ELNUR GABARRON®

INSTALLATION INSTRUCTIONS AND USER GUIDE

DIGITAL MODULATING ELECTRIC BOILER

FOR CENTRAL HEATING AND DOMESTIC HOT WATER

MATTIRA

MODEL

MBX15

Please read these instructions before installing or using this appliance for the first time. These instructions must be followed for the safe installation of the unit. Any problem, fault or damage caused by the non-observance of these instructions will not be covered under the manufacturer's warranty. This manual should be retained with the appliance by the user for future reference.

INDEX

1.- IMPORTANT

The following installation instructions are intended to guide the competent person throughout the entire installation process.

The boiler's guarantee does not cover any damage caused by non-observance of any of these instructions.

These installation instructions and the user's guide must be conserved and given to any new user.

Connections can come loose in transit, and all should be checked before installation.

The symbols used in the text are explained below:

 WARNING This indication shows the possibility of causing death from electric shock.

 WARNING This indication shows the possibility of causing death or serious injury.

 CAUTION This indication shows the possibility of causing injury or damage to properties only.

 Symbol for useful information.

2.- SAFETY

- This appliance is not destined for use by anyone (including children) with reduced physical, sensorial or mental capacities or those who do not know how to use the appliance, unless they are supervised or instructed by a person responsible for their safety.
- Check that the voltage on the rating plate of the boiler coincides with the voltage of the mains circuit to which it is going to be connected.
- The use of these boilers in the presence of gases, explosives or inflammable objects is prohibited.
- The air inputs and outputs of the boiler ensure its correct operation and protect it from over-heating. They must never be covered.
- This boiler must be disconnected from the mains electricity before carrying out any internal repairs.
- The boiler must be installed in such a manner that the switches or other controls cannot be touched by anyone who is using the bath or shower.

The installation must be performed in accordance with current IEE Wiring Regulations, Building Regulations, Water Fitting Regulations (England & Wales) or Water Byelaws (Scotland) and all relevant British Standards.

- This appliance is destined to be permanently connected to a fixed installation. The power circuit of the boiler must incorporate an omni-polar cut-off switch with a separation between the contacts of at least 3 mm.
- The electricity supply circuit must incorporate a Residual-Current Device.
- This boiler must be earthed.
- All the models incorporate different safety elements. If one or more of them are activated, consult the section 7 TROUBLE SHOOTING.
- In time, the presence in the air of smoke, dust and pollution may stain the walls and areas close to the appliance.
- Any improper use is forbidden.
- Do not install the boiler in rooms prone to frost.

3.- INTRODUCTION

3.1 DESIGN & OPERATION

The Elnur Gabarron MATTIRA MBX15 boilers are electrically heated combi boilers providing wet central heating through a standard radiator system and domestic hot water (DHW) delivered at mains water pressure.

Outputs are from 2 to 15kW. Maximum output can be adjusted to match the heat requirement of the system or the limitations of the incoming available power supply. Operation is possible on three phase 3x400V+N or single phase 230V - 50Hz.

The boilers are designed for internal installation on a suitable wall with consideration for the total weight of the appliance when full.

A digital control panel provides user control to adjust the temperatures of heating and hot water. A power modulation feature automatically adjusts the heating output to the demand to ensure economic operation.

A suitable external time clock/room thermostat should be fitted (not supplied).

An adjustable thermostatic blending valve should be fitted on the hot water supply to ensure a safe and economic supply of hot water (not supplied).

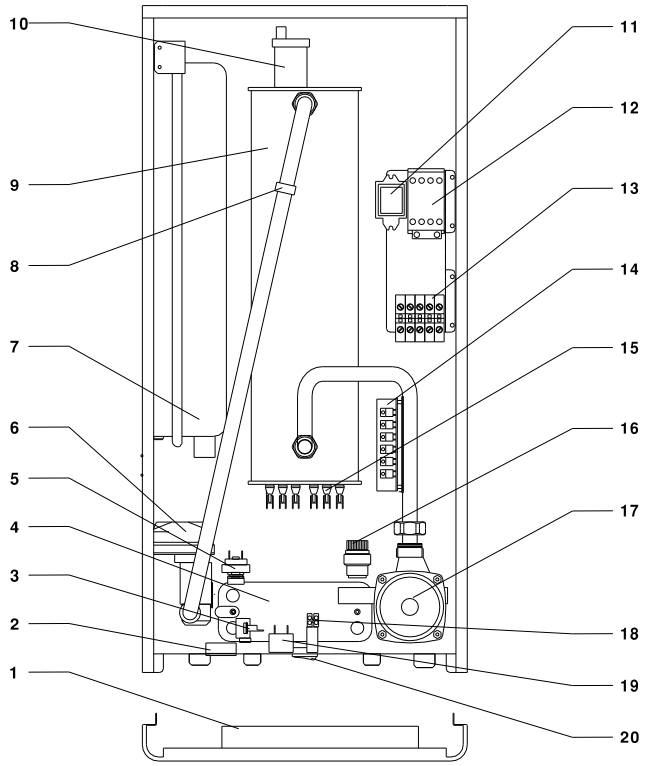
All components for sealed system central heating are built-in. **A suitable filling loop should be fitted externally to comply with water supply regulations (not supplied).**

Heating and hot water functions will operate independently but not simultaneously, with priority always to hot water production unless this function is not selected.

3.2 PRINCIPLE COMPONENTS

- Insulated steel boiler unit with immersed stainless-steel elements INCOLOY800.
- Fully integrated electronic control boards featuring temperature control and modulation function, pump over-run, anti-seize and frost protection. Self-diagnostic fault information.
- Sealed system heating components: circulating pump, 6L expansion vessel, auto air-vent, 3 bar relief valve, pressure gauge, water pressure switch and temperature limit safety thermostat.
- Silent TRIAC power switches.
- Digital control board.

3.3 KEY TO COMPONENTS



1 Main electronic PCB.
2 Pressure gauge.
3 DHW temperature sensor.
4 Plate heat exchanger.
5 Water pressure switch.
6 3Way valve.
7 Heating expansion vessel 6L.
8 Heating temperature sensor.
9 Insulated heating header tank.
10 Automatic air vent.
11 Aux. relay.
12 Main contactor.
13 Connection block.
14 Power electronic PCB.
15 Heating resistance.
16 Heating 3 bar relief valve.
17 Circulation pump.
18 Ambient thermostat intake.
19 Safety thermal limit switch.
20 ON / OFF switch.

3.4 SAFETY DEVICES

Safe operation under various conditions is ensured by the following controls fitted inside the boiler:

- Water pressure switch that monitors water pressure in the heating system and will prevent operation in case of low pressure. If the system pressure is below the permitted level, error E5 will appear (see 7.3 HEATING SYSTEM PRESSURE SWITCH – E5 ERROR).
- Heating system high limit safety thermostat will prevent operation if the temperature exceeds 100°C. It requires re-setting manually.
- Heating system pressure relief valve will discharge to relieve excess pressure at 3 bar. (Requires piping to a safe external discharge point.)

4.- INSTALLATION

IMPORTANT PRE- INSTALLATION POINTS

In order to ensure the successful installation and operation of your Elnur Gabarron MATTIRA MBX15 boiler, please consider the following points before commencing.

SITING THE BOILER

WARNING Wall and fixings must be suitable to support the total weight; MATTIRA MBX15 boiler when full is **40kg.**

Allow sufficient clearance and access for operating, maintenance and repair work.
Boiler must be protected from any water, moisture or dampness.
Where installations are in a bathroom, the installation must comply with the relevant electrical regulations.
Boiler electrical protection rating is IP20/IP2X. This boiler is not designed to be installed in the open air.
The boiler must be installed in the upright position.

ELECTRICAL POWER SUPPLY & WIRING

WARNING Before carrying out any work inside the boiler and obtaining access to terminals, all supply circuits must be disconnected.

WARNING Earth the appliance. If the appliance is not earthed, it may hold voltage if a defect occurs.

Competency for electrical installation is required.
The power supply must meet the capacity for the heat output required plus all other appliance that may be supplied.
The cable, MCB and RCD must be of sufficient capacity to carry the required load.

Boiler is supplied set at maximum output and must be adjusted to suit the incoming supply before being switched on. (See 5.2 LIMITING BOILER MAXIMUM OUTPUT).

HEATING SYSTEM & CONTROLS

Any existing system must be suitable for sealed system operation at up to 3bar pressure and will require flushing/cleansing in accordance with the Building Regulations.
Any new heating system must be flushed and cleansed in accordance with the Building Regulations.
A combi filling loop, isolation valves and drain point are required.
A time clock/room thermostat should be installed (Necessary to activate automatic power modulation).
A bypass circuit (min 2m recommended) incorporating an automatic bypass valve must be installed on all central heating systems where TRV's are fitted to every radiator.
Note - A bypass circuit incorporating an automatic bypass valve is recommended for all installations.
The correct heat requirement for the dwelling should be calculated.

HOT WATER SYSTEM

Manufacturer's notes must not be taken as over-riding statutory obligations.
Any existing system and controls (e.g. shower) must be suitable to operate at mains water pressure.
The incoming water main pressure and flow must be sufficient for requirements.
The boiler safety valves require piping to a safe discharge point as per the Building Regulations.
In hard water areas it is mandatory to protect the boiler against lime scale formation.

4.1 GENERAL REQUIREMENTS

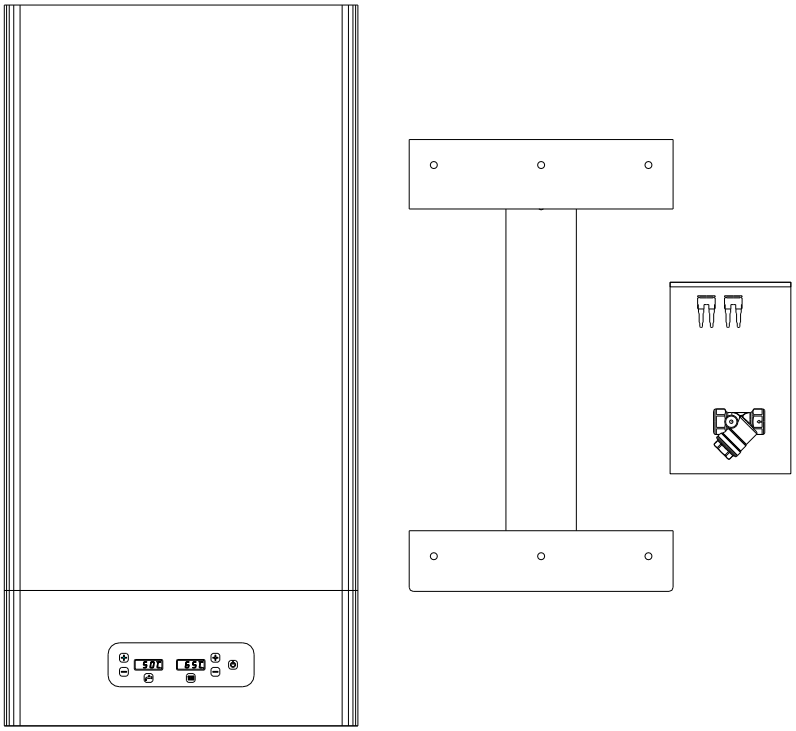
The installation should be carried out by a person certified as competent for the installation of heating systems in accordance with current building regulations.

