

MRH 400 - 1250

Roof-mounted insulated unit for mechanical smoke extract



MRH

MRH, motorised roof hatch with 24VDC actuator is used in case of fire to extract smoke gases from the room. Smoke-free escape ways increase the chances to rescue people in case of fire.

Features:

- Vertical exhaust
- Axial smoke and heat extract fan with motor inside air stream
- Tested to F400 (400°C/2h) requirement according to EN 12101-3
- SL 1000 respectively SL 1250 at size 1250 (EN 12101-3)
- WL 1500 (EN 12101-2), wind suction load
- CPR certificate by BSI (Notified Body 2797)
- Insulation thickness: walls 120 mm, cover 150 mm
- Thermal transmittance class T2
- 24VDC electrically operated spindle actuator for cover opening
- Indication for opened/closed cover position (floating limit switches)
- Robust structure
- Intake side connection acc. EUROVENT 1/2
- Exhaust protective grid is included

In serially available version the hatch is intended for emergency use only (without EMC protection).

Motorised hatch opening

Tested also to Re 10000 (cycle open - close), but for dual use additional safety elements are needed to reduce risk due to hatch closing.

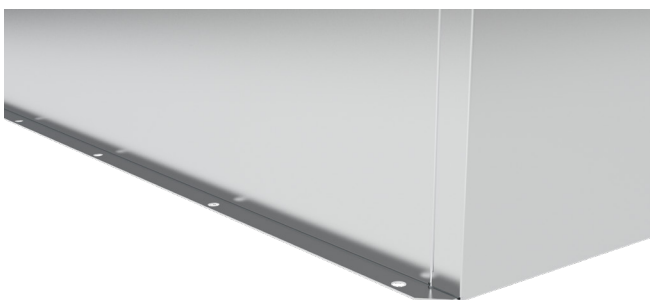
Switch

Service switches of motor and actuator serially on the hatch casing. Electrical connection in the service switches.

Motors are provided without PTC. The motor protection is provided by customer.

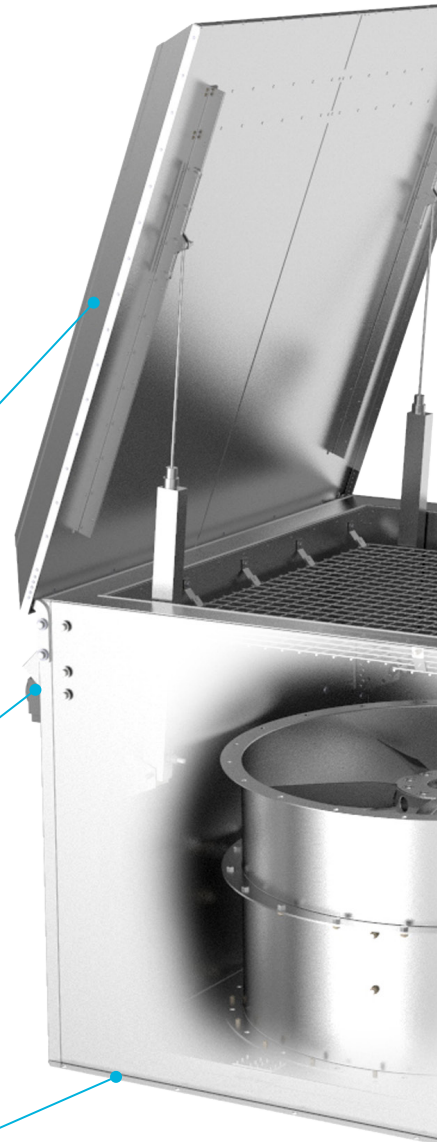
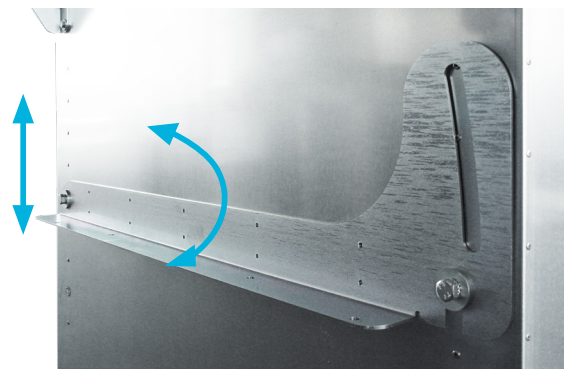
Fixed brackets

For installation on a flat roof.



