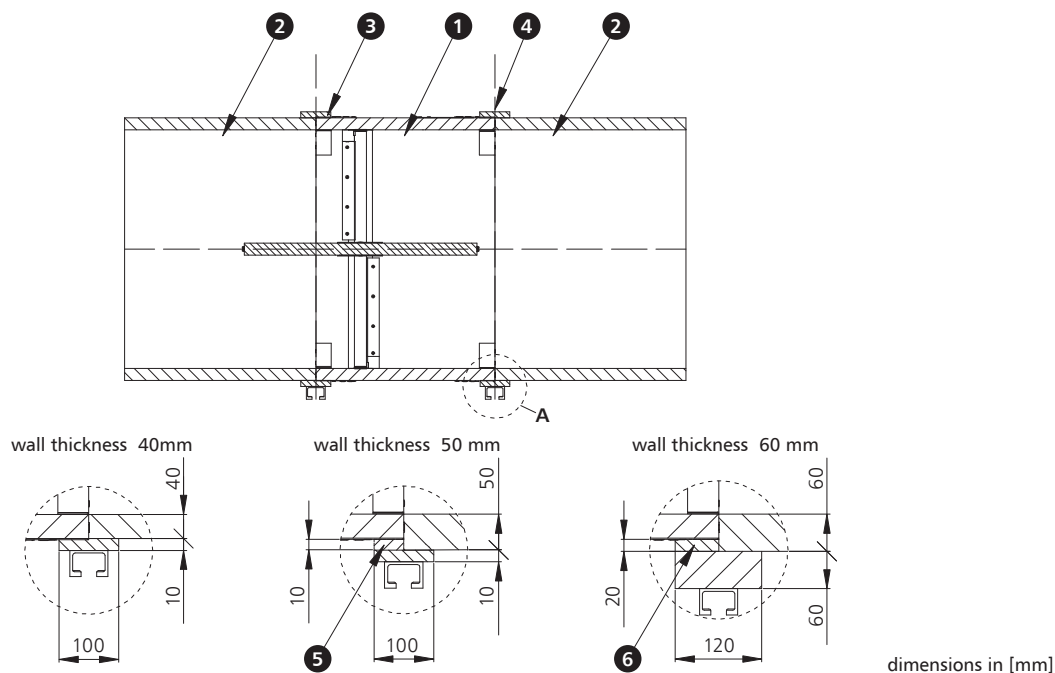
- 4. installation hangers system
- 5. M10 x 20 bolt
- 6. MWB system grille (optional)

1.5.7 | Damper installation on vertical ducts



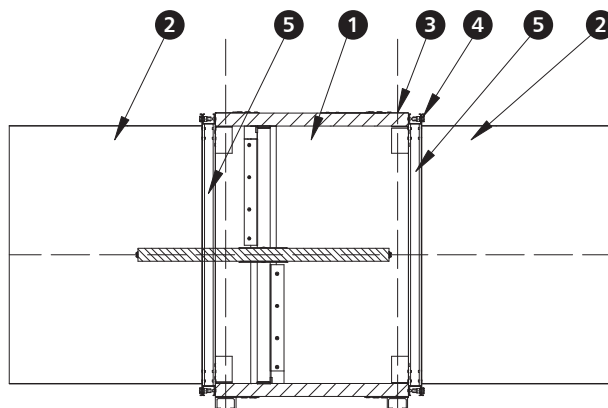
- 1. mcr FID B BxH smoke damper
- 2. multi-compartment smoke extract duct – fire-proof board
- 3. a strip of fire-proof board along the entire length of the BxH side
- 4. installation hangers system
- 5. M10 x 20 bolt
- 6. MWB system grille (optional)

1.5.8 | Damper connection with a multi-compartment duct, e.g. made of fire-proof boards with various wall thickness



- 1. mcr FID B BxH smoke damper
- 2. multi-compartment smoke extract duct – fire-proof board
- 3. a strip of fire-proof board along the entire length of the BxH side
- 4. installation hangers system
- 5. a strip of fire-proof board along the entire length of the BxH side with the dimensions 10 x 50 mm
- 6. a strip of fire-proof board along the entire length of the BxH side with the dimensions 20 x 60 mm

1.5.9 | Damper connection with single-compartment duct, e.g. made of metal sheets



- | | |
|---|----------------------|
| 1. mcr FID B BxH smoke damper | 4. M10 x 20 bolt |
| 2. single-compartment smoke extract duct – metal sheets | 5. RB mounting frame |
| 3. installation hangers system | |

Smoke extraction ducts should be made in accordance with the ducts manufacturer's guidelines. The ducts must have an adequate fire resistance rating in accordance with the fire resistance rating provided for the entire solution. Seal all connections between the damper and the ducts with the appropriate grout/glue/gaskets, ensuring that the fire resistance rating is maintained. The shut-off damper in vertical fire ventilation systems may be installed across the horizontal smoke extract duct or on the sides of the horizontal smoke extract duct or on the surface of any side of the vertical smoke extract duct. A masking grille may terminate the system.

