FLEXIHEAT UK LTD
www.flexiheatuk.com
01202 822221

INSTRUCTION MANUAL FOR INDUSTRIAL LOW NOx WARM AIR HEATERS MODELS :

IH/AR 40
IH/AR 50
IH/AR 75
IH/AR 100
IH/AR 125
IH/AR 150
IH/AR 175
IH/AR 200

IH/AR 250
IH/AR 300
IH/AR 350
IH/AR 400
IH/AR 500
IH/AR 600
IH/AR 750
IH/AR 1000

ErP
Energy Related Product

nº6660235EN
Updated 02/2020

CE
1312

INDEX

1. GENERAL INFORMATION

1.1 GENERAL WARNINGS

The manual is an integral and essential part of the product; it will be delivered to the user.
Carefully read the warnings contained in the manual because they supply important information pertaining to installation, use and maintenance safety.
Preserve the manual with care for future consultation.
The installation must be carried out in conformity with the regulations in force and the manufacturer's instructions by professionally trained personnel. Professionally trained personnel means technicians with a specific technical knowledge in the field of thermal installation components and those Service Centers that are authorized by the manufacturer.
The manufacturer is not responsible for damages to people, animals and objects caused by an incorrect installation.

After removing the packaging, make sure that the content is complete.
In uncertain cases, do not use the device and contact the supplier. The packaging elements must be kept out of reach of children due to potential danger.
Before carrying out any cleaning or maintenance operations, disconnect the equipment from the supply mains using the system switch a/o the special cut-off devices.

Do not obstruct the air intake grills and the air discharge heads.

If the equipment shuts down or fails, turn it off and refrain from carrying out any machine repairs or direct interventions.
Contact professionally trained personnel only.
Product repairs must be carried out only by a Service Center that is authorized by the manufacturer using original spare parts only.
Machine safety may be compromised if the previous instructions are not respected.
In order to guarantee the efficiency and correct functioning of the machine, routine maintenance following the manufacturer's instructions must be carried out by professionally trained personnel only.

If you decide to no longer use the machine, all parts that may cause danger must be made harmless.

If the machine is sold or transferred to another owner or if you move and leave the machine behind, always make sure that the present manual stays with the equipment so that it can be consulted by the new owner a/o installer.

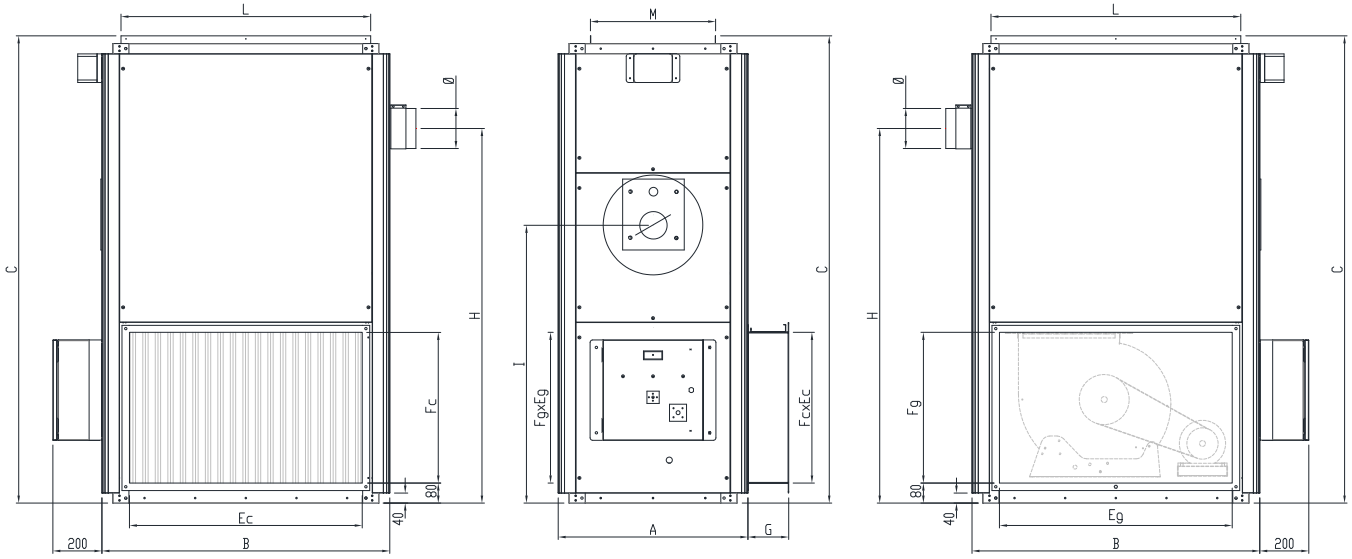
Original accessories must be used for all devices with optional or kit accessories (electrical components included).

This appliance should be used only for the purpose it was manufactured for.
Any other use should be considered incorrect and therefore dangerous.

Any contractual or extra-contractual responsibility of the manufacturer for damages caused by the incorrect installation and use or the inobservance of the instructions supplied by the manufacturer is excluded.

1.2 TECHNICAL DATA AND DIMENSIONS

1.2.1 IH/AR 40 - 400



MODEL	A [mm]	B [mm]	C [mm]	Ec [mm]	Fc [mm]	Eg [mm]	Fg [mm]	G [mm]	H [mm]	I [mm]	L [mm]	M [mm]	Ø [mm]	weight (Kg)
IH/AR 40	760	950	1665	730	500	730	500	160	1390	1005	790	490	160	300
IH/AR 50	760	950	1665	730	500	730	500	160	1390	1005	790	490	160	305
IH/AR 75	760	1150	1760	930	600	930	600	160	1490	1105	990	490	160	380
IH/AR 100	760	1150	1760	930	600	930	600	160	1490	1105	990	490	160	385
IH/AR 125	960	1290	2050	1070	700	1070	700	160	1775	1290	1140	590	200	600
IH/AR 150	960	1290	2050	1070	700	1070	700	160	1775	1290	1140	590	200	610
IH/AR 175	960	1490	2050	1270	700	1270	700	160	1775	1290	1340	590	200	700
IH/AR 200	960	1490	2050	1270	700	1270	700	160	1775	1290	1340	590	200	710
IH/AR 250	1160	1760	2380	1530	800	1530	800	160	2120	1460	1480	800	250	900
IH/AR 300	1160	1760	2380	1530	800	1530	800	160	2120	1460	1480	800	250	910
IH/AR 350	1160	2160	2380	1940	800	1940	800	160	2120	1460	1975	800	250	1150
IH/AR 400	1160	2160	2380	1940	800	1940	800	160	2120	1460	1975	800	250	1160

EXCHANGER WORKING CHARACTERISTICS IH/AR 40 – 400

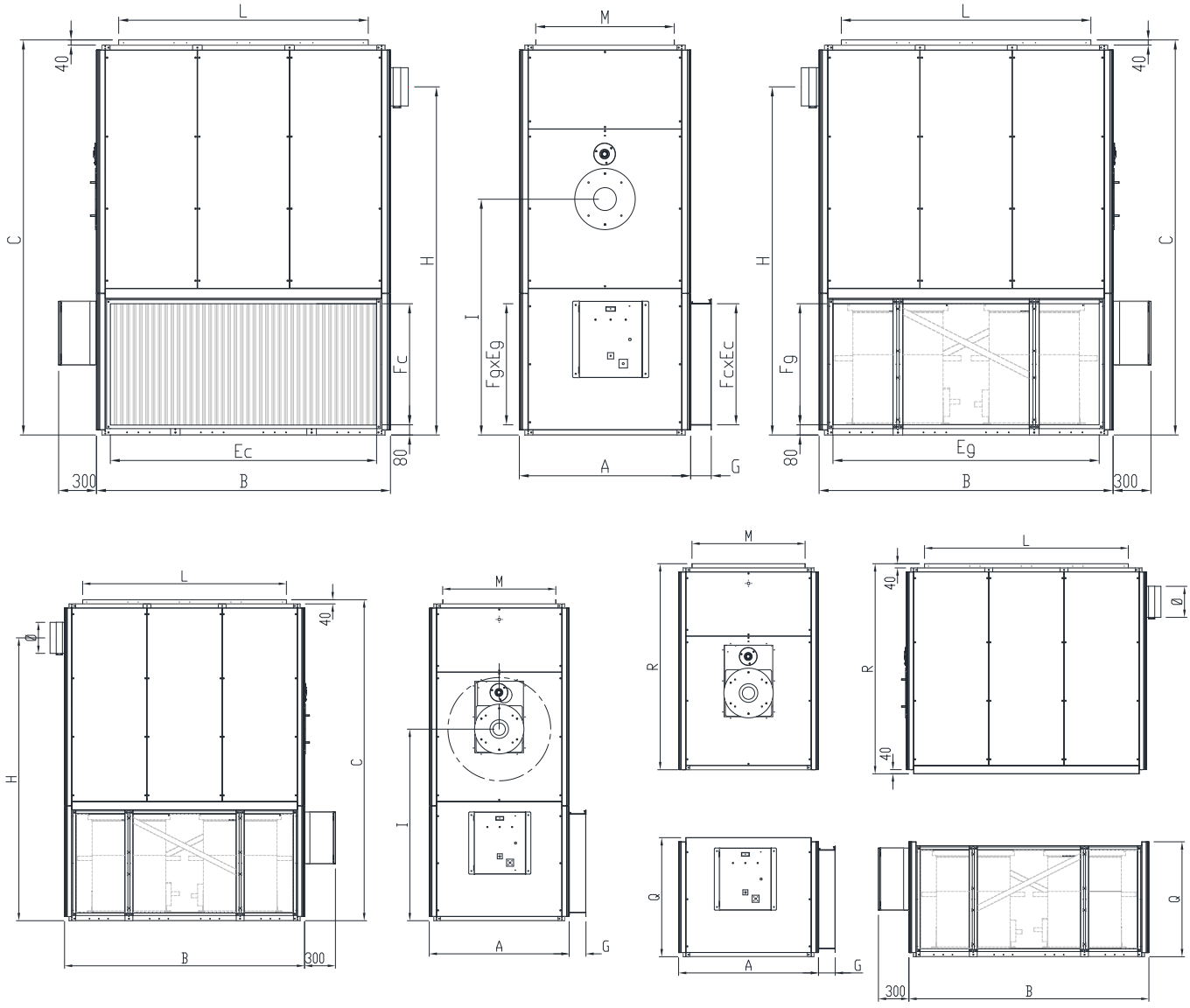
MODEL	Thermal Power input max	$P_{rated,h}$ Rated Heating Capacity	η_{nom} Useful Efficiency at rated heating capacity	P_{min} Minimum Capacity	η_{pl} Useful Efficiency at rated heating capacity	P_{mot} Electrical Motor power	el_{max} Electrical Power consumpt. at rated heating capacity	el_{min} Electrical Power consumpt. at minimal capacity	$\eta_{s,h}$ Seasonal space heating energy efficiency *
	kW	kW	%	kW	%	kW	kW	kW	%
IH/AR 40	46,5	42,3	82,72	21,15	83,56	0,535	0,1	0,1	74,56
IH/AR 50	60,7	55	83,49	27,5	83,58	0,736	0,11	0,11	74,33
IH/AR 75	92	83	81,61	41,5	84,04	1,1	0,11	0,11	73,63
IH/AR 100	115,9	105,1	82,16	52,55	84,22	1,5	0,13	0,13	74,29
IH/AR 125	145,4	131,4	82,09	65,7	83,65	2,2	0,13	0,13	73,57
IH/AR 150	185,8	168	81,74	84	84,02	3	0,2	0,2	73,20
IH/AR 175	203,5	187,2	82,01	93,6	83,60	3	0,2	0,2	73,36
IH/AR 200	232,6	211,6	82,18	105,8	83,49	4	0,2	0,2	73,40
IH/AR 250	290,7	264,5	82,16	132,25	83,60	2x2,2	0,54	0,54	73,37
IH/AR 300	348,8	317,4	82,22	158,7	83,91	2x3	0,54	0,54	72,90
IH/AR 350	406,7	370,7	82,56	185,35	83,30	2x3	0,935	0,935	73,16
IH/AR 400	465,1	423,2	82,52	211,6	83,70	2x4	0,935	0,935	73,84

*values obtained matching two stages burner

VENTILATION WORKING CHARACTERISTICS IH/AR 40 – 400

MODEL	GENERAL				DIRECT THROW					DUCTED INSTALLATION			
	N° OF FANS	TYPE OF FAN	FAN RPM (rpm)	Conn. Motor/ Fan.	AIRFLOW (m^3/h)	Δt AIR max (°C)	AIR THROW (m)	N° OF HEADS	Level of Noise at 1.5mt (dBA)	AIRFLOW (note 2) (m^3/h)	NET STATIC PRESSURE (Pa)	Δt AIR max (°C)	Level of Noise at 1.5mt (dBA)
IH/AR 40	1	DD 12/9	n.d.	Dir.	3.150	38,5	15	2	n.d.	**3.500**	**100**	34,6	n.d.
IH/AR 50	1	DD 12/9	n.d.	Dir.	3.900	40,4	17	2	n.d.	**4.300**	**100**	36,7	n.d.
IH/AR 75	1	AT 15/11	n.d.	Ind.	5.500	43,3	20	3	n.d.	**5.800**	**160**	41,0	n.d.
IH/AR 100	1	AT 15/11	n.d.	Ind.	6.800	44,3	24	3	n.d.	**7.800**	**180**	38,6	n.d.
IH/AR 125	1	AT 18/13	n.d.	Ind.	8.650	43,5	30	3	n.d.	**9.400**	**220**	40,1	n.d.
IH/AR 150	1	AT 18/13	n.d.	Ind.	10.250	47,0	35	3	n.d.	**11.100**	**200**	43,4	n.d.
IH/AR 175	1	AT 18/18	n.d.	Ind.	12.300	43,6	40	3	n.d.	**13.100**	**200**	41,0	n.d.
IH/AR 200	1	AT 18/18	n.d.	Ind.	14.250	42,6	50	3	n.d.	**15.000**	**200**	40,4	n.d.
IH/AR 250	2	AT 18/13	n.d.	Ind.	17.400	43,6	60	3	n.d.	**18.500**	**200**	41,0	n.d.
IH/AR 300	2	AT 18/13	n.d.	Ind.	19.000	47,9	65	3	n.d.	**20.250**	**180**	44,9	n.d.
IH/AR 350	2	AT 18/18	n.d.	Ind.	22.800	46,6	70	4	n.d.	**25.800**	**280**	41,2	n.d.
IH/AR 400	2	AT 18/18	n.d.	Ind.	25.200	48,1	75	4	n.d.	**31.000**	**240**	39,1	n.d.

1.2.2 IH/AR 500-1000



DIMENSIONS (mm)																
MODEL	**A** [mm]	**B** [mm]	**C** [mm]	**Ec** [mm]	**Fc** [mm]	**Eg** [mm]	**Fg** [mm]	**G** [mm]	**H** [mm]	**I** [mm]	**L** [mm]	**M** [mm]	**Q** [mm]	**R** [mm]	**Ø** [mm]	weight (Kg)
IH/AR 500	1360	2530	3060	2310	950	2310	950	195	2740	1850	2280	1100	1150	1990	300	1.700
IH/AR 600	1360	2530	3060	2310	950	2310	950	195	2740	1850	2280	1100	1150	1990	300	1720
IH/AR 750	1360	3030	3100	2840	950	2840	950	195	2730	1850	2800	1100	1150	1990	350	1900
IH/AR1000	1360	3930	3100	3740	950	3740	950	195	2730	1850	3700	1100	1150	1990	350	2300

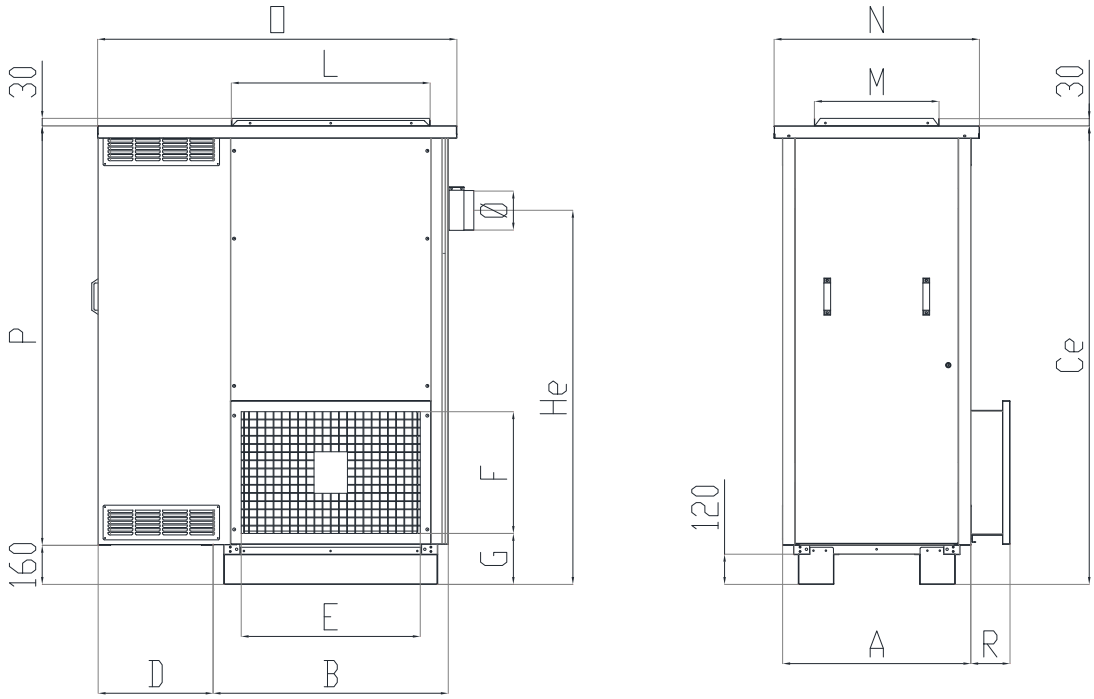
EXCHANGER WORKING CHARACTERISTICS IH/AR 500 – 1000									
MODEL	Thermal Power input max	$P_{rated,h}$ Rated Heating Capacity	η_{nom} Useful Efficiency at rated heating capacity	P_{min} Minimum Capacity	η_{pl} Useful Efficiency at rated heating capacity	P_{mot} Electr. Motor power	el_{max} Electrical Power consumpt. at rated heating capacity	el_{min} Electrical Power consumpt. at minimal capacity	$\eta_{s,h}$ Seasonal space heating energy efficiency *
	kW	kW	%	kW	%	kW	kW	kW	%
IH/AR 500	581,4	538	83,24	269	85,66	2x4	1,15	1,15	73,61
IH/AR 600	697,7	634,9	82,01	317,45	83,66	2x5,5	1,15	1,15	73,24
IH/AR 750	872	794	82,01	397	83,91	2x7,5	2,2	2,2	73,23
IH/AR 1000	1163	1058	82,01	529	83,80	3x7,5	2,2	2,2	73,30

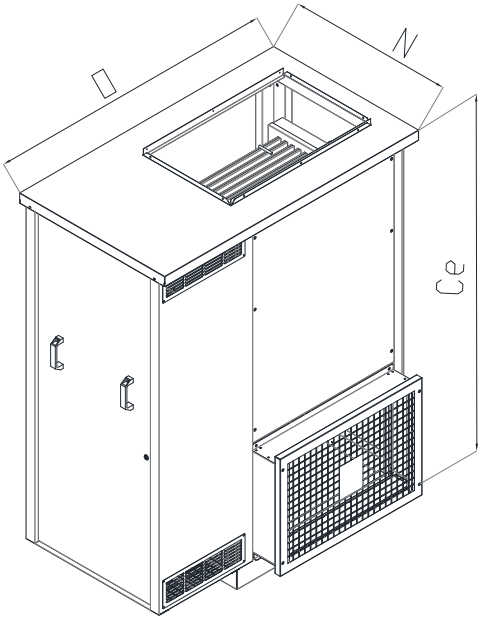
*values obtained matching two stages burner

VENTILATION WORKING CHARACTERISTICS IH/AR 500-1000													
	GENERAL				**DIRECT THROW**					**DUCTED INSTALLATION**			
MODEL	**N° of Fans**	**TYPE OF FAN**	**FAN RPM** (rpm)	**Connection Motor Fan**	**AIRFLOW** (m^3/h)	**Δt AIR** max (°C)	**AIR THROW** (m)	**N° OF HEADS**	**LEVEL of NOISE at 1.5m** (dBA)	**AIRFLOW** (note 2) (m^3/h)	**NET STATIC PRESSURE** (Pa)	**Δt AIR** max (°C)	**LEVEL of NOISE at 1.5m** (dBA)
IH/AR 500	2	ADH 560	665	n.d.	30.200	51,1	80	6	n.d.	**35.000**	**200**	44,1	n.d.
IH/AR 600	2	ADH 560	740	n.d.	36.200	50,3	87	6	n.d.	**43.500**	**200**	41,8	n.d.
IH/AR 750	2	ADH 560	750	n.d.	48.000	47,4	95	7	n.d.	**53.000**	**180**	42,9	n.d.
IH/AR 1000	3	ADH 560	750	n.d.	65.000	46,7	110	9	n.d.	**72.000**	**200**	42,1	n.d.

