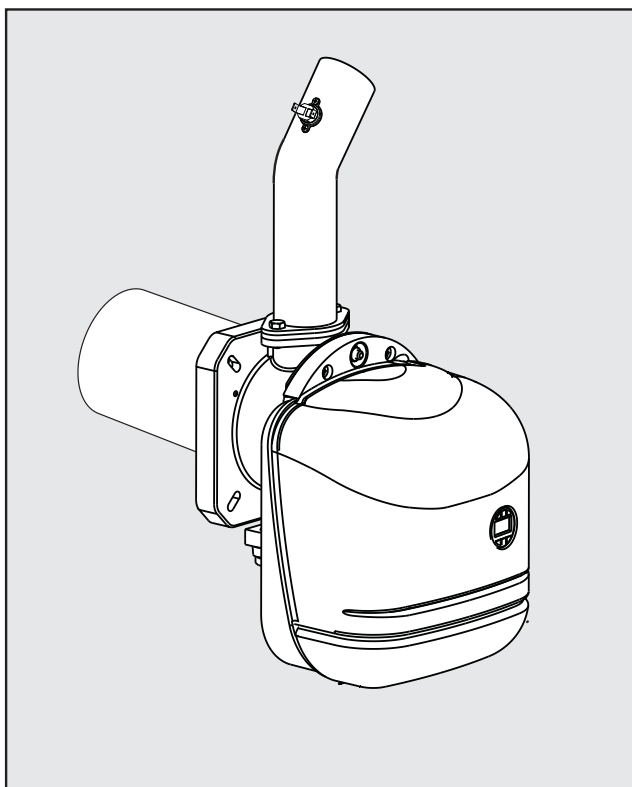


SUN P7 - P12



1. GENERAL WARNINGS

- Carefully read and follow 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, in compliance with the current regulations and according to 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 electrical power supply using the switch and/or the special cut-off devices.
- In case of a fault and/or poor operation, deactivate the unit and do not try to repair it or directly intervene. Contact professionally qualified personnel. Any repair/replacement of the products must only be carried out by qualified personnel using original replacement 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 deemed improper and therefore hazardous.
- The packing materials are potentially hazardous and must not be left within the reach of children.
- The unit must not be used by people (including children) with limited physical, sensory or mental abilities or without experience and knowledge of it, unless instructed or supervised in its use by someone responsible for their safety.
- The unit and its accessories must be appropriately disposed of, in compliance with the current regulations.
- 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

Dear Customer,

Thank you for choosing **SUN P7 - P12**, a **FERROLI** burner featuring advanced design, cutting-edge technology, high reliability and quality construction.

SUN P7 - P12 is a pellet burner whose compact size and original design make it suitable for use with the majority of solid fuel-burning boilers available on the market. The care taken in its design and industrial production has resulted in a well-balanced product offering high efficiencies, low CO and NOx emissions and a very quiet flame.

2.2 Control panel

Display

The display shows various information, depending on the set operation method.

There are 3 operation methods:

- A** = Burner management (Default setting)
- B** = Burner management (Second internal clock or contact)
- C** = Burner management (Second internal clock or contact)

Display

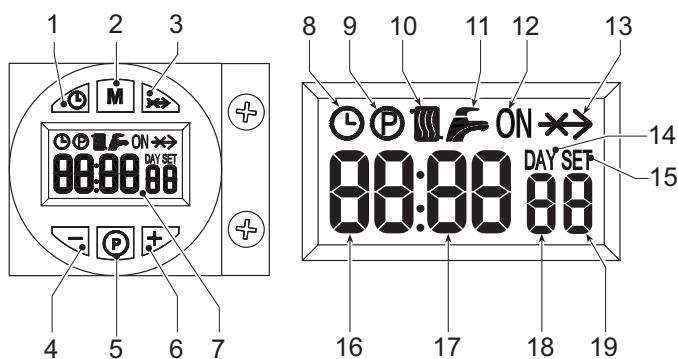


fig. 1 - Control panel

Ref. fig. 1	Method A	Method B and C
1	Day/time setting button	
2	Operation mode selection button	
3	Override button - Pellet load button	
4	- button	
5	Programming button	
6	+ button	
7	Display	
8	Automatic mode symbol	
9	Programming Menu symbol	
10	Burner lighting request symbol	
11	Not used	
12	Multifunction symbol: • in Automatic mode, it indicates when the programmer clock is in the request band • if Automatic mode was not selected it indicates Manual On mode	
13	Override symbol	
14	Deactivated symbol	Day symbol
15	Deactivated symbol	Setting symbol
16	Heating sensor temperature	Current time
17	°C symbol	Current minutes
18	Actual burner power 1 = Min. 5 = Max. O/FH = During Pre-ventilation/Post-ventilation 6 = During Post-ventilation2	Day of the week
19	Burner On	

Indications during operation

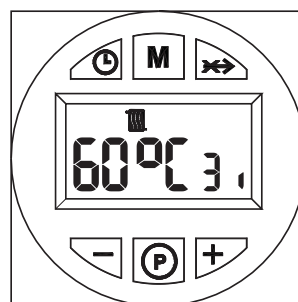


fig. 2 Method A

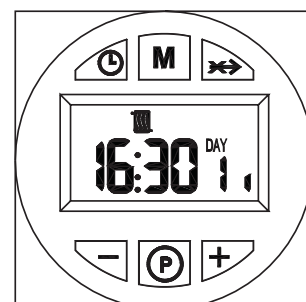


fig. 3 - Methods B and C

The lighting request (generated on closing of the contact on terminals 7-8 (see fig. 14), in default setting conditions) is indicated by activation of the radiator symbol (detail 10 - fig. 1).