Installation should also be in accordance with the relevant British Standards and Codes of Practice including the following:

BS 5449 Forced circulation hot water systems
BS 5546 Installation of hot water supplies for domestic purposes
BS 6700 Design, installation, testing and maintenance of services supplying water
BS7074 Application, selection and installation of expansion vessels and ancillary equipment for sealed water systems.
BS 7593 Code of Practice for treatment of water in heating systems
BS 7671 Requirements for electrical installations, IEE Wiring Regulations

4.2 UNPACKING & CONTENTS

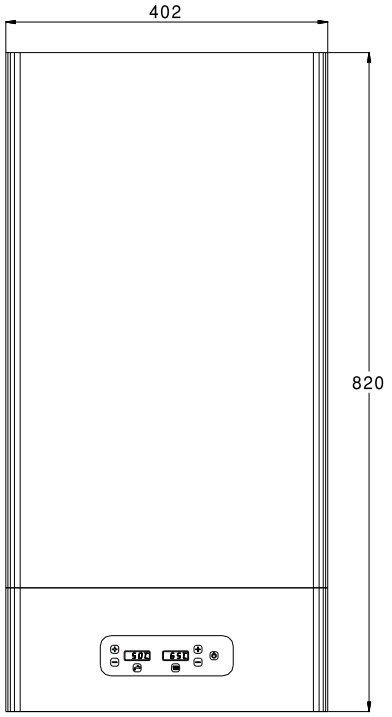
- Wall bracket with template.
- Boiler.
- Documentation.
- Bags with parts and fittings.



Dispose of the cardboard packaging at a cardboard recycling site. Observe national regulations.

4.3 LOCATION

WARNING INSTALL UPRIGHT ON A WALL SUITABLE TO SUPPORT THE TOTAL WEIGHT OF THE BOILER WHEN FULL OF WATER – 40kg.



The location should be clean and dry with no presence of gases, explosives or flammable objects.

It is not suitable for installation outside and should be protected from moisture and frost.

The boiler must be sited so that the boiler and controls are not accessible to any person whilst using a bath or shower and there should be no possibility of water dripping or splashing onto the boiler or controls.

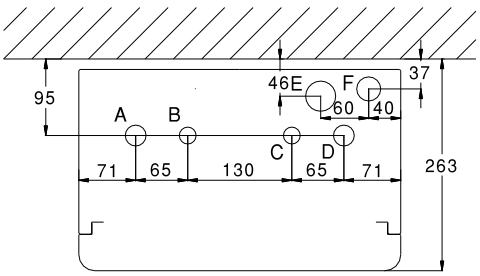
Electrical safety regulations for clearances must be followed if installed in a bathroom or shower area.

The boiler has an electric protection rating of IP20/IP2X.

Where possible the boiler should be sited to minimize the pipe distance to hot water outlets.

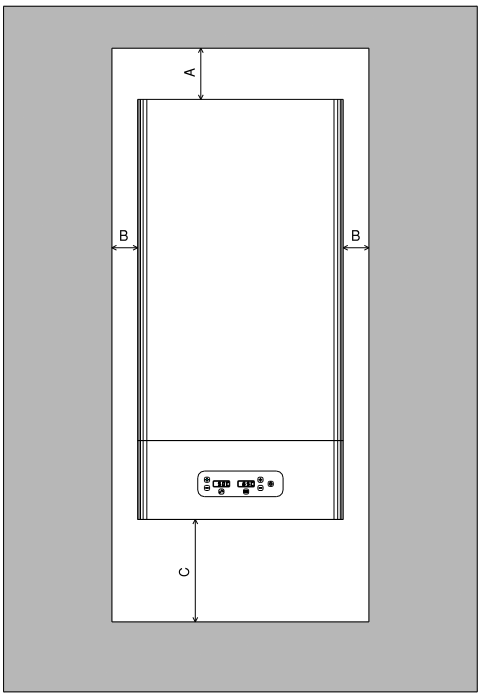
The power supply cable should be carefully routed and secured and provision made for a suitable isolation switch and MCB/RCD.

4.4 DIMENSIONS & CONNECTIONS



A Heating flow ¾”
B DHW outlet ½”
C Cold water input ½”
D Heating return ¾”
E Electrical connection
F Sealed heating system pressure relief valve (to drain) ½”

4.5 CLEARANCES

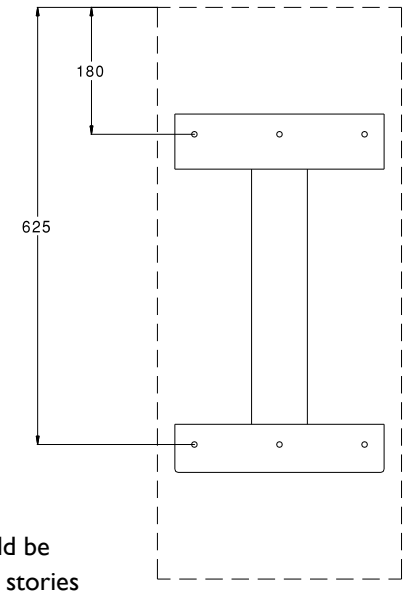


A: 75 mm B: 10 mm C: 200 mm

The clearances around the boiler as shown above must be observed for correct operation.

A minimum of 200mm clearance must be maintained underneath the boiler to allow replacement of the heating elements if required. A minimum of 500 mm clearance must be maintained in front of the boiler to enable easy access for servicing. Ensure sufficient space to make all water connections including the outlet pipes for the heating and hot water safety valves which should be routed to a suitable discharge point.

4.6 MOUNTING BRACKET



Mark the hole positions using the wall bracket as a template per the diagram.

Fit bracket securely onto wall before lifting appliance into position. Drill the holes and fit the bracket ensuring it is level using suitable high strength screws, with appropriate plugs or fixings, minimum M10 size.

HANDLING BEFORE INSTALLATION

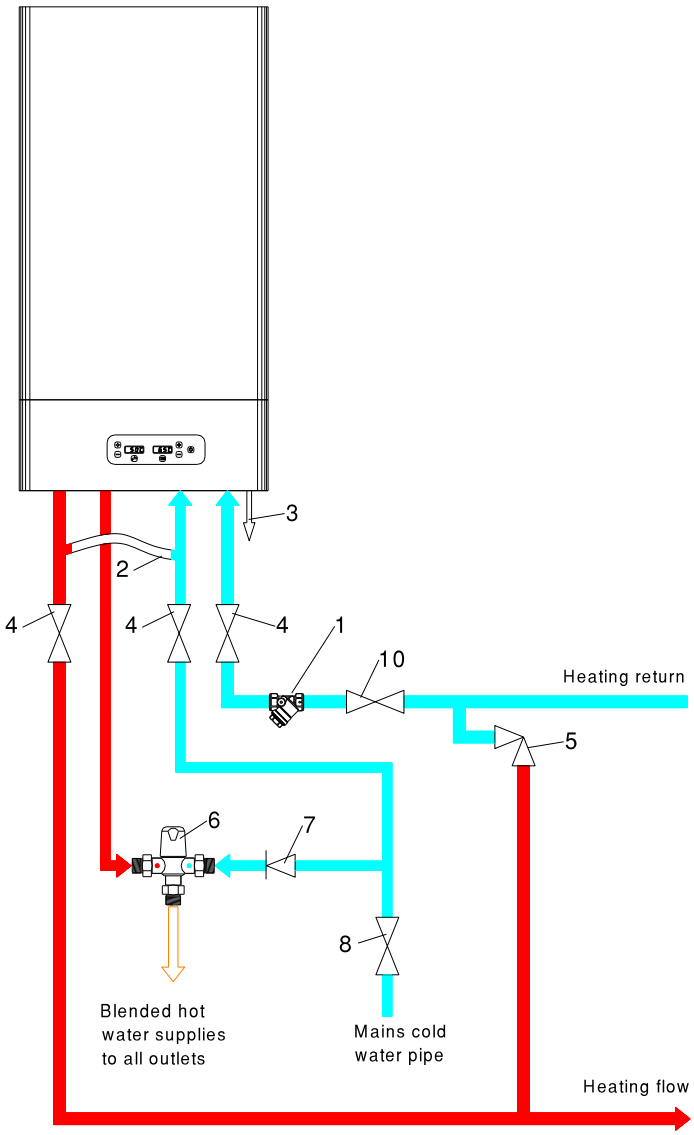
The Elnur Gabarron MATTIRA MBX15 must be handled with care and stored the correct way up in a dry place. Any manual handling/lifting operations will need to comply with the requirements of the Manual Handling Operations Regulations issued by the H.S.E.
The appliance can be moved using a sack truck on the rear face although care should be taken, and the route should be even. In apartment buildings containing a number of stories we would recommend that the appliances are moved vertically in a mechanical lift. If it is proposed to use a crane, expert advice should be obtained regarding the need for slings, lifting beams etc.

Always use assistance if required. Wear suitable cut resistant gloves when handling the appliance.

Ensure safe lifting techniques are used. Do not lift the appliance by attached pipe-work or components.

When lifting the boiler ensure that the fixing elements and the wall have a sufficient load-bearing capacity. Check the quality of the wall.

4.7 TYPICAL INSTALLATION LAYOUT



1. Filter (Supplied)
2. Filling Loop (Not supplied)
3. Sealed heating system Pressure relief valve (to drain)
4. Full bore isolation valve with drain off above (Not supplied)
5. Bypass Circuit incorporating 22mm auto bypass valve (Not supplied)
6. Thermostatic mixing valve (Not supplied)
7. NRV (Not supplied)
8. Full bore isolation valve (Not supplied)

4.8 WATER CONNECTIONS - GENERAL

CAUTION All connections to the boiler must be carried out respecting the correct flow, return, hot, cold and discharge indicators that are labelled on the boiler and also shown in this manual.

CAUTION When tightening or loosening threaded connections, always use suitable tools such as open-end spanners. Do not use pipe wrenches, extensions or unsuitable tools that may cause damage or water leaks.

4.9 (a) CENTRAL HEATING CONNECTIONS, DESIGN & REQUIREMENTS

This boiler is designed for fully pumped sealed systems only.

Treatment of Water Circulating Systems
All recirculatory water systems will be subject to corrosion unless an appropriate water treatment is applied. This means that the system efficiency will deteriorate as corrosion sludge accumulates within the system. This causes a risk to the pump and valves and can result in boiler noise and circulation problems. When installing heating systems, flux will be evident in the system which can lead to damage of boiler and system components.

All systems must be thoroughly drained and flushed out using corrosion inhibitors and cleansing agents/descalers that are compliant with BS7593 requirements. In all cases, they should be used following the manufacturer's instructions.

Failure to flush and add an inhibitor to the system will invalidate the manufacturer's warranty of the boiler.
It is also important that the inhibitor concentration is checked for correctness after installation, modification and during every service in accordance with the relevant manufacturer's instructions. Test kits specifically for this purpose are available from inhibitor stockists.

Heating Flow & Return

These connections are ¾" for connection to 22mm pipe. Service valves should be installed in the pipework directly below the boiler with drain-off points above to allow the boiler to be isolated for maintenance without the need to drain the entire system. The valves should be of sufficiently large bore so not to restrict the heating circulation.

The boiler is not suitable for single pipe heating systems, only a twin-pipe heating system should be used.

It is recommended that a **minimum** of 2m of 22mm diameter pipework is present to/from the flow and return connections on the boiler as reduction in size prior to this may result in the system flow rate being below the minimum level required.

Drain Point

As detailed above, drain points should be installed directly above the service valves on the flow and return pipe work to enable the removal of water from within the boiler for servicing and maintenance, preventing the need to drain the entire system.