1.3 EXTERNAL VERSION IH/AR

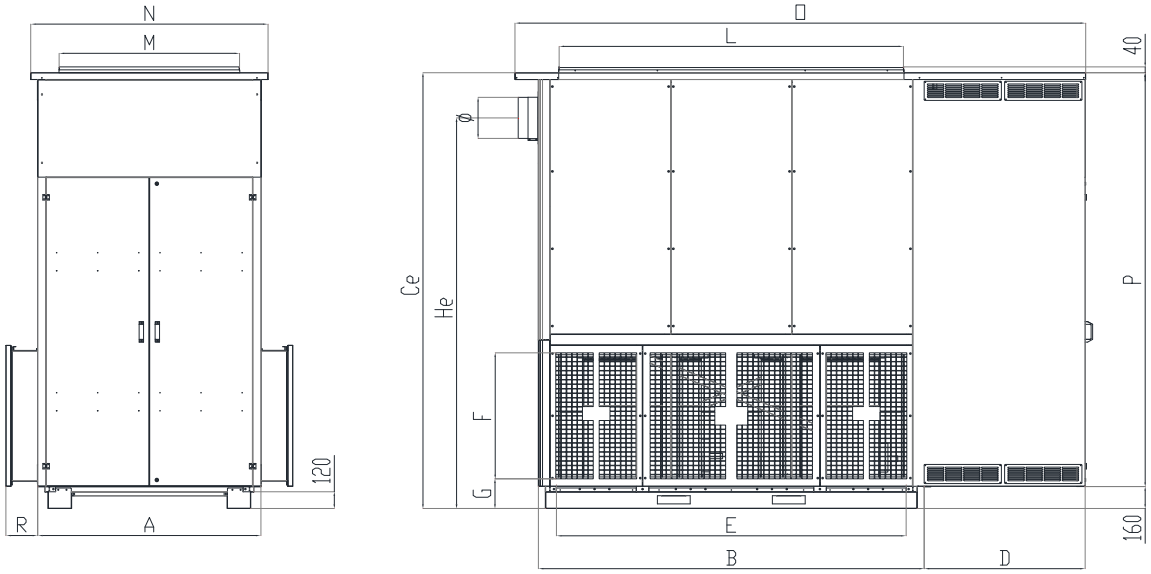
1.3.1 DIMENSIONS IH/AR 40-100 (EXTERNAL VERSION)

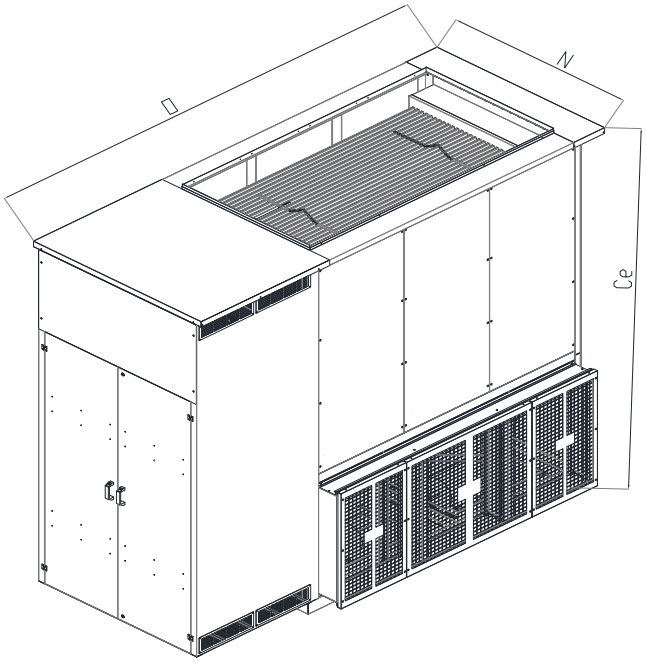




MODELLO	A	B	Ce	D	E	F	G	He	L	M	N	O	P	R	Ø	Kg
IH/AR 40-50	760	950	1850	460	700	500	200	1510	790	490	830	1450	1695	160	160	450
IH/AR 75-100	760	1150	1950	460	900	600	200	1610	990	490	830	1700	1795	160	160	550

1.3.2 DIMENSIONS IH/AR 125-1000 (EXTERNAL VERSION)



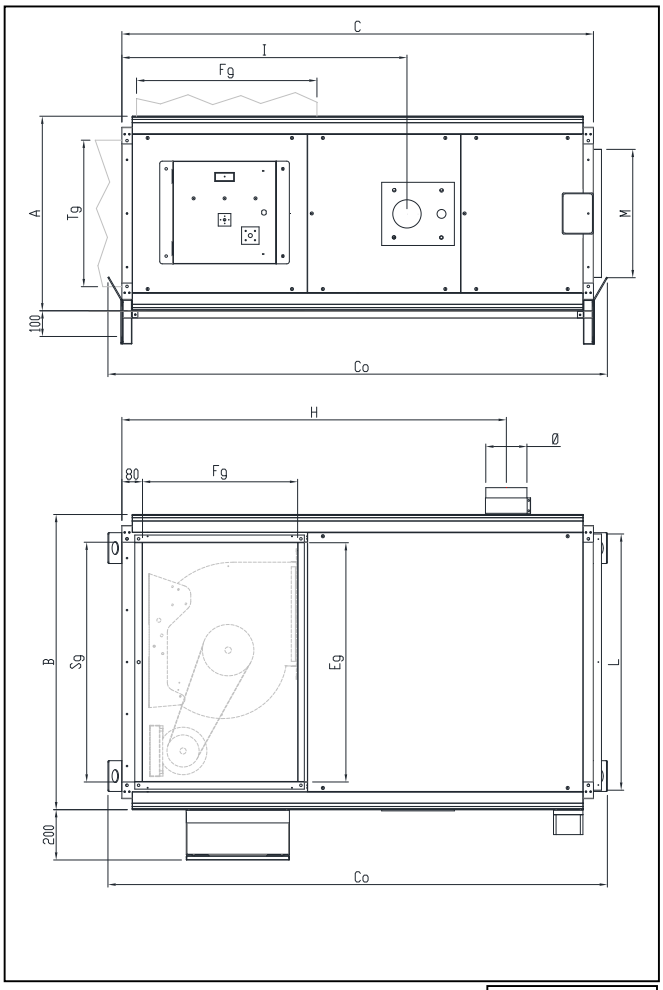


MODEL	A	B	Ce	D	E	F	G	He	L	M	N	O	P	R	Ø	Kg
IH/AR 125-150	960	1340	2145	470	1050	700	200	1895	1145	590	1040	1895	1985	160	200	780
IH/AR 175-200	960	1545	2145	470	1250	700	200	1895	1345	590	1380	2100	1985	160	200	900
IH/AR 250-300	1160	1880	2290	470	1500	800	200	2270	1480	800	1260	2615	2330	195	250	1150
IH/AR 350-400	1160	2280	2360	470	1900	800	200	2270	1980	800	1260	3070	2330	195	300	1300
IH/AR 500-600	1360	2530	3185	980	2280	950	200	2900	2280	1010	1445	3650	3025	195	300	1950
IH/AR 750	1360	3030	3220	980	2800	950	200	2855	2805	1105	1450	4150	3025	195	350	2150
IH/AR 1000	1360	3930	3220	980	3700	950	200	2855	3705	1105	1450	5050	3025	195	350	2500

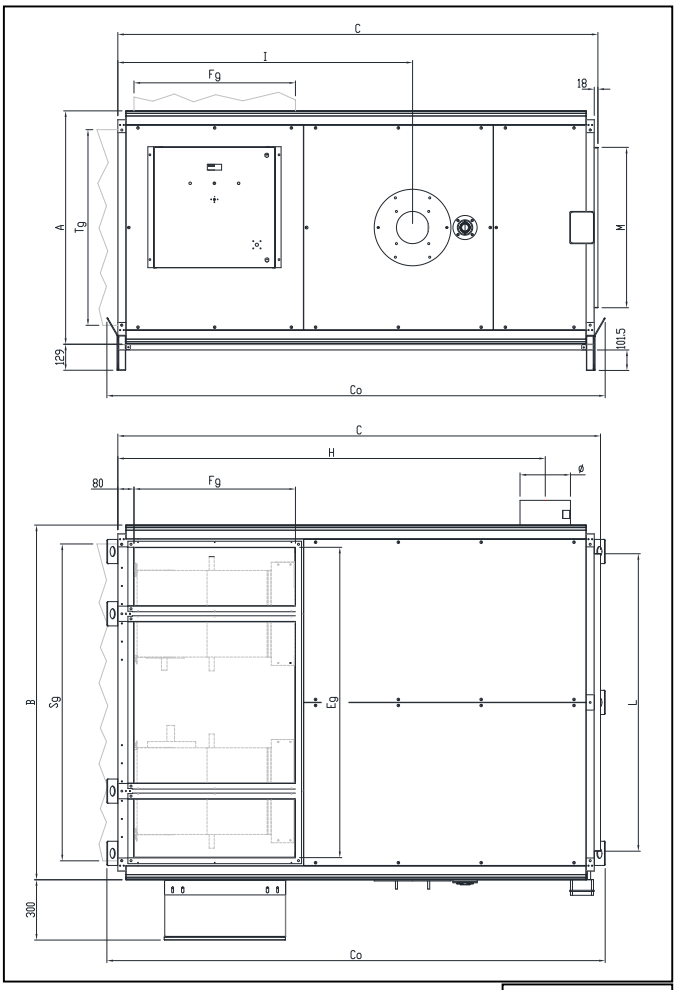
Note: Attention, at the moment of the order, please verify the dimensions of the housing box for burner to be sure that the selected burner can stay inside.
For any kind of additional information do not hesitate to contact our technical dept.

1.4 HORIZONTAL VERSION IH/AR

1.4.1 DIMENSIONS IH/AR 40 - 400 (HORIZONTAL VERSION) (INSTALLATION WITHOUT FILTER BOX)



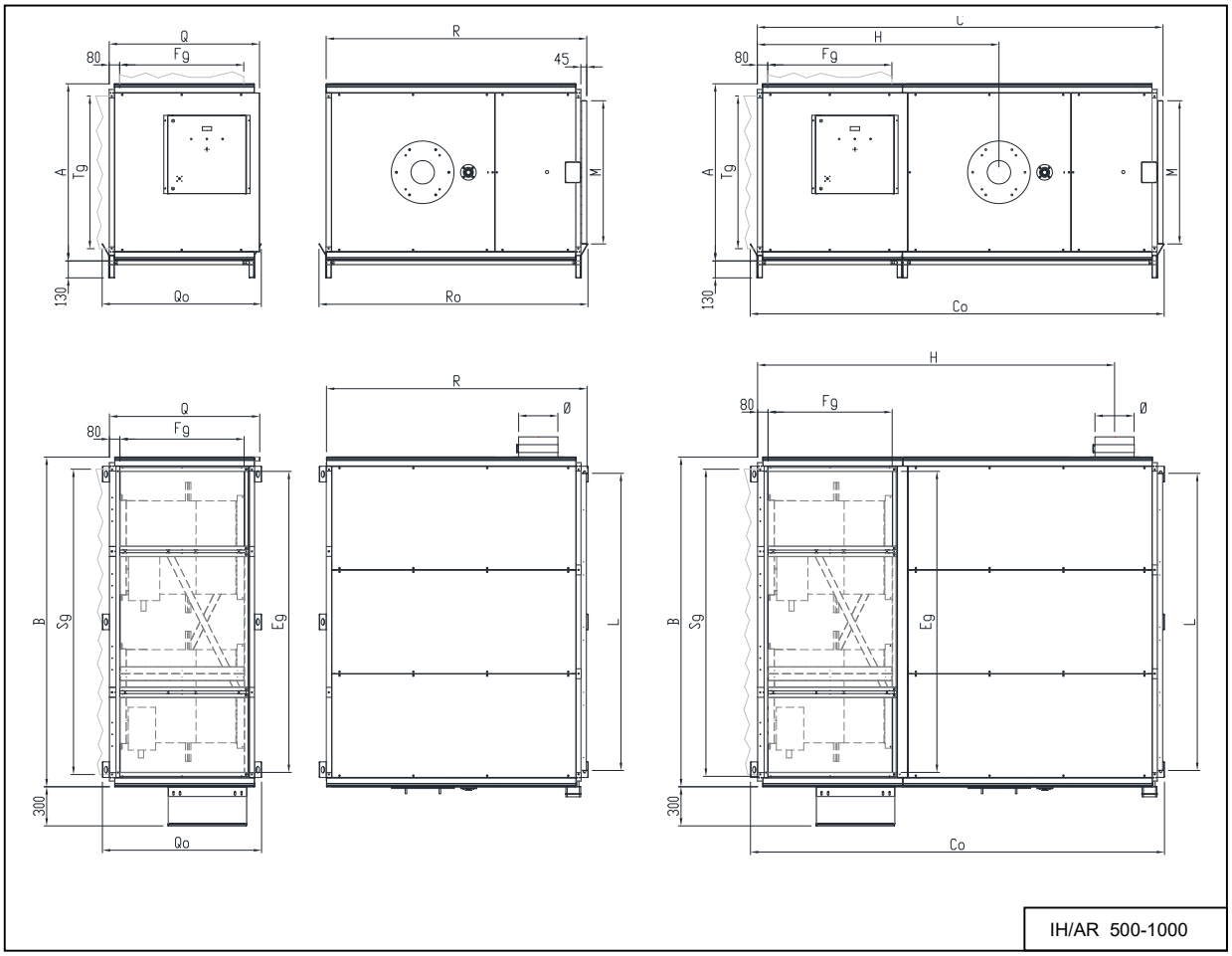
IH/AR 40-200



IH/AR 250-400

	EXTERNAL DIMENSIONS			AIR INLET DIMENSIONS				AIR INLET DIMENSIONS		OTHER DIMENSIONS			WEIGHT
				LATERAL SIDE ON THE FILTER BOX		LATERAL SIDE ON THE HEATER BOX							
MODEL	**A**	**B**	**Co**	**Eg**	**Fg**	**Sg**	**Tg**	**L**	**M**	**H**	**I**	**Ø**	**(Kg)**
IH/AR 40-50	760	950	1835	730	500	730	500	790	490	1390	1005	160	330
IH/AR 75-100	760	1150	1860	930	600	930	600	990	490	1490	1105	160	420
IH/AR 125-150	960	1290	2165	1070	700	1070	700	1140	590	1775	1290	200	650
IH/AR 175-200	960	1490	2150	1270	700	1270	700	1340	590	1775	1290	200	750
IH/AR 250-300	1160	1760	2470	1530	800	1530	800	1480	800	2120	1460	250	975
IH/AR 350-400	1160	2160	2470	1940	800	1940	800	1975	800	2120	1460	250	1250

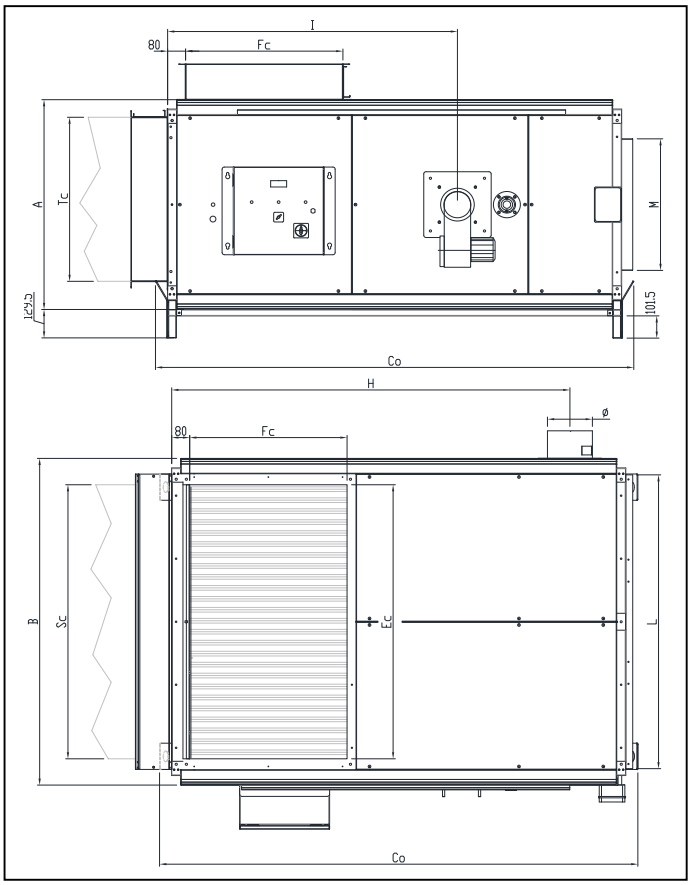
1.4.2 DIMENSIONS IH/AR 500 - 1000 (HORIZONTAL VERSION) (INSTALLATION WITHOUT FILTER BOX)



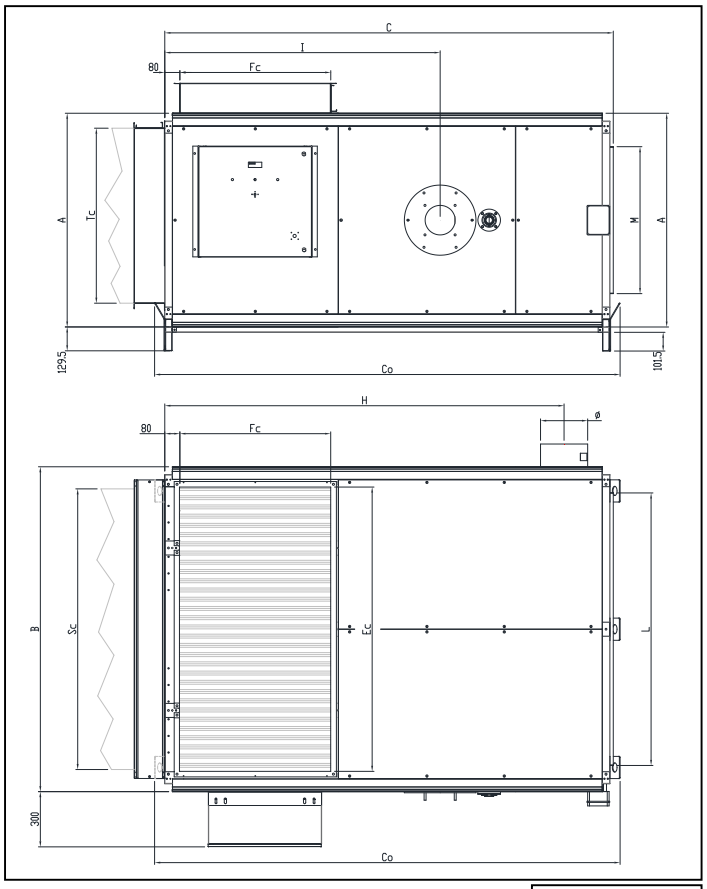
IH/AR 500-1000

MODEL	EXTERNAL DIMENSIONS			AIR INLET DIMENSIONS				AIR OUTLET		OTHER DIMENSIONS					WEIGHT
				LATERAL SIDE ON THE FILTER BOX		LATERAL SIDE OF THE HEATER									
	A	B	Co	Eg	Fg	Sg	Tg	L	M	Qo	Ro	H	I	Ø	(Kg)
IH/AR 500-600	1360	2530	3170	2340	950	2340	950	2280	1100	1220	2060	2735	1850	300	1800
IH/AR 750	1360	3030	3170	2840	950	2840	1170	2800	1100	1220	2020	2730	1850	350	2050
IH/AR 1000	1360	3930	3170	3710	950	3740	1170	3700	1100	1220	2020	2730	1850	350	2500

1.4.3 DIMENSIONS IH/AR 40 - 400 (HORIZONTAL VERSION) (INSTALLATION WITH FILTER BOX)



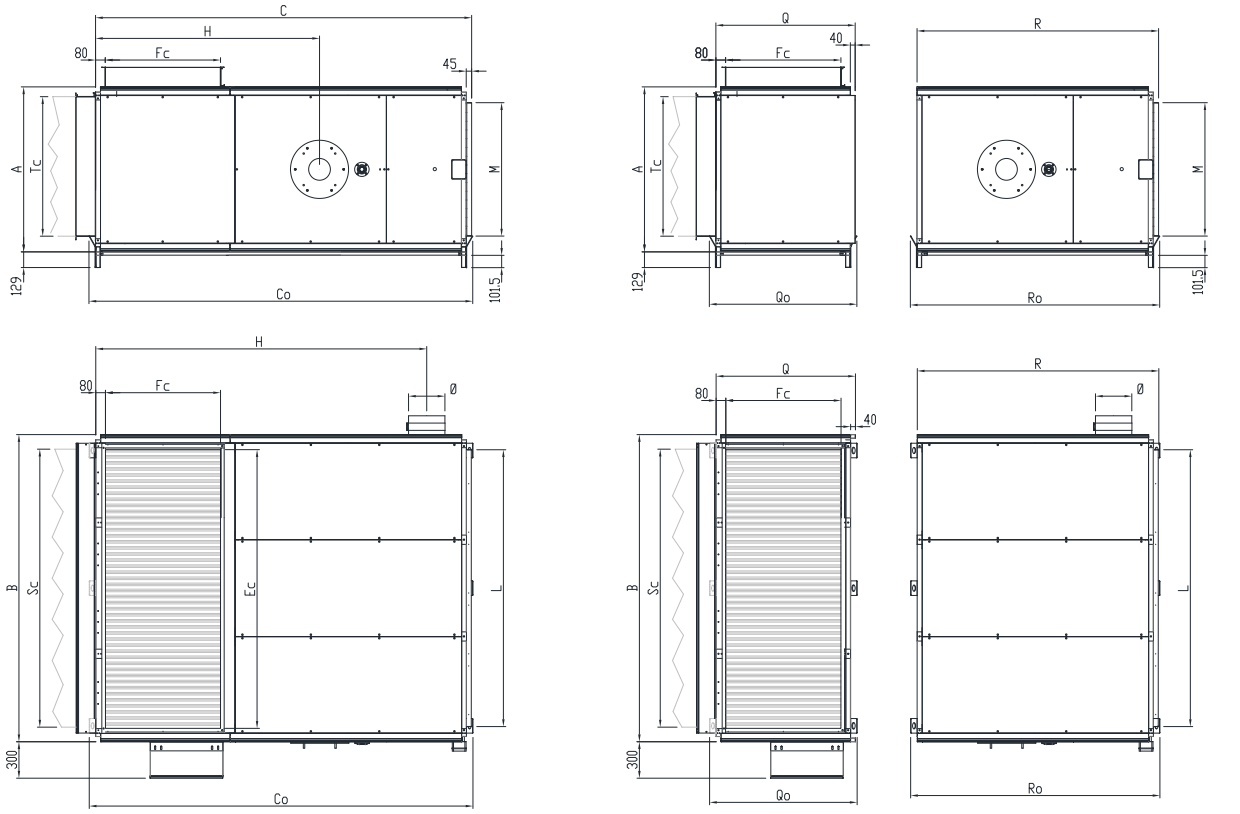
IH/AR 40-200



IH/AR 250-400

	EXTERNAL DIMENSIONS			AIR INLET WITH FILTER BOX DIMENSIONS				AIR OUTLET		OTHER DIMENSIONS			WEIGHT
				LATERAL SIDE ON THE FILTER BOX		LATERAL SIDE OF THE HEATER							
MODEL	**A**	**B**	**Co**	**Ec**	**Fc**	**Sc**	**Tc**	**L**	**M**	**H**	**I**	**Ø**	**(Kg)**
IH/AR 40-50	760	950	1835	730	500	790	500	790	490	1390	1005	160	350
IH/AR 75-100	760	1150	1860	930	600	930	600	990	490	1490	1110	160	450
IH/AR 125-150	960	1290	2165	1070	700	1070	700	1140	590	1770	1290	200	700
IH/AR 175-200	960	1490	2150	1270	700	1270	700	1340	590	1775	1290	200	800
IH/AR 250-300	1160	1760	2470	1530	800	1530	800	1480	800	2120	1460	250	1000
IH/AR 350-400	1160	2160	2470	1940	800	1940	800	1975	800	2120	1460	250	1300