Adaptive brackets (optional)

For flat or inclined roof (3 height positions).



Housing

The hatch casing is made of ZM (ZnAlMg coated) steel while the hatch cover is made of AlMg3. The casing is made as double metal layer with mineral wool insulation:

- base with 120mm
- cover with 150mm

Built-in axial fan

MRH is intended for insertion of standardized or customized axial smoke and heat extract fan with motor inside air stream. Max. nominal power of inserted fan is 37 kW. The axial fan inside steel casing has aluminium hub and blades.

Recommended start of the fan is 20s after starting actuator for cover opening, to ensure vertical exhaust of hot gases.

Wiring

Please see details in instructions on the web site.

ACCESSORIES

AES control accessory

When choosing AES exhaust air and smoke extraction control accessory, please observe serial connecting capability of the service switch of the fan (instructions). Higher connecting capability on request.

Vibration monitoring set

Inlet cone

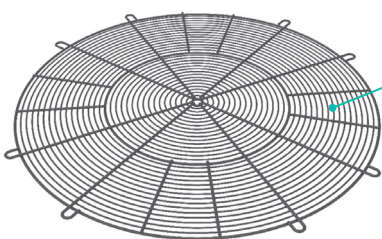
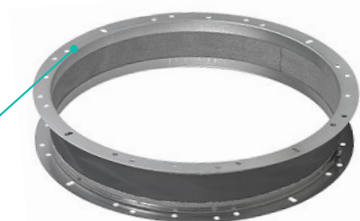
When using inlet cone ESD-F, a short duct between cone and MRH might be needed because of diameter of cone.

Flexible connection

Counter flange

Protective grid for inlet

For non-ducted application protective grid for inlet is available as accessory.