2.3 Lighting

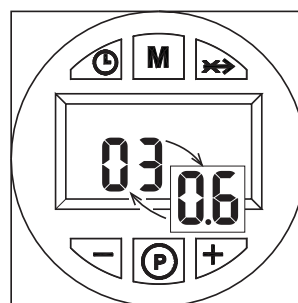


fig. 4

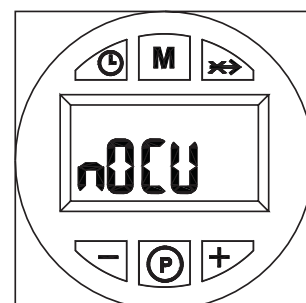


fig. 5

Switch on the power to the unit:

- During the first 10 seconds the display shows:
 - The software version of the user interface and the controller (fig. 4)
 - "nOCU" (fig. 5) may appear for a couple of seconds
- The burner does a pre-ventilation of the combustion chamber.
- At the end of this time, the burner will be ready to work.

2.4 Adjustments

Setting the clock (methods B and C only)

1. Press the day/time setting button (detail 1 - fig. 1).
2. The CLOCK and DAY icons flash on the display (detail 7 - fig. 1): set the current day of the week with the + and - buttons (details 4 and 6 - fig. 1), considering that 1=Monday, 7=Sunday. Confirm the day by pressing the day/time setting button (detail 1 - fig. 1).
3. The two digits of the CURRENT HOUR and the CLOCK icon flash on the display (detail 7 - fig. 1): set the exact hour with the + and - buttons (details 4 and 6 - fig. 1), from 00 to 23. Confirm the hour by pressing the day/time setting button (detail 1 - fig. 1).
4. The two digits of the CURRENT MINUTES and the CLOCK icon flash on the display (detail 7 - fig. 1): set the exact minutes with the + and - buttons (details 4 and 6 - fig. 1), from 00 to 59. Confirm the minutes by pressing the day/time setting button (detail 1 - fig. 1). Automatic Heating, Manual On, Manual Off mode

Press the operation mode selection button (detail 2 - fig. 1) to set the:

1. In Automatic mode, the display (detail 7 - fig. 1) shows the CLOCK icon. The burner activation and deactivation request depends on the set weekly programme. In the request time band, the display (detail 7 - fig. 1) also shows the ON icon.
2. In Manual On mode, the display (detail 7 - fig. 1) only shows the ON icon. The burner is always in request status.



The set weekly programme is bypassed.

3. In Manual Off mode, the display (detail 7 - fig. 1) does not show the ON icon or the CLOCK icon. The burner is off.



The set weekly programme is bypassed.

Preset weekly programme

06:30	08:30
12:00	12:00
16:30	22:30

The weekly programme is preset with 3 ON time bands and 3 OFF time bands; equal for every day of the week. In the request time band, the display (detail 7 - fig. 1) shows the ON icon.



Attention: Check burner operation methods (see sec. 4.1)

Modifying the weekly programme (methods B and C only)

1. Press the Programming button "P" (detail 5 - fig. 1)
2. Select the day to be programmed with the + and - buttons (details 4 and 6 - fig. 1):
 - Day 1 and Radiator flashing: Monday heating programming
 - Day 2 and Radiator flashing: Tuesday heating programming
 - Day 3 and Radiator flashing: Wednesday heating programming
 - Day 4 and Radiator flashing: Thursday heating programming
 - Day 5 and Radiator flashing: Friday heating programming
 - Day 6 and Radiator flashing: Saturday heating programming
 - Day 7 and Radiator flashing: Sunday heating programming
 - Day 15 and Radiator flashing: Monday - Friday heating programming
 - Day 67 and Radiator flashing: Saturday - Sunday heating programming
 - Day 16 and Radiator flashing: Monday - Saturday heating programming
 - Day 17 and Radiator flashing: Monday - Sunday heating programming
 - Day 15 and Radiator flashing: not used
3. Press the Programming button "P" (detail 5 - fig. 1):
4. 06:30 and Radiator flashing, ON, 1
 - Use the + and - buttons (details 4 and 6 fig. 1) to modify the start of the 1st ON time band; e.g. 06:00 Press the Programming button "P" (detail 5 - fig. 1)
5. 08:30 and Radiator flashing, 2
 - Use the + and - buttons (details 4 and 6 fig. 1) to modify the start of the 1st OFF time band; e.g. 09:00 Press the Programming button "P" (detail 5 - fig. 1)
6. 12:00 and Radiator flashing, ON, 3
 - Use the + and - buttons (details 4 and 6 fig. 1) to modify the start of the 2nd ON time band; e.g. 12:30 Press the Programming button "P" (detail 5 - fig. 1)
7. 12:00 and Radiator flashing, 4
 - Use the + and - buttons (details 4 and 6 fig. 1) to modify the start of the 2nd OFF time band; e.g. 14:00 Press the Programming button "P" (detail 5 - fig. 1)
8. 16:30 and Radiator flashing, ON, 5
 - Use the + and - buttons (details 4 and 6 fig. 1) to modify the start of the 3rd ON time band; e.g. 16:00 Press the Programming button "P" (detail 5 - fig. 1)
9. 22:30 and Radiator flashing, 6
 - Use the + and - buttons (details 4 and 6 fig. 1) to modify the start of the 3rd OFF time band; e.g. 23:30 Press the Programming button "P" (detail 5 - fig. 1)
10. By repeating the above procedure it is possible to programme the 4th ON time band and the 4th OFF time band.
11. Press the Programming button "P" (detail 5 - fig. 1) for 3 seconds to exit the programming mode.

Parameters menu

Press the programming button "M" (detail 2 - fig. 1) for 5 seconds to access the parameters menu. Parameter "u01", identified by the message SET 01, is displayed. Press the button "P" (detail 5 - fig. 1) to scroll the list of parameters.

To modify the value of a parameter, press the + and - buttons (details 4 and 6 - fig. 1): the change will be automatically saved. After modifying the parameter, it is necessary to wait 3 seconds: the datum item flashes and is saved.

