



Riscalda la vita.



UK

DOWN-FIRED BOILERS USER MANUAL

LNK15 EVO - LNK20 EVO
LNK30 EVO - LNK40 EVO

MADE IN ITALY
design & production

007291003 - 000

! ATTENTION



**SURFACES CAN BECOME VERY HOT!
ALWAYS USE PROTECTIVE GLOVES!**

During combustion, thermal energy is released that significantly increases the heat of surfaces, doors, handles, controls, glass, exhaust pipes, and even the front of the appliance. Avoid contact with those elements if not wearing protective clothing (protective gloves included). Make sure children are aware of the danger and keep them away from the stove during operation.

ENGLISH - CONTENTS

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We thank you for having chosen our company; our product is a great heating solution developed from the most advanced technology with top quality machining and modern design, aimed at making you enjoy the fantastic sensation that the heat of a flame gives, in complete safety.

The purpose of these instructions is to help you become familiar with the operation, maintenance and care of the system. Improper operation of the system may result in personal injuries, damage to animals and property.

Please be aware that before installing the boiler, the chimney flue must be inspected by qualified personnel, who must issue installation conformity documentation in accordance with national regulations.

Please also read these operating instructions before commissioning and comply with the technical data and instructions of the system. If you follow the instructions and notes and operate carefully, the safety, reliability and efficacy of the system will be significantly improved and its value preserved.

We reserve the right to make changes to the product without prior notice in the interest of improving and further developing it. We hope you are satisfied with your new boiler.

GENERAL COPYRIGHT REGULATIONS

These installation and operating instructions are protected by copyright.

The document cannot be copied, edited, translated or submitted to third parties without our written consent.

We reserve the right to make technical changes to the product or this manual, useful for technical progress, at any time and without prior notice.

DESCRIPTION OF THE SOFTWARE

The described software version of the boiler control was correct at the time this document was created.

WARNINGS

THIS INSTRUCTION MANUAL IS AN INTEGRAL PART OF THE PRODUCT: MAKE SURE THAT IT ALWAYS ACCOMPANIES THE APPLIANCE, EVEN IF TRANSFERRED TO ANOTHER OWNER OR USER, OR IF TRANSFERRED TO ANOTHER PLACE.

If it is damaged or lost, request another copy from the area technician.

This product is intended for the use for which it has been expressly designed. The manufacturer is exempt from any liability, contractual and extracontractual, for injury/damage caused to persons/animals and objects, due to installation, adjustment and maintenance errors and improper use.

INSTALLATION MUST BE PERFORMED BY QUALIFIED STAFF, WHICH ASSUMES COMPLETE RESPONSIBILITY FOR THE DEFINITIVE INSTALLATION AND CONSEQUENT GOOD FUNCTIONING OF THE PRODUCT INSTALLED. ONE MUST ALSO BEAR IN MIND ALL LAWS AND NATIONAL, REGIONAL, PROVINCIAL AND TOWN COUNCIL STANDARDS PRESENT IN THE COUNTRY IN WHICH THE APPLIANCE HAS BEEN INSTALLED, AS WELL AS THE INSTRUCTIONS CONTAINED IN THIS MANUAL.

THE MANUFACTURER CANNOT BE HELD RESPONSIBLE FOR THE FAILURE TO COMPLY WITH SUCH PRECAUTIONS.

After removing the packaging, ensure that the content is intact and complete. Otherwise, contact the dealer where the appliance was purchased.

ALL ELECTRIC COMPONENTS THAT MAKE UP THE PRODUCT MUST BE REPLACED WITH ORIGINAL SPARE PARTS EXCLUSIVELY BY AN AUTHORISED SERVICE CENTRE, THUS GUARANTEEING CORRECT OPERATION.

SAFETY

- ◆ THE APPLIANCE MAY BE USED BY CHILDREN 8 YEARS OF AGE OR OLDER AND INDIVIDUALS WITH REDUCED PHYSICAL, SENSORY, OR MENTAL CAPACITIES OR WITHOUT EXPERIENCE OR THE NECESSARY KNOWLEDGE, PROVIDED THAT THEY ARE SUPERVISED OR HAVE RECEIVED INSTRUCTIONS ON SAFE USE OF THE APPLIANCE AND THAT THEY UNDERSTAND THE INHERENT DANGERS.
- ◆ CHILDREN MUST BE CHECKED TO ENSURE THAT THEY DO NOT PLAY WITH THE APPLIANCE.
- ◆ THE CLEANING AND MAINTENANCE REQUIRED BY THE USER MUST NOT BE PERFORMED BY CHILDREN WITHOUT SUPERVISION.
- ◆ DO NOT TOUCH THE GENERATOR WHEN YOU ARE BAREFOOT OR WHEN PARTS OF THE BODY ARE WET OR DAMP.
- ◆ THE SAFETY AND ADJUSTMENT DEVICES MUST NOT BE MODIFIED WITHOUT THE AUTHORISATION OR INDICATIONS OF THE MANUFACTURER.
- ◆ DO NOT PULL, DISCONNECT, TWIST ELECTRIC CABLES LEAVING THE STOVE, EVEN IF DISCONNECTED FROM THE ELECTRIC POWER SUPPLY MAINS.
- ◆ IT IS ADVISED TO POSITION THE POWER SUPPLY CABLE SO THAT IT DOES NOT COME INTO CONTACT WITH HOT PARTS OF THE APPLIANCE.
- ◆ DO NOT CLOSE OR REDUCE THE DIMENSIONS OF THE AIRING VENTS IN THE PLACE OF INSTALLATION. THE AIRING VENTS ARE ESSENTIAL FOR CORRECT COMBUSTION.
- ◆ DO NOT LEAVE THE PACKAGING ELEMENTS WITHIN REACH OF CHILDREN OR UNASSISTED DISABLED PERSONS.
- ◆ THE HEARTH DOOR MUST ALWAYS BE CLOSED DURING NORMAL FUNCTIONING OF THE PRODUCT.
- ◆ CHECK FOR THE PRESENCE OF ANY OBSTRUCTIONS BEFORE SWITCHING THE APPLIANCE ON FOLLOWING A PROLONGED PERIOD OF INACTIVITY.
- ◆ THE GENERATOR HAS BEEN DESIGNED TO FUNCTION IN ANY CLIMATIC CONDITION.
- ◆ IN PARTICULARLY ADVERSE CONDITIONS (STRONG WIND, FREEZING) SAFETY SYSTEMS MAY INTERVENE THAT SWITCH THE GENERATOR OFF. IF THIS OCCURS, CONTACT THE TECHNICAL AFTER-SALES SERVICE AND ALWAYS DISABLE THE SAFETY SYSTEMS.
- ◆ IN THE EVENT THE FLUE CATCHES FIRE, USE SUITABLE SYSTEMS FOR SUFFOCATING THE FLAMES OR REQUEST HELP FROM THE FIRE BRIGADE.
- ◆ THIS APPLIANCE MUST NOT BE USED TO BURN WASTE
- ◆ DO NOT USE ANY FLAMMABLE LIQUIDS FOR IGNITION

SAFETY INSTRUCTIONS FOR INSTALLATION

- ◆ The operation can only be performed by trained adults. A briefing can be given by the qualified and licensed technician or by an authorised Service Centre.
- ◆ If installed in commercial or industrial facilities, local, internal or facility-specific provisions, regulations and/or requirements also apply.
- ◆ For the electrical connection, carry out the work in accordance with European, national and local installation and safety regulations and in a workmanlike manner.
- ◆ Failure to do so may result in death, serious injuries and extensive material damage!
- ◆ These instructions must be read carefully, in advance, by all people in charge of installing, operating,

repairing and performing maintenance on this system.

- ◆ The instructions contain important information for correct assembly, operation, personal safety and protection of the boiler system.
- ◆ Assembly and installation operations can be performed only by qualified and licensed heating and installation specialists.
- ◆ During assembly and installation, the safety regulations must be complied with.
- ◆ Depending on the country and the current funding programme, state funding may be available.
- ◆ While installing the boiler and during operation, it is necessary to comply with building, commercial, emission control and water pollution laws.

SAFETY INSTRUCTIONS FOR THE USER

This appliance can be used by people (including children over the age of 8) with reduced physical, sensory or mental capabilities or lack of experience and knowledge, provided that they are supervised or have been instructed on how to use it safely and understand the dangers involved. Children near the appliance must be supervised. Children must not play with this appliance.

Cleaning and maintenance operations must not be performed by children without supervision.

SAFETY INSTRUCTIONS FOR THE SYSTEM

The system can be used only with suitable fuels.

Failure to do so may result in death, serious injuries and extensive material damage!

During assembly and installation, it is necessary to comply with the "Health and safety at the workplace, safety regulations and environmental protection" regulations, warnings and notes.

If installed in commercial or industrial facilities, local, internal or facility-specific provisions, regulations and/or requirements also apply.

The electrical connection conditions specified must be met.

Make settings and work on the appliance only according to the instructions in the user manual.

Do not modify or remove any additional parts or accessories installed.

SAFETY INSTRUCTIONS DURING OPERATION

Contact with hot surfaces may cause burns.

Therefore, do not touch the hot surfaces inside the appliance, or the pipes, fittings and exhaust pipes.

The error messages indicate faults in the heating system and, if they are not repaired, they may have serious consequences for the operation of the heat generator. In addition to this, the warranty will be void.

Therefore, inform your local Service Centre of any faults immediately.

In the event of faults in the electrical system, the system must be put out of service and specialised personnel must be contacted.

The boiler must be equipped with a pressure relief valve.

COMMISSIONING AND INSTRUCTIONS

The boiler must be commissioned and the operator trained EXCLUSIVELY BY QUALIFIED AND LICENSED PERSONNEL OR BY AN AUTHORISED SERVICE CENTRE.

Incorrect operation may result in additional costs which are not covered by the warranty.

MANAGEMENT AND MONITORING

- IT IS FORBIDDEN TO LEAVE CHILDREN UNATTENDED NEXT TO THE BOILER WHEN IN OPERATION.
- IT IS FORBIDDEN TO USE FLAMMABLE LIQUIDS TO IGNITE THE BOILER WITH SOLID FUEL.
- IT IS FORBIDDEN TO INCREASE THE POWER IN ANY WAY AND/OR OVERLOAD THE PRODUCT (OVERHEATING).
- **IT IS FORBIDDEN TO THROW FLAMMABLE OBJECTS INTO THE BOILER OR NEXT TO THE INFEED OPENING AND ASH DRAWERS, AND IT IS COMPULSORY TO ONLY EMPTY THE ASHES IN NON-FLAMMABLE CONTAINERS EQUIPPED WITH A COVER.**
- THE BOILERS MUST BE SUPERVISED BY THE OPERATOR FROM TIME TO TIME DURING OPERATION.
- DURING OPERATION, CHECK THE TIGHTNESS OF THE DOORS AND THE CLEANING OPENINGS, WHICH MUST ALWAYS BE SECURED WELL.
- THE USER IS NOT AUTHORISED TO INTERVENE ON THE STRUCTURE AND ELECTRICAL SYSTEM OF THE BOILERS.
- THE BOILER AND THE ENTIRE SYSTEM MUST ALWAYS BE CLEANED PERFECTLY ACCORDING TO THE FREQUENCY INDICATED, TO ENSURE CORRECT OPERATION OF THE ENTIRE SYSTEM.
- THE INFEED DOORS AND ASH DRAWER MUST ALWAYS BE CLOSED PROPERLY.

WARRANTY AND RESPONSIBILITIES

The warranty is only valid if the products have been installed and used correctly.

The boiler must be installed in a dry room.

The appliance must be used with a return temperature > 60°C for the warranty to be valid.

The Warranty Conditions can be found on the following website:

<https://www.lanordica-extraflame.com/en/solutions/guarantee-terms>

THE WARRANTY IS VOID ALSO IN THE FOLLOWING CASES:

- Use of safety elements that do not comply with current regulations.
- Repairs made during the warranty period by unauthorised people or companies.
- Improper transport of the boiler to the place of installation.
- Incorrect installation including incorrect smoke exhaust.
- Incorrect and/or inconsistent operation of the boiler by the user, including exceeding the maximum permissible temperature of the water in the boiler, allowing the water to freeze in the system or in the boiler, pouring cold water into the hot boiler, extinguishing the embers in the combustion chamber with water.
- Starting the boiler with the system not loaded properly.
- Corrosion of the steel elements due to prolonged use of the boiler with a return temperature below 60°C (operation without an anti-condensation valve).
- Operation with a different draught level (either higher or lower) than that indicated in the production specifications.
- Use of boiler supply water with a hardness greater than 7°dH and consequent damage.
- Calcification of the parts of the thermal discharge safety device due to calcareous water.
- Use of unauthorised fuels.
- The manufacturer shall not be held responsible for any damage caused by water leaks, condensation water, acid corrosion, limescale or damage caused by dirt or oxygen particles in the water.

In the event of unjustified claims, the costs incurred will be borne by the consumer.

Failure to comply with these installation and operating instructions will invalidate the warranty.

After completing installation, these installation and operating instructions must be explained and delivered to the manager, who must keep them.

INSTALLATION

SYSTEM REGULATIONS

FOR GERMANY ONLY

Before installing the boiler, it is necessary to obtain the approval of the main district chimney sweep authorised to submit a chimney calculation. The appliance must be installed in closed heating systems, that have been installed in accordance with current regulations **and with the current state of the art.**

NOTES ON THE INSTALLATION ROOM

The installation room must:

- Comply with local fire regulations and building regulations.
- Be frost-proof
- Ensure the minimum distances of combustible materials from the boiler wall

Moreover, a sufficient supply of fresh air must be guaranteed in the room.

European, national and local installation regulations must be complied with. The combustion air can be supplied through openings to the outside or, in accordance with safety and installation regulations, from adjacent rooms.

The openings to the outside must be protected against the elements and against the entry of birds or rodents.

The maximum vacuum must not exceed 4Pa in the combustion air inlet system (if present).

If the combustion air is introduced through an opening in the outer wall, a pressure difference of 3 Pa must not be exceeded.

The minimum opening for the combustion air inlet must be at least 100 cm².

REQUIREMENTS FOR THE HEATING WATER

The heating water must meet the requirements of current hydronic safety regulations.

The LNK-EVO log gasification boiler must operate with an anti-condensation valve.

This means that a minimum return temperature of 60°C must be guaranteed to prevent condensation.



IF THE BOILER IS OPERATED WITHOUT AN ANTI-CONDENSATION VALVE, IT MAY BE SERIOUSLY DAMAGED!

For LNK-EVO type boilers, a storage tank must be installed.

Check the European, national and local regulations for the size of the storage tank.

The manufacturer recommends the minimum storage tank volumes indicated in the following table:

LNK 15 EVO	1000 L
LNK 20 EVO	1200 L
LNK 30 EVO	1600 L
LNK 40 EVO	2100 L

FIRE PROTECTION FOR INSTALLATION AND USE OF THERMAL DEVICES



WARNING IN SITUATIONS WHERE GASES, OR FLAMMABLE VAPOURS MAY BE PRESENT, AND IN THE PRESENCE OF WORKS WITH A TEMPORARY RISK OF FIRE OR EXPLOSION (INSTALLATION OF LINOLEUM WITH GLUE, PVC, ETC.), THE BOILERS MUST BE PUT IN A SAFE CONDITION (SWITCHED OFF AND COOLED DOWN) BEFORE THE DANGER ARISES. **OBJECTS MADE OF FLAMMABLE MATERIAL MUST NOT BE PLACED ON THE BOILER OR CLOSER THAN THE SAFETY DISTANCE.**

CHIMNEY FLUE

The sizing, installation and connection of the chimney flue to the boiler must be carried out by an authorised company of master chimney sweepers according to European, national and local regulations.

The flue must develop a sufficient draught to convey and transport combustion smoke outdoors at all operating speeds. It is important to have an adequately sized self-sufficient flue for the boiler to operate correctly.



TO STABILISE THE DRAUGHT IN THE FLUE, IT IS NECESSARY TO INSTALL AN ADDITIONAL AUTOMATIC DRAUGHT REGULATOR ON THE FLUE PIPE OR IN THE CHIMNEY.

