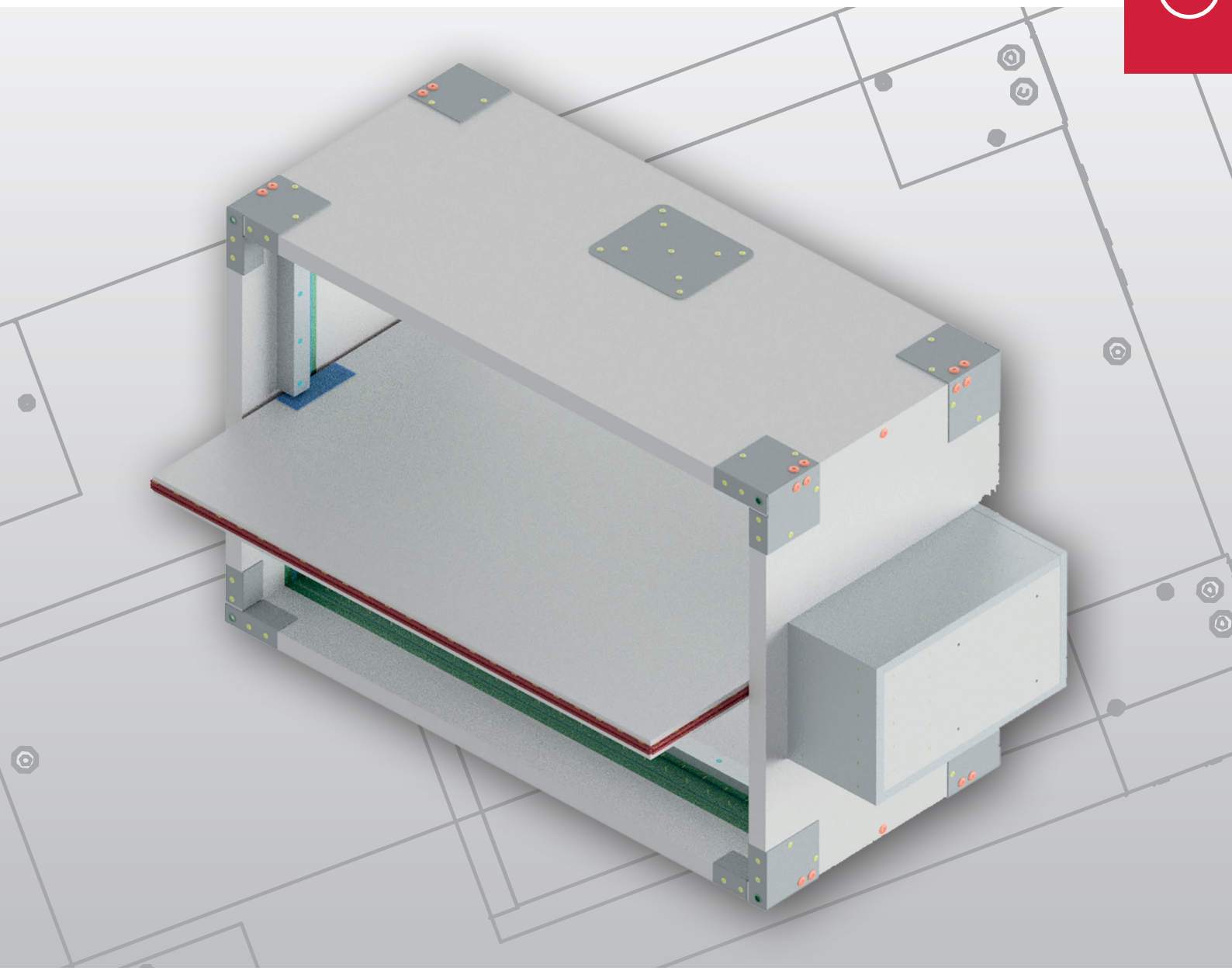
NEW IN OFFER

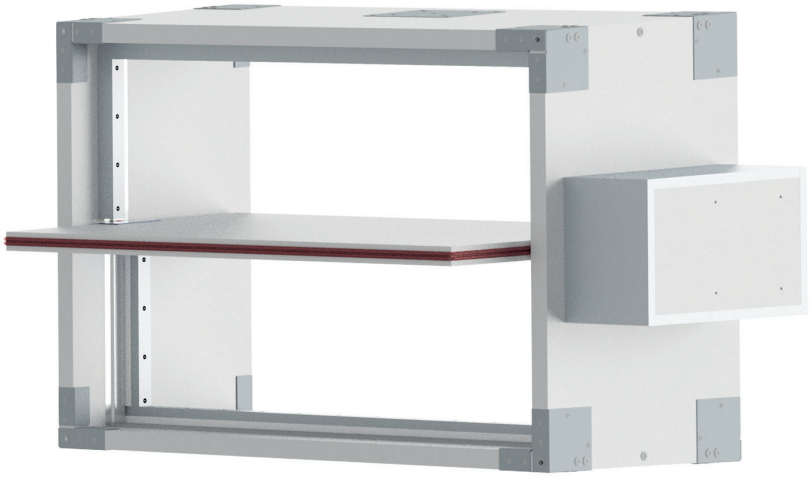


mcr FID B

single-blade smoke exhaust fire dampers for multi-zone fire ventilation systems

mcr FID B

single-blade smoke exhaust fire dampers for multi-zone fire ventilation systems

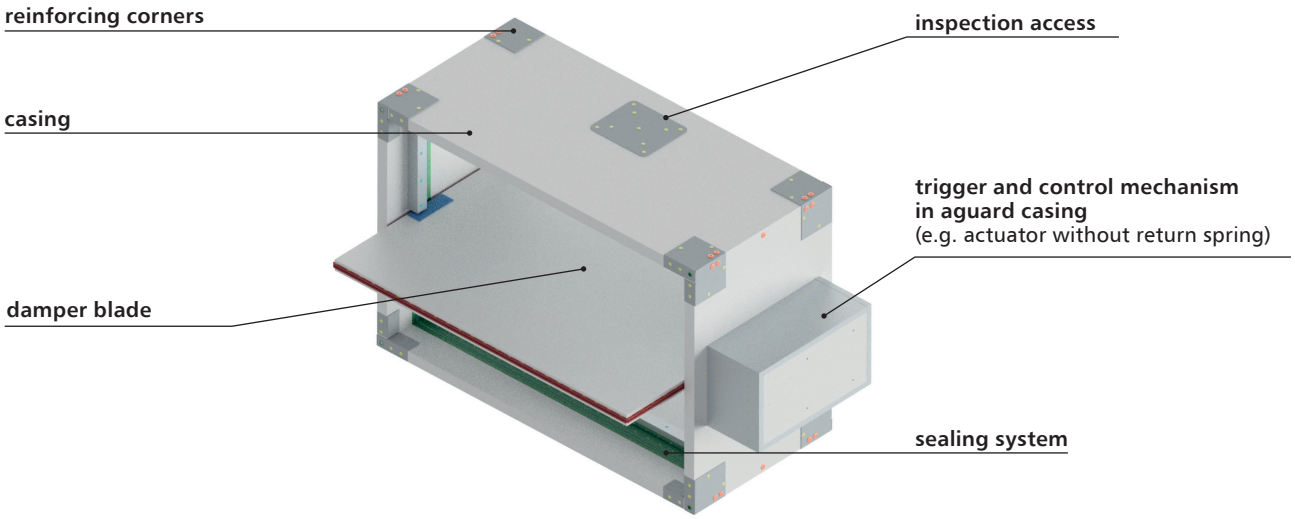


- EIS120
- **Certificate of constancy of performance 2434-CPR-0031.**
- **Dampers certified for compliance with EN 12101-8.**
- **Dampers qualified under EN 13501-4 tested under EN 1366-10.**
- **Cut-off dampers with the fire resistance independent of airflow direction and installation side.**
- **Lower acoustic noise and hydraulic resistance in the system thanks to reduction of damper blade thickness – 40mm thickness for EIS120.**
- **MA feature (the damper partition can change its position during a fire).**

1.1. application

The mcr FID B smoke exhaust dampers are intended for installation in automatically operated fire ventilation systems. Dampers mcr FID B are used in fire ventilation systems, or in mixed, fire and comfort ventilation systems. They support both single and multiple fire zones in a building. The devices prevent fire, smoke and fire gases propagation to the adjacent areas. During normal operation, the fire damper is in open or closed position depending on its function. The damper blade opens in the zone on fire and dampers close in other zones. The damper blade during a fire can change its position - feature MA, depending on the needs of rescue teams and the fire scenario.

