EN

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 a FERROLI boiler featuring advanced design, cutting-edge technology, high reliability and quality construction. Please read this manual carefully since it provides important information on safe installation, use and maintenance.

ATLAS D UNIT is a high-efficiency heat generator for domestic hot water production (optional) and heating, equipped with a blown oil burner. The boiler shell consists of cast-iron elements, assembled with double cones and steel stays. The control system is with microprocessor and digital interface with advanced temperature control functions.

The boiler is arranged for connection to an external storage tank for hot water production (optional). In this manual all the functions relevant to domestic hot water production are only active with the optional hot water tank connected as indicated in sec. 3.3

2.2 Control panel

Panel

[Diagram of control panel with key numbers and labels]

Panel key

1 = DHW temperature setting decrease button
2 = DHW temperature setting increase button
3 = Heating system temperature setting decrease button
4 = Heating system temperature setting increase button
5 = Display
6 = Summer / Winter mode selection button
7 = Economy / Comfort mode selection button
8 = Reset button
9 = Unit On / Off button
10 = “Sliding Temperature” menu button
11 = Set DHW temperature reached
12 = DHW symbol
13 = DHW mode
14 = DHW outlet temperature / setting
15 = Eco (Economy) or Comfort mode
16 = External sensor temperature (with optional external probe)

2.3 Lighting and turning off

Boiler not electrically powered

[Diagram of boiler lighting and turning off]

The antifreeze system does not work when the power and/or gas to the unit are turned off. To avoid damage caused by freezing during long idle periods in winter, it is advisable to drain all water from the boiler, DHW circuit and system; or drain just the DHW circuit and add a suitable antifreeze to the heating system, complying with that prescribed in sec. 3.3.
Boiler lighting

- Open the fuel on-off valves.
- Switch on the power to the unit.
- For the following 120 seconds the display will show FH which identifies the heating system air venting cycle.
- During the first 5 seconds the display will also show the card software version.
- When the message FH disappears, the boiler is ready to operate automatically whenever domestic hot water is drawn or in case of a room thermostat demand.

Turning the boiler off

Press the on/off button (detail 9 - fig. 1) for 1 second.

When the boiler is turned off, the PCB is still powered. Domestic hot water and heating are disabled. The antifreeze system remains activated.

To relight the boiler, press the on/off button (detail 9 - fig. 1) again for 1 second.

DHW temperature adjustment

Use the DHW buttons (details 1 and 2 - fig. 1) to adjust the temperature from a min. of 10°C to a max. of 65°C.

Room temperature adjustment (with optional room thermostat)

Using the room thermostat, set the temperature desired in the rooms. If the room thermostat is not installed the boiler will keep the heating system at its setpoint temperature.

Room temperature adjustment (with optional remote timer control)

Using the remote timer control, set the temperature desired in the rooms. For information on the remote timer control, please refer to its user's manual.

Sliding temperature

When the optional external probe is installed the control panel display (detail 5 - fig. 1) shows the actual outside temperature read by the probe. The boiler control system operates with "Sliding Temperature". In this mode, the temperature of the heating system is adjusted according the outside weather conditions, in order to ensure high comfort and energy saving throughout the year. In particular, as the outside temperature increases, the system delivery temperature is decreased according to a specific "compensation curve".

With Sliding Temperature adjustment, the temperature set with the heating buttons (details 3 and 4 - fig. 1) becomes the maximum system delivery temperature. It is advisable to set a maximum value to allow system adjustment throughout its useful operating range.

The boiler must be adjusted at the time of installation by qualified personnel. Possible adjustments can in any case be made by the user to improve comfort.

Compensation curve and curve offset

Press the mode button (detail 10 - fig. 1) once to display the actual compensation curve (fig. 11), which can be modified with the DHW buttons (details 1 and 2 - fig. 1).

Adjust the required curve from 1 to 10 according to the characteristic (fig. 13). By setting the curve to 0, sliding temperature adjustment is disabled.

Press the mode button (detail 10 - fig. 1) again to exit parallel curve adjustment mode.

Press the heating buttons (details 3 and 4 - fig. 1) to access parallel curve offset (fig. 14), modifiable with the DHW buttons (details 1 and 2 - fig. 1).

Press the mode button (detail 10 - fig. 1) again to exit parallel curve adjustment mode.

2.4 Adjustments

Summer/Winter Switchover

Press the summer/winter button (detail 6 - fig. 1) for 1 second.

The display activates the Summer symbol (detail 27 - fig. 1); the boiler will only deliver domestic hot water. The antifreeze system remains activated.

To deactivate the Summer mode, press the summer/winter button (part. 6 - fig. 1) again for 1 second.

Heating temperature setting

Use the heating buttons (details 3 and 4 - fig. 1) to adjust the temperature from a min. of 30°C to a max. of 80°C.

In any case it is advisable not to operate the boiler below 45°C.
If the room temperature is lower than the required value, it is advisable to set a higher order curve and vice versa. Proceed by increasing or decreasing in steps of one and check the result in the room.