Table. 1

Parameters	Description	Range	SUN P7 - P12
u01	Delivery set point adjustment	30 - 80°C	80°C
u02	Burner max. power	1 - 5	3
u03	Burner operation methodology (see sec. 4.1)	0 - 2	0

Press the "operation mode selection - M" button (detail 2 - fig. 1) for 5 seconds to exit the menu.

Service parameters menu

Press the programming button "P" (detail 5 - fig. 1) for 10 seconds to access the parameters menu. Parameter "t01", identified by the message SET 01, is displayed. Press the button "P" (detail 5 - fig. 1) to scroll the list of parameters.

To modify the value of a parameter, press the + and - buttons (details 4 and 6 - fig. 1): the change will be automatically saved. After modifying the parameter, it is necessary to wait 3 seconds: the datum item flashes and is saved.

Table. 2

Parameters	Description	Range	Default/ SUN P7	SUN P12
t01	Pellet loading function	0=Disabled 1=Enabled	0=Disabled	0=Disabled
t02	Delivery probe	0=Disabled 1=Enabled	1=Enabled	1=Enabled
t03	Fan setpoint in Lighting	0-200 Pa	51 Pa	51 Pa
t04	Auger activation time in Lighting	0-100 (1=4 seconds)	8	8
t05	Adjustment calculation timer (Only with Modulating burner operation with delivery Probe)	0-100 seconds	5 seconds	5 seconds
t06	Ramp function timer	0-100 seconds	100 seconds	100 seconds
t07	Period (activation+deactivation time) with auger operating (from Power 1 to Power 5)	0-50 seconds	15 seconds	12 seconds
t08	Fan setpoint at Power 1	0-200 Pa	51 Pa	51 Pa
t09	Auger activation time at Power 1	0-100 (100=10 seconds)	28	38
t10	Fan setpoint at Power 2	0-200 Pa	74 Pa	70 Pa
t11	Auger activation time at Power 2	0-100 (100=10 seconds)	38	40
t12	Fan setpoint at Power 3	0-200 Pa	120 Pa	100 Pa
t13	Auger activation time at Power 3	0-100 (100=10 seconds)	46	45
t14	Fan setpoint at Power 4	0-200 Pa	150 Pa	120 Pa
t15	Auger activation time at Power 4	0-100 (100=10 seconds)	53	60
t16	Fan setpoint at Power 5	0-200 Pa	170 Pa	155 Pa
t17	Auger activation time at Power 5	0-100 (100=10 seconds)	56	65
t18	Burner operation selection (Only with Delivery Probe)	0=On/Off 1=Modulating	0=On/Off	0=On/Off
t19	Post-Ventilation time 2	0-100 (100=10 seconds)	99	99
t20	Photoresistance voltage	00-30 (50 = 5Vdc)	--	--

Press the programming button "P" (detail 5 - fig. 1) for 10 seconds to exit the menu.



2.5 Operating instructions

Once the burner is installed and correctly adjusted, its operation is fully automatic without requiring any control by the user. In case of anomalies or no fuel, the burner stops and shuts down. To avoid irregular burner operation it is advisable to top-up the fuel before it finishes.

Make sure the room where the burner is installed is free of flammable materials or objects, corrosive gases and volatile substances, and that it is not dusty. In fact, dust drawn by the fan sticks to the blades and reduces the air flow or obstructs the flame stability disk, affecting its efficiency.



Do not allow unskilled persons or children to tamper with the burner.

Max. power adjustment (parameter u02) depending on the boiler

Parameter value	SUN P7 Power - kW	SUN P12 Power - kW
1	14	30
2	20	36
3	25	41
4	30	48
5	34	55

3. INSTALLATION

3.1 General Instructions

This unit must only be used for its intended purpose.

This unit can be used with heat generators for solid fuels, compatibly with its characteristics, performance and heating capacity. Any other use is deemed improper and therefore hazardous. Opening or tampering with the unit's components is not allowed (except for the parts requiring servicing); do not modify the unit to alter its performance or intended use.

If the burner is completed with optionals, kits or accessories, only use original products.



BURNER INSTALLATION AND SETTING MUST ONLY BE CARRIED OUT BY QUALIFIED AND SPECIALISED PERSONNEL, IN COMPLIANCE WITH ALL THE INSTRUCTIONS GIVEN IN THIS TECHNICAL MANUAL, THE CURRENT PROVISIONS OF LAW, THE PRESCRIPTIONS OF NATIONAL AND LOCAL STANDARDS, AND THE RULES OF PROPER WORKMANSHIP.

3.2 Installation in boiler

Place of installation

The room where the boiler and burner are installed must have openings to the outside as required by the current regulations. If there are several burners or exhausters 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 materials or objects, corrosive gases, dusts or volatile substances which, drawn by the fan, can obstruct the pipes inside the burner or the combustion head. The room must be dry and not exposed to rain, snow or frost.

Fix the burner to the door. Make the electrical connections as shown in cap. 5.4 (wiring diagram). If the burner is installed in a boiler **SFL**, use the special conversion kit. Insert the temperature probe (contained in the kit) in the sheathing on the cast-iron boiler shell and make the respective electrical connections.



THE BURNER IS DESIGNED TO WORK ON HEAT GENERATORS WITH COMBUSTION CHAMBER IN NEGATIVE PRESSURE.

THE PELLET HOPPER MUST BE POSITIONED SO THAT THE AUGER/BURNER FLEXIBLE CONNECTION TUBE IS NOT TWISTED AND/OR BENT.

Overtemperature safety device

The heat generator must be equipped with its own protection device against overtemperature. If the device provided for is a safety thermostat, it must be connected to terminals 13 and 14 of the terminal block located inside the burner (after removing the jumper). For FERROLI boilers not equipped with safety coil, the kit 033001X0 must be used.