THE QUALITY OF COMBUSTION, THE HEAT OUTPUT AND THE SERVICE LIFE OF THE BOILER DEPEND ON THE DRAUGHT. Fireplace draught is directly proportional to the diameter, height and coarseness of the internal wall. Smoke from another appliance must not flow into the flue connected to the boiler.



WARNING: AS REGARDS THE CONNECTION TO THE CHIMNEY FLUE AND FLAMMABLE MATERIALS, REFER TO THE **European, national and local regulations.** THE FLUE MUST BE AT A SUITABLE DISTANCE FROM FLAMMABLE OR COMBUSTIBLE MATERIALS BY MEANS OF ADEQUATE INSULATION OR AN AIR GAP.

SMOKE DUCT

THE HEAT GENERATOR OPERATES WITH NEGATIVE PRESSURE AND IS EQUIPPED WITH AN OUTPUT FAN FOR SMOKE EXTRACTION. THE GENERATOR MUST ONLY HAVE ONE DISCHARGE SYSTEM. IT IS NOT PERMITTED TO HAVE A FLUE THAT IS SHARED WITH OTHER DEVICES. Components of the smoke extraction system must be selected based on the type of device to install and according to:

- UNI/TS 11278 in the case of metal fireplaces, with special reference to the designation.
- UNI EN 13063-1 and UNI EN 13063-2, UNI EN 1457, -UNI EN 1806: in the case of non-metal fireplaces.
- The smoke duct must be as short as possible.
- A T-fitting must be installed with a condensation collection cap at the bottom of the vertical section. The vertical duct can either be inside or outside the building. If the smoke duct is installed inside an existing flue, it must be certified for solid combustion.
- If the smoke duct is outside the building, it must **always be insulated.**
- It must be possible to inspect all sections of the smoke duct.
- Inspection openings must be provided for cleaning.



IT IS **MANDATORY** TO PROVIDE A "T" FITTING WITH A CONDENSATE COLLECTION CAP AT THE BASE OF THE VERTICAL SECTION (SMOKE SUCTION FAN OUTLET).

CONNECTION MUST BE CARRIED OUT WITH STABLE, STURDY PIPES THAT COMPLY WITH ALL STANDARDS AND REGULATIONS IN FORCE AND ACCORDING TO THE PROVISIONS OF LAW, AND SECURED WELL TO THE FLUE.

THE INTERNAL DIAMETER OF THE CONNECTION PIPE MUST CORRESPOND TO THE EXTERNAL DIAMETER OF THE SMOKE OUTLET OF THE APPLIANCE.

CHIMNEY POT

Flue draught also depends on the suitability of the chimney pot.

CHIMNEY POTS MUST MEET THE FOLLOWING REQUIREMENTS:

- Have a useful output section of more than double the length of the fireplace/pipe system into which it is inserted
- Be constructed in such a way that rain and snow cannot penetrate into the fireplace/pipe system
- Be constructed in such a way that even in the case of winds from all directions and with any inclination, the evacuation of combustion products (windshield terminal) is ensured.



FAILURE TO COMPLY WITH THESE REQUIREMENTS WILL INVALIDATE THE WARRANTY

CHIMNEY

Before installing the system, be sure to have all the permissions required by European, national and local regulations.

The chimney and flue pipe must be designed in accordance with the technical specifications of the LNK-EVO product.

When sizing and checking the flue, a draught regulator must be installed.

In order to ensure trouble-free operation when installing a new heating system, optimal chimney sizing in accordance with current regulations is a prerequisite.

The connection to the chimney must be as short as possible.

Before installing the system, it is necessary to measure the draught and calculate the flue.

The maximum vacuum in the boiler room must not exceed 4 Pa for combustion air supplied via pipes.

If the combustion air is introduced through an opening in the outer wall, a pressure difference of 3 Pa must not be exceeded.

All information required for the calculation of the flue can be found in the technical specifications of the respective boiler type.

Calculated chimneys smaller than the flue gas inlet (150mm) of the boiler are not allowed.

DRAUGHT REGULATOR

To ensure the correct operation of LNK-EVO wood boilers, it is necessary to use a draught regulator.

OBLIGATIONS OF THE SYSTEM OPERATOR

The operator is required to:

- Always operate the system in appropriate conditions;
- Not make changes or allow others to make changes or tamper with the system;
- Read the operating instructions before starting the system;
- Have the operation of the whole system checked;
- Have the system repaired.

The system must be commissioned by the installing company (specialising in the construction of heating systems) or by an authorised La Nordica Spa Service Centre.

This must be documented in a commissioning report.

It is necessary to check that all system components have been installed correctly and that all control and safety devices are working properly and are correctly set.

The installer must issue the certification of the entire system installed, with instructions for operation and maintenance.

When it is delivered to the operator, the operation and maintenance of the system and of the boiler, including any additional equipment, must be explained in detail to him/her or to the person assigned to the management of the system.

In particular, the function of the safety devices and the measures to maintain safe operation must be explained.

If the system is not commissioned by legally qualified and authorised personnel, the warranty will be void.

The prerequisites for trouble-free operation are:

- Periodic cleaning of the boiler
- Good fuel quality;
- Constant flue draught;
- A sufficient supply of fresh air of at least 4 m³/h for 1 kW in the installation room;
- Built-in and regulated draught regulator.

PERMITTED FUELS

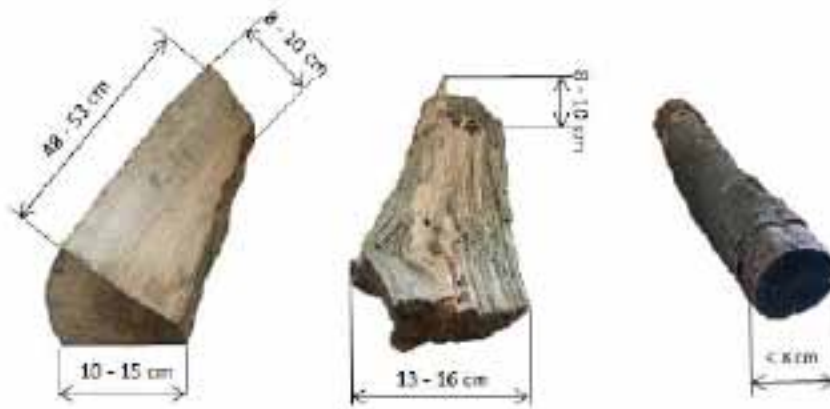
Only natural wood in the form of split logs, including the bark, can be burned in the LNK-EVO boiler.

IT IS FORBIDDEN TO USE PALLETS, PLANKS AND SIMILAR, BECAUSE THEY HAVE BEEN PRETREATED WITH PAINT.

THE USE OF OTHER NON-PERMITTED FUELS MAY DAMAGE THE BOILER. IN THIS CASE, NEITHER THE MANUFACTURER NOR THE SUPPLIER SHALL BE HELD RESPONSIBLE.

Note: the logs must have a residual moisture between 12% and 18%. For wood with low residual moisture (12%), logs with a large diameter (> 10 cm) should be used.

For wood with high residual moisture (18%), logs with a small diameter (6-8 cm) should be used. Glued, painted or similar materials must never be used in this boiler!



FUEL

The recommended type of fuel is dry wood having a diameter of 8-15 cm, aged for at least 2 years, with a moisture content not exceeding 15-18%, with a heat output of 4.7 kW/kg and a log length of 50 cm.

The dimensions of the fuel to use can be found in the "TECHNICAL SPECIFICATIONS" paragraph.

Basic data regarding wood.

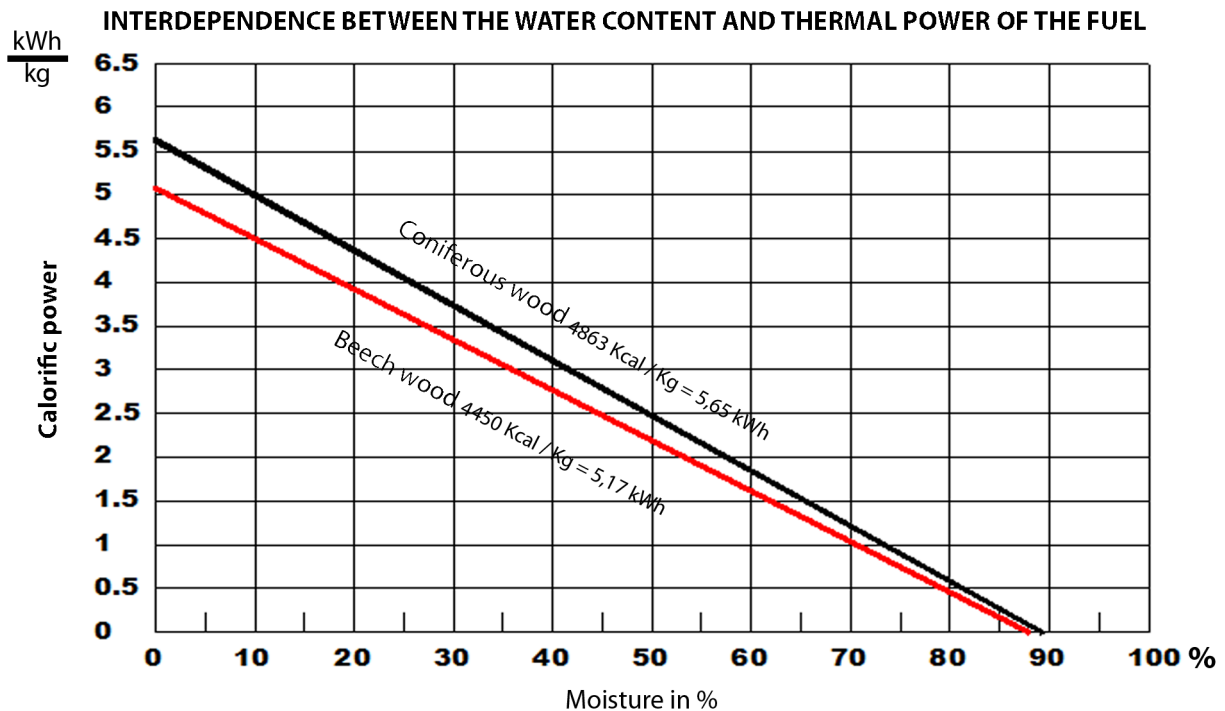
The graph below indicates the interdependence between the water content and heat output of the fuel. The useful energy volume of the wood drops significantly in relation to the amount of water.

Boilers are not suitable for burning wood with a moisture content of less than 12% because, below this value, gasification becomes uncontrollable.

Inferior calorific power of the main types of wood

Type of wood	Calorific power per 1 kg with 20% moisture		
	kcal	kJoule	kW/kg
FIR	3,900	16,250	4.5
PINE	3,800	15,800	4.4
LARCH	3,800	15,800	4.4
TURKEY OAK	3,600	15,100	4.2
POPLAR	3,500	14,760	4.1
ELM	3,500	14,760	4.1
BIRCH	3,750	15,500	4.3
OAK	3,600	15,100	4.2
BEECH	3,450	14,400	4.0

We do not recommend using fresh wood since it will produce a lot of smoke, will radically shorten the service life of the boiler and flue, and reduce the boiler's power by 50%.



INFORMATION ON THE BOILER

The LNK-EVO boiler is a wood gasification boiler with built-in differential control for buffer tank loading by means of a sensor.

All operating parameters are preconfigured in the control. Only the primary and secondary air positions need to be adapted to the standard fuel. This is done when the boiler is commissioned with the help of a flue gas analyser. There is a detailed section on the following pages to illustrate the operating mode.

HOW IT IS DELIVERED

The LNK-EVO boiler is delivered completely pre-assembled and complete with covering. It is transported on a pallet. For safety reasons, the boiler is secured to the pallet with screws. Depending on the installation room and situation, the boiler can be partially disassembled.

The delivery of the boiler includes:

- Connection cable ready for connection;
- Combustion chamber made of refractory panels;
- Cleaning kit;
- Identification plate and energy label (already glued on);
- Turbolators and cleaning mechanism;
- Smoke suction fan with exhaust flange (packed separately in a box);
- Heat exchanger cleaning lever (disassembled, placed in the upper combustion chamber);
- Instructions for use (placed in the upper combustion chamber);
- Heat exchanger cleaning equipment.

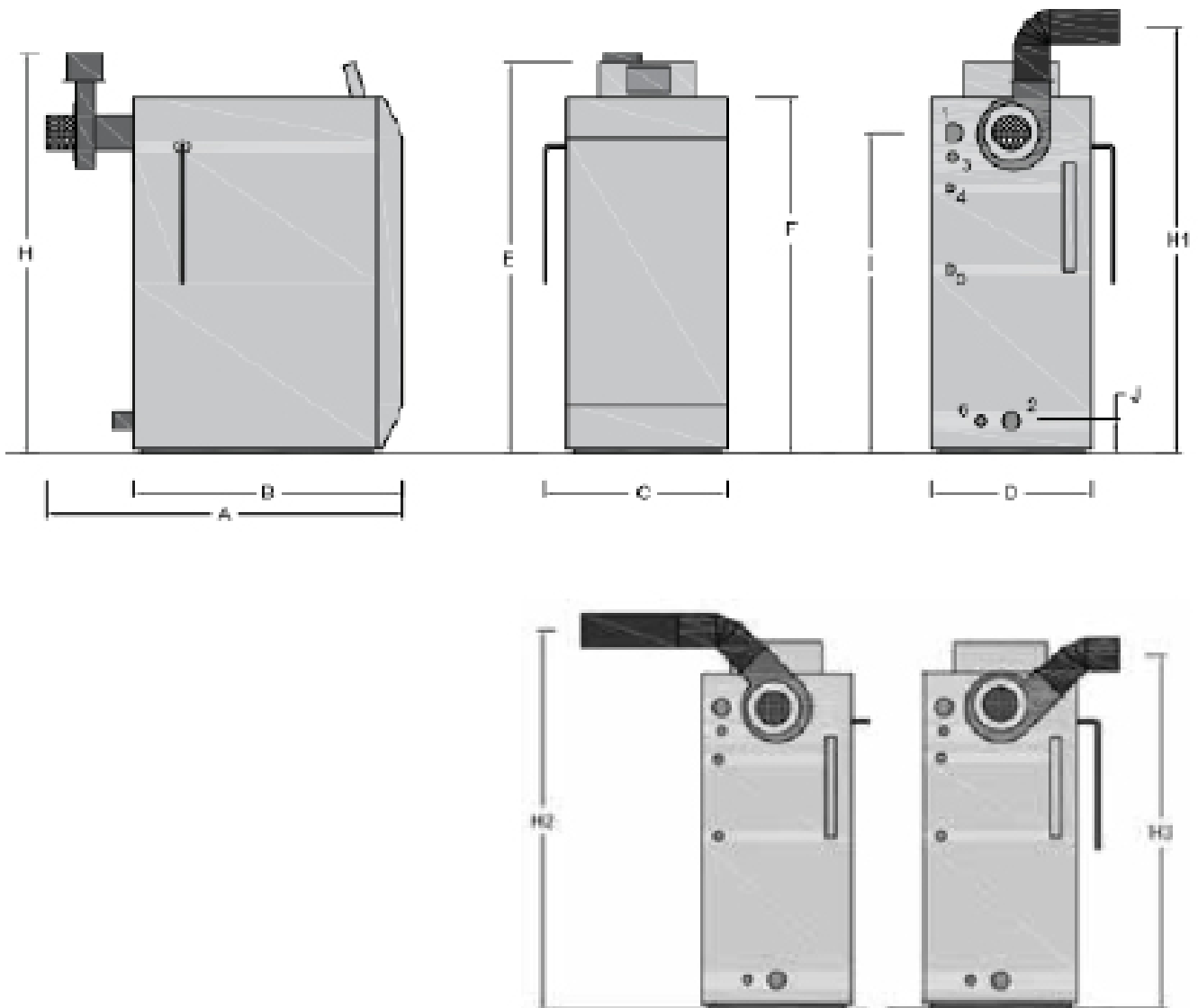
ACCESSORIES REQUIRED

- Anti-condensation valve
- Safety valve - 2.5 bar
- Safety device for thermal discharge
- Expansion tank
- Draught limiter
- Technical water tank

