Напольные конденсационные котлы GIAVA KRB

Технические характеристики

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2. TECHNICAL FEATURES AND DIMENSIONS

Technical features

The boiler is equipped with a built-in fully pre-mixed gas burner, condensing heat exchanger and single coil water heater. The following models are available:

- **KRB 12** - Condensing boiler with single coil water heater, 12 kW heat input.
- **KRB 24** - Condensing boiler with single coil water heater, 23.7 kW heat input.
- **KRB 28** - Condensing boiler with single coil water heater, 26.4 kW heat input.
- **KRB 32** - Condensing boiler with single coil water heater, 30.4 kW heat input.
- **KRBS 12 V** - Condensing boiler with single coil water heater, 12 kW heat input. Version preset for connection to a high-temperature and a low-temperature zone.
- **KRBS 24 V** - Condensing boiler with single coil water heater, 23.7 kW heat input. Version preset for connection to a high-temperature and a low-temperature zone.
- **KRBS 28 V** - Condensing boiler with single coil water heater, 26.4 kW heat input. Version preset for connection to a high-temperature and a low-temperature zone.
- **KRBS 32 V** - Condensing boiler with single coil water heater, 30.4 kW heat input. Version preset for connection to a high-temperature and a low-temperature zone.
- **KRBS 12 Z** - Condensing boiler with single coil water heater, 12 kW heat input. Version preset for connection to a high-temperature zone and two low-temperature zones.
- **KRBS 24 Z** - Condensing boiler with single coil water heater, 23.7 kW heat input. Version preset for connection to a high-temperature zone and two low-temperature zones.
- **KRBS 28 Z** - Condensing boiler with single coil water heater, 26.4 kW heat input. Version preset for connection to a high-temperature zone and two low-temperature zones.
- **KRBS 32 Z** - Condensing boiler with single coil water heater, 30.4 kW heat input. Version preset for connection to a high-temperature zone and two low-temperature zones.

The boilers meet local applicable Directives enforced in the country of destination, which are stated on their rating plate. Installation in any other country may be a source of danger for people, animals and property.

The key technical features of the boilers are listed below.

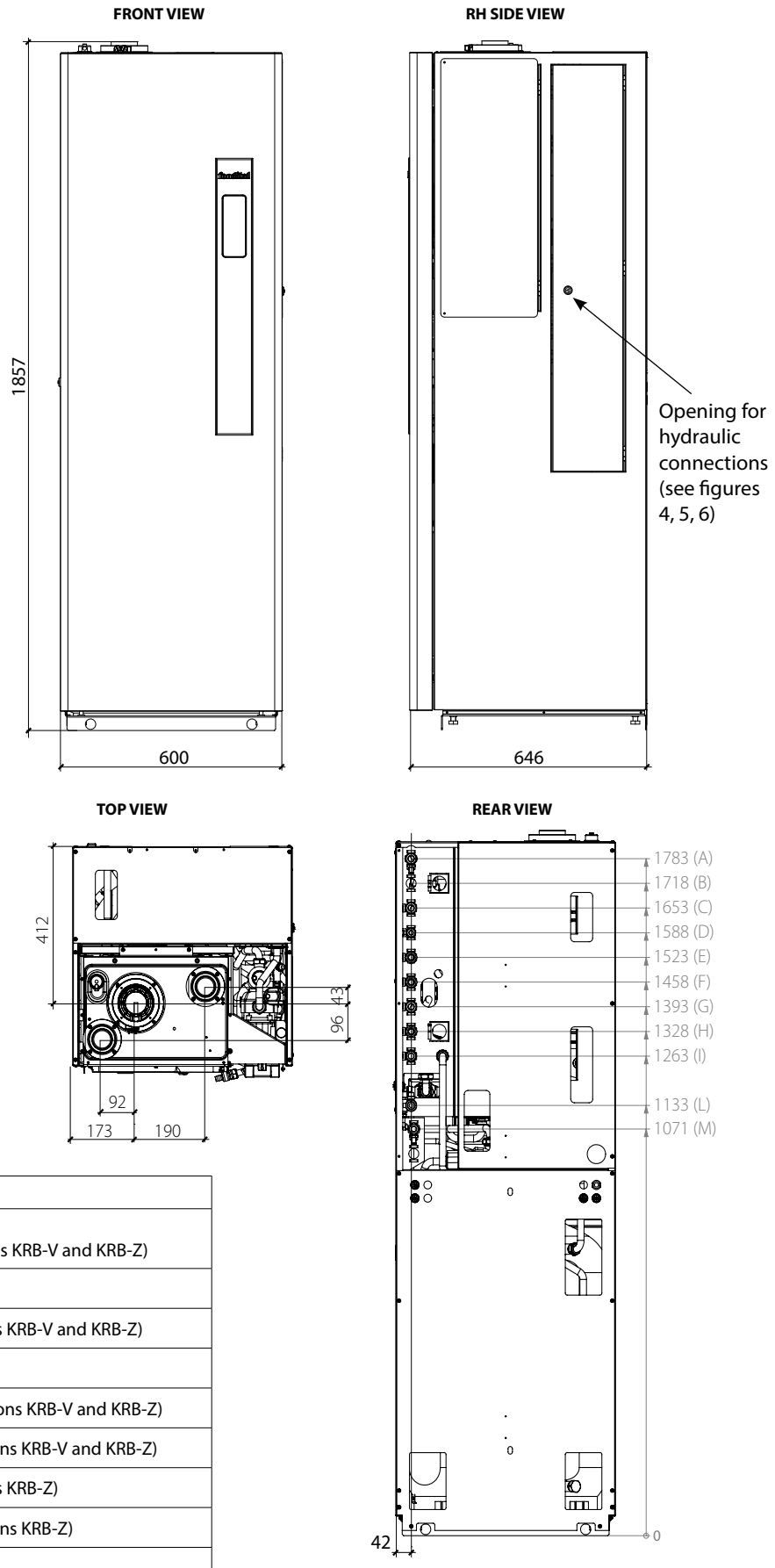
Manufacturing characteristics:
- IPX5D electrically protected control panel;
- Integrated, modulating electronic safety board;
- Electronic start-up with igniter and ionisation flame detection;
- Stainless steel, fully pre-mixed burner;
- Mono-thermal, high efficiency, composite and stainless steel heat exchanger with air purging device;
- Twin shutter modulating gas valve with constant air/gas ratio;
- Modulating, electronically managed combustion fan;
- 3-speed CH circulation pump with built-in air purging device;
- CH pressure sensor;
- Hydraulic separator, mixing valves and circulation pumps for high- and low-temperature outlets **(V and Z versions);**
- CH water temperature probe, DHW temperature probe, water heater temperature probe;
- Safety limit thermostat on low-temperature flow zones;
- Double safety probe on CH flow;
- Flue gas thermostat on discharge tower;
- Flue gas probe on primary heat exchanger;
- Integrated, automatic by-pass;
- 10-litre CH expansion vessel, 5-litre DHW expansion vessel;
- CH system filling and draining cocks;
- Water heater discharge cock;
- CH 3-bar safety valve;
- DHW 6-bar safety valve;
- CH motorised deviating valve;