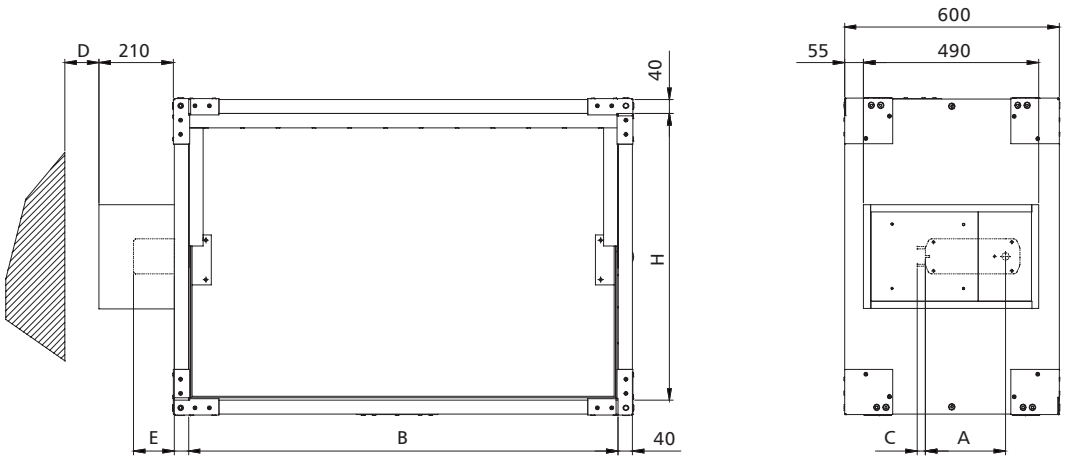
1.2. design



The mcr FID B smoke exhaust dampers consist of a casing with a rectangular cross-section consisting of fire-proof boards, a moving damper blade and an actuator activated manually or remotely. For chemically aggressive environments, the fire-proof boards are impregnated. The casing total length is 600 mm. The damper blade is made of a fire-proof board with a total thickness of 40 mm. The inner side of the fire damper casing is equipped with an gasket system. There are stop profiles fastened to the inner casing surface, which limit the rotating motion of the damper blade. The damper is equipped as standard with an inspection access, located on one of the sides of the casing. 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.

1.3. versions

1.3.1. damper closing and opening with an actuator



mechanism	A	C	D	E
BE	198	10	75	81
BLE	130	30	75	70
BEE	149	30	75	52
BEN	130	30	75	48

During normal operation, the damper blade of the fire damper remains open or closed. In case of fire, the blade of the damper in the zone on fire opens, while in other zones the damper blades are closed - the dampers are remotely activated by applying the power supply.

The mcr FID B dampers are equipped with a trigger and control mechanisms BE, BLE, BEE or BEN series axial actuator, powered with 24 V AC / DC or 230 V AC. BE and BLE series actuators are equipped with limit switches used to monitor the blade position. Furthermore, the mechanical position indicator is placed on the actuator.

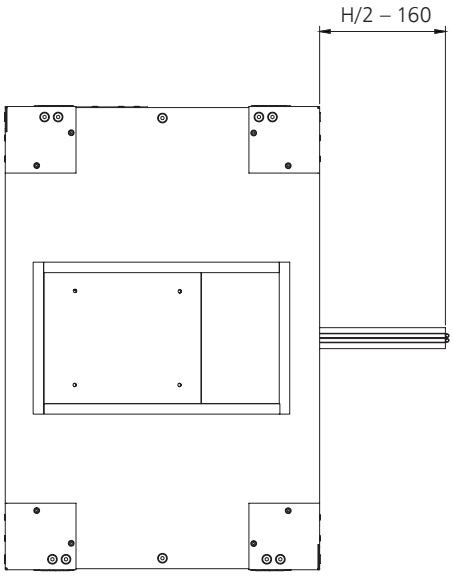
Dampers with Belimo BE, BLE, BEE or BEN series actuators close and open when the voltage is applied to the actuator terminals.

1.4. dimensions

rectangular dampers:

- nominal width B: from 200 mm to 1200 mm
- nominal hight H: from 200 mm to 800 mm
- the maximum cross-section surface of one damper up to: 0,96m^2
- the design of the damper ensures that its damper blade, regardless of the dimensions of the BxH damper, does not protrude beyond the device housing on one side.

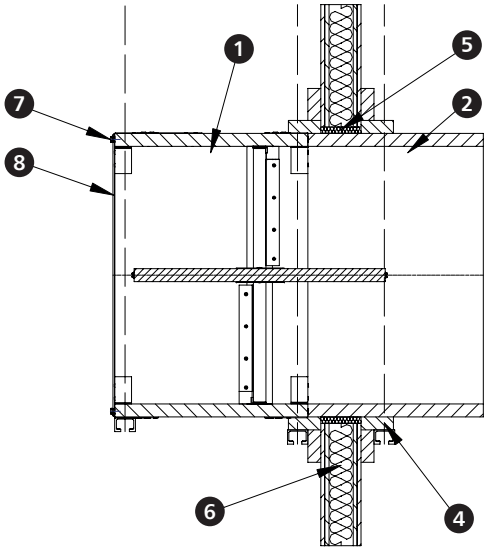
Apart from the standard dimensions, fire dampers may be manufactured with intermediate dimensions (in 1 mm increments, in the given range).

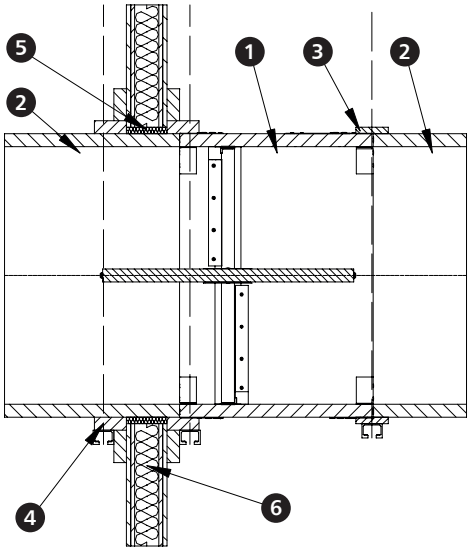


1.5. installation

The mcr FID B rectangular dampers are EI120(ved hod i↔o)S1500C10.000 MA multi-rated if installed on fire-resistant ducts classified according to EN 1366-8 and EN 1366-9.