TECHNICAL SPECIFICATIONS

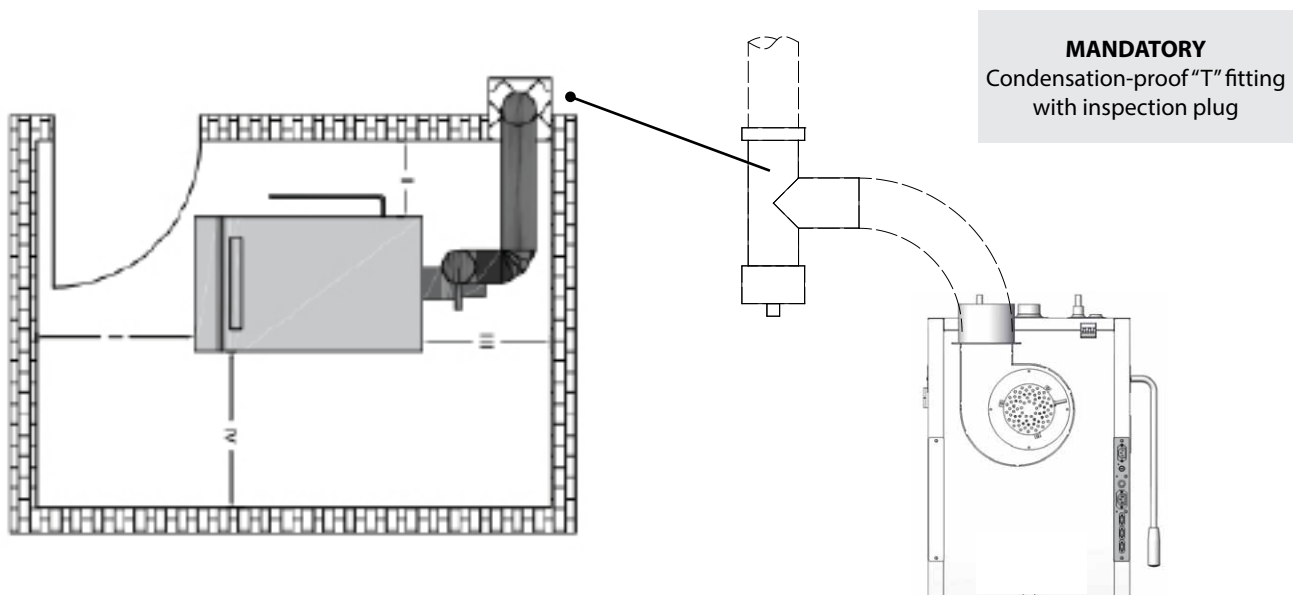
Boiler type	LNK 15 EVO	LNK 20 EVO	LNK 30 EVO	LNK 40 EVO
Nominal heat output	17,3 kW	21 kW	29 kW	37 kW
Efficiency at nominal heat output of the boiler	89,0 %	89,3 %	89,9 %	90,5 %
Filling chamber volume	78 l	78 l	105 l	105 l
Flue draught	10 Pa	10 Pa	10 Pa	10 Pa
Exhaust gas mass flow	11,14 g/s	12,69 g/s	16,03 g/s	19,03 g/s
Exhaust gas temperature	164,9 °C	167,9 °C	174,2°C	180 °C
Max. water pressure	2,5 bar	2,5 bar	2,5 bar	2,5 bar
Water content	72 l	72 l	91,6 l	90,2 l
Weight of the boiler	465 kg	465 kg	520 kg	525 kg
Smoke discharge	150 mm	150 mm	150 mm	150 mm
Delivery	1 ½"	1 ½"	1 ½"	1 ½"
Return	1 ½"	1 ½"	1 ½"	1 ½"
DSA integrated system inlet and outlet	¾"	¾"	¾"	¾"
DSA probe sump	½"	½"	½"	½"
Average consumption	4,5 kg /h	5,4 kg /h	7,4 kg/h	9,2 kg/h
CO emissions (10% O ₂)	184,5 mg/m ³	202,1 mg/m ³	240,2 mg/m ³	274,4 mg/m ³
CO ₂ emissions	11,65 %	12,09 %	13,05 %	13,91 %
Particulate emissions	19,2 mg/ m ³	18,9 mg/m ³	18,2 mg/m ³	17,6 mg/m ³
Max. Length of logs	50 cm	50 cm	50 cm	50 cm
Voltage	230V/50Hz	230V/50Hz	230V/50Hz	230V/50Hz
Electricity consumption at nominal heat output	28 W	33 W	43 W	52 W

DIMENSIONS



DIMENSIONS in mm				
	LNK 15 EVO	LNK 20 EVO	LNK 30 EVO	LNK 40 EVO
A	1320	1320	1320	1320
B	1060	1060	1060	1060
C	550	550	650	650
D	480	480	580	580
E	1320	1320	1320	1320
F	1200	1200	1200	1200
H	1460	1460	1460	1460
H1	1565	1565	1565	1565
H2	1430	1430	1430	1430
H3	1340	1340	1340	1340
I	1200	1200	1200	1200
J	150	150	150	150

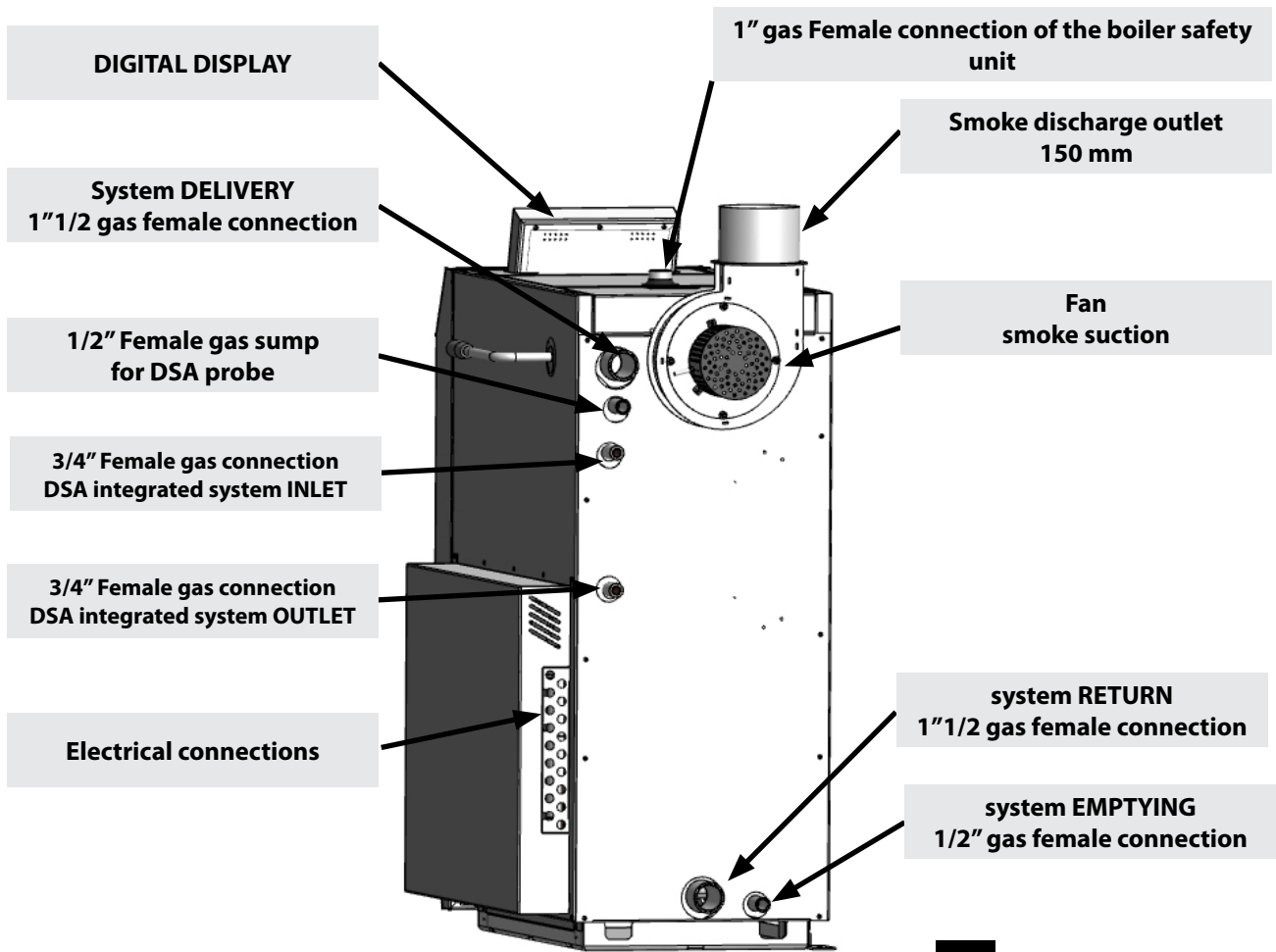
SPACING



Minimum DISTANCES in mm				
	LNK 15 EVO	LNK 20 EVO	LNK 30 EVO	LNK 40 EVO
I	700	700	700	700
II	400	400	400	400
III	500	500	500	500
IV	200	200	200	200

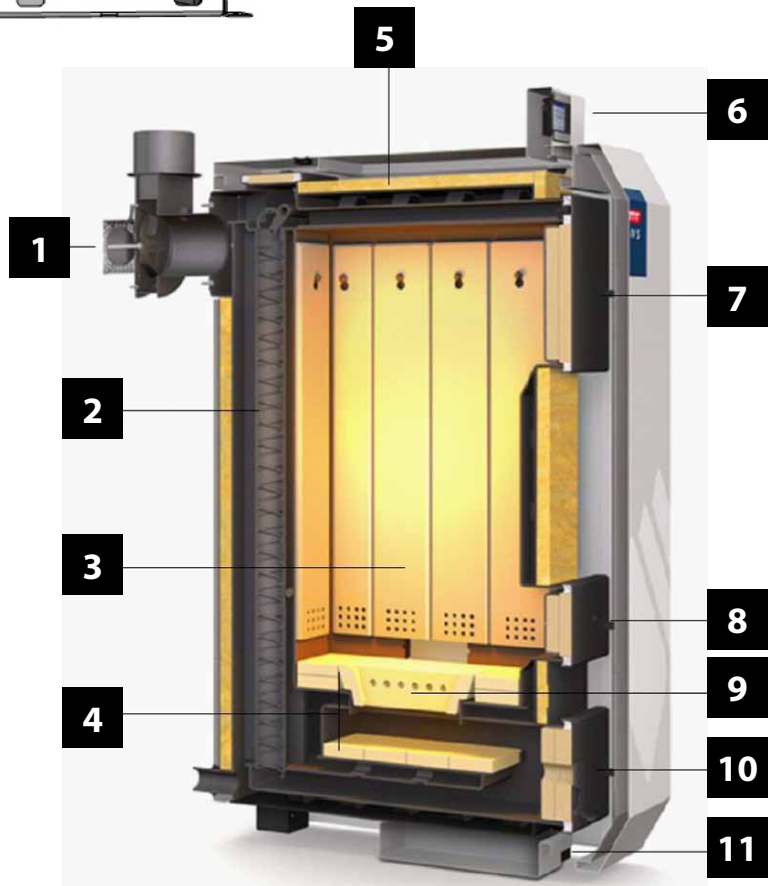
Minimum HEIGHT of the room in mm				
	LNK 15 EVO	LNK 20 EVO	LNK 30 EVO	LNK 40 EVO
	1850	1850	1850	1850

IDENTIFICATION OF COMPONENTS



BOILER SECTION

1	Suction fan
2	Tube bundle with turbulators
3	Mounting plates
4	Fire clay panels
5	Safety cooling coil
6	Control display
7	Loading door
8	Ignition door
9	Air nozzles
10	Cleaning door
11	Ash box



SAFETY HEAT EXCHANGER AND AUTOMATIC THERMAL DISCHARGE VALVE DSA

The safety heat exchanger of the boiler must be equipped with a tested and certified thermal discharge valve.

If the temperature of the boiler exceeds 95°C, the cold water supply is activated to prevent the boiler temperature from rising even more.

The water side connection can be made only by a qualified technician, who must make sure that the water supply is sufficient and meets the specifications indicated below.

DOMESTIC WATER SYSTEMS ARE NOT ALLOWED, ONLY PUBLIC WATER SYSTEMS ARE ALLOWED.

The pH of the drinking water must be greater than or equal to pH 7.4. If this value is not reached, the warranty is invalidated. The water hardness test must be provided to the manufacturer on request.

The thermal discharge valve DSA must be installed at the outlet of the safety heat exchanger. This applies even if the manufacturer of the thermal discharge valve has indicated other installation positions.

It is necessary to make sure that there is a constant water pressure of at least 2 bar.

In the event of problems with the water pressure, the system must be put out of service.

It must not be possible to block the inlet and outlet lines!

The inlet and outlet lines must be visible and accessible. The section of the line to and from the safety heat exchanger must have a nominal width of at least 15.



THE SAFETY HEAT EXCHANGER MUST NEVER BE USED FOR DOMESTIC HOT WATER PRODUCTION/HEATING.

BOILER ASSEMBLY

DISASSEMBLY / INTRODUCTION / ASSEMBLY

The product is delivered almost completely pre-assembled. Only the lever for cleaning the heat exchanger and the fan unit needs to be installed.

DISASSEMBLY

Depending on the conditions of the room in which the boiler is installed, some parts of it may be disassembled differently for transport purposes.

Weight reduction:

- Removal of suspended plates;
- Removal of ceramic components and refractory panels from the upper and lower combustion chambers;
- Disassembly of the covering door;
- Disassembly of the three boiler doors;

Please note:

When disassembling components from inside the boiler, the disassembled parts must be marked in order to be able to install them quickly and correctly.

HANDLING

The boilers are screwed onto the transport pallets for safety reasons. Loosen these screws and push the boiler off the pallet.

If the boiler needs to be lifted, there is an eyelet welded to the centre of it.

It is advisable to use a pallet truck when moving it at ground level.

Any disassembly must be adapted to the conditions of the room as well as the type of installation, so that the boiler is not damaged!

ASSEMBLY

If the boiler is installed as delivered, only the following precautions must be taken to complete the system:

- Assembly and alignment of the adjustable feet;
- Assembly of the components of the smoke exhaust system;
- Assembly of the lever for cleaning the heat exchanger (description below).

CONNECTING THE SMOKE EXHAUST SYSTEM

The connection between the smoke exhaust and the chimney flue must be chosen according to the chimney calculation and the configurations that the installation room allows.

It is necessary to take into account product and installation regulations.

The smoke exhaust system and relative gasket are not pre-assembled.

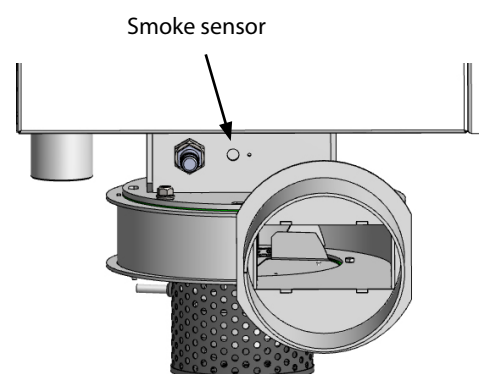
This unit can be installed at different angles depending on the installation site and the position of the chimney.

The possible variants, vertical and 45° to the right/left, are shown below.

Positioning the smoke sensor

The smoke sensor is inserted in the dedicated hole above the flue flange and it is locked in place by means of a self-tapping screw.

(See image to the side)



DIRECTION OF SMOKE FAN

The forced draught smoke fan, complete with smoke fitting, is supplied disassembled from the boiler. During installation, the fan is secured to the discharge flange of the boiler together with the fastening nuts and perimeter gasket. To facilitate installation, the smoke inlet can be installed in different positions, with the option to rotate it by 180°.



