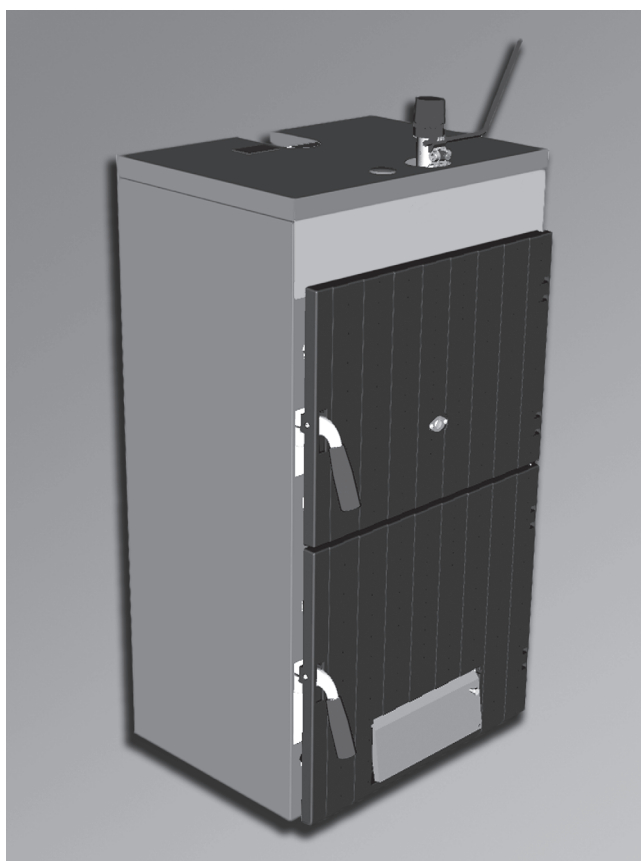


SFL



IT - ISTRUZIONE PER L'USO L'INSTALLAZIONE E LA MANUTENZIONE
EN - INSTRUCTIONS FOR USE, INSTALLATION AND MAINTENANCE
FR - INSTRUCTIONS D'UTILISATION, D'INSTALLATION ET D'ENTRETIEN
RO - INSTRUȚIUNI DE UTILIZARE, INSTALARE ȘI ÎNTREȚINERE
HU - HASZNÁLATI, BESZERELÉSI ÉS KARBANTARTÁSI UTASÍTÁS
SK - NÁVOD NA POUŽITIE A ÚDRŽBU

1. GENERAL INSTRUCTIONS

- Carefully read the instructions contained in this instruction booklet.
- After boiler installation, inform the user regarding its operation and give him this manual, which is an integral and essential part of the product and must be kept with care for future reference.
- Installation and maintenance must be carried out by professionally qualified personnel, according to current regulations and the manufacturer's instructions. Do not carry out any operation on the sealed control parts.
- Incorrect installation or inadequate maintenance can result in damage or injury. The Manufacturer declines any liability for damage due to errors in installation and use or failure to follow the instructions.
- Before carrying out any cleaning or maintenance operation, disconnect the unit from the power supply using the system switch and/or the special cut-off devices.
- In case of a fault and/or poor operation, deactivate the unit and do not attempt to repair it or directly intervene. Contact professionally qualified personnel. Repair/replacement of the products must only be carried out by professionally qualified using original spare parts. Failure to comply with the above could affect the safety of the unit.
- This unit must only be used for its intended purpose. Any other use is considered improper and therefore dangerous.
- The packing materials are potentially hazardous and must not be left within the reach of children.
- The images given in this manual are a simplified representation of the product. In this representation there may be slight and insignificant differences with respect to the product supplied.

2. OPERATING INSTRUCTIONS

2.1 Introduction

The SFL is a new cast-iron boiler for heating, using solid fuels (wood and coke), or pellets (with optional kit). The boiler shell consists of elements assembled with nipples; the profile of the elements has been carefully designed with optimum division of the fins to ensure high thermal efficiency, high performance and considerable energy-saving. The combustion chamber is specially designed to take large pieces of wood; loading is through the large top door. The combustion chamber is completely wet; which ensures long life and high efficiency.

2.2 Control panel

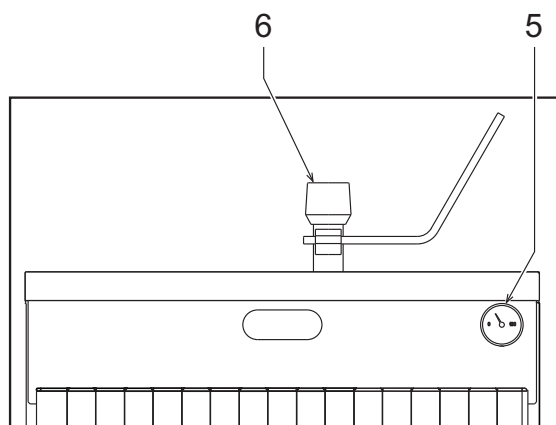


fig. 1 - Panel

- 5 Thermometer
6 Draught thermostatic regulator

2.3 Lighting and turning off

Fuel

The boiler must only burn coke or natural wood that has not been treated. It is also possible to use pressed and briquette fuels provided they are entirely of wood. A pellet burner can be fitted to the boiler with the optional conversion kit. Refer to the instructions supplied with the burner for the lighting, shutdown and maintenance operations.



The combustion of waste, plastic or liquids can produce poisonous burnt gases with the risk of poisoning, death or explosion.

- Use the recommended fuels only.
- Shut down the boiler in case of danger of explosion, fire, burnt gases or fumes.
- The boiler must only be used by adults who are familiar with its operation and the instructions.
- The user is only authorised to light the boiler, set the heating temperature, shut down the boiler and clean it.
- Keep unsupervised children away from the boiler when in use.
- Never burn any liquids or use them to increase boiler performance.
- Clean the surface of the boiler with non-flammable agents only.
- Never place any flammable objects on or near the boiler.
- Never place any flammable materials in the boiler room (e.g. wood, paper, petroleum, gas oil).