A drain point must also be fitted at the lowest point of the system. It is not acceptable to drain the boiler through the safety valve as debris and deposits will prevent correct operation of the valve.

Heating System By-pass

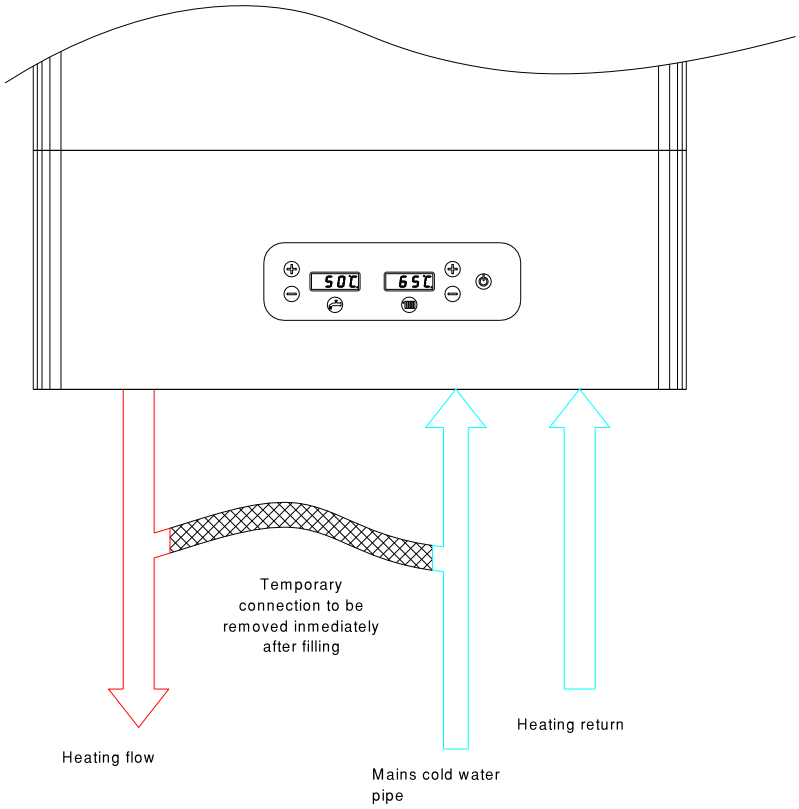
Systems fitted with Thermostatic Radiator Valves on every radiator **must** have a bypass circuit installed.
The bypass circuit must be in 22mm pipe work, it is recommended to have at least 2m of continuous pipework and must incorporate an automatic bypass valve. This is required in order to maintain sufficient flow through the boiler should all of the valves be closed.
To alleviate potential flow issues, especially on smaller systems, it is recommended that all installations be fitted with a bypass circuit as described above.

System Expansion

An integral 6 L expansion vessel provides for expansion of the heated system water under normal conditions. However a system with larger volumes of water may require extra expansion capacity to be provided.

Filling Loop

A combi filling loop is required for filling of the heating system and replacing water lost during servicing or bleeding and should be installed close to the boiler. The loop should be as shown in the diagram and comply with current Water Supply Regulations. The temporary connection should be removed after filling and the valves sealed with suitable caps.



Ensure that all radiators have air release (bleed) valves installed and that high points in pipe work have an air release valve (automatic type recommended) installed.

Pressure Relief Valve

The pressure relief valve is set at 3 bar, subsequently all fittings and pipework, etc. must be suitable for pressures in excess of 3 bar and temperature in excess of 100°C.
The pressure relief discharge pipe must run continuously downward and discharge outside of the building, preferably over a drain.
The discharge pipe should be routed in such a manner that it does not present a hazard to occupants or cause damage to wiring or electrical components.
If the discharge pipe does not terminate over a drain, then, the end of the pipe should terminate facing down and towards the wall.
Under no circumstances should the discharge be above a window, entrance or other public access.
The installer must give consideration to the possibility that boiling water / steam could discharge from the pipe.
If the discharge is to join into the common discharge from an unvented cylinder then, it must follow the guidance of G3 of the Building Regulations.
All installations must be fitted in accordance with all local regulations in force at that time. Failure to comply with these regulations will invalidate the manufacturers' warranty.

4.9 (b) PUMP DUTY

Boiler equipped with a high efficiency circulation pump, with a maximum delivery head of 7.5 m and a maximum flow of 2.5m³/h.

There are selectable operation modes with the built-in key. You can select delivery head (5m, 6m, 7m, 7.5m) depending onf the installation requirements.

The LED light indicates the operating status of the pump:

- Green fixed: correct operation.
- Over voltage protection. During the power-on test, when the input voltage is detected to be higher than 270 ± 10V for 2 seconds, overvoltage protection is entered. The indicator light flashes once, and the circulating pump stops running. When the voltage returns to 260 ± 10V, the circulating pump resumes normal operation.
- Under voltage protection: During the power on test, it is detected that the input voltage is below 165 ± 10V. After 2 seconds, it enters under voltage protection, and the indicator light flashes twice. The circulating pump stops running. When the voltage returns to 170 ± 10V, the circulating pump operates normally.
- Over current protection: When the circulating pump is running at full load, if there is a hardware over current, turn on the over current protection. When overcurrent occurs, the circulating pump immediately stops working and the indicator light flashes 3 times. After 10 seconds, the circulating pump restarts. If the fault is not eliminated, it will continue to circulate.
- Phase loss protection: When the motor is in phase loss, the indicator light flashes 4 times. The circulating pump immediately stops working and restarts after 10 seconds. After the cumulative number of protections reaches 5, the circulating pump is completely protected and will not restart again. It needs to be powered on again.
- Locked rotor protection: If the circulation pump is blocked for 3 seconds, the controller will trigger the locked rotor protection. The indicator light will flash 5 times, and the circulation pump will stop working. After 10 seconds, the circulation pump will restart. If the fault is not eliminated, after the cumulative number of protection times reaches 5, the circulation pump will be completely protected and will not restart. It is necessary to power on again.
- Over temperature protection: When operating in a high temperature environment with high temperature water at rated voltage and frequency, and when the surface temperature of the IPM module exceeds 125 ± 10% ℃, the circulating pump stops and the indicator light flashes 7 times simultaneously. When the surface temperature of the IPM is below 100 ± 10% ℃, the circulation pump resumes normal operation.

4.9 (c) CONNECTIONS, DESIGN & REQUIREMENTS

The installation of the thermostatic blending valve (not supplied) is recommended, as per the diagram shown in 4.7 to ensure a safe and economic supply of hot water.


CAUTION: Modifications should not be made to this product. Replacement parts, including immersion heaters, should be purchased from Elnur UK Limited, or agents approved by them.
Combi boilers need regular routine checks, and these are detailed below. It is for this reason that this manual must always be left with the Elnur Gabarron MATTIRA MBX15 boiler.

It is essential that these checks be carried out at the time of boiler maintenance by a qualified installer:
1. Manually open the relief valves and check that water is discharged from the valves and runs freely through out at the discharge point. Ensure that the valves re-seat satisfactorily. (Note – the water may be very hot).
2. It is important to check that the discharge pipework is carrying the water away adequately. Check for blockages etc. if it is not.
3. Check the charge pressure in the expansion vessel and repressurize if required.
4. Re-fill the system and ensure that all relief valves have re-seated.
5. The Service Record should be updated at each service.
6. Check and if necessary, descale the heat exchanger in hard water areas ie. above 200ppm (mg/l).

The Elnur Gabarron MATTIRA MBX15 boiler is available in one variant:

1. Elnur Gabarron MATTIRA MBX15 boiler - For providing central heating and hot water heated by electricity.

Elnur Gabarron MATTIRA MBX15 boiler is designed primarily for use with on peak electrical supplies. It is supplied fitted with **3 x 3kW & 3 x 2kW** immersion heaters which are CE approved for safety.

Typical Layout
Please refer to section 4.7 TYPICAL INSTALLATION LAYOUT

Pipework to be supplied and fitted by installer.

General Design Considerations

The wall chosen for the boiler should be level and capable of supporting the weight of the unit when full of water as shown in **Section 4**.

In new systems, pipes should be insulated to comply with building regulations, the maximum permissible heat loss is indicated in the table below, and labelled accordingly as follows:

i. Primary circulation pipes for domestic hot water circuits should be insulated through their length, subject only to practical constraints imposed by the need to penetrate joists and other structural elements.
ii. All pipes connected to the boiler, including the vent pipe, should be insulated for at least 1 metre from their points of connection to the unit (or they should be insulated up to the point where they become concealed). In replacement systems, whenever a boiler or hot water storage vessel is replaced in an existing system, any pipes that are exposed as part of the work or are otherwise accessible should be insulated as recommended for new systems or to some lesser standard where practical constraints dictate.

Pipe outside diameter	Maximum heat loss
15mm	7.89W/m
22mm	9.12W/m
28mm	10.07W/m
35mm	11.08W/m

Insulation of pipework

Further guidance on converting heat loss limits to insulation thickness for specific thermal conductivities is available in TIMSA "HVAC guidance for achieving compliance with Part L of the Building Regulations".

The Elnur Gabarron MATTIRA MBX15 boiler is designed for use with <u>single bathroom properties only.</u>

Mains Water Supply
Existing properties with a 15mm supply will be satisfactory provided the local mains pressure is good. For new properties, the communication and service pipe into the dwelling should be a minimum of 22mm (usually in the form of a 25mm MDPE supply). The optimum performance is achieved if the inlet pressure is 3 bar dynamic. However, the Elnur Gabarron MATTIRA MBX15 boiler will function with lower inlet pressures, but this will reduce the performance. For optimum performance, 15 L/min incoming mains flow should be present; however, the boiler will work at lower flow rates, although performance will be affected. Particularly on larger properties, the pipe sizes should be calculated in accordance with BS EN 806-3:2006 and BS 8558:2011.

Mains Water Connection
The installation of a full-bore isolation valve on the mains water supply to the boiler is required (in close proximity to the boiler location).

General Restrictions

a. The highest hot or cold water draw off point should not exceed 10m above the Pressure Reducing Valve.
b. An ascending spray type bidet or any other appliance with a Class 1 back-siphonage risk requiring a type A air gap should not be used.
c. The Elnur Gabarron MATTIRA MBX15 boiler is only designed to be a self-contained unit powered by electricity via the main incoming terminal block and not by or in conjunction with any other system or source.
d. The Elnur Gabarron MATTIRA MBX15 boiler should not be used in a situation where maintenance is likely to be neglected.
e. Check the performance requirements of the terminal fittings regarding flow/pressure are suitable.

Shower Fittings

Aerated taps are recommended to prevent splashing. Any type of shower mixing valve can be used as long as both the hot and cold supplies are mains fed. However, all mains pressure systems are subject to dynamic changes particularly when other hot and cold taps/showers are opened and closed, which will cause changes in the water temperature at mixed water outlets such as showers. For this reason and because these are now no more expensive than a manual shower, we strongly recommend the use of thermostatic showers with this appliance. These must be used in 3 story properties where the impact on pressure/temperature of opening another tap in the system is greater than normal.

Pipe Layout

In all mains pressure installations it is important to remember that the incoming cold supply must be shared between all terminal fittings. It is important that a 22mm supply is brought to the appliance. A minimum of one metre of smaller diameter pipework, or flow restrictors, should be provided on the final connection to all outlets so as to balance the water available. In any event the distribution pipework should generally be in accordance with BS_EN806-1 to 5.

Plastic Pipework

This appliance is suitable for use with plastic pipework as long as the material is recommended for the purpose by the manufacturer and is installed fully in accordance with their recommendations.