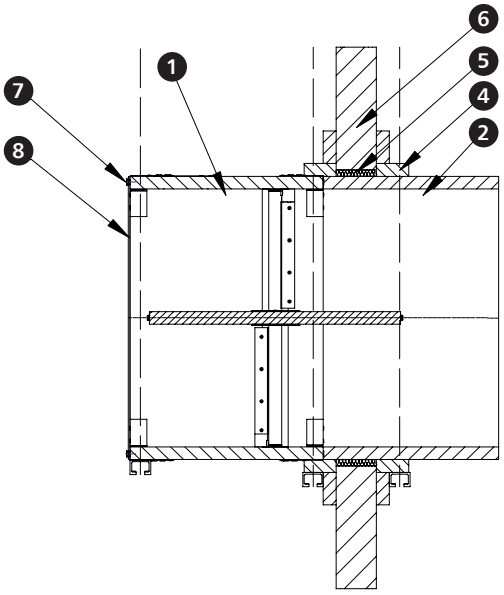
1.5.1. installation of damper in panel walls

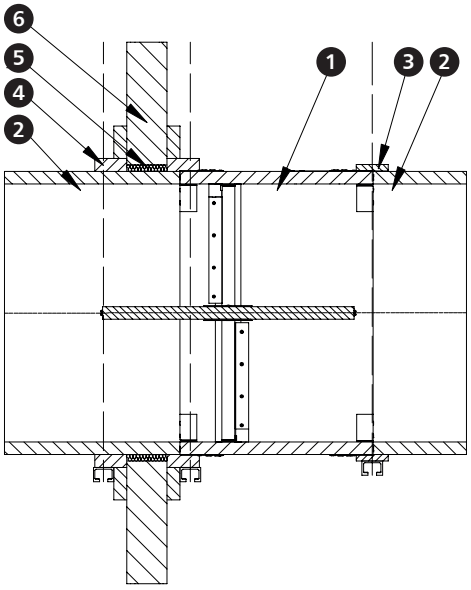




1. mcr FID B BxH damper
2. multi-zone smoke extract duct - eg made of fire-rated boards
3. a strip of fire-resistant board along the entire length of the side BxH
4. system of ceiling hanger
5. system of installation transition of the fireproof duct
6. panel wall
7. M10x20 screw
8. MWB system grille

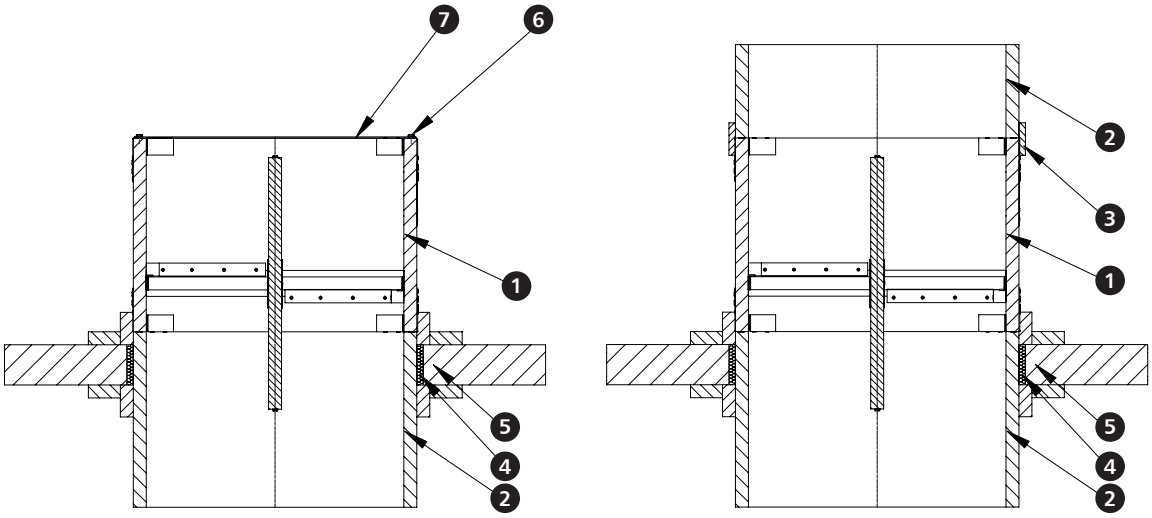
1.5.2. installation of damper in solid walls





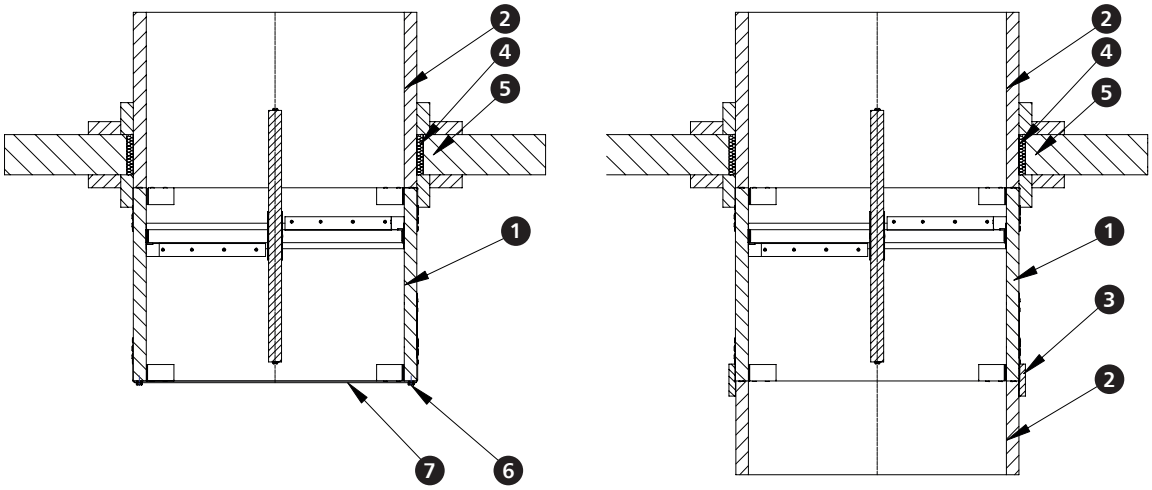
1. mcr FID B BxH damper
2. multi-zone smoke extract duct - eg made of fire-rated boards
3. a strip of fire-resistant board along the entire length of the side BxH
4. system of ceiling hanger
5. system of installation transition of the fireproof duct
6. panel wall
7. M10x20 screw
8. MWB system grille

