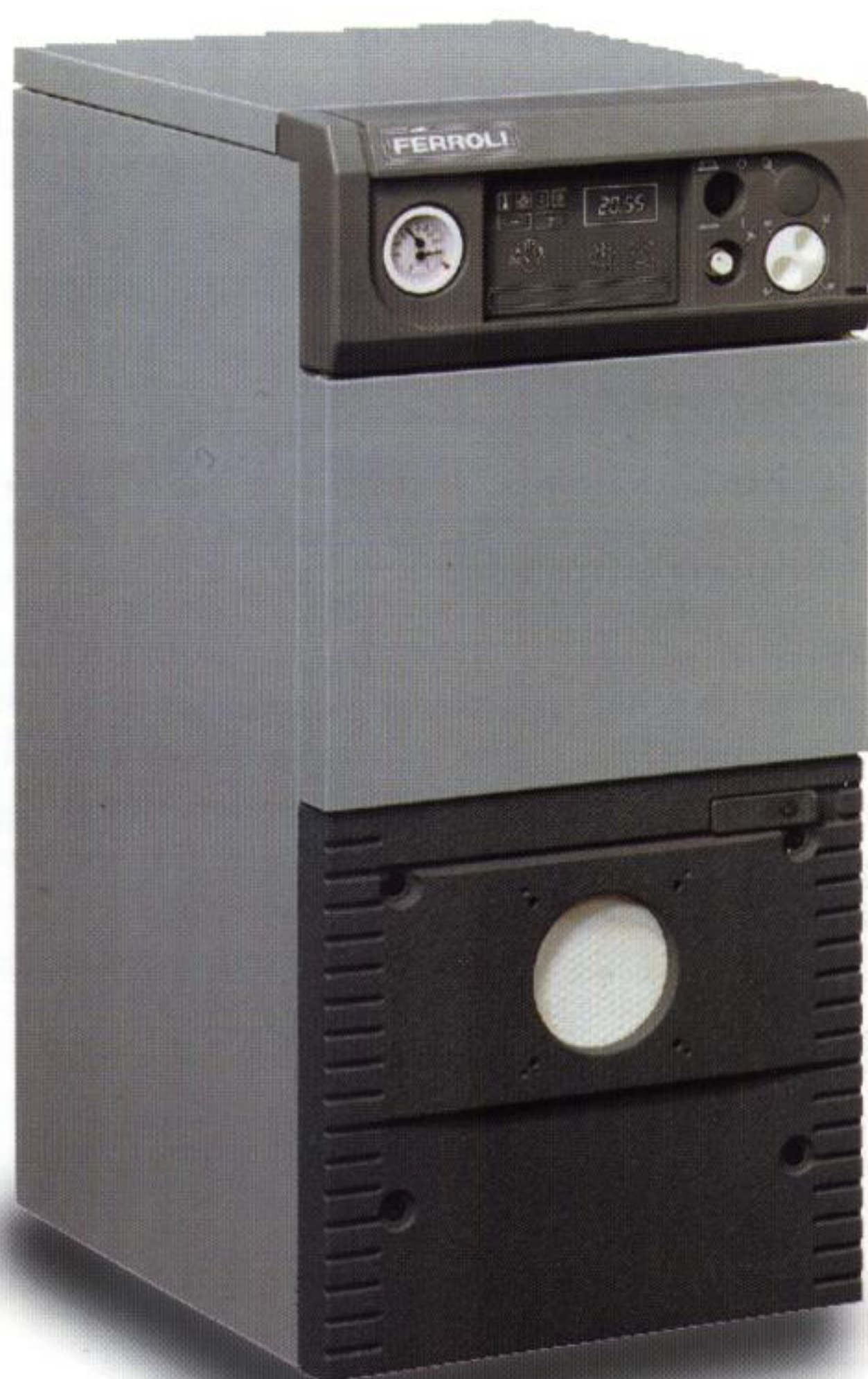


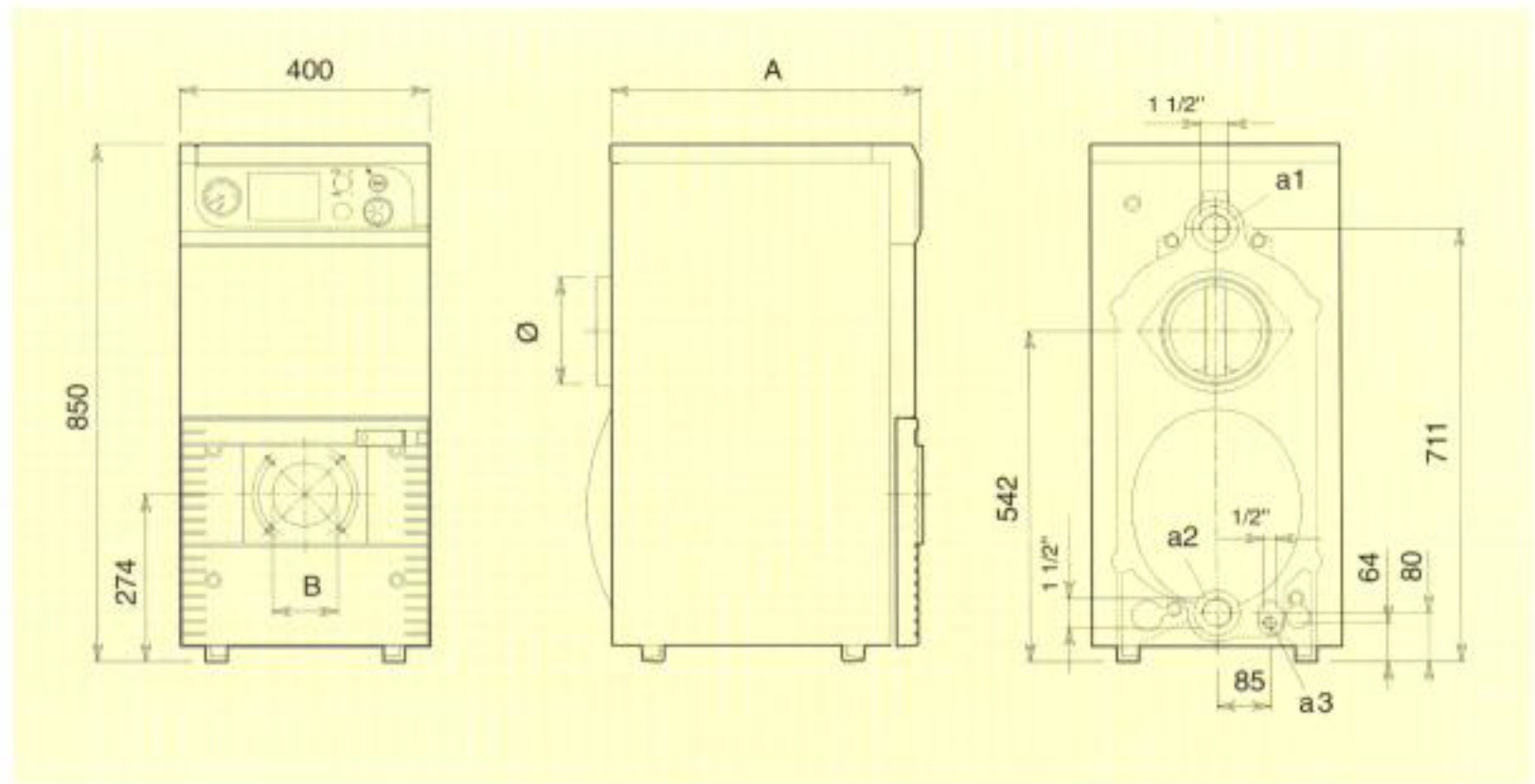
# GN1



**FERROLI**

## GENERAL DESCRIPTION

The GN1 range of boilers is available for pressure jet oil (35 or 28 sec.) or forced air gas firing (natural or LPG). The cast iron sections are joined by steel nipples and tie rods. All models are delivered to site fully assembled with the casing already fitted, palletised and surrounded by a wooden frame with a protective plastic covering. GN1 boilers are designed for use with fully pumped indirect heating systems up to a maximum working pressure of 4 bar and a flow temperature of 82°C against a  $\Delta t$  11°C. The pre-wired boiler control panel incorporates ON/OFF illuminated switch, control thermostat, limit (manual re-set) thermostat, combined thermometer and altitude gauge. For ease of maintenance all cleaning of the flueways and burner servicing is carried out from the front of the boiler, which means that the side clearances are kept to a minimum, making this boiler particularly suitable for modular installations. The system electrical and associated controls should be installed so that the burner is never allowed to fire when there is no demand for heat.



## TECHNICAL DATA

MODEL	OUTPUT		DIMENSIONS			CONNECTIONS			WATER CONTENT lt	WEIGHT kg