User interface
- Touch interface with built-in LCD to display and control boiler operating condition: OFF, WINTER, SUMMER and CH ONLY;
- CH water temperature regulator: 20/78 °C (standard range) – 20/45 °C (reduced range);
- DHW temperature regulator on the control panel: 35/65 °C.

Operating features

- CH electronic flame modulation with timer-controlled rising ramp (60 seconds, adjustable);
- Electronic flame modulation in DHW mode;
- DHW priority function;
- Flow freeze protection function: ON 5°C; OFF 30°C or after 15 minutes of operation if CH temperature > 5 °C;
- DHW freeze protection function: ON 5°C; OFF 10 °C or after 15 minutes of operation if DHW temperature > 5 °C;
- Ambient probe freeze protection function: ON at 5 °C; OFF at 6 °C;
- Timer-controlled flue cleaning function: 15 minutes;
- Ignition flame propagation function;
- Possibility to select the heating range: standard or reduced;
- CH maximum heat input parameter adjustment;
- Ignition heat input adjustment parameter;
- CH thermostat timer: 240 seconds (adjustable);
- CH pump post-circulation function, freeze protection and flue cleaning modes: 30 seconds (adjustable);
- DHW post-circulation function: 30 seconds;
- Post-circulation function for CH water temperature > 78 °C: 30 seconds;
- Post-ventilation function: at the end of each operation request, the fan continues to operate for 10 seconds;
- Safety post-ventilation function: with flow temperature > 95 °C, the fan is activated until the flow temperature drops below 90 °C;
- CH pump and deviating valve anti-shutdown function: 30 seconds of operation every 24 hours with boiler not in use;
- Anti-shutdown function for zone pumps and mixing valve (the latter for **V and Z versions only**): 10 seconds of operation every 24 hours with boiler not in use;
- Anti-water hammer function: can be set from 0 to 10 seconds through parameter P15;
- High- and low-temperature zone CH system supply **(V and Z versions)**;
- Ready for chronothermostat function on the boiler, in combination with two ambient probes;
- Ready for operation with an OpenTherm remote control (optional, supplied by the manufacturer).
- Ready for operation with external temperature probe (standard on V and Z versions, optional on all other versions).