1.5.3. installation of damper in rigid floor – above the rigid floor



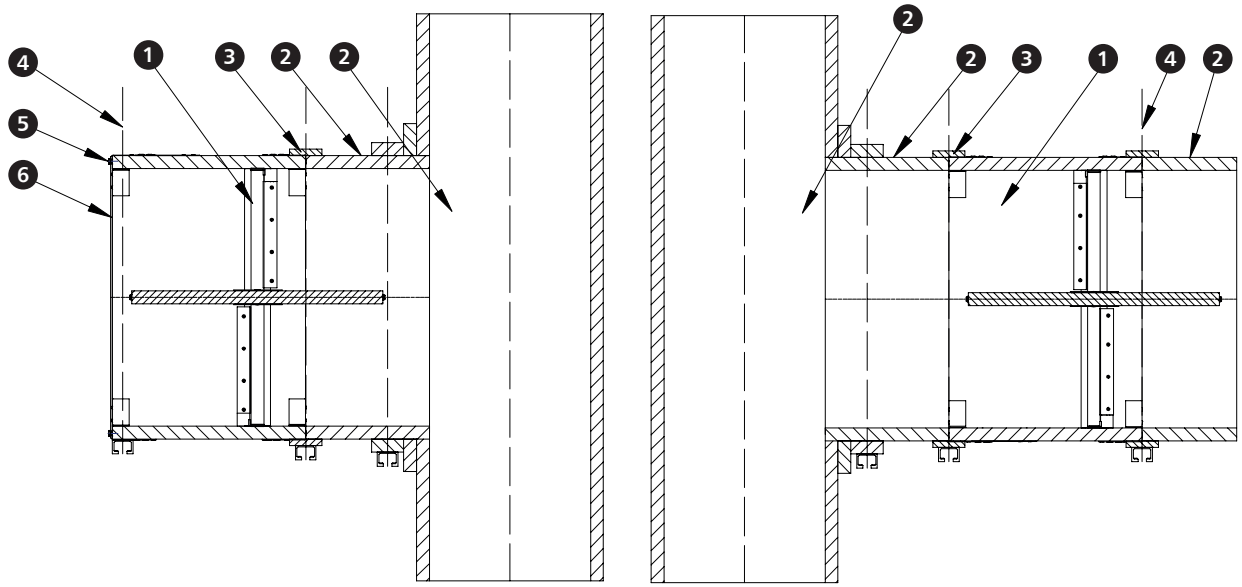
1. mcr FID B BxH damper
2. multi-zone smoke extract duct - eg made of fire-rated boards
3. a strip of fire-resistant board along the entire length of the side BxH
4. system of installation transition of the fireproof duct
5. rigid floor
6. M10x20 screw
7. MWB system grille

1.5.4. installation of damper in rigid floor – below the rigid floor



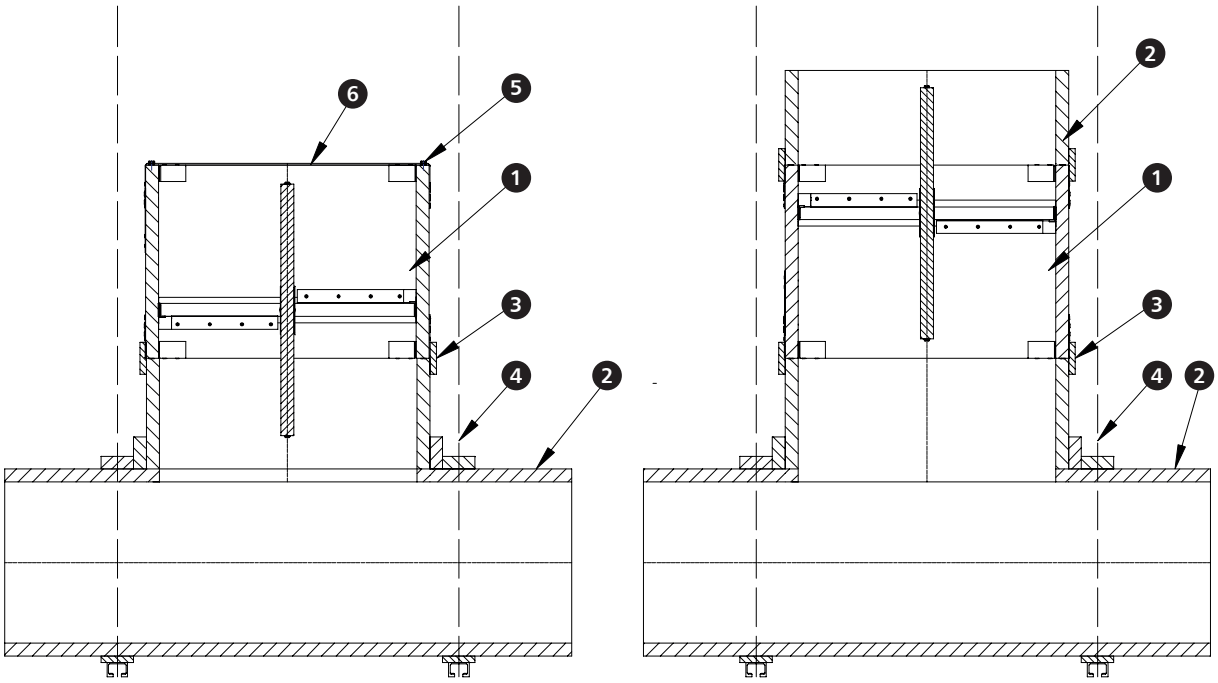
1. mcr FID B BxH damper
2. multi-zone smoke extract duct - eg made of fire-rated boards
3. a strip of fire-resistant board along the entire length of the side BxH
4. system of installation transition of the fireproof duct
5. rigid floor
6. M10x20 screw
7. MWB system grille

1.5.5. installation of the damper on horizontal ducts



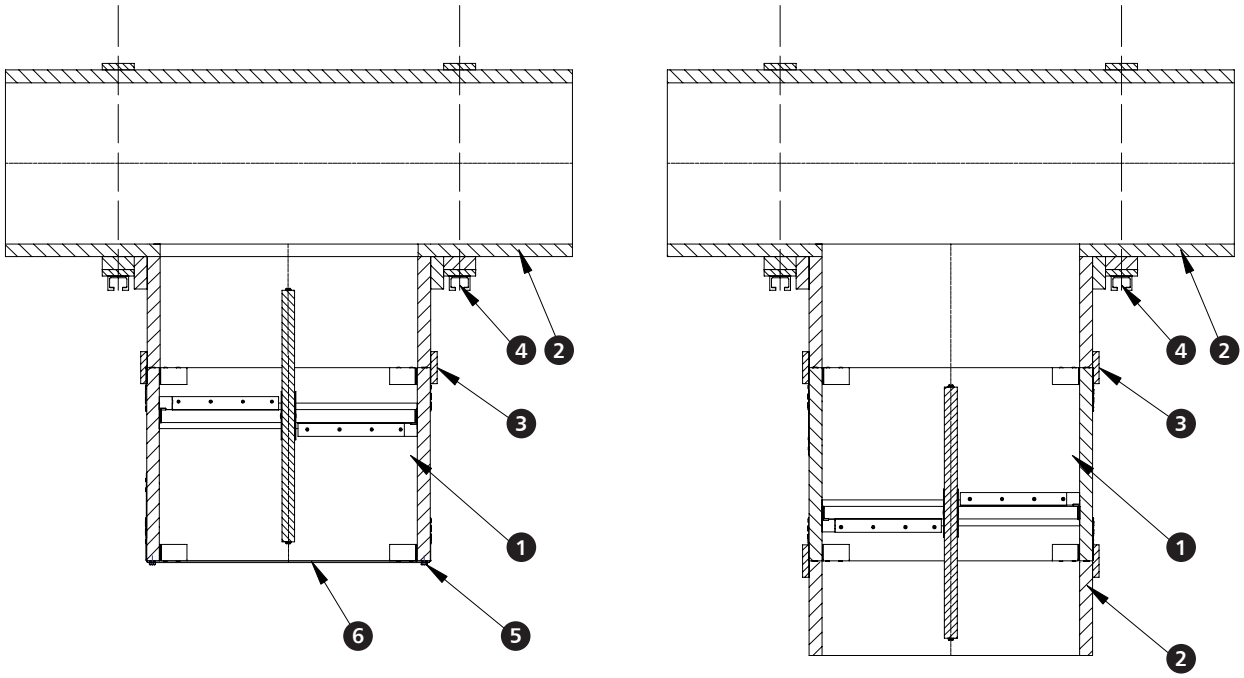
1. mcr FID B BxH damper
2. multi-zone smoke extract duct - eg made of fire-rated boards
3. a strip of fire-resistant board along the entire length of the side BxH
4. system of ceiling hanger
5. M10x20 screw
6. MWB system grille

