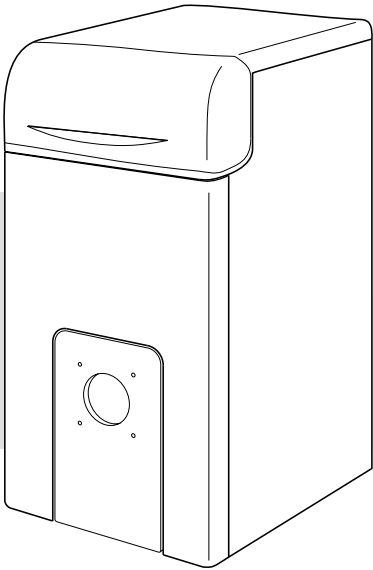
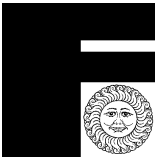


**FERROLI**

# GN1 N



**CAST IRON HIGH EFFICIENCY SECTIONAL BOILER,  
FOR GAS/OIL FUELS**



## **General instructions**

- Read the warnings given in this manual thoroughly. They provide important information for safe installation, use and maintenance.
- Keep the manual carefully for future consultation.
- The instruction manual is an integral and essential part of the product and must be kept by the user.
- If the appliance is sold or transferred to another owner or if the owner moves, leaving the appliance behind, always ensure that the manual is kept with the appliance for consultation by the new owner and/or installer.
- Incorrect installation or poor maintenance absolves the manufacturer from all liability for damage to people or things.
- Installation and maintenance must be carried out in conformity with current legislation, according to the manufacturer's instructions and by qualified personnel.
- Before cleaning or maintenance, disconnect the appliance from the mains via the switch on the appliance or a suitable isolating device.
- In the event of malfunction or faulty operation, deactivate the appliance. Do not attempt to repair or carry out any other operation on the appliance directly. Contact qualified personnel only.
- Repairs or the replacement of components must be carried out exclusively by qualified personnel using original spare parts only. Failure to respect the above may compromise the safety of the appliance.
- To guarantee efficient operation, the appliance must be serviced once a year by an authorised service centre.
- The appliance may not be used for purposes other than those for which it was explicitly designed. Any other use is considered improper and therefore dangerous.
- Incorrect installation and use or failure to follow the instructions provided by the manufacturer absolve the manufacturer from all liability for damage.
- After unpacking, check that the contents are whole and undamaged.
- Keep packaging out of reach of children as it is potentially hazardous.
- To clean external parts, use a damp cloth moistened with soapy water if necessary. Avoid using abrasive cleaning products and solvents.

## **Mars**

The CE mark indicates that the appliance satisfies all the essential requisites of the gas appliance directive (90/396/CEE) and the technical standards referred to.

**Index**

**1.** Technical information ..... 4  
**2.** Dimensions and technical data ..... 5  
**3.** Packing and shipment ..... 6  
**4.** Installation ..... 7  
**5.** Testing ..... 8  
**6.** Service ..... 9

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## 1. TECHNICAL INFORMATIONS

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### 1.01 Introduction

**GN1 N** boiler is a new heating generator with high efficiency, for central heating system as well sanitary hot water production suitable for burners using oil or gas.

The boiler body is built by cast iron sections joined together by mean of biconical nipples and tie rods. Sections fins are especially developed to achieve the best efficiency of the boiler in order to save on fuel consumption. The boiler body insulation is provided by mineral high density fibers that minimizes the body heat lost.

Key

- 1 Timer socket
- 2 Thermomanometer
- 3 Security thermostat manual resetting
- 4 Main switch
- 5 Control thermostat

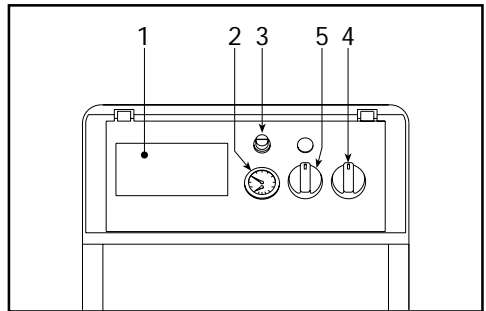


Fig. 1

### 1.02 Control and securities devices operation

#### Regulating thermostat, manual resetting 3 (fig. 1)

It operates when the boiler temperature, during the heating mode reach such a level that can use a danger situation. Before resetting this thermostat ask for Qualified Serviceman to inspect the appliance.

