Quadrifoglio B

Steel condensing module for cascading systems

Ferroli

> DESIGNED WITH EXPERIENCE, METICULOUSLY MANUFACTURED

The **QUADRIFOGLIO B** series heat generators are the synthesis of the Ferroli Group's decades' long experience in the steel boiler business, and its know-how acquired in condensing heating system technology.

The technical features underlying the design of the **QUADRIFOGLIO B** allow designers to select from a wide range of system solutions, choosing either one single boiler or a series of appliances operating in a cascade.

> RANGE

model 70
WITH 65.5 KW HEAT INPUT

model 125
WITH 116 KW HEAT INPUT

model 220
WITH 207 KW HEAT INPUT

model 320
WITH 299 KW HEAT INPUT

QUADRIFOGLIO B IN BRIEF

INDOOR — Suitable only for **indoor** operation

REMOTE — **Remote control** (ROMEO) for setting boiler parameters

STAINLESS STEEL — **Patented** exchanger in **AISI 316 Ti stainless steel**

MODULAR — Electronics features built-in **master-slave cascade** operation, without additional controllers

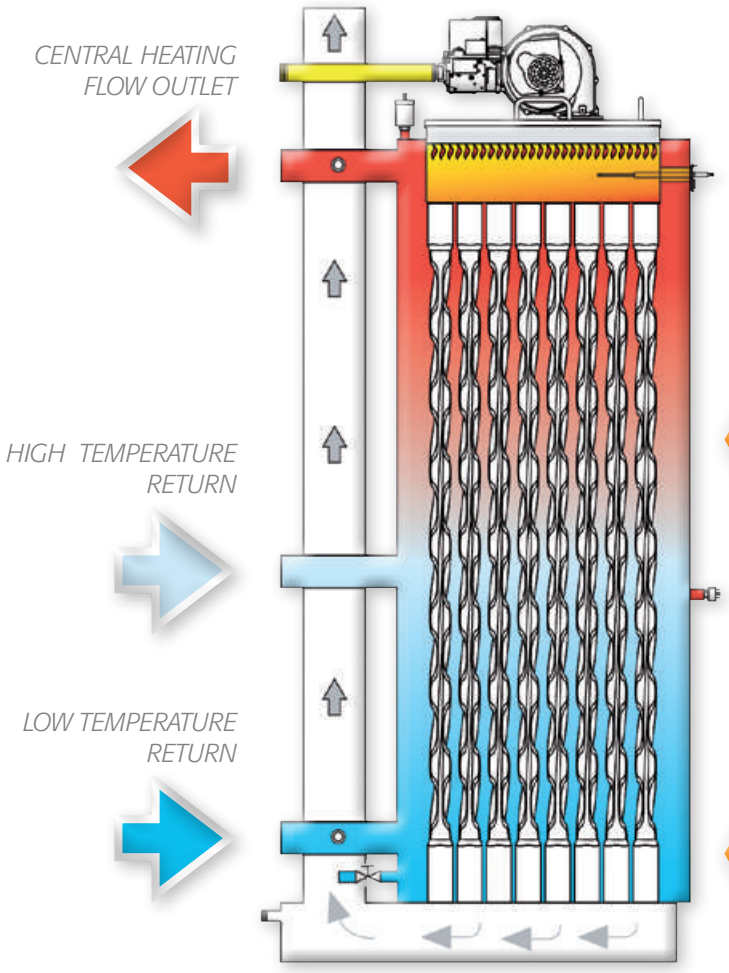
CLIMATIC — Possible connection to an optional outdoor probe, thus enabling **system flow temperature compensation**

CLASS 5 — Appliance rated as **class 5**, the most **ecological** rating defined the relevant European standards (EN 297 and 483)

RANGE RATED — **"Range rated"** certified appliance, according to EN 483

> THE IDEAL SOLUTION FOR EVERY SYSTEM

The boiler's high water content and its vertical layout mean that the QUADRIFOGLIO B series have very low pressure drop even at high flow-rates, allowing the boiler to work at practically any ΔT between outlet and return - up to a maximum of 60°C when the flow-rate is near zero. All this ensures considerable installation flexibility, freeing system designers from the limits imposed by the type of boiler. Moreover, the appliances can be connected directly to the system without needing low-loss headers, even in multi-zone systems where variations in flow-rate and Δt between boiler outlet and return are often considerable. These characteristics make this model especially suitable in the following situations:



WATER CONTENT

MODEL 70	MODEL 125	MODEL 220	MODEL 320
160 litres	265 litres	380 litres	530 litres

1

> SYSTEMS WITH MULTI-ZONE DISTRIBUTION CIRCUITS WITH DIFFERENT OPERATING TEMPERATURES

QUADRIFOGLIO B is fitted with a second return attachment for connection to systems operating at high temperatures (e.g. return from DHW storage) that, being located around half-way up the heat exchanger, avoids raising the average return temperature of the low temperature circuit, while guaranteeing maximum appliance efficiency.

2

>SYSTEMS WITH HIGH WATER FLOW-RATES AND SYSTEMS WITH MODULATING CIRCULATION

The physical characteristics of the boiler make it ideal for systems with high water flow-rates, operating simultaneously in multiple "zones". The possibility to work across a practically unlimited range of Δt means the boiler can easily operate in combination with low power, variable-speed circulation systems, bringing advantages in terms of building energy efficiency calculation.

3

> RENOVATION OF EXISTING SYSTEMS

Being a boiler that can be integrated into any type of heat distribution system obviously allows designers much more freedom. Furthermore, the appliance works perfectly with plate heat exchangers (that feature very high pressure drop) fitted between the boiler and the system, to prevent slime from ending up in the boiler and affecting correct operation.

4

> REPLACEMENT OF EXISTING HEAT GENERATORS

The fact that the QUADRIFOGLIO B is "independent" of the type of system makes it the best solution in terms of performance and technical specifications when replacing old heat generators. Four-star certification guarantees higher overall system efficiency and a consequent reduction in energy consumption.

> CHARACTERISTICS

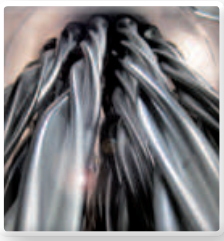
THE HEART OF THE QUADRIFOGLIO B

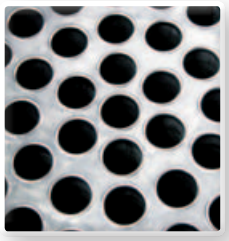
> CARE TO DETAIL

AISI 316 TI stainless steel is used in the construction of the heat exchanger and the condensate collection pan, guaranteeing maximum mechanical strength and resistance to corrosion.