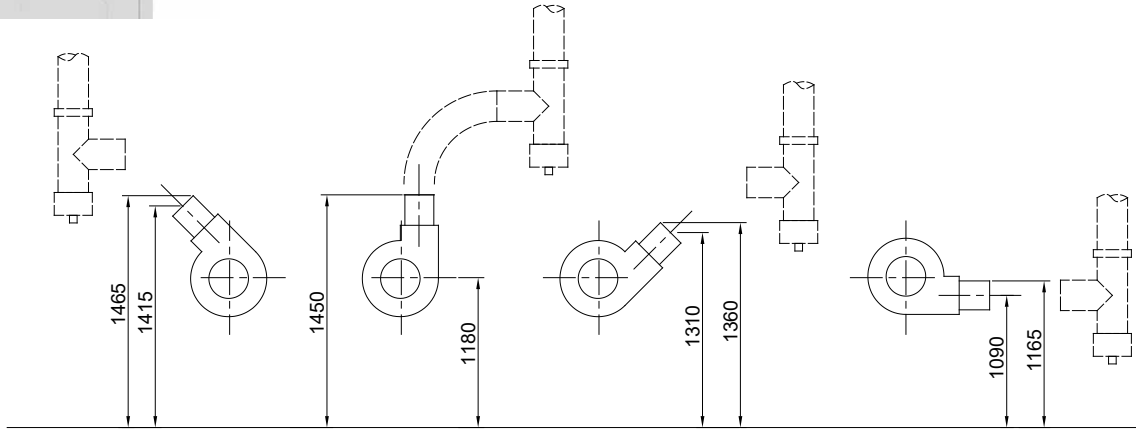
ATTENTION – THE SMOKE FAN IS SUPPLIED DISASSEMBLED. Insert it into the smoke duct at the back, tighten the wing nuts completely, connect it to the power supply outlet and check if it operates correctly - **suction**.



THIS IMAGE SHOWS ALL POSSIBLE ASSEMBLY POSITIONS WITH RELATIVE HEIGHT INDICATIONS. In this regard, please note that installation at a 90° angle generates more heat than discharge flow. SMOKE RETURN SHOULD BE VERTICAL OR AT AN ANGLE OF 45°.

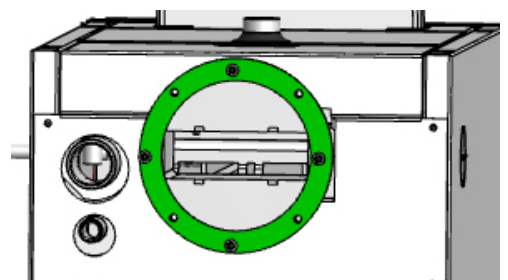
MANDATORY

Condensation-proof "T" fitting with inspection plug

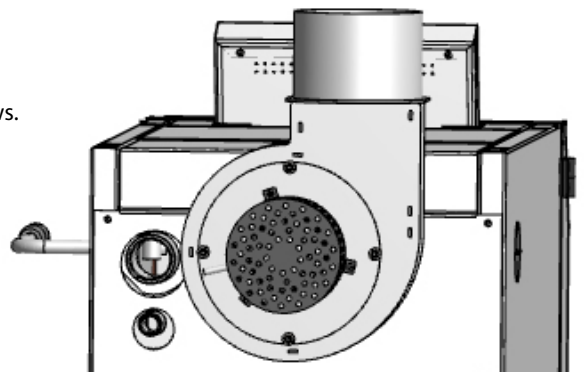


Installing the gasket for the smoke exhaust system

Place the gasket on the flange of the boiler. Use a screw (M8x20) to secure it.

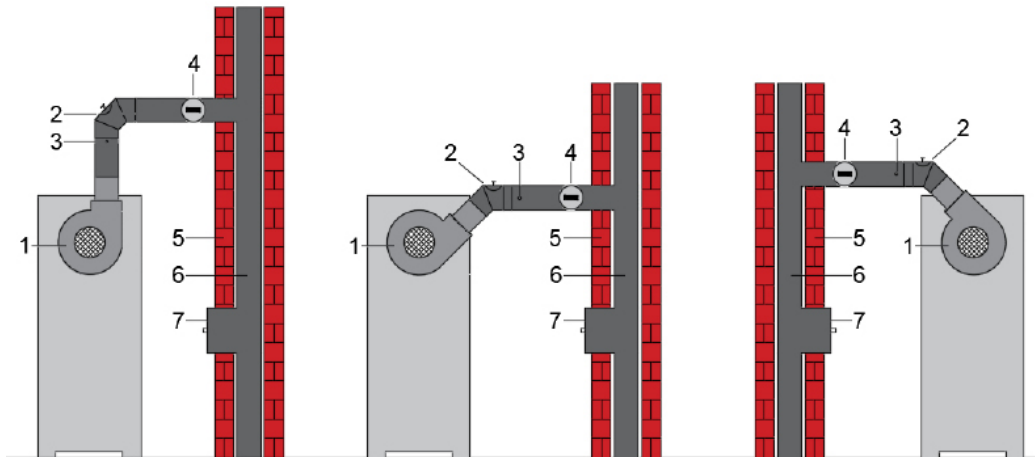


Secure the smoke exhaust system in the desired position using 4 M8x20 screws.



DIRECTION OF ROTATION AND COMPONENTS

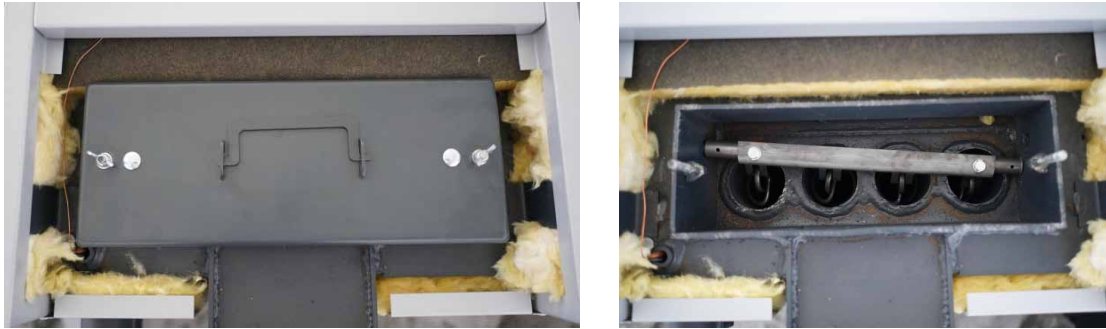
The possible directions of rotation of the exhaust flange are shown below.



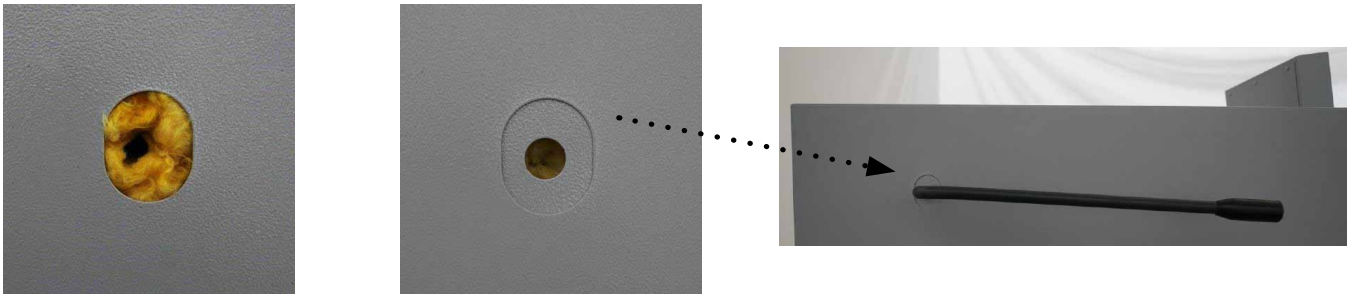
1	Smoke exhaust system
2	45°/90° elbow with cleaning opening
3	Measuring opening (30 cm distance from the nozzle)
4	Draught regulator
5	Existing masonry chimney
6	Flue
7	Chimney inspection opening

INSTALLING THE LEVER FOR CLEANING THE HEAT EXCHANGER

Remove the external casing to access the heat exchanger cover.
Loosen the wing nuts and remove the heat exchanger cover.



Insert the flange covering the handle fixing hole behind the side panel of the outer boiler casing.

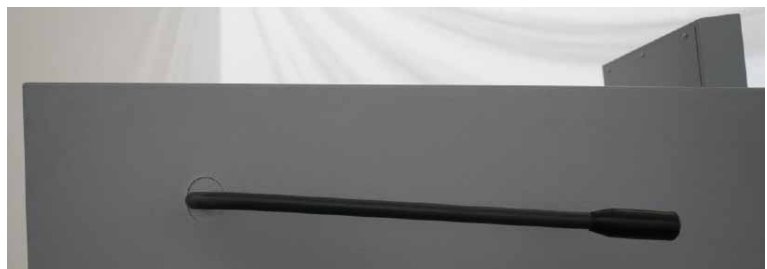


Insert the lever and slide it into the empty pipe of the heat exchanger cleaning system.
Then secure it with the fixing clip.



Please note:

Insert the lever horizontally to find the right hole more quickly.



WATER SIDE CONNECTION

The connection of the boiler to the heating network (delivery and return) must be made with at least the following pipe sections:

LNK 15 EVO	28 mm
LNK 20 EVO	28 mm
LNK 30 EVO	35 mm
LNK 40 EVO	35 mm

Lime, corrosion and rust sludge interfere with the operation of the heating system.

The filling water must meet the requirements of European, national and local regulations on the treatment of technical water (e.g. Desalination, softening, sludge removal) to avoid resulting damage.

The system can be filled and emptied only when it is cold.

When filling it, it is necessary to check the line or boiler pressure using a pressure gauge. It is advisable to fill it using a permanently installed filling system to minimise the oxygen content of the system.

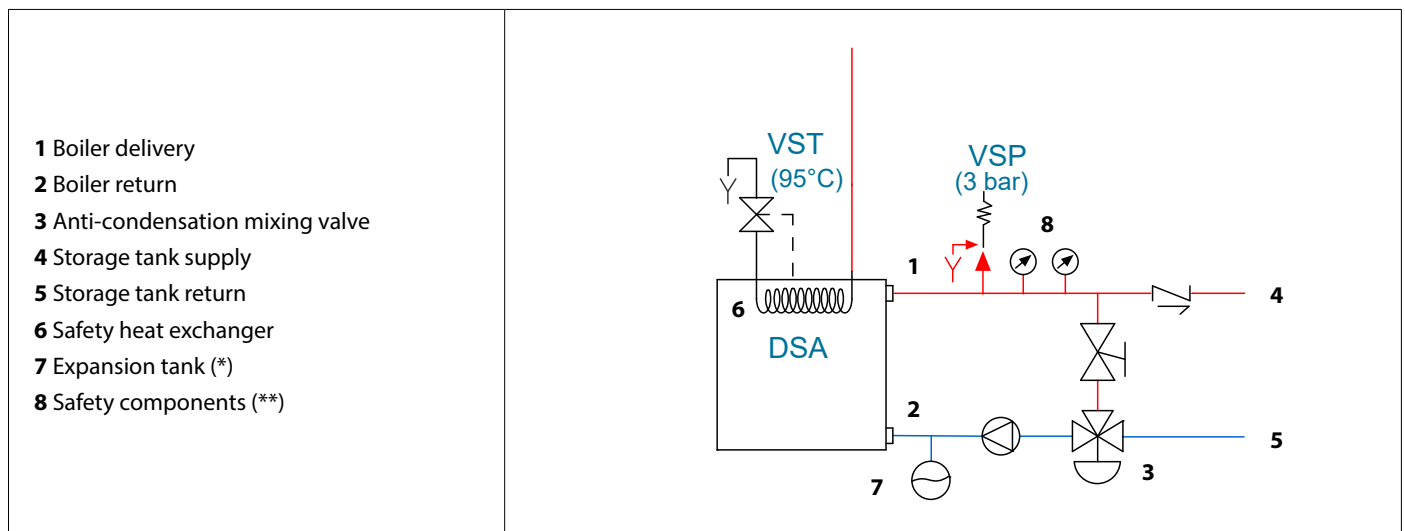


ATTENTION: Even the smallest amounts of oxygen combined with the high water temperature in heating systems inevitably lead to corrosion.

For correct filling, bleed the system both during and at the end of the filling operations.

When emptying it, make sure that the system is cold and that the water pressure in the heating circuit is suitable for the ambient pressure by manually activating the boiler safety unit. This prevents dangerous situations while emptying it.

Installing the boiler return increase and safety components



(*) The system must be sized according to current European, national and local regulations. The manufacturer's installation conditions must be met!

(**) Install certified components according to the regulations in force.

The diagrams are purely indicative, therefore they do not have design value.

OPEN VESSEL INSTALLATION.

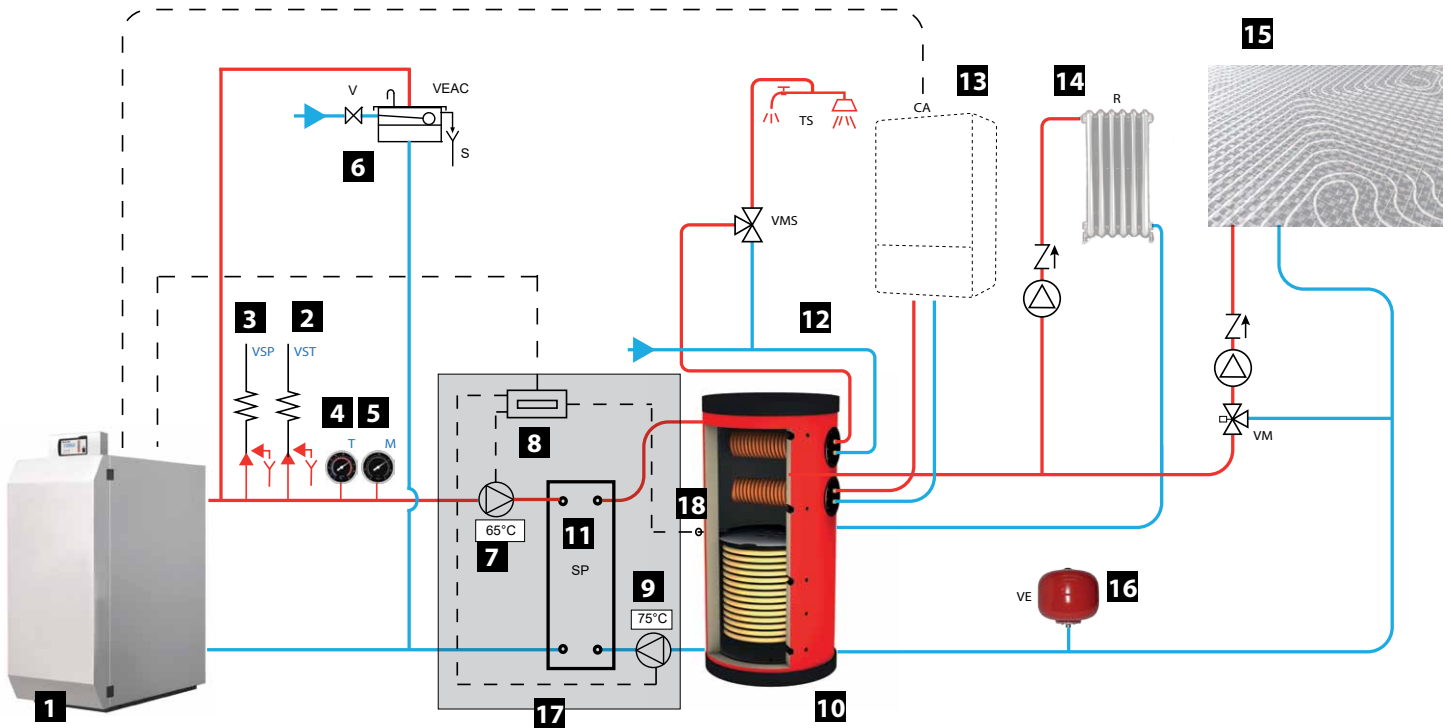
THE DIAGRAMS ARE PURELY INDICATIVE, THEREFORE THEY DO NOT HAVE DESIGN VALUE.