1.4.4 DIMENSIONS IH/AR 500 - 1000 (HORIZONTAL VERSION) (INSTALLATION WITH FILTER BOX)



IH/AR 500-1000

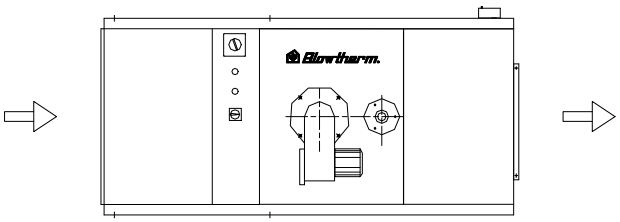
MODEL	EXTERNAL DIMENSIONS			AIR INLET DIMENSIONS				AIR OUTLET		OTHER DIMENSIONS					WEIGHT
				LATERAL SIDE ON THE FILTER BOX		LATERAL SIDE OF THE HEATER									
	A	B	Co	Ec	Fc	Sc	Tc	L	M	Qo	Ro	H	I	Ø	(Kg)
IH/AR 500-600	1360	2530	3170	2340	950	2340	950	2280	1100	1220	2060	2730	1850	300	1850
IH/AR 750	1360	3030	3170	2800	950	2800	950	2800	1100	1220	2020	2730	1850	350	2100
IH/AR 1000	1360	3930	3170	3700	950	3700	950	3700	1100	1200	2020	2730	1850	350	2600

1.4.5 HORIZONTAL VERSION - POSSIBLE CONFIGURATIONS

Air outlet on the right

Air outlet on the left side

A



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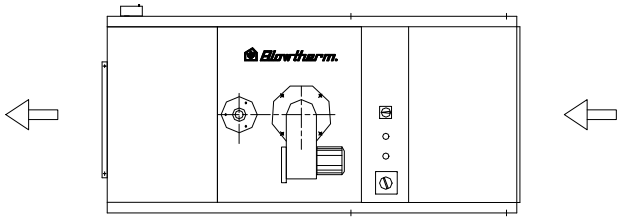

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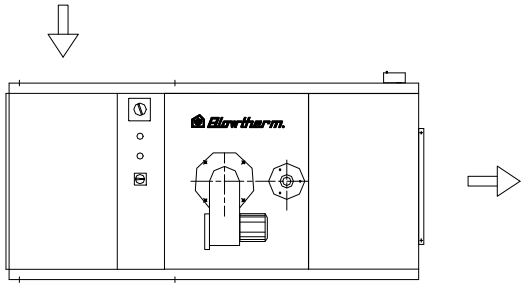

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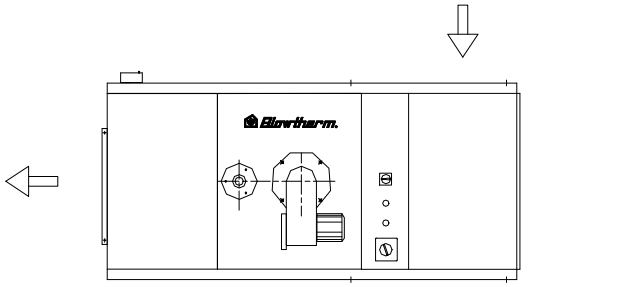

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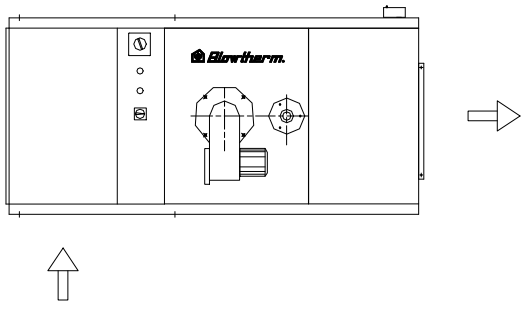
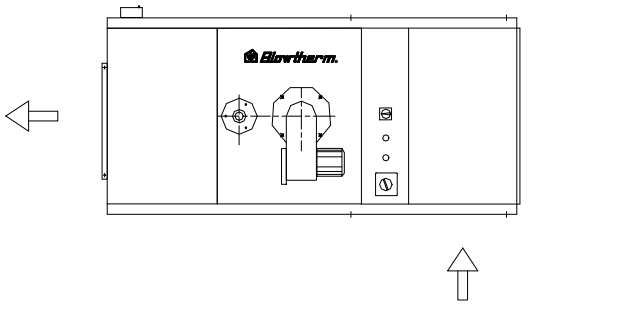
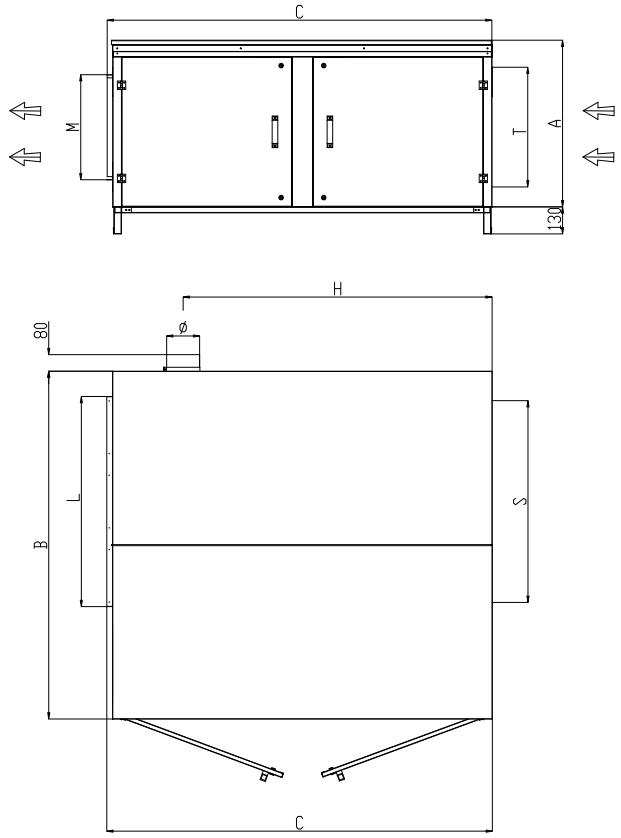


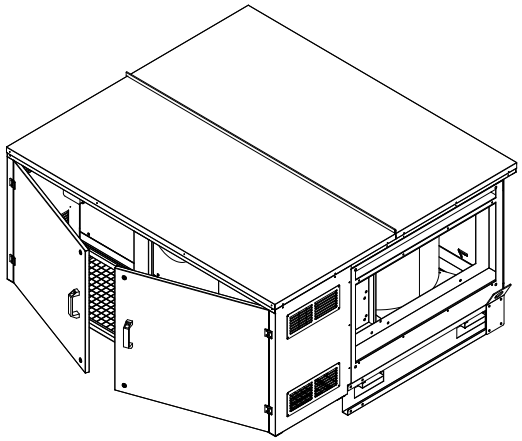
F



1.5 HORIZONTAL EXTERNAL VERSION IH/AR

1.5.1 DIMENSIONS IH/AR 40 - 400 (HORIZONTAL EXTERNAL VERSION) (INSTALLATION WITHOUT FILTER BOX)

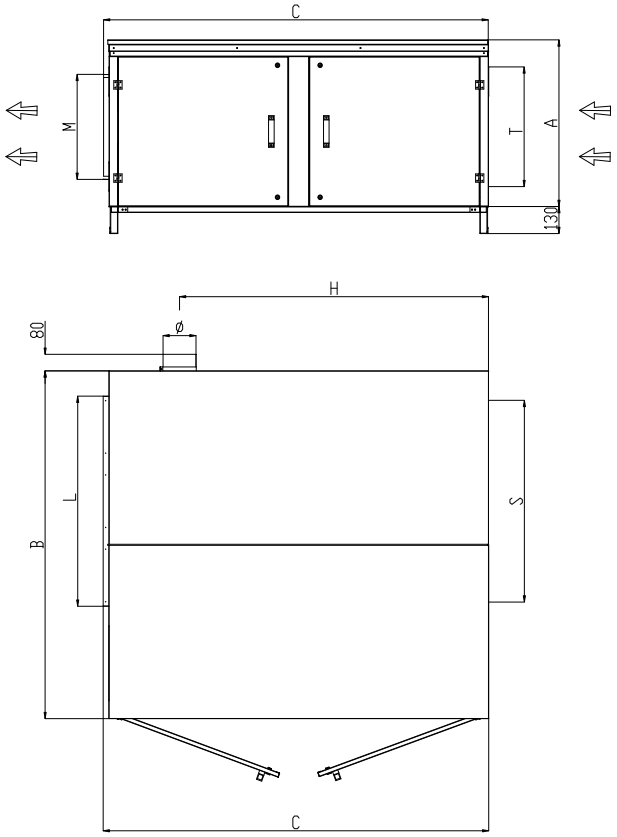


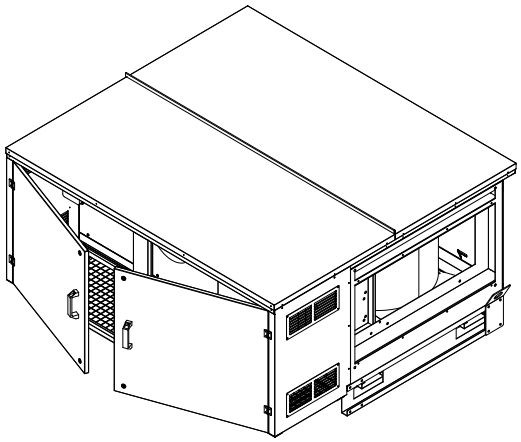


IH/AR 40-400

	EXTERNAL DIMENSIONS			AIR INLET DIMENSIONS		AIR OUTLET		OTHER DIMENSIONS		Weight
MODEL	**A**	**B**	**C**	**S**	**T**	**L**	**M**	**H**	**Ø**	**(Kg)**
IH/AR 40-50	765	1455	1670	730	500	790	490	1400	160	420
IH/AR 75-100	765	1655	1740	930	600	990	490	1495	160	520
IH/AR 125-150	965	1895 **	2055	1110	700	1135	600	1780	200	760
IH/AR 175-200	965	2095	2055	1270	700	1340	600	1770	200	870
IH/AR 250-300	1160	2553	2385	1530	800	1480	800	2120	250	1100
IH/AR 350-400	1160	2925 **	2385	1940	800	1975	800	2120	250	1380

1.5.2 DIMENSIONS IH/AR 500 - 1000 (HORIZ. EXTERNAL VERSION) (INSTALLATION WITHOUT FILTER BOX)

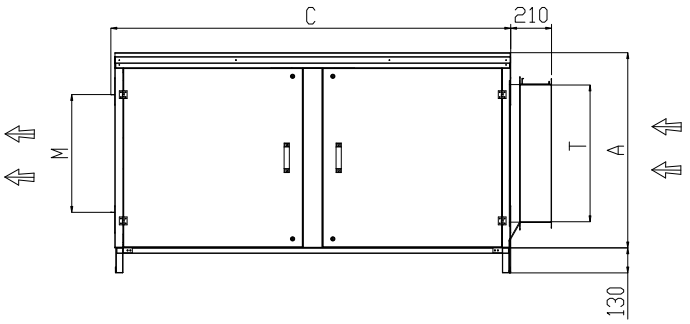


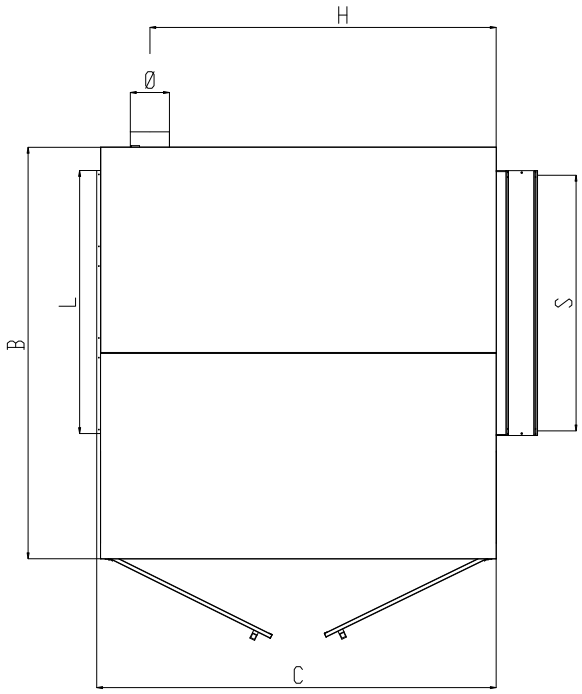


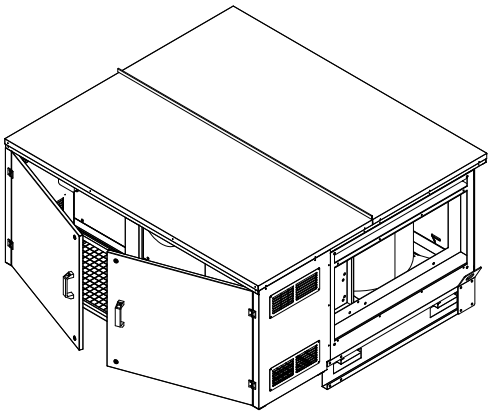
IH/AR 500-1000

	EXTERNAL DIMENSIONS			AIR INLET DIMENSIONS		AIR OUTLET		OTHER DIMENSIONS		Weight
MODEL	**A**	**B**	**C**	**S**	**T**	**L**	**M**	**H**	**Ø**	**(Kg)**
IH/AR 500K-600K	1365	3330	3140	2310	950	2280	1100	2740	300	1960
IH/AR 750K	1365	3830	3140	2840	950	2800	1100	2730	350	2150
IH/AR 1000K	1365	4930	3140	3740	950	3700	1100	2730	350	2600

1.5.3 DIMENSIONS IH/AR 40 - 400 (HORIZONTAL EXTERNAL VERSION) (INSTALLATION WITH FILTER BOX)

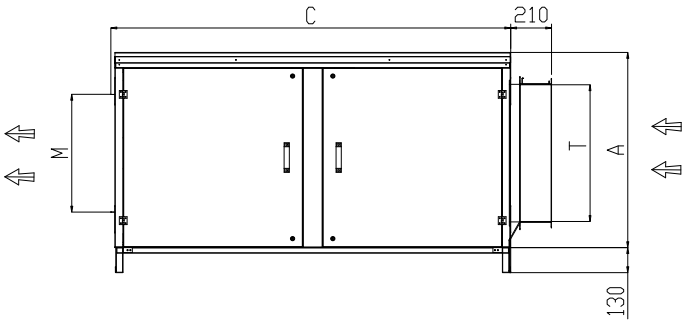


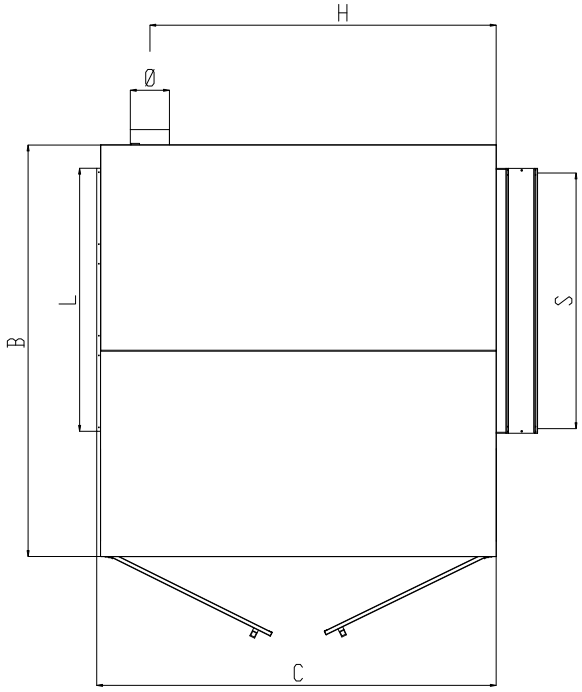


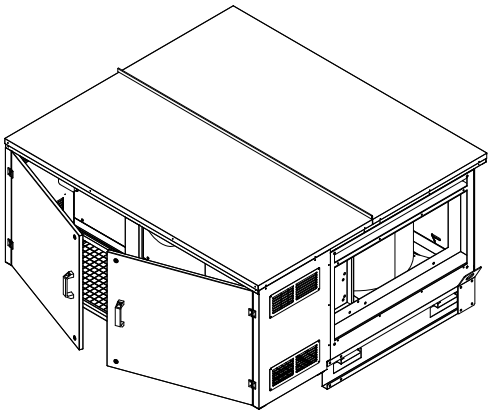


	EXTERNAL DIMENSIONS			AIR INLET DIMENSIONS		AIR OUTLET		OTHER DIMENSIONS		Weight
MODEL	**A**	**B**	**C**	**S**	**T**	**L**	**M**	**H**	**Ø**	**(Kg)**
IH/AR 40-50	765	1455	1670	730	500	790	490	1400	160	420
IH/AR 75-100	765	1655	1740	930	600	990	490	1495	160	520
IH/AR 125-150	965	1895 **	2055	1110	700	1135	600	1780	200	760
IH/AR 175-200	965	2095	2055	1270	700	1340	600	1770	200	870
IH/AR 250-300	1160	2553	2385	1530	800	1480	800	2120	250	1100
IH/AR 350-400	1160	2925 **	2385	1940	800	1975	800	2120	250	1380

1.5.4 DIMENSIONS IH/AR 500 - 1000 (HORIZ. EXTERNAL VERSION) (INSTALLATION WITH FILTER BOX)



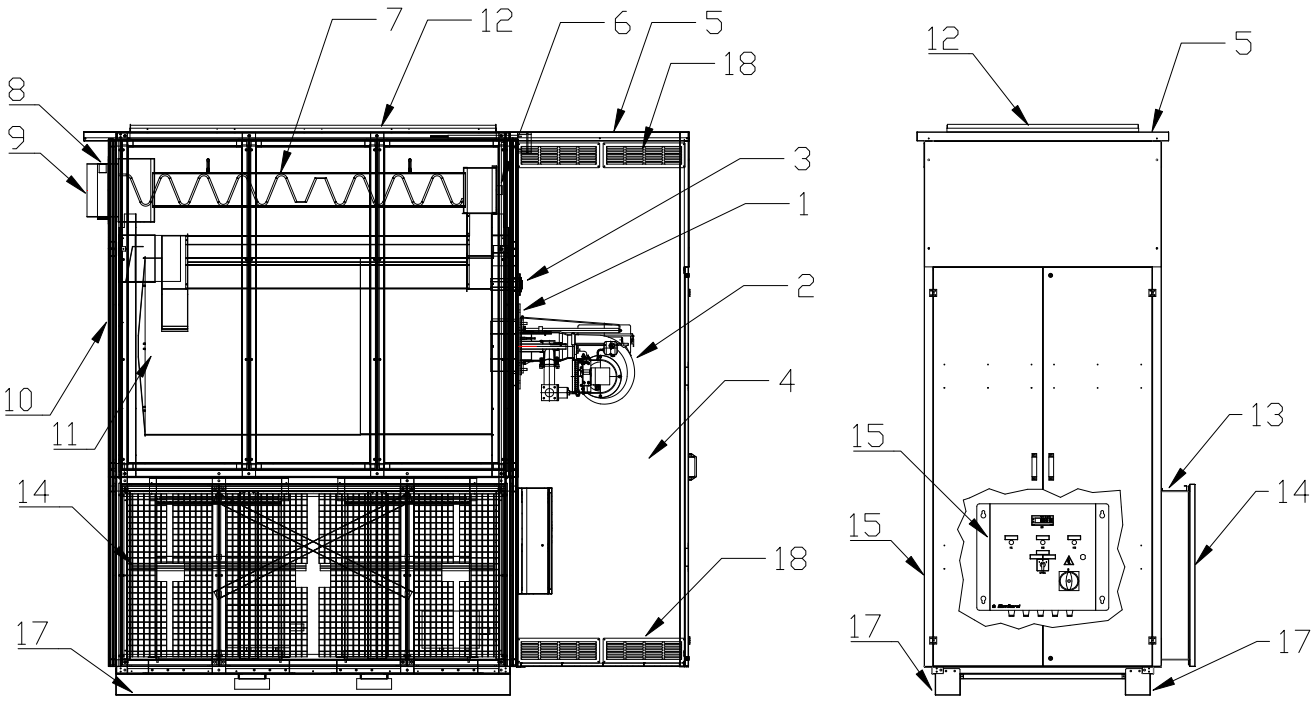




IH/AR 500-1000

	EXTERNAL DIMENSIONS			AIR INLET DIMENSIONS		AIR OUTLET		OTHER DIMENSIONS		Weight
MODEL	**A**	**B**	**C**	**S**	**T**	**L**	**M**	**H**	**Ø**	**(Kg)**
IH/AR 500K-600K	1365	3330	3140	2310	950	2280	1100	2740	300	1960
IH/AR 750K	1365	3830	3140	2840	950	2800	1100	2730	350	2150
IH/AR 1000K	1365	4930	3140	3740	950	3700	1100	2730	350	2600

1.6 CONSTRUCTION DETAILS FOR IH/AR 40-1000 EXTERNAL VERSION



1. Burner Flange
2. Burner
3. Anti-explosion relief with flame visor
4. Housing box for burner
5. Heater Rain Cover
6. Heat exchanger Inspection Door
7. Stainless steel turbolators
8. Posterior smokes inspections
9. Exhaust gas connection
10. Cover panels with internal thermo-insulation
11. Alluminized steel combustion chamber
12. Air outlet
13. Filter box (filter included)
14. Air inlet Grill
15. Electrical control Panel
16. Closing lateral panel
17. Support Profiles
18. External burner air intake

1.7 MANUFACTURING CHARACTERISTICS

- **Heat exchanger** entirely made of aluminized steel, resistant to high temperatures including :
    - Trought flame on Cylindrical combustion chamber.
    - Flat-shape tubes with a large exchange surface.
    - Flue chamber with inspection for easy access cleaning.