1.5.6. Installation of the damper on vertical ducts



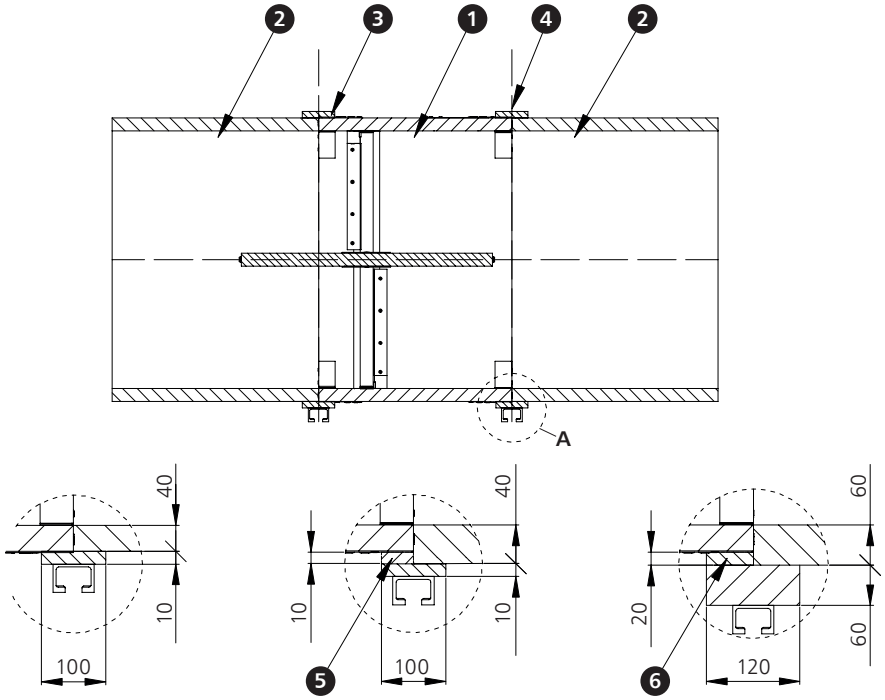
1. mcr FID B BxH damper
2. multi-zone smoke extract duct - eg made of fire-rated boards
3. a strip of fire-resistant board along the entire length of the side BxH
4. system of ceiling hanger
5. M10x20 screw
6. MWB system grille

1.5.7. installation of the damper on vertical ducts



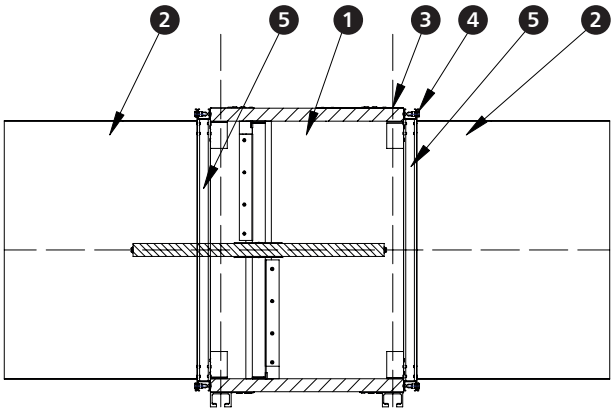
1. mcr FID B BxH damper
2. multi-zone smoke extract duct - eg made of fire-rated boards
3. a strip of fire-resistant board along the entire length of the side BxH
4. system of ceiling hanger
5. M10x20 screw
6. MWB system grille

1.5.8. connection of a multi-zone fireproof duct, e.g. made of fire-reated boards



1. mcr FID B BxH damper
2. multi-zone smoke extract duct - eg made of fire-rated boards
3. a strip of fire-resistant board along the entire length of the side BxH
4. system of ceiling hanger
5. a strip of fire-resistant board along the entire length of the side BxH with dimensions 10x50mm
6. a strip of fire-resistant board along the entire length of the side BxH with dimensions 20x50mm

1.5.9. connection of a single- compartment fireproof duct, e.g. made of metal sheets



1. mcr FID B BxH damper
2. single-compartment smoke extract duct - eg metal one
3. system of ceiling hanger
4. M10x20 screw
5. RB mounting frame

Smoke extraction duct should be made in accordance with the duct manufacturer's guidelines. The ducts must have adequate fire resistance in accordance with the fire resistance provided for the entire solution. Seal all connections between the damper and the ducts with appropriate mortar / glue / gaskets, ensuring fire resistance. The shut-off damper in vertical position fire ventilation systems may be mounted 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.

1.6. technical parameters of mcr FID B rectangular dampers

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

v – velocity [m/s]
Sk – duct cross-section [m^2]
Se – damper active cross-section [m^2]

Q – flow [m^3/h]
dp – pressure drop [Pa]
L_{WA} – damper noise level [dB]

			height H [mm]														
			200					250					300				
		v [m/s]	Sk [m^2]	Se [m^2]	Q [m^3/h]	dp [Pa]	L_{WA} [dB]	Sk [m^2]	Se [m^2]	Q [m^3/h]	dp [Pa]	L_{WA} [dB]	Sk [m^2]	Se [m^2]	Q [m^3/h]	dp [Pa]	L_{WA} [dB]
width B [mm]	200	4	0.040	0.029	420	9	31	0.050	0.039	564	9	31	0.06	0.049	708	8	32
		6			631	21	41			847	19	42			1 063	19	42
		8			841	37	49			1 129	35	49			1 417	33	50
		10			1 051	58	55			1 411	54	55			1 771	52	55
	250	4	0.050	0.037	526	9	31	0.063	0.049	706	9	32	0.075	0.062	886	8	32
		6			788	21	42			1 058	19	43			1 328	18	42
		8			1 051	37	50			1 411	35	50			1 771	31	50
		10			1 314	57	55			1 764	54	56			2 214	49	56
	300	4	0.060	0.044	631	9	32	0.075	0.059	847	8	33	0.09	0.074	1 063	8	32
		6			946	20	43			1 270	19	43			1 594	17	43
		8			1 261	36	50			1 693	34	51			2 125	30	50
		10			1 577	56	56			2 117	53	56			2 657	47	56
	350	4	0.070	0.051	736	9	33	0.088	0.069	988	8	33	0.105	0.086	1 240	7	32
		6			1 104	20	43			1 482	19	44			1 860	16	43
		8			1 472	36	51			1 976	33	51			2 480	29	50
		10			1 840	56	57			2 470	52	57			3 100	45	56
	400	4	0.080	0.058	841	9	33	0.100	0.078	1 129	8	34	0.12	0.098	1 417	7	32
		6			1 261	19	43			1 693	19	44			2 125	15	42
		8			1 682	35	51			2 258	33	52			2 834	27	50
		10			2 102	54	57			2 822	52	57			3 542	42	56
	450	4	0.090	0.066	946	9	33	0.113	0.088	1 270	7	32	0.135	0.111	1 594	7	32
		6			1 419	19	44			1 905	17	43			2 391	15	43
		8			1 892	35	51			2 540	29	51			3 188	27	50
		10			2 365	54	57			3 175	46	56			3 985	42	56
	500	4	0.100	0.073	1 051	9	34	0.125	0.098	1 411	7	32	0.15	0.123	1 771	7	32
		6			1 577	19	44			2 117	16	43			2 657	15	43
		8			2 102	35	52			2 822	28	50			3 542	26	50
		10			2 628	54	58			3 528	44	56			4 428	41	56
	550	4	0.110	0.080	1 156	8	34	0.138	0.108	1 552	7	33	0.165	0.135	1 948	6	33
		6			1 734	19	44			2 328	16	43			2 922	14	43
		8			2 313	34	52			3 105	28	51			3 897	26	51
		10			2 891	53	58			3 881	44	57			4 871	40	56
	600	4	0.120	0.088	1 261	8	34	0.150	0.118	1 693	7	33	0.18	0.148	2 125	6	33
		6			1 892	19	45			2 540	15	43			3 188	14	43
		8			2 523	34	52			3 387	27	51			4 251	26	51
		10			3 154	53	58			4 234	42	56			5 314	40	57
	650	4	0.130	0.095	1 367	8	35	0.163	0.127	1 835	6	32	0.195	0.160	2 303	6	33
		6			2 050	19	45			2 752	14	43			3 454	14	44
		8			2 733	34	53			3 669	26	50			4 605	26	51
		10			3 416	53	59			4 586	40	56			5 756	40	57
	700	4	0.140	0.102	1 472	8	35	0.175	0.137	1 976	6	33	0.21	0.172	2 480	6	34
		6			2 208	19	45			2 964	14	43			3 720	14	44
		8			2 943	33	53			3 951	26	51			4 959	26	52
		10			3 679	52	59			4 939	40	56			6 199	40	57