INSTALLATION, RELATIVE SYSTEM CONNECTIONS, COMMISSIONING AND VERIFICATION OF CORRECT OPERATION MUST BE CARRIED OUT CORRECTLY BY PROFESSIONALLY QUALIFIED AND TRAINED PERSONNEL IN FULL COMPLIANCE WITH CURRENT NATIONAL, REGIONAL, PROVINCIAL AND MUNICIPALITY REGULATIONS IN THE COUNTRY WHERE THE APPLIANCE IS INSTALLED.

Size the system correctly to avoid long pause times that would cause significant problems like the ones mentioned in the section regarding DOWN-FIRED BOILER OPERATION.



ATTENTION: THE BOILER PUMP WORKS ON THE BASIS OF THE TEMPERATURE DIFFERENCE BETWEEN THE BOILER AND THE BUFFER TANK. IF THE BOILER TEMPERATURE FALLS BELOW THE BUFFER TANK TEMPERATURE, THE PUMP IS SWITCHED OFF.



1	LNK-EVO REVERSE FLAME BOILER	
2	THERMAL DISCHARGE VALVE	
3	SAFETY VALVE 1.5 bar	
4	THERMOMETER	
5	PRESSURE GAUGE	
6	EXPANSION TANK	
7	CIRCULATOR	
8	HEATING DEVICE CONTROLLER	
9	CIRCULATOR	
10	PUFFER	
11	PLATE EXCHANGER	
12	DOMESTIC HOT WATER PRODUCTION	
13	AUXILIARY BOILER (GAS, METHANE, LPG or DIESEL)	
14	RADIATOR SYSTEM (high temperature)	
15	RADIANT PANEL SYSTEM (low temperature)	
16	EXPANSION TANK	
17	Complete SYSTEM SEPARATOR KIT can be supplied as an ACCESSORY	Can be combined with boiler models LNK 15 EVO, LNK 20 EVO and LNK 30 EVO. With regard to model LNK 40 EVO, consider a KIT with a suitably sized plate heat exchanger (PHE).
18 (*)	NTC probe - cable length 5 m	NOT included in the system separator KIT. Can be supplied as an OPTIONAL accessory

(*) IMPORTANT: THE POSITION OF THE BUFFER TANK PROBE IS INDICATIVE. THE REAL POSITION HAS TO BE EVALUATED WITH THE INSTALLER/DESIGNER.

CLOSED VESSEL INSTALLATION.

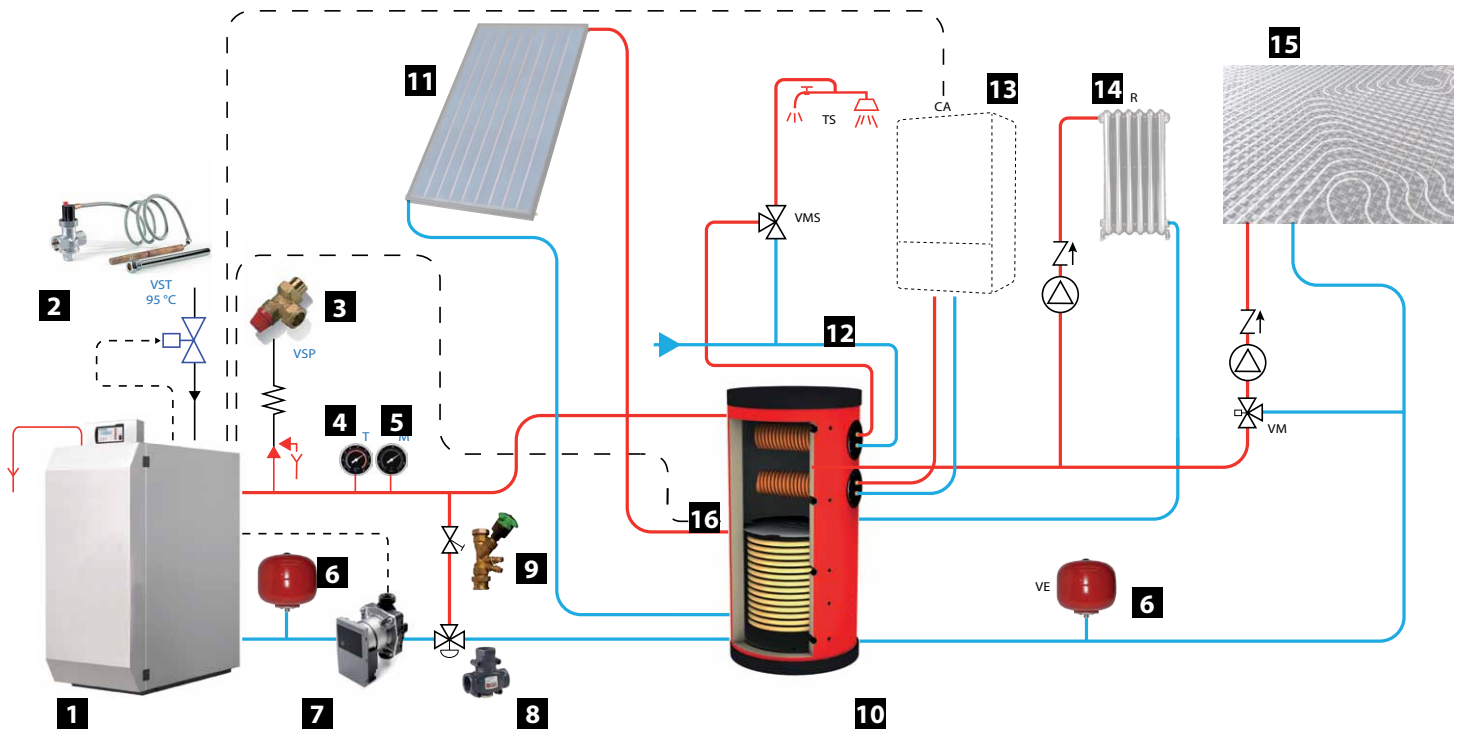
THE DIAGRAMS ARE PURELY INDICATIVE, THEREFORE THEY DO NOT HAVE DESIGN VALUE.

INSTALLATION, RELATIVE SYSTEM CONNECTIONS, COMMISSIONING AND VERIFICATION OF CORRECT OPERATION MUST BE CARRIED OUT CORRECTLY BY PROFESSIONALLY QUALIFIED AND TRAINED PERSONNEL IN FULL COMPLIANCE WITH CURRENT NATIONAL, REGIONAL, PROVINCIAL AND MUNICIPALITY REGULATIONS IN THE COUNTRY WHERE THE APPLIANCE IS INSTALLED.

Size the system correctly to avoid long pause times that would cause significant problems like the ones mentioned in the section regarding DOWN-FIRED BOILER OPERATION.



ATTENTION: THE BOILER PUMP WORKS ON THE BASIS OF THE TEMPERATURE DIFFERENCE BETWEEN THE BOILER AND THE BUFFER TANK. IF THE BOILER TEMPERATURE FALLS BELOW THE BUFFER TANK TEMPERATURE, THE PUMP IS SWITCHED OFF.



1	LNK-EVO reverse flame boiler	
2	AUTOMATIC THERMAL DISCHARGE VALVE DSA	
3	SAFETY VALVE 2.5 bar	
4	THERMOMETER	
5	PRESSURE GAUGE	
6	EXPANSION TANK	
7	CIRCULATOR	
8	ANTI-CONDENSATION MIXING VALVE FOR 60°C RECIRCULATION circuit	(can be supplied as an OPTIONAL accessory)
9	BALANCING VALVE	
10	PUFFER	
11	SOLAR PANELS	
12	DOMESTIC HOT WATER PRODUCTION	
13	AUXILIARY BOILER (GAS, METHANE, LPG or DIESEL)	
14	RADIATOR SYSTEM (high temperature)	
15	RADIANT PANEL SYSTEM (low temperature)	
16 (*)	BUFFER TANK PROBE	

(*) IMPORTANT: THE POSITION OF THE BUFFER TANK PROBE IS INDICATIVE. THE REAL POSITION HAS TO BE EVALUATED WITH THE INSTALLER/DESIGNER.

ANTI-CONDENSATION MIXING VALVE FOR 60°C RECIRCULATION CIRCUIT

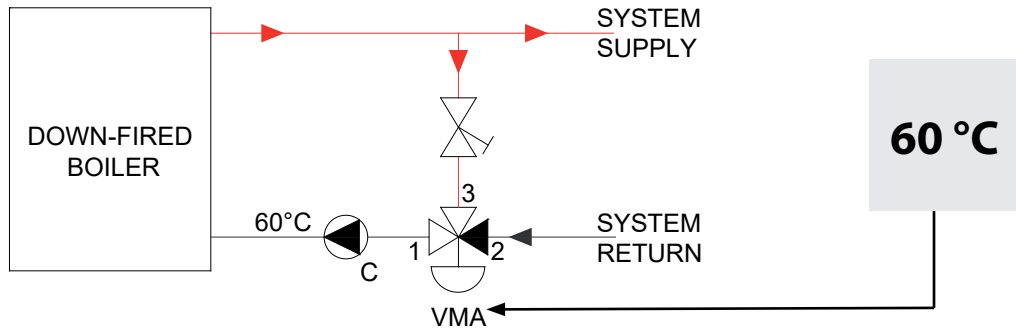
(can be supplied as an **OPTIONAL** accessory).

The anti-condensation mixing valve is used in solid combustion heating devices and boilers since it prevents the return of cold water into the heat exchanger. Sections 1 and 3 are always open and, together with the pump installed on the return (R), they guarantee circulation of water inside the heat exchanger of the biomass boiler (Down-fired Boiler).

A HIGH RETURN TEMPERATURE ENABLES IMPROVED EFFICIENCY, REDUCES THE FORMATION OF SMOKE CONDENSATION AND PROLONGS THE BOILER'S LIFE-SPAN. Once the valve's calibration temperature has been reached, section 2 is opened and the boiler's water goes to the system through the supply.



IMPORTANT: FAILURE TO INSTALL THE DEVICE SHALL RENDER THE BOILER'S WARRANTY NULL AND VOID.



The diagrams are purely indicative, therefore they do not have design value.

ELECTRICAL CONNECTION

All electrical connections can be made by qualified electricians only!
This goes for 230V connections in particular!



ATTENTION: Risk of electric shock

The mains connection must be made in a workmanlike manner!

The boiler is delivered internally pre-wired.

If it was not necessary to loosen any connections when disassembling it, all the connections or plug connections are secured at the back of the boiler.

(See photo marked in red)

THE PRODUCT MUST BE INSTALLED AND CONNECTED BY QUALIFIED PERSONNEL IN COMPLIANCE WITH CURRENT REGULATIONS. (See Chap. SPECIAL WARNINGS). **NORDICA S.P.A. SHALL NOT BE HELD LIABLE FOR UNAUTHORISED PRODUCT MODIFICATIONS AS WELL AS USE OF NON-ORIGINAL SPARE PARTS.**

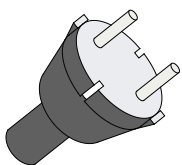


WARNING: THE BOILER MUST BE CONNECTED TO THE MAINS WITH AN UPSTREAM DIFFERENTIAL LINE CUT-OFF SWITCH ACCORDING TO CURRENT REGULATIONS. CONNECT THE POWER SUPPLY CABLE OF THE BOILER TO A BIPOLAR SWITCH WITH A MINIMUM DISTANCE BETWEEN CONTACTS OF 3mm (Power supply 230 V~ 50 Hz; correct system earthing is essential).

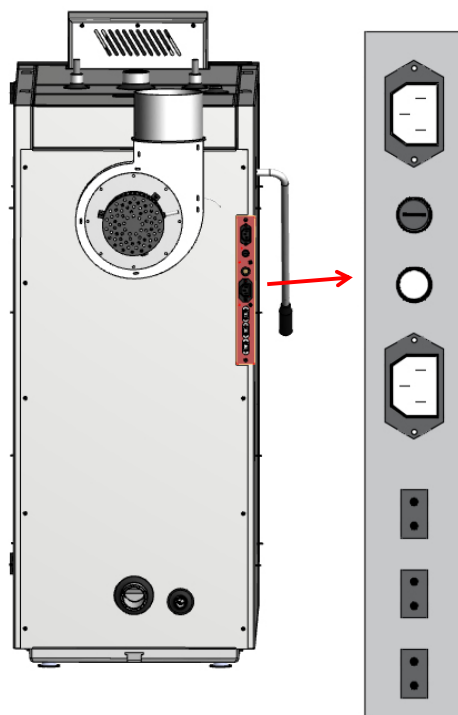
THE POWER SUPPLY CABLE MUST BE CHECKED REGULARLY AND KEPT IN ITS ORIGINAL STATUS. ANY TYPE OF INTERVENTION ON THE SAFETY CIRCUITS AND SINGLE ELEMENTS IS FORBIDDEN SO AS NOT TO COMPROMISE SAFE AND RELIABLE OPERATION OF THE BOILER. IN THE EVENT OF DAMAGE TO THE ELECTRICAL SYSTEM, PUT THE BOILER OUT OF SERVICE, DISCONNECT IT FROM THE POWER SUPPLY AND ENSURE PROFESSIONAL REPAIR IS CARRIED OUT IN COMPLIANCE WITH CURRENT REGULATIONS.



ATTENTION: THE POWER CABLE MUST NOT BE IN CONTACT WITH HOT PARTS.



NON FORNITO
NOT SUPPLIED
NICHT IM LIEFERUMFANG
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NO SUMINISTRADO



Mains connection plug (230V)

Fine fuse 3.15A

Fan connector output (230V)

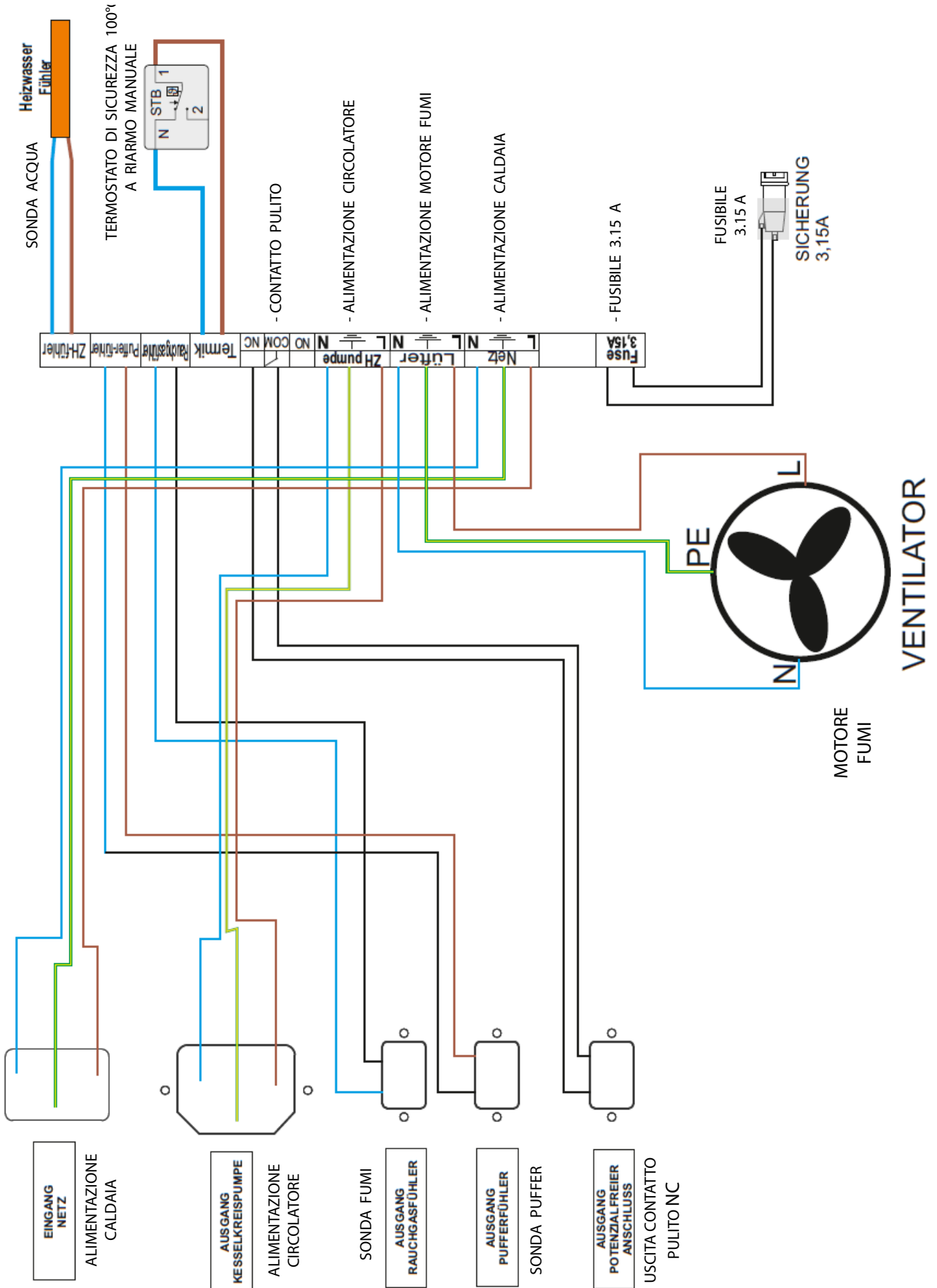
Boiler circuit pump plug (230V)