Wood is an extremely heterogeneous fuel due to its type, moisture content, shape and dimensions. Boiler thermal efficiency depends on the type of wood used, its moisture content, the method of loading and the size of the pieces. Excellent quality woods are oak, ash, beech, maple and fruit trees except cherry, good quality woods are chestnut and birch, while woods of sufficient quality are lime, poplar and willow. Resinous ones are generally mediocre fuels. The higher the wood moisture content, the lower the heating power. Using damp fuels causes a loss of efficiency. Use logs in their natural state that have been dried in the open air (stored for 2 years with maximum humidity 20%).

Boiler lighting (operation with wood or coke)

- Open the bottom door and remove any ash from the combustion chamber. Close the bottom door.
- Turn thermostatic regulator knob 6 to the required temperature value.
- Open the top door. Put some paper and small pieces of dry wood on the burner grate.
- Light the fuel and add some slightly larger pieces of wood.
- Close the door and wait for an initial bed of embers to form.
- Open the top door slowly.
- Spread the embers evenly over the burner plate using a poker.
- After the bed of embers has formed on the main plate, it is possible to start loading the firewood or coke in small and medium-sized pieces.



- Pieces that are too long will not fall properly, causing gaps in the wood box and forming areas of unburnt wood.
- Pieces that are too short cause uneven air flows, with a reduction in power and efficiency
- Always open the top door slowly to avoid puffs of smoke
- Never open the bottom door during operation.
- When loading, avoid keeping the top door open for long periods.
- In case of reduced performance, distilled gases can form at low temperature, which can cause smoke poisoning if inhaled.
- If dense smoke can be seen, do not breathe it.
- Make sure the room is well ventilated.
- Clean the boiler and the gas flueways as specified.

Boiler shutdown

To shut down the boiler, allow all the fuel to burn.

Shutdown for brief periods

For brief shutdown periods, once the fuel has been consumed and the boiler cooled:

- Clean the support surfaces of the loading door and loading compartment.
- Remove the ash and clean the combustion chamber.
- Close the ash door and loading door.

Shutdown for long periods

To put the boiler out of service for long periods (e.g. at the end of the cold season), carefully clean the boiler to prevent corrosion.



To avoid damage caused by freezing during long idle periods in winter, it is advisable to drain all water from the boiler, or add a suitable antifreeze to the heating system, in compliance with that prescribed in sec. 3.3.

2.4 Adjustments

Important

To prevent condensate from forming in the combustion chamber, it is advisable to turn the control knob to 60°C; it would be best to turn it to 80°C and adjust the heating water temperature with the mixer valve.

The only manual operations necessary are:

- Periodical cleaning of the firebox through the front grate, with removal of ash, opening the bottom door.
- Periodical loading of the firebox through the special top door.

System pressure adjustment

Periodically check that the system is full of water. These checks must be carried out cold, checking the expansion tanks (open types must have water at the initial level, whereas in closed types the pressure must be equal to or higher than the initial prefilling pressure).

3. INSTALLATION

3.1 General Instructions

BOILER INSTALLATION MUST ONLY BE PERFORMED BY QUALIFIED PERSONNEL, IN ACCORDANCE WITH ALL THE INSTRUCTIONS GIVEN IN THIS TECHNICAL MANUAL, THE PROVISIONS OF CURRENT LAW, THE PRESCRIPTIONS OF NATIONAL AND LOCAL STANDARDS AND THE RULES OF PROPER WORKMANSHIP.

3.2 Place of installation

The boiler must be installed in a special room with ventilation openings to the outside in conformity with current regulations. If there are several burners or extraction units that can work together in the same room, the ventilation openings must be sized for simultaneous operation of all the units. The place of installation must be free of flammable objects or materials, corrosive gases, volatile substances or dusts that can be sucked by the fan. The place must be dry and not exposed to rain, snow or frost.

Enough space must be provided around the unit for removing the casing and for normal maintenance operations. In particular, make sure there is enough space in the front part of the boiler for loading fuel.

For installation, proceed as follows:

1. Unpack the boiler.
2. Fit the thermostatic regulator "H" fig. 2.
3. Connect the boiler delivery and return to the heating system.
4. Adjust the air inlet door adjustment screw so that with the door touching there is in any case an air passage of approx. 1 - 2 mm (max.). With boiler cold, set the control thermostat to 60°C. Hook the chain "C" to the special air inlet door eyelet "D", adjusting its length so that the air passage "L" (fig. 2) is approx. 15 mm for "coke III" and 2 mm for "wood".

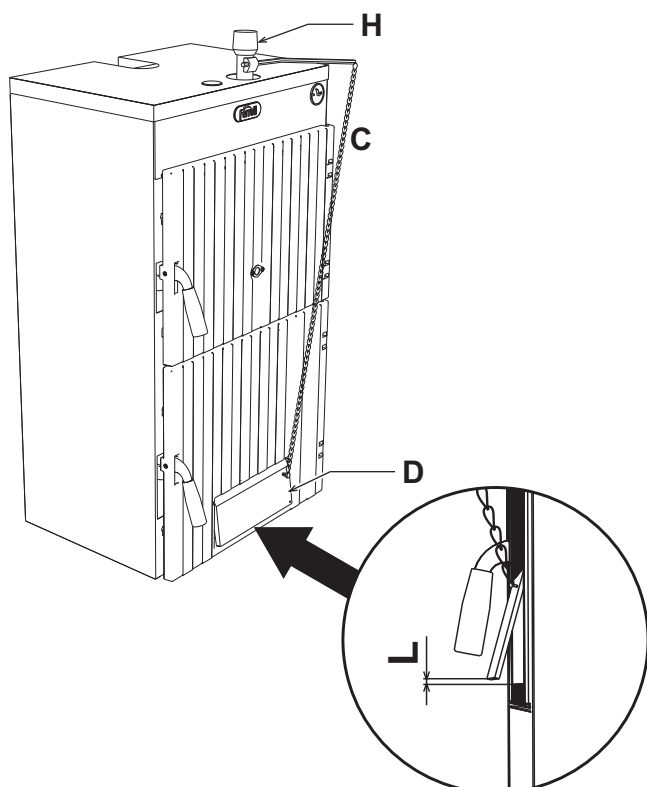


fig. 2 - Installation

3.3 Plumbing connections

The heating capacity of the unit must be previously established by calculating the building's heat requirement according to the current regulations. The system must be provided with all the components for correct and regular operation. In particular, provide for all the protection and safety devices required by the current regulations. They must be installed on the hot water circuit delivery piping, within a distance of not more than 0.5 metres, with no shutoff devices in between. The unit is not supplied with an expansion tank; its connection must therefore be carried out by the Installer.