1.6. technical parameters of mcr FID B rectangular dampers

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

v – velocity [m/s]
Sk – duct cross-section [m^2]
Se – damper active cross-section [m^2]

Q – flow [m^3/h]
dp – pressure drop [Pa]
L_{WA} – damper noise level [dB]

			height H [mm]														
			200					250					300				
		v [m/s]	Sk [m^2]	Se [m^2]	Q [m^3/h]	dp [Pa]	L_{WA} [dB]	Sk [m^2]	Se [m^2]	Q [m^3/h]	dp [Pa]	L_{WA} [dB]	Sk [m^2]	Se [m^2]	Q [m^3/h]	dp [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
					6 307	45	59			8 467	34	57			10 627	42	60

1.6. technical parameters of mcr FID B rectangular dampers

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

v – velocity [m/s]
Sk – duct cross-section [m^2]
Se – damper active cross-section [m^2]

Q – flow [m^3/h]
dp – pressure drop [Pa]
L_{WA} – damper noise level [dB]

			height H [mm]															
			350					400					450					
		v [m/s]	Sk [m^2]	Se [m^2]	Q [m^3/h]	dp [Pa]	L_{WA} [dB]	Sk [m^2]	Se [m^2]	Q [m^3/h]	dp [Pa]	L_{WA} [dB]	Sk [m^2]	Se [m^2]	Q [m^3/h]	dp [Pa]	L_{WA} [dB]
width B [mm]	200	4	0.070	0.059	852	8	32	0.080	0.069	996	7	31	0.090	0.079	1 140	7	31
		6			1 279	18	42			1 495	17	42			1 711	15	41
		8			1 705	32	50			1 993	29	49			2 281	26	49
		10			2 131	50	56			2 491	46	55			2 851	41	54
	250	4	0.088	0.074	1 066	7	31	0.100	0.087	1 246	6	29	0.113	0.099	1 426	6	29
		6			1 598	16	42			1 868	13	40			2 138	13	40
		8			2 131	29	50			2 491	23	47			2 851	22	47
		10			2 664	45	55			3 114	36	53			3 564	35	53
	300	4	0.105	0.089	1 279	7	32	0.120	0.104	1 495	6	30	0.135	0.119	1 711	5	30
		6			1 918	16	43			2 242	13	41			2 566	12	40
		8			2 557	28	50			2 989	24	48			3 421	22	48
		10			3 197	44	56			3 737	37	54			4 277	34	54
	350	4	0.123	0.104	1 492	7	32	0.140	0.121	1 744	6	30	0.158	0.139	1 996	5	30
		6			2 238	15	42			2 616	13	41			2 994	12	41
		8			2 984	26	50			3 488	22	48			3 992	21	48
		10			3 730	41	56			4 360	35	54			4 990	33	54
	400	4	0.140	0.118	1 705	6	31	0.160	0.138	1 993	6	31	0.180	0.158	2 281	5	30
		6			2 557	13	41			2 989	13	41			3 421	12	41
		8			3 410	24	49			3 986	22	49			4 562	21	48
		10			4 262	37	55			4 982	35	55			5 702	32	54
	450	4	0.158	0.133	1 918	5	30	0.180	0.156	2 242	5	30	0.203	0.178	2 566	4	29
		6			2 877	12	41			3 363	12	41			3 849	10	40
		8			3 836	22	48			4 484	21	48			5 132	18	47
		10			4 795	34	54			5 605	32	54			6 415	28	53
	500	4	0.175	0.148	2 131	5	31	0.200	0.173	2 491	5	30	0.225	0.198	2 851	4	29
		6			3 197	12	41			3 737	11	40			4 277	9	39
		8			4 262	22	49			4 982	19	48			5 702	17	47
		10			5 328	34	55			6 228	30	54			7 128	26	52
	550	4	0.193	0.163	2 557	5	30	0.220	0.190	2 740	5	30	0.248	0.218	3 136	4	29
		6			3 836	12	41			4 110	11	41			4 704	9	40
		8			5 115	21	48			5 481	19	48			6 273	17	47
		10			6 394	32	54			6 851	30	54			7 841	26	53
	600	4	0.210	0.178	2 557	5	30	0.240	0.208	2 989	4	28	0.270	0.238	3 421	4	29
		6			3 836	10	40			4 484	8	37			5 132	9	40
		8			5 115	19	48			5 979	14	45			6 843	17	47
		10			6 394	29	53			7 474	27	53			8 554	26	53
	650	4	0.228	0.192	2 771	5	30	0.260	0.225	3 239	4	30	0.293	0.257	3 707	4	30
		6			4 156	10	40			4 858	10	40			5 560	9	40
		8			5 541	19	48			6 477	17	48			7 413	17	48
		10			6 926	29	54			8 096	27	53			9 266	26	54
	700	4	0.245	0.207	2 984	5	30	0.28	0.242	3 488	4	30	0.315	0.277	3 992	4	30
		6			4 476	10	41			5 232	10	40			5 988	9	40
		8			5 967	19	48			6 975	17	48			7 983	16	48
		10			7 459	29	54			8 719	27	54			9 979	25	53

1.6. technical parameters of mcr FID B rectangular dampers

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

v – velocity [m/s]
Sk – duct cross-section [m^2]
Se – damper active cross-section [m^2]

Q – flow [m^3/h]
dp – pressure drop [Pa]
L_{WA} – damper noise level [dB]

			height H [mm]														
			350					400					450				
		v [m/s]	Sk [m^2]	Se [m^2]	Q [m^3/h]	dp [Pa]	L_{WA} [dB]	Sk [m^2]	Se [m^2]	Q [m^3/h]	dp [Pa]	L_{WA} [dB]	Sk [m^2]	Se [m^2]	Q [m^3/h]	dp [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

1.6. technical parameters of mcr FID B rectangular dampers

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

v – velocity [m/s]
Sk – duct cross-section [m^2]
Se – damper active cross-section [m^2]

