

# Easy Hybrid BIASI HYBRID SYSTEM





# **OUR COMPANY**

Biasi englobes the experience, skills, organization and patents of a company history that started in the 1930s and developed to become an industry professional. For over 80 years we have been operating in the heating industry, investing in Italy and abroad looking for solutions for comfort in the domestic and professional industries. Today our offer covers all market segments: from wall-hung to floor-standing condensing boilers, water heaters, a wide range of integrated systems with solar based on high energy efficiency. It also supplies new complete systems with heat pumps and hybrids, which can be integrated with radiant solutions, operating at low temperatures.



# **OUR HISTORY**



### QUALITY

TECNOLOGY AND RELIABILITY

RESEARCH AND INNOVATION

ITALIAN DESIGN

COSTUMER CARE

FLEXIBILITY

STRUCTURED LOGISTIC

Our wall hung boilers' factory is equipped to:

- produce up to 160,000 boilers per year;

- produce 500 different part numbers;

- produce more than 16 product ranges,

# **OUR PRODUCTS**

RESIDENTIAL

Condensing boilers Traditional boilers Hybrid systems Heat pumps Water heaters Air conditioning Solar panels Boilers Integrated systems with solar We constantly design and improve our products. We assemble them in our assembly lines, we check the quality at each step of the process. The value of Made in Italy is in every detail.



**PROFESSIONAL** Boilers for centralized systems

# **SPARE PARTS**

# **Biasi hybrid system**

This is the Biasi range of economical gas/electric hybrid systems created and designed to achieve maximum integration and energy efficiency in the most different living spaces, even in combination of any emission system (fan coils, radiant systems, radiators) also in combination with other renewable sources such as solar or photovoltaic.

Easy Hybrid is ideal for upgrading existing systems, but also for new buildings. The different possible combinations are up to heat pumps and condensing boilers.

The hydronic kit and the electronic system management control, especially developed by BIASI, guarantee easy installation and operating, simple operation for the end user and last but not least energy saving.

# The two simple possibilities

The EASY HYBRID range is divided into different versions: the Biasi monobloc heat pump [in sizes 6kW,8 kW and 10kW, with the BASICA COND or RINNOVA ADAPTIVE boiler.



# **Guaranteed savings**

EASY HYBRID guarantees high performance and optimal comfort during the whole year. The heat pump works in line with the boiler, even under the most extreme conditions, guaranteeing maximum efficiency and economic operation.



Easy Hybrid





**Hybrid system** Comfort and energy saving

# The hybrid system: function and goals

The hybrid system works thanks to the combination and integrated work of two heat generators. The task of hybrid systems is to combine the advantage of condensing technology with that of heat pump technology (powered by renewable sources), resulting in lower energy expenditure and therefore reduced costs, without sacrificing comfort and adaptable to different realities.

This system offers the possibility to fully benefit from all the advantages offered by heat pump technology (well recognized in terms of efficiency) combined with the consolidated uses of condensing boiler technology. The management **ELECTRONICS** of the Biasi system, by selecting the most suitable machine at any time, will always guarantee maximum efficiency of use, operating economy and living comfort. The hybrid system, again thanks to the system electronics, allows to expand the field of application from systems operating at low temperatures to common radiators, which work at higher temperatures.

# **Biasi hybrid system**



# **Easy Hybrid**

Easy Hybrid is the compact Hybrid System, made in Biasi. It is able to produce hot or cold water and to satisfy, depending on the season, the needs of heating, cooling of the building and production of DHW.

The system is composed of a condensing generator of the Basic or Rinnova series in combination with a very high efficiency heat pump suitable for the most severe climatic conditions.

# The advantages

- Quick and easy installation
- The F-gas patent is not required for installation.
- Climate management included
- Compact



# Where to install it?

- · Suitable for new energy efficient buildings
- Suitable for building renovations
- Suitable for harsh environments such as mountains and high T production up to 70°C.
- Suitable where there is no possibility to transport GAS
- Suitable for applications with radiant systems, fancoils, air conditioning and UTA.



Heat-pump

Hybrid module

° ∆BIASI





- **1.** Instantaneous condensing boiler 25 KW
- 2. Control to the heat generator
- **3.** Wall mounted heat pump outlet return
- **4.** Return of existing system \*(only config. A)
- 5. 20 litre tank
- 6. Control to existing system
- 7. Frame for wall mounting



- 1. EC fan
- 2. Twin Rotary Compressor



## **k** Winter operation

The winter operating modes are:

1. Heat pump mode for heating: the unit produces hot water at the system side exchanger for heating; the production of DHW is guaranteed by the condensing heat generator;

2. Hybrid mode, heat pump and boiler work synchronously managed by electronics specifically developed to guarantee maximum comfort. DHW management is always guaranteed by the boiler\*;

3. Boiler mode, the heat generator intervenes to meet high temperature operating conditions or when external temperature conditions make the use of the heat pump uneconomic. DHW production is always guaranteed by the condensing boiler.