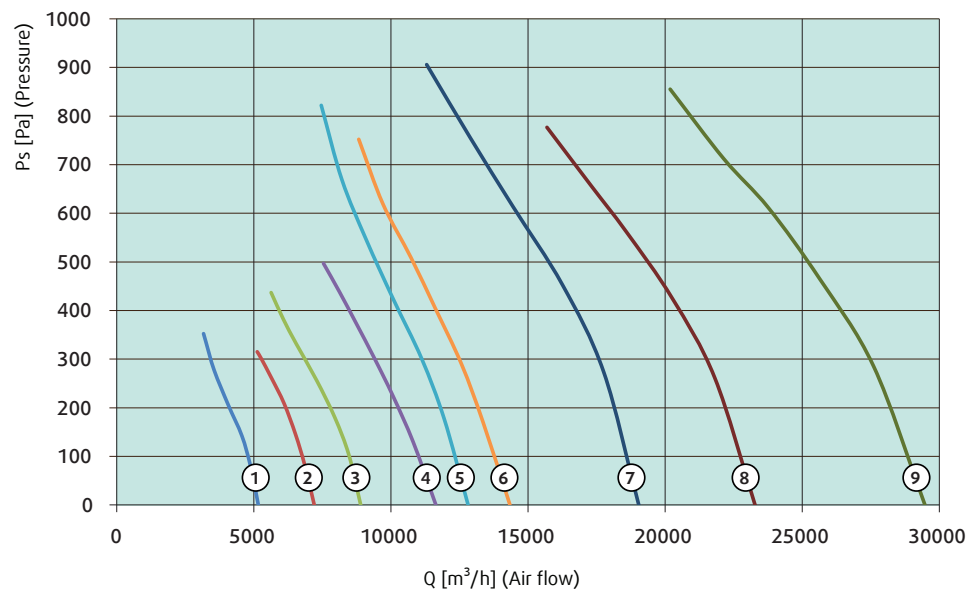
Technical data, standardized axial fans

Curve	Item number	Model	Max. airflow	Nominal motor power	Max. input power	RPM	Max. current	Conne- ction	Starting current*	Sound pressure level (4m)	Weight
			400V/3~/50Hz	m ³ /h	kW	kW	min ⁻¹		A	Y or Y-D	
1	9995299	MRH 400-2-0.75-F400	5150	0,75	0,9	2940	1,7	Y	12	69	258
2	9995300	MRH 400-2-1.1-F400	7150	1,3	2,4	2940	2,4	Y	18	69	259
3	9995301	MRH 450-2-1.5-F400	8850	1,5	1,6	2940	3,1	Y	24	72	270
4	9995302	MRH 500-2 -2.2-F400	11550	2,2	2,6	2940	4,5	Y	35	81	285
5	9995303	MRH 560-2-3.0-F400	12700	3	2,9	2940	6,8	Y	56	79	300
6	9995304	MRH 560-2-4.0-F400	14100	4	4,5	2940	7,5	Y	62	79	305
7	9995305	MRH 630-2-5.5-F400	19000	5,5	6,7	2940	11,6	Y-D	32	86	370
8	9995306	MRH 630-2-7.5-F400	23100	7,5	8,4	2940	14,3	Y-D	40	85	405
9	9995307	MRH 630-2-11-F400	29300	11	12,4	2940	20,6	Y-D	57	85	430
10	9995308	MRH 710-4-5.5-F400	32200	5,5	5,4	1470	9,1	Y-D	25	74	400
11	9995309	MRH 800-4-7.5-F400	41000	7,5	6,7	1470	11,5	Y-D	32	77	410
12	9995310	MRH 900-4-7.5-F400	48700	7,5	8,4	1470	14,4	Y-D	40	80	500
13	9995311	MRH 1000-4-7.5-F400	49700	7,5	7,9	1470	13,5	Y-D	37	81	510
14	9995312	MRH 1000-4-11-F400	60500	11	11,5	1470	20,2	Y-D	51	83	600
15	9995313	MRH 1000-4-15-F400	64500	15	13	1470	22,3	Y-D	54	84	625
16	9995314	MRH 1000-4-18.5-F400	79300	18,5	19	1470	33,5	Y-D	83	85	677
17	9995315	MRH 1000-4-22-F400	87000	22	23,7	1470	41,2	Y-D	100	86	700
18	9995316	MRH 1120-4-18.5-F400	63800	18,5	20,2	1470	35,5	Y-D	88	86	790
19	9995317	MRH 1120-4-22-F400	71300	22	23,2	1470	40,3	Y-D	98	86	810
20	9995318	MRH 1120-4-30-F400	90100	30	30,7	1470	54,7	Y-D	137	86	850
21	9995319	MRH 1250-4-22-F400	97800	22	23,4	1470	40,6	Y-D	99	88	890
22	9995320	MRH 1250-4-30-F400	111900	30	30,8	1470	54,8	Y-D	137	90	920
23	9995321	MRH 1250-4-37-F400	124600	37	38,1	1470	64,8	Y-D	166	91	1130

* Approximate current at Y connection (direct start) respectively at Y-D connection (Y-D start).

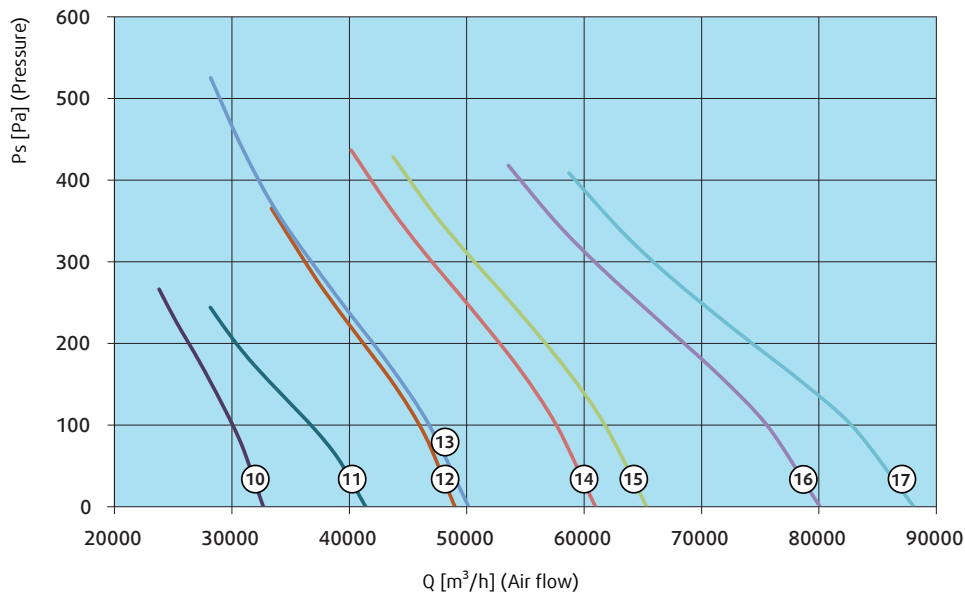
Performance MRH 400 to 630 with standardized axial fans