1.6 | mcr FID B rectangular dampers technical parameters

B – nominal width [mm]
H – nominal height [mm]

v – velocity [m/s]
S_k – duct cross-section [m²]
S_e – damper active cross-section [m²]

Q – flow [m³/h]
d_p – pressure drop [Pa]
L_{WA} – damper noise level [dB]

		height H [mm]														
		200					250					300				
	v [m/s]	S _k [m ²]	S _e [m ²]	Q [m ³ /h]	d _p [Pa]	L _{WA} [dB]	S _k [m ²]	S _e [m ²]	Q [m ³ /h]	d _p [Pa]	L _{WA} [dB]	S _k [m ²]	S _e [m ²]	Q [m ³ /h]	d _p [Pa]	L _{WA} [dB]
width B [mm]	200	4	0.040	0.029	420	9	0.050	0.039	564	9	31	0.06	0.049	708	8	32
		6			631	21			847	19	42			1 063	19	42
		8			841	37			1 129	35	49			1 417	33	50
		10			1 051	58			1 411	54	55			1 771	52	55
	250	4	0.050	0.037	526	9	0.063	0.049	706	9	32	0.075	0.062	886	8	32
		6			788	21			1 058	19	43			1 328	18	42
		8			1 051	37			1 411	35	50			1 771	31	50
		10			1 314	57			1 764	54	56			2 214	49	56
	300	4	0.060	0.044	631	9	0.075	0.059	847	8	33	0.09	0.074	1 063	8	32
		6			946	20			1 270	19	43			1 594	17	43
		8			1 261	36			1 693	34	51			2 125	30	50
		10			1 577	56			2 117	53	56			2 657	47	56
	350	4	0.070	0.051	736	9	0.088	0.069	988	8	33	0.105	0.086	1 240	7	32
		6			1 104	20			1 482	19	44			1 860	16	43
		8			1 472	36			1 976	33	51			2 480	29	50
		10			1 840	56			2 470	52	57			3 100	45	56
	400	4	0.080	0.058	841	9	0.100	0.078	1 129	8	34	0.12	0.098	1 417	7	32
		6			1 261	19			1 693	19	44			2 125	15	42
		8			1 682	35			2 258	33	52			2 834	27	50
		10			2 102	54			2 822	52	57			3 542	42	56
	450	4	0.090	0.066	946	9	0.113	0.088	1 270	7	32	0.135	0.111	1 594	7	32
		6			1 419	19			1 905	17	43			2 391	15	43
		8			1 892	35			2 540	29	51			3 188	27	50
		10			2 365	54			3 175	46	56			3 985	42	56
	500	4	0.100	0.073	1 051	9	0.125	0.098	1 411	7	32	0.15	0.123	1 771	7	32
		6			1 577	19			2 117	16	43			2 657	15	43
		8			2 102	35			2 822	28	50			3 542	26	50
		10			2 628	54			3 528	44	56			4 428	41	56
	550	4	0.110	0.080	1 156	8	0.138	0.108	1 552	7	33	0.165	0.135	1 948	6	33
		6			1 734	19			2 328	16	43			2 922	14	43
		8			2 313	34			3 105	28	51			3 897	26	51
		10			2 891	53			3 881	44	57			4 871	40	56
	600	4	0.120	0.088	1 261	8	0.150	0.118	1 693	7	33	0.18	0.148	2 125	6	33
		6			1 892	19			2 540	15	43			3 188	14	43
		8			2 523	34			3 387	27	51			4 251	26	51
		10			3 154	53			4 234	42	56			5 314	40	57
	650	4	0.130	0.095	1 367	8	0.163	0.127	1 835	6	32	0.195	0.160	2 303	6	33
		6			2 050	19			2 752	14	43			3 454	14	44
		8			2 733	34			3 669	26	50			4 605	26	51
		10			3 416	53			4 586	40	56			5 756	40	57
	700	4	0.140	0.102	1 472	8	0.175	0.137	1 976	6	33	0.21	0.172	2 480	6	34
		6			2 208	19			2 964	14	43			3 720	14	44
		8			2 943	33			3 951	26	51			4 959	26	52
		10			3 679	52			4 939	40	56			6 199	40	57

mcr FID B | Single-blade smoke control dampers for multi-compartment fire ventilation systems

B – nominal width [mm]
H – nominal height [mm]

v – velocity [m/s]
S_k – duct cross-section [m²]
S_e – damper active cross-section [m²]

Q – flow [m³/h]
d_p – pressure drop [Pa]
L_{WA} – damper noise level [dB]

			height H [mm]															
			200						250					300				
			v [m/s]	S _k [m ²]	S _e [m ²]	Q [m³/h]	d _p [PA]	L _{WA} [dB]	S _k [m ²]	S _e [m ²]	Q [m³/h]	d _p [PA]	L _{WA} [dB]	S _k [m ²]	S _e [m ²]	Q [m³/h]	d _p [PA]	L _{WA} [dB]
width B [mm]	800		4	0.160	0.117	1 682	8	35	0.200	0.157	2 258	6	32	0.24	0.197	2 834	6	33
			6			2 523	18	45			3 387	14	43			4 251	14	44
			8			3 364	32	53			4 516	24	51			5 668	24	52
			10			4 205	50	59			5 645	38	56			7 085	38	57
	900		4	0.180	0.131	1 892	7	34	0.225	0.176	2 540	6	32	0.27	0.221	3 188	5	32
			6			2 838	16	44			3 810	13	43			4 782	12	42
			8			3 784	29	52			5 080	23	50			6 376	21	50
			10			4 730	45	58			6 350	36	56			7 970	32	56
	1000		4	0.200	0.146	2 102	7	34	0.250	0.196	2 822	6	32	0.3	0.246	3 542	5	32
			6			3 154	16	45			4 234	13	43			5 314	12	43
			8			4 205	29	52			5 645	22	50			7 085	21	50
			10			5 256	45	58			7 056	35	56			8 856	32	56
	1100		4	0.220	0.161	2 313	7	35	0.275	0.216	3 105	5	32	0.33	0.271	3 897	5	33
			6			3 469	16	45			4 657	12	43			5 845	12	43
			8			4 625	29	53			6 209	22	50			7 793	21	51
			10			5 782	45	59			7 762	34	56			9 742	32	56
	1200		4	0.240	0.175	2 523	8	37	0.300	0.235	3 387	5	33	0.36	0.295	4 251	9	40
			6			3 784	18	47			5 080	12	43			6 376	20	51
			8			5 046	29	53			6 774	22	51			8 502	36	58
			10			6 307	45	59			8 467	34	57			10 627	42	60