# **Summer operation**

The summer operating modes are:

1. Chiller mode: the unit only produces chilled water for the system;

2. Boiler mode for the production of domestic hot water.

# Automatic season regulation

The changeover from one mode to another takes place automatically referring to a logic of priority in the production of domestic water.

# The sizes

The boilers comply with the following sizes:

# **Basica Cond 25S**

- Width 400 mm Height - 703 mm Depth - 325 mm
- A Flue outlet / air suction (concentric Ø 100/60)
- B Flue exhaust (split Ø 80)
- **C** Air suction (split Ø 80)
- **D** Boiler fixing support
- **E** Electrical connection ducts positioning area
- **F** Area for positioning the condensate drain pipe
- **G** MR Heating flow
- H US DHW outlet
- I Gas
- J ES DHW inlet
- **K** RR Heating return



[installation template]

# RinNova Adaptive 25S - 30S - 35S

Width - 400 mm
Height - 700 mm
Depth - 290 mm

- A Flue outlet / air suction (concentric Ø 100/60)
- **B** Flue exhaust (split Ø 80)
- **C** Air suction (split Ø 80)
- **D** Boiler fixing support
- **E** Electrical connection ducts positioning area
- **F** Area for positioning the condensate drain pipe
- **G** MR Heating flow
- H US DHW outlet
- Gas
- J ES DHW inletm
- **K** RR Heating return



[installation template]





The heat pump and the hybrid module comply with the following sizes:

# Heat pump - 6 kW / 8 kW / 10 kW

Width - 1003 mm
Height with feet - 735 mm
Height without feet - 700 mm
Volume depth - 403 mm
Depth with rear connection - 442,5 mm







# Hybrid module

Width - 340 mm
Height - 546 mm
Depth - 180 mm

### Hybrid Kit with box - sizes:

Width - 400 mm	
Height - 630 mm	
Depth - 250 mm	







# **Delivery and mounting**

The system is the sum of three products, supplied in three separate packages:



Hybrid Kit - which will contain:





The assembly sequences of the Hybrid Kit + accessory Kit:



Fixing template hybrid module



Hybrid module assembly



Box Hybrid's cover insertion



Overview complete system

**ATTENTION!** For the wall mounting of the Hybrid Kit is not necessary the aesthetic cover, that is the sheet metal box that we see in the sequence above. The **Hybrid Kit Box** is in fact an optional accessory.



The **Hybrid Kit**, that is the HYBRID MODULE of 20 lt, can be mounted on the wall using the appropriate brackets.

# The components

The system allows to create different configurations, including - choosing - between:

# **Basica Cond 25S**

Premixed condensing boiler

# ↓ MODULATION 1:5. ↓ 25 kW. ↓ 25 kW. ↓ W ↓ 00MESTIC WATER ↓ 14,7 ÷ 17,6 L/min ↓ 14,7 ÷ 17,6 L/min ↓ 0 NATURAL GAS/LPG ▲ ENERGY CLASS

Basica Cond is the compact pre-mixed condensing boiler that ensures high

efficiency, low consumption and respect for the environment. It is available in combi version for heating and domestic hot water production, with 25 KW power and energy class A.

### Its main features are :

- Primary condensing heat exchanger in stainless steel with steel coating to offer maximum corrosion resistance

- Total premix burner, stainless steel (Class NOx 6)
- Modulation 1:5 Natural gas and also LPG
- Stainless steel plate DHW exchanger
- 8 litre expansion vessel
- High efficiency pump with low energy consumption
- Integration with BIASI solar systems, through solar kit
- Analogue pressure reading
- Remote control and external probe can be installed



# RinNova Adaptive 25S / 30S / 35S

### Condensing boiler



RinNova Cond Plus is the new BIASI range of wall-hung condensing boilers. Excellent performance and high efficiency that last over time thanks to the innovative heat exchanger. Simplicity of use thanks to the digital control panel with display designe

use thanks to the digital control panel with display designed to communicate with the user in an easy and comfortable way. Available in combi version of heating and domestic hot water at 25 KW power, with compact dimensions: 700x400x290 cm.