- ① MRH 400-2-0.75-F400
- ② MRH 400-2-1.1-F400
- ③ MRH 450-2-1.5-F400
- ④ MRH 500-2 -2.2-F400
- ⑤ MRH 560-2-3.0-F400
- ⑥ MRH 560-2-4.0-F400
- ⑦ MRH 630-2-5.5-F400
- ⑧ MRH 630-2-7.5-F400
- ⑨ MRH 630-2-11-F400



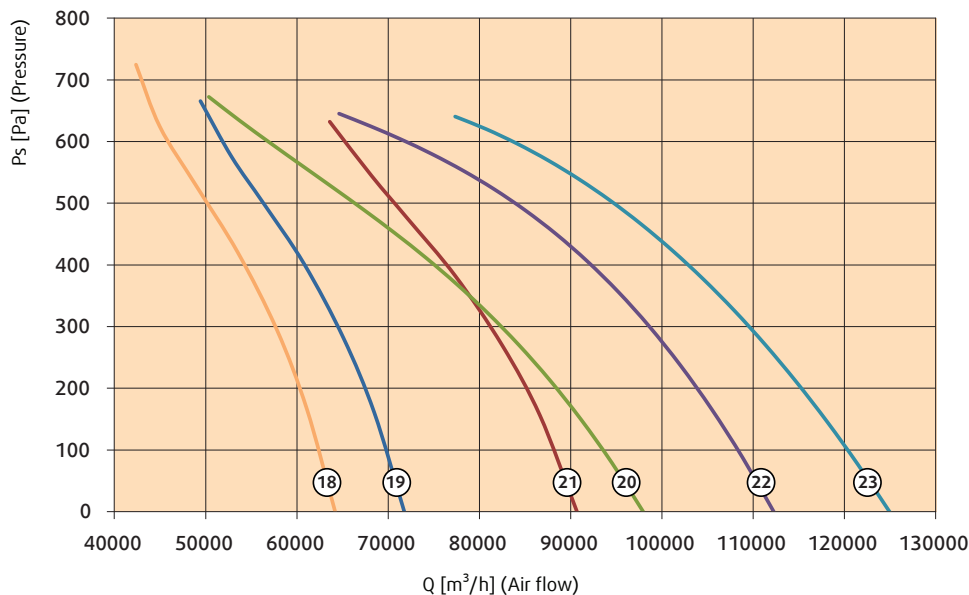
**Performance
MRH 710 to 1000
with standardized
axial fans**

- ⑩ MRH 710-4-5.5-F400
- ⑪ MRH 800-4-7.5-F400
- ⑫ MRH 900-4-7.5-F400
- ⑬ MRH 1000-4-7.5-F400
- ⑭ MRH 1000-4-11-F400
- ⑮ MRH 1000-4-15-F400
- ⑯ MRH 1000-4-18.5-F400
- ⑰ MRH 1000-4-22-F400