The "four-leaf clover" cross-section of the heat exchanger tubes and their helical arrangement guarantee a larger heat exchange surface, a better heat transfer coefficient between the water and the flue gas, and a very low heat load.

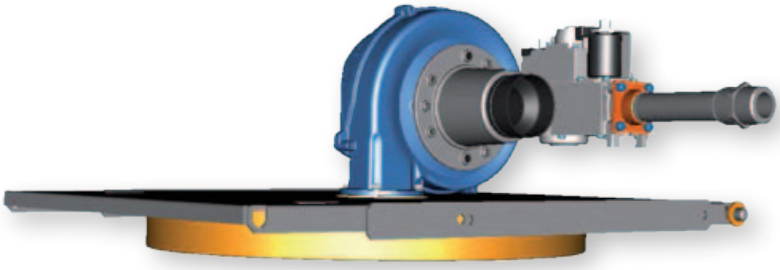
Special care has also been paid to the welding between the flues and the head plates, an area that is especially exposed to corrosion by condensate. Indeed, a special **"speed short-arc"** welding process is adopted, which significantly reduces any problems that may arise when joining together different types of steel.





> PREMIX

QUADRIFOGLIO B features a total premix combustion unit, with variable-speed fan, operating on natural gas or LPG. The special layout of the front combustion burner and the use of a diffusion grill for the air/gas mixture ensure perfect division of the heat load across the combustion chamber, protecting both the burner and the heat exchanger against thermal head. The burner occupies very little space vertically, allowing the entire length of the heat exchanger to be exploited and bringing obvious benefits regarding condensation and stratification in the boiler.



NOx	CO	
< 40 mg/kWh	< 10 mg/kWh	VALUES REFER TO THE WEIGHTED AVERAGE

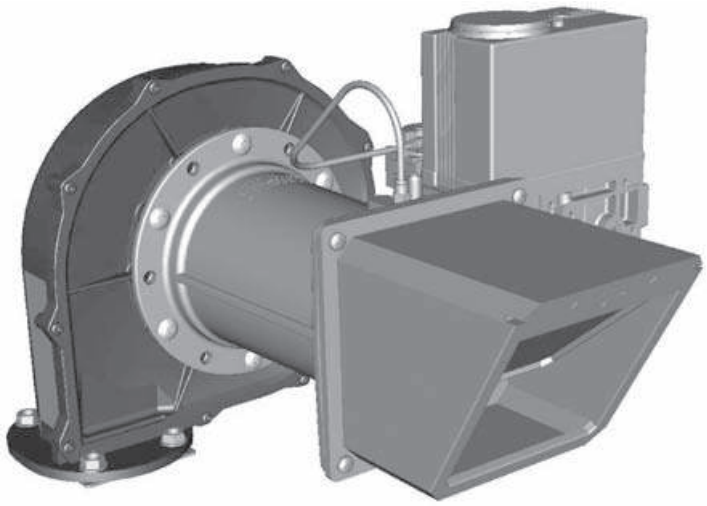
> CHARACTERISTICS

THE HEART OF THE QUADRIFOGLIO B

> FLUE GAS NON-RETURN VALVE

A valve fitted with moving damper is installed as standard on the burner premixing unit fan. This valve prevents flue gas from returning through the boiler, with the consequent release of harmful gases in the installation environment.

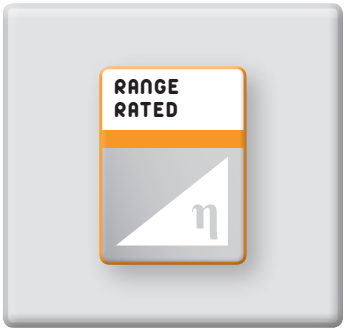
This means the combustion gas can be discharged under pressure and consequently the flue system can be sized more easily, using smaller diameter pipes than in traditional negative pressure systems.

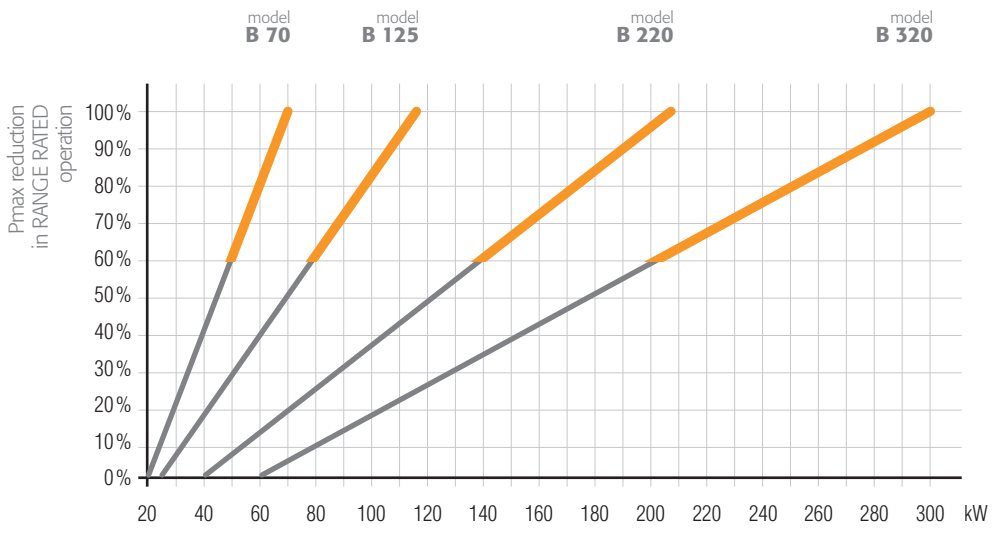


> RANGE RATED

QUADRIFOGLIO B is a "RANGE RATED" boiler in accordance with the requirements defined by standard EN 483.

In fact, heating capacity can be adapted based on system requirements, making the heating system as efficient as possible and guaranteeing the maximum performance declared by the manufacturer.