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B – nominal width [mm]
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v – velocity [m/s]
S_k – duct cross-section [m²]
S_e – damper active cross-section [m²]

Q – flow [m³/h]
d_p – pressure drop [Pa]
L_{WA} – damper noise level [dB]

		height H [mm]														
		350					400					450				
	v [m/s]	S _k [m ²]	S _e [m ²]	Q [m ³ /h]	d _p [Pa]	L _{WA} [dB]	S _k [m ²]	S _e [m ²]	Q [m ³ /h]	d _p [Pa]	L _{WA} [dB]	S _k [m ²]	S _e [m ²]	Q [m ³ /h]	d _p [Pa]	L _{WA} [dB]
width B [mm]	200	4	0.070	0.059	852	8	0.080	0.069	996	7	31	0.090	0.079	1 140	7	31
		6			1 279	18			1 495	17	42			1 711	15	41
		8			1 705	32			1 993	29	49			2 281	26	49
		10			2 131	50			2 491	46	55			2 851	41	54
	250	4	0.088	0.074	1 066	7	0.100	0.087	1 246	6	29	0.113	0.099	1 426	6	29
		6			1 598	16			1 868	13	40			2 138	13	40
		8			2 131	29			2 491	23	47			2 851	22	47
		10			2 664	45			3 114	36	53			3 564	35	53
	300	4	0.105	0.089	1 279	7	0.120	0.104	1 495	6	30	0.135	0.119	1 711	5	30
		6			1 918	16			2 242	13	41			2 566	12	40
		8			2 557	28			2 989	24	48			3 421	22	48
		10			3 197	44			3 737	37	54			4 277	34	54
	350	4	0.123	0.104	1 492	7	0.140	0.121	1 744	6	30	0.158	0.139	1 996	5	30
		6			2 238	15			2 616	13	41			2 994	12	41
		8			2 984	26			3 488	22	48			3 992	21	48
		10			3 730	41			4 360	35	54			4 990	33	54
	400	4	0.140	0.118	1 705	6	0.160	0.138	1 993	6	31	0.180	0.158	2 281	5	30
		6			2 557	13			2 989	13	41			3 421	12	41
		8			3 410	24			3 986	22	49			4 562	21	48
		10			4 262	37			4 982	35	55			5 702	32	54
	450	4	0.158	0.133	1 918	5	0.180	0.156	2 242	5	30	0.203	0.178	2 566	4	29
		6			2 877	12			3 363	12	41			3 849	10	40
		8			3 836	22			4 484	21	48			5 132	18	47
		10			4 795	34			5 605	32	54			6 415	28	53
	500	4	0.175	0.148	2 131	5	0.200	0.173	2 491	5	30	0.225	0.198	2 851	4	29
		6			3 197	12			3 737	11	40			4 277	9	39
		8			4 262	22			4 982	19	48			5 702	17	47
		10			5 328	34			6 228	30	54			7 128	26	52
	550	4	0.193	0.163	2 557	5	0.220	0.190	2 740	5	30	0.248	0.218	3 136	4	29
		6			3 836	12			4 110	11	41			4 704	9	40
		8			5 115	21			5 481	19	48			6 273	17	47
		10			6 394	32			6 851	30	54			7 841	26	53
	600	4	0.210	0.178	2 557	5	0.240	0.208	2 989	4	28	0.270	0.238	3 421	4	29
		6			3 836	10			4 484	8	37			5 132	9	40
		8			5 115	19			5 979	14	45			6 843	17	47
		10			6 394	29			7 474	27	53			8 554	26	53
	650	4	0.228	0.192	2 771	5	0.260	0.225	3 239	4	30	0.293	0.257	3 707	4	30
		6			4 156	10			4 858	10	40			5 560	9	40
		8			5 541	19			6 477	17	48			7 413	17	48
		10			6 926	29			8 096	27	53			9 266	26	54
	700	4	0.245	0.207	2 984	5	0.28	0.242	3 488	4	30	0.315	0.277	3 992	4	30
		6			4 476	10			5 232	10	40			5 988	9	40
		8			5 967	19			6 975	17	48			7 983	16	48
		10			7 459	29			8 719	27	54			9 979	25	53

mcr FID B | Single-blade smoke control dampers for multi-compartment fire ventilation systems

B – nominal width [mm]
H – nominal height [mm]

v – velocity [m/s]
S_k – duct cross-section [m²]
S_e – damper active cross-section [m²]