A safety valve suitable for use with this unit is available on request.



The safety valve outlet must be connected to a funnel or collection pipe to prevent water spurting onto the floor in case of overpressure in the heating circuit. Otherwise, if the discharge valve cuts in and floods the room, the boiler manufacturer cannot be held liable.

Do not use the water system pipes to earth electrical appliances.

Before installation, carefully clean all the system pipes to remove any residuals or impurities that could affect proper operation of the unit.

Carry out the relevant connections according to the diagram in cap. 5 and the symbols given on the unit.

System water characteristics

In the presence of water harder than 25° Fr (1°F = 10ppm CaCO₃), use suitably treated water in order to avoid possible scaling in the boiler. Treatment must not reduce the hardness to values below 15°F (Decree 236/88 for uses of water intended for human consumption). Treatment of the water used is indispensable in case of very large systems or with frequent introduction of replenishing water in the system.

Antifreeze system, antifreeze fluids, additives and inhibitors

If necessary, antifreeze fluids, additives and inhibitors can be used only if the manufacturer of these products guarantees that they are suitable for this use and do not cause damage to the boiler exchanger or other components and/or materials of the unit and system. Do not use antifreeze fluids, additives or inhibitors that are not specific for use in heating systems and not compatible with the boiler materials and system.

Safety coil connection

It is possible to receive an external (cooling circuit) safety heat exchanger (optional) together with the boiler.

In countries where Standard EN 303-5 is applied, the boiler must have the availability of a system allowing a safe outlet for excess of heat without additional energy. In this way the max. boiler water temperature will not exceed 100°C (overheating protection).

The minimum cooling water supply pressure must be 2.0 bar. A flow-rate of at least 10 l/min must be available.

- Remove the flange "A" located on the back of the boiler.
- Fit the coil "N", fixing it with the 4 bolts.
- Fit the safety valve "P" on the outlet of the coil "N", respecting the direction of the arrow. Insert the valve probe "Q" in the special sheathing "G". Connect the water inlet directly to the safety coil. Connect the outlet to the valve.

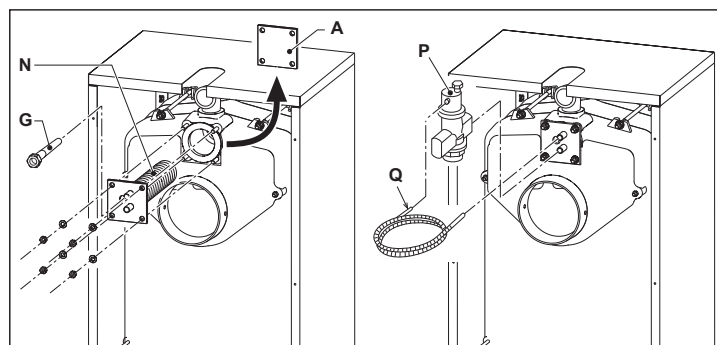


fig. 3 - Safety heat exchanger connection



In pellet use only (with burners FERROLI "SUN P7" - "SUN P12"), as an alternative to the safety coil it is possible to use the "Thermostatic safety kit" code 033001X0.

3.4 Conversion for use with pellet burner

An optional kit is available for use with a pellet burner.

For installation, refer to the instructions contained in the kit.

Instructions for installing the pellet burner SUN P7 - P12 in the boiler SFL

Insert the temperature probe "C" in the special hole, making sure to run the cable "E" through the hole in the boiler cover.

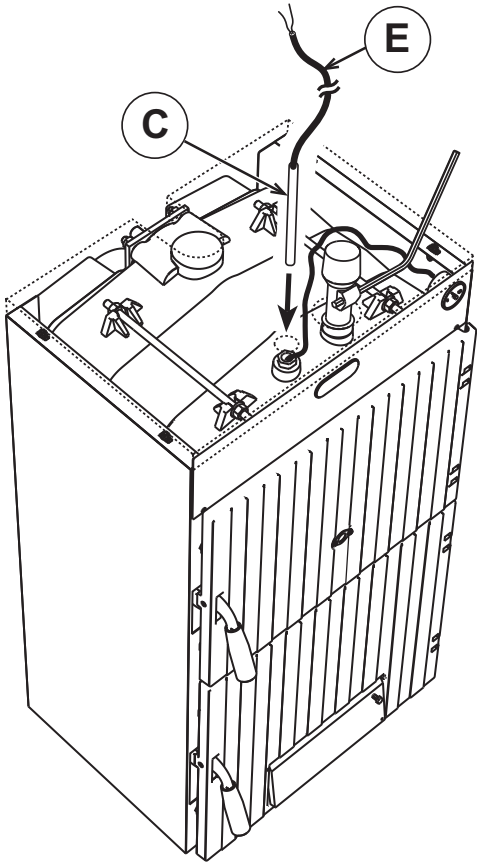


fig. 4

Remove the pins "D" and the bottom door "H" (fig. 5)

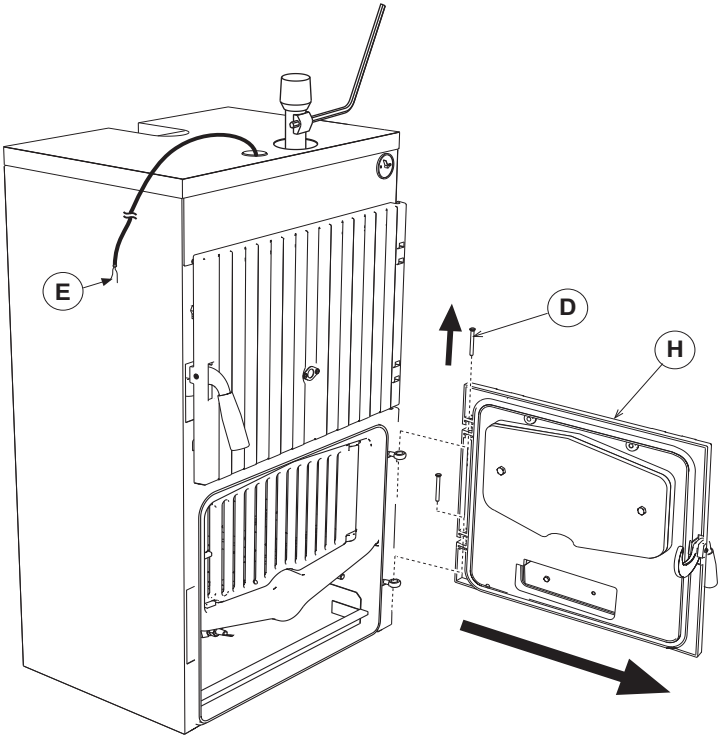


fig. 5

Fit the new bottom door "H" and insert the pins "D" (fig. 6).
Remove the grille "B".