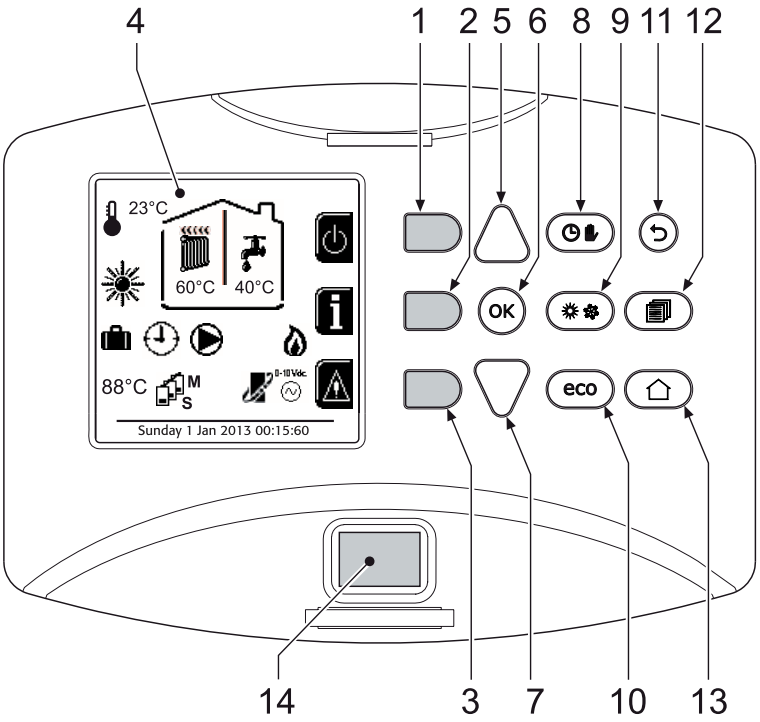


Range of output modulation

HEAT INPUT IS ADAPTED AS DESCRIBED IN THE TECHNICAL DOCUMENTS. THIS ENSURES THE PERFORMANCE AND EFFICIENCY DECLARED BY THE MANUFACTURER.

> CHARACTERISTICS
CONTROL PANEL

The QUADRIFOGLIO B series is fitted with a control panel featuring a large dot matrix display and buttons for setting the basic boiler functions and selecting the parameter menus.
The interface has been designed to make it easier to read the parameters and browse the USER menus for controlling and setting the basic functions, and the SERVICE menus for maintenance and advanced parameter settings.

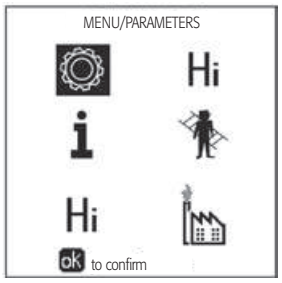


KEY

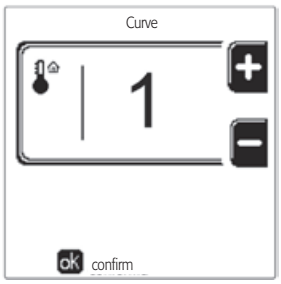
1 Context button 1
2 Context button 2
3 Context button 3
4 Dot matrix display (e.g. main screen)
5 Navigation/menu button
6 Confirm/enter menu button
7 Navigation/menu button
8 Automatic/Manual Central heating/DHW mode button
9 Select Summer/Winter mode button
10 Select Economy/Comfort mode button
11 Exit menu button
12 Main menu button
13 Home button (return to the main screen)
14 On/off switch

CONTEXT BUTTONS CONTEXT BUTTONS (no. 1, 2, 3) are grey in colour, have no screen printed markings and their meaning changes depending on the selected menu.
The information shown on the display (icons and texts) must be read in order to understand the function. For example, context button 2 (no. 2) provides access to appliance information such as: temperature sensor readings, operating output, etc.
DIRECT BUTTONS (no. 8, 9, 10) always have the same function
NAVIGATION/MENU BUTTONS
The navigation/menu buttons (no. 5, 6, 7, 11, 12, 13) are used to navigate between the various menus available on the control panel

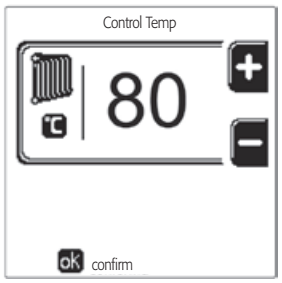
SOME EXAMPLES OF THE DISPLAY INTERFACE



Main service menu



Climate curve setting



Central heating temperature setting

Domestic hot water production with storage cylinder and dedicated pump

> CHARACTERISTICS
ELECTRONIC CONTROL UNIT

INPUTS

REMOTE CONTROL OF TEMPERATURE OR OUTPUT
0 - 10 Vdc signal

REMOTE RESET CONTACT

REMOTE RESET INPUT
230 Vac - 50 Hz power supply

ROOM THERMOSTAT OR REMOTE TIMER CONTROL CONTACT FOR FIRST ZONE

ROOM THERMOSTAT CONTACT FOR SECOND ZONE

OUTSIDE PROBE

CASCADE OUTLET PROBE

DHW STORAGE PROBE

ELECTRONIC BOARD FEATURES

COMMUNICATION PROTOCOL
ModBus

OUTPUTS

1ST SYSTEM ZONE PUMP
230 Vac - 50 Hz power supply

2ND SYSTEM ZONE PUMP/DHW PUMP OR THREE-WAY VALVE
230 Vac - 50 Hz power supply

REMOTE FAULT SIGNAL CONTACT
230 Vac - 50 Hz power supply

MOTORISED BOILER WATER CIRCUIT ON/OFF SOLENOID VALVE
230 Vac - 50 Hz power supply

BURNER ON / LEGIONELLA PROTECTION ON SIGNAL (SET BY PARAMETER)
Free contact

MODULATING PUMP CONTROL SIGNAL
PWM signal

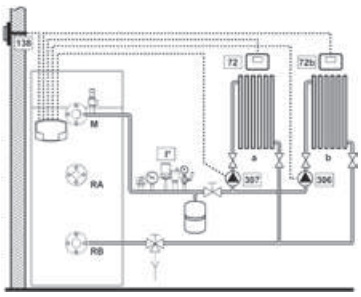
AUXILIARY TERMINALS 230 VAC - 50 HZ

> ELECTRONIC CONTROL UNIT

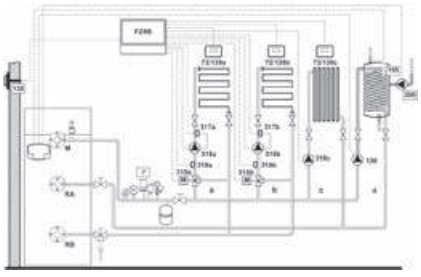
The electronic controller on the QUADRIFOGLIO B has been designed and developed for integration into the latest system logic. In the standard configuration, the electronic board can control most of the typical devices in a heating system.