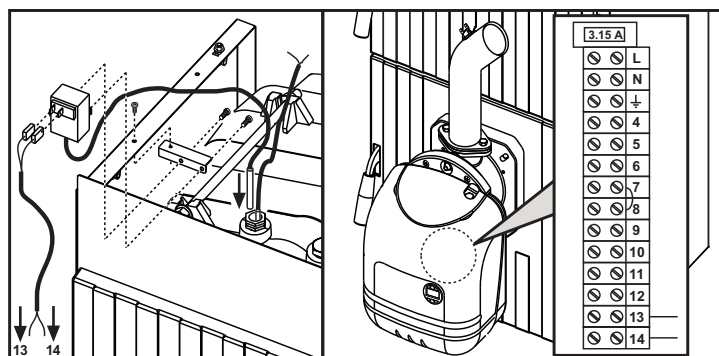


fig. 6 - Safety thermostat connection

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

Optional kits are available for use of the pellet burner with boilers SFL. For installation, refer to the instructions contained in the kits.

After installing the kit in the boiler, fit the burner.

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

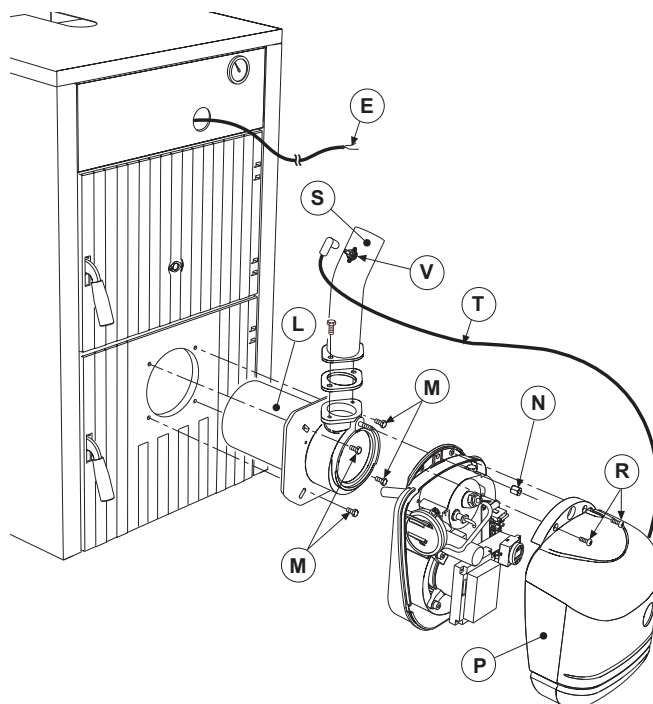


fig. 7

Insert the motor-operated feed pipe "Y" in the pellet hopper "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. 8.

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

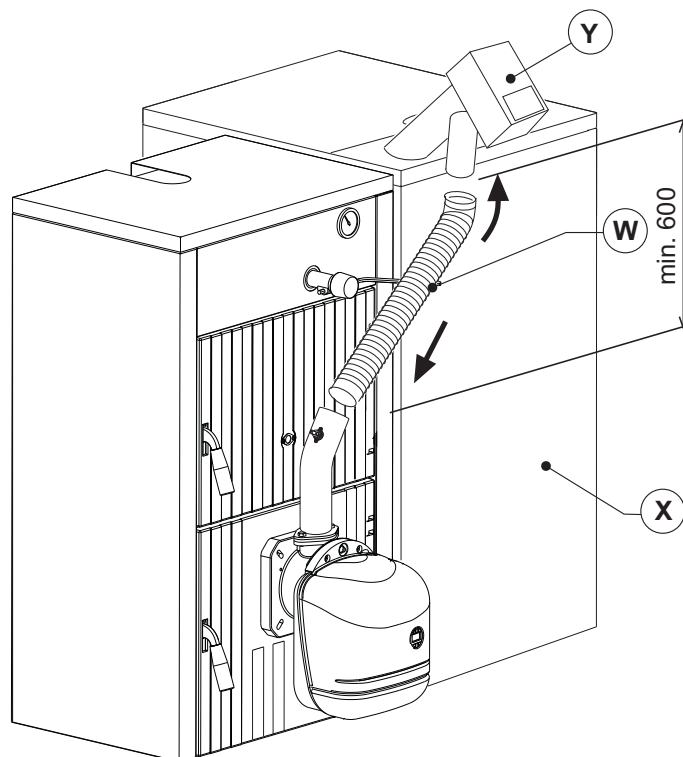


fig. 8

3.3 Electrical connections

The burner is equipped with a multi-pole terminal block for the electrical connections; refer to the wiring diagram in section "4 Technical data and characteristics" for the connections. The connections to be made by the installer are:

- Supply line
- Request contact
- Auger motor connection
- Temperature probe connection
- Boiler safety thermostat connection

The length of the connection cables must allow the burner and, if necessary, the boiler door to be opened. If the burner power cable is damaged, it must only be replaced by qualified personnel.

The burner must be connected to a single-phase 230 Volt-50 Hz electric line.



Have the efficiency and suitability of the earthing system checked by professionally qualified personnel; the Manufacturer declines any liability for damage caused by failure to earth the system. Also make sure the electrical system is adequate for the maximum power absorbed by the unit, as specified on the boiler data plate.

Make sure to respect the polarities (LINE: brown wire / NEUTRAL: blue wire / EARTH: yellow-green wire) in the connections to the electric line.

3.4 Fuel supply

General Instructions

The burner must be fed with the type of fuel for which it is arranged, as specified on the unit's dataplate and in the technical data table on sec. 5.3 of this manual.

The user is advised to use good quality pellets, since low quality pellets result in low heat outputs, high ash content with subsequent need of frequent cleaning, possible early wear of burner parts exposed to the fire, clogging of the auger and burner due to excess loose sawdust, and operation shutdowns due to sedimentation of unburnt materials inside the burner.

