

Riva

PLUS COMBI

WALL HUNG GAS BOILER FOR
CENTRAL HEATING SUPPLY

**Please Read Instructions Carefully
Save for Future Reference**

WARNING: If the information in this manual is not followed exactly, a fire or explosion may result causing property damage, personal injury or loss of life.

- Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.
- **WHAT TO DO IF YOU SMELL GAS**
 - Do not try to light any appliance.
 - Do not touch any electric switch; do not use any phone in your building.
 - Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions.
 - If you can not reach your gas supplier call the fire department.
- Installation and service must be performed by a qualified installer, service agency or the gas supplier.

Manufactured by:



Biasi S.p.A.
Verona, Italy



Distributed By:



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Dear Customer:

Thank you for buying a Biasi Riva Plus Combi.

The Riva Plus Combi is a high efficiency condensing, wall mounted gas boiler which provides central heat.

We realize that it is not possible to answer all questions about the Riva Plus Combi in this manual. Reading this installation manual does not make the reader an expert in all aspects of installation and operation, and does not replace the need for a qualified, licensed heating contractor. We urge you to contact your installing contractor or distributor if you are in question about any aspect of your boiler's performance. Our main concern is that you are satisfied with your boiler and its performance. We require that your contractor complete efficiency tests using instruments.

The external controls and accessories listed in this manual (excluding those supplied inside the boiler) are intended to serve as guidelines rather than specific recommendations. We realize that other makes and models of such devices are available and can be used as successfully as those we specify. The installing contractor is the best judge of a system's specific requirements, as well as the local availability of certain makes and models of controls and accessories. The preceding does not apply, however, to the equipment that comes with every boiler, such as the overheat control and pressure relief valves. The installation of the specific devices supplied with every boiler is absolutely necessary to the safe operation of the boiler and protection of the heating system.

All BIASI wall hung boilers are built in accordance with the ASME boiler and pressure vessel code, and bear the "H" stamp. The Entire range of applications for the Riva Plus Combi has been tested to standard CSA 4.9 and is CSA compliant.

This Riva Plus Combi has a 2 year warranty, a copy of which is provided with the boiler. Please be sure to return the warranty registration card as the warranty will be void without your boiler's serial numbers (located on the ratings label affixed to the boiler), date of installation and the name of your installer being on record in our files.

Thank you for purchasing our Riva Plus Combi. If you have questions or comments, please don't hesitate to contact us immediately. Our goal is 100% customer satisfaction.

QHT inc.

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WARNING

Boiler is certified as an indoor appliance. Do not install boiler outdoors or locate where it will be exposed to freezing temperatures.

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- **WHAT TO DO IF YOU SMELL GAS**
 - Do not try to light any appliance.
 - Do not touch any electric switch; do not use any phone in your building.
 - Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions.
 - If you can not reach your gas supplier call the fire department.
- Installation and service must be performed by a qualified installer, service agency or the gas supplier.

DANGER

Caution: Do not store or use flammable materials, chemicals or flammable liquids, especially gasoline, in the vicinity of this heating appliance.

Caution: Should overheating occur or the gas supply fail to shut off, do not turn off or disconnect the electrical supply to the pump. Instead, shut off the gas supply at a location external to the appliance.

Caution: Do not use this boiler if any part has been under water. Immediately call a qualified service technician to inspect the boiler and to replace any part of the control system and any gas control which has been under water.

WARNING

Any appliance that burns natural gas, propane gas, fuel oil, wood or coal is capable of producing carbon monoxide (CO). Carbon Monoxide (CO) is a gas which is odorless, colorless and tasteless but is very toxic. CO is lighter than air and thus may travel throughout the building.

BRIEF EXPOSURE TO HIGH CONCENTRATIONS OF CO, OR PROLONGED EXPOSURE TO LESSER AMOUNTS OF CO MAY RESULT IN CARBON MONOXIDE POISONING. EXPOSURE CAN BE FATAL AND EXPOSURE TO HIGH CONCENTRATIONS MAY RESULT IN THE SUDDEN ONSET OF SYMPTOMS INCLUDING UNCONSCIOUSNESS.

Symptoms of CO poisoning include the following:

dizziness	vision problems	shortness of breath
headache	loss of muscle control	unclear thinking
nausea	weakness	unconsciousness

The symptoms of CO poisoning are often confused with those of influenza, and the highest incidence of poisoning occurs at the onset of cold weather or during flu season.

A victim may not experience any symptoms, only one symptom, or a few symptoms.

Suspect the presence of carbon monoxide if symptoms tend to disappear when you leave your home.

The following signs may indicate the presence of carbon monoxide:

- Hot gasses from appliance, venting system pipes or chimney, escaping into the living space.
- Flames coming out around the appliance.
- Yellow colored flames in the appliance.
- Stale or smelly air.
- The presence of soot or carbon in or around the appliance.
- Very high unexplained humidity inside the building.