Smoke sensor

Buffer sensor

Potential-free contact

BOILER WIRING DIAGRAM



BOILER OPERATION

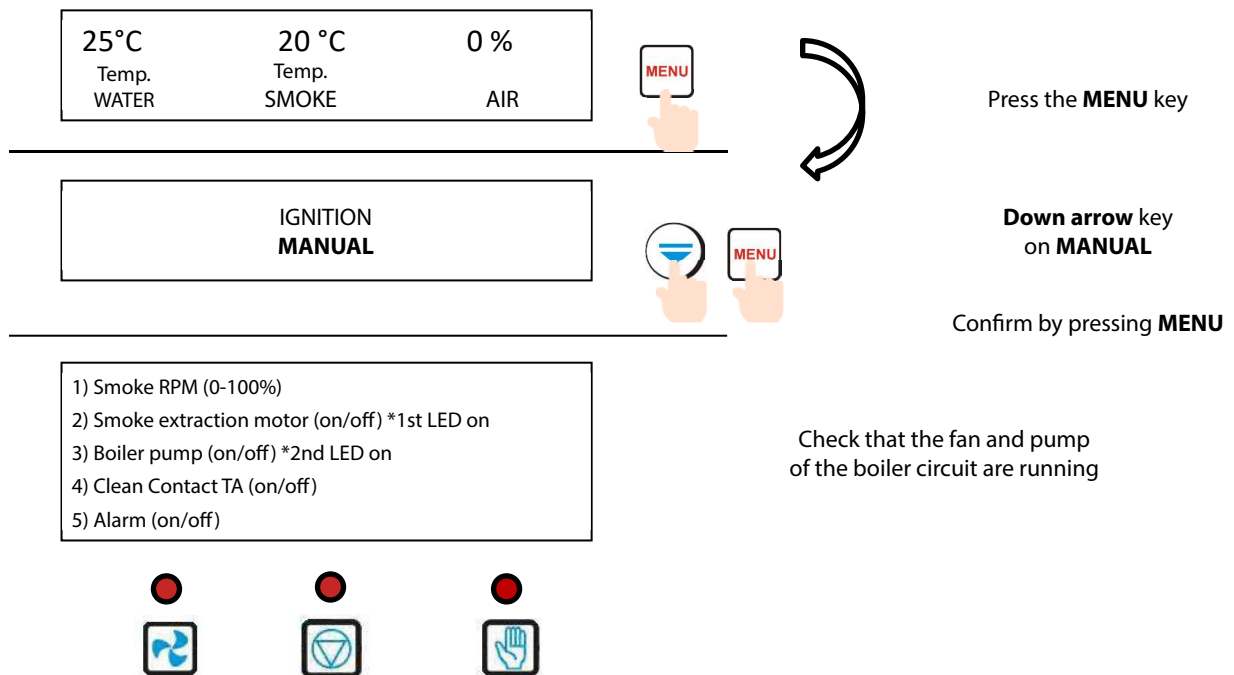
INSTALLATION

Before starting the boiler, it is necessary to follow this check list:

- Boiler + installed accessories;
- Flue gas connection installed in accordance with current regulations;
- Boiler aligned by means of the adjustable feet;
- System filled and bled in accordance with current regulations;
- Connections checked for leaks;
- Foreign bodies (e.g. packaging residues) removed from inside the boiler;
- Check that the fire clay panels fit properly (upper and lower combustion chamber);
- Electrical connections installed;
- Test all electrical components / manual operation;
- First IGNITION (see FIRST START-UP section);
- Check that the boiler is working and check the smoke values;
- Operator instructions on operation and cleaning.

MANUAL OPERATION/SMOKE FAN AND PUMP TEST

Before starting the boiler for the first time, it is necessary to check the operation of the boiler circuit pump and the fan in MANUAL mode.



*In MANUAL mode, the 3rd LED is always on

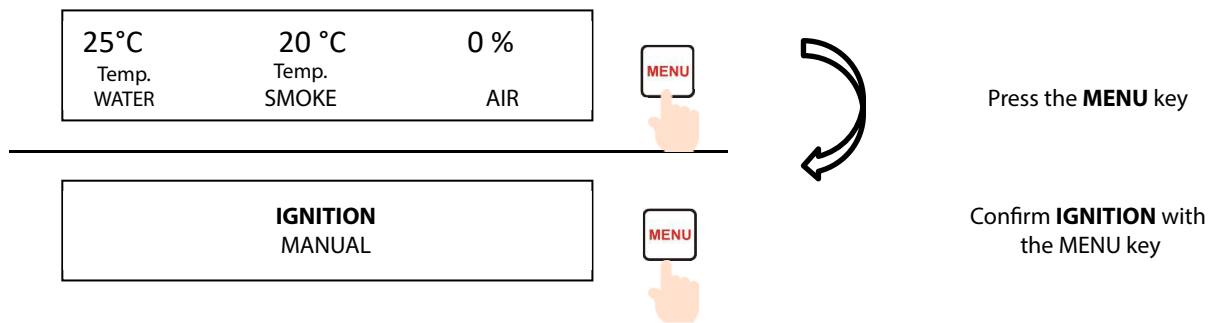
After checking the operation of the boiler circuit pump and fan, it is possible to start the first IGNITION process.

FIRST START-UP

The first IGNITION requires a special approach.

It differs from normal operation, as described below, because the inside of the boiler and the refractory panels are still free of ash residue. All air intakes inside the combustion chamber (except for the nozzle stone) must be clogged over time to ensure clean and efficient operation. To do this, proceed as follows:

1. Line the upper combustion chamber with cardboard;
ATTENTION: the nozzle gap must remain clear!
2. Fill the combustion chamber up to the level of the fire door with smaller pieces of wood;
3. Place some cardboard or paper in front of the wood to help light it;
4. IGNITION.



5. Burn the thin cardboard or paper and close the door leaving a gap of less than 1 cm;
6. The door can be closed if the SMOKE temperature is higher than 220°C;

34°C Temp. WATER	221°C Temp. SMOKE	100% AIR
------------------------	-------------------------	-------------

7. After the wood has burned and formed a layer of embers, more wood can be placed on top of it as tightly as possible;
8. Check the operation of the boiler (smoke measurement) and check the buffer filling/return flow increase.



HEATING (NORMAL OPERATION)

Before heating with wood, it is necessary to consider the storage tank temperature to load the boiler with the correct amount of fuel. Make sure that there is sufficient thermal capacity in the storage tank!

Please pay attention to the heat demand of your system in relation to the external temperatures, especially in transition periods, to avoid overheating the system.

Stratify the amount of wood according to the thermal capacity of the system, as follows:

1. Spread the ashes of the previous combustion over the bottom of the loading chamber.



2. Place small pieces of wood on the ashes.



3. Fill the loading chamber by creating a pile of wood from the smallest pieces to the largest ones.

The cross-section of the logs must be adapted to the width of the combustion chamber. In order to prevent the flames from spreading too quickly in the gaps between the logs, it is advisable to choose the width in such a way that the logs fit tidily next to one another.



ATTENTION: THE AIR PASSAGE NOZZLES MUST ALWAYS BE CLEAR.

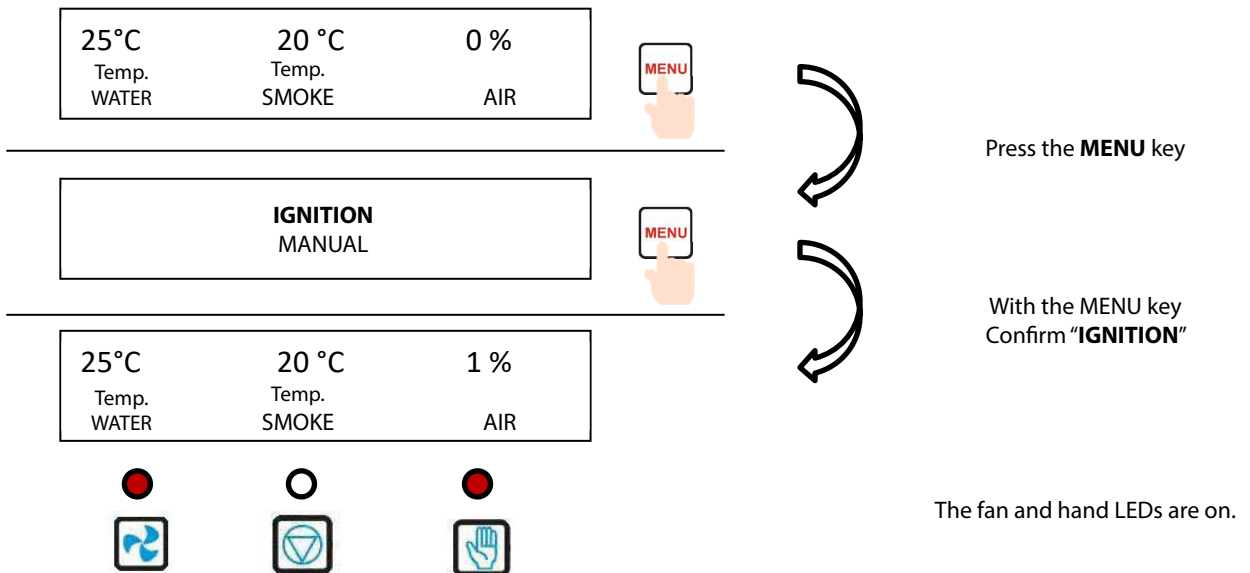
- Close the upper and lower doors of the boiler.
Place some paper or cardboard in front of the logs to help them light.



- Start the **IGNITION** process from the DISPLAY



The **IGNITION** process must be activated from the control display, **ONLY AFTER THE BOILER HAS BEEN LOADED.**



Now the smoke fan will start.

If the smoke fan does not start, it means that the safety thermostat has been triggered due to previous overheating. IT MUST BE RESET!

- Burn the paper or cardboard



5. "Half-close" the ignition door



After lighting the cardboard or paper, leave the ignition door ajar with a gap of about 1 cm.



**IF THE DOOR IS FULLY CLOSED, THE FLAME WILL GO OUT.
IF THE DOOR REMAINS FULLY OPEN, SMOKE CAN ESCAPE INTO THE BOILER ROOM!**

6. Close the ignition door and the boiler panelling door.

If the SMOKE temperature is higher than 220°C, the ignition door and the panelling door can be closed.
For example:

35°C	221° C	100 %
Temp. WATER	Temp. SMOKE	AIR

7. Observe the SMOKE temperature

After closing the doors, the SMOKE temperature must continue to increase within a few minutes.
The boiler then automatically switches to work mode.
Otherwise, it is necessary to open the ignition door again briefly!



WHEN THE SMOKE TEMPERATURE HAS REACHED 220°C THE DOOR MUST BE CLOSED.



If within 30 minutes after starting the ignition process the smoke temperature does not exceed 100°C, the process is stopped and the error message, "NO IGNITION", is displayed.
REPEAT THE STEPS DESCRIBED IN THE CHAPTER "HEATING (NORMAL OPERATION)".

INFORMATION ON THE SAFETY DEVICES:

At a boiler temperature of 85°C, the boiler switches to overheating mode or to modulation mode. This is an attempt to “slow down” combustion, in order to prevent a further rise in temperature, without stopping combustion.

When the boiler temperature reaches 90°C, the smoke fan is deactivated in order to stop the combustion air and thus stifle combustion.



IN THIS SITUATION, IT IS IMPORTANT TO KEEP ALL BOILER DOORS CLOSED BECAUSE THERE IS A RISK OF EXPLOSION!

AUTOMATIC THERMAL DISCHARGE VALVE D.S.A.

The automatic thermal discharge valve D.S.A. is triggered at about 93°C.

The safety cooling exchanger is crossed by a flow of cold water that protects the boiler from dangerous overheating temperatures above 100°C.

THERMAL SAFETY THERMOSTAT

When a temperature of 95°C has been reached, the thermal safety thermostat is triggered.

It interrupts the supply to the smoke fan in order to stop the combustion air and thus stifle combustion. ONLY after the boiler has cooled down (to a temperature below 60°C) can the thermal safety thermostat be reset.

ADDING FUEL

Fill the loading chamber only when the filling space is mostly empty and there is only a layer of embers.

The fuel level in the loading chamber is controlled by the ignition door to prevent any smoke from escaping if there is too much residual fuel.



IF THERE IS TOO MUCH UNBURNED FUEL IN THE COMBUSTION CHAMBER, THERE IS A RISK OF EXPLOSION WHEN THE LOADING DOOR IS OPENED.

When the external panel is opened to access the loading door, the fan automatically increases its suction speed to prevent any smoke from escaping.

At this point, slowly open the loading door.

To do this, list the door handle to the first latch position and wait a few seconds in this position so that any exhaust gases can escape through the door.

Then open the door completely and add fuel in such a way that the logs fit tidily next to one another, to prevent the flames from spreading too quickly in the gaps between the logs.

Close the loading door and leave the ignition door slightly open until the SMOKE temperature has reached 220°C.

When refilling, it is necessary to take into account the exhaust gas temperature. If the smoke temperature falls below 100°C, the boiler will shut down.

In this case, it is necessary to repeat the steps described in the chapter “HEATING (NORMAL OPERATION)”.

CONTROL DISPLAY

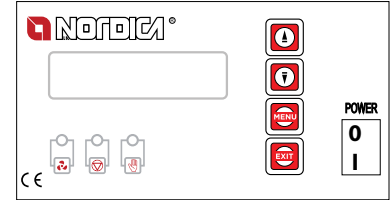
The control display regulates combustion and boiler output according to the water temperature in the exchanger and the smoke temperature. The prerequisite for correct regulation is a correctly sized hydraulic system and chimney flue.