- **Flue turbulators** made of AISI 304 stainless steel with high thermic resistance.

- **Double inlet centrifugal fans** with forward inclined blades made of galvanized steel plate with dynamically balanced wheel and mounted on elastic supports.

- **Pipe plates** in aluminized steel, welded to the exchange pipes and the combustion chamber; continuous wire welding process in controlled atmosphere.

- **Cover** consisting of press-bent panels of precoated and PVC-film protected plate.

- **Monoblock type frame supporting structure** consisting of galvanized elements screwed together without welding (**Mod. 40÷400**).

- **Two-block type frame supporting structure;** consisting of galvanized elements screwed together without welding (**Mod. 500÷1000**).

- **Sealing gasket** made of fibers in conformity with CE directives.

- **Electrical panel** built with an IP40 protection degree (IP44 for models 75-1000) containing :
    - main switch.
    - Summer-winter commutator.
    - Power lamp.
    - Working lamp.
    - Ventilation block Lamp
    - Magneto-thermic electrical protection: **Mod. 75 ÷1000**.
    - Electrical protection inside motor: **Mod. 40÷50**.
    - Fan solenoid switches: **Mod. 75 ÷1000**.
    - Delta-star start: **Mod. 250 ÷1000**.
    - Single-phase power supply 230/1/50: **Mod. 20N ÷50**.
    - Triple-phase power supply 400/3/50: **Mod. 75 ÷1000**.
    - Upon request: triple-phase power supply 230/3/50 from model 75 to 1000
    - Terminal board for connection to electrical panel

1.8 WORKING CHARACTERISTICS AND SAFETY DEVICES

❑ Working characteristics

- **Drop pressure in the combustion chamber** in conformity with European standard values.
- **Turbulation of the combustion products** in the exchange pipes through stainless steel turbulators supplying a continuous and progressive action.
- **Structure of the monoblock type heater (Mod. 40 ÷ 400)** including :
  - ventilation unit (with easy access)
  - thermic exchange unit (self-supporting, with easy access for periodic inspection and cleaning).
- **Structure of the two-block type heater (Mod. 500 ÷ 1000)** including :
  - ventilation unit (with easy access)
  - thermic exchange unit (self-supporting, with easy access for periodic inspection and cleaning).
- **Minimum loss of pressure** relative to the air capacity when flowing through the heater; this means that there is a high available pressure for the possibile air ductings.
- **Cover insulation** made of a glass wool jacket externally covered by a galvanized sheet(sandwich type panel) in order to guarantee that the temperature difference between the external surface of the cover and the room air complies with the regulations in force.
- **Safety and regulation thermostat devices** including :
  - 40°C fixed calibration **FAN** thermostat with automatic reset.
  - 75°C **LIMIT** thermostat II° stage burner with automatic reset.
  - 85°C **LIMIT** thermostat with automatic reset.
  - 100°C safety **SICUR** thermostat with manual reset.
- Revolving type multiple **discharge heads** (upon request) complete with movable fins.
- **Filter box** (upon request) made of precoated steel plate containing the extractible filtration unit and protected by a metal grill.

❑ Safety devices

The device that guarantees the safety of the machine is the **Safety thermostat**: when it intervenes it causes the heater to shutdown completely (fan and burner) before the exiting air temperature can reach 100°C.

This allows:

- Limiting the exiting air temperature to values in conformity with the regulations in force.
- Avoiding the overheating of the exchanger and other heater parts due to system, fan or thermoregulation failures.

The cause of it's intervention may be a heater malfunction:

- A fan malfunction
- A malfunction in the limit thermostat that should intervene before the safety thermostat

Or a system malfunction:

- Increase in heat loss
- Decrease in the fan air capacity.

Once the malfunction is removed and the heater cools down, the safety thermostat reset is done manually by pressing the reset button:

- Directly on the thermostat located on the outside for mod. 40 - 1000

after removing the release button protection cover

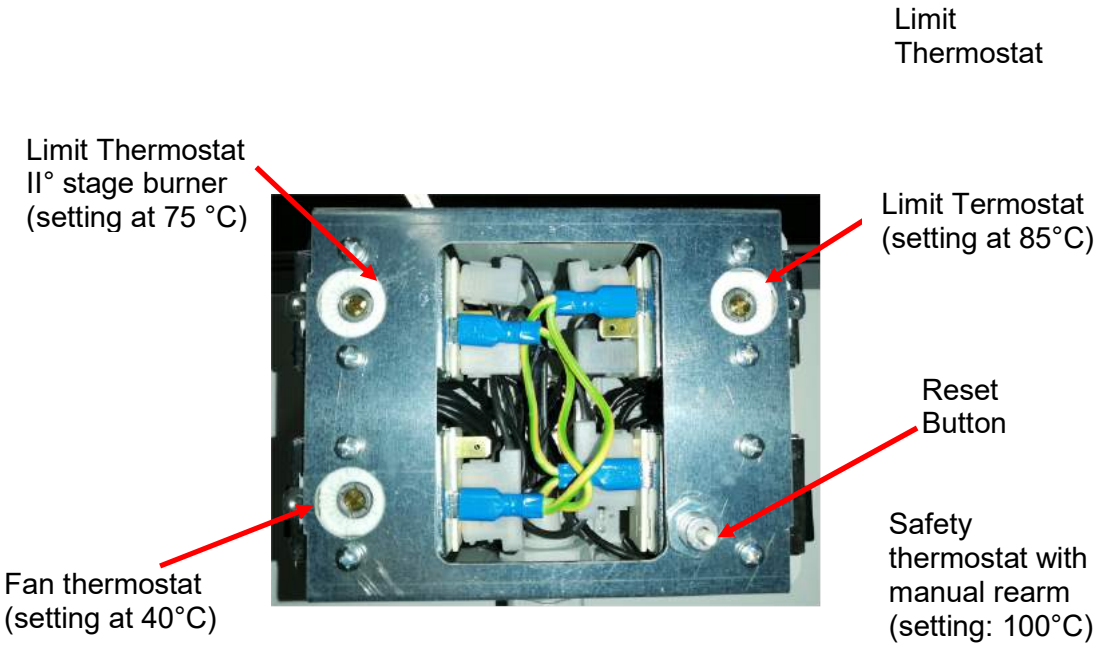
1.9 ELECTRICAL DIAGRAMS

The wiring diagrams are supplied as an attachment to this manual:

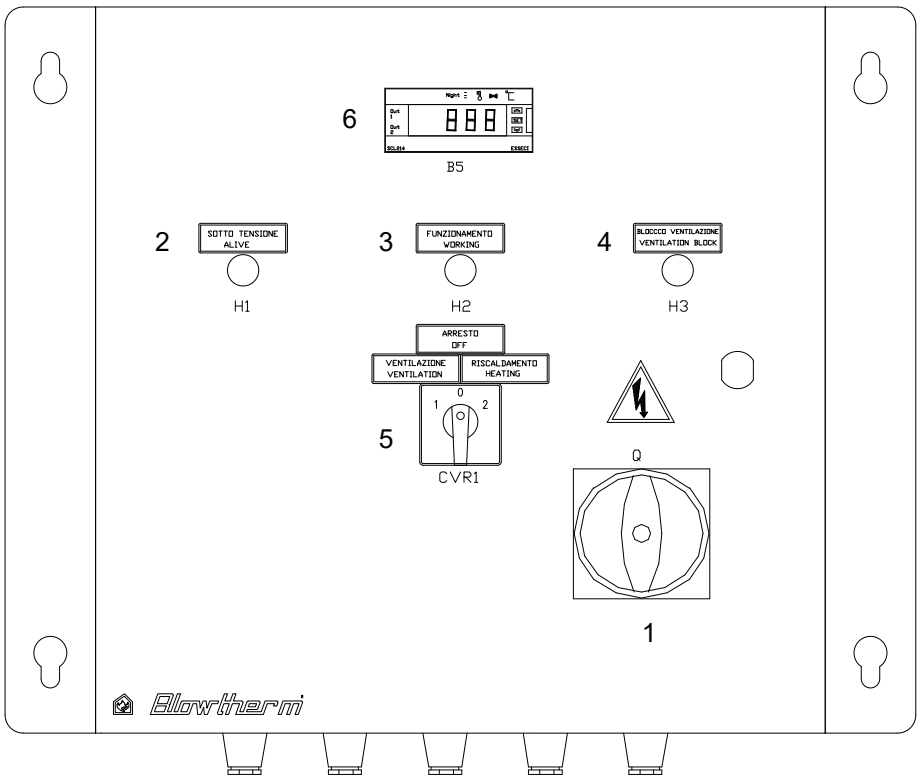
IH/AR 40-50: 6650290
IH/AR 75-200: 6650291
IH/AR 250-400: 6650300
IH/AR 500-750: 6650288

1.10 THERMOSTAS

The warm air heater of the range IH/AR, models IH/AR 40-1000, are always supplied with the thermostats already wired to the electrical control panel, but not fixed in their correct position in order to be protected during the transport (for the transport they are usually put inside a plastic bag inside the ventilation section). After the placement of the heater, during the installation, is necessary to place correctly the thermostats in the foreseen position (to see the correspondent holes in the left lateral panel of the heat exchanger section of the heater) using screws Ø5mm.



1.11 CONTROL PANEL



1 Main switch ON-OFF
2 Power lamp
3 Fan operating lamp
4 Ventilation block lamp
5 Ventilation-Heating-off selector
6 Two stages burner digital thermoregulator

1.12 MAINTENANCE

A correct use and a routine maintenance are fundamental for reliable functioning and the long life of the appliance.
Any operation on the machine must be carried out only when the machine is cold; the electricity must be disconnected and the fuel supply must be closed.

The following is advised:

- **Never disconnect the heater from the electrical main when it is operating!** This operation, by stopping the fan, does not allow a regular cooling down of the combustion chamber that may be damaged by overheating.
- Check the burner setting periodically, examining the combustion products; a constant and good setting ensures combustible saving and environment protection.
- Check the air filter periodically; if clogged with dust, wash it with water.
- If the heater sucks in dusty air, make sure that an excessive quantity of dust has not accumulated on the fans and exchanger surfaces. If necessary, use a compressed air jet to blow off the dust.
- Every year, when the installation is not being used, clean the internal exchange surfaces. All combustion deposits must be removed by means of swabbing. The exchange surfaces can be reached easily from the front through the inspection plate and from the back through the two side openings.
- Check the condition of the flue turbolators every year; if necessary replace them with new ones.
- Check the voltage of the fan unit belts periodically (**Mod 75÷1000**).
- Disconnect the heater from the electrical supply when not being used.

1.13 BURNER CHOICE

The IH/AR Industrial warm air heaters have been type approved according to the Europena Gas Directive.
In order to respect such standards the heaters may be fired only by certified gas burners which are tested on the product and authorized by the Certifying Institute.

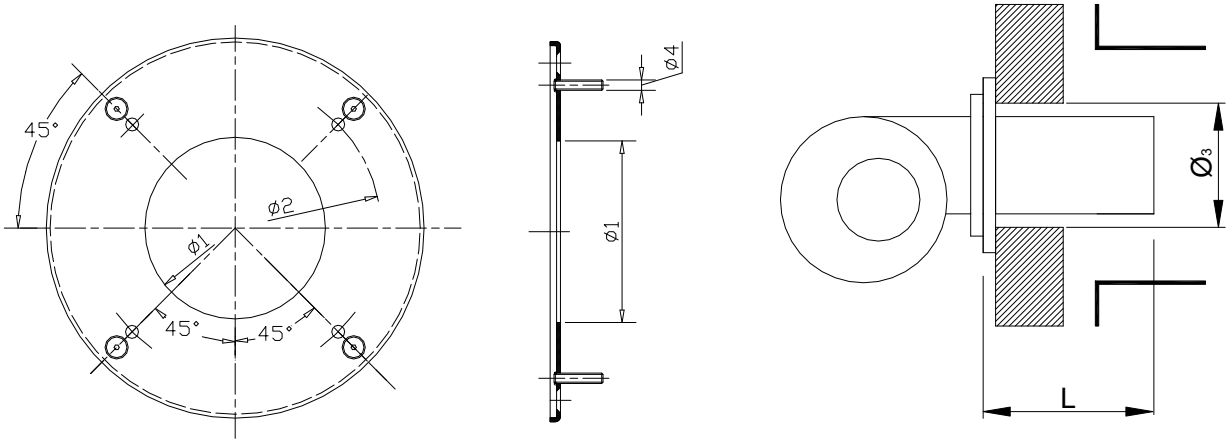
The ideal values for **natural gas G20** are the following :
CO_2 = 9.6%
CO< 50 ppm
Nox<100 ppm
Flue T- Room T (with 2nd stage) = 175**°-** 200°C.
(Note: in order to respect the Gas Directive, this coupling may only be carried out with CE burners authorized by the Certifying Institute).

The ideal values for **butane gas G30** are the following :
CO_2 = 11.0%
CO< 50 ppm
Nox<100 ppm
Flue T- Room T (with 2nd stage) = 175**°-** 200°C.
(Note: in order to respect the Gas Directive, this coupling may only be carried out with CE burners authorized by the Certifying Institute).

The ideal values for **propane G31** are the following :
CO_2 = 11.2%
CO< 50 ppm
Nox<100 ppm
Flue T- Room T (with 2nd stage) = 175**°-** 200°C.
(Note: in order to respect the Gas Directive, this coupling may only be carried out with CE burners authorized by the Certifying Institute).

The ideal values for **gas oil** are the following :
CO_2 = 13.0%
CO< 50 ppm
Nox<100 ppm
Bacharach < 2
Flue T- Room T (with 2nd stage) = 175**°-** 200°C.

The coupling is in accordance with the diagrams shown on the the following page:



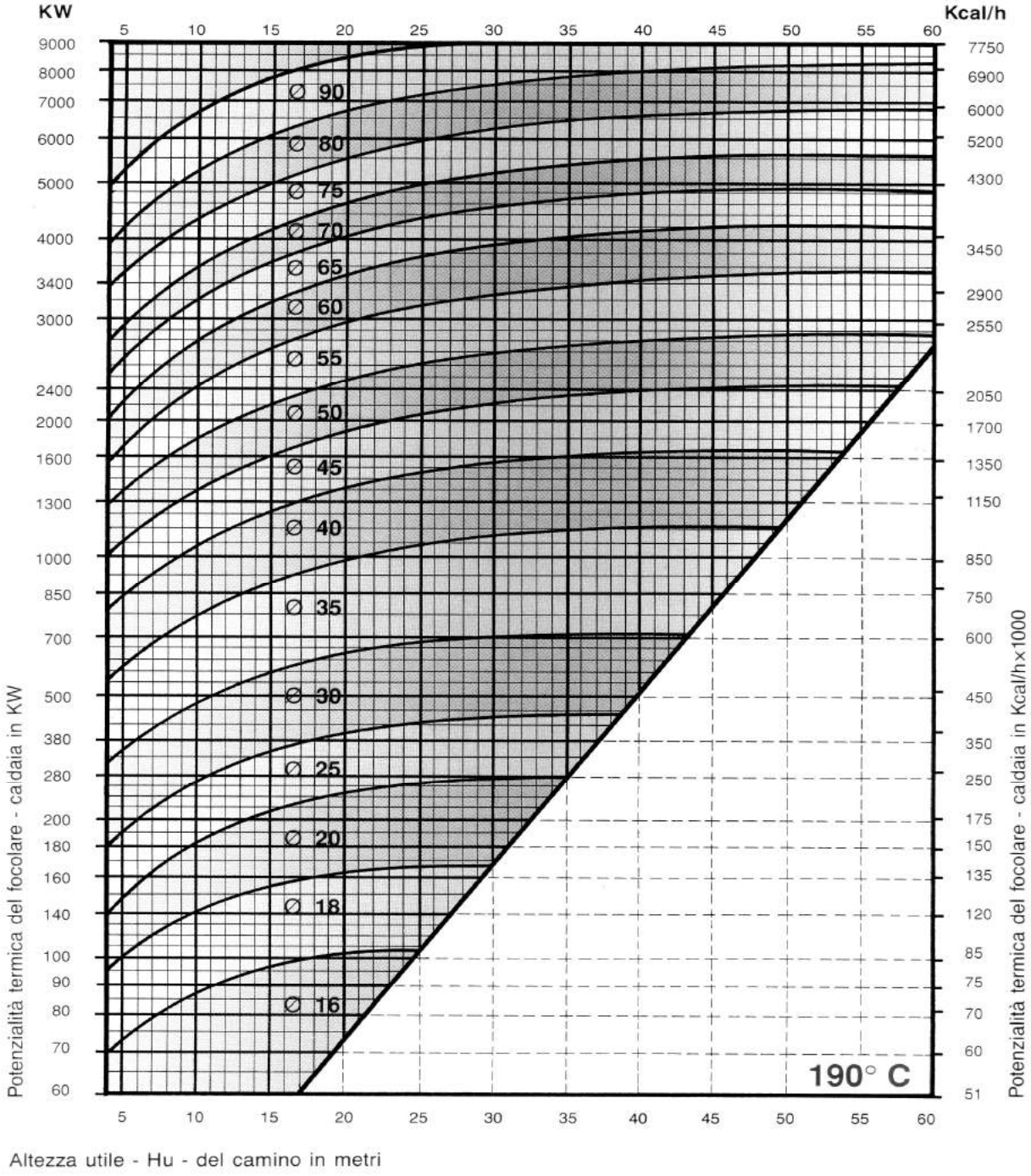
Model IH/AR	*Thermal Power Input [kW]*	*Drop Pressare Heat Exchanger [mbar[*	*Internal Diameter Standard Burner Flange Ø1 [mm]*	*Screws Position/ Diameter (Standard Burner Flange) Ø2 / M Ø4 [mm]*	*Heat Exchanger Hole Diameter Ø3 [mm]*	*Advised Lenght Burner Blast Tube min-max L (LOW NOx Burners) [mm]*
IH/AR 40	46.5	1,0 ÷ 1,6	100	135 - M8	115	185-220
IH/AR 50	60.7	1,2 ÷ 2,0	100	135 - M8	115	185-220
IH/AR 75	92.0	1,1 ÷ 2,0	120	135 - M8	135	185-220
IH/AR 100	116.2	1,2 ÷ 2,1	120	160 - M8	135	215-250
IH/AR 125	145.4	1,2 ÷ 1,8	150	226 - M10	145	215-250
IH/AR 150	185.8	1,4 ÷ 2,1	150	226 - M10	145	215-280
IH/AR 175	203.5	1,4 ÷ 2,6	150	226 - M10	160	235-280
IH/AR 200	232.6	1,6 ÷ 3,5	150	226 - M10	160	235-280
IH/AR 250	290.7	1,5 ÷ 2.8	160	226 - M10	165	245-280
IH/AR 300	348.8	2.0 ÷ 3,8	160	226 - M10	165	248-280
IH/AR 350	406.7	1,7 ÷ 3,0	160	226 - M10	190	245-350
IH/AR 400	465.1	2,0 ÷ 3,8	160	226 - M10	190	245-350
IH/AR 500	581.4	2,1 ÷ 7,5	180	368 - M12	240	245-350
IH/AR 600	697.7	2,2 ÷ 8,5	180	368 - M12	240	245-350
IH/AR 750	872.0	2,3 ÷ 9,0	195	368 - M12	240	245-350
IH/AR 1000	1163	2,1 ÷ 8,5	195	368 - M12	240	245-350

1.14 CHIMNEY DIMENSIONS

On the models IH/AR 20 ÷1000 industrial warm air heaters the flue outlet is connected to a chimney that is built and sized according to the regulations in force. Attached below are the sizing diagrams according to UNI 9615 and DIN 4705.

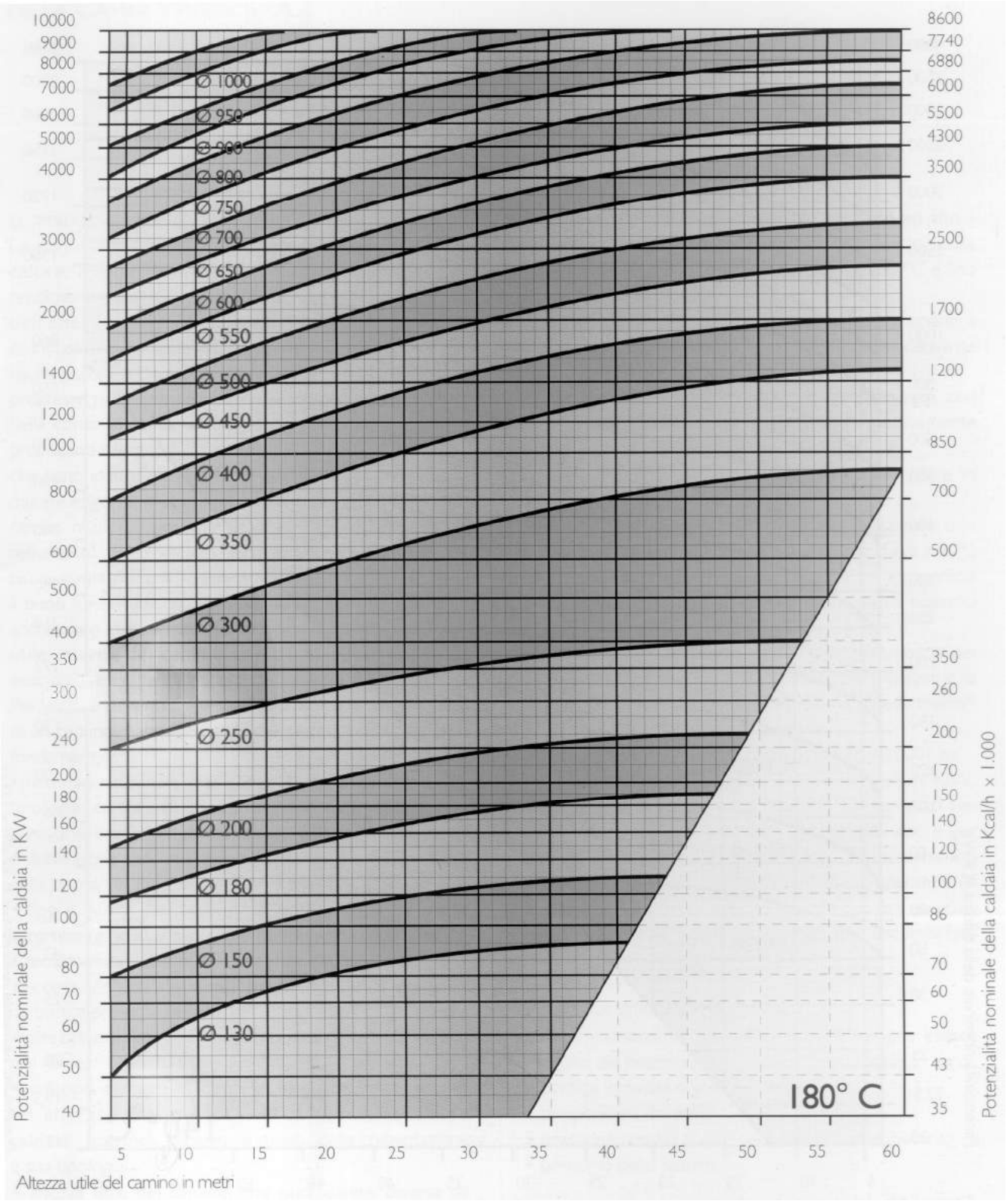
1.14.1 CHIMNEYS MADE OF REFRACTORY MATERIAL

The diagram refers to the DIN 4705-part 2 Norm.