If any of the symptoms of CO occur, or if any of the signs of carbon monoxide are present, **VACATE THE PREMISES IMMEDIATELY AND CONTACT A QUALIFIED HEATING SERVICE COMPANY OR THE GAS COMPANY OR THE FIRE DEPARTMENT.**

ONLY QUALIFIED, LICENSED SERVICE CONTRACTORS SHOULD PERFORM WORK ON YOUR BIASI RIVA PLUS COMBI BOILER.

IMPORTANT INFORMATION
Please read this page carefully.

- **ALL BOILERS MUST BE INSTALLED IN ACCORDANCE WITH NATIONAL, STATE AND LOCAL PLUMBING, HEATING AND ELECTRICAL CODES AND ORDINANCES, AS WELL AS THE REGULATIONS OF THE SERVING ELECTRICAL, WATER AND GAS UTILITIES.**
- **All systems should be designed by competent contractors, and only persons knowledgeable in the layout and installation of heating systems should attempt the installation of any boiler. It is the responsibility of the installing contractor to see that all controls are correctly installed and operating properly when the installation is completed.**
- **This boiler is intended for use, only with propane or natural gas. All flammable liquids (especially gasoline), chemicals, rags, paper, wood scraps, debris, etc., should be kept away from the boiler at all times. Keep the boiler area clean and free of all fire hazards.**
- **Please read the literature and warranties supplied by the manufacturers of the various accessory equipment. This equipment is warranted by the respective manufacturers, not by Quincy Hydronic Technologies, Inc. Each piece of equipment must be installed and used according to the recommendations of the manufacturer.**

Codes and Regulations:

Installation of the boiler and related equipment must conform to national, state and local regulating agencies and codes applicable to the installation of the equipment. In the absence of local requirements, the following codes apply:

- | |
|---|
| A. ANSI/NFPA - #70 National Electric Code |
| B. ANSI/NFPA - #211 Chimneys and Vents |
| C. ANSI/NFPA - #Z223.1 National Fuel Gas Code |
| C. ANSI/NFPA - Domestic Gas Conversion Burner |
| D. CAN/CGA - B149 Installation Codes |
| E. ANSI/ASME - CSD-1 |

The above codes are available from:

National Fire Protection Association (NFPA)
Battery March Park
Quincy, Massachusetts, 02269
<http://www.nfpa.org>

CSA International
8501 E. Pleasant Valley Road
Cleveland, OH 44134-5575
<http://www.csa-international.org>

1. General Information

The Riva Plus Combi is a high efficiency condensing, wall mounted gas boiler which provides central heat. The boiler features a gas valve which modulates the energy input from 49 474 BTU/h to 116 008 BTU/h. The boiler is shipped fully assembled. All units are pressure and combustion tested at the factory prior to shipping.

Key Features:

- Wall mountable - saving valuable floor space.
- Several flue options available
- Electronic spark ignition
- Safety flow switch - positioned on the main circuit, which monitors the flow and protects the main heat exchanger from thermal shock should there be a lack of water in the system.
- Frost protection - contains an integral frost protection system to prevent frost damage which can occur in areas susceptible to very cold weather conditions.
- Boiler operation recognition system - should the boiler not be used for longer than 24 hours, it then performs a controlled system test to ensuring the motorized components within the boiler do not become inoperable due to lack of use.
- Gas valve modulation - the gas input modulates based off central heating temperature to within ± 2 °F
- Diagnostic information system equipped with three LED diagnostic lights for quick error assessment.

2. Technical Information (M135.30CM)

GENERAL		
Height	in	31.6
Width	in	15.7
Depth	in	13.8
Weight	lb	109.5

ELECTRICAL		
Voltage	V	120
Frequency	Hz	60
Current	A	1.6
Power consumption	W	180

INJECTORS	No.	Size
Natural	14	130
Propane	14	85

CENTRAL HEATING		
Maximum working temp.	°F	185
Temp. Regulation range*	°F	100-176
Maximum pressure	psi	30.0
Minimum pressure	psi	4.35
Max head loss (at 4.4 GPM)	ft	8.25
*At the minimum useful output		

2. Technical Information Cont.

ENERGY CAPACITY		
Nominal heat input (0/2000ft)	MBH	116.0
Nominal heat input (2000/4500ft)	MBH	110.2
Minimum heat input	MBH	49.5
Maximum useful output (0/2000ft)	MBH	102.0
Maximum useful output (2000/4500ft)	MBH	97.2
Minimum useful output	MBH	41.6

GAS SUPPLY PRESSURE				
Gas		Normal	Min	Max
Natural	inwc	7.0	3.5	10.5
Propane	inwc	11.0	8.0	13.0