Hot Water Outlet

A ½"connection is provided for connection to 15mm pipe. To ensure economic operation the pipe run between the boiler and taps should be not more than15 mm dia. pipe and the distance as short as possible. The pipe-work should be insulated to reduce heat loss.
The installation of the hot water outlet pipe should be in accordance with 4.7 TYPICAL INSTALLATION LAYOUT

Fitting Blending Valves (thermostatic mixing valves) To the Elnur Gabarron Mattira MBX15 boiler

When fitting a blending valve, it is important that the installation does not contravene the G3, WRC and Health and Safety directives or the manufacturer's recommendations. If this is the case, then the warranty should be null & void. The key requirements to comply with these regulations are:

1. Any fitting or material in contact with potable water (e.g. a blending valve) must be approved by WRC or an equivalent body.
2. Connections or wiring arrangements must not bypass any safety devices.
3. Any expansion due to heating must not be allowed to expand back into the cold mains.
4. The settings of any safety devices must not be tampered with or adjusted.

Commissioning

The boiler/heating systems should be filled and commissioned in accordance with good practice following the guidance in BS 7593:2006/the boiler manufacturer's instructions. This includes adequately flushing the system to remove any debris that may have been introduced during installation/maintenance.

NOTES

At the time of commissioning, complete all relevant sections of the **Checklist** located on the inside back pages of this document.
This must be completed during commissioning and left with the product to meet the Warranty conditions offered by Elnur UK Ltd.

When initially opening the taps, a small surge in flow may be experienced, which disappears as the pressure in the system stabilizes. This is quite normal with these types of systems and does not indicate a fault.
In some areas, the water will initially appear cloudy, but will quickly clear when left to stand. This is nothing to be concerned about and is due to aeration of the water.

4.10 ELECTRICAL CONNECTIONS

Connection to Mains Supply

The ELNUR GABARRON MATTIRA MBX15 boilers must be installed in premises having a system impedance of not more than 0.25 + j0.25Ω.

The ELNUR GABARRON MATTIRA MBX15 boilers comply with the technical requirements of BS EN 61000-3-3.

The ELNUR GABARRON MATTIRA MBX15 boilers must be installed in premises having a service capacity ≥100 A per phase.

Complete all the pipe-work before connecting the boiler to the electricity supply.

Any re-installation must be performed by qualified electricians.

Ensure that the mains voltage available coincides with that shown on the rating label.

 **WARNING** IMPORTANT: CHECK THAT THE TOTAL POWER SUPPLY TO THE BUILDING HAS SUFFICIENT LOAD CAPACITY TO SUPPLY THE BOILER AT THE HEAT OUTPUT REQUIRED IN ADDITION TO ALL OTHER APPLIANCES THAT MAY BE SUPPLIED.

 **WARNING** THE SUPPLY CABLE TO THE BOILER SHOULD BE OF SUFFICIENT SIZE TO CARRY THE LOAD CAPACITY REQUIRED. IT SHOULD BE WIRED THROUGH A LINKED ISOLATOR SWITCH WITH MINIMUM CONTACT GAPS OF 3mm IN EVERY POLE AND PROTECTED BY A SUITABLY RATED CIRCUIT BREAKER MCB/RCD Install the necessary electrical protections as indicated in the current regulations. In the event of these regulations not being complied with, the manufacturer will not be liable for any bodily injury or material damage that may occur.

 **WARNING** IT IS ESSENTIAL THAT THE BOILER IS PROPERLY EARTHED and the wiring tested to current IEE regulations.

Electrical Supply Sizing

The following table shows the specification for a boiler installed on single phase supply.

Rated output of boiler	4kW	5kW	6kW	7kW	8kW	9kW	10kW	11kW	12kW	13kW	15kW
Supply current	17.4A	21.7A	26.1A	30.4A	34.8A	39.1A	43.5A	47.8A	52.2A	56.5A*	65.2A*
MCB / RCD rating	20A	25A	32A	32A	40A	50A	50A	50A	63A	63A*	80A*
Minimum cable size	4mm²	6mm²	10mm²	10mm²	10mm²	16mm²	16mm²	16mm²	16mm²	25mm²	25mm²

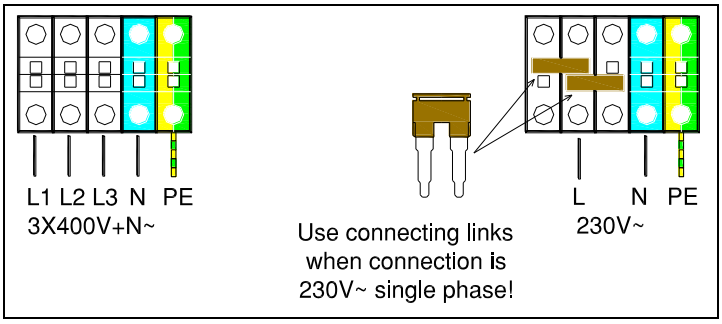
*** The standard configuration of the boiler only allows a maximum of 12kW when connected SINGLE-PHASE 230V~.**

Connection to Boiler

WARNING Touching live connections can cause serious personal injury.

Before establishing a mains connection switch off the power supply. Secure the power supply against being switched on again. Mains connection terminals remain live even if the on/off switch is turned off.

The boiler is delivered ready for operation on 3x400V three phase supply. For operation on 230V single phase the supplied links must be connected across the terminals of the connection block as shown.



Three phase and single phase connection

The terminal connection block is located mid-way up at the front right hand side of the boiler and is accessed after removing the boiler front panel . The supply cable should be routed to this point through the cable entry point on the right hand bottom of the boiler.

CAUTION: A mains voltage at the incorrect plug terminal can destroy the electronics.

Make sure the connecting cables are securely fastened to the plug terminals.

Wiring External Controls

It is recommended that the boiler is controlled by an external control such as a time clock or room thermostat or a combined programmable room thermostat such as the Elnur model CTM20.

CAUTION: The switching connection of this control should be VOLT FREE and connected to the ambient thermostat intake. The factory fitted link labeled as "**Ambient Thermostat"** across these terminals must be removed.

The boiler's automatic power modulation feature is ONLY activated by the initial interruption of this switching link.

5.- COMISSIONING

5.1 INSTALLATION PARAMETERS

These parameters must be adjusted by the installer to match the requirements of the installation.
To access to installation parameters menu:

- Ensure the rear mounted power on/off switch is turned on.
- Ensure the main display front panel is turned off by using the button.
- Press and hold the and buttons together for at least 5 seconds.

To move forward or backward through the menu use the and buttons respectively.

To modify a parameter:

- Select the appropriate value e.g. –P00, P01, P02, etc.
- Press the button to display the current setting.
- Modify the setting as required using the and buttons.
- To confirm the new setting, press the button once.

After setting the various parameters it is necessary to validate by pressing the button for 3 seconds.
Note - If this is not done after completing changes, none of the changes made will be saved.
IMPORTANT - If none of the buttons are pressed for 30 seconds, the installation parameter menu will be automatically closed without validating/saving any changes.

Boiler type. 1 corresponds to model MBX.

Model. 15 corresponds to model MBX.

Boiler maximum output limit.
MBX15 can be limited to 15 - 13 - 12 - 11 - 10 - 9 - 8 - 7 - 6 - 5 - 4 - 3 - 2 kW.

Underfloor heating. If the boiler is underfloor heating ready this parameter will be 1 otherwise it will be 0.

Outdoor temperature probe. An outdoor temperature probe (not provided) can be installed. In this case the parameter value will be 1.

Heating temperature differential. The heating temperature differential can be selected from 2°C to 10°C. The default value is 2°C.

DHW temperature differential. Temperature differential below and above the setting to increase or decrease the output power. The default value is 4°C. It is recommended not to modify this value.

Modulation. 1 (modulation ON)
0 (modulation OFF).

Units. °C (Celsius) / °F (Fahrenheit).

To access the parameters menu from **P11 – P15**, an outdoor temperature probe must be installed and the parameter in **P05** set to **1**

AUTO heating regulation. If a fan outdoor temperature probe is installed it is possible to activate the auto heating regulation by shifting this parameter value to 1.

TIMAX. Maximum water flow temperature in AUTO heating mode.

TIMIN. Minimum water flow temperature in AUTO heating mode.

TEMAX. Outdoor temperature from which the water flow temperature will be TIMIN.

TEMIN. Outdoor temperature below which the water flow temperature will be TIMAX.

TSCON. Time interval between DHW output adjustments. Factory pre-set.

5.2 LIMITING BOILER MAXIMUM OUTPUT

The boiler is supplied for operation on maximum heat output of 15kW. The output can be rated below this maximum to match the heat load required. This rating is done by means of P03 parameter. See above"5.1 INSTALLATION PARAMETERS"

WARNING: ON INSTALLATIONS WHERE THE INCOMING POWER SUPPLY IS NOT CAPABLE OF MAXIMUM LOAD THE BOILER CONTROL MUST BE RE-CONFIGURED TO LIMIT THE OUTPUT BEFORE SWITCHING ON.

As the output for Domestic Hot Water will also be limited to the same level it is recommended to adjust to the highest output possible so as to maintain the best hot water performance.

The chart below shows the maximum flow based on the power setting, and the inlet and outlet temperatures.

Power (kW)	**T. outlet(°C)**	**T. inlet (°C)**	**Max Flow (l/min)**
10	50	10	3,58
11	50	10	3,94
12	50	10	4,30
13	50	10	4,66
15	50	10	5,38

The boiler will not exceed this pre-set maximum but will still modulate in heating mode up to this level, adapting to demand and ensuring economic operation.

Correct configuration for the selected output can be checked on the boiler display panel following the procedure shown in 7.4 CHECKING RATED HEAT OUTPUT.

CAUTION: It is essential to confirm the power output with the use of a clamp meter.

LIMITATION OF OUTPUT ON MODELS MATTIRA COMBI MAC15C

Maximum output limited to:	MAXIMUM CURRENT **L1**	MAXIMUM CURRENT **L2**	MAXIMUM CURRENT **L3**
15kW	21.7A	21.7A	21.7A
13kW	21.7A	21.7A	13.0A
12kW	8.7A	21.7A	21.7A
11kW	21.7A	13.0A	13.0A
10kW	13.0A	8.7A	21.7A
9kW	13.0A	13.0A	13.0A
8kW	13.0A	8.7A	13.0A
7kW	8.7A	13.0A	8.7A
6kW	8.7A	8.7A	8.7A
5kW	8.7A	13.0A	-
4kW	-	8.7A	8.7A
3kW	13.0A	-	-
2kW	-	-	8.7A

CONNECTION THREE-PHASE 3x400V~+N

Maximum output limited to:	MAXIMUM CURRENT
15kW*	65.2A*
13kW*	56.5A*
12kW	52.2A
11kW	47.8A
10kW	43.5A
9kW	39.1A
8kW	34.8A
7kW	30.4A
6kW	26.1A
5kW	21.7A
4kW	17.4A
3kW	13.0A
2kW	8.7A

CONNECTION SINGLE PHASE 230V~

*** The standard configuration of the boiler only allows a maximum of 12kW when connected SINGLE-PHASE 230V~.**

5.3 HEATING SYSTEM FLUSHING

CAUTION: Flush the heating installation thoroughly prior to installation.