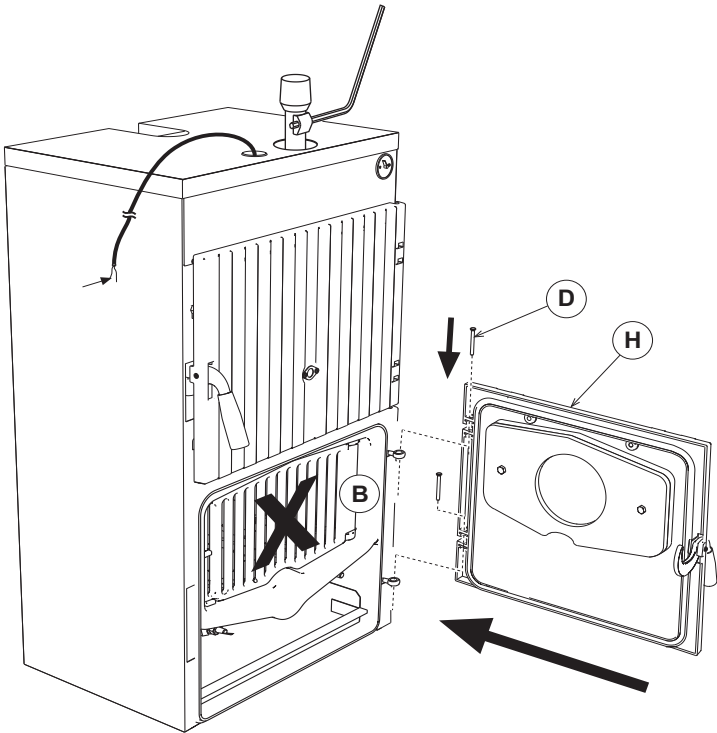


fig. 6

Fix the nozzle "L" with screws "M" and the burner with nut "N". Connect the cable "E" to terminals 11 and 12, and cable "T" to the sensor "V". Fix the casing "P" to the burner body with screws "R" and part "S" to the burner.

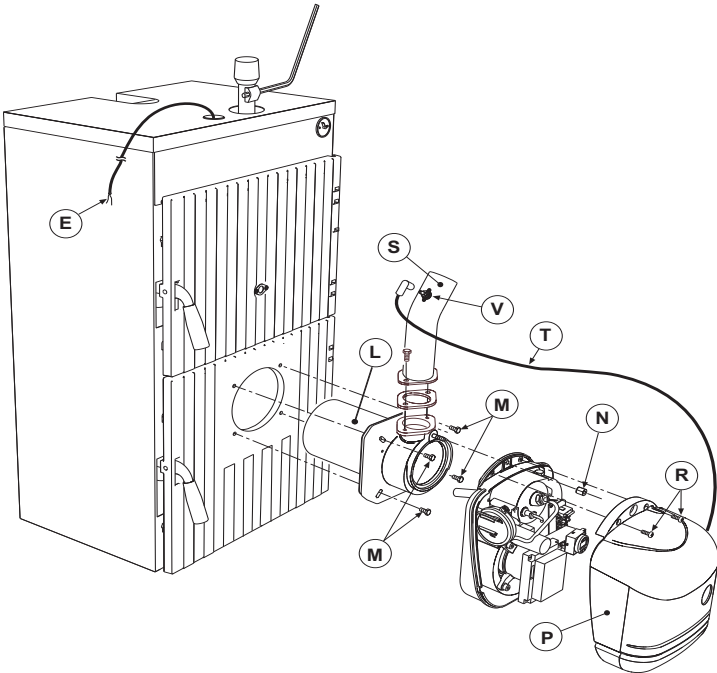


fig. 7

Insert the motor-operated feed pipe "Y" in the pellet tank "X" and carry out the auger-burner connection so that the flexible tube "W" is not twisted and/or bent. **Respect the distance given in the fig. 9.**
Adjust the burner as described in the relevant instruction manual and, in particular, set the parameter u02 on the burner controller as given in the table.

Model		3	4	5	6	7
Nominal heating capacity	kW	24.9	33.4	41	48	55
Nominal heat output	kW	22	30	36	42	48
Parameter	u02	2	5	3	4	5