1.14.2 STAINLESS STEEL CHIMNEYS

The diagram refers to the UNI 9615 Norm.



1.15 FUELS THAT CAN BE USED

The IH/AR Industrial warm air heaters can be fired by burners that use the following fuels:

- **Natural gas G20.**
- **Butane G30.**
- **Propane G31.**
- **Gas oil max 1.5°E to 20°C.**

The fuel that is used depends on the type of burner that is coupled with the heater.

1.16 UNPACKING THE HEATER

1. Remove the metal staples that hold the bottom part of the wooden case together. Use a screwdriver for slotted screws to pull out the staples.

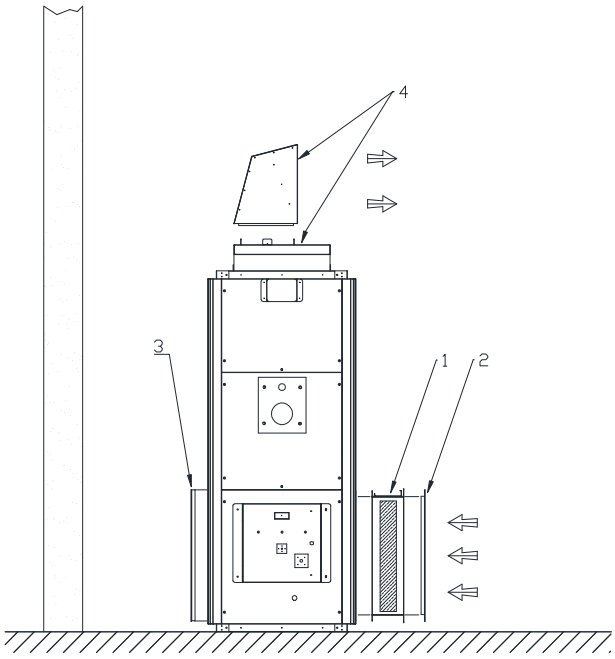
2. Take off the top part of the case, lifting it and setting it aside. Two people are needed for this operation.

1.17 ACCESSORIES

In our catalogue a complete range of options is available to complete the installation of our warm air heaters both for internal installation, both for external installation, from the simple basic installation tot he most complicated scheme.

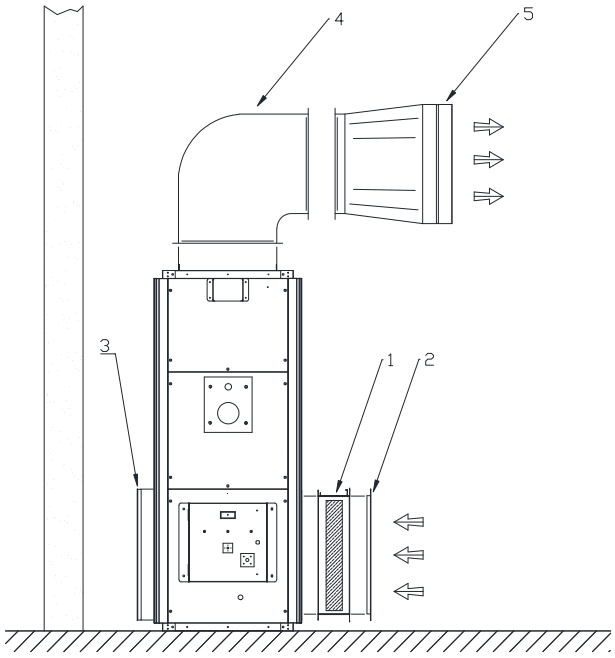
In the following drawings it is possible to see the possible configurations for an internal installation:

1.17.1 INTERNAL INST. WITH DIRECT AIR DISTRIBUTION



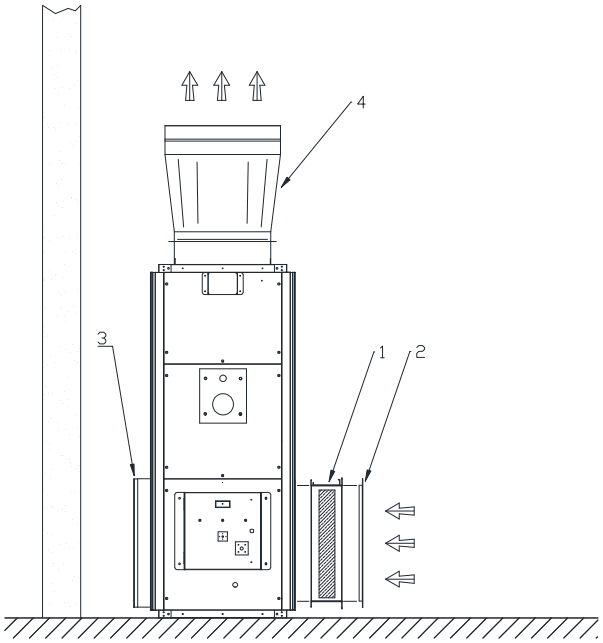
1 FILTER BOX
2 STANDARD AIR INLET GRILL
3 CLOSING LATERAL PANEL
4 AIR DISTRIBUTION PLENUM WITH REVOLVING HEADS

1.17.2 INTERNAL INST. WITH PREDISPOSITION FOR CIRCULAR AIR DUCT



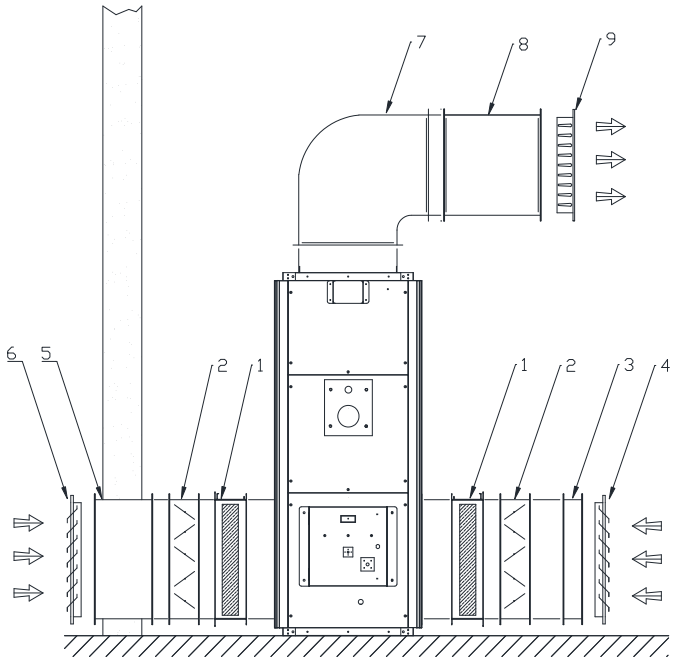
1 FILTER BOX
2 STANDARD AIR INLET GRILL
3 CLOSING LATERAL PANEL
4 90° BEND DUCT
5 ADAPTATION AIR DUCT SQUARE/CIRCULAR

1.17.3 INTERNAL INST. WITH VERTICAL PREDISPOSITION FOR CIRCULAR AIR DUCT



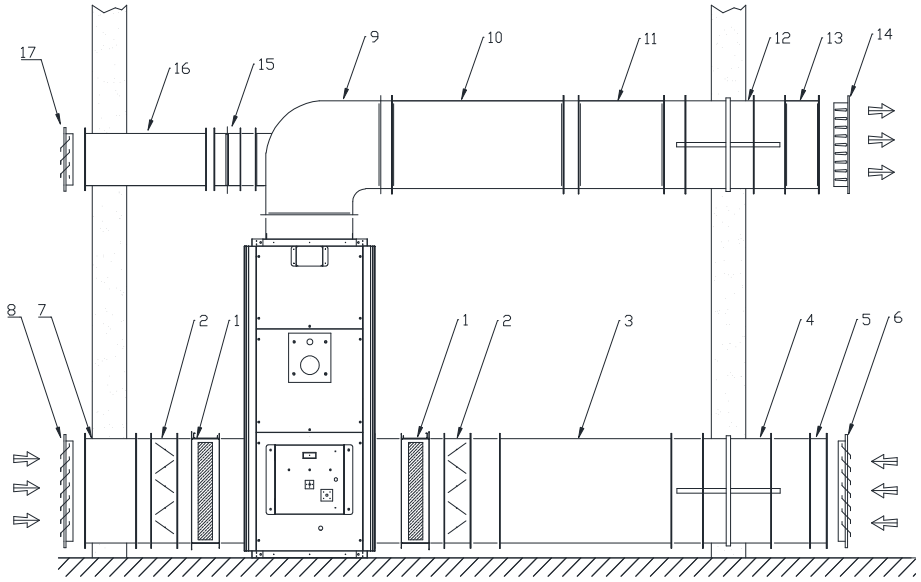
1 FILTER BOX
2 STANDARD AIR INLET GRILL
3 CLOSING LATERAL PANEL
4 ADAPTATION AIR DUCT SQUARE/CIRCULAR

1.17.4 INTERNAL INST. WITH AIR DISTRIBUTION DUCTS WITH AIR MIXING EXTERNAL/RECIRCULATION AIR



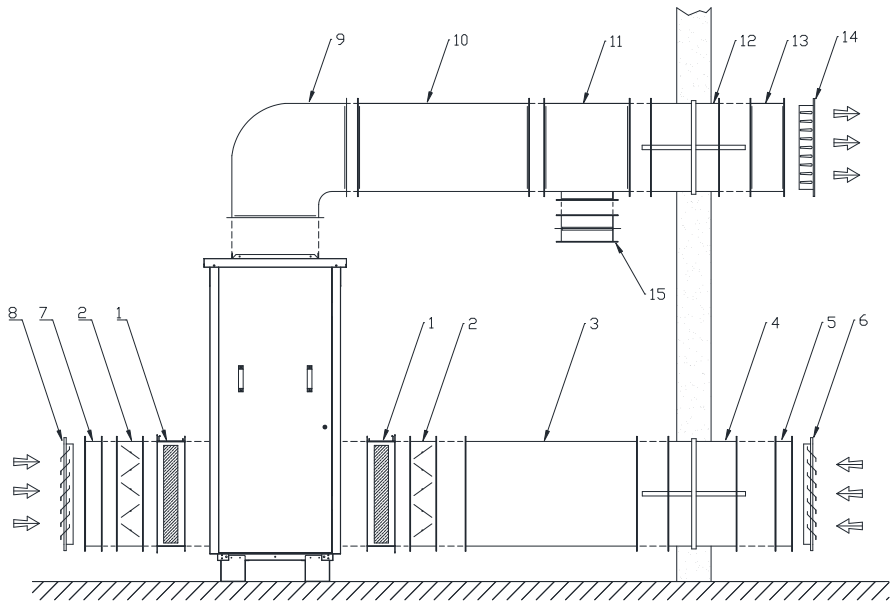
1 FILTER BOX
2 MANUAL REGULATION DAMPER
3 CONNECTING DUCT FOR AIR INLET GRILL
4 AIR INLET GRILL
5 CONNECTING DUCT AIR INLET GRILL (EXT SIDE) - GRILL
6 AIR INLET GRILL (EXT SIDE)
7 90° BEND DUCT
8 AIR OUTLET DUCT L=0,5M
9 AIR OUTLET GRILL

1.17.5 INTERNAL INST. WITH AIR DISTRIBUTION DUCTS WITH AIR MIXING EXTERNAL/RECIRCULATION AIR – UNIT IN CENTRAL ROOM



1 FILTER BOX
2 MANUAL REGULATION DAMPER
3 AIR INLET DUCT L=1M
4 AIR INLET FIRE DAMPER
5 CONNECTING DUCT FOR AIR INLET GRILL
6 AIR INLET GRILL
7 CONNECTING DUCT AIR INLET GRILL (EXT SIDE) - GRILL
8 AIR INLET GRILL (EXT SIDE)
9 90° BEND DUCT WITH THIRD WAY FOR EXHAUST GAS DAMPER
10 AIR OUTLET DUCT L=1M
11 AIR OUTLET DUCT L=0,5M
12 AIR OUTLET FIRE DAMPER
13 CONNECTING DUCT FOR AIR OUTLET GRILL
14 AIR OUTLET GRILL
15 EXHAUST GAS DAMPER
16 CONNECTING DUCT FOR AIR INLET GRILL
17 AIR INLET GRILL

1.17.6 EXTERNAL INST. WITH AIR DISTRIBUTION DUCTS WITH AIR MIXING EXTERNAL/RECIRCULATION AIR



1 FILTER BOX
2 MANUAL REGULATION DAMPER
3 AIR INLET DUCT L=1M
4 AIR INLET FIRE DAMPER
5 CONNECTING DUCT FOR AIR INLET GRILL
6 AIR INLET GRILL
7 CONNECTING DUCT AIR INLET
GRILL (EXT SIDE) - GRILL
8 AIR INLET GRILL (EXT SIDE)
9 90° BEND DUCT
10 AIR OUTLET DUCT L=1M
11 THREE WAY DUCT L=0,5M
12 AIR OUTLET FIRE DAMPER
13 CONNECTING DUCT FOR AIR OUTLET GRILL
14 AIR OUTLET GRILL
15 EXHAUST GAS DAMPER

1.17.7 TABLE WITH ACCESSORIES FOR STANDARD BASIC INTERNAL INSTALLATION:

MODEL	Room thermostat	A	B	C	D	E	F
	CODE	CODE	CODE	CODE	CODE	CODE	CODE
IH/AR 40K-50	9TE0071	6PL00050	6PA00040	6GR00040	6CF00040	6GAM0040	6GAR0040
IH/AR 75K-100	9TE0071	6PL00075	6PA00075	6GR00075	6CF00075	6GAM0075	6GAR0075
IH/AR 125K-150	9TE0071	6PL00125	6PA00125	6GR00125	6CF00125	6GAM0125	6GAR0125
IH/AR 175K-200	9TE0071	6PL00175	6PA00175	6GR00175	6CF00175	6GAM0175	6GAR0175
IH/AR 250K-300	9TE0071	6PL00250	6PA00250	6GR00250	6CF00250	6GAM0250	6GAR0250
IH/AR 350K-400	9TE0071	6PL00350	6PA00350	6GR00350	6CF00350	6GAM0350	6GAR0350
IH/AR 500K-600	9TE0071	6PL05000	6PA00500	6GR00500	6CF00500	6GAM0500	6GAR0500
IH/AR 750	9TE0071	6PL00700	6PA00700	6GR00700	6CF00700	6GAM0700	6GAR0700
IH/AR 1000	9TE0071	6PL01000	6PA01000	6GR01000	6CF01000	6GAM0900	6GAR0900

LEGEND:

A Plenum for air discharge with movable revolving discharge heads on a 360˚horizontal plane with fins that move vertically- –standard packing in polyurethane up to IH/AR 200 , and cardboard.
B Lateral intake closing panel for air entry head in a varnished steel plate
C Grill for air entry head.
D Filter box made of pre-varnished steel plate- a corrugated filtering jacket with a large surface and easily extractible –thermo-shrinking standard packing.
E – F Anti-vibration joints for air entry ducting in coated polyvinyl fabric- fire retardant until 130˚C, crimped with two bands in galvanized plat

2 USER

2.1 WARNINGS FOR THE USER

- The manual is an essential and integral part of the product; it will be delivered to the user.
- Carefully read the warnings contained in the manual because they supply important information pertaining to installation and maintenance safety.
- Preserve the manual with care for future consultation.
- Do not obstruct the air intake and outlet grills.
- If the machine shuts down or fails, turn it off and refrain from carrying out any machine repairs or direct interventions.
- Contact professionally trained personnel only.
- Product repairs must be carried out only by a Service Center that is authorized by the manufacturer using original spare parts only.
- Machine safety may be compromised if the previous instructions are not respected.
- In order to guarantee the efficiency and correct functioning of the equipment, routine maintenance following the manufacturer's instructions must be carried out by professionally trained personnel only.
- If you decide to no longer use the machine, all parts that may cause danger must be made harmless.
- If the machine is sold or transferred to another owner or if you move and leave the machine behind, always make sure that the present manual stays with the equipment so that it can be consulted by the new owner a/o installer.
- Original accessories must be used for all devices with optional or kit accessories (electrical components included).
- This appliance should be used only for the purpose it was manufactured for.
- Any other use should be considered incorrect and therefore dangerous.
- Any contractual or extra-contractual responsibility of the manufacturer for damages caused by the incorrect installation and use or the inobservance of the instructions supplied by the manufacturer is excluded.

2.2 CLEANING

For a long life and preservation of the appliance, the following cleaning operations are advised to be carried out periodically:

- **clean the cover** of the appliance using a soft cloth and products that will not damage the varnished plate.
- **clean the filter:** if the appliance is used with a duct system equipped with filters it is absolutely necessary that they are periodically checked. A filter that is excessively dirty may cause a reduction in the air capacity. Consequently, the safety thermostat will intervene.

2.3 MAINTENANCE

For a safe and efficient use of the equipment, a few routine maintenance operations are absolutely necessary. These operations are of the exclusive competence of a service technican and almost all have an annual periodicity.

2.4 SETTING UP: WINTER CONDITIONS

1. Set the room thermostat to the maximum value (the room thermostat is connected following the electrical diagram shown in this manual.)
2. Allow the fuel to flow in by opening the shutoff cock.
3. Turn on the electrical supply by using the main switch.
4. During this phase the prewashing of the combustion chamber begins. Then it sparks and the fuel valve opens for the lighting.
5. After the burner is started, the flame detector automatically cuts off the sparking for lighting. If there is air in the gas feeding system, the burner may not turn on and the appliance may shut down; wait about thirty seconds and repeat the operation until it starts normally; a few minutes after the burner is on, the air fan starts.
6. Set the room thermostat to the desired temperature. When the room reaches this temperature the burner stops and after a few minutes, the air fan also stops. When the room temperature goes below the value set on the room thermostat, the cycle is automatically repeated.

2.5 SETTING UP: SUMMER CONDITIONS (VENTILATION ONLY)

1. Close the fuel shutoff cock.
2. Turn the summer-winter switch to the summer position.
3. Leave the room thermostat switch in the OFF position or at the minimum temperature.

2.6 CONDITIONS FOR TURNING OFF THE HEATER

- For **relatively short periods of turning off the heater** (for example, during the night), set the room thermostat to the minimum value.
- For **long periods of turning off the heater** (for example, an entire season), turn the main switch to the OFF position and close the fuel tap.

CAUTION!!!

Disconnect the electrical supply for the appliance only after the air fan has stopped because it runs for a few minutes even after the burner has been turned off.

Otherwise overheating in the exchanger can occur (causing damage) due to thermic inertia with the manual set safety thermostat intervening.

2.7 MALFUNCTIONS

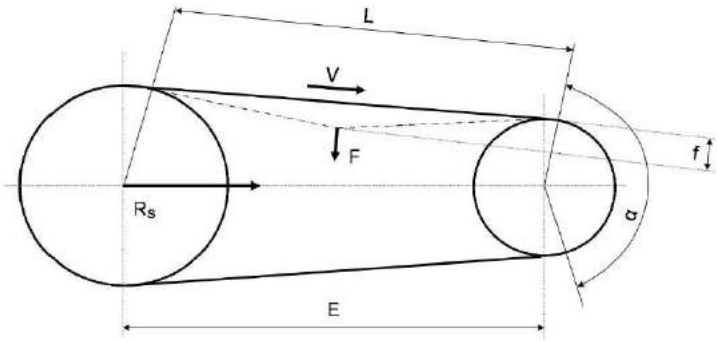
If malfunctions occur the safety thermostat intervenes which causes all of the heater's functions to shutdown: fan and burner.

In this case the user must:

Verify if the cause of the breakdown is due to a heater malfunction or an external cause.

2.8 REGULATION OF THE TENSION OF THE BELTS

A correct tension of the belts is achieved when, pushing on the belts in the middle it is possible to obtain a flexion "F" less than 20mm. If the flexion is bigger, it is necessary to make a regulation of the adjustable elements supporting the motor of the heater.



3 INSTALLER

3.1 WARNINGS FOR THE INSTALLAR

- The manual is an integral and essential part of the product; it will be delivered to the user.
- Carefully read the warnings contained in the manual because they supply important information pertaining to installation, use and maintenance safety.