Some of the systems that can be developed include:

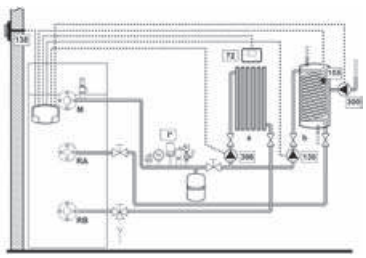
HEATING SYSTEM WITH TWO ZONES



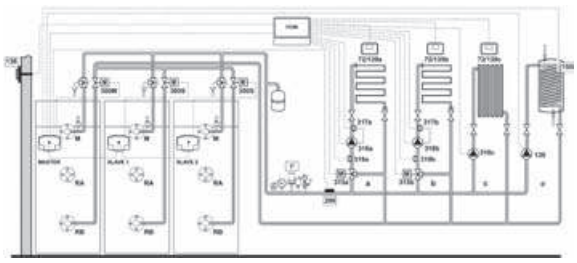
MIXED HEATING SYSTEM WITH THREE CENTRAL HEATING ZONES
(DHW + 1 DIRECT AND 2 MIXED ZONES)



MIXED HEATING SYSTEM
(CENTRAL HEATING + DHW)



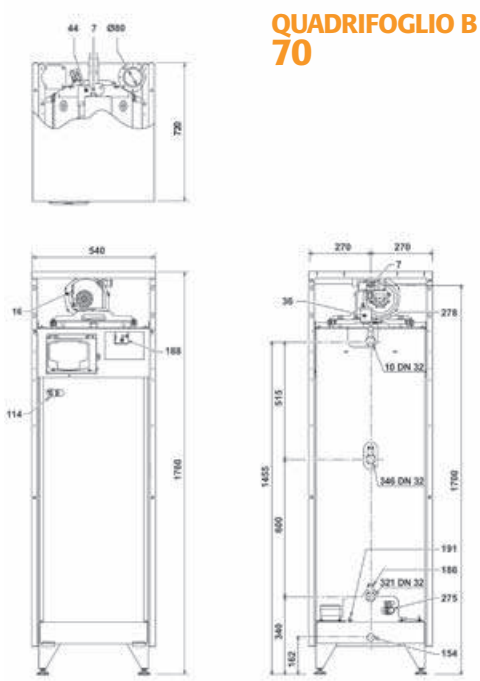
CASCADE INSTALLATION



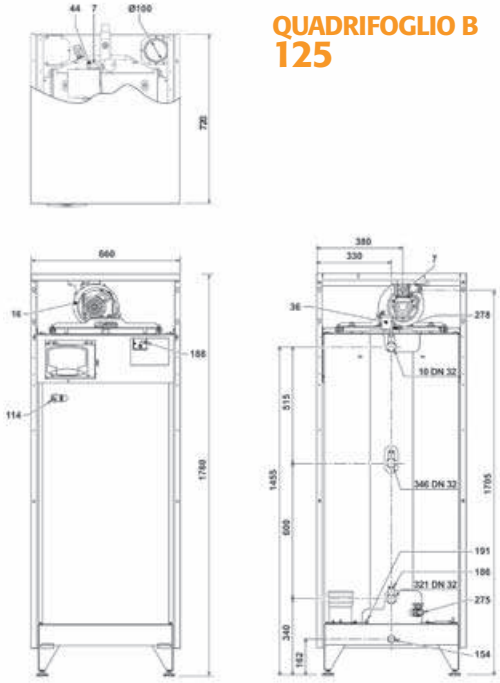
> TECHNICAL SPECIFICATIONS

DIMENSIONS - PRESSURE DROP

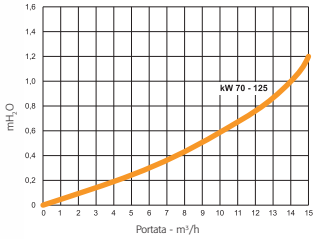
QUADRIFOGLIO B 70



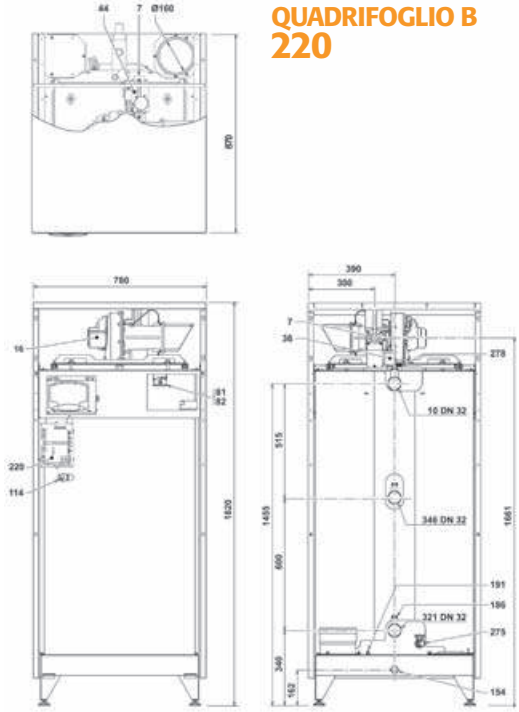
QUADRIFOGLIO B 125



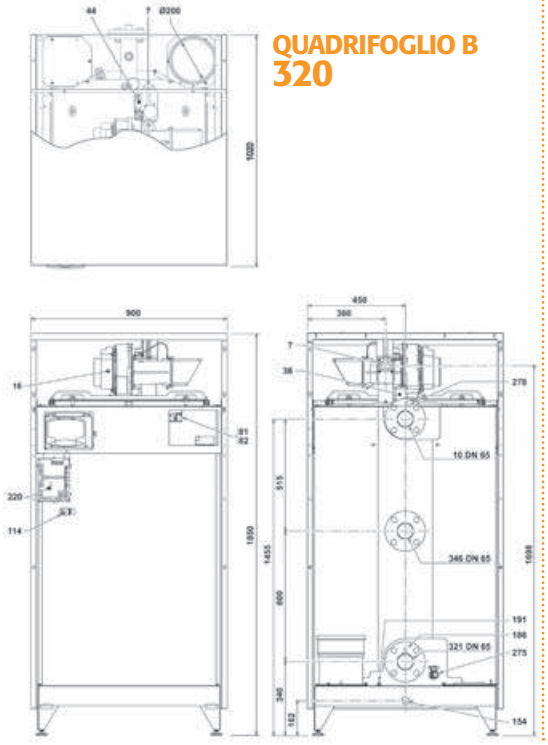
PRESSURE DROP DIAGRAM 70/125



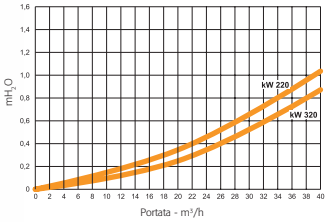
QUADRIFOGLIO B 220



QUADRIFOGLIO B 320



PRESSURE DROP DIAGRAM 220/320



KEY **7** Gas inlet **10** System delivery **16** Fan **32** Heating circulating pump (not supplied) **36** Automatic air vent **44** Gas valve **72** Room thermostat (not supplied) **72b** Second room thermostat (not supplied) **81** Ignition electrode **82** Detection electrode **95** Diverter valve (not supplied) **98** Switch **114** Water pressure switch **130** DHW circulating pump (not supplied) **138** External probe (not supplied) **139** Remote timer control (not supplied) **154** Condensate drain pipe **155** Hot water tank temperature probe (not supplied) **186** Return sensor **188** Ignition/Ionisation electrode **191** Fume temperature sensor **220** Ignition card **256** Modulating heating circulating pump signal **275** Heating system drain cock **278** Double sensor (Safety + Heating) **298** Cascade temperature sensor (not supplied) **299** Input 0-10 Vdc **300** Burner lit contact (voltage-free contact) **301** Fault contact (voltage-free contact) **302** Remote reset input (230 Volt) **306** Heating system circulating pump (not supplied) **307** Heating system second circulating pump (not supplied) **321** Low temperature return **346** High temperature return **357** Faulty contact (230 Vac) **361** Cascade connection of next module **362** Cascade connection of previous module **363** MODBUS communication