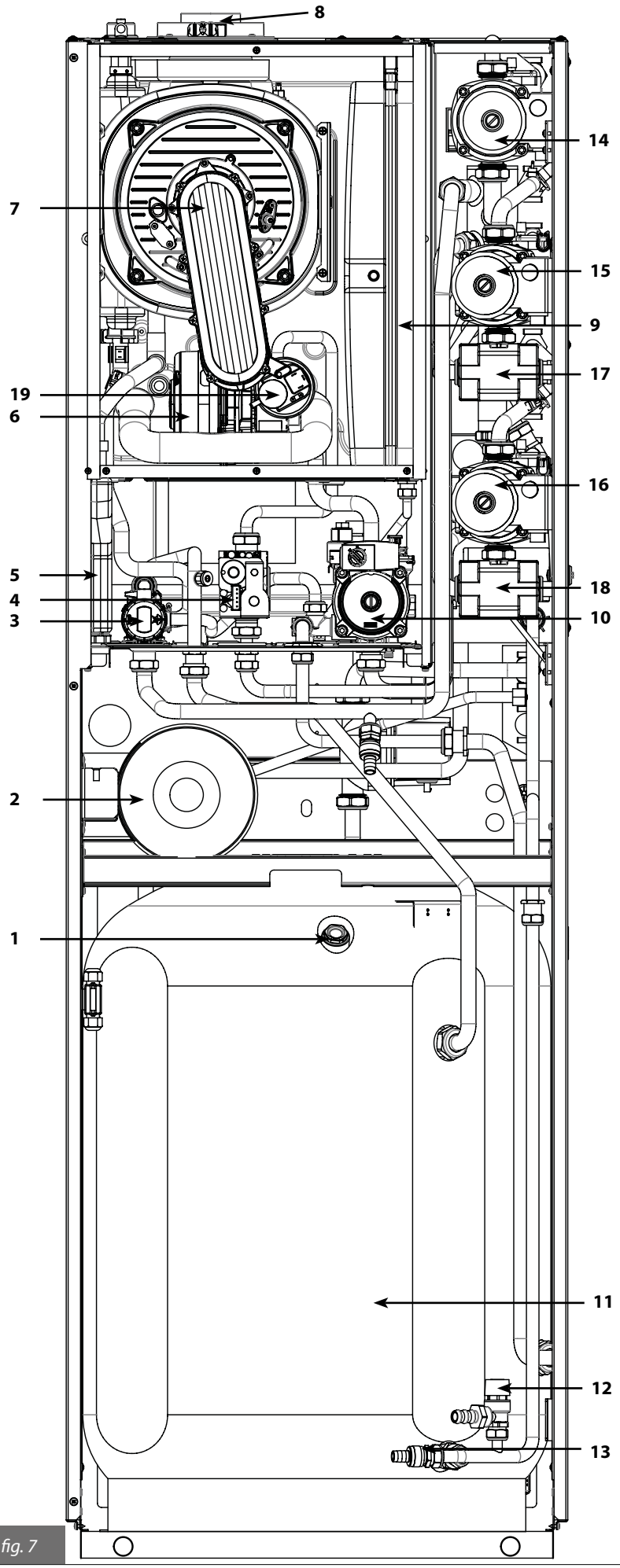
Dimensions



Connessione		Descrizione
A	**¾"**	CH flow (version KRB) High-temperature CH flow zone 1 (versions KRB-V and KRB-Z)
B	**¾"**	CH Return (versione KRB)
C	**¾"**	Low-temperature CH flow zone 2 (versions KRB-V and KRB-Z)
D	**½"**	Gas
E	**¾"**	High-temperature CH return zone 1 (versions KRB-V and KRB-Z)
F	**¾"**	Low-temperature CH return zone 2 (versions KRB-V and KRB-Z)
G	**¾"**	Low-temperature CH flow zone 3 (versions KRB-Z)
H	**¾"**	Low-temperature CH return zone 3 (versions KRB-Z)
I	**¾"**	DHW outlet
L	**½"**	Cold water inlet
M	**¾"**	Recirculation pump (optional)