	kW	BTU/h	A	B	Ø flue size	a1	a2	a3		
GN1 02	17.4-23.3	59-79	300	105	130	1" 1/2	1" 1/2	1/2"	11	75
GN1 03	24.4-34.9	83-119	400	105	130	1" 1/2	1" 1/2	1/2"	14	100
GN1 04	36.0-46.5	122-158	500	105	130	1" 1/2	1" 1/2	1/2"	17	125
GN1 05	47.7-58.1	162-198	600	105	180	1" 1/2	1" 1/2	1/2"	20	150
GN1 06	59.3-69.8	202-238	700	125	180	1" 1/2	1" 1/2	1/2"	23	175
GN1 07	70.9-81.4	241-277	800	125	180	1" 1/2	1" 1/2	1/2"	26	200
GN1 08	82.6-93.0	281-317	900	125	180	1" 1/2	1" 1/2	1/2"	29	225

## MODULAR APPLICATIONS

This boiler range, is particularly suited for modular applications since all servicing and flue cleaning is carried out from the front, so that side clearances are kept to a minimum. For further details please contact FERROLI commercial boiler sales office.

## INSTALLATION REQUIREMENTS

All GN1 boilers should be installed in accordance with the relevant requirements of the building Regulations, Health and Safety Executive Regulation PMS, IEE Regulations and the Byelaws of the Local Authority and the local water company.

### British Standard Codes of Practice

**CP341.300-307:** Central heating by low pressure hot water.

**CP341.342:** Part 2 Centralised hot water supply.

**CIBSE Guide:** Reference sections B7, B11 & B13.