> TECHNICAL SPECIFICATIONS

SUMMARY TABLE

MODEL		70	125	220	320
Efficiency and performance					
Max heat input in central heating mode	kW	65,5	116	207	299
Min heat input in central heating mode	kW	14	23	41	62
Max heat output in CH (80/60)	kW	64,4	114	204	294,5
Min heat output in CH (80/60)	kW	13,7	22,5	40,2	60,8
Max heat output in CH (50/30)	kW	69,9	123,9	221	319,3
Min heat output in CH (50/30)	kW	15	24,8	44,2	66,8
Efficiency at Pmax (80/60)	%	98,3	98,3	98,5	98,5
Efficiency at Pmin. (80/60)	%	98	98	98	98
Efficiency at Pmax (50/30)	%	106,8	106,8	106,8	106,8
Efficiency at Pmin. (50/30)	%	107,7	107,7	107,7	107,7
Efficiency at 30% (30°C)	%	109,6	109,6	109,6	109,6
Efficiency class, Directive 92/42 EEC		★★★★	★★★★	★★★★	★★★★
NOx class		5	5	5	5
Max central heating temperature	°C	90	90	90	90
Max domestic hot water temperature	°C	70	70	70	70
Max heat exchanger ΔT	°C	60	60	60	60
Maximum stack pressure at Pmax	pascal	200	150	200	200
Operating pressure min - max	bar	0,8 - 6	0,8 - 6	0,8 - 6	0,8 - 6
Structural characteristics					
Water content	litres	160	265	380	530
Empty weight	Kg	180	280	400	500
Width	mm	540	660	780	900
Height	mm	1760	1780	1820	1850
Depth	mm	720	720	870	1020
Electrical specifications					
Power supply voltage	V/Hz	230/50	230/50	230/50	230/50
Index of protection	IP	X0D	X0D	X0D	X0D
Power consumption	W	95	200	260	370
Water and gas fittings					
Central heating flow outlet		1' 1/4	1' 1/4	2'	DN 65
Central heating return inlet, low temperature		1' 1/4	1' 1/4	2'	DN 65
Gas inlet		1'	1'	1'	1'
Central heating return inlet, high temperature		1' 1/4	1' 1/4	2'	DN 65
Flue gas outlet Ø (mm)		80	100	160	200
Combustion					
Type of appliance		B23	B23	B23	B23
Combustion efficiency at Pmax	%	98,3	98,3	98,3	98,3
Combustion efficiency at Pmin	%	98,7	98,7	98,7	98,7
Losses through the stack with burner on at Pmax	%	1,7	1,7	1,7	1,7
Losses through the stack with burner on at Pmin	%	1,3	1,3	1,3	1,3
Flue gas temperature at Pmax (80/60)	°C	68	66	67	67
Flue gas temperature at Pmin (80/60)	°C	60	60	61	61
Flue gas temperature at Pmax (50/30)	°C	43	43	45	45
Flue gas temperature at Pmin (50/30)	°C	32	32	31	31
Flue gas flow-rate at Pmax	kg/h	107,1	189,6	338,4	488,8
Flue gas flow-rate at Pmin	kg/h	23,3	39,9	71,1	107,5
CO_2 at Pmax	%	9,3	9,3	9,3	9,3
CO_2 at Pmin	%	9,1	8,7	8,7	8,7
CO O_2=0% at Pmax	mg/kWh	17	30	40	35
CO O_2=0% at Pmin	mg/kWh	1	2	2	3
CO O_2=0% weighted	mg/kWh	5,5	6	8	20
NOx O_2=0% at Pmax	mg/kWh	69,7	50	44	41
NOx O_2=0% at Pmin	mg/kWh	13,3	10	9	10
NOx O_2=0% weighted	mg/kWh	35	37	38	26

> CASCADE INSTALLATION
PRACTICAL AND SMART

Every part has been designed to simplify cascade installations. The main points are as follows.

1 The water fittings have been positioned at the same heights so as to simplify connection to the system outlet and return manifolds.

2 The double flue gas outlet on the right and left sides of the boiler, and the non-return damper positioned directly on the fan simplify sizing and development of the flue gas manifold.

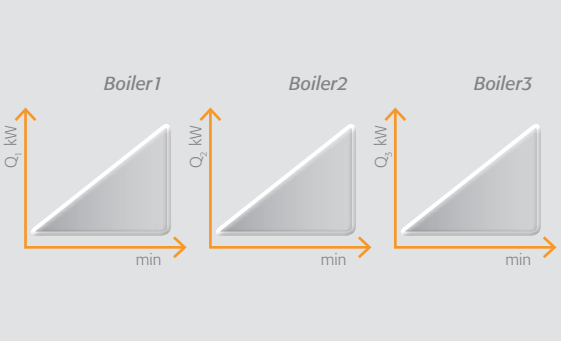
3 The QUADRIFOGLIO B range features a complete series of accessories for multiple combinations in groups of two or three boilers, up to a maximum output of 920 kW.

4 Each configuration comes complete with flue gas, water circuit and gas accessories.

5 The electronic controller fitted as standard has been designed to independently manage the operation of multiple heat generators in a cascade, with MASTER-SLAVE logic, up to a maximum of 6 appliances.

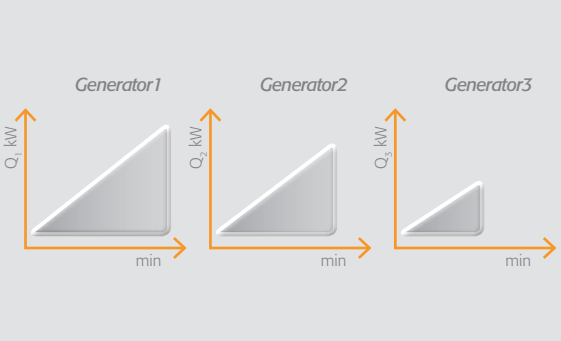
6 The air/gas system has been designed to allow the group flue gas manifold to be sized for operation under pressure and consequently allow smaller manifolds.