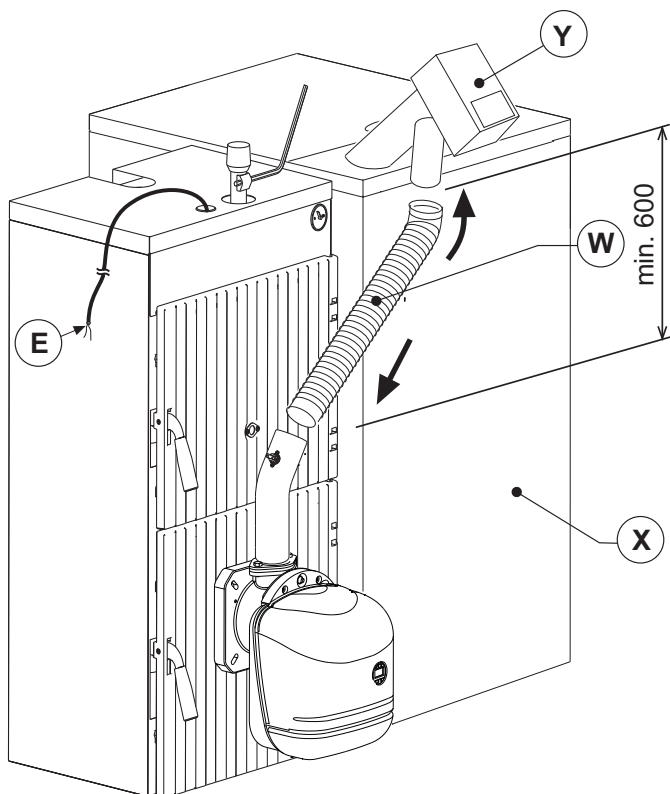


fig. 8

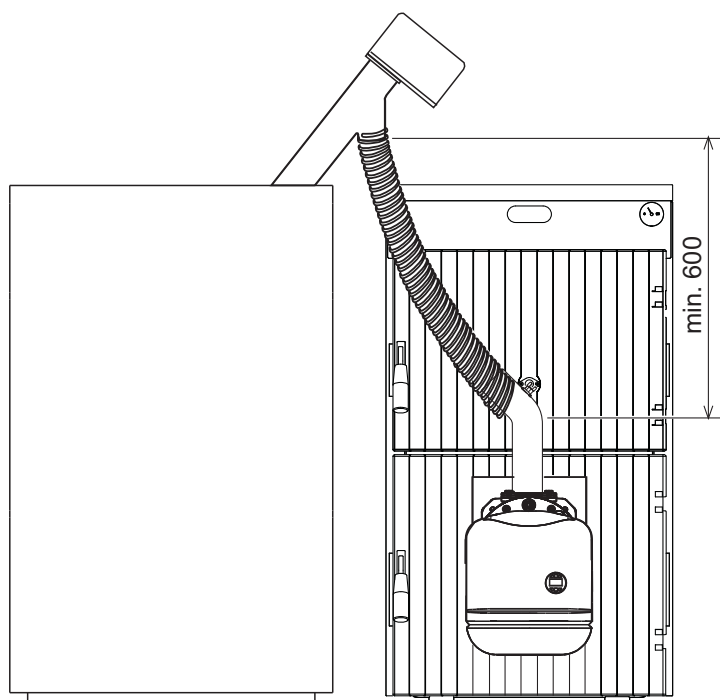


fig. 9

3.5 Installation Safety thermostat kit (optional) only with 14-pole terminal block

A “safety thermostat” kit is available on request as an alternative to the “Safety coil” to be used with the boiler working with pellets.

For installation, carry out the following instructions.

- Remove the boiler cover.
- Fix the bracket and the thermostat as indicated in the fig. 10.
- Insert the temperature probe in the special hole.
- Connect the fastons to the thermostat.

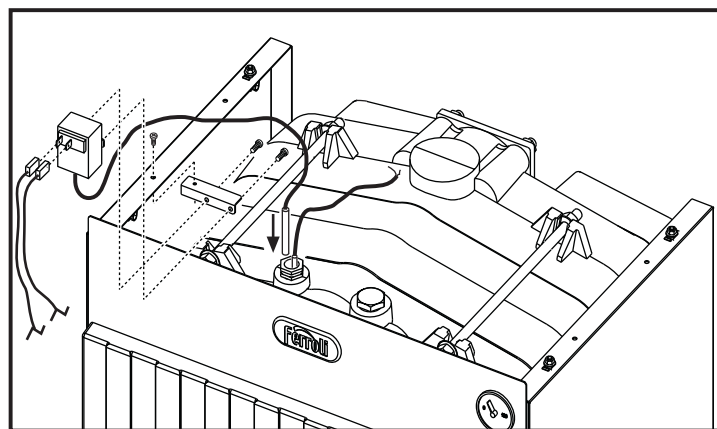


fig. 10

- Position the boiler cover and run the cable through the hole as indicated in fig. 11.
- Connect the cable to terminals 13 and 14 of the terminal block inside the burner.

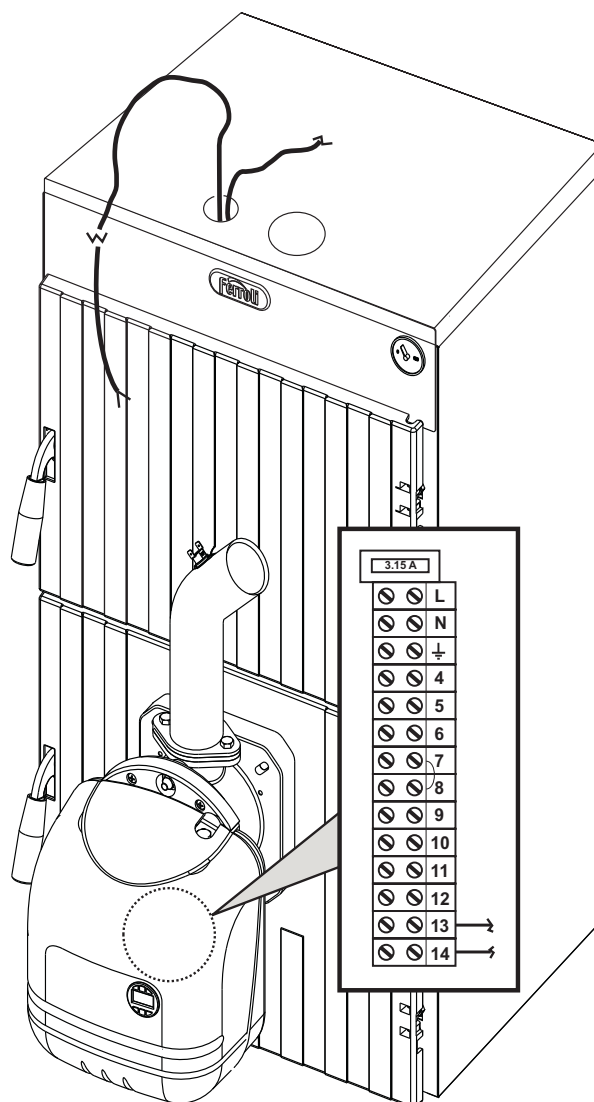


fig. 11

3.6 Conversion with double door

Remove the grille "B" which will be used whenever the boiler works with wood or coke.