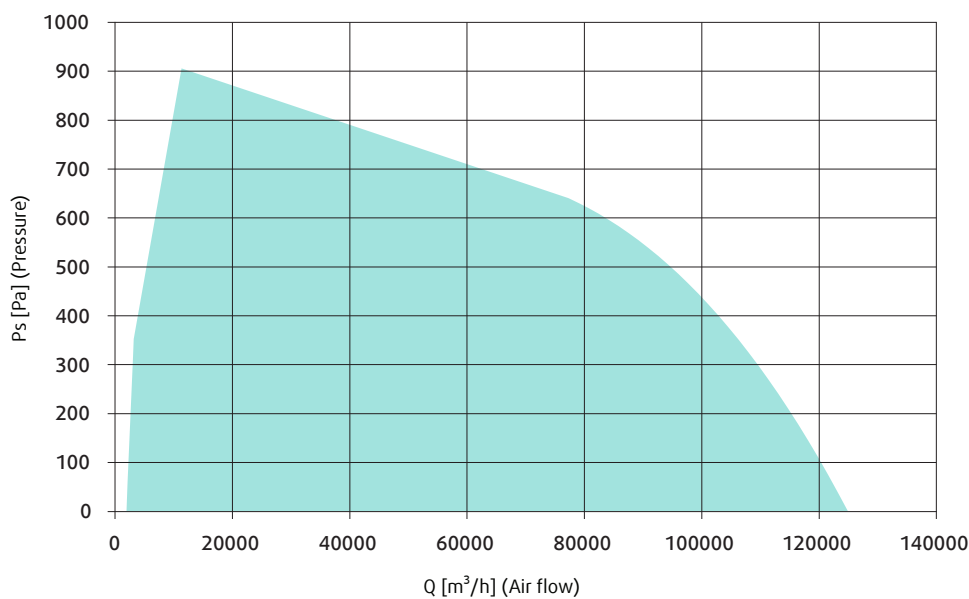


**Performance
MRH 1120 to 1250
with standardized
axial fans**

- ⑱ MRH 1120-4-18.5-F400
- ⑲ MRH 1120-4-22-F400
- ⑳ MRH 1120-4-30-F400
- ㉑ MRH 1250-4-22-F400
- ㉒ MRH 1250-4-30-F400
- ㉓ MRH 1250-4-37-F400



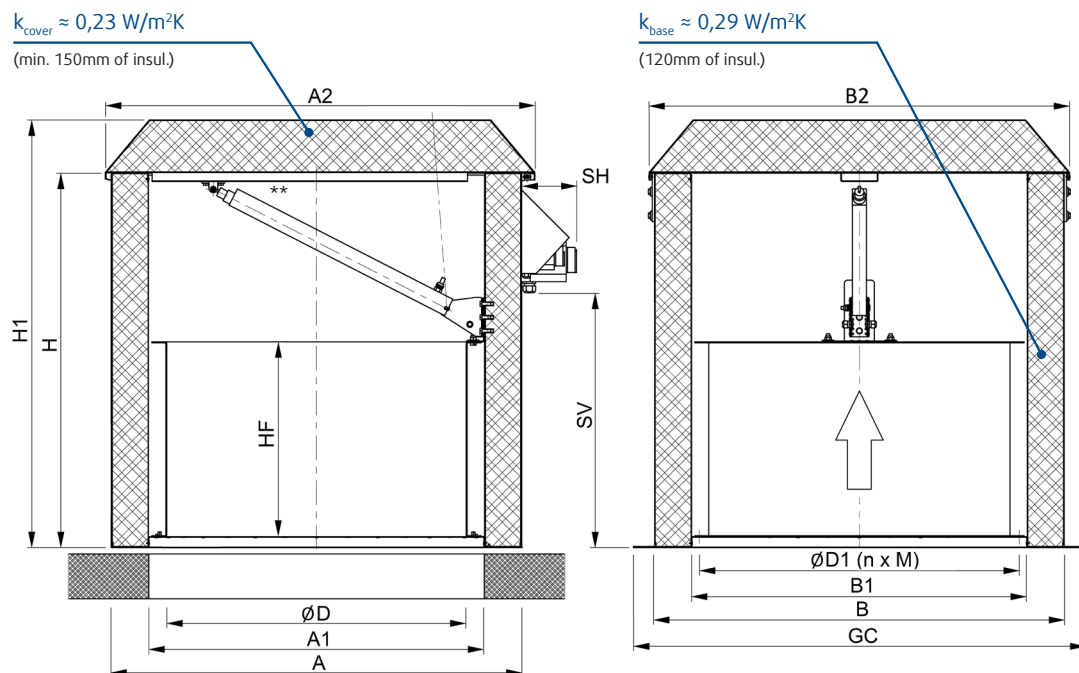
**Performance range
MRH 400 to 1250
with customized
axial fans**