7 The parameters available on the cascade MASTER board can be set so as to select the activation sequence of the various modules and rotation of the activation sequence, so as to uniformly divide the number of operating hours.



> PARALLEL OPERATION

"Parallel" operation of the modules involves simultaneous start-up, output modulation and shut-down of the burners.
This solution ensures maximum system efficiency, as a higher number of appliances on and operating at lower output guarantees maximum condensation.
However, the range of output modulation of the system is limited



> SEQUENTIAL OPERATION

Sequential start-up and output modulation of the burners guarantees a wider range of modulation, from the minimum output of one single boiler to the sum of the maximum outputs of the boiler with all the burners on.
This makes the system more flexible to respond to system heating requirements, however with a slight decline in energy efficiency.

> CASCADE INSTALLATION

A minimum of two 70 kW boilers up to a maximum of three 320 kW boilers can be connected together, in the combinations shown in the table.

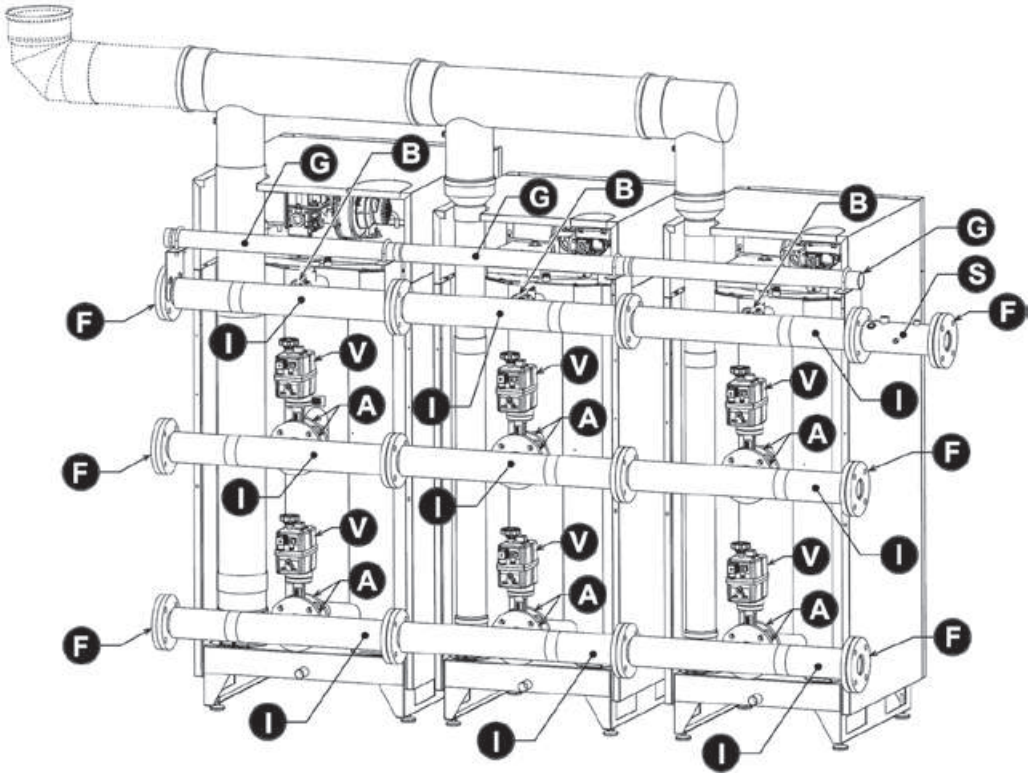
For all these configurations, the company guarantees correct operation and supplies all the water circuit, gas, flue gas manifold accessories and additional cascade safety kits, required to construct the “cascade”.

HEAT INPUT	HEAT OUTPUT		CASCADE MODULATION Pmin/Pmax 50/30°C	MODULES QTY	MODELS COMBINATION		
	80/60°C	50/30°C			1	2	3
kW	kW	kW	kW				
131,0	128,8	139,8	15,0/139,8	2	70	70	-
181,5	178,4	194,9	15,0/194,9	2	70	125	-
232,0	228,0	250,0	24,8/250,0	2	125	125	-
247,0	242,8	264,8	15,0/264,8	3	70	70	125
297,5	292,4	319,9	15,0/319,9	3	70	125	125
323,0	318,0	345,0	24,8/345,0	2	125	220	-
348,0	342,0	375,0	24,8/375,0	3	125	125	125
414,0	408,0	440,0	44,2/440,0	2	220	220	-
439,0	432,0	470,0	24,8/470,0	3	125	125	220
506,0	498,5	540,0	44,2/540,0	2	220	320	-
530,0	522,0	565,0	24,8/565,0	3	125	220	220
598,0	589,0	640,0	66,8/640,0	2	320	320	-
621,0	612,0	660,0	44,2/660,0	3	220	220	220
713,0	702,5	760,0	44,2/760,0	3	220	220	320
818,0	793,0	860,0	44,2/860,0	3	220	320	320
897,0	883,5	960,0	66,8/960,0	3	320	320	320

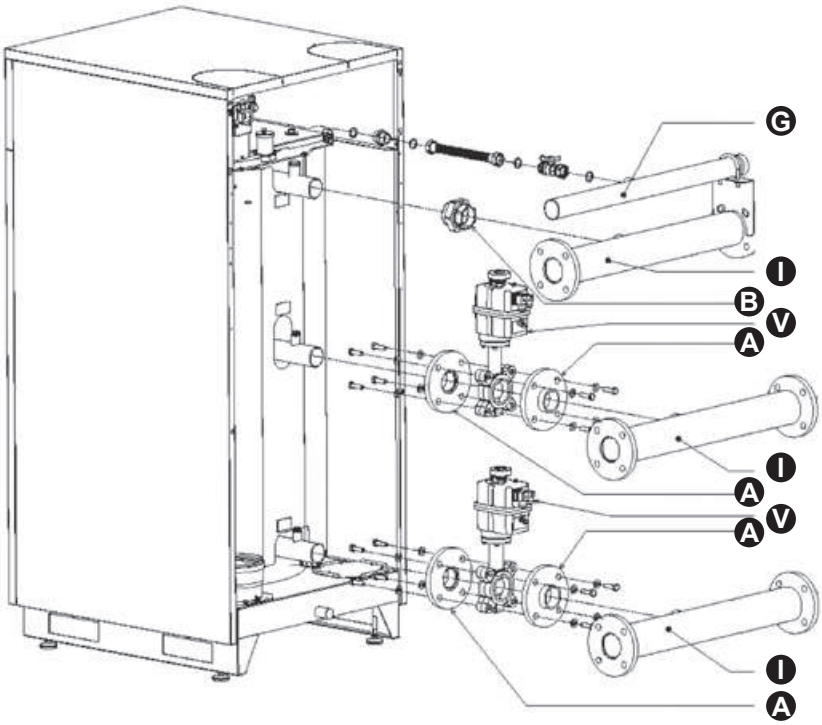
Remark: for the other model combinations the Company doesn’t supply cascade accessories