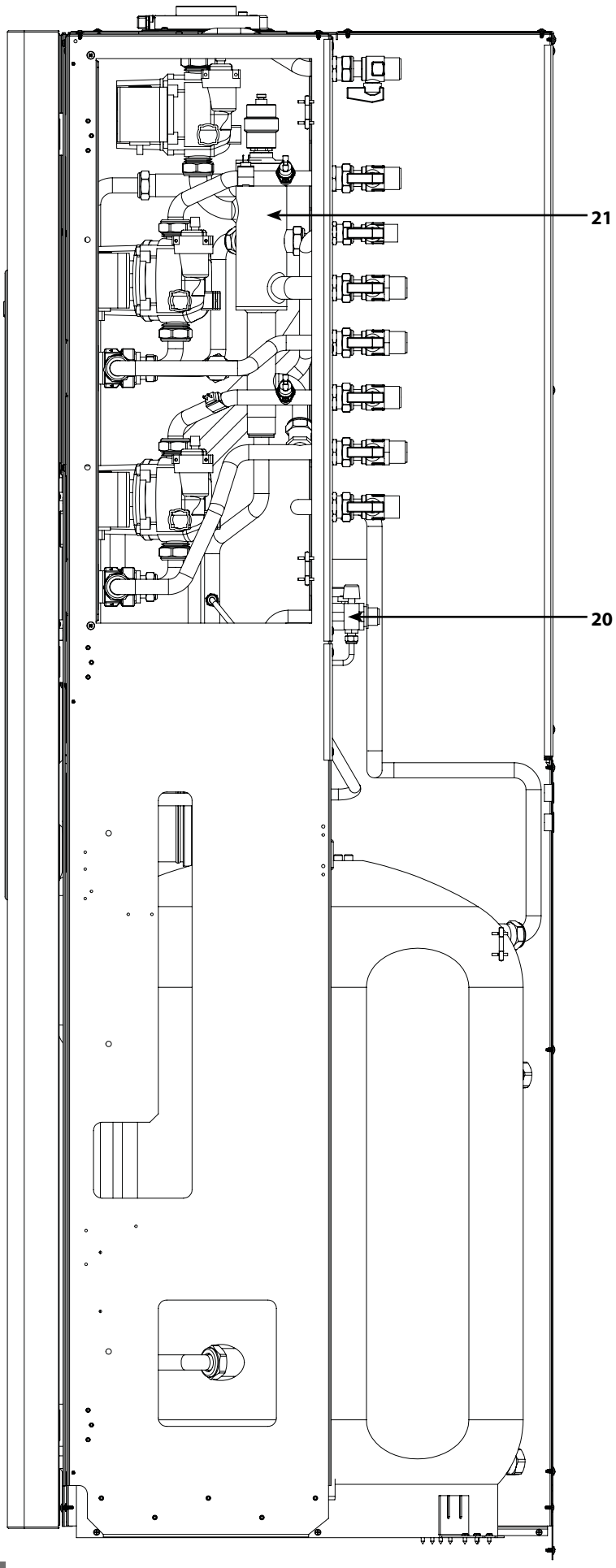
fig. 3

Key components



Ref. no.	Description
1	Water heater protective anode
2	DHW expansion vessel
3	Motorised 3-way deviating heating valve
4	Gas valve
5	Condensate trap
6	Modulating fan
7	Pre-mixed burner
8	Flue gas discharge tower
9	10 litre CH expansion vessel
10	CH pump
11	130-litre water heater
12	DHW 6-bar safety valve
13	System discharge cock
14	Zone 1 high-temperature pump (V and Z versions)
15	Zone 2 low-temperature pump (V and Z versions)
16	Low-temperature pump (Z versions)
17	Zone 2 low-temperature mixing valve (V and Z versions)
18	Zone 3 low-temperature mixing valve (Z versions)
19	Air pressure switch

fig. 7



Ref. no.	Description
20	CH system filler cock
21	Hydraulic separator

fig. 8

Operating data

Burner pressures reported in the following page must be verified after the boiler has been operating for 3 minutes.

KRB 12

Type of gas	CH max. heat input [kW]	CH heat output (80-60°C) [kW]		CH heat output (50-30°C) [kW]		DHW heat output [kW]		Gas mains pressure [mbar]	Nozzle [mm/100]	Diaphragm diameter [mm]	CO_2 values of the flue gas [%]
		min.	max.	min.	max.	min.	max.				
Methane gas G20	12.0	1.8	11.7	2.1	12.6	1.8	17.5	20	3.05	-	9 ÷ 9.3
Propane Gas G31	12.0	1.8	11.7	2.1	12.6	1.8	17.5	37	2.50	-	10 ÷ 10.3

Table 4 – KRB 12 model adjustment rates

KRB 24

Type of gas	CH max. heat input [kW]	CH heat output (80-60°C) [kW]		CH heat output (50-30°C) [kW]		DHW heat output [kW]		Gas mains pressure [mbar]	Nozzle [mm/100]	Diaphragm diameter [mm]	CO_2 values of the flue gas [%]
		min.	max.	min.	max.	min.	max.				
Methane gas G20	23.7	2.6	23.0	3.2	25.0	2.7	26.8	20	3.7	-	9 ÷ 9.3
Propane Gas G31	23.7	2.6	23.0	3.2	25.0	2.7	26.8	37	3.0	-	10

Table 5 – KRB 24 model adjustment rates

KRB 28

Type of gas	CH max. heat input [kW]	CH heat output (80-60°C) [kW]		CH heat output (50-30°C) [kW]		DHW heat output [kW]		Gas mains pressure [mbar]	Nozzle [mm/100]	Diaphragm diameter [mm]	CO_2 values of the flue gas [%]
		min.	max.	min.	max.	min.	max.				
Methane gas G20	26.4	3.0	25.5	3.5	28.0	3.0	29.3	20	4.0	-	9 ÷ 9.3
Propane Gas G31	26.4	3.0	25.5	3.5	28.0	3.0	29.3	37	3.3	-	10 ÷ 10.3

Table 6 – KRB 28 model adjustment rates

KRB 32

Type of gas	CH max. heat input [kW]	CH heat output (80-60°C) [kW]		CH heat output (50-30°C) [kW]		DHW heat output [kW]		Gas mains pressure [mbar]	Nozzle [mm/100]	Diaphragm diameter [mm]	CO_2 values of the flue gas [%]
		min.	max.	min.	max.	min.	max.				
Methane gas G20	30.4	3.9	29.4	4.4	32.3	3.9	33.4	20	4.45	-	9.0 ÷ 9.3
Propane Gas G31	30.4	3.9	29.4	4.4	32.3	3.9	33.4	37	3.55	7.2	10

Table 7 – KRB 32 model adjustment rates

General Characteristics

		KRB 12	KRB 24	KRB 28	KRB 32
Device category	-	II2H3P	II2H3P	II2H3P	II2H3P
CH system max. and min. pressure	bar	3.0 - 0.5	3.0 - 0.5	3.0 - 0.5	3.0 - 0.5
DHW system max. and min. pressure	bar	6.0 - 0.5	6.0 - 0.5	6.0 - 0.5	6.0 - 0.5
Specific flow rate ΔT = 30 °C - EN 625	l/10'	195	220	225	234
DHW production rating - EN 13203-1		★★★	★★★	★★★	★★★
Draw capacity for 10 min. - EN 13203-1	l/min	17.5	20.3	21.5	21.3
Cocks - EN 13203-1	1..4	3	4	4	4
Power supply: Voltage ~ Frequency	V ~ Hz	230 ~ 50	230 ~ 50	230 ~ 50	230 ~ 50
Power mains supply fuse	A	3.15	3.15	3.15	3.15
Power absorption (version without zones)	W	107	115	117	126
Power absorption (version V)	W	283	292	294	302
Power absorption (version Z)	W	387	395	398	406
Stand-by power absorption (version without zones)	W	2.5	2.5	2.5	2.5
Stand-by power absorption (version V)	W	3.5	3.2	3.5	3.5
Stand-by power absorption (version Z)	W	4.5	4.2	4.5	4.5
Pump absorption in CH mode (version without zones)	W	73	73	73	73
Pump absorption in CH mode (V version)	W	245	245	245	245
Pump absorption in CH mode (Z version)	W	343	343	343	343
Electric protection rating	IP	X5D	X5D	X5D	X5D
Total boiler weight (*)	Kg.	165	166	167	168
Methane gas consumption at maximum CH output (*)	m^3/h	1.27	2.51	2.79	3.22
Propane gas consumption at maximum CH output (*)	Kg/h	0.93	1.84	2.05	2.36
Maximum CH working temperature	°C	78 + 5	78 + 5	78 + 5	78 + 5
Maximum DHW working temperature	°C	65	65	65	65
Heating expansion vessel total capacity	l	10	10	10	10
DHW expansion vessel total capacity	l	5	5	5	5
Maximum recommended system capacity (***)	l	200	200	200	200