#### Central thermostat 5 (fig. 1)

It allows to control the boiler temperature by mean of its knobs. This thermostat controls the burner.

#### Room thermostat (not supplied)

This device is not supplied, but can be fitted by installer, it is connected in series to the control thermostat and it manages both the burner and the circulating pump during the heating mode. The use of such appliance is advised to get a better comfort as well on energy saving.

## 2. DIMENSIONS AND TECHNICAL DATA

### 2.01 Dimensions and technical data (fig. 2 - tab. 1)

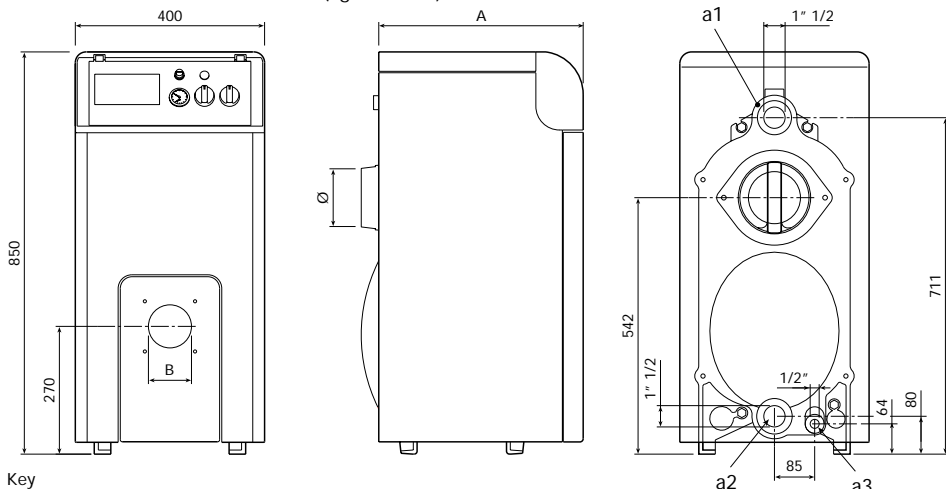


Fig. 2

- a1 Flow 11/2"
- a2 Return 11/2"
- a3 Boiler drain 11/2"

| Model    | Heat and D.H.W. (gross) gas Max. | Heat and D.H.W. (net) gas+oil Max. | Heat and D.H.W. output Max. | Heat and D.H.W. (gross) gas Min. | Heat and D.H.W. (net) gas+oil Min. | Heat and D.H.W. output Min. | N° element | Water capacity dm <sup>3</sup> | Combustion chamber length mm | Combustion chamber dimension Ømm |
|----------|----------------------------------|------------------------------------|-----------------------------|----------------------------------|------------------------------------|-----------------------------|------------|--------------------------------|------------------------------|----------------------------------|
| GN1 N 02 | 28,6                             | 25,8                               | 23,3                        | 18,2                             | 16,4                               | 15,0                        | 2          | 11                             | 286                          | 260x310                          |
| GN1 N 03 | 43                               | 38,7                               | 34,9                        | 18,2                             | 16,4                               | 15,0                        | 3          | 14                             | 386                          | 260x310                          |
| GN1 N 04 | 57,3                             | 51,6                               | 46,5                        | 39,3                             | 35,4                               | 32,5                        | 4          | 17                             | 486                          | 260x310                          |
| GN1 N 05 | 71,6                             | 64,5                               | 58,1                        | 49,1                             | 44,2                               | 40,5                        | 5          | 20                             | 586                          | 260x310                          |
| GN1 N 06 | 86,1                             | 77,5                               | 69,8                        | 59,1                             | 53,2                               | 48,8                        | 6          | 23                             | 686                          | 260x310                          |
| GN1 N 07 | 100,4                            | 90,4                               | 81,4                        | 68,8                             | 62,0                               | 57,0                        | 7          | 26                             | 786                          | 260x310                          |
| GN1 N 08 | 114,7                            | 103,3                              | 93,0                        | 78,6                             | 70,8                               | 65,0                        | 8          | 29                             | 886                          | 260x310                          |