Q – flow [m³/h]
d_p – pressure drop [Pa]
L_{WA} – damper noise level [dB]

		v [m/s]	height H [mm]														
			350					400					450				
			S _k [m²]	S _e [m²]	Q [m³/h]	d _p [Pa]	L _{WA} [dB]	S _k [m²]	S _e [m²]	Q [m³/h]	d _p [Pa]	L _{WA} [dB]	S _k [m²]	S _e [m²]	Q [m³/h]	d _p [Pa]	L _{WA} [dB]
width B [mm]	800	4	0.280	0.237	3 410	4	30	0.32	0.277	3 986	4	30	0.360	0.317	4 562	4	29
		6			5 115	10	41			5 979	9	41			6 843	9	40
		8			6 820	18	48			7 972	17	48			9 124	16	47
		10			8 525	28	54			9 965	26	54			11 405	25	53
	900	4	0.315	0.266	3 836	4	31	0.360	0.311	4 484	6	35	0.405	0.356	5 132	4	29
		6			5 754	10	41			6 726	12	44			7 698	9	40
		8			7 672	18	49			8 968	26	54			10 264	16	47
		10			9 590	28	55			11 210	33.4	58			12 830	25	53
	1000	4	0.350	0.296	4 262	4	30	0.400	0.346	4 982	4	31	0.450	0.396	5 702	4	29
		6			6 394	9	41			7 474	9	42			8 554	9	40
		8			8 525	17	48			9 965	17	49			11 405	16	47
		10			10 656	26	54			12 456	26	55			14 256	25	53
	1100	4	0.385	0.326	4 689	4	32	0.440	0.381	5 481	4	31	0.495	0.436	6 273	4	29
		6			7 033	10	42			8 221	9	42			9 409	9	39
		8			9 377	18	50			10 961	17	49			12 545	15	47
		10			11 722	28	56			13 702	26	55			15 682	24	53
	1200	4	0.420	0.355	5 115	4	31	0.480	0.415	5 979	4	31	0.540	0.475	6 843	4	29
		6			7 672	9	41			8 968	9	42			10 264	9	39
		8			10 230	16	49			11 958	16	49			13 686	15	47
		10			12 787	25	54			14 947	25	55			17 107	24	53

mcr FID B | Single-blade smoke control dampers for multi-compartment fire ventilation systems

B – nominal width [mm]
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v – velocity [m/s]
S_k – duct cross-section [m²]
S_e – damper active cross-section [m²]

Q – flow [m³/h]
d_p – pressure drop [Pa]
L_{WA} – damper noise level [dB]

		height H [mm]														
		500					550					600				
	v [m/s]	S _k [m ²]	S _e [m ²]	Q [m ³ /h]	d _p [Pa]	L _{WA} [dB]	S _k [m ²]	S _e [m ²]	Q [m ³ /h]	d _p [Pa]	L _{WA} [dB]	S _k [m ²]	S _e [m ²]	Q [m ³ /h]	d _p [Pa]	L _{WA} [dB]
width B [mm]	200	4	0.1	0.089	1 284	6	0.110	0.099	1 428	5	29	0.120	0.109	1 572	5	29
		6			1 927	13			2 143	12	39			2 359	12	39
		8			2 569	22			2 857	21	47			3 145	21	47
		10			3 211	35			3 571	33	53			3 931	32	53
	250	4	0.125	0.112	1 606	6	0.138	0.124	1 786	5	30	0.150	0.137	1 966	5	30
		6			2 408	13			2 678	12	40			2 948	12	40
		8			3 211	22			3 571	21	48			3 931	21	48
		10			4 014	35			4 464	33	53			4 914	32	54
	300	4	0.15	0.134	1 927	5	0.165	0.149	2 143	5	30	0.180	0.164	2 359	5	30
		6			2 890	12			3 214	12	41			3 538	11	40
		8			3 853	21			4 285	21	48			4 717	19	48
		10			4 817	33			5 357	32	54			5 897	30	53
	350	4	0.175	0.156	2 248	5	0.193	0.174	2 500	5	31	0.210	0.191	2 752	5	30
		6			3 372	12			3 750	12	41			4 128	10	40
		8			4 496	21			5 000	21	49			5 504	19	48
		10			5 620	32			6 250	32	55			6 880	29	54
	400	4	0.2	0.178	2 569	5	0.220	0.198	2 857	5	30	0.240	0.218	3 145	4	30
		6			3 853	11			4 285	10	41			4 717	10	41
		8			5 138	19			5 714	19	48			6 290	18	48
		10			6 422	30			7 142	29	54			7 862	28	54
	450	4	0.225	0.201	2 890	4	0.248	0.223	3 214	4	29	0.270	0.246	3 538	4	30
		6			4 335	9			4 821	9	40			5 307	9	40
		8			5 780	17			6 428	17	47			7 076	17	48
		10			7 225	26			8 035	26	53			8 845	26	53
	500	4	0.250	0.223	3 211	4	0.275	0.248	3 571	4	29	0.300	0.273	3 931	4	29
		6			4 817	8			5 357	9	39			5 897	9	39
		8			6 422	14			7 142	15	47			7 862	15	47
		10			8 028	20			8 928	24	52			9 828	24	53
	550	4	0.275	0.245	3 853	3	0.303	0.273	4 285	4	28	0.330	0.300	4 717	4	28
		6			5 780	8			6 428	8	38			7 076	8	39
		8			7 707	13			8 571	14	46			9 435	14	46
		10			9 634	21			10 714	22	52			11 794	22	52
	600	4	0.3	0.268	3 853	3	0.330	0.298	4 285	3	28	0.360	0.328	4 717	3	28
		6			5 780	8			6 428	8	38			7 076	8	39
		8			7 707	13			8 571	13	46			9 435	13	46
		10			9 634	21			10 714	21	51			11 794	21	52
	650	4	0.325	0.290	4 175	4	0.358	0.322	4 643	3	28	0.390	0.355	5 111	3	28
		6			6 262	10			6 964	8	38			7 666	8	39
		8			8 349	17			9 285	13	46			10 221	13	46
		10			10 436	21			11 606	21	52			12 776	21	52
	700	4	0.350	0.312	4 496	3	0.385	0.347	5 000	3	28	0.420	0.382	5 504	3	29
		6			6 744	8			7 500	8	39			8 256	8	39
		8			8 991	13			9 999	13	46			11 007	13	47
		10			11 239	21			12 499	21	52			13 759	21	52