Dimensions of MRH sizes for flat mounting with standardized axial fans

MRH size	ØD	ØD1	n x M bolts	A	A1	A2	B	B1	B2	GC	HF max.	H	H1	SH, ~	SV, ~
	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
400	400	450	8xM8	1000	747	1070	1000	747	1050	1064	540	1250	1410	185	800
450	450	500	8xM8	1000	747	1070	1000	747	1050	1064	540	1250	1410	185	800
500	500	560	12xM8	1000	747	1070	1000	747	1050	1064	540	1250	1410	185	800
560	560	620	12 x M8	1000	747	1070	1000	747	1050	1064	540	1250	1410	185	800
630	630	690	12xM8	1000	747	1070	1000	747	1050	1064	750	1500	1660	185	1050
710	710	770	16xM8	1150	897	1220	1150	897	1200	1214	700	1250	1410	185	800
800	800	860	16xM8	1150	897	1220	1150	897	1200	1214	700	1250	1410	185	800
900	900	970	16xM8	1370	1117	1440	1370	1117	1410	1434	850	1250	1430	185	800
1000*	1000	1070	16xM8	1370	1117	1440	1370	1117	1410	1434	850	1250	1430	185	800
1000	1000	1070	16xM8	1370	1117	1440	1370	1117	1410	1434	850	1500	1680	185	1050
1120	1120	1190	20xM10	1530	1277	1600	1640	1387	1680	1704	1050	1250	1410	185	1050
1250	1250	1320	20xM10	1670	1417	1740	1780	1527	1820	1844	1050	1250	1410	185	1050