  The installation must be carried out in conformity with the regulations in force by professionally trained personnel and according to the manufacturer's instructions. Professionally trained personnel means technicians with a specific technical knowledge in the field of thermal installation components and those Service Centers that are authorized by the manufacturer.
- The manufacturer is not responsible for damages to people, animals and objects caused by an incorrect installation.
- After removing all of the packaging parts, make sure that the content is complete.
- In uncertain cases, do not use the device and contact the supplier.
- The packaging elements must be kept out of reach of children due to potential danger.
- Do not obstruct the air intake and outlet grills.
- Original accessories must be used for all devices with optional or kit accessories (electrical components included).
- This appliance should be used only for the purpose it was manufactured for.
- Any other use should be considered incorrect and therefore dangerous.
- Any contractual or extra-contractual responsibility of the manufacturer for damages caused by the incorrect installation and use or the inobservance of the instructions supplied by the manufacturer is excluded.

3.2 INSTALLATION

IMPORTANT WARNINGS FOR THE INSTALLATION

- CHECK THAT THE ELECTRICAL INPUT FOR THE MOTOR IS IN CONFORMITY WITH THE LABEL VALUE.
- IF THE HEATER SHUTS DOWN, CHECK THAT THE MANUAL RESET SAFETY THERMOSTAT AND THE MAGNETO-THERMIC PROTECTION MAIN SWITCH HAVE NOT INTERVENED.
- BEFORE DISCONNECTING THE MAIN SWITCH, TURN THE SUMMER-WINTER COMMUTATOR TO THE “0” POSITION (OFF) AND WAIT FOR THE FAN TO TURN OFF COMPLETELY.
- BEFORE WORKING ON THE ELECTRICAL SYSTEM, DISCONNECT THE MAIN SWITCH (DISCONNECT THE HEATER ELECTRICAL SUPPLY).

The installation of IH/AR industrial warm air heaters is regulated by **Standards of the Law** that must be respected.

It is always necessary to respect the following regulations:

- Unpack the appliance and make sure that it was not damaged during transport.
- The installation area must be flat and horizontal, preferably higher than the surrounding floor so that the burner electrical components will be 50cm. off the floor (see IED 64/2 Norms).
- The position of the electrical components and relative wirings must comply with the IEC 64/2 Norms. The mass cable must be longer than the line and neutral cables.
- The position of the heaters permits an easy inspection and the routine and overtime maintenance operations:

  -the burner can be removed from the heater

  -the panels can be easily removed for inspecting and cleaning the exchanger.

  -the motor-fan unit can be reached easily for maintenance.
- The air intake and outlet ducts (if included) are connected to the heater by means of non-flammable anti-vibration joints in order to avoid transmitting vibrations to the ducts.

  The air intake ducts must be easily removable to allow the fan unit to be inspected.
- The filter box, (if included) can be reached easily to completely remove the filter to clean and/or replace it.
- Position the room thermostat so that it is not hit by air drafts which may influence the reading of the real temperature.
- The connection to the chimney which is built according to regulations in force, must be workmanlike performed so that the ducts can be easily removed without counter-slopes, elbow bends, rush section changes, etc.
- The fuel connection must be carried out using a pipe that has an adequate diameter, taking the easiest path and paying attention to the burner working limits.
- Check that there are not any leaks in the gas feeding pipe by using soapy water. Also make sure that there are not any impurities inside the pipe.

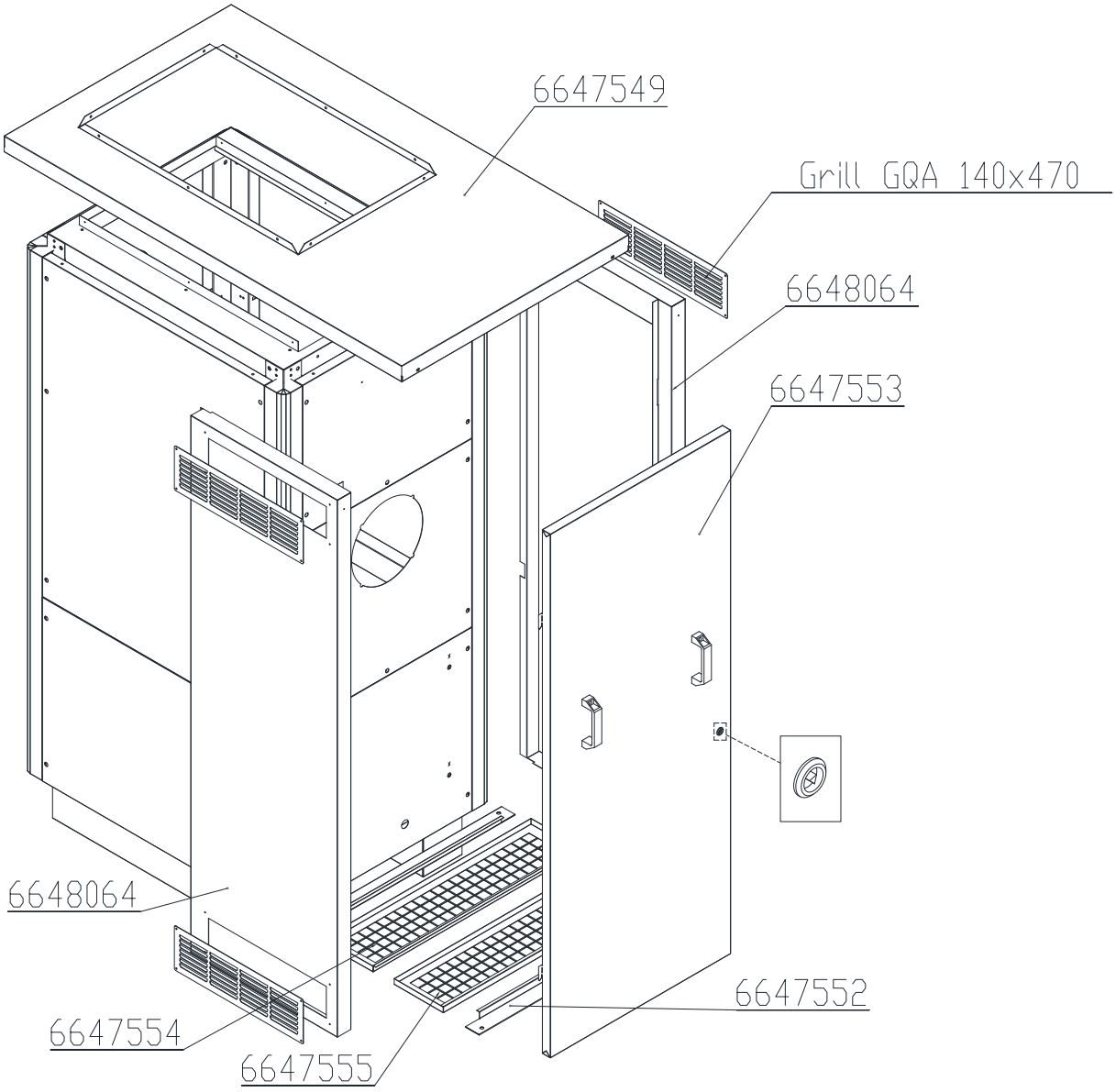
3.3 EXTERNAL KIT INSTALLATION SCHEMES

In case of order of external version warm air heaters IH/AR, the customer will receive a standard heater and additionally a kit made by:

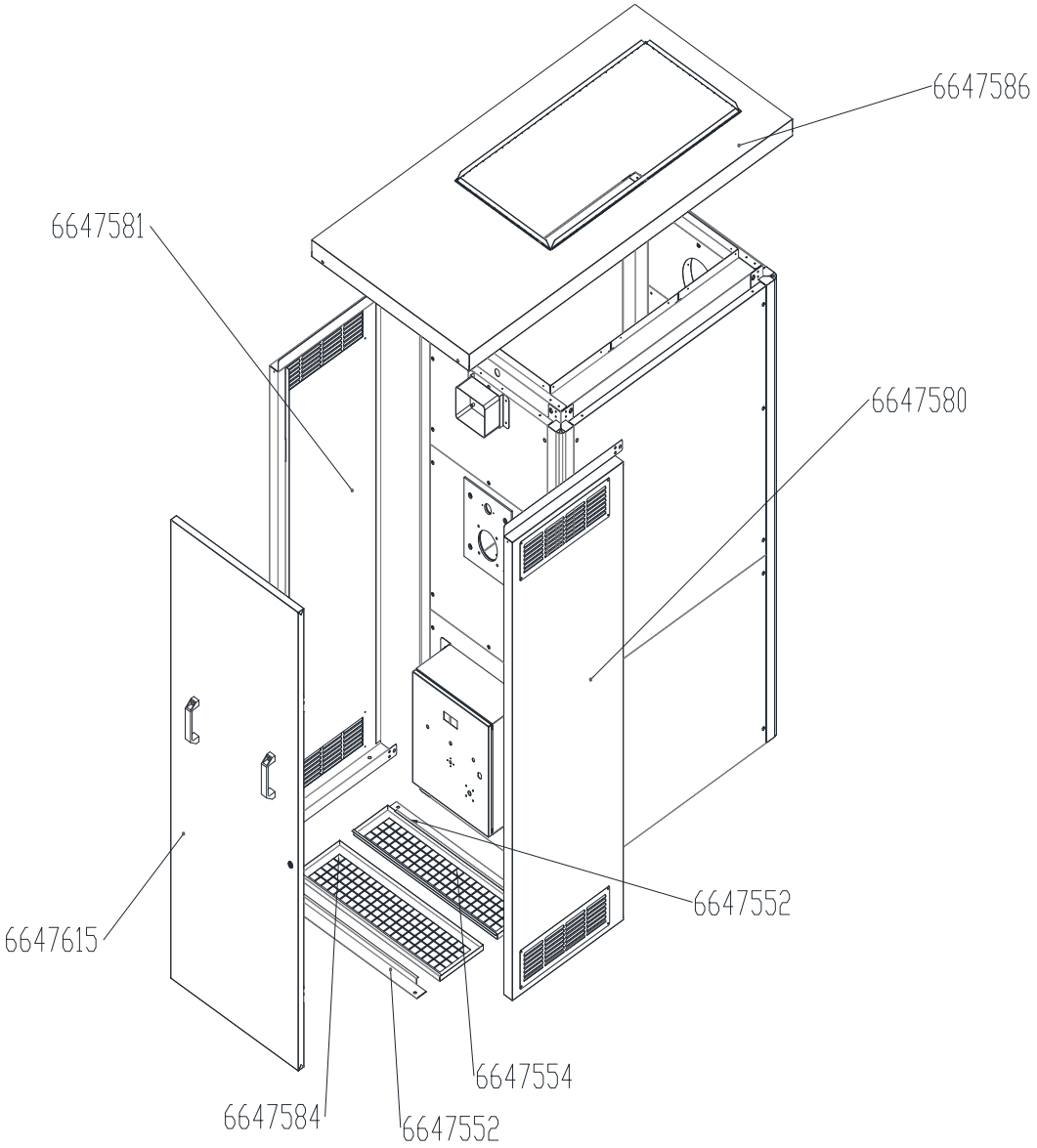
- Housing box for burner protection
- Rain Cover Protection for all the heater

For the installation, to follow the instructions in the scheme in the following pages.