### Its main features are:

- High yields (\*\*\*\* according to the EEC Directive 92/42
- and Legislative Decree 311/06)
- DHW comfort (★★ EN 13203)
- Stainless steel primary condensing heat exchanger with steel coating for maximum corrosion resistance
- Total premix burner, built in stainless steel (NOx class 6)
- Modulation 1:5 Natural gas and also LPG
- Stainless steel plate DHW exchanger
- 7 litre expansion vessel
- High efficiency pump with low energy consumption
- Maximum power adjustable according to the system





Together with:

# Heat Pump - 6 kW / 8 kW / 20 kW





# 

- DU 6,38 kW PA 1,33 KW
- DOMESTIC WATER 55°C
- HEATING WATER
- WORKING RANGE -22°C/+45°C

The 2T Biasi monobloc heat pump units are particularly suitable for applications with the following systems for radiant panel heating or for low temperature applications such as fancoil, fan heaters and AHUs suitably sized for flow temperatures of 50°C. All versions are equipped with highly silent EC axial fans and Twin Rotary inverter compressors that allow the complete power management of every single component. In fact, compressor, fan and circulators are modulated instant by instant by a programmed control unit with internally control logic.

### It comes complete with:

# Hybrid module



	DIMENSIONS
$\bigcup$	360 x 546 x 180 mm
0↔0	CONNECTIONS DISTANCE
	90 mm
0	CONNECTIONS DIMENSION
$\leftrightarrow$	1"
Λ	WATER CONTENT
0	20 liters

Specially designed circuit breaker/inertial circuit to promote the correct functioning of the hybrid system.

Available with practical aesthetic protection box/carter and system heat pump connection pipes. The 20-litre insulated storage tank allows the heat pump to operate correctly, especially in the low water content systems. \_\_\_\_

# **System schemes**

### Solution A / Hybrid with single zone heating



## Solution B / Hybrid with single zone heating



- Module Instantaneous condensing
- 3 boiler 25S 4
- Filling group

1

2

- system management 8 9
  - low temperature radiant system
  - Fan coil system

18

Direct plant relaunch group



# Solution C / Hybrid with radiant heating and summer fan coil air conditioning



### Solution D / Hybrid with single-zone heating DHW production with boiler preheating HP



# **Technical data**

Boilers technical data		Basica Cond	RinNova Adaptive
		25S	25 S
Nominal heating/d.h.w. heat input	kW	21.0/26,0	21,0 / 26,0
Minimum heat/ d.h.w input	kW	5,1	5,1
Output power for heating/d.h.w. 60°/80° C *	kW	20,5/25,4	20,3 / 25,1
Minimum output power for heating/d.h.w 60/80° C **	kW	4,8	4,8
Output power for heating/d.h.w. 30°/50° C	kW	22,4/27,8	22,4 / 27,8
Minimum output power for heating/d.h.w 30°/50° C	kW	5,3	5,3
Quantity of drain to Q.nom 30°/50° C (in heating)	l/h	4,2	4,2
Quality of drain to Q.nom 30°/50° C (in heating)	l/h	0,8	0,8
Ph of condensation		4,0	4,0
Efficiency at nominal input 60°/80° C *	%	97,7	96,6
Efficiency at minimum input 60°/80° C **	%	93,5	93,3
Efficiency at nominal input 30°/50C **	%	106,8	106,8
Efficiency at minimum input 30°/50C **	%	103,9	103,9
Efficiency at 30% load *	%		-
Efficiency at 30% load **	%	107,5	107,6
Efficiency electric		****	****
Heat loss at the chimney with burner on	Pf (%)	1,8	1,8
Heat loss at the chimney with burner off $\Delta t$ = 50°	Pfbs (%)	0,2	0,2
Heat loss towards the environment through the casing with the burner operating	Pd (%)	1,6	1,6
Class NOx	n°	6	б
Weighted NOx ***	mg/kWh	43	45
Minimum/maximum heating temperature	°C	27-80	25 / 80
Minimum/maximum heating pressure	bar	0,3-3	0,3 / 3,0
Pressure Available	bar	0,385	0,350
Total capacity of the expansion tank	I	8	7,0 / 3,5
Minimum/ maximum d.h.w. temperature	°C	35-60	35 / 60
Minimum/ maximum d.h.w pressure	bar	0,3-10	0,3 / 10,0
Maximum flow rate ( $\Delta$ t = 25 K) / ( $\Delta$ t = 35 K)	l/min	14,7-10,3	14,4 / 10,3
Specific d.h.w flow ( $\Delta t$ = 30 K) *****	l/min	12,4	12,0
Voltage / electric power at nominal heat input	V~/ W	230~/99	230/99
Electric power at minimum heat input	W	12,6	-
Electric power in stand-by	W	3,3	2,6
Electric degree of protection	n°	IPX5D	IPX5D
Max flue gas temperature	°C	60/69	60 / 69
Max / min exhaust gas mass flow rate	kg/s	0,0027/0,0118	0,0027 / 0,0118
Max / min air mass flow rate	kg/s	0,0026/0,0113	0,0026 / 0,0113
Max. coaxial flue gas discharge length	m	10,0/10,0	10 / 10
Max twin flue pipe gas discharge length	m	40,0	40
Height x Width x Depth	mm	703x400x325	700x400x290
Weight	kg	30,0	31,0
Water contained in the boiler		2,0	2
Fuel		Natural gas (G20) - LPG (G31)	Natural gas (G20) - LPG (G31)
		/	