The heating system should be flushed in accordance with BS7593 & BS5449 which will remove any debris or contaminants detrimental to the operation and life of the boiler. Any cleanser or additives used should comply with current standards and the manufacturer's instructions carefully followed.
NOTE: IT IS IMPORTANT NOT TO USE THE BOILER PRESSURE RELIEF VALVE TO DRAIN OR FLUSH THE SYSTEM AS TRAPPED DEBRIS WILL CAUSE INCORRECT OPERATION. A PURPOSE PROVIDED DRAIN POINT SHOULD BE USED.

5.4 HEATING SYSTEM INITIAL FILLING

Ensure both flow and return isolation valves are open. Identify the boiler automatic air release valve at the top of the heating cylinder and loosen the cap. Close any manual air vents fitted on the system.
Be careful not to splash any of the electrical components.
Connect the filling loop and fill slowly until the pressure gauge indicates between 1 and 1.5 bar.
Proceed to vent all the manual release valves until all air is purged from the system. It will be necessary to top-up through the filling loop during this operation until the pressure gauge indicates between 1 and 1.5 bar.

5.5 PUMP CHECKING & VENTING

Sometimes it is necessary to check that the pump is properly vented and spinning freely.

If excess air remains in the system or there is insufficient pressure the boiler will fail to operate and display fault E5.

A LED indicator informs about the operating status of the pump. Check the *4.9(b) Pump Duty* section in case of error.

5.6 FILLING DOMESTIC HOT WATER

Open the mains water inlet valve underneath the boiler. Turn on all the hot water system taps and thoroughly flush allowing water to flow until no air is present. This will automatically vent the integral installation of any air.

5.7 MORE INSTALLATION DATA

It is possible to display more installation data by pressing for a few seconds and then or .

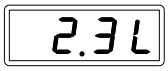
Heating return temperature.

Maximum output limitation in kW.

Modulated output in kW.

Outdoors temperature. (Only if the sensor is connected and P005 is activated).

It is possible to display additional info about the DHW side by pressing for a few seconds. Press or to move through the different values:



First value displayed is the DHW water flow in l/min. The data is displayed followed by a "L"

Press once to move to the actual DHW temperature outlet.

By pressing again , the frequency reading of the water flow sensor will be displayed.

By pressing again , the actual power output will be displayed.

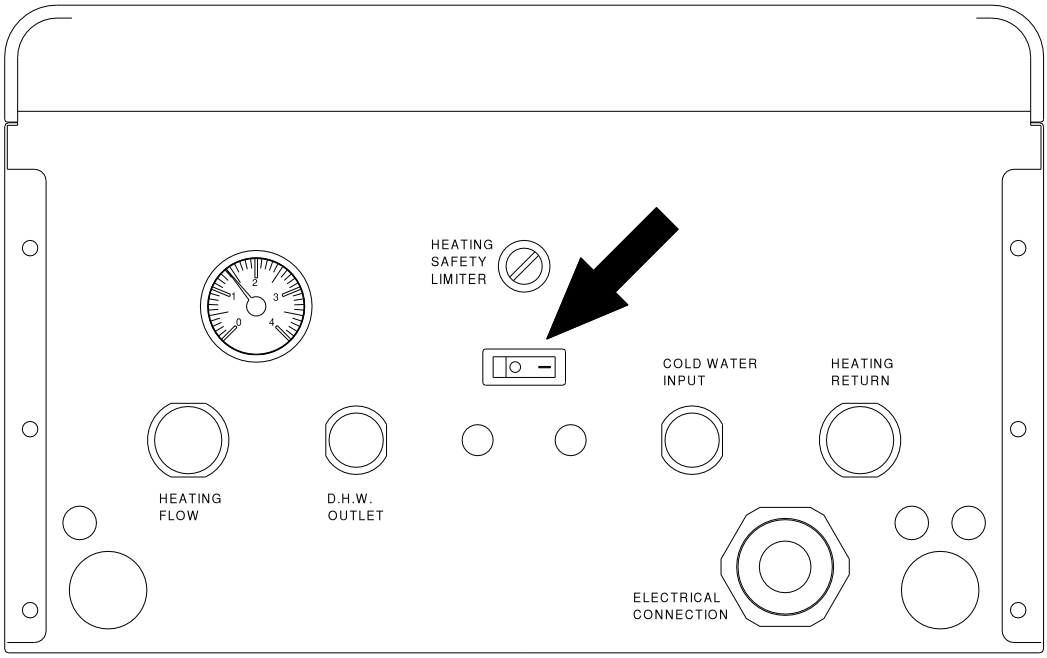
6.- OPERATING THE BOILER

6.1 INITIAL SWITCHING ON

CAUTION: THE MAXIMUM HEAT OUTPUT MUST BE ADJUSTED BEFORE SWITCHING ON. THE BOILER SHOULD NEVER BE SWITCHED ON WITH THE HEATING SYSTEM EMPTY. DAMAGE COULD OCCUR.

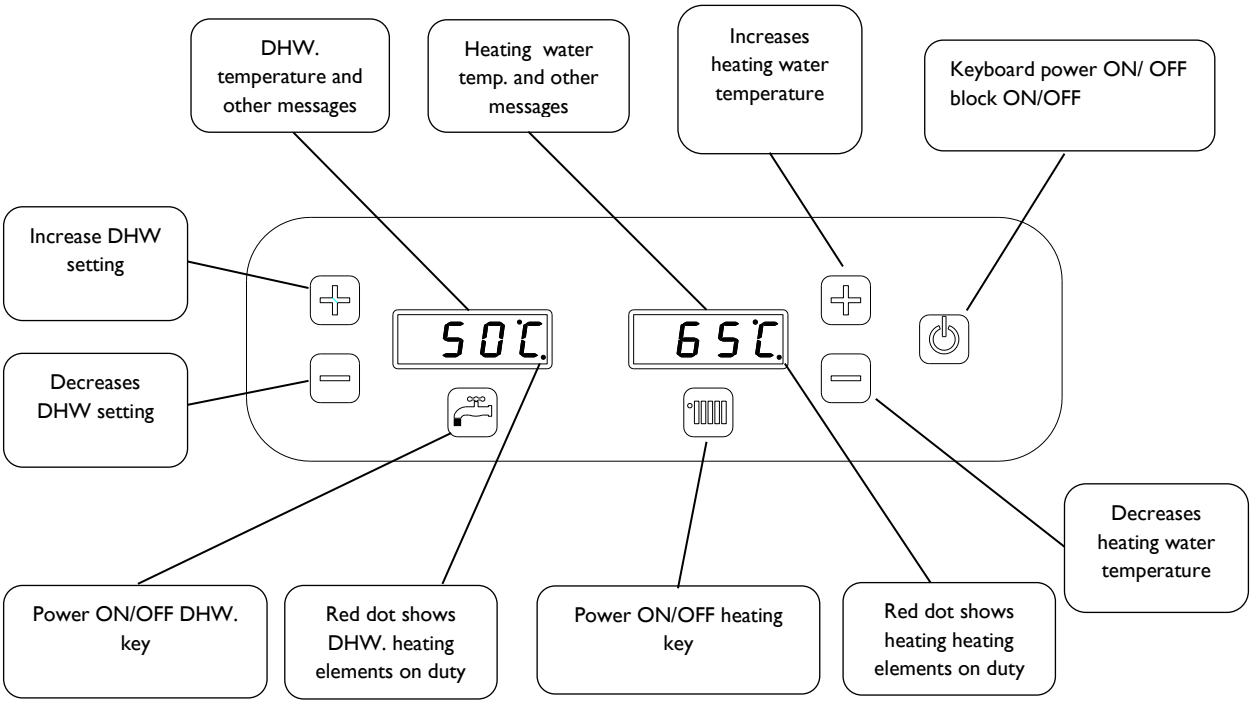
When the boiler is first connected it will perform a general self-check and if a fault is detected it will be indicated on the display.

Turn on the boiler with the on/off switch located at the back of the boiler as shown.



CAUTION: MAINS CONNECTION TERMINALS REMAIN LIVE EVEN IF THE ON/OFF SWITCH IS TURNED OFF.

6.2 CONTROL PANEL DESCRIPTION

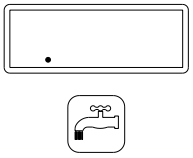


Push the button to start the boiler up. The same button will turn the boiler off when pushed again.

If the heating or DHW function are not powered on, the relevant screen will not display a value but just a red dot.

6.3 DOMESTIC HOT WATER OPERATION

To turn on the DHW function push the press the button. Pushing again will switch the function off and return the display to just a red dot.



When the DHW mode is selected, the display will show the DHW temperature setting. The boiler will always give priority to DHW production over central heating.

If heat is demanded by the DHW and the elements are energized a small red indicator is displayed to the right of the temperature display.

This light will go out when the DHW temperature is reached or the DHW demand is over.

The setting of the DHW temperature can be modified by pushing either the button or the button and using the same buttons to adjust the setting that flashes on the display. The modified setting will be stored automatically after a few seconds, or instantly by pushing the button.

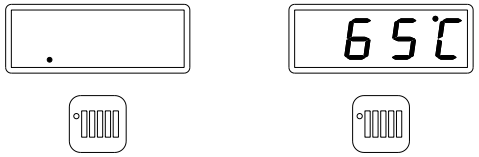
The DHW setting can be varied between 20 and 60°C.

The DHW has priority over the central heating operation and so the outputs are never added together.

6.4 CENTRAL HEATING OPERATION

First ensure that any external controls such as room thermostat or time clock are demanding heat.

To select the heating function, push the button. Pushing again will switch the function off and return the display to just a red dot.

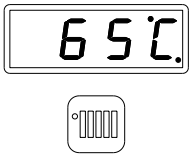


When the heating mode is selected the display will show the temperature of the heating water.

We can modify the setting of the temperature of the water by pushing either the button or the button and using the same buttons to adjust the value that flashes on the display.

The modified setting will be stored after a few seconds or instantly by pushing the button.
The heating setting can be varied between 8°C and 80°C. The symbol H appears after the 80 value or before the 8 value. If this value is selected, the heating will function in anti-freeze mode.

If the setting is higher than the actual temperature of the heating water and the DHW is not connected, the heating will connect and a small red indicator of the consumption of heating resistances will light up.



6.5 ANTI-FREEZE MODE (Frost Protection)

It is possible to select an anti-freeze mode for frost protection during periods of inactivity. The power supply to the boiler must be maintained.
By attempting to set a central heating temperature below the 8°C value or above the 80°C value the symbol H will appear on the display. By selecting this value the heating will only work in anti-freeze mode i.e. if the boiler temperature falls to 7°C the heating will activate automatically.

6.6 USER PARAMETERS

The user can change a number of parameters to set some functions of the boiler to the needs of each customer.

To access the user parameters menu – with front display OFF, press and hold the  and  buttons for at least 5 secs.

To move forward or backward through the menu use the  and  buttons respectively.

To modify a parameter, press the  button and the current value will be displayed. It can be modified with the  and  buttons. Press the  button to validate

Modulation. 1 (modulation ON)
0 (modulation OFF).

Units. °C (Celsius)
°F (Fahrenheit).

AUTO heating regulation. If a fan outdoor temperature probe is installed it is possible to activate the auto heating regulation by shifting this parameter value to 1.

TIMAX. Maximum water flow temperature in AUTO heating mode.

TIMIN. Minimum water flow temperature in AUTO heating mode.

TEMAX. Outdoor temperature from which the water flow temperature will be TIMIN.

TEMIN. Outdoor temperature below which the water flow temperature will be TIMAX.