**IGE/UP/2:** Gas Installation pipework, boosters and compressors on Industrial and Commercial premises.

**BS6644:** Installation of gas fired hot water boilers rated inputs above 60 kW but not greater than 2 Mw.

**BS5410:** Part 2 oil-fired installation of 44 kW and above.

## BASE REQUIREMENTS

The boiler should stand on a load bearing non-combustible level base. Any plinth constructed must exceed the boiler plan area by not less than 80 mm overall.

## WATER FLOW RATES

The system design must ensure that adequate circulation takes place whilst the boiler is firing.

MODEL		102	103	104	105	106	107	108
FLOW RATE AT $\Delta t$ 11°C	lt/sec	0.5	0.75	1.0	1.25	1.5	1.75	2.0
FLOW RATE AT $\Delta t$ 20°C	lt/sec	0.28	0.42	0.55	0.69	0.83	0.97	1.1

## WATERSIDE PRESSURE DROPS

Waterside pressure drops, to assist with selection of pumps, the table indicates the hydraulic resistance (mbar).

MODEL		102	103	104	105	106	107	108
PRESSURE DROP AT $\Delta t$ 11°C		1.0	1.8	4.2	7.2	11.0	15.0	20.0
PRESSURE DROP AT $\Delta t$ 20°C		—	—	1.0	1.6	2.3	3.3	4.5

## PUMP OVER-RUN

Provision should be made to dissipate residual heat on plant shutdown. The GN1 boiler includes a 3 pole changeover thermostat which means that provided the installation is wired in accordance with the "Electrical Diagram" then this facility will be provided.