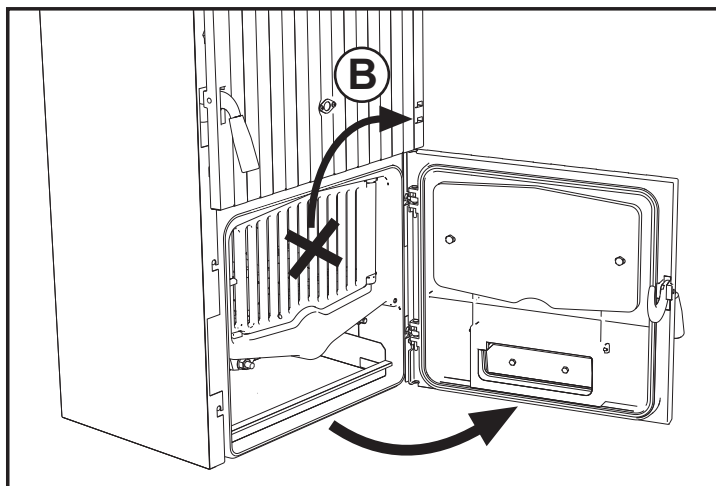


fig. 12 -

Remove the screw "C" and fix plate "D" with the screws "E" supplied in the kit.

Remove the jumper on terminals 13 and 14 of the terminal block inside the burner and connect the door switch cable to them. Connect the other end of the cable to the common contacts and 2 located on the switch.

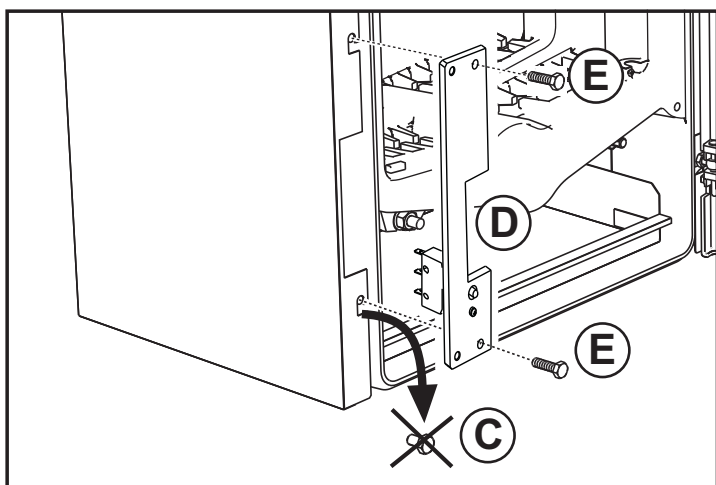


fig. 13 -

Fix the stays "F" respecting the distances indicated in fig. 14.

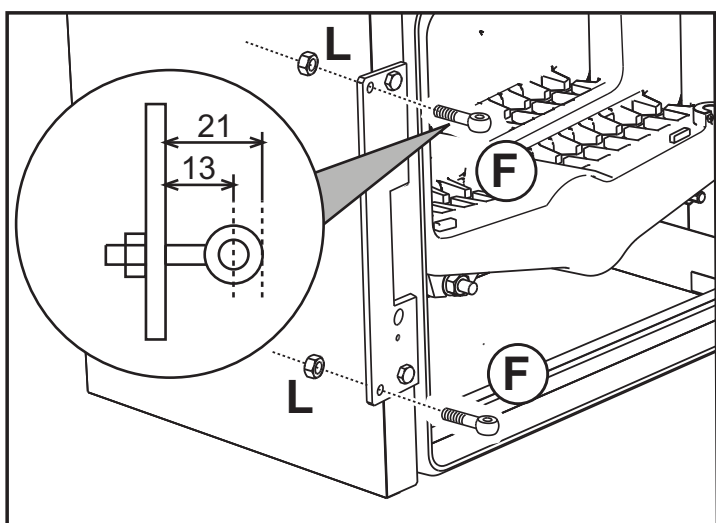


fig. 14 -

Hook the door "G", inserting the pins "H". Close the door, tightening the knob "P", interposing the washer "R".

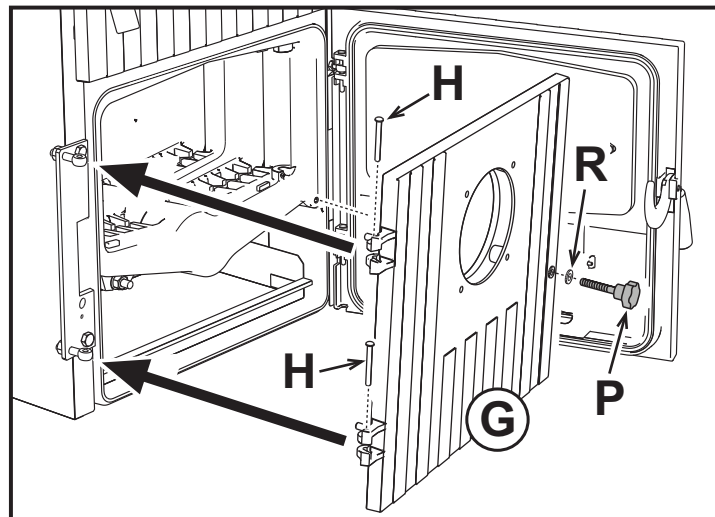


fig. 15 -

3.7 Connection to the flue

The unit must be connected to a flue designed and built in compliance with current regulations. The pipe between the boiler and flue must be made from material suitable for the purpose, i.e. heat and corrosion resistant. Ensure the seal at the joints and insulate the entire pipe between boiler and flue, to prevent the formation of condensate.

4. SERVICE AND MAINTENANCE

All adjustment, commissioning and periodical inspection operations described below must only be carried out by Qualified Personnel (meeting the professional technical requirements prescribed by the current regulations).

FERROLI declines any liability for damage and/or injury caused by unqualified and unauthorised persons tampering with the unit.

4.1 Adjustments

Secondary air adjustment

The secondary air control device must be set during the commissioning stage.

Adjust the air inlet door adjustment screw so that in any case there remains an air passage of not more than 1 - 2 mm. With the boiler cold, set the thermostat to 60°. Hook the chain to the special air inlet door eyelet, adjusting its length so that the air passage "L" (fig. 2) is approx. 15 mm for "coke III" and 2 mm for "wood".

4.2 Startup



Checks to be made at first lighting, and after all maintenance operations that involved disconnecting from the systems or operations on safety devices or parts of the boiler.