*Item 9995311

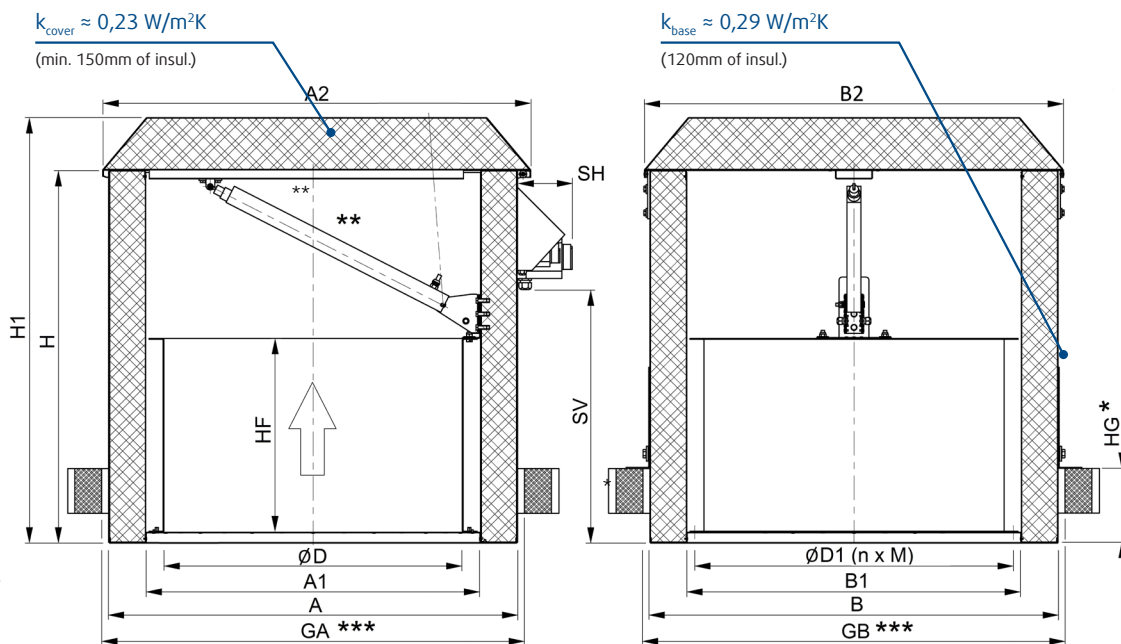


Dimensions MRH for flat or inclined roof mounting

Item* number casing	MRH size	ØD	ØD1	n x M bolts	A	A1	A2	B	B1	B2	GA	GB	HF max.	H	H1	SH, ~	SV, ~
		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
95763	400	400	450	8xM8	1000	747	1070	1000	747	1050	1050	1050	540	1250	1410	185	800
95762	450	450	500	8xM8	1000	747	1070	1000	747	1050	1050	1050	540	1250	1410	185	800
95759	500	500	560	12xM8	1000	747	1070	1000	747	1050	1050	1050	540	1250	1410	185	800
95758	560	560	620	12 x M8	1000	747	1070	1000	747	1050	1050	1050	540	1250	1410	185	800
95778	560**	560	620	12 x M8	1000	747	1070	1000	747	1050	1050	1050	540	1500	1660	185	1050
95757	630	630	690	12xM8	1000	747	1070	1000	747	1050	1050	1050	750	1250	1410	185	800
95773	630**	630	690	12xM8	1000	747	1070	1000	747	1050	1050	1050	750	1500	1660	185	1050
95756	710	710	770	16xM8	1150	897	1220	1150	897	1200	1200	1200	700	1250	1410	185	800
95755	800	800	860	16xM8	1150	897	1220	1150	897	1200	1200	1200	700	1250	1410	185	800
95754	900	900	970	16xM8	1370	1117	1440	1370	1117	1410	1420	1420	850	1250	1430	185	800
95777	900**	900	970	16xM8	1370	1117	1440	1370	1117	1410	1420	1420	850	1500	1680	185	1050
95552	1000	1000	1070	16xM8	1370	1117	1440	1370	1117	1410	1420	1420	850	1250	1430	185	800
95774	1000**	1000	1070	16xM8	1370	1117	1440	1370	1117	1410	1420	1420	850	1500	1680	185	1050
95553	1120	1120	1190	20xM10	1530	1277	1600	1640	1387	1680	1680	1690	1050	1250	1410	185	1050
74808	1250	1250	1320	20xM10	1670	1417	1740	1780	1527	1820	1720	1830	1050	1250	1410	185	1050

* casing without axial fan; axial is to choose up to requirement (customized)

** high version for larger motors



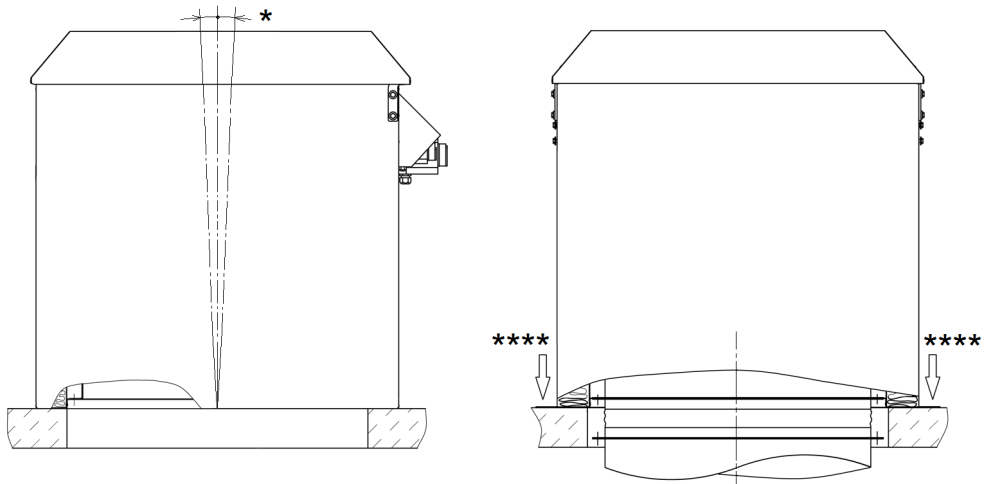
* HG = 0 or 250 or 500 mm

** Number of actuators for cover opening = 1 (up to size 1000), 2 (for sizes 1120 and 1250)

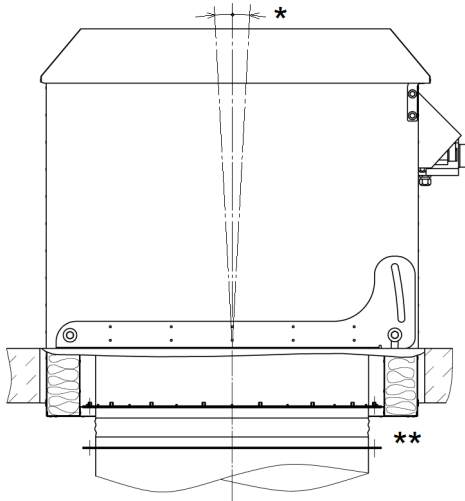
*** GA and GB are dimensions of hole for through the roof mounting