To identify quality pellets it is advisable to proceed as follows:

- They must be cylinders of constant diameter and have a smooth and bright surface.
- Check that the labels give the details of the quality certifications
- Check that the packs are intact so that the pellets do not absorb humidity.

Load pellets

Pellet loading can be activated within 40 minutes after switching on the power to the burner.

Within this time, the system makes available three 5-minute attempts, during which only the auger is activated.

The burner cannot be lit during pellet loading.

Sequence:

1. Switch on the power to the burner.
2. Wait for the pre-ventilation stage to end.
3. Remove the burner lighting request: open the request contact (Method A, default setting) or set the manual OFF mode (Method B and C).
4. Press and hold down the Override button "x->" (detail 3 - fig. 1) for 3 seconds.
 - The message "PELT", identifying the imminent start of the PELLET loading procedure, will be displayed.
 - After two seconds, the auger will be electrically powered and continuously for a maximum time of 5 minutes.
 - PELLET loading can be terminated at any time by pressing and holding down the Override button "x->" (detail 3 - fig. 1) for 3 seconds.
5. If the maximum pellet loading time (5 minutes) is reached, the power to the auger is switched off.
6. Press and hold down the Override button "x->" (detail 3 - fig. 1) for 3 seconds.
 - The message "PELT" will disappear and the display returns to normal operation.
7. If the first attempt was not sufficient, repeat the previous sequence from point 4 to start the second attempt
8. If the second attempt was not sufficient, repeat the previous sequence from point 4 to start the third and last attempt
9. In order to do another 3 attempts, switch the power to the unit off and then on again
10. After pellet loading, reinstate the burner lighting request: close the request contact (Method A, default setting) or set the Automatic or manual ON mode (Method B and C)

4. SERVICE AND MAINTENANCE

All adjustment, commissioning and maintenance operations must be carried out by Qualified Personnel in compliance with the current regulations. The personnel of our sales organisation and the Local After-Sales Technical Service are at your disposal for any further information.

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

4.1 Burner operation methodology

Three methods of burner ignition management are foreseen:

A - Burner management (default setting)

The request for burner lighting is activated only on closing of the contact on terminals 7-8 (see fig. 14).



The clock and the set weekly programme are bypassed: the exact time does not have to be set.

B - Burner management (with internal Clock or Contact)

The request for burner lighting can be activated by the Clock (during Automatic Heating Mode in ON Band or in Manual On Heating Mode) or with closing of the contact on terminals 7-8 (see fig. 14).



It is necessary to set the Clock and possibly modify the weekly programme default setting.

C - Burner management (with internal Clock and Contact)

The request for burner lighting is activated by the Clock (during Automatic Heating Mode in ON Band or with Manual On Heating Mode) and if the contact on terminals 7-8 is closed (see fig. 14).



It is necessary to set the Clock and possibly modify the weekly programme default setting.

The selection of A, B or C occurs from the Clock user menu.

Press the operation mode selection button "M" (detail 2 - fig. 1) for 5 seconds.

Press the Programming button "P" (detail 5 - fig. 1) twice.

Parameter no. 3, identified by the message SET 03, is displayed.

Set to 00 for mode A, 01 for mode B, or 02 for mode C with the + and - buttons (details 4 and 6 - fig. 1).

After selecting the method, it is necessary to wait 3 seconds: the data flashes and is stored. Press the operation mode selection "M" button (detail 2 - fig. 1) for 5 seconds to exit the menu.

4.2 Commissioning

Checks to be made at first lighting, and after all maintenance operations involving disconnection from the systems or any operation on safety devices or parts of the burner:

Before lighting the burner

- Make sure the burner is correctly fixed in the boiler with the preliminary settings indicated above.
- Make sure the boiler and system are filled with water or diathermic oil, the water circuit valves are open and that the flue is free and correctly sized.
- Check closing of the boiler door, so that the flame is only generated inside the combustion chamber.
- Check the correct positioning of the auger and the burner connection flexible tube.
- Fill the hopper with pellets.
- Check the correct positioning and connection of the temperature probe.



Make sure the grille (detail 1 fig. 9) is clean.

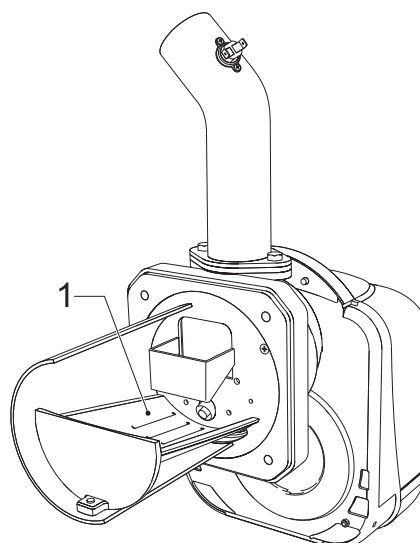


fig. 9 - Burner grille

Burner lighting

- Switch on the power, operating the main switch ahead of the burner.
- To fill the auger with pellets, see sec. 3.4.
- close the thermostat line (boiler/room).

Burner setting

1. Connect a combustion analyser to the boiler outlet and leave the burner working at max. for 30 minutes; meanwhile, check the efficiency of the flue pipe.
2. **MAKE SURE THE COMBUSTION CHAMBER IS IN NEGATIVE PRESSURE**
3. Check the combustion at max. burner power (adjusted according to boiler nominal power).
4. Combustion parameters:
 - O_2 between 5% and 9%
 - CO between 150 and 1000 ppm

To set the burner, change the fan set point by modifying the relevant parameter (see the section "Service parameters menu" and **table 2** in cap. 2.4).
The CO value depends on the quality of pellets, the amount of dirt in the combustion head and boiler draught.

To operate the burner in MODULATING mode, it is necessary to modify the parameter "T18" and then carry out points 5 and 6 described below.