mcr FID B | Single-blade smoke control dampers for multi-compartment fire ventilation systems

B – nominal width [mm]
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v – velocity [m/s]
S_k – duct cross-section [m²]
S_e – damper active cross-section [m²]

Q – flow [m³/h]
d_p – pressure drop [Pa]
L_{WA} – damper noise level [dB]

			height H [mm]														
			500						550					600			
			v [m/s]	S _k [m²]	S _e [m²]	Q [m³/h]	d _p [PA]	L _{WA} [dB]	S _k [m²]	S _e [m²]	Q [m³/h]	d _p [PA]	L _{WA} [dB]	S _k [m²]	S _e [m²]	Q [m³/h]	d _p [PA]
width B [mm]	800	4	0.4	0.357	5 138	3	28	0.440	0.397	5 714	3	29	0.480	0.437	6 290	3	29
		6			7 707	8	39			8 571	8	39			9 435	8	40
		8			10 276	13	46			11 428	13	47			12 580	13	47
		10			12 845	21	52			14 285	21	53			15 725	21	53
	900	4	0.45	0.401	5 780	3	28	0.495	0.446	6 428	3	29	0.540	0.491	7 076	3	30
		6			8 670	8	39			9 642	8	40			10 614	8	38
		8			11 560	13	46			12 856	13	47			14 152	13	45
		10			14 450	21	52			16 070	21	53			17 690	21	51
	1000	4	0.5	0.446	6 422	3	28	0.550	0.496	6 428	3	30	0.600	0.546	7 862	3	30
		6			9 634	8	39			9 642	8	40			11 794	8	41
		8			12 845	13	46			12 856	13	48			15 725	13	48
		10			16 056	21	52			16 070	21	54			19 656	21	54
	1100	4	0.55	0.491	7 065	4	29	0.605	0.546	7 857	4	31	0.660	0.601	8 649	3	31
		6			10 597	8	39			11 785	8	41			12 973	8	41
		8			14 129	14	47			15 713	14	49			17 297	13	49
		10			17 662	22	53			19 642	22	55			21 622	21	54
	1200	4	0.6	0.535	7 707	3	27	0.660	0.595	8 571	3	30	0.720	0.655	9 435	3	30
		6			11 560	7	38			12 856	7	40			14 152	7	40
		8			15 414	13	45			17 142	13	48			18 870	12	48
		10			19 267	20	51			21 427	20	54			23 587	19	54

mcr FID B | Single-blade smoke control dampers for multi-compartment fire ventilation systems

B – nominal width [mm]
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v – velocity [m/s]
S_k – duct cross-section [m²]
S_e – damper active cross-section [m²]

Q – flow [m³/h]
d_p – pressure drop [Pa]
L_{WA} – damper noise level [dB]