Installation examples

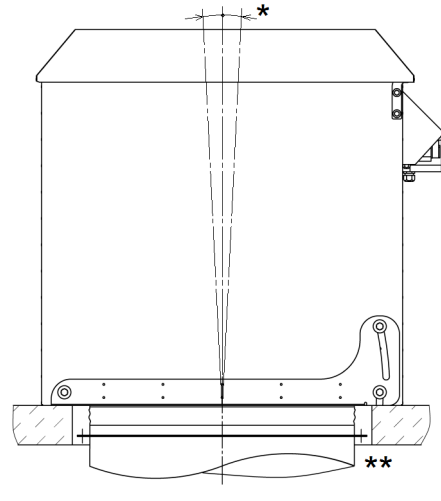
Mounting on flat roof mounting (MRH with fixed brackets)



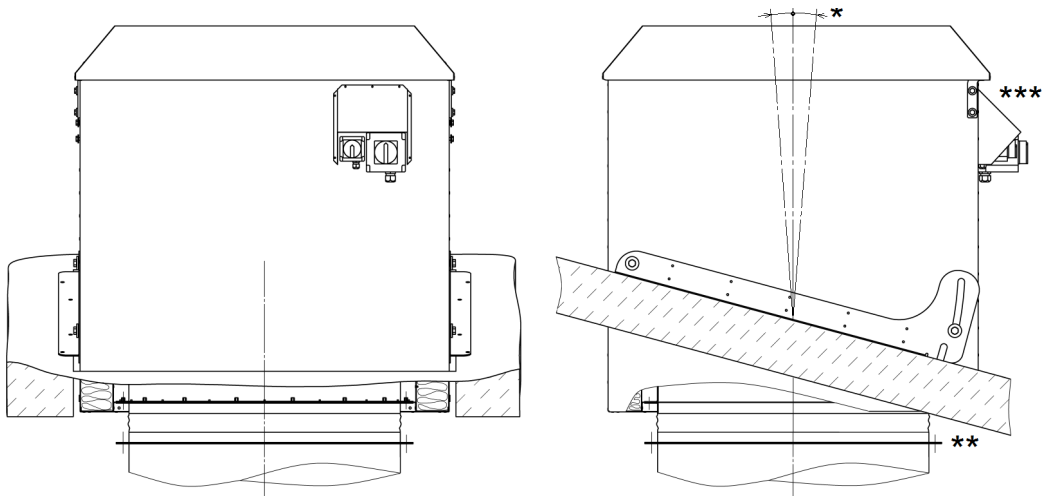
Mounting through the flat roof (MRH with adjustable brackets)



Mounting on top of flat roof (MRH with adjustable brackets)



Pitched roof mounting (MRH with adjustable brackets)



* The MRH centreline can deviate from the vertical for max. +/- 5° - this can be combined with the side bar setting.

** Avoid additional load to accessories due to weight of eventual duct with flexible connection

*** The position of service switches/direction of opening to ridge (left-right) choose considering access/snow deposition/wind/pitch.

**** Fix MRH with bolts to the roof construction. Roof insulation and flashing is not shown in the installation examples.

Serial equipment and on request options

	Serial item	Options on request at individually configured items
Installation	Installation on top of flat roof	1. Installation on top of flat roof 2. Installation on flat or inclined roof - adjustable side bars to roof pitch – possible installation through the roof
Fan fire class	Preselected	1. F300, 2. F400, 3. Normal temperature
Air direction	Exhaust	1. Exhaust 2. Supply 3. Reversible (Exhaust or Supply)
Colour	Galvanized steel (casing), Aluminium (cover)	1. Galvanized steel (casing), Aluminium (cover) 2. Galvanized steel (casing), Aluminium (cover) + Decorative painting
EMC protection	NO	1. NO 2. YES – Conditionally
Fan performance	Preselected	1. Preselected 2. Individually selected in a wide range
Power supply for hatch actuator	~230V	1. ~230 VAC 2. = 24 VDC
Power supply connection for fan	Default service switch	1. Default service switch 2. Range of service switches or connection box – also suitable for AES control accessory