Q – flow [m^3/h]
dp – pressure drop [Pa]
L_{WA} – damper noise level [dB]

			height H [mm]														
			500					550					600				
		v [m/s]	Sk [m^2]	Se [m^2]	Q [m^3/h]	dp [Pa]	L_{WA} [dB]	Sk [m^2]	Se [m^2]	Q [m^3/h]	dp [Pa]	L_{WA} [dB]	Sk [m^2]	Se [m^2]	Q [m^3/h]	dp [Pa]	L_{WA} [dB]
width B [mm]	200	4	0.1	0.089	1 284	6	29	0.110	0.099	1 428	5	29	0.120	0.109	1 572	5	29
		6			1 927	13	40			2 143	12	39			2 359	12	39
		8			2 569	22	47			2 857	21	47			3 145	21	47
		10			3 211	35	53			3 571	33	53			3 931	32	53
	250	4	0.125	0.112	1 606	6	30	0.138	0.124	1 786	5	30	0.150	0.137	1 966	5	30
		6			2 408	13	41			2 678	12	40			2 948	12	40
		8			3 211	22	48			3 571	21	48			3 931	21	48
		10			4 014	35	54			4 464	33	53			4 914	32	54
	300	4	0.15	0.134	1 927	5	30	0.165	0.149	2 143	5	30	0.180	0.164	2 359	5	30
		6			2 890	12	41			3 214	12	41			3 538	11	40
		8			3 853	21	48			4 285	21	48			4 717	19	48
		10			4 817	33	54			5 357	32	54			5 897	30	53
	350	4	0.175	0.156	2 248	5	30	0.193	0.174	2 500	5	31	0.210	0.191	2 752	5	30
		6			3 372	12	41			3 750	12	41			4 128	10	40
		8			4 496	21	48			5 000	21	49			5 504	19	48
		10			5 620	32	54			6 250	32	55			6 880	29	54
	400	4	0.2	0.178	2 569	5	30	0.220	0.198	2 857	5	30	0.240	0.218	3 145	4	30
		6			3 853	11	41			4 285	10	41			4 717	10	41
		8			5 138	19	48			5 714	19	48			6 290	18	48
		10			6 422	30	54			7 142	29	54			7 862	28	54
	450	4	0.225	0.201	2 890	4	29	0.248	0.223	3 214	4	29	0.270	0.246	3 538	4	30
		6			4 335	9	39			4 821	9	40			5 307	9	40
		8			5 780	17	47			6 428	17	47			7 076	17	48
		10			7 225	26	52			8 035	26	53			8 845	26	53
	500	4	0.250	0.223	3 211	4	27	0.275	0.248	3 571	4	29	0.300	0.273	3 931	4	29
		6			4 817	8	38			5 357	9	39			5 897	9	39
		8			6 422	14	45			7 142	15	47			7 862	15	47
		10			8 028	20	50			8 928	24	52			9 828	24	53
	550	4	0.275	0.245	3 853	3	27	0.303	0.273	4 285	4	28	0.330	0.300	4 717	4	28
		6			5 780	8	37			6 428	8	38			7 076	8	39
		8			7 707	13	45			8 571	14	46			9 435	14	46
		10			9 634	21	51			10 714	22	52			11 794	22	52
	600	4	0.3	0.268	3 853	3	27	0.330	0.298	4 285	3	28	0.360	0.328	4 717	3	28
		6			5 780	8	38			6 428	8	38			7 076	8	39
		8			7 707	13	45			8 571	13	46			9 435	13	46
		10			9 634	21	51			10 714	21	51			11 794	21	52
	650	4	0.325	0.290	4 175	4	31	0.358	0.322	4 643	3	28	0.390	0.355	5 111	3	28
		6			6 262	10	41			6 964	8	38			7 666	8	39
		8			8 349	17	49			9 285	13	46			10 221	13	46
		10			10 436	21	51			11 606	21	52			12 776	21	52
	700	4	0.350	0.312	4 496	3	28	0.385	0.347	5 000	3	28	0.420	0.382	5 504	3	29
		6			6 744	8	38			7 500	8	39			8 256	8	39
		8			8 991	13	46			9 999	13	46			11 007	13	47
		10			11 239	21	52			12 499	21	52			13 759	21	52

1.6. technical parameters of mcr FID B rectangular dampers

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

v – velocity [m/s]
Sk – duct cross-section [m^2]
Se – damper active cross-section [m^2]

Q – flow [m^3/h]
dp – pressure drop [Pa]
L_{WA} – damper noise level [dB]

			height H [mm]														
			500					550					600				
		v [m/s]	Sk [m^2]	Se [m^2]	Q [m^3/h]	dp [Pa]	L_{WA} [dB]	Sk [m^2]	Se [m^2]	Q [m^3/h]	dp [Pa]	L_{WA} [dB]	Sk [m^2]	Se [m^2]	Q [m^3/h]	dp [Pa]	L_{WA} [dB]
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

1.6. technical parameters of mcr FID B rectangular dampers

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

v – velocity [m/s]
Sk – duct cross-section [m^2]
Se – damper active cross-section [m^2]

Q – flow [m^3/h]
dp – pressure drop [Pa]
L_{WA} – damper noise level [dB]

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

1.6. technical parameters of mcr FID B rectangular dampers

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

v – velocity [m/s]
Sk – duct cross-section [m^2]
Se – damper active cross-section [m^2]

Q – flow [m^3/h]
dp – pressure drop [Pa]
L_{WA} – damper noise level [dB]

			height H [mm]														
			650					700					750				
		v [m/s]	Sk [m^2]	Se [m^2]	Q [m^3/h]	dp [Pa]	L_{WA} [dB]	Sk [m^2]	Se [m^2]	Q [m^3/h]	dp [Pa]	L_{WA} [dB]	Sk [m^2]	Se [m^2]	Q [m^3/h]	dp [Pa]	L_{WA} [dB]
width B [mm]	800	4	0.520	0.477	6 866	3	27	0.560	0.517	7 442	4	29	0.600	0.557	8 018	3	28
		6			10 299	6	38			11 163	7	37			12 027	6	39
		8			13 732	12	45			14 884	11	43			16 036	12	46
		10			17 165	18	51			18 605	16	47			20 045	18	52
	900	4	0.585	0.536	7 724	3	26	0.630	0.581	8 372	3	27	0.675	0.626	9 020	3	27
		6			11 586	6	36			12 558	6	37			13 530	6	38
		8			15 448	10	44			16 744	10	45			18 040	10	45
		10			19 310	16	50			20 930	16	51			22 550	16	51
	1000	4	0.650	0.596	8 582	3	26	0.700	0.646	9 302	3	27	0.750	0.696	10 022	3	28
		6			12 874	6	36			13 954	6	38			15 034	6	38
		8			17 165	10	44			18 605	10	45			20 045	10	46
		10			21 456	16	50			23 256	16	51			25 056	16	52
	1100	4	0.715	0.656	9 441	3	29	0.770	0.711	10 233	3	31	0.825	0.766	11 025	3	28
		6			14 161	8	40			15 349	8	42			16 537	6	39
		8			18 881	13	47			20 465	13	49			22 049	10	46
		10			23 602	21	53			25 582	21	55			27 562	16	52
	1200	4	0.780	0.715	10 299	3	28	0.840	0.775	11 163	3	30	0.900	0.835	12 027	2	28
		6			15 448	7	39			16 744	7	41			18 040	5	38
		8			20 598	12	46			22 326	12	48			24 054	10	46
		10			25 747	19	52			27 907	19	54			30 067	15	52

1.6. technical parameters of mcr FID B rectangular dampers

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

v – velocity [m/s]
Sk – duct cross-section [m^2]
Se – damper active cross-section [m^2]

Q – flow [m^3/h]
dp – pressure drop [Pa]
L_{WA} – damper noise level [dB]