		height H [mm]														
		650					700					750				
	v [m/s]	S _k [m ²]	S _e [m ²]	Q [m ³ /h]	d _p [Pa]	L _{WA} [dB]	S _k [m ²]	S _e [m ²]	Q [m ³ /h]	d _p [Pa]	L _{WA} [dB]	S _k [m ²]	S _e [m ²]	Q [m ³ /h]	d _p [Pa]	L _{WA} [dB]
width B [mm]	200	4	0.130	0.119	1 716	5	0.140	0.129	1 860	5	29	0.150	0.139	2 004	5	29
		6			2 575	11			2 791	11	40			3 007	11	40
		8			3 433	20			3 721	20	47			4 009	20	47
		10			4 291	31			4 651	31	53			5 011	31	53
	250	4	0.163	0.149	2 146	5	0.175	0.162	2 326	5	30	0.188	0.174	2 506	5	30
		6			3 218	11			3 488	11	41			3 758	11	41
		8			4 291	20			4 651	20	48			5 011	20	48
		10			5 364	31			5 814	31	54			6 264	31	54
	300	4	0.195	0.179	2 575	5	0.210	0.194	2 791	4	29	0.225	0.209	3 007	4	30
		6			3 862	10			4 186	10	40			4 510	10	40
		8			5 149	19			5 581	18	47			6 013	18	48
		10			6 437	29			6 977	28	53			7 517	28	54
	350	4	0.228	0.209	3 004	4	0.245	0.226	3 256	4	30	0.263	0.244	3 508	4	30
		6			4 506	10			4 884	10	40			5 262	10	41
		8			6 008	18			6 512	17	48			7 016	17	48
		10			7 510	28			8 140	27	53			8 770	27	54
	400	4	0.260	0.238	3 433	4	0.280	0.258	3 721	4	30	0.300	0.278	4 009	4	31
		6			5 149	10			5 581	10	41			6 013	10	41
		8			6 866	18			7 442	17	48			8 018	17	49
		10			8 582	28			9 302	27	54			10 022	27	54
	450	4	0.293	0.268	3 862	4	0.315	0.291	4 186	4	29	0.338	0.313	4 510	4	30
		6			5 793	9			6 279	9	40			6 765	9	40
		8			7 724	17			8 372	15	47			9 020	15	48
		10			9 655	26			10 465	24	53			11 275	24	53
	500	4	0.325	0.298	4 291	4	0.350	0.323	4 651	4	29	0.375	0.348	5 011	4	29
		6			6 437	9			6 977	8	40			7 517	8	40
		8			8 582	15			9 302	15	47			10 022	15	47
		10			10 728	24			11 628	23	53			12 528	23	53
	550	4	0.358	0.328	5 149	4	0.385	0.355	5 116	4	29	0.413	0.383	5 512	4	29
		6			7 724	8			7 674	8	39			8 268	8	40
		8			10 299	14			10 233	14	47			11 025	14	47
		10			12 874	22			12 791	22	53			13 781	22	53
	600	4	0.390	0.358	5 149	3	0.420	0.388	5 581	3	29	0.450	0.418	6 013	3	29
		6			7 724	8			8 372	8	39			9 020	8	40
		8			10 299	13			11 163	13	47			12 027	13	47
		10			12 874	21			13 954	21	53			15 034	21	53
	650	4	0.423	0.387	5 579	3	0.455	0.420	6 047	3	28	0.488	0.452	6 515	3	28
		6			8 368	7			9 070	7	39			9 772	7	39
		8			11 157	13			12 093	13	46			13 029	12	46
		10			13 946	20			15 116	20	52			16 286	19	52
	700	4	0.455	0.417	6 008	3	0.490	0.452	6 512	3	29	0.525	0.487	7 016	3	28
		6			9 012	7			9 768	7	39			10 524	7	39
		8			12 015	13			13 023	13	47			14 031	12	46
		10			15 019	20			16 279	20	53			17 539	19	52

mcr FID B | Single-blade smoke control dampers for multi-compartment fire ventilation systems

B – nominal width [mm]
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v – velocity [m/s]
S_k – duct cross-section [m²]
S_e – damper active cross-section [m²]

Q – flow [m³/h]
d_p – pressure drop [Pa]
L_{WA} – damper noise level [dB]

		height H [mm]														
		650					700					750				
	v [m/s]	S _k [m ²]	S _e [m ²]	Q [m ³ /h]	d _p [Pa]	L _{WA} [dB]	S _k [m ²]	S _e [m ²]	Q [m ³ /h]	d _p [Pa]	L _{WA} [dB]	S _k [m ²]	S _e [m ²]	Q [m ³ /h]	d _p [Pa]	L _{WA} [dB]
width B [mm]	800	4	0.520	0.477	6 866	3	0.560	0.517	7 442	4	29	0.600	0.557	8 018	3	28
		6			10 299	6			11 163	7	37			12 027	6	39
		8			13 732	12			14 884	11	43			16 036	12	46
		10			17 165	18			18 605	16	47			20 045	18	52
	900	4	0.585	0.536	7 724	3	0.630	0.581	8 372	3	27	0.675	0.626	9 020	3	27
		6			11 586	6			12 558	6	37			13 530	6	38
		8			15 448	10			16 744	10	45			18 040	10	45
		10			19 310	16			20 930	16	51			22 550	16	51
	1000	4	0.650	0.596	8 582	3	0.700	0.646	9 302	3	27	0.750	0.696	10 022	3	28
		6			12 874	6			13 954	6	38			15 034	6	38
		8			17 165	10			18 605	10	45			20 045	10	46
		10			21 456	16			23 256	16	51			25 056	16	52
	1100	4	0.715	0.656	9 441	3	0.770	0.711	10 233	3	31	0.825	0.766	11 025	3	28
		6			14 161	8			15 349	8	42			16 537	6	39
		8			18 881	13			20 465	13	49			22 049	10	46
		10			23 602	21			25 582	21	55			27 562	16	52
	1200	4	0.780	0.715	10 299	3	0.840	0.775	11 163	3	30	0.900	0.835	12 027	2	28
		6			15 448	7			16 744	7	41			18 040	5	38
		8			20 598	12			22 326	12	48			24 054	10	46
		10			25 747	19			27 907	19	54			30 067	15	52

mcr FID B | Single-blade smoke control dampers for multi-compartment fire ventilation systems

B – nominal width [mm]
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v – velocity [m/s]
S_k – duct cross-section [m²]
S_e – damper active cross-section [m²]

Q – flow [m³/h]
d_p – pressure drop [Pa]
L_{WA} – damper noise level [dB]