Table 8 - Technical features

(*) Weight of empty water heater and boiler without optional components (high- and low-temperature heating outlet)

(**) Value referred to 15 °C - 1013 mbar

(***) Maximum water temperature 78 °C. expansion vessel pressure 1 bar

KRB 12		Max. output	Min. output	30% load
Casing heat loss with burner on	%	0.40	7.85	-
Casing heat loss with burner off	%		0.53	
Flue system heat loss with burner on	%	2.50	1.85	-
Flue system mass capacity	g/s	8.25	0.89	-
Flue gas temp. – air temp.	°C	57.9	34.5	-
Maximum heat output efficiency rating (60/80°C)	%	97.1	-	-
Maximum heat output efficiency rating (30/50°C)	%	105.1	-	-
Minimum heat output efficiency rating (60/80°C)	%	-	90.3	-
Minimum heat output efficiency rating (30/50°C)	%	-	105.0	-
30% heat output efficiency rating	%	-	-	106.0
Efficiency rating (according to 92/42/EC)	-		★★★★	
NO_x emission class	-		6	

Table 9 – Combustion specifications, model KRB 12

KRB 24		Max. output	Min. output	30% load
Casing heat loss with burner on	%	0.44	984	-
Casing heat loss with burner off	%		0.21	
Flue system heat loss with burner on	%	2.72	2.02	-
Flue system mass capacity	g/s	12.43	1.33	-
Flue gas temp. – air temp	°C	61	33	-
Maximum heat output efficiency rating (60/80°C)	%	96.8	-	-
Maximum heat output efficiency rating (30/50°C)	%	105.6	-	-
Minimum heat output efficiency rating (60/80°C)	%	-	88.1	-
Minimum heat output efficiency rating (30/50°C)	%	-	106.9	-
30% heat output efficiency rating	%	-	-	107.4
Efficiency rating (according to 92/42/EC)	-		★★★★	
NO_x emission class	-		6	

Table 10 - Combustion specifications, model KRB 24

KRB 28		Max. output	Min. output	30% load
Casing heat loss with burner on	%	1.04	6.13	-
Casing heat loss with burner off	%		0.20	
Flue system heat loss with burner on	%	2.26	1.89	-
Flue system mass capacity	g/s	13.93	1.47	-
Flue gas temp. – air temp.	°C	60	45	-
Maximum heat output efficiency rating (60/80°C)	%	96.7	-	-
Maximum heat output efficiency rating (30/50°C)	%	106.0	-	-
Minimum heat output efficiency rating (60/80°C)	%	-	92.0	-
Minimum heat output efficiency rating (30/50°C)	%	-	105.6	-
30% heat output efficiency rating	%	-	-	107.4
Efficiency rating (according to 92/42/EC)	-		★★★★	
NO_x emission class	-		6	

Table 11 – Combustion specifications, model KRB 28

KRB 32		Max. output	Min. output	30% load
Casing heat loss with burner on	%	0.87	5.10	-
Casing heat loss with burner off	%		0.19	
Flue system heat loss with burner on	%	2.33	2.00	-
Flue system mass capacity	g/s	15.81	1.87	-
Flue gas temp. – air temp	°C	60	40.5	-
Maximum heat output efficiency rating (60/80°C)	%	96.8	-	-
Maximum heat output efficiency rating (30/50°C)	%	106.2	-	-
Minimum heat output efficiency rating (60/80°C)	%	-	92.9	-
Minimum heat output efficiency rating (30/50°C)	%	-	104.8	-
30% heat output efficiency rating	%	-	-	108.3
Efficiency rating (according to 92/42/EC)	-		★★★★	
NO_x emission class	-		6	