> CASCADE INSTALLATION

ACCESSORIES MATCHING - WATER AND GAS



WATER, GAS, FLUES MANIFOLDS



DESCRIPTION OF CASCADE ACCESSORIES

A Adaptor for connection of motorized valve

B Adaptor connections boiler/manifold

F Flange for manifold (one blind flange, a drilled one, including gaskets, screws, nuts)

G Gas manifold, including ON/OFF valve, flexible hose, gaskets, screws, nuts

I Water manifold, including gaskets, screws, nuts

S Manifold for lodging of additional optional safety devices (according to Italian INAIL rules)

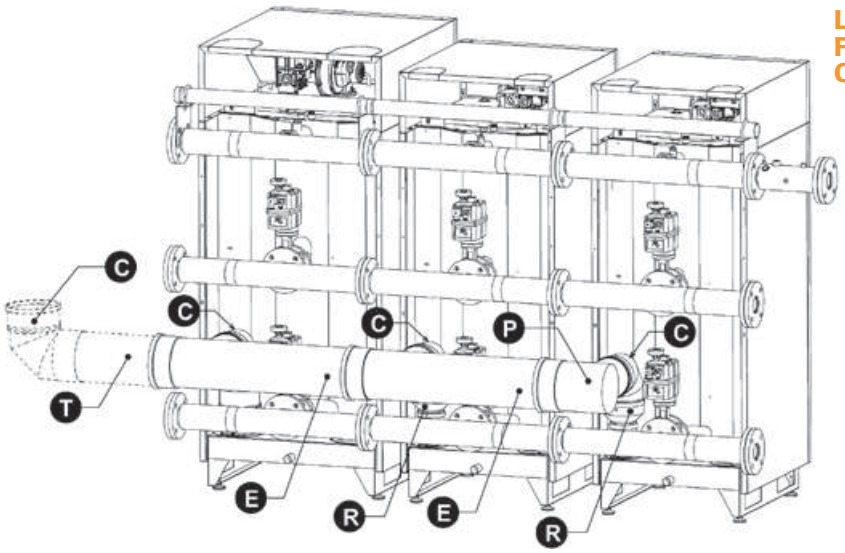
V Motorised ON/OFF valve

> CASCADE INSTALLATION

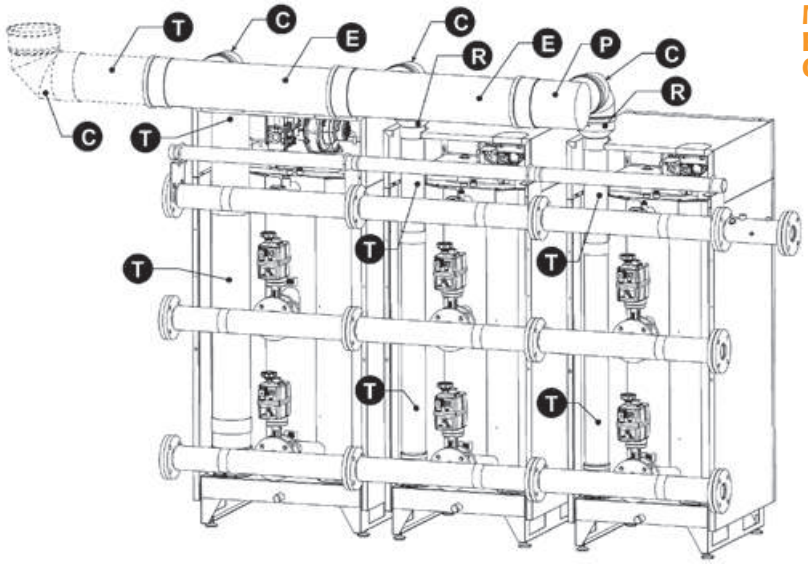
WATER AND GAS ACCESSORIES MATCHING

					G	G	G	I	I	I	S	S	S	F	F	F	B	B	A	A	A	V	V
					1"1/2 gas manifold	2" gas manifold	2" 1/2 gas manifold	2" water manifold	2"1/2 water manifold	4" water manifold	2" safety accessories manifold	2"1/2 safety accessories manifold	4" safety accessories manifold	2" flange kit	2" 1/2 flange kit	4" flange kit	F-F coupling 1"1/4	F-F coupling 2"	2"-1"1/2 M-F reduction nipples	DN50 flange - 1"1/4 connection	DN65 flange - 2" connection	DN50 valve	DN65 valve
																							
HEAT INPUT kW	**MODULES QUADRIFOGLIO B**			**MANI-FOLD**	**042050X0**	**042051X0**	**042052X0**	**042053X0**	**042054X0**	**042055X0**	**042056X0**	**042057X0**	**042058X0**	**042059X0**	**042060X0**	**042061X0**	**042062X0**	**042063X0**	**042064X0**	**042065X0**	**042066X0**	**052000X0**	**052001X0**
					nr.	nr.	nr.	nr.	nr.	nr.	nr.	nr.	nr.	nr.	nr.	nr.	nr.	nr.	nr.	nr.	nr.	nr.	nr.
131,0	70	70	-	Gas	2																		
				Flow				2			1			1			2						
				Return				2						1						4		2	
181,5	70	125	-	Gas	2																		
				Flow				2			1			1			2						
				Return				2						1						4		2	
232,0	125	125	-	Gas	2																		
				Flow				2			1			1			2						
				Return				2						1						4		2	
247,0	70	70	125	Gas	3																		
				Flow				3			1			1			3						
				Return				3						1						6		3	
297,0	70	125	125	Gas	3																		
				Flow				3			1			1			3						
				Return				3						1						6		3	
323,0	125	220	-	Gas		2																	
				Flow					2			1			1			2	1				
				Return					2						1				1		4		2
348,0	125	125	125	Gas		3																	
				Flow					3			1			1			3	3				
				Return					3						1				3		6		3
414,0	220	220	-	Gas		2																	
				Flow					2			1			1			2					
				Return					2						1						4		2
439,0	125	125	220	Gas		3																	
				Flow					3			1			1			3	2				
				Return					3						1				2		6		3
506,0	125	220	220	Gas		3																	
				Flow					3			1			1			3	1				
				Return					3						1				1		6		3
530,0	220	320	-	Gas			2								1								
				Flow						2			1			1					1		
				Return						2						1					1		2
598,0	320	320	-	Gas			2								1								
				Flow						2			1			1							
				Return						2						1							2
621,0	220	220	220	Gas			3								1								
				Flow						3			1			1					3		
				Return						3						1					3		3
713,0	320	220	220	Gas			3								1								
				Flow						3			1			1					2		
				Return						3						1					2		3
818,0	320	320	220	Gas			3								1								
				Flow						3			1			1					1		
				Return						3						1					1		3
897,0	320	320	320	Gas			3								1								
				Flow						3			1			1							
				Return						3						1							3