| Model    | Working pressure bar | A   | B   | Ø   | Combustion chamber load loss Δp mbar | Combustion chamber volume dm <sup>3</sup> | Water load losses |       | Weight of unit kg. |
|----------|----------------------|-----|-----|-----|--------------------------------------|---|-------------------|-------|--------------------|
|          |                      |     |     |     |                                      |   | Δt 10             | Δt 20 |                    |
| GN1 N 02 | 4                    | 300 | 105 | 130 | 0,2                                  | 12,09                                     | 1                 | -     | 75                 |
| GN1 N 03 | 4                    | 400 | 105 | 130 | 0,2                                  | 20,15                                     | 1,8               | -     | 100                |
| GN1 N 04 | 4                    | 500 | 105 | 130 | 0,2                                  | 28,21                                     | 4,2               | 1     | 125                |
| GN1 N 05 | 4                    | 600 | 105 | 180 | 0,2                                  | 36,27                                     | 7,2               | 1,6   | 150                |
| GN1 N 06 | 4                    | 700 | 125 | 180 | 0,2                                  | 52,39                                     | 11                | 2,3   | 175                |
| GN1 N 07 | 4                    | 800 | 125 | 180 | 0,2                                  | 60,45                                     | 15                | 3,3   | 200                |
| GN1 N 08 | 4                    | 900 | 125 | 180 | 0,2                                  | 68,51                                     | 20                | 4,5   | 225                |

**N.B.:** - Max. water temperature for the heating system is 90° C. - Min. water temperature for the heating system is 45° C.

**2.02 Pressure drop (fig. 3)**

Pressure drops according to the boiler size are specified on the following diagram and refer to temperature difference between flow and return comprises between 10 and 20°C.

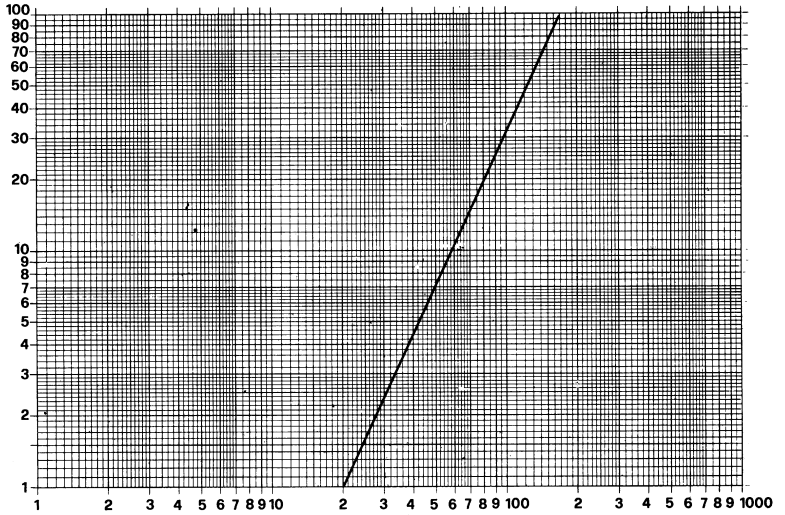


Fig. 3

**3. PACKING AND SHIPMENT**

Boiler is delivered complete assembled in a wood crate.