Table 12 - Combustion specifications, model KRB 32

2.7. CH circulation pump available head

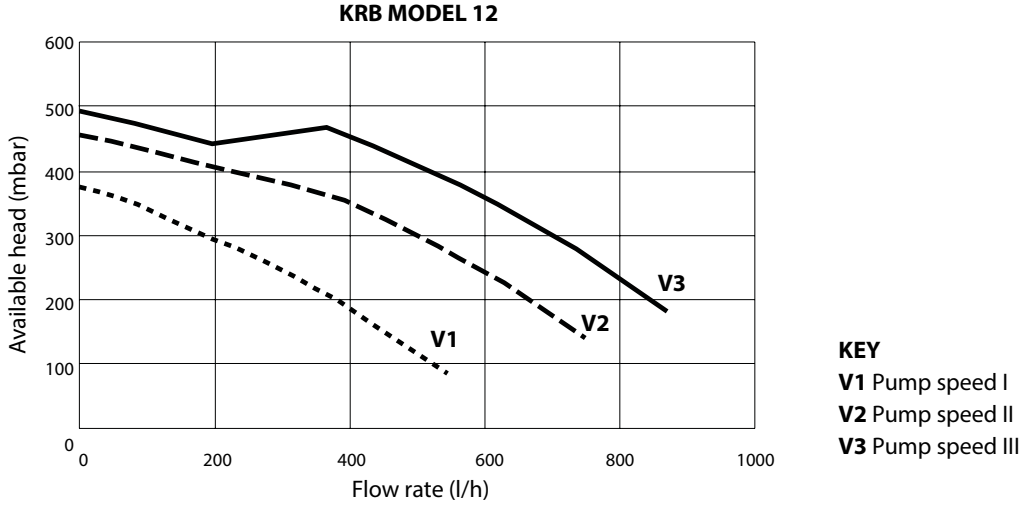
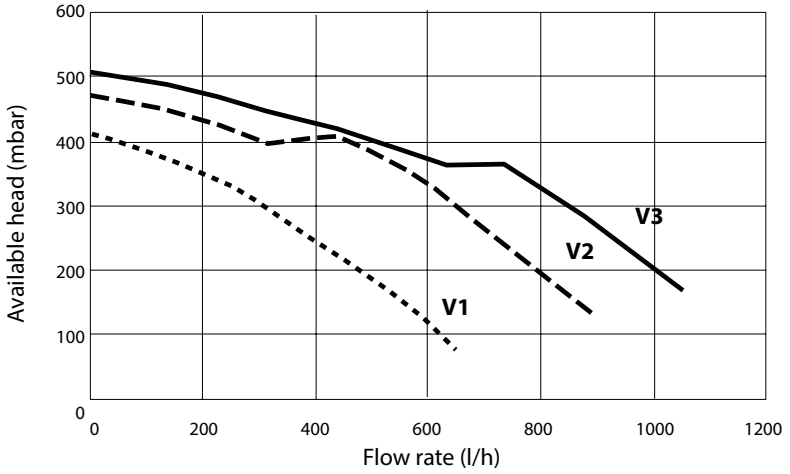