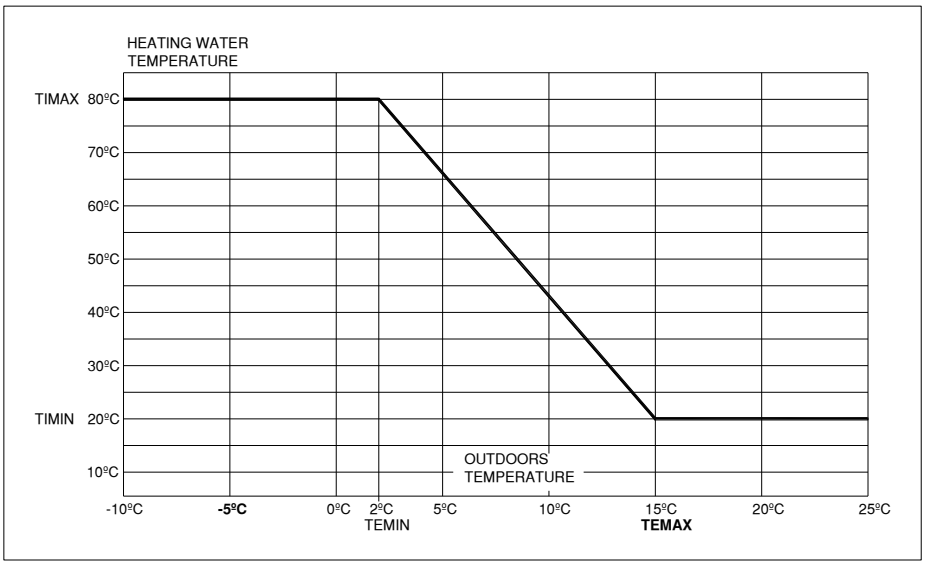
6.7 HEATING MODULATION FEATURE

The advanced control board on the boiler will automatically modulate the heating output to the demand required to save energy.
This function works by the boiler 'learning' and anticipating the time taken to reach the temperature level demanded by the external thermostatic control. The power output is automatically adjusted therefore reducing power consumption on warmer days or when another heat source is present.
An external 'volt free' control must be fitted across the ambient thermostat intake connection and the 'bridge' removed for this function to be activated.
This feature can be disabled using parameter P11. See "6.6 USER PARAMETERS".

6.8 AUTO HEATING REGULATION

It is possible to regulate the temperature at which the boiler drives the water heating circuit depending on the outdoors temperature. This method of regulation provides maximum comfort as it anticipates changes in the thermal needs of the house. The room thermostat continues to regulate the temperature inside the house.

To activate this mode of heating, the installer will need to connect an external temperature sensor (not supplied) and activate the P05 and P11 parameters.



There are four parameters that define this function.

TIMAX. Maximum water flow temperature in AUTO heating mode.
In the above example TIMAX=80°C.

TIMIN. Minimum water flow temperature in AUTO heating mode.
In the above example TIMIN=20°C.

TEMAX. Outdoor temperature from which the water flow temperature will be TIMIN.
In the above example TEMAX=15°C.

TEMIN. Outdoor temperature below which the water flow temperature will be TIMAX.
In the above example TEMIN=2°C.

On the coldest days the water will be driven at higher temperatures and vice versa on the hottest days-less water will be driven at a lower temperature. In the example, we see how, if the outdoors temperature is of 5°C the water flow temperature heating circuit would be about 66 °C.

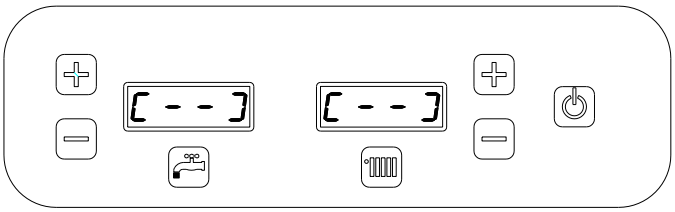
You can temporarily override the automatically calculated set point. If, for example, you want to use the boiler to the maximum for a few hours even when automatic control mode, you would proceed as follows:
When pressing the ⊕ or ⊖ button, the display will alternatively show the calculated set point and the indication AUTO. By holding down either of these two keys for at least 5 seconds, the calculated set point will start flashing and the set point can now be modified with the same keys. Validate the selection by pressing the button. The time that the set point is going to be overridden is shown: 1H. It can be modified from 1 to 24h. Validate the selection by pressing the button. The override set point and the remaining time are displayed alternatively every 10 seconds.
At any time, it is possible to cancel this state just by turning off and restarting the boiler.

6.9 BLOCKING THE CONTROLS

It is possible to lock the buttons of the control panel to prevent any adjustment.

By keeping the button pressed down for a few seconds, the control panel will be locked.

The control buttons of the boiler will be locked, and no button will respond when pressed. Internally all the settings remain the same and the boiler will function normally.



To unlock the buttons, press the same button down for a few seconds until the above displayed symbol goes off. If the boiler is disconnected from the mains or there is a failure in the house's electricity supply, the buttons will also be unlocked.

6.10 PUMP ANTI-SEIZE FUNCTION

The advanced boiler control will automatically energize the pump for 10 seconds each month to protect it from seizing during long periods of inactivity. The power supply must be maintained for this function to operate.

7.- TROUBLESHOOTING

7.1 POSSIBLE FAULTS & SOLUTIONS

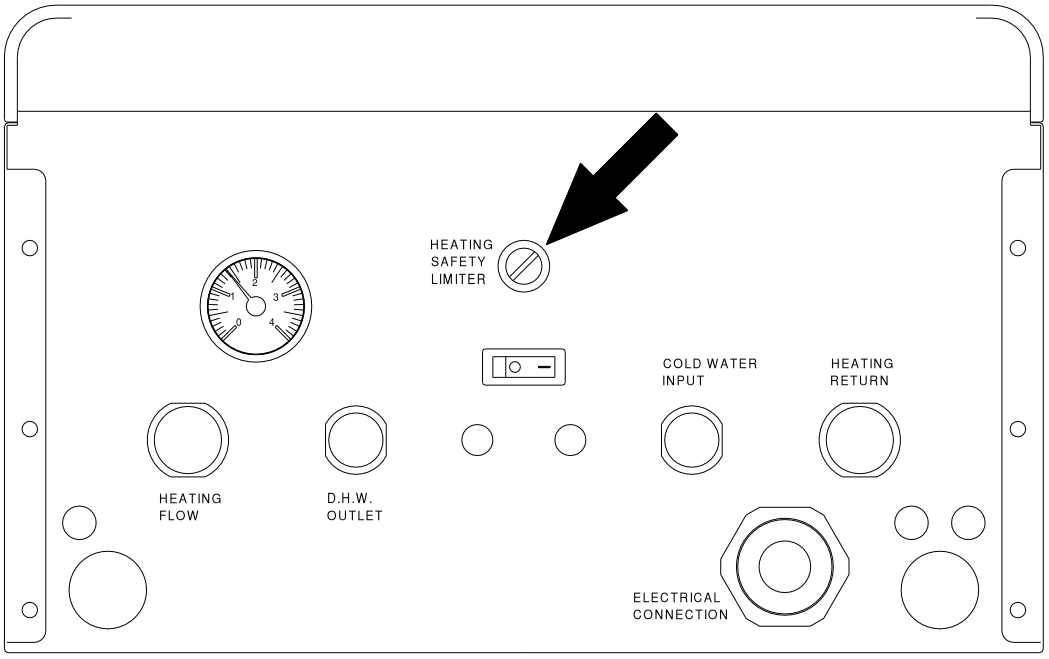
Problem	Possible cause	Solution
Boiler will not start	No power to boiler.	Check incoming power supply.
	No power.	Check boiler control switch is on. (See Section 6.1.)
	Overheat. Thermal cut-out tripped.	Locate switch and reset. (See Section 7.2)
Fault E1 displayed Heating flow temperature sensor	Heating water out temperature probe defective.	Contact Technical Service
Fault E2 displayed Heating return temperature sensor	Heating water return temperature probe defective.	Contact Technical Service
Fault E5 displayed Heating system water pressure switch	Low heating system pressure.	Check for leaks. Refill heating system to 1.5 bar.
	Air in system.	Purge thoroughly. Check automatic air valve open. Vent pump (sect 5.5)
Fault E6 displayed DHW temperature sensor	Defective DHW tank temperature sensor.	Check connections. Replace sensor if necessary.
Fault E8 displayed Outdoor temperature sensor	Defective outdoor temperature sensor or not present.	This sensor is optional. Check connections. Replace sensor if necessary. Check parameter settings correct (Sect 5.1)
Fault E9 displayed Temperature Protection	Faulty Auto air vent, presence of air in the installation, electronic fault.	Contact Technical Service
Heating system water discharging from 3 bar safety valve	Excessive heating system pressure.	Check filling loop has not been left connected and is not "letting water pass". Disconnect filling loop hose. Check expansion vessel is charged to correct level with air. Check system expansion volume.
The buttons do not respond	Control panel blocked	See Section 6.9 BLOCKING THE CONTROLS
Low heating temperature	Settings too low.	Check temperature & output selected.
	Failure of heating elements	Check and replace.
	Heat requirements miscalculated.	Re-calculate & configure.

If the suggested action fails to resolve a problem, please contact ELNUR technical service for further advice.

7.2 OVERHEAT LOCK-OUT & RE-SETTING

Central heating overheat.

If the boiler detects an overheat condition of 100°C in the central heating circuit a safety thermal limit switch will operate and switch the boiler off disabling all functions including DHW production.
The cause of the overheat should be investigated.
The safety limit switch is underside of the boiler and will require re-setting manually by following the procedure shown:



Unscrew & remove the black cap and push the small pin behind it until you hear a click. The limiter will not re-set until the temperature in the heating header drops below 100°C.

7.3 HEATING SYSTEM PRESSURE SWITCH – E5 ERROR

If the error E5 appears on the display, the pressure switch has detected insufficient water pressure in the heating circuit and heat production is disabled to protect the boiler from overheating.

The possible causes for this condition are:

- Insufficient water pressure in the heating system requiring re-filling to 1.5bar
- Air in system requiring purging thoroughly. Check automatic air valve open. Vent pump (sect 5.5)

7.4 CHECKING RATED HEAT OUTPUT

It is possible to check the actual heat power output configuration that is set on the boiler and also the modulated operating output at that moment.

Press the button for three seconds.

The heating display will show Sr followed by the temperature value of the return probe of the heating circuit.

On pushing button, the display will show PM followed by the value of the limited maximum output according to the tables (see 5.1).

On pushing button again, the display will show PA followed by the actual modulated output power at that moment.

8.- MAIN COMPONENTS LIST

Expansion vessel 6L	ref. 60091518	DHW. resistance joint	ref. 60105671
Insulated heating header tank	ref. 60101701	Heating resistance joint	ref. 60091090
Circulation pump	ref. 60106045	0-4 bar pressure gauge	ref. 60100820
Main electronic PCB MBX	ref. 60105586	100°C thermal limiter	ref. 60101860
Power PCB MBX with support	ref. 60105595	3 bar central heating relief valve	ref. 60106085
Heating Temperature Sensors	ref. 60106100	Keyboard MBX	ref. 60105555
DHW Temperature Sensor	ref. 60106090	3 way valve	ref. 60106065
15 kW heating resistance	ref. 60100751	Pressure switch	ref. 60106095

9.- MAINTENANCE & CARE

Elnur Gabarron MATTIRA MBX15 boilers will require an annual maintenance check to ensure preservation of the manufacturer's warranty and a prolonged and trouble-free life. A full check list and service log is located at the back of this manual which should be adhered to. The following points below should also be constantly observed:

-Check and maintain the heating system pressure between 1 & 1.5 bar when cold. Frequent re-filling of the system could cause scaling and corrosion and should be avoided. Regular pressure loss could indicate a leak and should be investigated promptly.