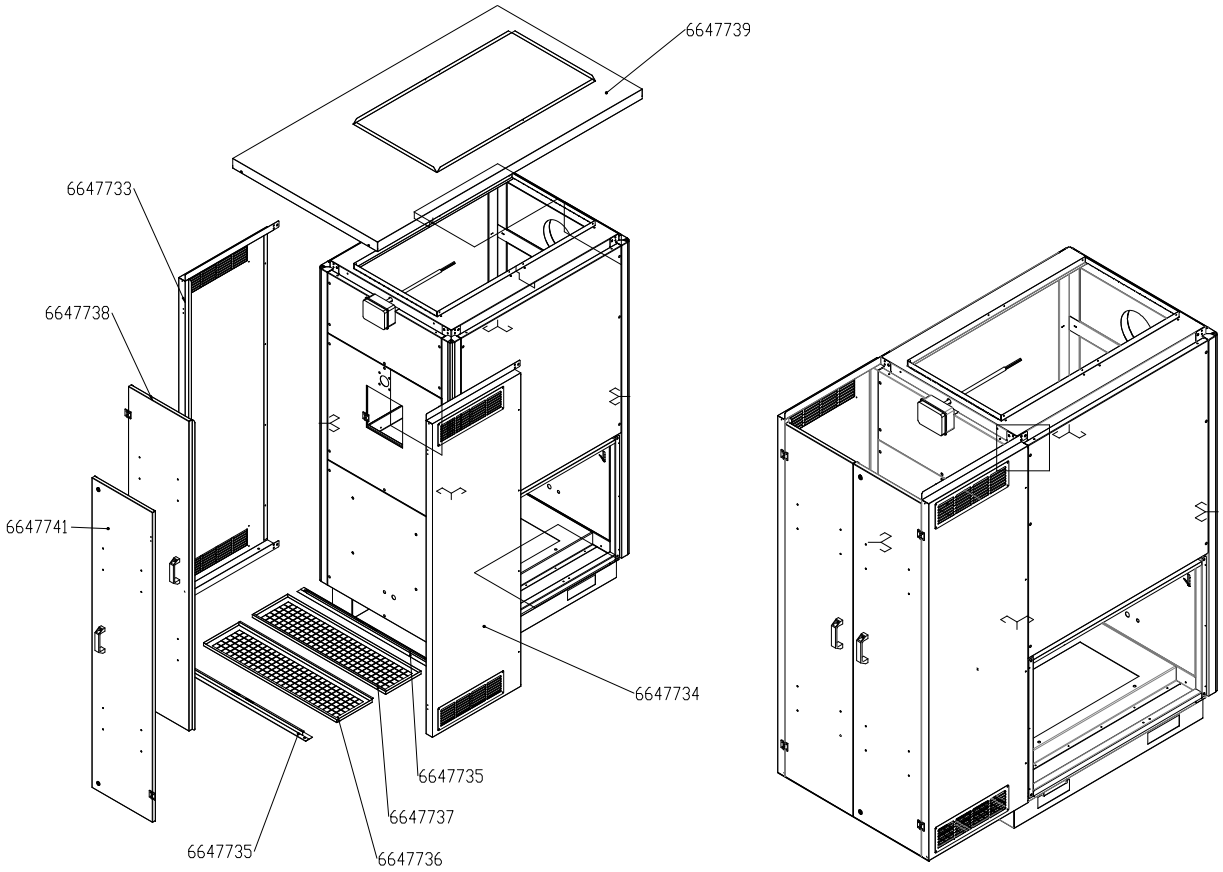
3.3.1 IH/AR 40-50 VERTICAL VERSION

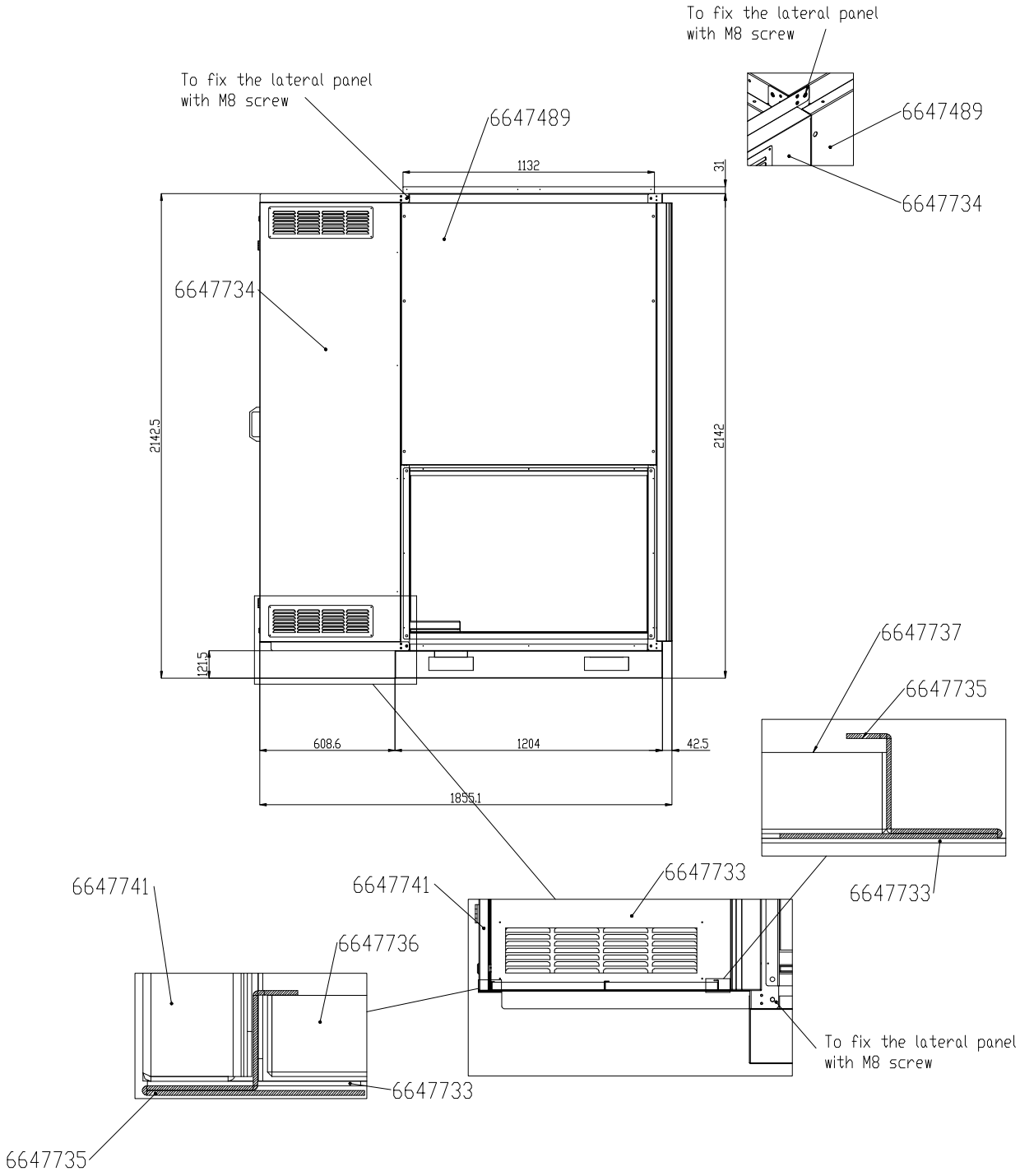


3.3.2 IH/AR 75-100 VERTICAL VERSION

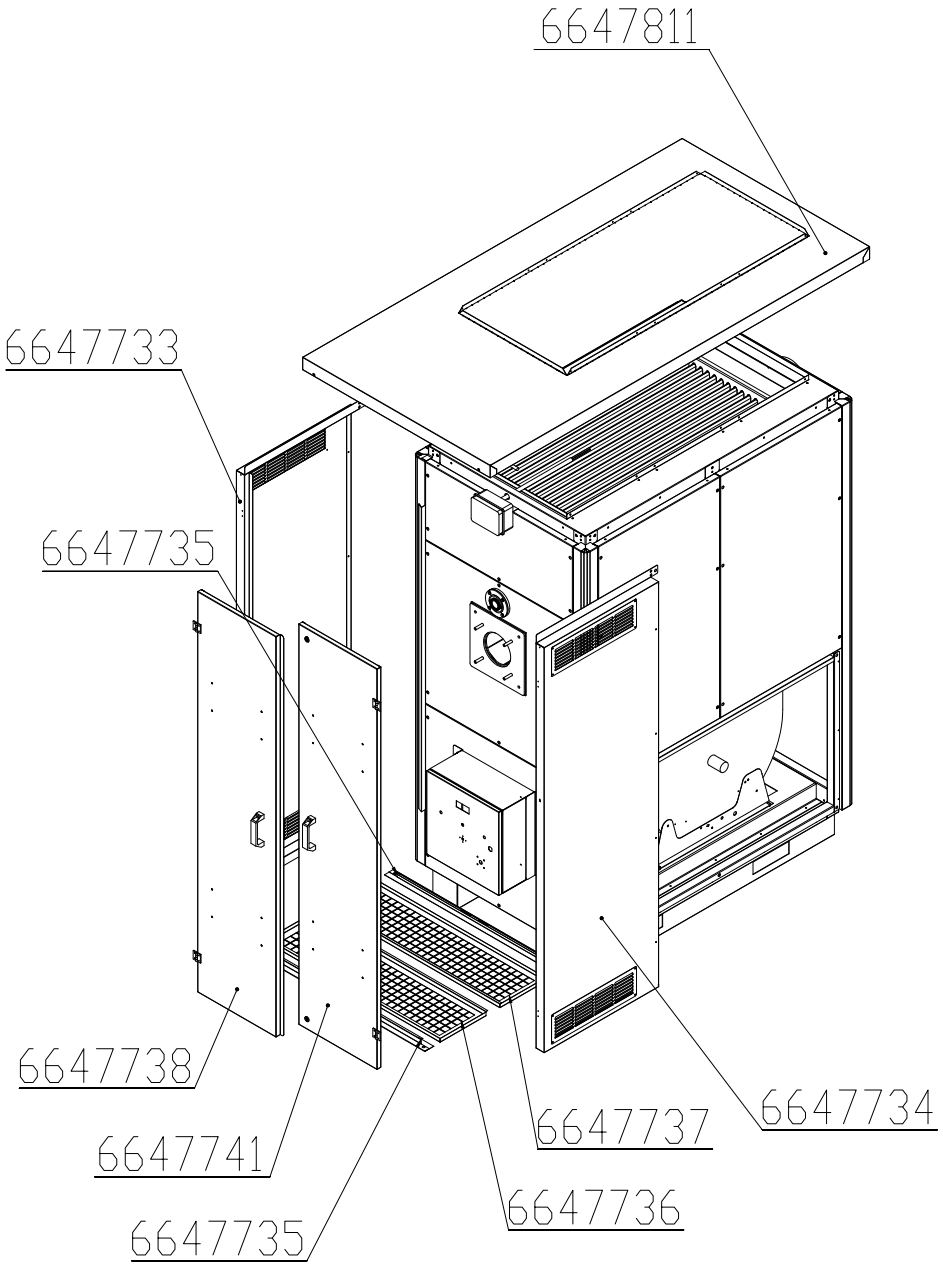


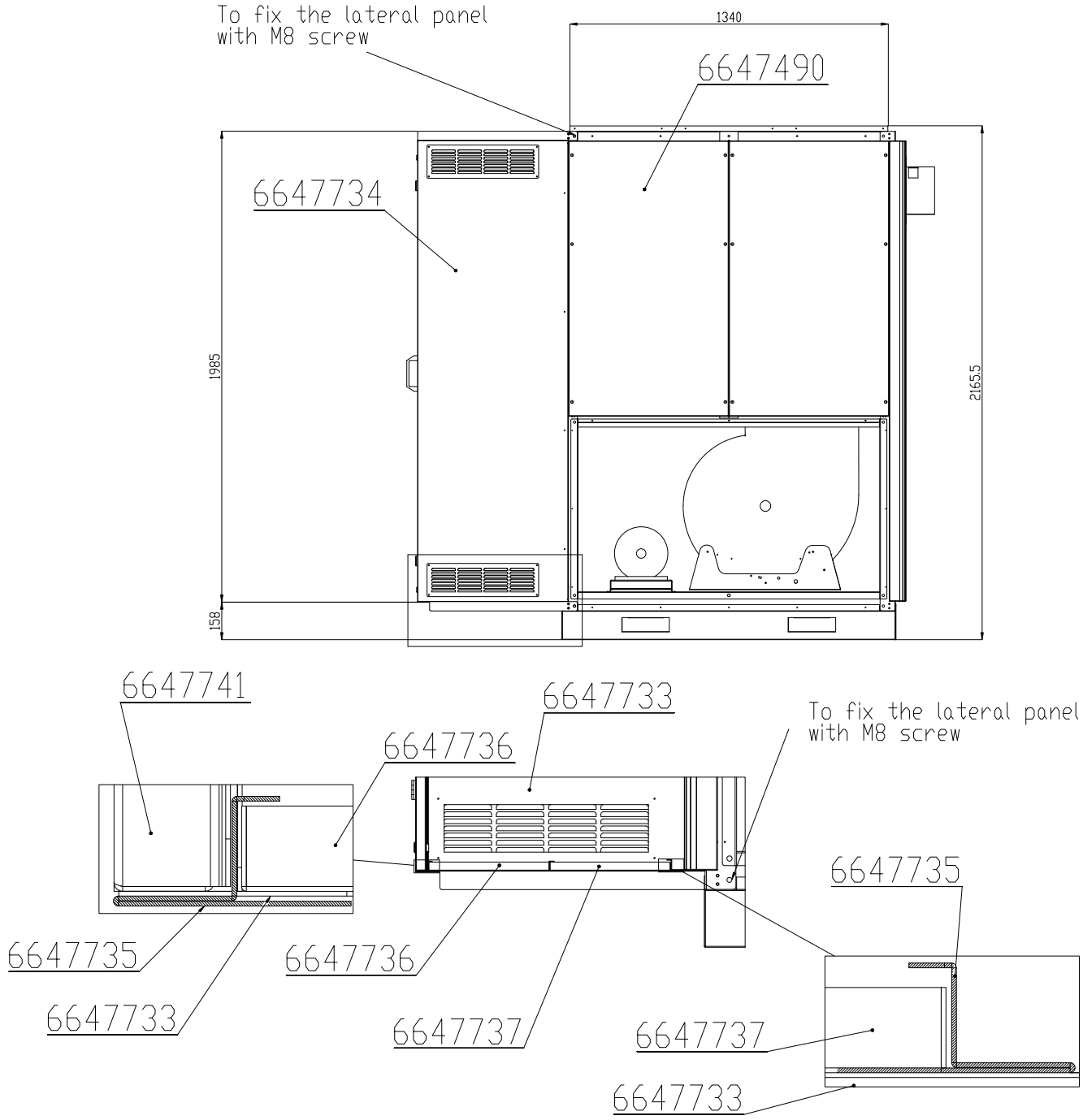
3.3.3 IH/AR 125-150 VERTICAL VERSION



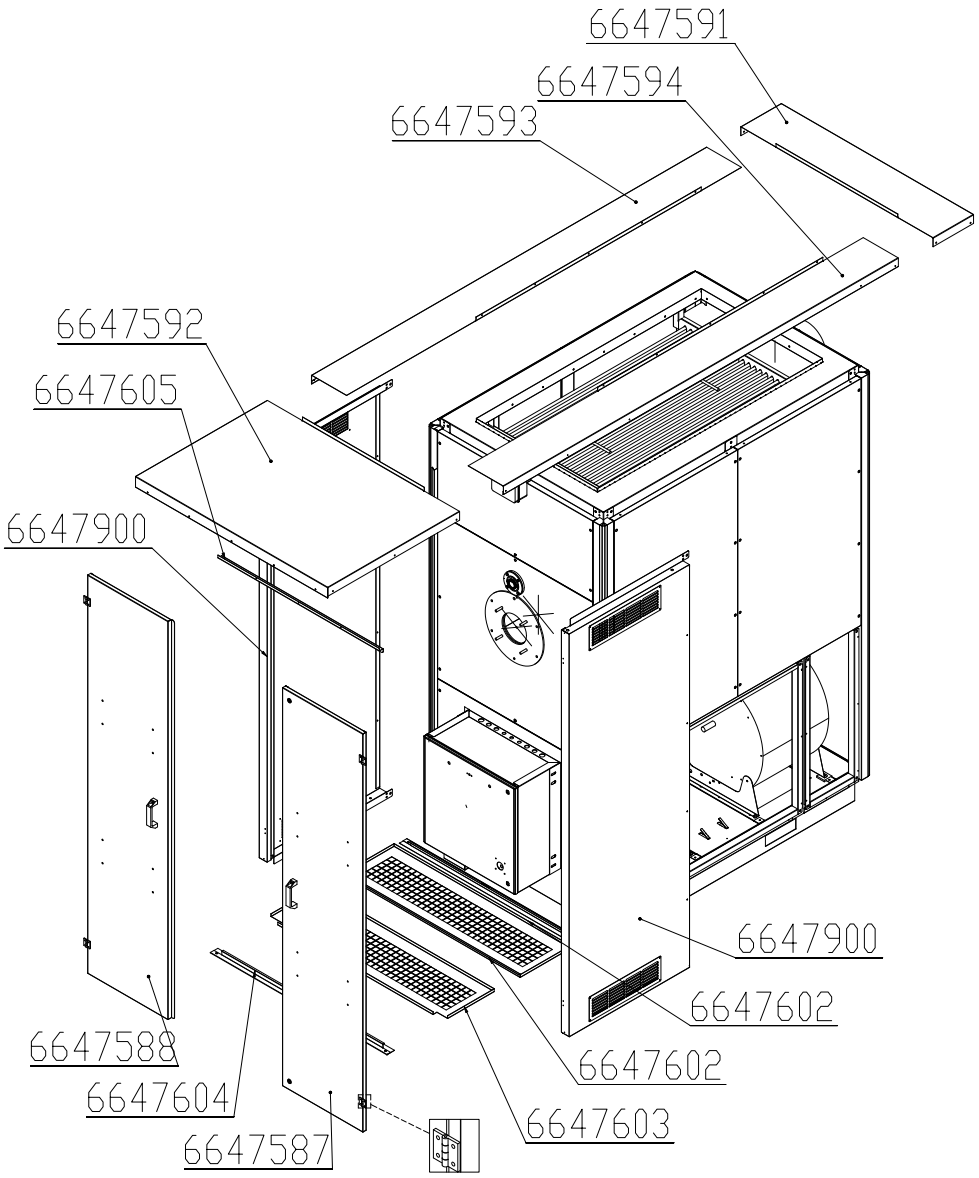

To fix the lateral panel with M8 screw
To fix the lateral panel with M8 screw
6647489
6647489
6647734
6647734
1132
31
2142.5
2142
121.5
608.6
1204
42.5
1835.1
6647737
6647735
6647733
6647741
6647741
6647733
6647736
6647733
6647735
To fix the lateral panel with M8 screw

3.3.4 IH/AR 175-200 VERTICAL VERSION

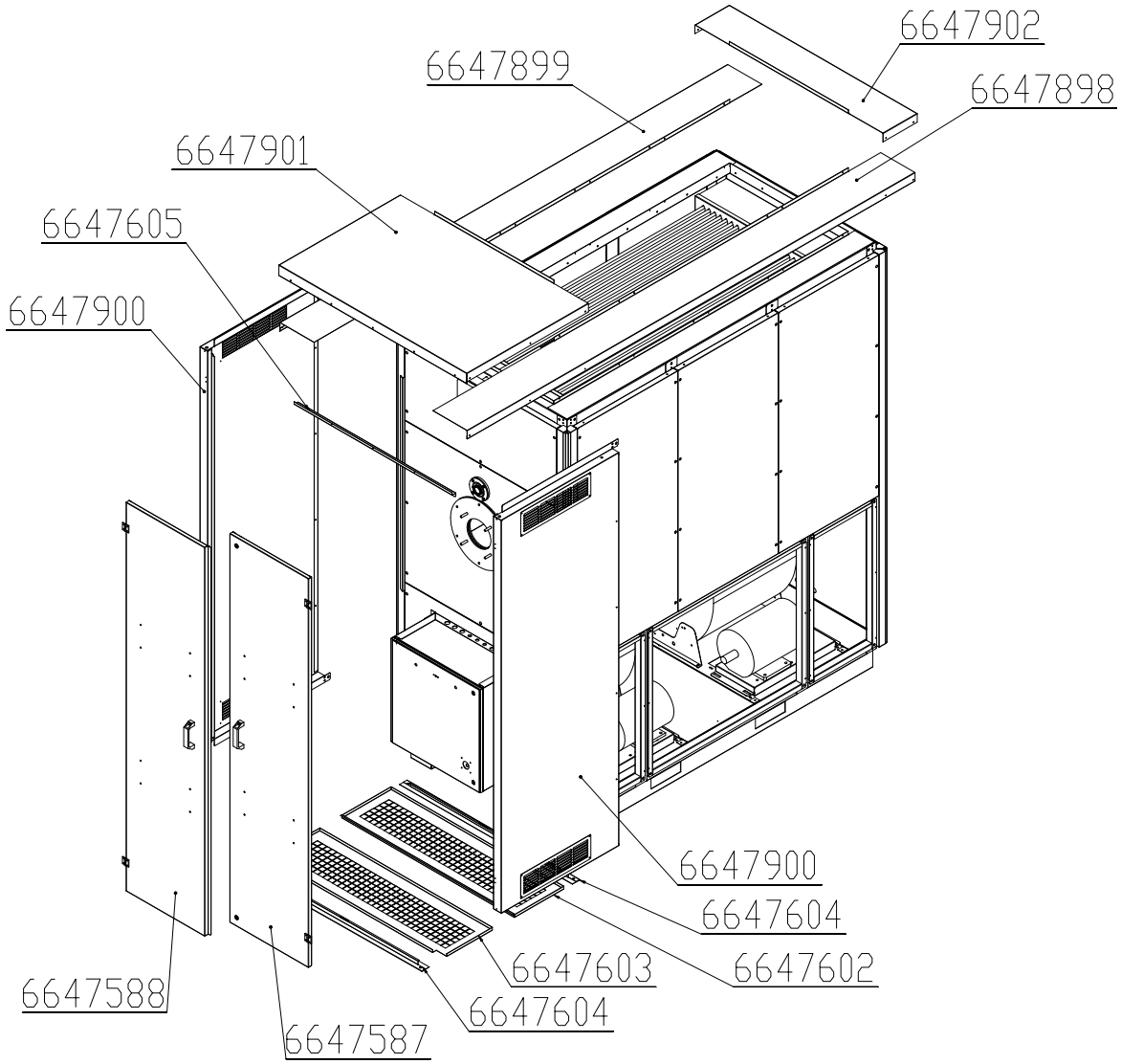


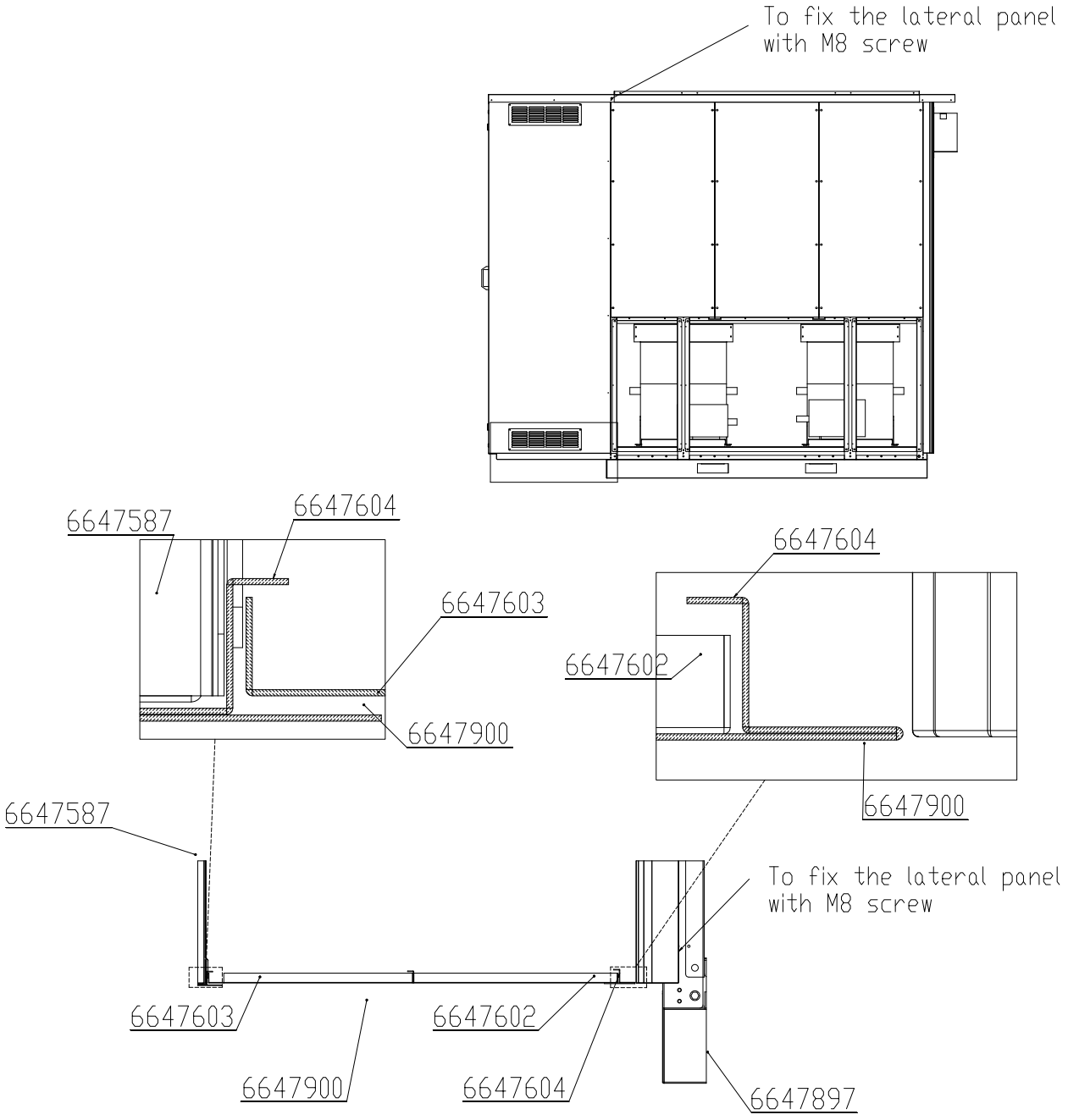

To fix the lateral panel
with M8 screw
1340
6647490
6647734
1985
2165.5
158
6647741
6647733
6647736
To fix the lateral panel
with M8 screw
6647735
6647735
6647736
6647733
6647737
6647737
6647733

3.3.5 IH/AR 250-300 VERTICAL VERSION

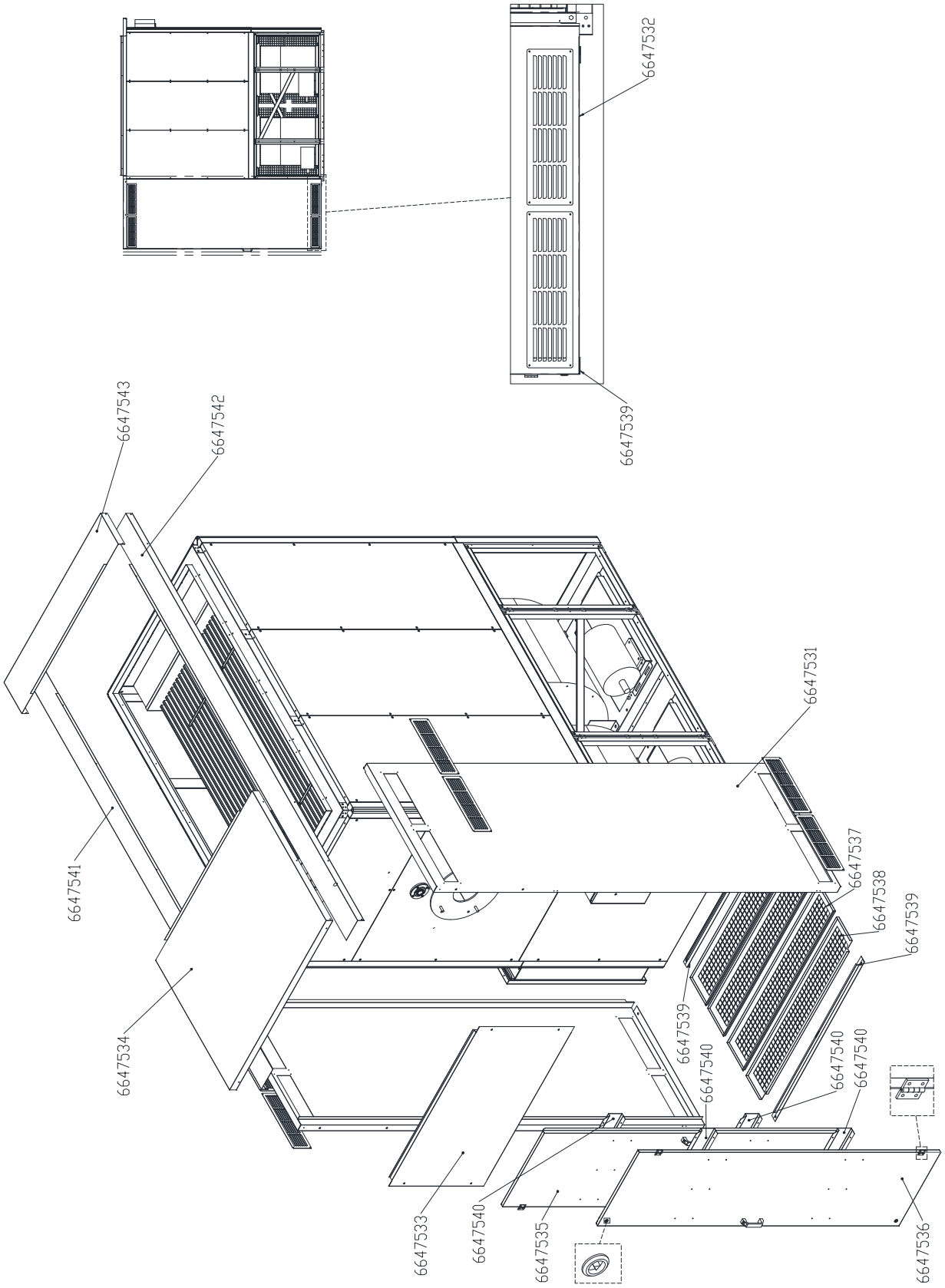


3.3.6 IH/AR 350-400 VERTICAL VERSION

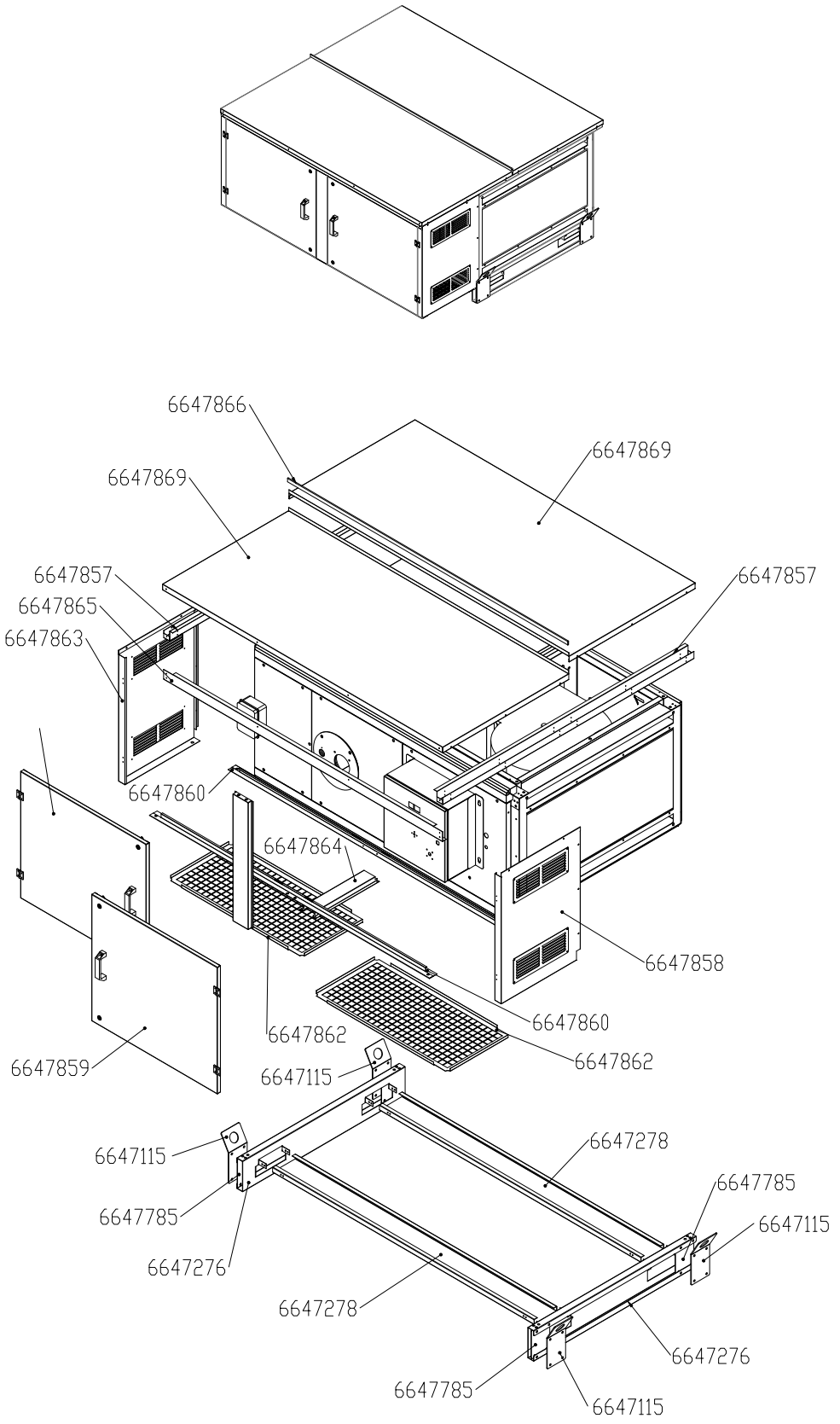



To fix the lateral panel
with M8 screw
6647587
6647604
6647603
6647900
6647604
6647602
6647900
6647587
To fix the lateral panel
with M8 screw
6647603
6647602
6647900
6647604
6647897