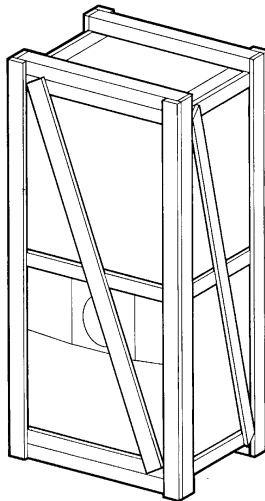


Fig. 4

## 4. INSTALLATION

It is law that all gas appliances are installed by Competent Persons, in accordance with the regulations. Failure to install appliances correctly lead to prosecution, it is your own interest, and that of safety, to ensure that the law is complied with. Manufacturers instructions must NOT be taken in any way as over-riding statutory obligations, special care must be paid to conform with law and regulation concerning building and location of the chimney.

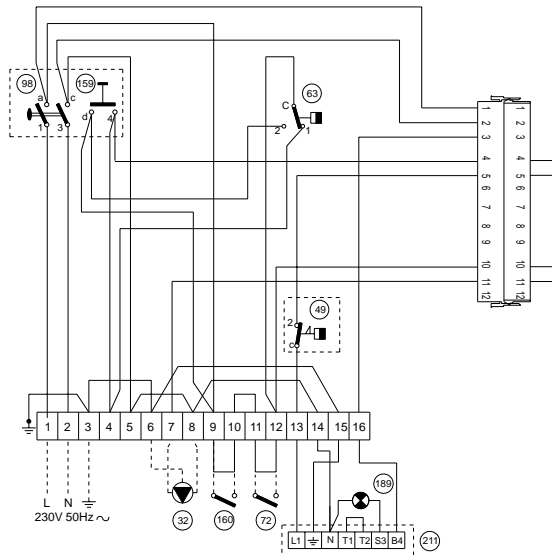
### 4.01 Electrical connection

Proceed to wire pump, burner and optional room thermostat. According to the wiring diagrams (fig.5) and to the directions attached to the cables. It is recommended to install a two-pole switch between the power supply and the boiler. The switch contacts must have a clearance of at least 3 mm and fuses of 5 A max must be provided.

#### N.B. - Appliance must be earthed.

**It is recommended to connect the boiler to a good electric earth system.**

**FERROLI could not be considered responsible for any kind of damage to Persons or things caused by failure of earthing the system.**



Key

- 32** Central heating pump
- 49** Overheat cut-off thermostat
- 63** C.H. boiler thermostat
- 72** Room thermostat (not fitted)
- 98** Switch
- 159** Test knob
- 160** Auxiliary contact
- 189** Boiler shut down warning
- 211** Burner connector

Fig. 5a

**Note** = Dotted lines indicate connections to be performed during installation

## Electrical diagram

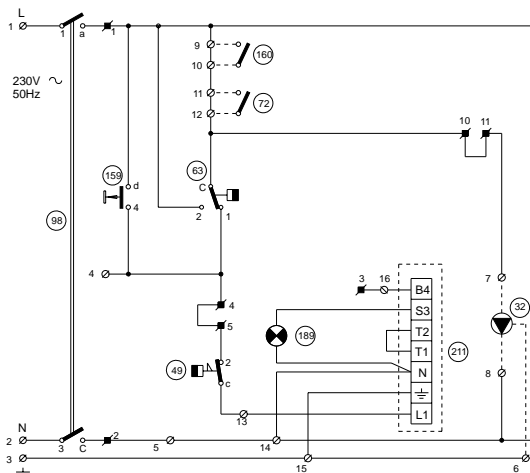


Fig. 5b

### Key

- 32** Central heating pump
- 49** Overheat cut-off thermostat
- 63** C.H. boiler thermostat
- 72** Room thermostat (not fitted)
- 98** Switch
- 159** Test knob
- 160** Auxiliary contact
- 189** Boiler shut down warning
- 211** Burner connector

**Note** = Dotted lines indicate connections to be performed during installation

### 4.02 Hydraulic connections

Boiler must be connected to the system according to boiler back part indications and those provided at fig. 2. Pipe must be free of any kind of strain and security valves must be provided in both central heating system and domestic hot water system location of such security valves be as close as possible to the boiler and between the boiler and valve no obstructions or gate valves must be placed.

The boiler is not supplied with expansion tank it has to be provided during the boiler installation. It is advised that the pressure in the hydraulic system has to be between 0,5 and 1 bar measured in cold water condition.