 CAUTION – Under no circumstances should the boiler be switched on when the system is dry.

- Keep the ventilation openings on the boiler clear to ensure correct operation and protect from overheating. Do not place or store objects on the boiler.
- Protect against freezing by ensuring power is maintained to the boiler at all times, unless the water supply is interrupted or the heating system is empty. In dwellings, frequently un-occupied or at risk of freezing, an appropriate anti-freeze can be added to the heating system at a concentration of not more than 30% by volume. Otherwise it is recommended to isolate the power and completely drain the heating and hot water systems.
- The outer case can be cleaned with a damp cloth having first isolated the boiler from the mains. Do not use solvents or abrasive cleaners.

10.- ENVIRONMENTAL INFORMATION

Elnur Gabarron MATTIRA MBX15 boilers are manufactured within a certified environmental management system. From the design stage, all the production phases are performed taking into account the most rigorous environmental requirements. For example, the selection of materials involves guaranteeing their biodegradability, re-use and recycling.

When this boiler's long, useful life is over; it must be handed in to an electrical equipment collection point for proper recycling. By ensuring that this product is correctly disposed of, you will help to avoid any possible negative effects on the environment and public health that could occur if this product is not properly handled. To obtain more detailed information on the recycling of this product, contact your local authority, your waste disposal service or the shop where you purchased the product.

The symbol on the product or in its packaging indicates that this product may not be treated as household waste. Instead it shall be handed over to the applicable collection point for the recycling of electrical and electronic equipment. By ensuring this product is disposed of correctly, you will help prevent potential negative consequences for the environment and human health, which could otherwise be caused by inappropriate waste handling of this product. For more detailed information about recycling of this product, please contact your local city office, your household waste disposal service or the shop where you purchased the product. These instructions are only valid in the EU member states.

11.- TECHNICAL DATA

		MBX15
Frequency	Hz	50
Connection 3x400V+N~		◆
Output limited to **15kW**; Maximum intensity	A	21.7
Output limited to **13kW**; Maximum intensity	A	21.7
Output limited to **12kW**; Maximum intensity	A	21.7
Output limited to **11kW**; Maximum intensity	A	21.7
Output limited to **10kW**; Maximum intensity	A	21.7
Output limited to **9kW**; Maximum intensity	A	13.0
Output limited to **8kW**; Maximum intensity	A	13.0
Output limited to **7kW**; Maximum intensity	A	13.0
Output limited to **6kW**; Maximum intensity	A	13.0
Output limited to **5kW**; Maximum intensity	A	13.0
Output limited to **4kW**; Maximum intensity	A	13.0
Output limited to **3kW**; Maximum intensity	A	13.0
Connection 230V~ single phase		◆[1]
Nominal maximum intensity **15kW**	A	65.2[1]
Maximum converted intensity at **13kW**	A	56.5[1]
Maximum converted intensity at **12kW**	A	52.2
Maximum converted intensity at **11kW**	A	47.8
Maximum converted intensity at **10kW**	A	43.5
Maximum converted intensity at **9kW**	A	39.1
Maximum converted intensity at **8kW**	A	34.8
Maximum converted intensity at **7kW**	A	30.4
Maximum converted intensity at **6kW**	A	26.1
Maximum converted intensity at **5kW**	A	21.7
Maximum converted intensity at **4kW**	A	17.4
Maximum converted intensity at **3kW**	A	13.0
[2]Maximum DHW flow with **15kW**	l/min	5,38
[2]Maximum DHW flow with **13kW**	l/min	4,66
[2]Maximum DHW flow with **12kW**	l/min	4,30
[2]Maximum DHW flow with **11kW**	l/min	3,94
[2]Maximum DHW flow with **10kW**	l/min	3,50
Weight	kg	32
Maximum Pressure of the Heating circuit	bar	2.5
Maximum operating temperature (Heating Circuit)	°C	80
Maximum operating temperature (DHW)	°C	60
Insulated steel heater header		◆
Stainless steel plated resistance elements INCOLOY800	Heating	◆
6 litre expansion vessel		◆
Electronic regulation of heater modulation		◆
Electronic regulation DHW		◆
Digital display		◆
0-4 bar pressure gauge		◆
Accelerator pump		◆
Automatic purge		◆
TRIACS silent power switches		◆
Heating pressure switch		◆
100°C heating temperature limiter		◆
3 bar central heating relief valve		◆
Ambient thermostat intake		◆
Sound power level (L_{WA})	dB	36

◆included

[1] using connecting links included

The standard configuration of the boiler only allows a maximum of 12kW when connected SINGLE-PHASE 230V~.

[2] Maximum flow calculated with a 10°C inlet temperature and 50°C outlet temperature. Contact Elnur for additional data.

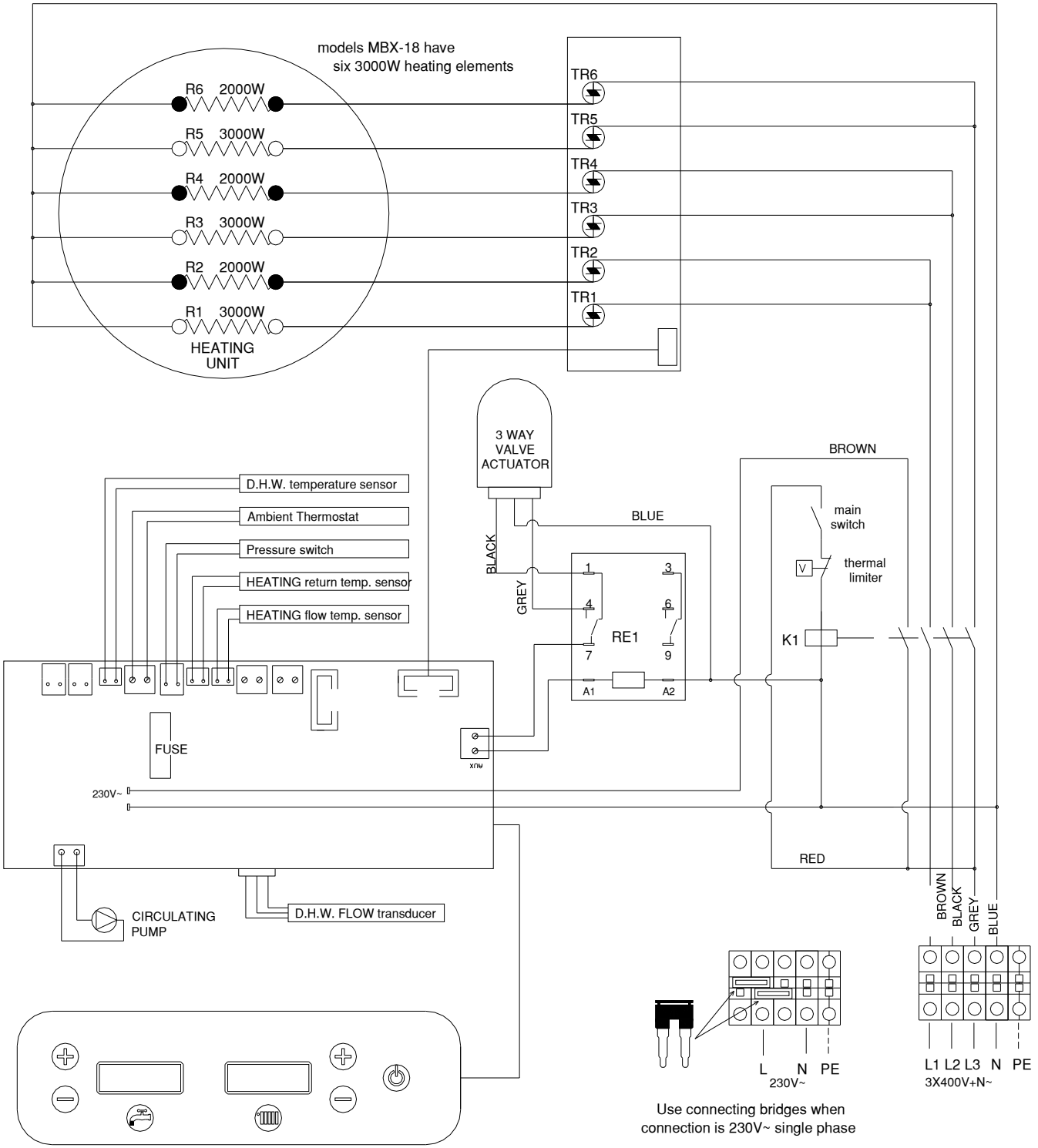
12.- PRODUCT FICHE

ErP

MODEL(S): **ELNUR GABARRON MATTIRA MBX15** (wall mounted electric combination boiler)
CONDENSING BOILER: NO
LOW TEMP. BOILER: NO
B1 BOILER: NO
CO-GENERATION SPACE HEATER: NO
COMBINATION HEATER: YES

Information	**Symbol**	**Value**	**Unit**
Space heating:			
Rated heat output	Prated	15	kW
Power output	P4	14,812	kW
Seasonal space heating energy efficiency	ηs	36,4	%
Useful efficiency at rated heat output and high-temperature regime	η4	39,5	%
Auxiliary electricity consumption in standby mode	Psb	0,003	kW
Standby heat loss	Pstby	0,07	kW
Sound power level, indoors	LWA	36	dB
Seasonal space heating energy efficiency class	D		
Contact details:	ELNUR, S.A. Travesía de Villa Esther, 11 28110 – Algete (Madrid) Spain		

13.- WIRING DIAGRAMS



14.- WARRANTY

Your new Elnur Gabarron MATTIRA MBX15 electric boiler from Elnur is warranted against faulty materials and manufacture defects for a period of 2 years from the date of purchase.

The above warranty is provided on the basis that:

- The boiler has been installed in accordance with the guidance detailed in this user manual and all relevant Codes of Practice and Regulations that are in force at the time of installation.
- All necessary valves, fittings, safety valves and controls have been installed.
- Installation has been completed by a competent person with regard to heating installation, G3 of the Building Regulations, Water Regulations/Bylaws and Electrical Regulations.
- No unauthorized person or person without prior written agreement by Elnur UK Ltd has modified or altered the boiler in any way whatsoever.
- The installation commissioning checklist (Section 16 at the rear of this manual) has been completed.
- The boiler has been regularly maintained as detailed in this manual (Section 9).
- The maintenance checklist (Section 17) is verified in the service record (Section 18) and that the service record is up to date.
- The boiler is only being used for domestic heating and hot water purposes.
- The boiler has been installed in the UK or Ireland.
- The warranty card supplied separately with this manual is completed and returned to Elnur UK Ltd or that the online guarantee registration form is completed and submitted at www.elnur.co.uk within 21 days of purchase.

Important Note:
The Elnur Gabarron MATTIRA MBX15 electric boiler is not warranted against the effects of damage caused by frost.
The heating elements are not warranted against the effects of damage caused by scale.
This warranty is in addition to the statutory rights of the consumer and in no way affects the statutory rights of the consumer.