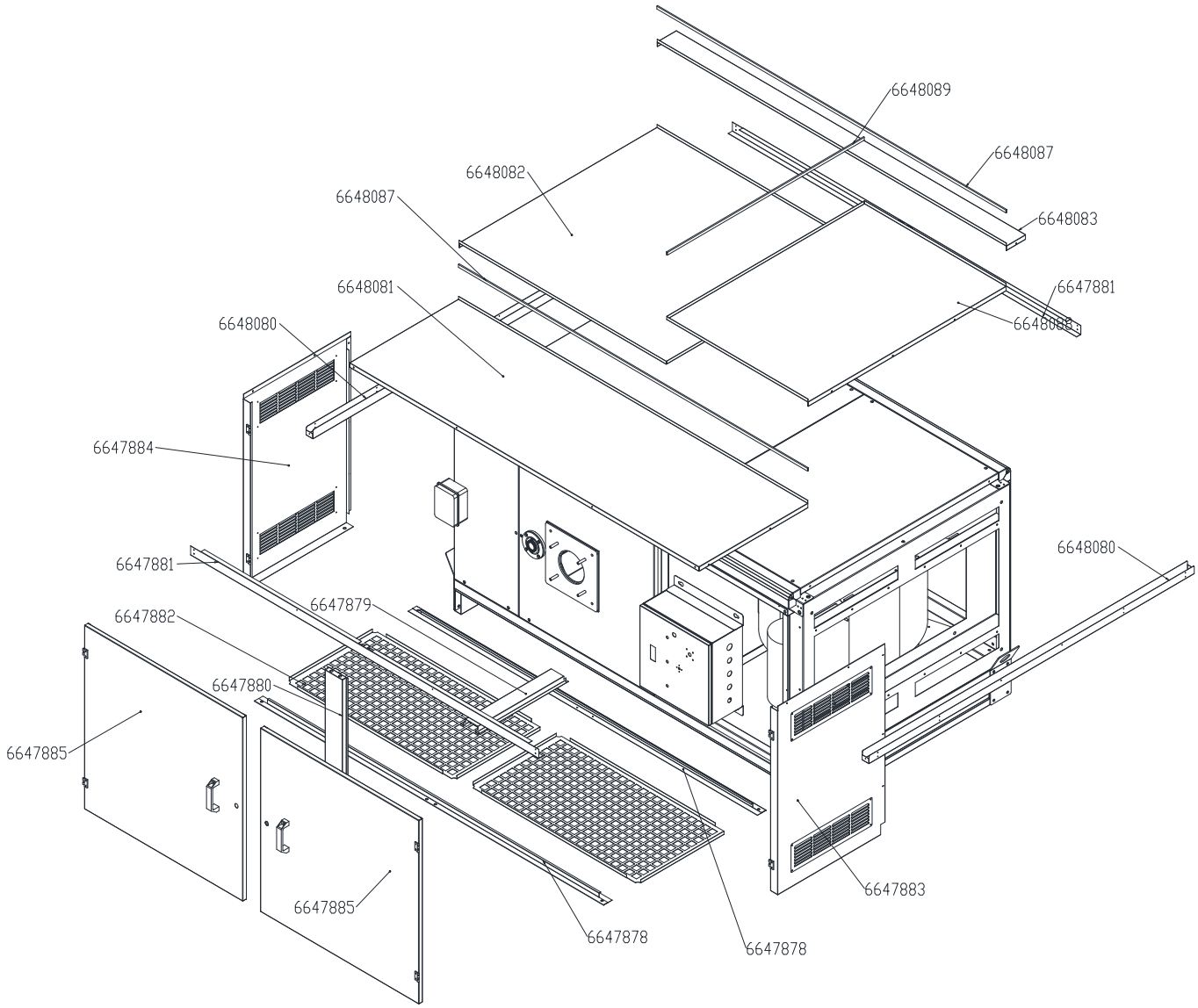
3.3.7 IH/AR 500-600 VERTICAL VERSION



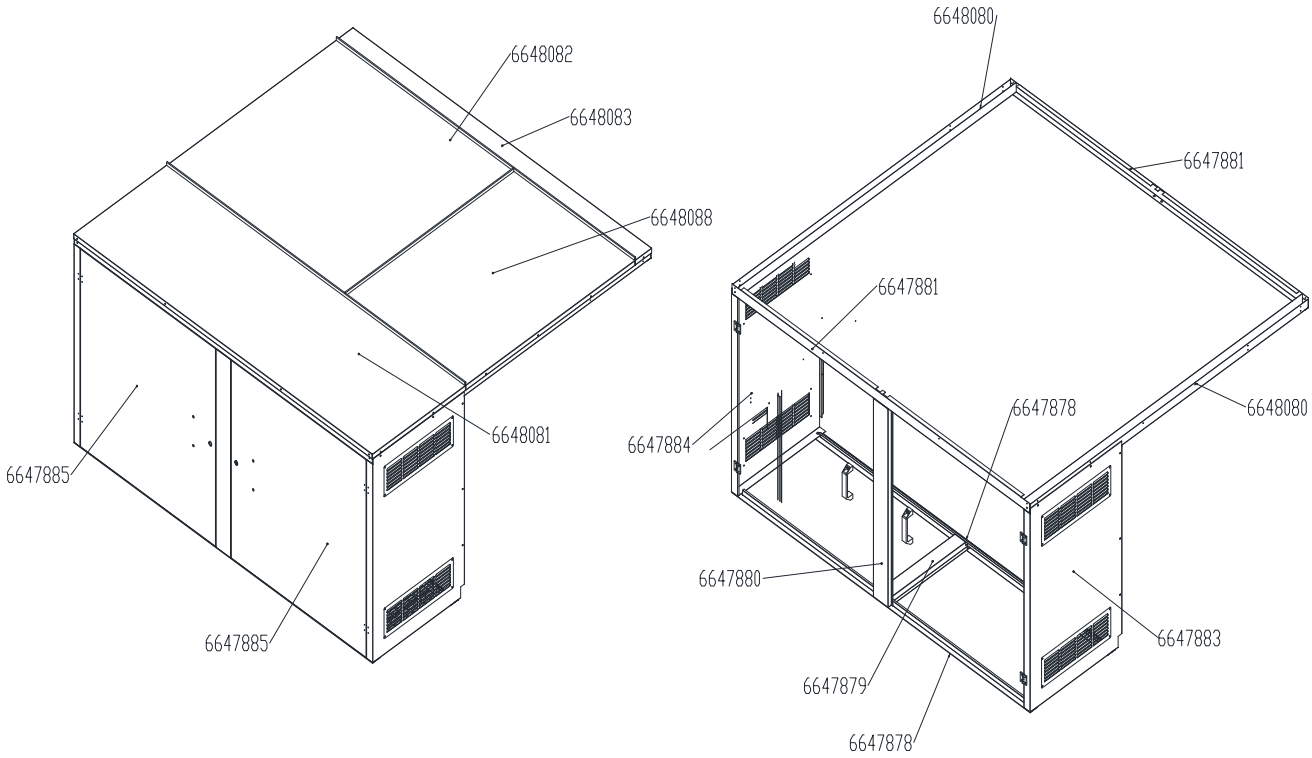
3.3.8 IH/AR 75-100 HORIZONTAL VERSION



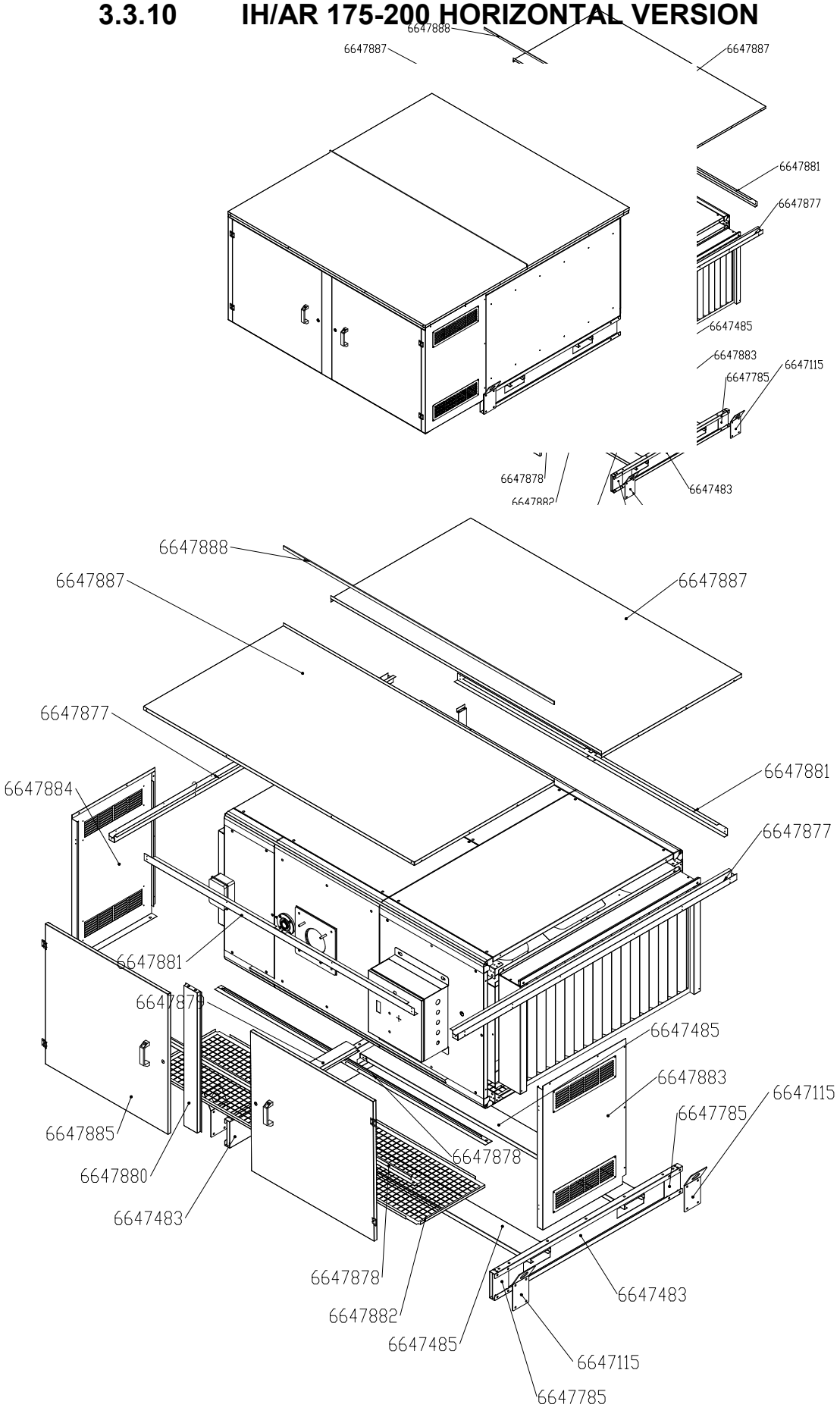
3.3.9 IH/AR 125-150 HORIZONTAL VERSION



Other details of the installation of the kit:



3.3.10 IH/AR 175-200 HORIZONTAL VERSION



4 SERVICE

4.1 WARNINGS FOR THE SERVICE CENTER

- Carefully read the warnings contained in the manual because they supply important information pertaining to the installation, use and maintenance safety.
- Before carrying out any maintenance or cleaning operations, disconnect the appliance from the electrical supply using the main switch a/o the special cut-off devices.
- Do not obstruct the air intake grills and the air discharge heads.
- Any product repair operations must be carried out only by a Service Center that is authorized by the manufacturer using original spare parts only.
- Machine safety may be compromised if the previous instructions are not respected.
- If you decide to no longer use the machine, all parts that may cause danger must be made harmless.
- Original accessories must be used for all devices with optional or kit accessories (electrical components included).

4.2 ROUTINE MAINTENANCE

A correct use and a routine maintenance are fundamental for reliable functioning and the long life of the appliance

Any operation on the machine must be carried out only when the machine is cold; the electricity must be disconnected and the fuel supply must be closed.

The following is advised:

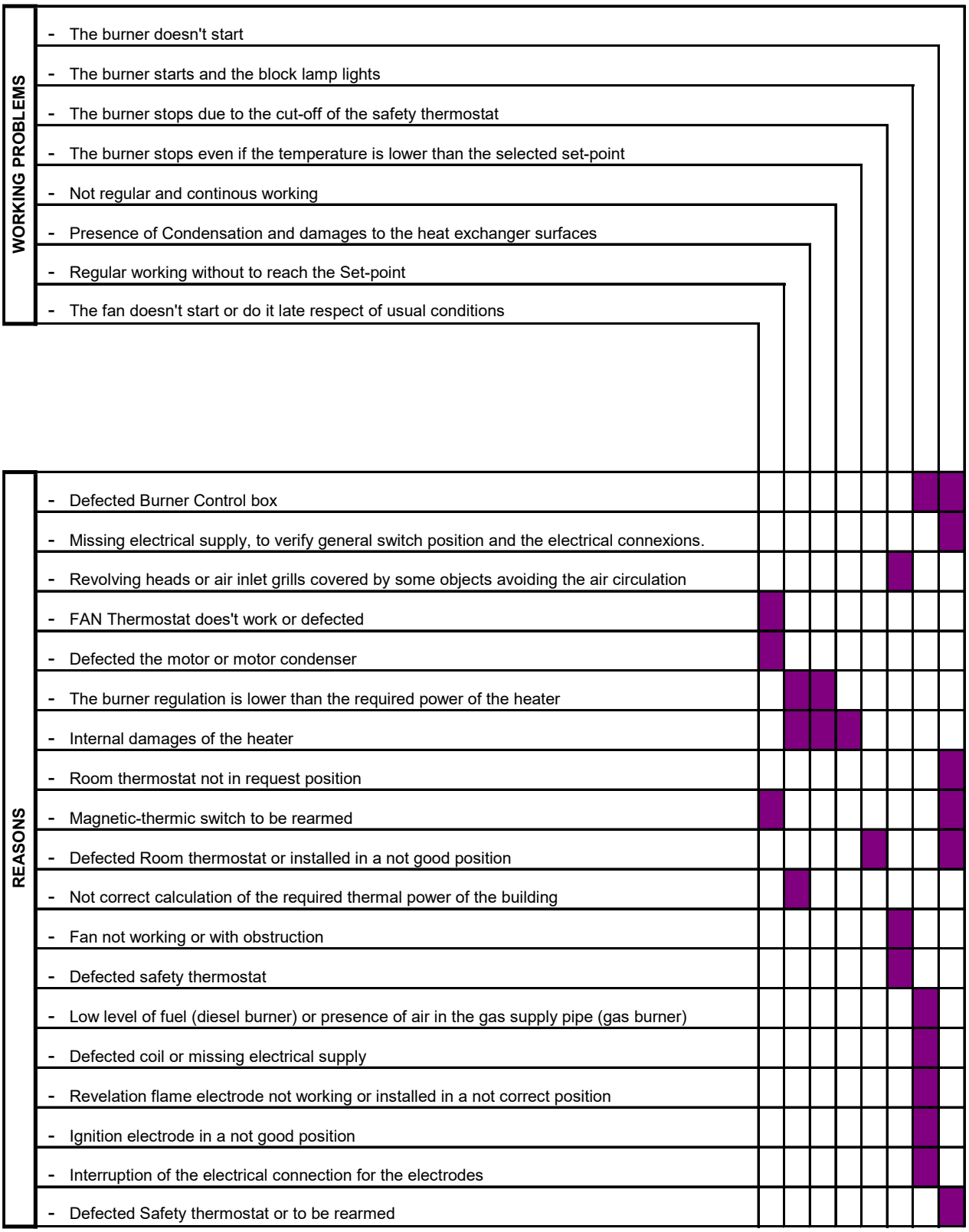
- **Never disconnect the heater from the electrical main when it is operating!** This operation, by stopping the fan, does not allow a regular cooling down of the combustion chamber that may be damaged by overheating.
- Check the burner setting periodically, examining the combustion products; a constant and good setting ensures combustible saving and environment protection.
- Check the air filter periodically; if clogged with dust, wash it with water.
- If the heater sucks in dusty air, make sure that an excessive quantity of dust has not accumulated on the fans and exchanger surfaces. If needed, use a compressed air jet to blow off the dust.
- Every year, when the installation is not being used, clean the internal exchange surfaces. All combustion deposits must be removed by means of swabbing. The exchange surfaces can be reached easily from the front through the inspection plate and from the back through the two side openings.
- Check the condition of the flue turbolators every year; if necessary replace them with new ones.
- Check the voltage of the fan unit belts periodically (**Mod 75÷1000**).
- Disconnect the heater from the electrical supply when not being used.

4.3 SETTING UP

Make sure that :

1. The electrical supply is in conformity with that indicated on the Electrical Diagram.
2. The electrical connections are carried out according to the connecting diagram shown in the Electrical Diagram.
3. The burner is adjusted to the heater flue potentiality according to that previously indicated in the identification data table.
4. The AUTOMATIC RESET FAN thermostat is adjusted to 40°C.
5. The AUTOMATIC RESET LIMIT thermostat is adjusted to 90°C.
6. The AUTOMATIC RESET SAFETY thermostat is adjusted to 100°C.
7. The rotation direction of the fan is the same as the arrow indicated on the shell.

4.4 QUICK INTERVENTION LIST



4.5 WARRANTY

The heat exchanger surfaces of the IH/AR series of industrial warm air heaters are guaranteed, starting from their billing date, with a special **Certificate of Warranty** that comes with every machine. In this certificate the conditions necessary for the Warranty to be valid are clearly indicated:

1. Installation in conformity with the regulations in force.
2. Installation, setting up, use and maintenance workmanlike performed and in conformity with the above-mentioned prescriptions.
3. No tampering or product modifications.
4. Interventions carried out by authorized personnel.

4.6 CERTIFICATE

The IH/AR warm air heaters have been certified and designed in conformity to the following European norms. Here is the EC Declaration of Conformity and an example of the plate serial number.

Blowtherm
Mark of quality

DECLARATION OF CONFORMITY

BLOWTHERM S.p.a.
Via G. Reni, 5 - 35134 PADOVA Italia
Tel 049 601600 Fax 0498644915 · http//www.blowtherm.com · e-mail:info@blowtherm.com

declare that the products
Floor standing industrial warm air heaters, type:

IH/AR 30 ÷ IH/AR 40 ÷ IH/AR 50 ÷ IH/AR 75 ÷ IH/AR 100 ÷ IH/AR 125
IH/AR 150 ÷ IH/AR 175 ÷ IH/AR 200 ÷ IH/AR 250 ÷ IH/AR 300 ÷ IH/AR 350
IH/AR 400 ÷ IH/AR 500 ÷ IH/AR 600 ÷ IH/AR 750 ÷ IH/AR 1000

has been designed and manufactured in compliance with the prescriptions of the following EC Directives:

Directive machinery CEE	**2006/42/UE**
Directive EMC CEE	**2014/30/UE**
Directive low voltage CEE	**2014/35/UE**
Gas Appliances Regulation	**2016/426/UE**
Eco Design Directive	**2009/125/UE**
ErP Regulation	**2016/2281/UE**

ErP
Energy Related Product

has been designed and manufactured in compliance with the standards:

EN1020:2009
2017/C 229/01
EN60335□1
EN60335□2□102

Declares that the product aforesaid is conforming to the model that has gotten, in conformity to the 2016/426/UE Gas Appliances Regulation, the certification CE - **PIN 1312CU6373** released from:
CERTIGAZ - 8 Rue de l'Hôtel de ville, 92200 Neuilly-sur-Seine, France
Notified Organism CE 1312

CE

Padova **16th of May 2019**

The Legal Rapresentantive

Blowtherm S.p.A.
Head Office: Via G. Reni, 5 - 35134 Padova (Italy) - Tel. +39/049 601600 (r.a.) - Fax +39/049 8644915
e-mail : info@blowtherm.com - **www.blowtherm.com**

Società soggetta all'attività di direzione e coordinamento da parte di Gemap S.p.A. con Socio Unico C.C.I.A.A. R.E.A Padova 177255
Registro Imprese Padova – Codice Fiscale e Partita IVA 01075700284 Capitale Sociale € 624.000,00 i.v.

Serial plate number of the heater:

Blowtherm® Via Borgo Padova 89
35012 Camposampiero (PD) - Italy - EC

CE

PIN:

Codice	Modello		Ordine
Matricola N°	Anno		
Categoria di apparecchio	Tipo di apparecchio		
Portata termica		Garanzia	Messa in funzione
Potenza termica nominale			
Efficienza utile a Pnom			
Potenza termica minima		Richiesta ricambi 1	Richiesta assistenza 1
Efficienza utile a Pmin			
Alimentazione elettrica			
Potenza elettica - Assorbimento		Richiesta ricambi 2	Richiesta assistenza 2
Efficienza energetica stagionale	IP40		
Paese di destinazione			
Distributore autorizzato Blowtherm		Richiesta ricambi 3	Richiesta assistenza 3