		800					
		v [m/s]	S _k [m ²]	S _e [m ²]	Q [m ³ /h]	d _p [Pa]	L _{WA} [dB]
width B [mm]	200	4	0.160	0.149	2 148	5	29
		6			3 223	11	40
		8			4 297	19	47
		10			5 371	30	53
	250	4	0.200	0.187	2 686	5	30
		6			4 028	11	41
		8			5 371	19	48
		10			6 714	30	54
	300	4	0.240	0.224	3 223	4	30
		6			4 834	10	41
		8			6 445	18	48
		10			8 057	28	54
	350	4	0.280	0.261	3 760	4	30
		6			5 640	10	41
		8			7 520	17	48
		10			9 400	27	54
	400	4	0.320	0.298	4 297	4	31
		6			6 445	10	41
		8			8 594	17	49
		10			10 742	27	55
	450	4	0.360	0.336	4 834	4	29
		6			7 251	8	39
		8			9 668	14	47
		10			12 085	22	53
	500	4	0.400	0.373	5 371	4	29
		6			8 057	8	40
		8			10 742	14	47
		10			13 428	22	53
	550	4	0.440	0.410	5 908	3	29
		6			8 862	8	40
		8			11 817	13	47
		10			14 771	21	53

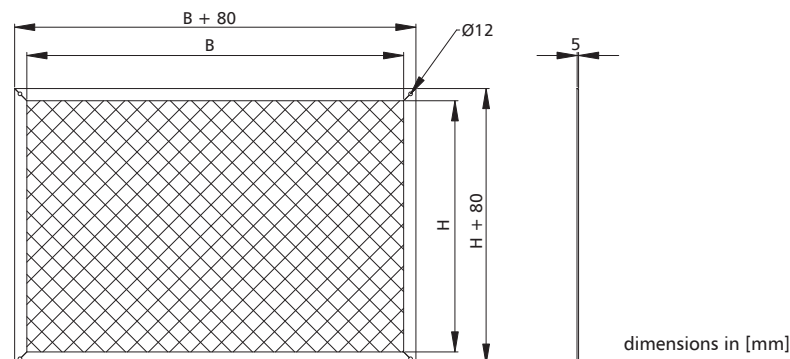
		800					
		v [m/s]	S _k [m ²]	S _e [m ²]	Q [m ³ /h]	d _p [Pa]	L _{WA} [dB]
width B [mm]	600	4	0.480	0.448	6 445	3	29
		6			9 668	7	39
		8			12 891	13	47
		10			16 114	20	53
	650	4	0.520	0.485	6 983	3	28
		6			10 474	7	39
		8			13 965	12	46
		10			17 456	19	52
	700	4	0.560	0.522	7 520	3	28
		6			11 280	6	39
		8			15 039	12	46
		10			18 799	18	52
	800	4	0.640	0.597	8 594	3	27
		6			12 891	6	38
		8			17 188	10	45
		10			21 485	16	51
	900	4	0.720	0.671	9 668	3	28
		6			14 502	6	38
		8			19 336	10	46
		10			24 170	16	51
	1000	4	0.800	0.746	10 742	3	28
		6			16 114	6	39
		8			21 485	10	46
		10			26 856	16	52
	1100	4	0.880	0.821	11 817	3	28
		6			17 725	6	39
		8			23 633	10	46
		10			29 542	16	52
	1200	4	0.960	0.895	12 891	2	28
		6			19 336	5	39
		8			25 782	10	46
		10			32 227	15	52

1.7 | Estimated weight of the mcr FID B rectangular dampers [kg]

		width B [mm]																				
		200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200
height H [mm]	200	26	28	29	31	33	34	36	37	39	40	42	43	45	46	48	49	51	53	54	56	57
	250	28	30	31	33	34	36	37	39	41	42	44	45	47	49	50	52	53	55	57	58	60
	300	29	31	33	34	36	38	39	41	43	44	46	48	49	51	53	54	56	58	59	61	62
	350	31	33	34	36	38	40	41	43	45	46	48	50	51	53	55	57	58	60	62	63	65
	400	33	34	36	38	40	41	43	45	47	48	50	52	54	55	57	59	61	62	64	66	68
	450	34	36	38	40	41	43	45	47	49	50	52	54	56	58	59	61	63	65	67	69	70
	500	36	37	39	41	43	45	47	49	51	52	54	56	58	60	62	64	66	67	69	71	73
	550	37	39	41	43	45	47	49	51	53	54	56	58	60	62	64	66	68	70	72	74	76
	600	39	41	43	45	47	49	51	53	55	57	59	60	62	64	66	68	70	72	74	76	78
	650	40	42	44	46	48	50	52	54	57	59	61	63	65	67	69	71	73	75	77	79	81
	700	42	44	46	48	50	52	54	56	59	61	63	65	67	69	71	73	75	77	79	81	84
	750	43	45	48	50	52	54	56	58	60	63	65	67	69	71	73	76	78	80	82	84	86
	800	45	47	49	51	54	56	58	60	62	65	67	69	71	73	76	78	80	82	84	87	89

1.8 | Accessories

1.8.1 | MWB masking grille



MWB system masking grille are designed to fulfill either supply or exhaust function. They allow for an aesthetic system termination. They come with a fixed steel mesh that covers the damper, reducing its visibility. Bolts are used to attach the masking grille body to the damper. Such a solution allows for installing the product even in the most visually-demanding applications. The masking grilles are painted in RAL 9010 as a standard (available in any colour from the RAL range on request).