Before lighting the boiler

- Open any on-off valves between the boiler and the systems.
- Check correct prefilling of the expansion tank
- Fill the water system and make sure that all air contained in the boiler and the system has been vented.
- Make sure there are no water leaks in the system, connections or boiler.
- Check correct connection of the electrical system and efficiency of the earthing system
- Make sure there are no flammable liquids or materials in the immediate vicinity of the boiler

Checks during operation

- Turn the unit on as described in sec. 2.3.
- Check the seal of the water systems.
- Check the efficiency of the flue and air-fume ducts while the boiler is working.
- Check that the water is circulating properly between the boiler and the systems.
- Check the seal of the wood loading and combustion chamber doors.
- Check combustion and correct setting of the secondary air control device.

4.3 Maintenance

Instructions



- Before carrying out any maintenance operation, disconnect the power to the boiler and wait until it is at room temperature.
- Never drain (even partially) the water from the system unless absolutely necessary.
- Do not clean the boiler and/or its parts with easily flammable substances (e.g. petrol, alcohol, etc.).
- Do not leave containers of flammable substances in the room where the boiler is installed.
- Do not clean the heating system when the boiler is operating.
- Use tube brushes and aspirators for cleaning; if rags are used, make sure they are not left inside the boiler.
- If the ash is still hot, wear protective gloves.
- Put the ashes in a non-flammable container provided with lid.

Regularly or the end of every period of operation, carefully clean the boiler, and also the flue if necessary. To clean the boiler, open both cast-iron doors, remove the coal grate then, with a flexible metal tube brush, carefully clean the combustion chamber and the various flueways. Then remove any soot deposited in the ashpan. Also make sure the fume exhaust pipes and flue are clean and perfectly tight.

Periodical check

To ensure correct operation of the unit over time, have qualified personnel carry out a yearly check, providing for the following:

- Check and if necessary clean the boiler and fume ducts as described in the previous section.
- Check the burner plates.
- Check the tightness of the loading and ash door; replace the seal if necessary.
- The control and safety devices must function correctly.
- The fume exhaust circuit must be perfectly efficient.
- The fume ducts must be free of obstructions and leaks
- The water pressure in the system when cold must be approx. 1 bar; otherwise, bring it to that value.
- The circulating pump must not be blocked.
- The expansion tank must be filled.
- A possible pellet burner (with optional kit) must be checked according to the instructions provided with the burner.

5. TECHNICAL DATA AND CHARACTERISTICS

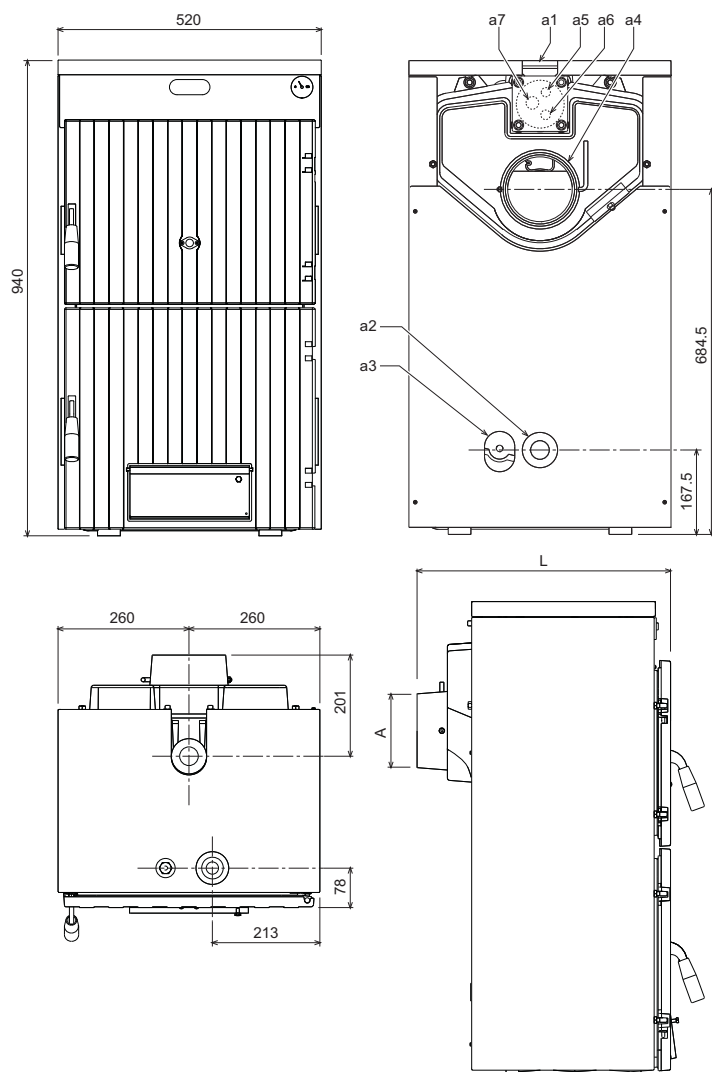


fig. 16 - Dimensions and connections

Model	L
SFL 3	510
SFL 4	620
SFL 5	730
SFL 6	840
SFL 7	950

- a1 System delivery
- a2 System return
- a3 System drain cock
- a4 Flue
- a5 - a6 Safety coil connections
- a7 Safety coil sheath connection

5.1 Technical data table

The column on the right gives the abbreviation used on the dataplate.