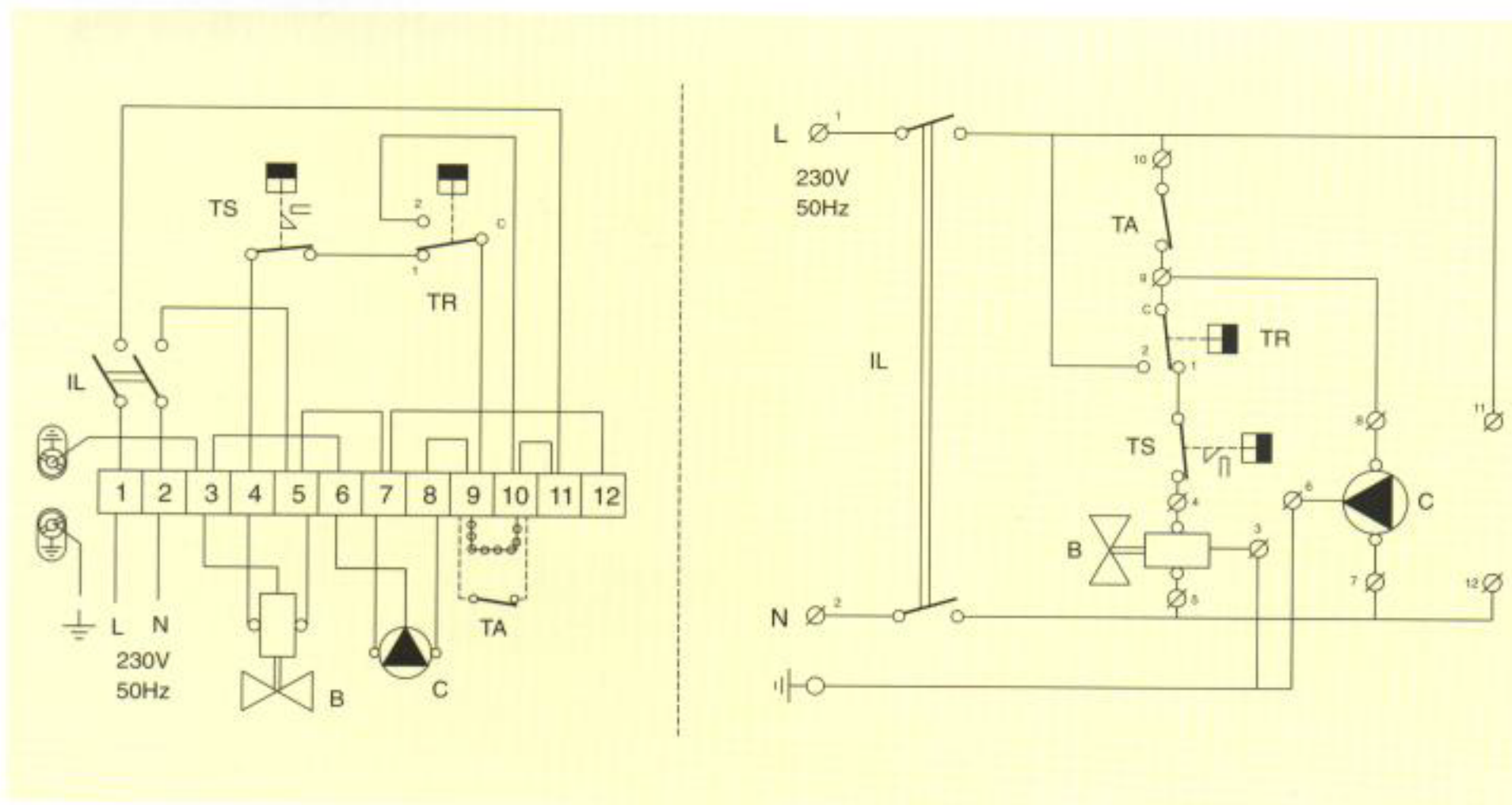
## VENTILATION

Safe, efficient, and trouble-free operation of conventionally flued gas boilers is vitally dependent on the provision of adequate supply of fresh air to the room in which the appliance is installed. Ventilation by grilles communicating directly with the outside, air is required at both high and low levels. The minimum free areas of these grilles must be in accordance with the table shown. The use of an extractor fan in the same room as the boiler (or in an adjacent room in communication) can, in certain conditions, adversely effect the safe operation of the boiler. Where such a fan is already fitted, or if an extractor fan is likely to be installed at later date, then further advice should be obtained.