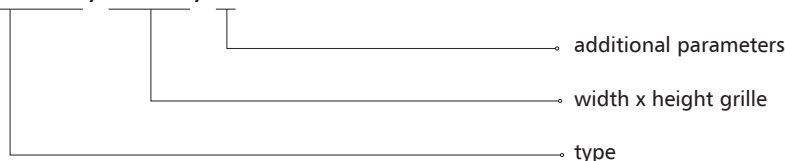
Dimensions:

- » nominal width B: from 200 to 1200 mm
- » nominal height H from 200 mm to 800 mm
- » nominal thickness G 5 mm

Apart from the standard dimensions, masking grilles may be manufactured with intermediate dimensions.

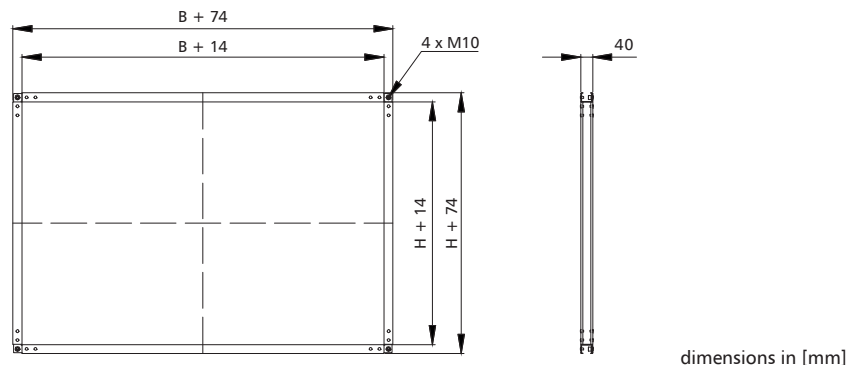
Marking:

mcr MWB / B x H / X



mcr FID B | Single-blade smoke control dampers for multi-compartment fire ventilation systems

1.8.2 | RB connecting subframe



Mcr RB connection frames are used to connect a steel ventilation duct to the damper. The connection may be made using bolts in the corners of the frame, as well as using latches/hasps for ventilation ducts or self-drilling screws.

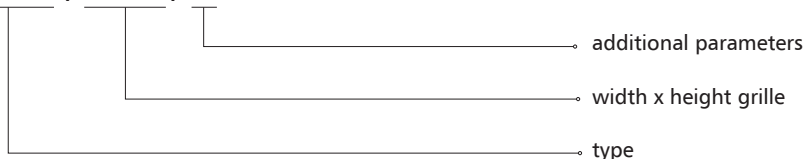
Dimensions:

- » nominal width B: from 200 to 1200 mm
- » nominal height H from 200 mm to 800 mm
- » nominal thickness G 40 mm

Apart from the standard dimensions, connection frames may be manufactured with intermediate dimensions.

Marking:

mcr RB / B x H / X



X – material

[no symbol] – galvanized steel, Zn 275 g/m² coating

KN – stainless steel

KK – 1.4404 acid-proof steel

1.9 | Marking

mcr FID B B x H 1 / 2 / 3



1 - control:

» trigger control mechanism

- BE24 – actuator without a return spring, U = 24 V AC/DC
- BEE24 – actuator without a return spring, U = 24 V AC/DC
- BEN24 – actuator without a return spring, U = 24 V AC/DC
- BE230 – actuator without a return spring, U = 230 V AC
- BEE230 – actuator without a return spring, U = 230 V AC
- BEN230 – actuator without a return spring, U = 230 V AC
- MLE24 – actuator without a return spring, U = 24 V AC/DC
- MLE230 – actuator without a return spring, U = 230 V AC
- ME24 – actuator without a return spring, U = 24 V AC/DC
- ME230 – actuator without a return spring, U = 230 V AC

mcr FID B | Single-blade smoke control dampers for multi-compartment fire ventilation systems

2 - material

[no symbol] – galvanized steel, Zn 275 g/m² coating

KN – stainless steel

KK – 1.4404 acid-proof steel

3 - additional parameters

» Control mechanism position

[no symbol] – along the damper rotation axis

» Damper axis of rotation

[no symbol] – horizontal axis of rotation

PP_D – vertical axis of rotation – mechanism at the bottom of the damper

PP_G – vertical axis of rotation – mechanism at the top of the damper

» Extended damper casing

[no symbol] – standard casing length

NOTE: separate additional parameters entered with the “/” sign

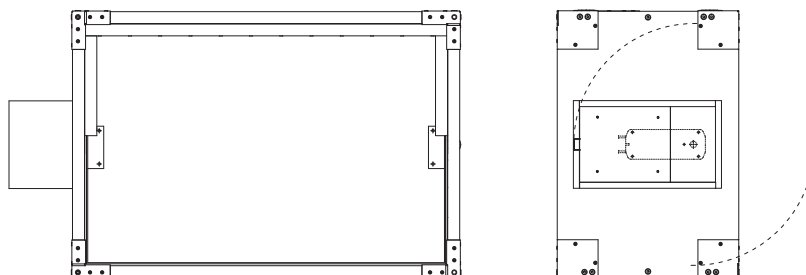
example marking:

mcr FID B 400 x 400 BEN24

Smoke control damper for fire ventilation systems with a 24 V actuator with limit switches.

1.9.1 | Design standards

» symmetrical damper



Chapter 18 in Technical Catalogue - power supply and control (p. 350) contains the following information:
- technical specifications and connection diagrams for the trigger control mechanisms supporting the damper.



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