5. Check the other burner steps, reducing the value of parameter u02 to 1 (see the section "Service parameters menu" and **table 1** in cap. 2.4).
6. Set the parameter u02 to the correct value.

4.3 Maintenance

Checks and controls

-  Periodically check the cleanness of the burner parts which will tend to get dirty depending on the quality of the pellets or due to incorrect burner adjustment.
-  Periodically check the pellet hopper and remove dust from the bottom. An excessive amount of dust can affect the proper supply of fuel to the burner.

The burner requires periodical maintenance which must be performed by qualified personnel at least once a year.

The basic operations to carry out are:

- check and cleaning of the internal parts of the burner and boiler as indicated in the following sections;
- complete combustion analysis (after at least 10 minutes' operation) and check of correct settings;

Opening the casing and removing the burner

 Before carrying out any checking or cleaning inside the burner, disconnect the power to the burner by means of the main system switch.

To open

Undo the screws (A) and remove the casing (B). The internal components, motor, shutter, etc., can be directly accessed.

To disassemble

Undo the screws (A) and remove the casing (B), undo the nut (C) and disconnect the body, undo the fixing screws (D) and remove the nozzle (E).

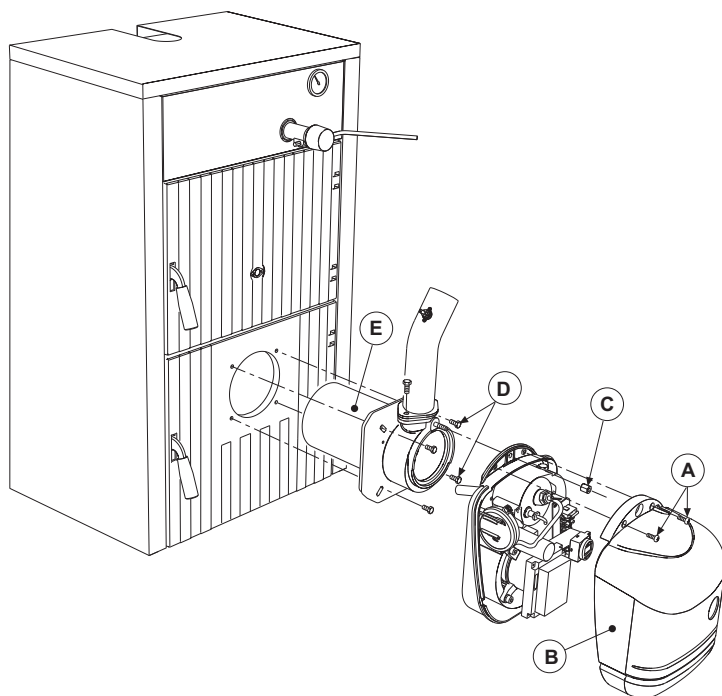


fig. 10

Checks on parts and components

Fan

Make sure no dust has accumulated inside the fan and on the blades: it reduces the air flow, thus causing pollutant combustion.

Combustion head

Make sure all parts of the combustion head are intact, not warped by the high temperature, free of impurities coming from the room, and correctly positioned.

Photoresistance

Remove any dust on the glass. The photoresistance is press-on; to remove, pull it outwards.

4.4 Troubleshooting

The burner is equipped with an advanced self-diagnosis system. In case of a burner anomaly, the display (Detail 7 - fig. 1) flashes indicating the fault code.

There are faults that cause permanent shutdowns (marked with the letter "A"): to restore operation press the button "P" (Detail 5 - fig. 1) for 1 second; if the burner fails to start, it is necessary to firstly eliminate the fault.

Other faults cause temporary shutdowns (marked with the letter "F") which are automatically reset as soon as the value returns within the burner's normal working range.

Table. 3 - List of faults

Code	Fault	Cause	Cure
A01	No ignition shutdown	Pellet container empty	Fill the container with pellets
		Auger cable broken or disconnected	Restore the connection
		Faulty igniter resistance	Replace and empty the head of pellets
		Combustion head dirty	Empty and clean it
		Pellet feed duct obstructed	Free it, make sure the combustion head is not clogged and empty it if necessary
F02	Parasite flame elimination	The demand for heat has ended, but the burner detects flame	Wait for end of post-ventilation
A02	Shutdown for parasite flame	Photoresistance short circuit	Replace the photoresistance
		Extraneous light strikes the photoresistance	Eliminate light source
A04	Auger safety thermostat block	Incorrect ignition parameters	Check the transparent parameters 03=51 and 04=12
		Boiler under pressure	Clean it and check correct minimum flue draught (10Pa)
		Faulty safety thermostat	Replace it
F05	Faulty pipe pressure adjustment	Pressure sensor connection tube squashed	Replace
		Fan motor damaged	Replace
		Fan dirty	Clean it
F06	Pressure transducer fault (disconnected)	Wiring disconnected	Check the wiring or replace the sensor
F10	Boiler shell probe fault (if enabled)	Sensor damaged	Check the wiring or replace the sensor
		Wiring shorted	
		Wiring disconnected	
A03	Wiring fault	Jumper of terminals 13-14 not connected	Check the wiring