Data	Unit	SFL 3	SFL 4	SFL 5	SFL 6	SFL 7	
Heat output Wood	kW	19	27	36	43	50	(P)
Heat output Coke	kW	22.5	32.5	42.5	52.5	62.5	(P)
Heat output Pellets	kW	22	30	36	42	48	(P)
Efficiency Wood	%	77	78	78	78	78.5	
Efficiency Coke	%	79	79.5	80	80.5	81	
Efficiency Pellets	%	87.6	87.7	87.7	87.7	87.8	
Max. working pressure	bar.	4	4	4	4	4	
Water content	L.	26	30	34	38	42	
Chamber volume	dm ³	48	68	88	108	128	
Loading opening dimensions Wood/Coke	mm	384x210	384x210	384x210	384x210	384x210	
Temperature adjustment range Wood/Coke	°C	30-90	30-90	30-90	30-90	30-90	
Max. heating temperature Wood/Coke	°C	95	95	95	95	95	
Recommended temperature setting	°C	>60	>60	>60	>60	>60	
Boiler return min. temperature	°C	50	50	50	50	50	
Safety coil cooling water supply line requirements	Min. pressure - bar	2.0	2.0	2.0	2.0	2.0	
	Min. flow rate - l/min	10	10	10	10	10	
	Max. temperature - °C	25	25	25	25	25	
Duration of one wood load	h	≥ 2.5	≥ 2.5	≥ 2.5	≥ 2.5	≥ 2.5	
Duration of one coke load	h	≥ 4.5	≥ 4.5	≥ 4.5	≥ 4.5	≥ 4.5	
Min. flue draught Wood	Pa	12	14	16	18	20	
Min. flue draught Coke	Pa	8	10	15	20	25	
Min. flue draught Pellets	Pa	23	25	28	30	32	
Efficiency class EN303-5		3	3	3	3	3	
Empty weight	kg	193	241	289	337	385	

5.2 Diagrams

Pressure loss

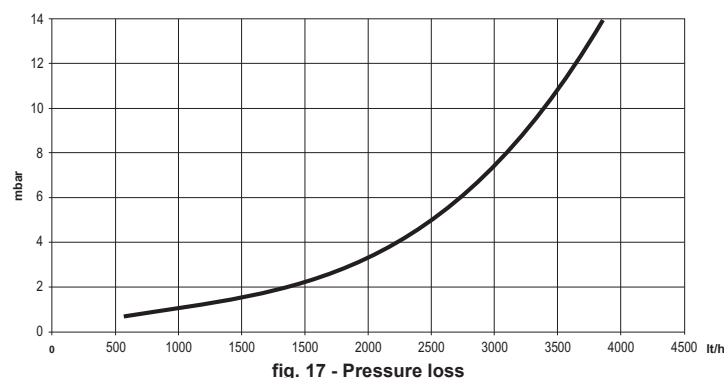


fig. 17 - Pressure loss

IT

Dichiarazione di conformità



Il Costruttore: FERROLI S.p.A.

Indirizzo: Via Ritonda 78/a - 37047 San Bonifacio VR

dichiara che questo apparecchio è conforme alle seguenti direttive CEE:

- Direttiva Bassa Tensione 2006/95
- Direttiva Compatibilità Elettromagnetica 2004/108
- Direttiva Apparecchi a pressione - PED 97/23 (solo per funzionamento a legna)
- Direttiva Rendimenti 92/42 (solo per funzionamento a gasolio)
- Direttiva Macchine 2006/42 (solo per funzionamento a gasolio e pellet)

Presidente e Legale rappresentante

Cav. del Lavoro

Dante Feroli

EN

Declaration of conformity



The Manufacturer: FERROLI S.p.A.

Address: Via Ritonda 78/a - 37047 San Bonifacio (VR) - ITALY

declares that this unit complies with the following EC directives:

- Low Voltage Directive 2006/95
- Electromagnetic Compatibility Directive 2004/108
- Pressurised Equipment Directive - PED 97/23 (only for operation with wood)
- Efficiency Directive 92/42 (only for operation with oil)
- Machinery Directive 2006/42 (only for operation with oil and pellets)

Chairman and Legal Representative

Knight of Labour

Dante Feroli

FR

Déclaration de conformité



Le constructeur : FERROLI S.p.A.

Adresse : Via Ritonda 78/a - 37047 San Bonifacio VR

déclare que cet appareil est conforme aux directives CEE ci-dessous :

- Directive basse tension 2006/95
- Directive Compatibilité Electromagnétique 2004/108
- Directive Appareils sous pression - PED 97/23 (uniquement pour fonctionnement au bois)
- Directive Rendements 92/42 (uniquement pour fonctionnement au gazole)
- Directive Machines 2006/42 (uniquement pour fonctionnement au gazole et granulés)

Président et fondé de pouvoir

Cav. del Lavoro (Chevalier du Travail)

Dante Feroli

RO

Declarație de conformitate



Producătorul: FERROLI S.p.A.

Adresă: Via Ritonda 78/a - 37047 San Bonifacio VR

declară că acest aparat este conform cu următoarele directive CEE:

- Directiva Joasă Tensiune 2006/95
- Directiva Compatibilitate Electromagnetică 2004/108
- Directiva Echipamente sub presiune - PED 97/23 (numai pentru funcționarea cu lemne)
- Directiva Randamente 92/42 (numai pentru funcționarea cu motorină)
- Directiva Mașini 2006/42 (numai pentru funcționarea cu motorină și peleti)

Președinte și reprezentant legal

Cav. al Muncii

Dante Feroli

HU

Megfeleléségi nyilatkozat

A gyártó: FERROLI S.p.A.

Cím: Via Ritonda 78/a - 37047 San Bonifacio VR

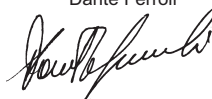
kijelenti, hogy a jelen berendezés megfelel az alábbi EGK irányelveknek:

- 2006/95 sz. irányelv a kifestőszűtségről
- 2004/108 sz. irányelv az elektromágneses kompatibilitásról
- 97/23 sz. irányelv a nyomástartó berendezésekről (csak fatűzelés)
- 92/42 sz. irányelv a hatásokról (csak gázolajos üzemeltetésre)
- 2006/42 sz. irányelv a gépekről (csak gázolajos és pelletes üzemeltetésre)

Elnök és jogi képviselő

Munka érdemrenddel kitüntetve

Dante Ferrolì

**SK**

Prehlásenie o zhodnosti s predpismi

Výrobca: FERROLI S.p.A.

Adresa: Via Ritonda 78/a - 37047 San Bonifacio VR

prehlasuje, že tento spotrebič spĺňa požiadavky nasledujúcich smerníc EHS:

- Smernica o nízkom napätí 2006/95
- Smernica o elektromagnetickej kompatibilite 2004/108
- Smernica o tlakových spotrebičoch - PED 97/23 (iba prevádzkované použitím dreva)
- Smernica o účinnosti 92/42 (iba naftové zariadenia)
- Smernica o strojoch 2006/42 (iba naftové a a peletové zariadenia)

Prezident a právny zástupca

Nositeľ radu práce

Dante Ferrolì



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