Elnur UK Limited Contact Information

Pre-sales product & installation advice – advice@elnur.co.uk / 01942 670119
Product specification service / advice – projects@elnur.co.uk / 01942 670119

Technical issues during installation – technical@elnur.co.uk / 01942 265048
After-sales service – technical@elnur.co.uk / 01942 265048

15.- INSTALLATION COMMISSIONING CHECKLIST

15.1 HOT WATER SYSTEM

This Commissioning Checklist is to be completed in full by the competent person who commissioned the heating system as a means of demonstrating compliance with the appropriate Building Regulations and then handed to the customer to keep for future reference.
Failure to install and commission this equipment to the manufacturer's instructions may invalidate the warranty but does not affect statutory rights.

Customer name:			Telephone number:		
Address:					
Boiler Make and Model: **Elnur Gabarron MATTIRA MBX15 electric boiler**					
Boiler Serial Number					
Commissioned by (PRINT NAME)			Registered Operative ID Number		
Company name:			Telephone number:		
Company address:					
			Commissioning date:		
To be completed by the customer on receipt of a Building Regulations Compliance Certificate*:					
Building Regulations Notification Number (if applicable)					
ALL INSTALLATIONS					
What is the incoming static cold water pressure at the inlet to the system?				bar	
Is the installation in a hard water area (above 200ppm)?	Yes		No		
If yes, has a water scale reducer been fitted?	Yes		No		
What type of scale reducer has been fitted?					
What is the hot water thermostat set temperature?				°C	
What is the maximum hot water flow rate at set thermostat temperature (measured at high flow outlet)?				l/min	
Time and temperature controls have been fitted in compliance with Part L of the Building Regulations?				Yes	
Type of control system (if applicable)	Y plan		S Plan	Other	
What is the hot water temperature at the nearest outlet?				°C	
All the appropriate pipes have been insulated up to 1 metre or the point where they become concealed				Yes	
Where is the pressure reducing valve situated (if fitted)?					
What is the pressure reducing valve setting?				bar	
Are all energy sources fitted with a cut out device?	Yes		No		
Has the expansion vessel or internal air space been checked?	Yes		No		
The hot water system complies with the appropriate Building Regulations				Yes	
The system has been installed and commissioned in accordance with the manufacturer's instructions				Yes	
The system controls have been demonstrated to and understood by the customer				Yes	
The manufacturer's literature, including Installation Checklist and Service Record, has been explained and left with the customer				Yes	
Commissioning Engineer's Signature					
Customer's Signature					
(To confirm satisfactory demonstration and receipt of manufacturer's literature)					

*All installations in England and Wales must be notified to Local Authority Building Control (LABC) either directly or through a competent persons Scheme. A Building Regulations Compliance Certificate will then be issued to the customer.

15.2 CENTRAL HEATING SYSTEM

This Commissioning Checklist is to be completed in full by the competent person who commissioned the heating system as a means of demonstrating compliance with the appropriate Building Regulations and then handed to the customer to keep for future reference.
Failure to install and commission this equipment to the manufacturer's instructions may invalidate the warranty but does not affect statutory rights.

Commissioned by (PRINT NAME)			Registered Operative ID Number			
Company name:			Telephone number:			
Company address:						
			Commissioning date:			
To be completed by the customer on receipt of a Building Regulations Compliance Certificate*:						
Building Regulations Notification Number (if applicable)						
ALL INSTALLATIONS						
What is the heating water thermostat set temperature?					°C	
Time and temperature controls have been fitted in compliance with Part L of the Building Regulations?					Yes	
Type of control system (if applicable)	Y plan		S Plan		Other	
If "other" selected above, please provide details						
Boiler interlock					Provided	
Thermostatic radiator valves			Fitted?		Not required?	
Automatic bypass to system			Fitted?		Not required?	
All appropriate pipes have been insulated up to 1 metre or the point where they become concealed					Yes	
Has the heating system discharge been connected and terminated correctly?					Yes	
The system has been flushed and cleaned in accordance with BS7593 and boiler manufacturer's instructions?					Yes	
What system cleaner was used?						
What inhibitor was used?	Quantity				Litres	
Central heating flow temperature?	Degrees				°C	
Central heating return temperature?	Degrees				°C	
Are all energy sources fitted with a cut out device?			Yes		No	
Has the expansion vessel or internal air space been checked?			Yes		No	
The system has been installed and commissioned in accordance with the manufacturer's instructions					Yes	
The system controls have been demonstrated to and understood by the customer					Yes	
The manufacturer's literature, including Installation Checklist and Service Record, has been explained and left with the customer					Yes	
Commissioning Engineer's Signature						
Customer's Signature						
(To confirm satisfactory demonstration and receipt of manufacturer's literature)						

*All installations in England and Wales must be notified to Local Authority Building Control (LABC) either directly or through a competent persons Scheme. A Building Regulations Compliance Certificate will then be issued to the customer.

15.3 ELECTRICAL INSTALLATION

This Commissioning Checklist is to be completed in full by the competent person who commissioned the heating system as a means of demonstrating compliance with the appropriate Building Regulations and then handed to the customer to keep for future reference.
Failure to install and commission this equipment to the manufacturer's instructions may invalidate the warranty but does not affect statutory rights.

Commissioned by (PRINT NAME)			Registered Operative ID Number		
Company name:			Telephone number:		
Company address:					
			Commissioning date:		
To be completed by the customer on receipt of a Building Regulations Compliance Certificate*:					
Building Regulations Notification Number (if applicable)					
ALL INSTALLATIONS					
Is the electrical supply to the property	single?		three phase?		
What is the rating of the main fuse to the property?			Amps		
Is the circuit relating to the boiler power supply a dedicated circuit that only supplies the boiler?			Yes		
Is the boiler circuit protected by an RCD?			Yes		
What is the rating of the boiler circuit MCB?			Amps		
What size Twin & Earth cable has been used for the boiler circuit?			mm^2		
Has a "local" isolation switch been installed in close proximity to the boiler?			Yes		
What is the rating of the local isolation switch for the boiler circuit?			Amps		
If external controls have been installed, are these powered from a separate switched and fused spur?			Yes		
Have all electrical connections been checked for tightness including factory connections to main terminals and contactor?			Yes		
Has the power setting on the boiler been adjusted to suit the installation requirements and within the capability of the power supply?			Yes		
What kW power rating has the boiler been set to?			kW		
Has a clamp meter test been carried out to verify the power rating?	Yes		No		
Has the electrical installation been tested and certified?			Yes		
The system has been installed and commissioned in accordance with the manufacturer's instructions			Yes		
The system controls have been demonstrated to and understood by the customer			Yes		
The manufacturer's literature, including Installation Checklist and Service Record, has been explained and left with the customer			Yes		
Commissioning Engineer's Signature					
Customer's Signature					
(To confirm satisfactory demonstration and receipt of manufacturer's literature)					

*All installations in England and Wales must be notified to Local Authority Building Control (LABC) either directly or through a competent persons Scheme. A Building Regulations Compliance Certificate will then be issued to the customer.

16.- MAINTENANCE CHECKLIST

This Maintenance Checklist is to be verified in full by the competent person undertaking the annual service of the boiler. Failure to maintain this equipment to the manufacturer's instructions may invalidate the warranty but does not affect statutory rights.

PERIODIC MAINTENANCE OF THIS EQUIPMENT IS ESSENTIAL FOR SAFETY & PRESERVATION OF THE MANUFACTURER'S GUARANTEE.	
GENERAL	
Check location of boiler and that it is accessible	
Check that boiler ventilation areas are not blocked or covered	
Visual inspection of appliance for damage or signs or misuse	
Remove boiler casings and inspect / clean	
MAINS PRESSURE HOT WATER SYSTEM	
Check and clean filter	
Check the condition and if necessary descale the heat exchangers in hard water areas	
Check that water pressure downstream of the pressure reducing valve is within the manufacturer's limits	
Check temperature set point is correct	
Check and advise the householder not to place any clothing or other combustible materials against or on top of this appliance	
Complete the service record log	
CENTRAL HEATING SYSTEM	
Check and clean / replace any filter system fitted in connection with the boiler	
Manually check the operation of the heating 3 bar relief valve	
Check discharge pipe from heating 3 bar relief valve is free from obstruction and blockage and is not passing any water	
Check that the temperature set point is correct	
Check the pressure on the air side of the heating expansion vessel. This must be done when the volume in the heating chamber is cold	
Check pressure gauge is between 1 and 1.5 bar when cold. Top up if required.	
Check quality of heating system water in accordance with inhibitor manufacturers guidelines	
Check boiler visually for leaks and corrosion	
Run boiler to ensure correct operation	
Check for air in system and remove. Top up pressure afterwards as required	
Check operation of any external controls connected to the boiler	
Check and advise the householder not to place any clothing or other combustible materials against or on top of this appliance	
Complete the service record log	
ELECTRICAL	
Check power rating of boiler	
Confirm power rating of boiler is suitable for electrical installation	
Check operation of RCD, MCB and local isolation switch	
Check tightness of all circuit electrical connections	
Check tightness of all power connections to boiler terminals	
Check tightness of all factory connections to main terminals and contactor	
Using a clamp meter, verify the power being drawn by the boiler is relative to the boiler power setting when operating at full demand	
Check and advise the householder not to place any clothing or other combustible materials against or on top of this appliance	
Complete the service record log	
The manufacturer's literature, including Installation Checklist and Service Record, has been explained and left with the customer	Yes

17.- SERVICE RECORD

It is recommended that your Elnur Gabarron MATTIRA MBX15 boiler is serviced regularly and that the appropriate service record is completed.
Before completing the appropriate service record below, please ensure you have carried out the service as described in the manufacturer's instructions.

SERVICE RECORD #01	DATE:	
General/Heating	Mains pressure Hot Water	Electrical
Engineer name:		
Company name:		
Telephone No:		
Comments:		
Signature:		

SERVICE RECORD #02	DATE:	
General/Heating	Mains pressure Hot Water	Electrical
Engineer name:		
Company name:		
Telephone No:		
Comments:		
Signature:		

SERVICE RECORD #03	DATE:	
General/Heating	Mains pressure Hot Water	Electrical
Engineer name:		
Company name:		
Telephone No:		
Comments:		
Signature:		

SERVICE RECORD #04	DATE:	
General/Heating	Mains pressure Hot Water	Electrical
Engineer name:		
Company name:		
Telephone No:		
Comments:		
Signature:		

SERVICE RECORD #05	DATE:	
General/Heating	Mains pressure Hot Water	Electrical
Engineer name:		
Company name:		
Telephone No:		
Comments:		
Signature:		

SERVICE RECORD #06	DATE:	
General/Heating	Mains pressure Hot Water	Electrical
Engineer name:		
Company name:		
Telephone No:		
Comments:		
Signature:		

SERVICE RECORD #07	DATE:	
General/Heating	Mains pressure Hot Water	Electrical
Engineer name:		
Company name:		
Telephone No:		
Comments:		
Signature:		

SERVICE RECORD #08	DATE:	
General/Heating	Mains pressure Hot Water	Electrical
Engineer name:		
Company name:		
Telephone No:		
Comments:		
Signature:		

SERVICE RECORD #09	DATE:	
General/Heating	Mains pressure Hot Water	Electrical
Engineer name:		
Company name:		
Telephone No:		
Comments:		
Signature:		

SERVICE RECORD #10	DATE:	
General/Heating	Mains pressure Hot Water	Electrical
Engineer name:		
Company name:		
Telephone No:		
Comments:		
Signature:		

ELNUR GABARRON®

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AENOR GESTIÓN DE LA CALIDAD ISO 9001 ER-0706/1999

AENOR GESTIÓN AMBIENTAL ISO 14001 GA-2002/0284

CERTIFIED IQNet MANAGEMENT SYSTEM