5. TECHNICAL DATA AND CHARACTERISTICS

5.1 Dimensions

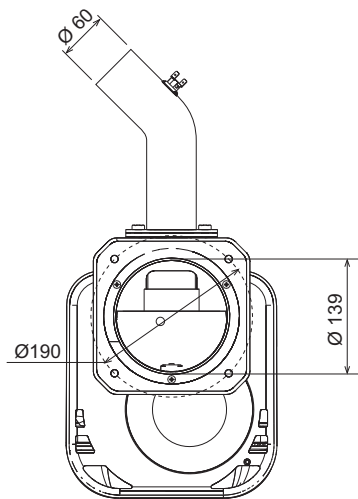
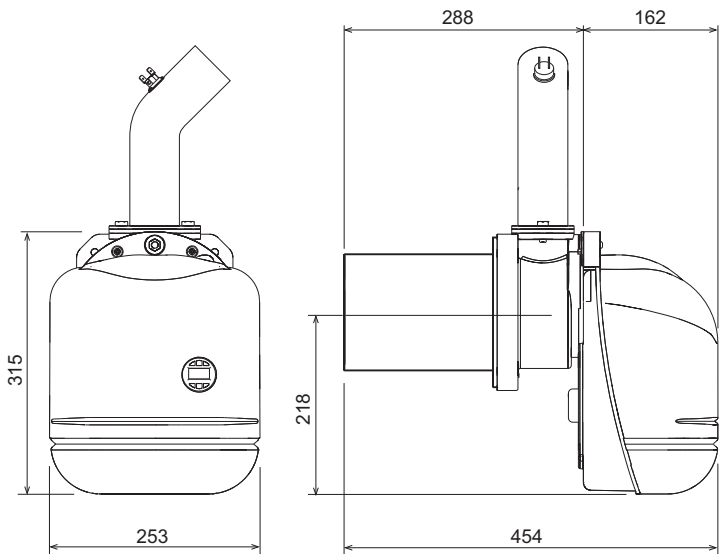


fig. 11 - Dimensional SUN P7

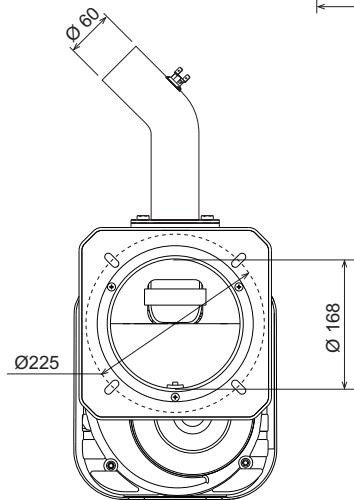
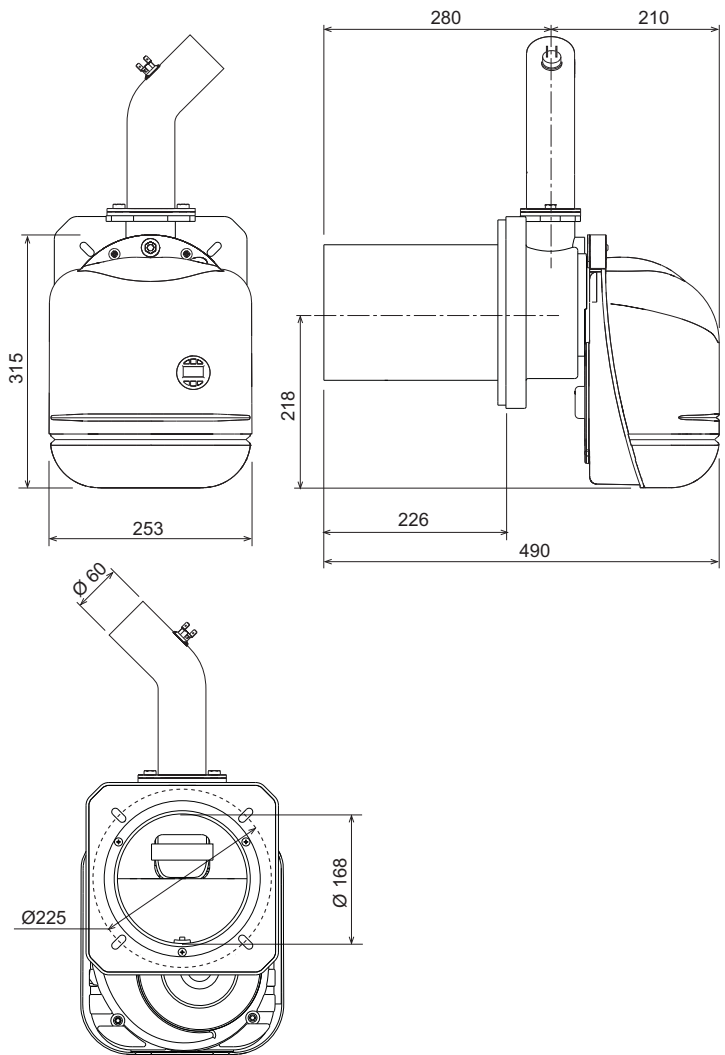


fig. 12 - Dimensional SUN P12

5.2 General view and main components

- Key
- 1 Pressure transducer
 - 2 Controller
 - 3 Burner body
 - 4 Terminal block
 - 5 User interface
 - 6 Heating element
 - 7 Photoresistance
 - 8 Thermostat 85°
 - 9 Burner loading tube
 - 10 Motor
 - 11 Fan
 - 12 Nozzle
 - 13 Grille