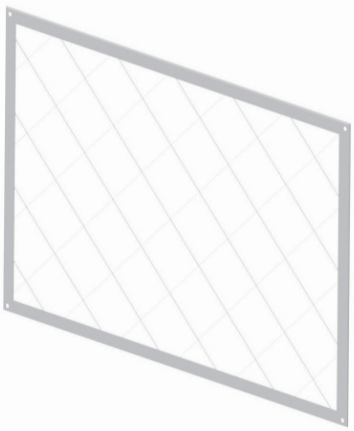
		height H [mm]												
		800												
		v [m/s]	Sk [m^2]	Se [m^2]	Q [m^3/h]	dp [Pa]	L_{WA} [dB]		v [m/s]	Sk [m^2]	Se [m^2]	Q [m^3/h]	dp [Pa]	L_{WA} [dB]
width B [mm]	200	4	0.160	0.149	2 148	5	29	600	4	0.480	0.448	6 445	3	29
		6			3 223	11	40		6			9 668	7	39
		8			4 297	19	47		8			12 891	13	47
		10			5 371	30	53		10			16 114	20	53
	250	4	0.200	0.187	2 686	5	30	650	4	0.520	0.485	6 983	3	28
		6			4 028	11	41		6			10 474	7	39
		8			5 371	19	48		8			13 965	12	46
		10			6 714	30	54		10			17 456	19	52
	300	4	0.240	0.224	3 223	4	30	700	4	0.560	0.522	7 520	3	28
		6			4 834	10	41		6			11 280	6	39
		8			6 445	18	48		8			15 039	12	46
		10			8 057	28	54		10			18 799	18	52
	350	4	0.280	0.261	3 760	4	30	800	4	0.640	0.597	8 594	3	27
		6			5 640	10	41		6			12 891	6	38
		8			7 520	17	48		8			17 188	10	45
		10			9 400	27	54		10			21 485	16	51
	400	4	0.320	0.298	4 297	4	31	900	4	0.720	0.671	9 668	3	28
		6			6 445	10	41		6			14 502	6	38
		8			8 594	17	49		8			19 336	10	46
		10			10 742	27	55		10			24 170	16	51
	450	4	0.360	0.336	4 834	4	29	1000	4	0.800	0.746	10 742	3	28
		6			7 251	8	39		6			16 114	6	39
		8			9 668	14	47		8			21 485	10	46
		10			12 085	22	53		10			26 856	16	52
	500	4	0.400	0.373	5 371	4	29	1100	4	0.880	0.821	11 817	3	28
		6			8 057	8	40		6			17 725	6	39
		8			10 742	14	47		8			23 633	10	46
		10			13 428	22	53		10			29 542	16	52
	550	4	0.440	0.410	5 908	3	29	1200	4	0.960	0.895	12 891	2	28
		6			8 862	8	40		6			19 336	5	39
		8			11 817	13	47		8			25 782	10	46
		10			14 771	21	53					32 227	15	52

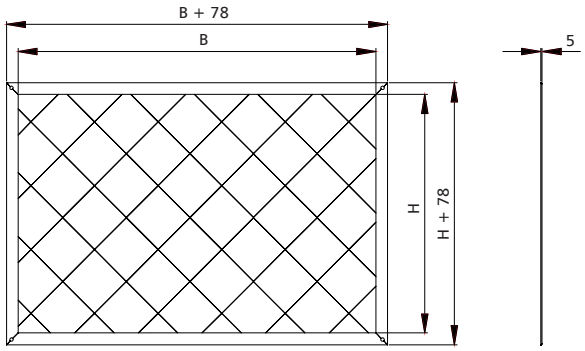
1.7. estimated weights of mcr FID B rectangular dampers [kg]

height H [mm] \ width B [mm]	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200
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. accesories

1.8.1. MWB system grille





The MWB system duct covers are used for air supply or extraction. They allow the installation to be finished aesthetically. They come with a fixed steel mesh covering the visibility of the damper. The casing of the duct cover is fixed to the damper with bolts. Such a solution allows for installing the product even in the most visually - demanding applications. The duct cover are painted in RAL 9010, as standard (available on request in any colour from the RAL range).

Dimensions:

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

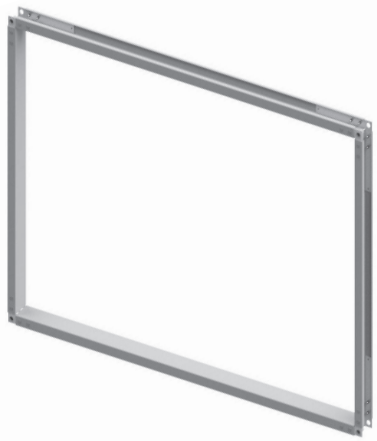
Apart from the standard dimensions there is a possibility to produce duct covers with intermediate dimensions.

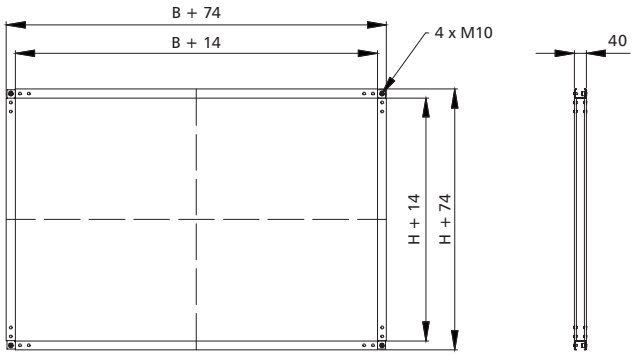
Marking:

mcr MWB / B x H / 1

- 1 – additional parameters
- B x H – width x height
- MWB – grille type

1.8.2. RB connecting subframe





The mcr RB connection frames are used to connect a steel ventilation duct to the damper. The connection can be made with screws in the corners of the frame as well as with clamps for ventilation ducts, as well as self-drilling screws.

Dimensions:

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

Apart from the standard dimensions there is a possibility to produce duct covers with intermediate dimensions.

Oznaczenie:

mcr RB / B x H / 1/2/3

- 1/2/3 – additional parameters
- B x H – width x height
- mcr RB – frame type

1.9. marking

1 – control:

– Belimo trigger control mechanism
BE24 – actuator without a return spring, U = 24 V AC/DC
BLE24 – 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
BE24-ST (with the BKNE230-24 option) – actuator without a return spring, U = 24 V AC/DC w/plug for the SBS control system
BLE24-ST (with the BKNE230-24 option) – actuator without a return spring, U = 24 V AC/DC w/plug for the SBS control system
BEE24-ST (with the BKNE230-24 option) – actuator without a return spring, U = 24 V AC/DC w/plug for the SBS control system
BEN24-ST (with the BKNE230-24 option) – actuator without a return spring, U = 24 V AC/DC w/plug for the SBS control system
BE230 – actuator without a return spring, U = 230 V AC
BLE230 – 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

2 – material

[no symbol] – galvanised steel, Zn 275 g/m2 coating
KN – stainless steel
KK – 1.4404 acid-proof steel

3 – additional parameters

Position of the control mechanism (see chapter 14.2 of this Catalogue)
[no symbol] – along the axis of damper rotation

Axis of rotation of the damper

[no symbol] – horizontal axis of rotation
PP – vertical axis of rotation
D – vertical axis of rotation – mechanism at the bottom of the damper
G – vertical axis of rotation – mechanism at the top of the damper

Extended damper casing

[no symbol] – standard casing length

Note: the additional parameters to be entered preceded by the "/" sign

example marking:

mcr FID B 400 x 400 BLE24

Smoke exhaust damper for fire ventilation systems with a 24 V compact Belimo actuator with limit switches.

FIRE PROTECTION SYSTEMS

- smoke and heat exhaust systems
- fire ventilation systems
- fire protection of building structures

Mercor S.A.
ul. Grzegorza z Sanoka 2
80-408 Gdańsk, Poland
tel. +48 58 341 42 45
fax +48 58 341 39 85
mercor@mercor.com.pl

www.mercor.com.pl

v.1/2021