fig. 10

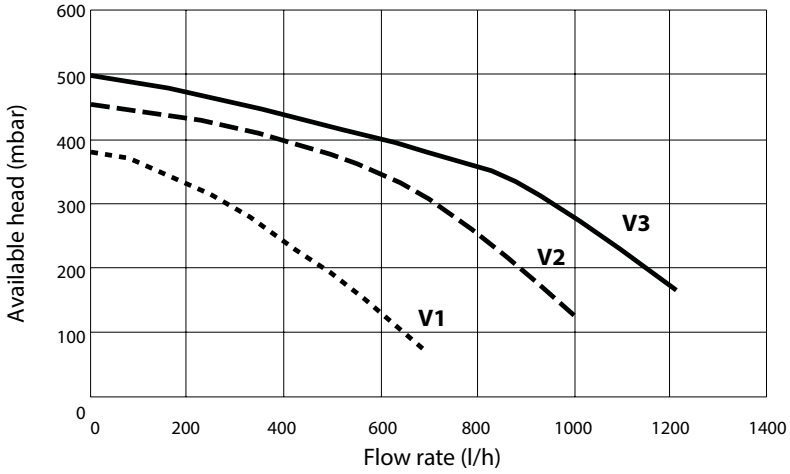
KRB MODEL 24



KEY
V1 Pump speed I
V2 Pump speed II
V3 Pump speed III

fig. 11

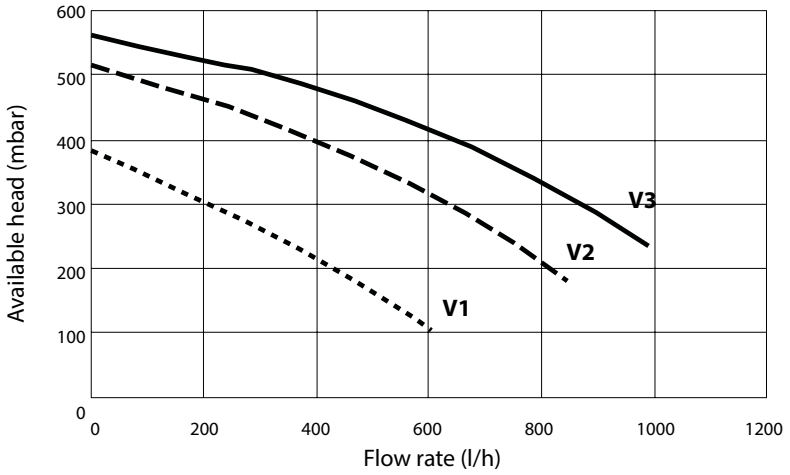
KRB MODEL 28



KEY
V1 Pump speed I
V2 Pump speed II
V3 Pump speed III

fig. 12

KRB MODEL 32



KEY
V1 Pump speed I
V2 Pump speed II
V3 Pump speed III

fig. 13

2.8. Low and high temperature circulation pump available head (V versions)

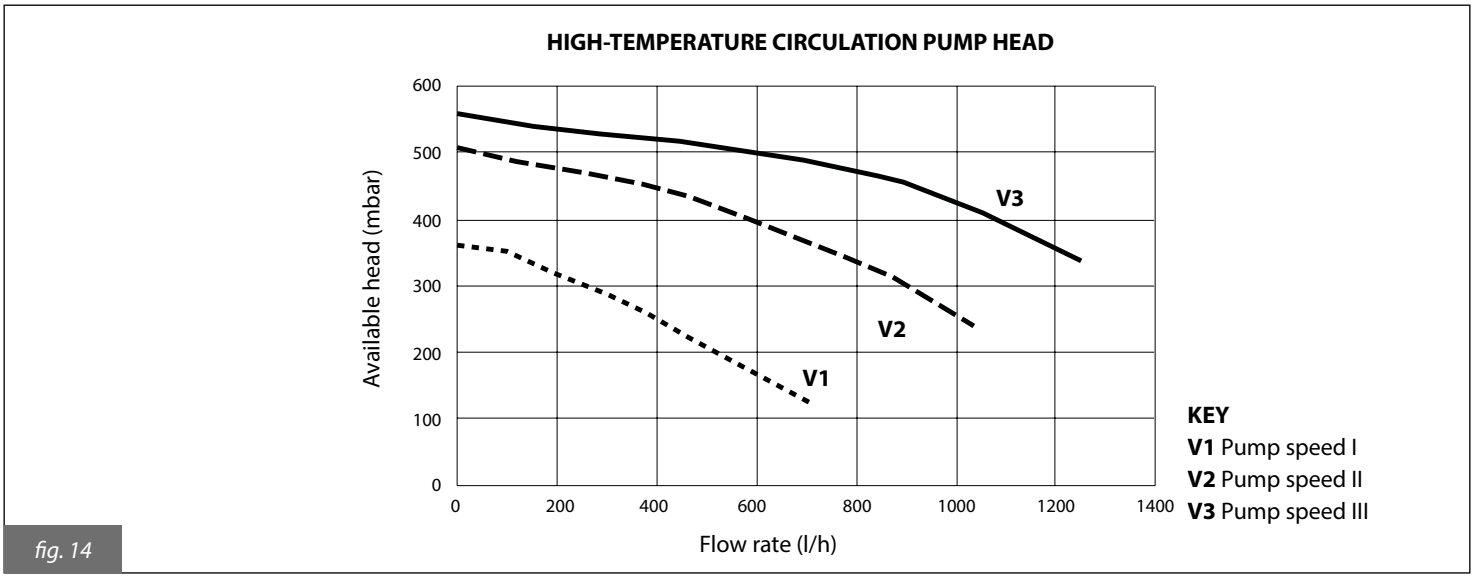


fig. 14

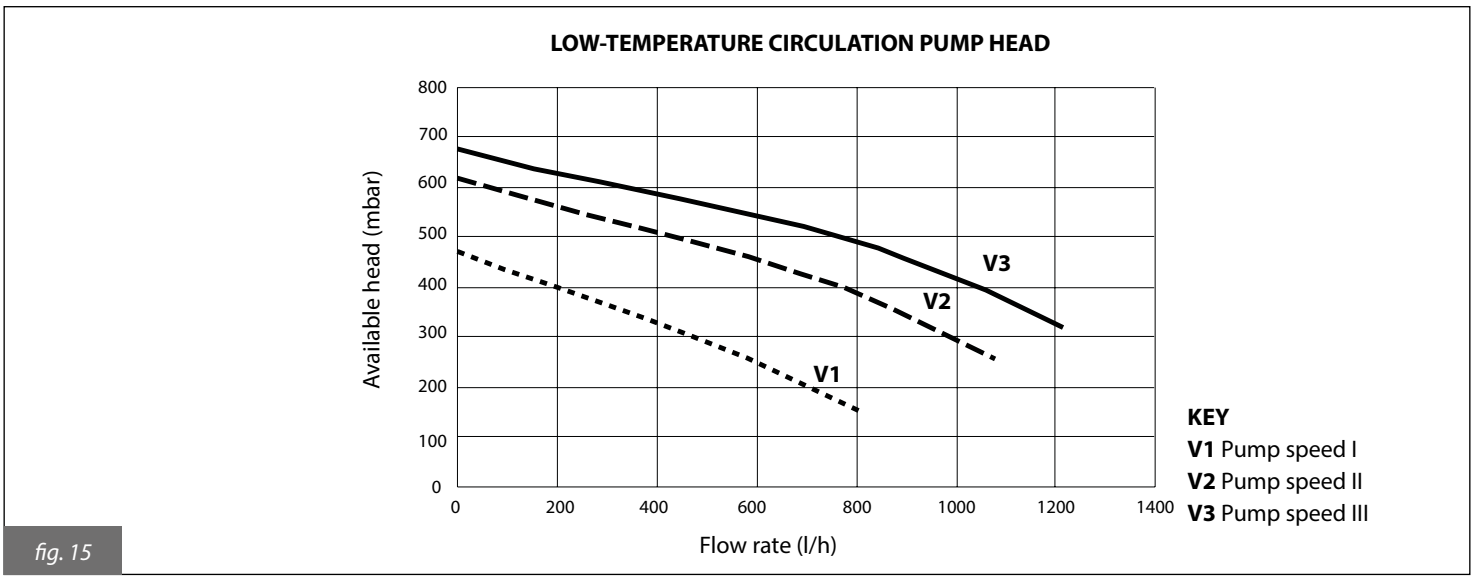