Total gross input rating of boilers	Position of Air vents	Air vent areas (Air direct from outside)
Up to 2 MW	High Level	270 cm <sup>2</sup> plus 2.25 cm <sup>2</sup> per kW in excess of 60 kW total rated input
Up to 2 MW	Low Level	540 cm <sup>2</sup> plus 4.5 cm <sup>2</sup> per kW in excess of 60 kW total rated input


For further detailed recommendations consult BS5440 PART 2 AND BS6644

## ELECTRICAL DIAGRAM



## ELECTRICAL REQUIREMENTS

These boilers are only to be used with single phase electric supply 220/240V having a max fuse rating of 5 amps.

- IL** Boiler ON/OFF switch
- CA** Auxiliary contacts
- TR** Control thermostat
- TS** Limit thermostat (manual reset)
- B** Burner
- C** Circulating pump
- 11 & 12** Spare terminals
-  Remove this link if a room thermostat is fitted

## WATER TREATMENT

Water contained in all heating and indirect hot water systems, particularly open vented systems, requires basic treatment. It is wrong to assume that because boilers are operating in conjunction with what is an apparently closed circuit, an open vented system will not under normal circumstances allow damage or loss of efficiency due to hardness salts and corrosion once the initial charge of water has been heated several times. One millimetre of lime reduces the heat conversion from flame via metal to water by 10%. In practice the accumulation of these salts is liable to cause noises from the boiler body or even premature boiler failure. Corrosion and the formation of black iron oxide sludge will ultimately result in premature radiator failure. Open vented systems are not completely sealed off from the atmosphere because it is necessary to provide a tank open to atmosphere if proper venting and expansion of system water is to be achieved. The same tank is used to fill the systems with water and it is through the cold feed pipe that system water expands into the tank when the boiler passes heat into the system. Conversely, when the system cools, water previously expanded is drawn back from the tank into the system together with a quantity of dissolved oxygen. Even if leakage from the heating and hot water system is eliminated there will be evaporation losses from the surface of the tank. Depending on ambient temperature these may be high enough to evaporate a large portion of the system water capacity over a full heating season. Corrosion will always occur within a heating/hot water system to a greater or lesser degree irrespective of water characteristics, unless the initial fill water from the mains is treated. Even the water in closed systems will promote corrosion unless treated.

# PRODUCT RANGE

## BOILERS

### WALL-MOUNTED BOILERS

With or without water production, these high performance, electronic and fully modulating systems are suitable for both hot water and heating applications. Models with outputs from 6 kW to 35 kW.

### CAST IRON BOILERS ATMOSPHERIC GAS FIRED

High performance, with or without hot water production; models with outputs from 10 kW to 289 kW.

### CAST IRON BOILERS PRESSURE JET OIL AND GAS FIRED

High performance, with or without hot water production, some models operate at low temperature. Models with outputs ranging from 17 kW to 650 kW.

### HOT WATER STORAGE CALORIFIERS

From 100 to 500 litre capacity.

### WELDED STEEL BOILERS

High performance models with outputs ranging between 87 kW and 10,465 kW for hot water, superheated hot water and steam up to 15 bar.

### SOLID FUEL BOILERS

These units are ideal for burning wood chips and fluid fuels (2 fuels) with output ranging between 174 kW and 6,990 kW for production of hot water superheated hot water and steam up to 15 bar.

## AIR-CONDITIONING

A complete range of products for air-conditioning ranging from mobile units, single and multisplit units, with chillers up to 143 kW.

## WHIRLPOOL BATH

An exclusive range of whirlpool and showers complete with accessories are available in 4 colours.

**ALL FERROLI BOILERS ARE CE APPROVED AND CONFORM TO THE RELEVANT EUROPEAN STANDARDS.**



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