### 4.03 Connection to the chimney

It is recommended to connect the boiler to a good working chimney built according to the regulations. The connection between boiler and chimney must be done by using suitable material proof against high temperature and corrosion. Where flue sections have to be connected it is advised pay attention to avoid leaking and provided good insulation through all the flue length to avoid condensing problem.



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## 5. TESTING

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### 5.01 Before the first light of the boiler

Before the first light of the boiler follow these check list:

- a) check the system is filled with water at the right pressure;
- b) check against any leakage of water fuel;
- c) check that the correct electric power is supplied to the unit;
- d) check size and perfect flue installation;
- e) check against any type of flammable materials where the boiler is installed;
- f) check the burner has the right heat input according to the boiler size;
- g) control that the water valves are open.

### 5.02 First lighting

After the boiler preliminaries checking , the appliance can be lights in the following way:

- 1) Open the fuel gate valve.
- 2) Set the regulating thermostat at the required temperature level.
- 3) Give electric power to the boiler and switch on the main switch 4 (fig. 1) on the boiler control panel.

After above operations the burner will start to run and the boiler will begin to work.

### 5.03 After the first lighting

After the first lighting it is advisable check:

burner works properly, this checking must be done by appropriate instruments.

Thermostats operate correctly.

Water flows through the system.

Smoke gases evacuate through the flue duct.

### 5.04 Switch off

To turn off the unit for a short period it is enough to switch off the switch 4 (fig. 1) on the control panel.

If the boiler has to be stopped for long period beside to act by the switch 4, it is necessary to cut the supply of fuel by mean of the gate valve, in winter season, to avoid damages due to the frost it is necessary to add the antifrost liquid in the system or to drain it completely.

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## 6. SERVICE

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The after sale service must be carried out only Qualified Plumbers. It is advise to service the boiler at least once a year, before the winter season. Check must include the boiler cleaning, the perfect operation of the controls and the burner.

Furthermore the flue duct conditions have to be inspected.

### 6.01 Boiler cleaning

Cut out electric power.

The front panels 1, 2, 3 (fig. 6).

Clean the boiler internal parts.

Check the flue duct and if necessary clean it.

The burner service must be done according the Manufacture Instructions.

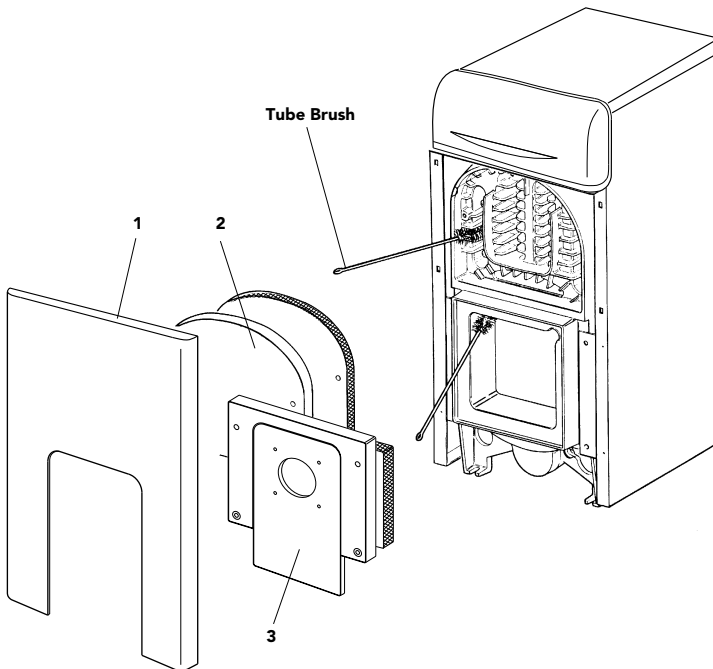


Fig. 6





**ALL SPECIFICATIONS SUBJECT TO CHANGE**

**Please note - to avoid incurring unnecessary expense, in the event of a boiler shut down, check this in not caused by lack of electricity supply, gas supply or low water pressure before calling our Customer Service Helpline.**

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