SERVICE

SWITCH OFF: press the switch to **O**

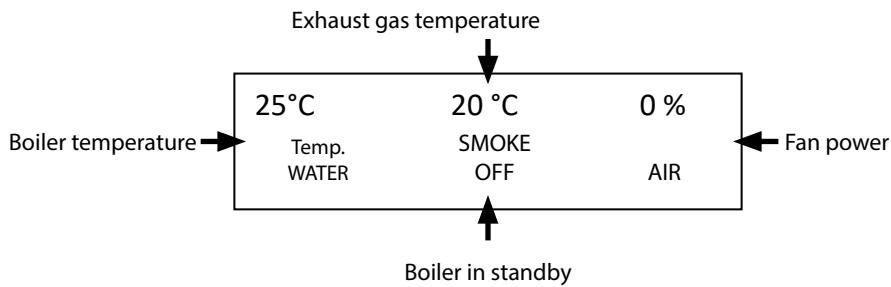
SWITCH ON: press the switch to **I**

When the appliance is switched on, the software version appears for about 5 seconds. If an error message appears on the display and there is an acoustic signal, the error must be eliminated. To do this, please read the section "ERROR MESSAGES"



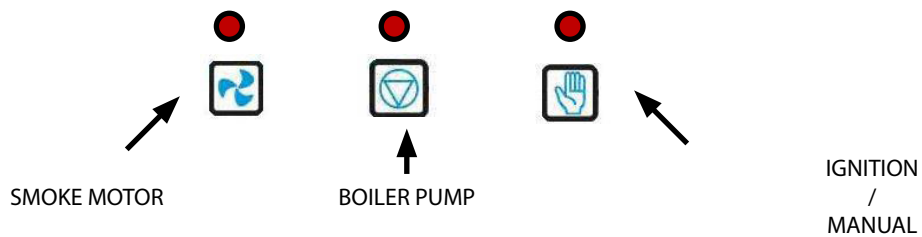
SCREEN

The control display shows the current operating parameters of the boiler:



LIGHT INDICATORS

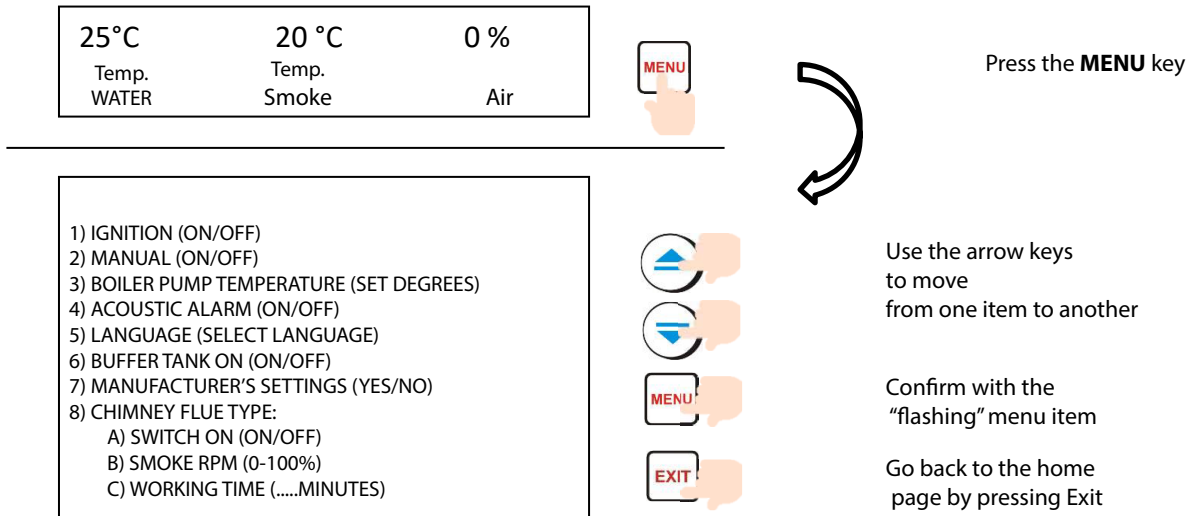
Below the display there are 3 LEDs that indicate the current operating status (LED on - operating).



KEY FUNCTION

Menu	Release	Up arrow	Down arrow
<ul style="list-style-type: none"> - Confirm menu items - Save edited parameters 	<ul style="list-style-type: none"> - Go back to previous screen - Exit selected items 	<ul style="list-style-type: none"> - Scroll through menu items - Increase parameters 	<ul style="list-style-type: none"> - Scroll through menu items - Decrease parameters

SCROLLING THROUGH THE MENU



Menu item	Description of work mode
Heating	The boiler goes into heating mode and runs the fan continuously up to 100%. Duration of heating time 30 min.
Manual operation (components test)	1) Fan speed test (0 - 100%) 2) Fan test (on/off) 3) Boiler circuit pump test (on/off) 4) Test alarm signal (on/off)
Pump (boiler circuit pump)	Indication of switch-on temperature of the boiler circuit pump 20 - 75°C, factory setting 65°C, hysteresis 2°C, switch-off temperature depending on the buffer probe
Alarm tone	Activates or deactivates the alarm signal. The alarm signal is active in the factory setting.
Language	Language setting (German, English, French, Russian, Polish, Danish, Swedish, Slovenian, Italian, Spanish)
Buffer sensor	If no buffer sensor is active, the boiler circuit pump is switched on and off according to the boiler temperature. If the buffer probe is active, the boiler circuit pump is controlled according to the temperature difference between the boiler and the buffer tank (buffer tank management).
Factory setting	Restore factory settings.
Chimney sweep mode	Activation of chimney sweep mode Setting of the fan speed and operating temperature Factory setting 70% and 45 min.

ERROR MESSAGES

To ensure trouble-free operation, the appliance is equipped with a series of safety elements. In the event of a fault, an acoustic alarm signal is given.



IMPORTANT: A QUALIFIED TECHNICIAN MUST CHECK THE CAUSES OF ALL PROBLEMS WITH THE BOILER. FAILURES DURING OPERATION

Error message	Ultimate cause	Troubleshooting
Buffer sensor damaged	<ul style="list-style-type: none"> - The buffer sensor is faulty - Buffer sensor not connected 	<ul style="list-style-type: none"> - Replace the sensor - Deactivate the sensor
Boiler temperature too high	Boiler overheating	<ul style="list-style-type: none"> - Let it cool down, check the safety thermostat, reset it if necessary - See chapter FAULTS DURING OPERATION
Failed ignition	Ignition process failed, no exhaust gas temperature reached > 100°C	Restart the Ignition process by relighting the fuel and activating "IGNITION" in the control unit
Error 50 Hz	Communication error between fan and controller	<ul style="list-style-type: none"> - Replace the smoke fan condenser - Check the operation of the control display

FAULTS DURING OPERATION

PROBLEM	POSSIBLE CAUSES
Smoke leak	<ul style="list-style-type: none"> - Check return temperature (min. 60 °C) - Check flue draught (15 Pa) - Check room air inlet supply - Check wood moisture (not above 20 % and not below 12 %) - Logs too large - Check smoke channel development and cleanliness - Set fan power based on fireplace draught
The boiler does not deliver enough power	<ul style="list-style-type: none"> - Check return temperature (min. 60 °C) - Check flue draught (15 Pa) - Check wood moisture (not above 20 % and not below 12 %) - Logs too large - Check wood load
Discharge smoke temperature too high	<ul style="list-style-type: none"> - Check flue draught - Adjust secondary air - Insert fuel correctly into the boiler
Hot water temperature too high	<ul style="list-style-type: none"> - Check system sizing - Check circulator dimensions and operation - Check return temperature (min. 60 °C)
Condensation in boiler	<ul style="list-style-type: none"> - Check return temperature (min. 60 °C) - Check flue draught - Check room air inlet supply - Check wood moisture (not above 20 % and not below 12 %) - Set fan power based on fireplace draught
The heating system does not heat	<ul style="list-style-type: none"> - Check system sizing - Check the heat demand - Check circulator dimensions and operation - Check return temperature (min. 60 °C)
The smoke fan does not work	<ul style="list-style-type: none"> - Check the condenser - Check smoke fan motor - Check smoke fan impeller - Check the possible triggering of the safety thermostat and reset it if necessary.

CHIMNEY SWEEP BUTTON AND MEASURING EMISSIONS

BOILER MEASUREMENT (IF APPLICABLE BY CURRENT REGULATIONS)

While the designated auditor is performing the measurements, it is convenient for the system installer to be present. If system problems are encountered, the installer can intervene immediately in total safety. The measuring sequence must be strictly complied with!

PREPARATION:

- Completely clean boiler (important: heat exchanger pipes)
- Perfectly clean smoke duct and chimney flue
- Draught regulator in perfect working order and correctly set (15 Pa)
- Fuel wood in logs (50 cm length, Ø about 8-10 cm)
- Log residual moisture 12 % –20 % (measured in the middle)
- The technical storage tank must be warm, but not at the maximum temperature to prevent the product from modulating
- Check the tightness of the door gaskets (they must be airtight)

BOILER MEASUREMENT:

- Before measuring, the boiler must have been operating continuously for approximately 1 hour so that the internal parts reach the operating temperature
- When starting to measure, the water temperature in the boiler must be at least 60°C
- The technical storage tank must have sufficient capacity to ensure constant heat absorption (the smoke extraction motor must work with 100 % without modulating)
- If there are large fluctuations in the smoke extraction motor power, it is necessary to stop the measuring operations and find the cause of irregular fan operation

Leave the residual embers from the previous combustion and distribute them evenly. A 4-5 cm bed of embers would be ideal.

Fill the loading chamber by creating a pile of wood from the smallest pieces to the largest ones. In order to prevent the flames from spreading too quickly in the gaps between the logs, it is advisable to choose the width in such a way that the logs fit tidily next to one another.

The upper loading door is then closed.

Leave the ignition door ajar with a gap of about 1 cm to help light the new load of fuel, so that the exhaust gas temperature reaches approximately 220°C.

Measurement of the chimney sweep can be started 5 minutes after the ignition door is closed.

CLEANING



TO CLEAN THE BOILER, THE SYSTEM MUST HAVE COOLED DOWN BELOW 60°C. THE SYSTEM MUST BE PUT OUT OF SERVICE DURING CLEANING OPERATIONS.



ATTENTION RISK OF FIRE DUE TO HOT ASHES.
ALWAYS BE CAREFUL WITH ASHES AS THEY MAY CONCEAL BURNING EMBERS.
DO NOT USE STANDARD VACUUM CLEANERS. USE ONLY SPECIFIC EQUIPMENT FOR ASH REMOVAL.

THE BOILER MUST BE CLEANED AT REGULAR INTERVALS.

Periodic cleaning includes: **daily cleaning**, **weekly cleaning** of the combustion chamber and ash, and **monthly cleaning** of the smoke baffle with smoke fan check.

Notes on cleaning and maintenance

In order to ensure regular operation, it is necessary to comply with the cleaning and maintenance frequencies described below. In the following process, the people authorised to carry out all operations are indicated.

WARNINGS FOR CLEANING AND MAINTENANCE

In order to ensure perfect system operation, it is necessary to comply with the cleaning and maintenance frequencies described below.

The people authorised to carry out all operations are as follows:

- USER
- QUALIFIED TECHNICIAN

A "USER" is an adult person that is trained to operate the boiler. The use of the boiler can be taught by the installer who commissions the system and issues the installation/conformity certificate.

The procedures with the indication "QUALIFIED TECHNICIAN" must be performed exclusively by the Technical Assistance Centre or by the system installer.

Cleaning and maintenance table

Application	Daily	Weekly	Monthly	Yearly	By
Heat exchanger cleaning lever (10 cycles)	x	x	x	x	USER
Removal of ashes from the lower combustion chamber	x	x	x	x	USER
Check nozzle openings	x	x	x	x	USER
Removal of ashes from the upper combustion chamber		x	x	x	USER
Check system pressure			x	x	USER
Clean heat exchanger pipes			x	x	USER
Check heat exchanger insulation panel cleaning gasket				x	QUALIFIED TECHNICIAN
Clean smoke fan				x	QUALIFIED TECHNICIAN
Clean smoke/smoke return pipe				x	QUALIFIED TECHNICIAN
Remove steel loading combustion chamber profiles				x	QUALIFIED TECHNICIAN
Clean boiler walls and primary air openings				x	QUALIFIED TECHNICIAN
Check boiler door gaskets				x	QUALIFIED TECHNICIAN
Clean smoke discharge sensor				x	QUALIFIED TECHNICIAN
Check safety valves				x	QUALIFIED TECHNICIAN
Thermal discharge valve check				x	QUALIFIED TECHNICIAN

DAILY CLEANING

Use the cleaning lever

The lever mechanism on the left side of the boiler is used in order to clean the heat exchanger pipes. Move the cleaning lever up and down for the turbulators to move up and down inside the pipes.

This movement must be made 10 times in a row (see Figure 1).

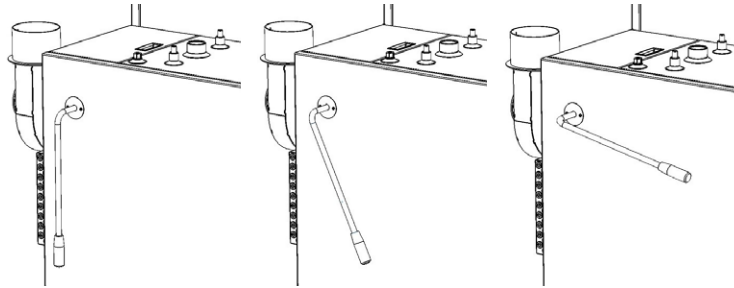


Figure 1. Movement of the cleaning lever



The daily cleaning of the heat exchanger by means of the cleaning lever is paramount to avoid the accumulation of encrustations, as well the arrest of the inner mechanism. THEREFORE THE COMPONENTS MAY BE PERMANENTLY DAMAGED AND CAN ONLY BE REPAIRED BY A SPECIALISED TECHNICIAN; **THIS OPERATION IS NOT COVERED BY THE WARRANTY.**

REMOVING THE ASHES FROM THE LOWER COMBUSTION CHAMBER (see Fig. 2)

- **BOILER MODE:** Boiler in standby mode - Off
- Open the lower door
- Pull out the ash drawer half way.
- Use the cleaning shovel to direct the ashes toward the front part of the ash drawer.

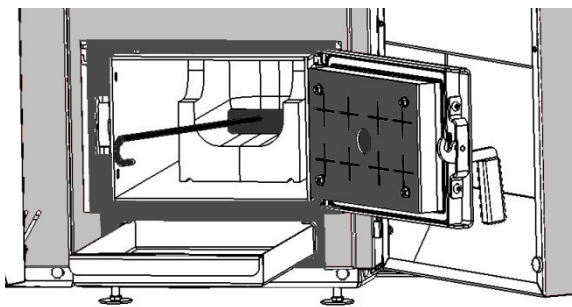


Fig. 2: Removal of ashes from the lower combustion chamber.

CHECK NOZZLE OPENINGS

THE NOZZLE OPENINGS BETWEEN THE UPPER AND LOWER COMBUSTION CHAMBER MUST ALWAYS BE FREE.

VISUALLY CHECK.



WEEKLY CLEANING

The following conditions must be ensured in order to execute weekly cleaning of the boiler:

- **BOILER MODE:** Boiler in standby mode - Off
- Boiler temperature below 50 °C

It is not possible to execute cleaning if the boiler is not in "OFF mode".

If the boiler is operating, it cannot be stopped (wait until combustion has ended automatically!).



ATTENTION EXTREMELY HIGH BOILER TEMPERATURES CAN CAUSE BURNS/INJURY!

REMOVAL OF ASHES FROM THE UPPER COMBUSTION CHAMBER (see Fig. 3)

- Open the centre door.
- Use the cleaning shovel to push the ashes out from the upper combustion chamber through the nozzle openings.

Any carbon residues as well as ashes up to approximately 5 cm can remain on the surface. This will in fact enable rapid ignition of subsequent refuelling and will protect against premature wear of the ceramic surface.

IN ORDER TO ENSURE PERFECT FLOW OF PRIMARY AIR, IT IS NECESSARY TO REMOVE THE ASHES FROM UNDER THE REMOVABLE STEEL PROFILES.

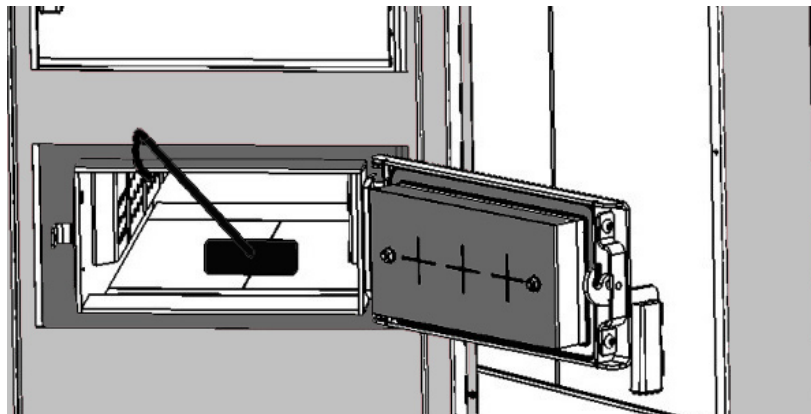


Fig. 3: Removal of ashes from the upper combustion chamber

CHECK SYSTEM PRESSURE

When the system is cold, the pressure gauge must indicate 1 - 2 bar.