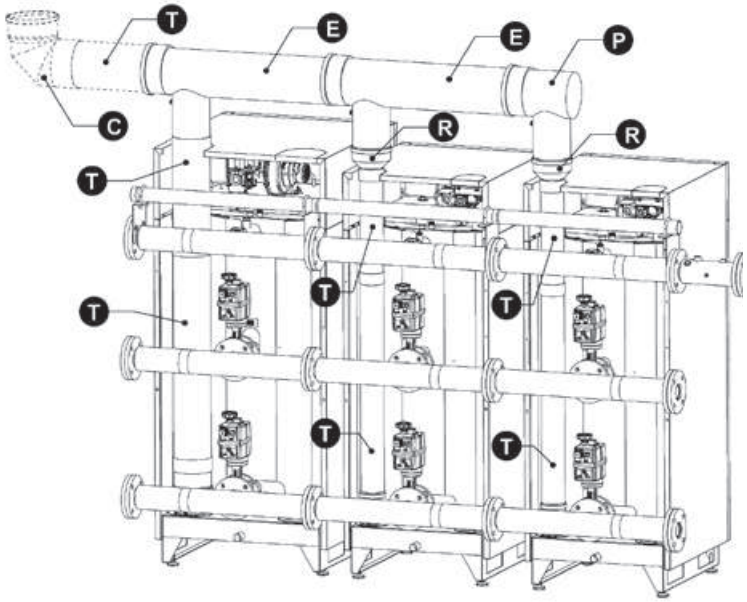
> CASCADE INSTALLATION
FLUES MANIFOLD



LOWER FLUES OUTLET



MID FLUES OUTLET



TOP FLUES OUTLET

DESCRIPTION OF CASCADE ACCESSORIES

C 90° bend, PPs, with gaskets

E Flues manifold, PPs, including gaskets

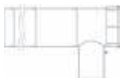
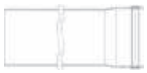
P One side-blind flues manifold, including condensate siphon

R Reduction for connection top flues manifold/vertical flue pipe

T Vertical pipe for connection from stack to top flues manifold

> CASCADE INSTALLATION

FLUES MANIFOLD MATCHING

					P	P	P	E	E	E	T	T	T	T	T	T	T	C	C	C	C	R	R	R
					Ø 300 flue manifold (first boiler)	Ø 200 flue manifold (first boiler)	Ø 160 flue manifold (first boiler)	Ø 300 flue manifold (additional boiler)	Ø 200 flue manifold (additional boiler)	Ø 160 flue manifold (additional boiler)	1 mt MF pipe, Ø 300, PPs	1 mt MF pipe, Ø 200, PPs	0,5 mt MF pipe, Ø 300, PPs	1 mt MF pipe, Ø 160, PPs	0,5 mt MF pipe, Ø 160, PPs	1 mt MF pipe, Ø 100, PPs	0,5 mt MF pipe, Ø 100, PPs	90° MF bend, Ø 300	90° MF bend, Ø 200, PPs	90° MF bend, Ø 160, PPs	90° MF bend, Ø 100, PPs	Ø 160 - 200 MF reduction, PPs	Ø 100 - 160 MF reduction, PPs	Ø 80 - 100 MF reduction, PPs
																									
HEAT INPUT kW	**MODULES QUADRIFOGLIO B**			**FLUE GAS EVACUATION**	**041070X0**	**041068X0**	**041066X0**	**041071X0**	**041069X0**	**041067X0**	**041063X0**	**041062X0**	**041076X0**	**041018X0**	**041074X0**	**041073X0**	**041072X0**	**041061X0**	**041060X0**	**041015X0**	**041077X0**	**041080X0**	**041079X0**	**041078X0**
					nr.	nr.	nr.	nr.	nr.	nr.	nr.	nr.	nr.	nr.	nr.	nr.	nr.	nr.	nr.	nr.	nr.	nr.	nr.	nr.
131,0	70	70	-	Low			1			1											2			2
				Medium			1			1						2	2				2			2
				High			1			1						2	2							2
181,5	70	125	-	Low			1			1											2			1
				Medium			1			1						2	2				2			1
				High			1			1						2	2							1
232,0	125	125	-	Low			1			1											2			
				Medium			1			1						2	2				2			
				High			1			1						2	2							
247,0	70	70	125	Low			1			2											3			2
				Medium			1			2						3	3				3			2
				High			1			2						3	3							2
297,0	70	125	125	Low			1			2											3			1
				Medium			1			2						3	3				3			1
				High			1			2						3	3							1
323,0	125	220	-	Low		1			1											2			1	
				Medium		1			1					1	2	1	1			2			1	
				High		1			1					1	2	1	1						1	
348,0	125	125	125	Low		1			2											3			3	
				Medium		1			2							3	3			3			3	
				High		1			2							3	3						3	
414,0	220	220	-	Low		1			1											2				
				Medium		1			1					2	2					2				
				High		1			1					2	2									
439,0	125	125	220	Low		1			2						1					3			2	
				Medium		1			2					1	2	2	2			3			2	
				High		1			2					1	2	2	2						2	
506,0	125	220	220	Low		1			2						2					3			1	
				Medium		1			2					2	4	1	1			3			1	
				High		1			2					2	4	1	1						1	
530,0	220	320	-	Low	1			1											2			1		
				Medium	1			1				1	1		3				2			1		
				High	1			1				1	1		3							1		
598,0	320	320	-	Low	1			1											2					
				Medium	1			1				2	2						2					
				High	1			1				2	2											
621,0	220	220	220	Low	1			2											3			3		
				Medium	1			2							9				3			3		
				High	1			2							9							3		
713,0	320	220	220	Low	1			2											3			2		
				Medium	1			2				1	1		6				3			2		
				High	1			2				1	1		6							2		
818,0	320	320	220	Low	1			2											3			1		
				Medium	1			2				2	2		3				3			1		
				High	1			2				2	2		3							1		
897,0	320	320	320	Low	1			2											3					
				Medium	1			2				3	3						3					
				High	1			2				3	3											

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