GAS PRESSURE AT BURNER				
Gas		Min	Max	Ignition
Natural	inwc	1.0	4.8	2.4
Propane	inwc	2.0	10.3	5.2

FLUE DESIGN		
Minimum Venturi pressure	inwc	0.64
<u>Flue pipe diameter</u>		
Coaxial	in	2.25/4 3.25/5
Twin split pipes	in	3.25/3.25
Nominal heat flow rate	MBH	116.0
Nominal heat flow rate (2000/4500ft)	MBH	110.2
Min Exhaust temperature	°F	158
Max Exhaust temperature	°F	156

GAS FLOW RATE			
Gas		Min	Max
Natural	ft³/h	48.7	115.1
Propane	lb/h	2.2	5.2

CLEARANCE TO COMBUSTIBLES		
Front	in	18
Back	in	0
Top	in	8
Sides	in	2
Bottom	in	8
Flue pipe enclosed	in	2
Flue pipe free air	in	0

FLUE GAS FIGURES		
Gas	Min	Max
CO ₂	2.5%	6.3%
O ₂	16.5%	9.7%

DOMESTIC HOT WATER		
Maximum temperature	°F	131
Minimum temperature	°F	95
Maximum pressure	psi	145
Minimum pressure	psi	4.35
D.h.w. ΔT 25K	gal/h	4.5
D.h.w. ΔT 30 K	gal/h	3.8
D.h.w. ΔT 35 K	gal/h	3.2
D.h.w. ΔT 40 K	gal/h	2.8

3. Appliance Description

3.1 Overview:

- 1 Case front panel
- 2 Control panel
- 3 Control panel cover

3.2 Control Panel:

- 4 Central heating circuit temperature and pressure gauge
- 5 Lock-out signal lamp
- 6 Boiler reset button
- 7 Function switch and Central heating temperature adjustment knob
- 8 Domestic hot water, temperature control knob
- 9 Appliance operation lights

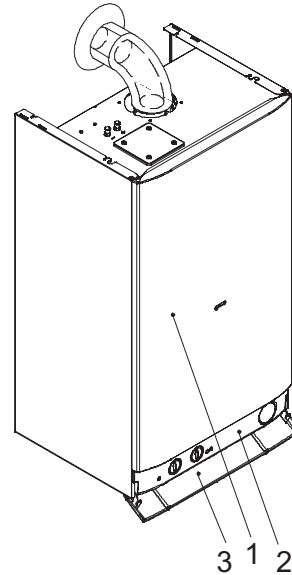


Figure 3.1

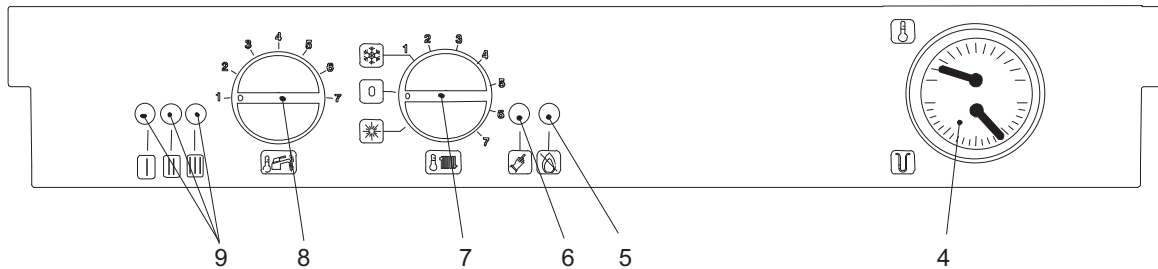


Figure 3.2

3.3 Piping Connections:

- A Gas inlet pipe
- B Main circuit drain cock
- C C.h. supply copper pipe
- D C.h. return copper pipe
- E C.h. PRV discharge copper pipe
- F D.h.w. outlet copper pipe
- G D.h.w. inlet copper pipe
- H Condensate drain connection area

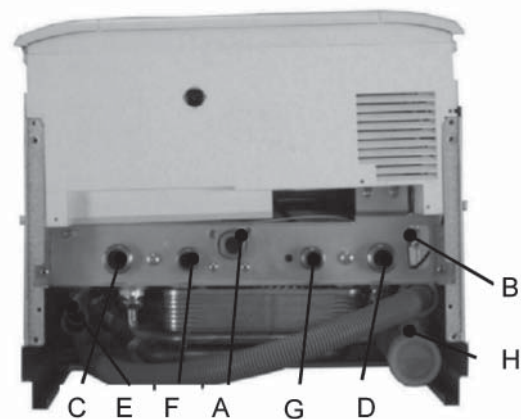


Figure 3.3