fig. 15

2.9. Low and high temperature circulation pump available head (Z versions)

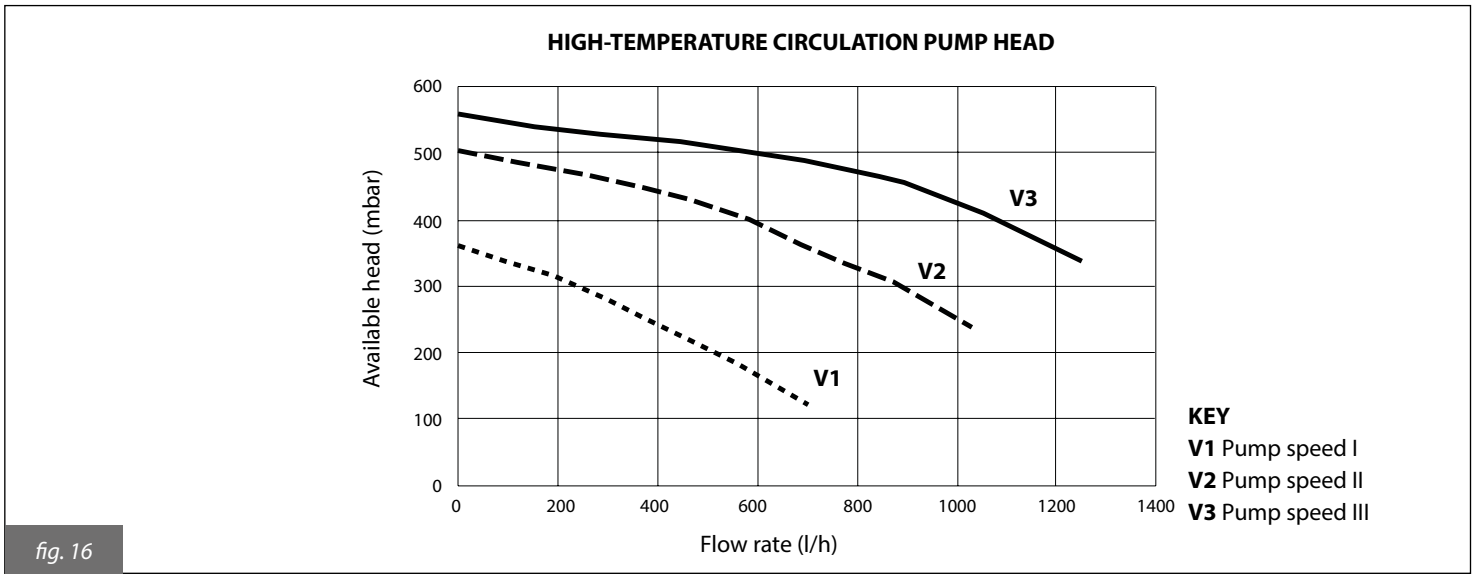
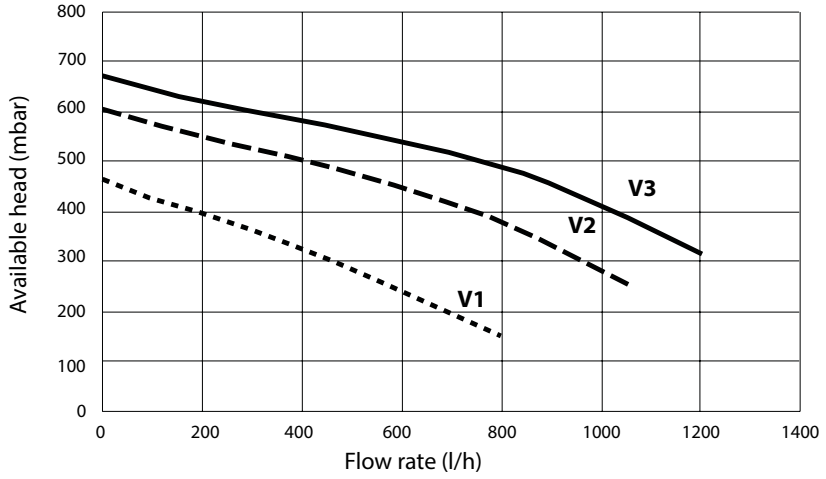


fig. 16

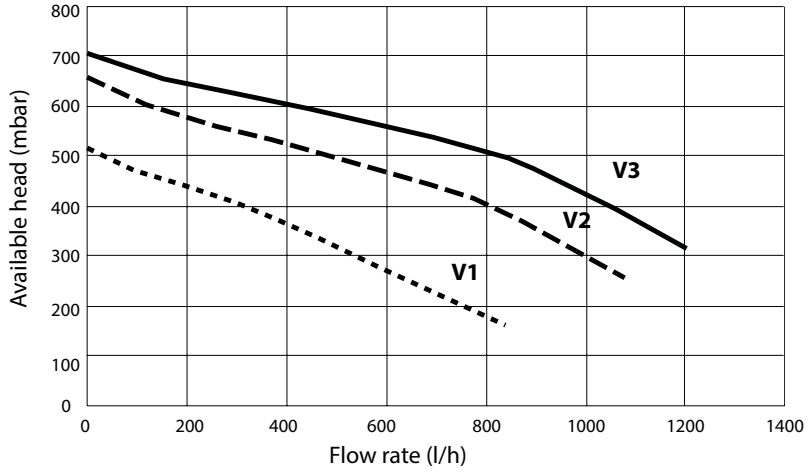
ZONE 1 LOW-TEMPERATURE CIRCULATION PUMP HEAD



KEY
V1 Pump speed I
V2 Pump speed II
V3 Pump speed III

fig. 17

ZONE 2 LOW-TEMPERATURE CIRCULATION PUMP HEAD



KEY
V1 Pump speed I
V2 Pump speed II
V3 Pump speed III

fig. 18

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