GN1 N

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

- 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.
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1. TECHNICAL INFORMATIONS

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 means 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 Thermostanometer
3 Security thermostat manual resetting
4 Main switch
5 Control thermostat

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)

Key

- a1 Flow 1 1/2"
- a2 Return 1 1/2"
- a3 Boiler drain 1 1/2"

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<tr>
<th>Model</th>
<th>Working pressure bar</th>
<th>A</th>
<th>B</th>
<th>Ø</th>
<th>Combustion chamber load loss (\Delta p) mbar</th>
<th>Combustion chamber volume dm³</th>
<th>Water load losses (\Delta t) 10</th>
<th>Water load losses (\Delta t) 20</th>
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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.

3. PACKING AND SHIPMENT

Boiler is delivered complete assembled in a wood crate.
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.

![Diagram](image-url)

**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 warming
- 211 Burner connector

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

Key
32 Central heating pump
49 Overheat cut-off thermostat
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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 is 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.
5. TESTING

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.
6. SERVICE

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](image-url)
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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