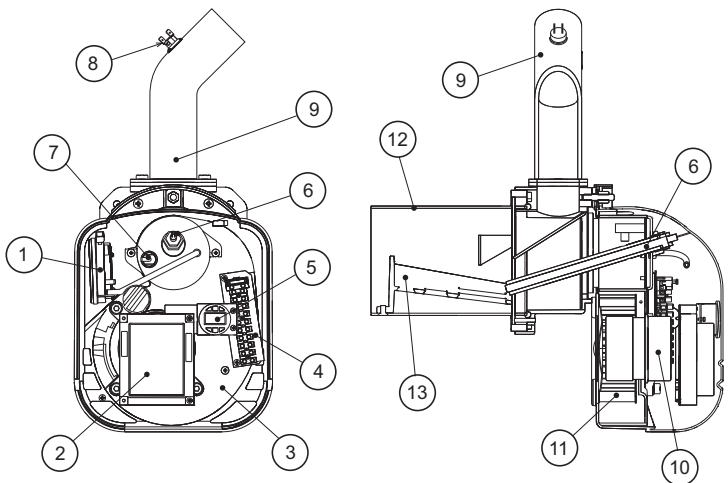


fig. 13

5.3 Technical data table

Data	Unit	SUN P7	SUN P12	
Max. heating capacity	kW	34.1	55.0	(Q)
Min. heating capacity	kW	13.7	30.0	(Q)
Max. fuel delivery	kg/h	7.2	11.6	
Min. fuel delivery	kg/h	2.9	6.3	
Electrical protection rating	IP	X0D	X0D	
Power voltage/frequency	V/Hz	230/50	230/50	
Electrical power input	W	100	100	
Igniter electric power	W	300	300	
Empty weight	kg	11	13.5	
Hopper capacity	litres	195	323	
Hopper content	kg	140	226	
Pellet dimensions (max. diameter/length)	mm	6/35	6/35	
Combustion chamber negative pressure	mbar	-0.2	-0.2	

5.4 Wiring diagram



DO NOT CONNECT "PHASE" OR "NEUTRAL" SIGNALS COMING FROM THE ELECTRICAL SYSTEM TO THE TERMINAL BLOCK.

ALL CONNECTIONS MUST BE MADE AS SHOWN IN THE WIRING DIAGRAM.

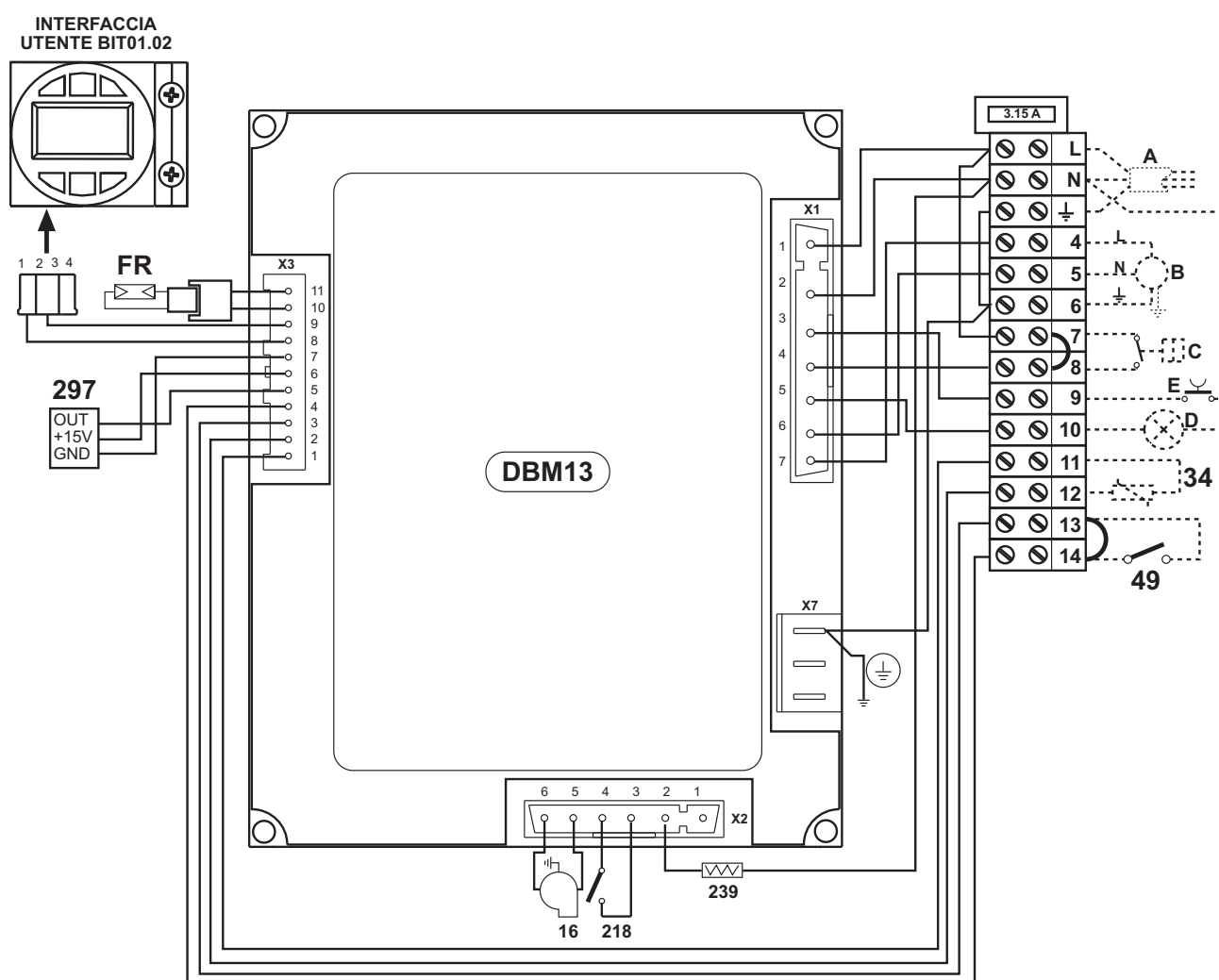


fig. 14 - Wiring diagram

Legend

FR	Photoresistance
16	Fan
34	Heating temperature sensor
49	Boiler safety thermostat
218	Pellet safety thermostat
239	Igniter
297	Air pressure transducer
A	electrical power supply
B	Motor auger
C	Request contact
D	Shutdown signal
E	Burner reset

EN Declaration of conformity

Manufacturer: FERROLI S.p.A.

Address: Via Ritonda 78/a 37047 San Bonifacio VR Italy

declares that this unit complies with the following EU directives:

- Low Voltage Directive 2006/95
- Electromagnetic Compatibility Directive 2004/108



President and Legal Representative

Cav. del Lavoro

Dante Ferrolì

A handwritten signature in black ink, appearing to read 'Dante Ferrolì', written over the printed name.



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