\* With return water temperatures that do not allow condensation. \*\* With return water temperatures that allow condensation. \*\*\* With coaxial flue gas outlet 60/100 L 0,9 m and NATURAL GAS G20. \*\*\*\* At minimum useful power. \*\*\*\*\* Referred to EN 625 standard. # Values referred to tests with split exhaust 80 mm 1 + 1 and natural gas G20. \* With return water temperatures that do not allow condensation. \*\* With return water temperatures that allow condensation. \*\*\* With coaxial flue gas outlet 60/100 L 0,9 m and natural gas G20. \*\*\*\* At minimum useful power. \*\*\*\*\* Referred to EN 625 standard. # Values referred to the tests with split exhaust 80 mm 1 + 1 and natural gas G20.

6 kW



8 kW

# Heat pump technical data

		6 kW	8 kW
Winter operation A7/W35			
Thermal power	100% kW	6,16	8,41
Thermal power	66% kW	4,21	5,23
Thermal power	33% kW	2,75	2,45
Power absorbed from blowers	100% kW	1,18	1,63
Total absorbed power	100% kW	1,34	1,82
СОР		4,59	4,62
Plant side			
Water flow system	m3/h	1,06	1,45
Useful head	mca	5,20	4,80
Power absorbed by the pump	kW	0,06	0,06
Fan side			
Air flow	m3/h	4000	4200
Useful head	Pa	24,00	40,00
Power absorbed	kW	0,10	0,14
Winter operation A7/W45			
Thermal power	100% kW	5,99	8,19
Thermal power	66% kW	4,08	5,07
Thermal power	33% kW	2,66	2,37
Power absorbed from blowers	100% kW	1,50	2,04
Total absorbed power	100% kW	1,65	2,23
СОР		3,62	3,67
Plant side			
Water flow system	m3/h	1,03	1,41
Useful head	mca	6,50	4,70
Fan side			
Air flow	m3/h	4000	4200
Useful head	Pa	24,0	40,0
Power absorbed	kW	0,10	0,14
Summer operation A35/W18			
Cooling power	100% kW	8,05	10,65
Cooling power	66% kW	5,58	6,54
Power absorbed from blowers	100% kW	1,36	1,88
Total absorbed power	100% kW	1,52	2,07
EER		5,29	5,15
Plant side			
Water flow system	m3/h	1,39	1,83
Useful head	mca	5,60	4,00
Fan side			
Air flow	m3/h	4000	4200
Useful head	Ра	24,0	40,0
Power absorbed	kW	0,10	0,14
Summer operation A35/W7			
Cooling power	100% kW	5,62	7,47

Cooling power	66% kW	2.07	4.20
	00% NW	3,07	4,07
Cooling power	33% kW	2,55	2,06
Power absorbed from blowers	100% kW	1,39	1,89
Total absorbed power	100% kW	1,54	2,09
EER		3,64	3,58
Lato impianto			
Water flow system	m3/h	1,0	1,28
Useful head	mca	6,5	5,1
Lato ventilatore			
Air flow	m3/h	4000	4200
Useful head	Ра	24,0	40,0
Dimensions	L x H x P	P 1000x735x443 mm R410a	
Coolant			
Compressor type	ssor type Twin Rotary		
Number of compressors		1	1
Number of fans		1	1
Power supply	V/Ph/Hz	230-1-50	230-1-50
Hydraulic connections size		1″	1"
Sound power	dB(A)	57	60

dB(A)

Sound pressure at 1m

55

57

[technical data continue on the following column]

# Accessories





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15AIBASI

	PRODUCT	CODE
10	Mix distribution group DN25 24v 0-10v standard circulator	10999.3466.0
	Mix distribution group DN25 24v 0-10v oversized circulator	10999.3467.0
	Isolated distribution manifold CS80 1 zone	10999.3468.0
No o o o	Isolated distribution manifold CS80 2 zones	10999.3469.0
di la caro c	Isolated distribution manifold CS80 3 zones	10999.3470.0





Headquarters and Production Legal office: Via Pravolton, 1/b - 33170 Pordenone (Italy) Tel. +39 0434 238311 - Fax +39 0434 238312





ww.biasi.it/en