System pressure increases as the water temperature rises. Therefore, in these conditions, the pressure gauge must indicate between 1.5 and 2.5 bar.

IF THE SYSTEM PRESSURE IS TOO LOW, IT IS NECESSARY TO INCREASE IT TO THE VALUES INDICATED BY ADDING MORE WATER TO THE SYSTEM.

MONTHLY CLEANING

The following conditions must be ensured in order to execute monthly cleaning of the boiler:

- **BOILER MODE:** Boiler in standby mode - Off
- Boiler temperature below 50 °C

IT IS NOT POSSIBLE TO EXECUTE CLEANING IF THE BOILER IS NOT IN "STANDBY MODE - OFF".
If the boiler is operating, it cannot be stopped (wait until combustion has ended automatically!).



ATTENTION EXTREMELY HIGH BOILER TEMPERATURES CAN CAUSE BURNS/INJURY!

CLEANING THE HEAT EXCHANGER PIPES

The inspection door is located on the top part of the boiler near the smoke suction fan.
It can be opened from the integrated handle. (see Fig. 4)

To open it, unscrew the wing nuts of the insulating panel. (Fig. 5)
This will expose the heat exchanger pipes and turbulators. (Fig. 6)

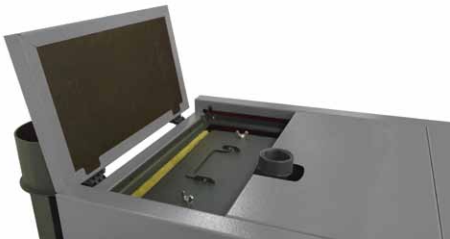


Fig. 4: Service opening



Fig. 5: Insulating panel



Fig. 6: Heat exchanger pipes with turbulators

Depending on the boiler model, the turbulators are attached (Fig. 7) or screwed on (Fig. 8).
The turbulators must be removed upwards from the pipes.
Then use the cleaning tools to free the pipes from dirt particles (Fig. 9-10).
These residues fall into the lower combustion chamber, from where they can be removed.
The collection tray above the pipes must be cleaned using an appropriate vacuum cleaner.



Fig. 7: Coupled turbulator

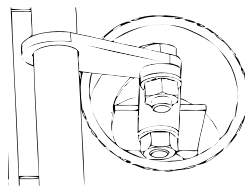


Fig. 8: Screwed turbulator



Fig. 9: Cleaning tool

After the cleaning operations, the turbulators are reinserted and secured following the disassembly operations in reverse order.
To facilitate assembly and disassembly of the turbulators, it is possible to simultaneously remove the cleaning lever on the side of the boiler.

Use the eyelet provided and secure it to the spindle of a screwdriver.
Attach the turbulator to the eyelet.

Start the screwdriver and scrape the inside of the heat exchanger pipe with movements from bottom to top and vice versa.



Fig. 10: Eyelet provided

ANNUAL CLEANING

The following conditions must be ensured in order to execute annual cleaning of the boiler:

- **BOILER MODE:** Boiler in standby mode - OFF
- Boiler temperature below 30 °C
- No voltage on the boiler - Turn the main switch from **I** to **O**, disconnect the mains power supply.

IT IS NOT POSSIBLE TO EXECUTE CLEANING IF THE BOILER IS NOT IN "STANDBY MODE - OFF".

If the boiler is operating, it cannot be stopped (wait until combustion has ended automatically!).



ATTENTION EXTREMELY HIGH BOILER TEMPERATURES CAN CAUSE BURNS/INJURY!



ATTENTION IF THE MAIN SWITCH IS NOT ENABLED (BOILER DISCONNECTED FROM POWER SUPPLY), ELECTRICAL SHOCKS ARE STILL POSSIBLE ON LIVE PARTS.

The ceramic stones can be removed from the lower combustion chamber during annual maintenance. After cleaning, they must be pushed back against the rear wall of the lower combustion chamber of the boiler. (Fig. 11)

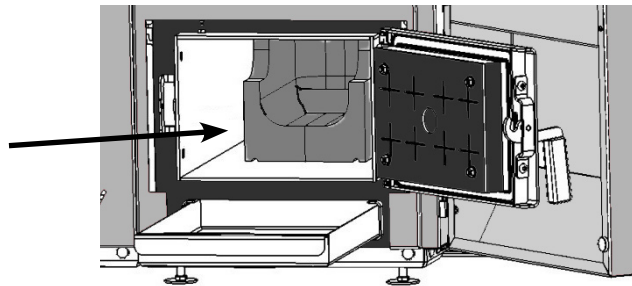


Fig. 11: Removal of the ceramic stones from the lower combustion chamber.

SMOKE FAN

The smoke fan is made up of two parts and is flanged to the boiler's structure. Fig. 12



ATTENTION FAN CONNECTED.
DISCONNECT THE MAINS POWER SUPPLY!

Loosen the connection screws between the fan, gasket and smoke discharge.

CAREFULLY CHECK THAT NO ASHES OR SOOT HAVE DEPOSITED ONTO THE FINNED IMPELLER OF THE FAN. IF NECESSARY, CLEAN WITH A VACUUM CLEANER OR A BRUSH.

1	Fan structure
2	Fan gasket
3	Fan motor
4	Smoke discharge sensor

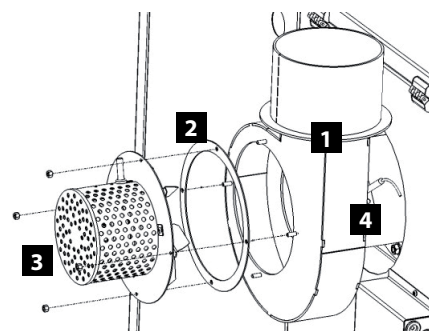


Fig. 12: Fan and smoke return

CHECK THE SMOKE DISCHARGE SYSTEM SEAL

IT IS NECESSARY TO CHECK THAT THE PERIMETER SEAL BETWEEN THE FAN BODY ON THE BOILER AND THE FAN MOTOR IS INTACT AND COMPLETE.

CLEAN THE COMBUSTION CHAMBER

- Open the UPPER and CENTRE door.
- Push upwards and remove the steel profiles.

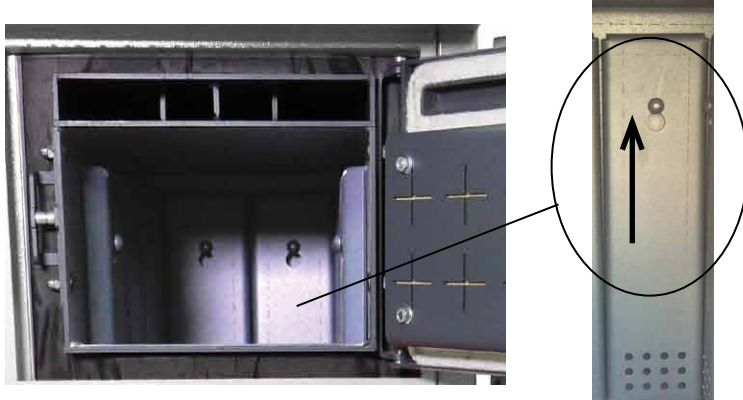


Fig. 13: Metal plates



Fig. 14: Boiler wall / primary air openings

After removing all steel profiles, clean the walls of the boiler and primary air opening from deposits of ashes and soot. Any ash residues must also be removed completely from inside.

USE THE CLEANING TOOLS AND AN ASH VACUUM CLEANER!

CHECK THE BOILER DOOR GASKETS Fig. 15

MAKE SURE THAT ALL PERIMETER GASKETS ON THE BOILER'S DOORS ARE INTACT AND COMPLETE, AND SEALED. A functional check must also be carried out regarding the status of the closing mechanisms (handles and hinges).

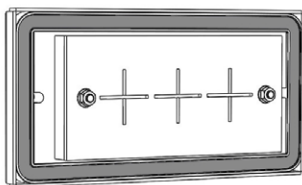


Fig. 15: Boiler door



Fig. 16: Smoke discharge sensor

CLEAN THE SMOKE DISCHARGE SENSOR Fig. 16

Loosen the fastening screw and remove the sensor from the smoke pipe. Then clean the soot and dirt particles with a cloth.

CHECK SAFETY VALVES (supplied as an OPTIONAL accessory)

CHECK THE SEAL AND OPERATION OF ALL SYSTEM SAFETY VALVES; MAKE SURE THERE ARE NO WATER LEAKS. If operation is compromised, the valve must be cleaned or replaced.

THERMAL DISCHARGE VALVE CHECK (supplied as an OPTIONAL)

MAKE SURE THE THERMAL DISCHARGE VALVE IS SEALED AND OPERATING, MEANING THERE IS NO WATER LEAK. For this purpose, manually activate the thermal discharge valve. If operation is compromised, the valve must be cleaned or replaced.



SMALTIMENTO

Informazioni per la gestione di rifiuti di apparecchiature elettriche ed elettroniche contenenti pile e accumulatori

Questo simbolo che appare sul prodotto, sulle pile, sugli accumulatori oppure sulla loro confezione o sulla loro documentazione, indica che il prodotto e le pile o gli accumulatori inclusi al termine del ciclo di vita utile non devono essere raccolti, recuperati o smaltiti assieme ai rifiuti domestici.

Una gestione impropria dei rifiuti di apparecchiature elettriche ed elettroniche, di pile o accumulatori può causare il rilascio di sostanze pericolose contenute nei prodotti. Allo scopo di evitare eventuali danni all'ambiente o alla salute, si invita l'utilizzatore a separare questa apparecchiatura, e/o le pile o accumulatori inclusi, da altri tipi di rifiuti e di consegnarla al centro comunale di raccolta. È possibile richiedere al distributore il ritiro del rifiuto di apparecchiatura elettrica ed elettronica alle condizioni e secondo le modalità previste dal D.Lgs. 49/2014. La raccolta separata e il corretto trattamento delle apparecchiature elettriche ed elettroniche, delle pile e degli accumulatori favoriscono la conservazione delle risorse naturali, il rispetto dell'ambiente e assicurano la tutela della salute.

Per ulteriori informazioni sui centri di raccolta dei rifiuti di apparecchiature elettriche ed elettroniche, di pile e accumulatori è necessario rivolgersi alle Autorità pubbliche competenti al rilascio delle autorizzazioni.

DISPOSAL

Information for management of electric and electronic appliance waste containing batteries or accumulators

This symbol, which is used on the product, batteries, accumulators or on the packaging or documents, means that at the end of its useful life, this product, the batteries and the accumulators included must not be collected, recycled or disposed of together with domestic waste. Improper management of electric or electronic waste or batteries or accumulators can lead to the leakage of hazardous substances contained in the product. For the purpose of preventing damage to health or the environment, users are kindly asked to separate this equipment and/or batteries or accumulators included from other types of waste and to arrange for disposal by the municipal waste service. It is possible to ask your local dealer to collect the waste electric or electronic appliance under the conditions and following the methods provided by national laws transposing the Directive 2012/19/EU.

Separate waste collection and recycling of unused electric and electronic equipment, batteries and accumulators helps to save natural resources and to guarantee that this waste is processed in a manner that is safe for health and the environment.

For more information about how to collect electric and electronic equipment and appliances, batteries and accumulators, please contact your local Council or Public Authority competent to issue the relevant permits.

ÉLIMINATION

Informations relatives à la gestion des déchets d'appareils électriques et électroniques contenant des piles et des accumulateurs

Ce symbole présent sur le produit, sur les piles, sur les accumulateurs, sur l'emballage ou sur la documentation de référence, indique que le produit et les piles ou les accumulateurs ne doivent pas être collectés, récupérés ou éliminés avec les déchets domestiques au terme de leur vie utile.

Une gestion impropre des déchets d'équipements électriques et électroniques, des piles ou des accumulateurs peut causer la libération de substances dangereuses contenues dans les produits. Pour éviter d'éventuelles atteintes à l'environnement ou à la santé, on invite l'utilisateur à séparer cet appareil, et / ou les piles ou les accumulateurs, des autres types de déchets et de le confier au service municipal de collecte. On peut demander au distributeur de prélever le déchet d'appareil électrique ou électronique aux conditions et suivant les modalités prévues par les normes nationales de transposition de la Directive 2012/19/UE.

La collecte sélective et le traitement correct des appareils électriques et électroniques, des piles et des accumulateurs, favorisent la conservation des ressources naturelles, le respect de l'environnement et assurent la protection de la santé.

Pour tout renseignement complémentaire sur les modalités de collecte des déchets d'appareils électriques et électroniques, des piles et des accumulateurs, il faut s'adresser aux Communes ou aux Autorités publiques compétentes pour la délivrance des autorisations.

BESEITIGUNG

Informationen für die Entsorgung von elektrischen und elektronischen Altgeräten, die Batterien und Akkus enthalten

Dieses Symbol auf dem Produkt, auf den Batterien, auf den Akkus, auf deren Verpackung oder in deren Unterlagen weist darauf hin, dass das Produkt und die Batterien oder Akkus am Ende ihrer Lebensdauer nicht zusammen mit dem normalen Hausmüll gesammelt, verwertet oder entsorgt werden dürfen. Eine unsachgemäße Entsorgung von elektrischen und elektronischen Altgeräten, sowie von Batterien oder Akkus kann zur Freisetzung gefährlicher Stoffe im Produkt führen. Um mögliche Umwelt- oder Gesundheitsschäden zu vermeiden, wird der Benutzer aufgefordert, dieses Gerät bzw. die Batterien oder Akkus von anderen Abfallarten zu trennen und der kommunalen Sammelstelle zu übergeben. Außerdem ist es möglich, den Händler um die Rücknahme der elektrischen und elektronischen Altgeräte unter den in den nationalen Vorschriften zur Umsetzung der Richtlinie 2012/19/EU vorgesehenen Bedingungen zu bitten.

Die getrennte Sammlung und die ordnungsgemäße Verwertung von elektrischen und elektronischen Altgeräten, Batterien und Akkus fördert die Erhaltung der natürlichen Ressourcen, respektiert die Umwelt und gewährleistet den Schutz der Gesundheit.

Für weitere Informationen zur Sammlung von elektrischen und elektronischen Altgeräten, Batterien und Akkus wenden Sie sich bitte an die für die Erteilung von Genehmigungen zuständigen Kommunen oder Behörden.

ELIMINACIÓN

Información para la gestión de residuos de aparatos eléctricos y electrónicos con pilas y acumuladores

Este símbolo que aparece en el producto, en las pilas, los acumuladores o en su embalaje o su documentación indica que el producto y las pilas o acumuladores que contiene, al final de su vida útil, no deben recogerse, recuperarse o desecharse junto con los residuos domésticos. Una gestión inadecuada de los residuos de aparatos eléctricos y electrónicos, pilas o acumuladores podría provocar la liberación de sustancias peligrosas contenidas en los productos. Para evitar posibles daños para el medio ambiente o la salud, se recomienda al usuario que separe este aparato y/o las pilas o acumuladores que contiene de otros tipos de residuos y lo entregue al servicio municipal encargado de la recogida. Se puede solicitar al distribuidor la recogida de los residuos de aparatos eléctricos y electrónicos en las condiciones y de acuerdo con las modalidades establecidas por las normas nacionales de transposición de la Directiva 2012/19/UE.

La recogida diferenciada y el tratamiento correcto de los aparatos eléctricos y electrónicos, de las pilas y los acumuladores favorecen la conservación de los recursos naturales, el respeto del medio ambiente y garantizan la protección de la salud.

Para obtener más información sobre las modalidades de recogida de los residuos de aparatos eléctricos y electrónicos, de las pilas y los acumuladores es necesario acudir a los ayuntamientos o las autoridades públicas competentes para la concesión de autorizaciones.



Riscalda la vita.

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CONTACT YOUR DEALER OR CONSULT
THE SITE WWW.LANORDICA-EXTRAFLAME.COM***

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