### Table 1

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Setting</th>
<th>Modifiable from</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heating temperature setting</td>
<td>Adjustment can be made from the Remote Timer Control menu and the boiler control panel.</td>
<td>Remote Control</td>
</tr>
<tr>
<td>DHW temperature adjustment</td>
<td>Adjustment can be made from the Remote Timer Control menu and the boiler control panel.</td>
<td>Remote Control</td>
</tr>
<tr>
<td>Summer/Winter Switchover</td>
<td>On disabling DHW from the Remote Timer Control menu, the boiler selects the Economy mode. In this condition, the button 7 - fig. 1 on the boiler panel is disabled.</td>
<td>Remote Control</td>
</tr>
<tr>
<td>Eco/Comfort selection</td>
<td>On enabling DHW from the Remote Timer Control menu, the boiler selects the Comfort mode. In this condition it is possible select one of the two modes with the button 7 - fig. 1 on the boiler panel.</td>
<td>Remote Control</td>
</tr>
<tr>
<td>Sliding Temperature</td>
<td>Both the Remote Timer Control and the boiler card manage Sliding Temperature adjustment; if the two, the Sliding Temperature of the boiler card has priority.</td>
<td>Remote Control</td>
</tr>
</tbody>
</table>

**Water system pressure adjustment**

The filling pressure with system cold, read on the display, must be approx. 1.0 bar. If the system pressure falls to values below minimum, the boiler card will activate fault F37 (fig. 15).

**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 PRESCRIBITIONS OF NATIONAL AND LOCAL STANDARDS AND THE RULES OF PROPER WORKMANSHIP.**

**3.2 Place of installation**

The boiler unit must be installed in a specific room with ventilation openings to the outside as prescribed by current regulations. If there are several burners or suction 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 materials or objects, corrosive gases, powders or volatile substances that, conveyed by the burner fan, can obstruct the internal lines of the burner or the combustion head. The room must be dry and not exposed to rain, snow or frost.

**If the unit is enclosed in a cabinet or mounted alongside, a space must be provided for removing the casing and for normal maintenance operations.**

**3.3 Plumbing connections**

**Important**

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. It is advisable to install shut-off valves between the boiler and heating system allowing the boiler to be isolated from the system if necessary.

The safety valve outlet must be connected to a funnel or collection pipe to prevent water spouting 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 wash all the pipes of the system 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.

**Water system 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.

If water softeners are installed at the boiler cold water inlet, make sure not to reduce the water hardness too much, as this could cause early deterioration of the magnesium anode in the hot water tank.

**Antifreeze system, antifreeze fluids, additives and inhibitors**

The boiler is equipped with an antifreeze system that turns on the boiler in heating mode when the system delivery water temperature falls under 6°C. The device will not come on if the electricity and/or gas supply to the unit are cut off. If it becomes necessary, it is permissible to use antifreeze fluid, additives and inhibitors only if the manufacturer of these fluids or additives guarantees they are suitable for this use and cause no damage to the heat exchanger or other components and/or materials of the boiler unit and system. It is prohibited to use generic antifreeze fluid, additives or inhibitors that are not expressly suited for use in heating systems and compatible with the materials of the boiler unit and system.

**Connection to a storage tank for domestic hot water production**

The unit's electronic board is arranged for managing an external storage tank for domestic hot water production. Make the plumbing connections according to the diagram fig. 16. Carry out: electrical connections as shown in the wiring diagram in cap. 5. A probe FERROLImust be used.

Carry out the access procedure described below.

**“Service Menu”**

The card Service Menu is accessed by pressing the Reset button for 10 seconds.

Press the Heating buttons to select “1S”, “IN”, “HI” or “IE”. “1S” means Transparent Parameters Menu, “IN” Information Menu, “HI” History Menu, and “IE” History Menu Reset. Select “1S” and press the Reset button.

The card has 20 transparent parameters also modifiable from Remote Control (Service Menu).

Press the Heating buttons to scroll the list of parameters in increasing or decreasing order. Press the DHW buttons to modify the value of a parameter: the change will be automatically saved.

Change parameter P02 of the “Transparent Parameters Menu” to 6.

Press the Reset button to return to the Service Menu. Press the Reset button for 10 seconds to exit to the card Service Menu.
3.4 Burner connection
The burner is equipped with flexible pipes and a filter for connection to the oil feed line. Run the flexible pipes out of the back and install the filter as indicated in fig. 17.

3.5 Electrical connections
Connection to the electrical grid

The unit’s electrical safety is only guaranteed when correctly connected to an efficient earthing system executed according to current safety standards. Have the efficiency and suitability of the earthing system checked by professionally qualified personnel. The manufacturer is not responsible for any damage caused by failure to earth the system. Also make sure that the electrical system is adequate for the maximum power absorbed by the unit, as specified on the boiler data plate.

The boiler is prewired and provided with a Y-cable and plug for connection to the electricity line. The connections to the grid must be made with a permanent connection and equipped with a bipolar switch whose contacts have a minimum opening of at least 3 mm, interposing fuses of max. 3A between the boiler and the line. It is important to respect the polarities (LINE: brown wire / NEUTRAL: blue wire / EARTH: yellow-green wire) in making connections to the electrical line. During installation or when changing the power cable, the earth wire must be left 2 cm longer than the others.

The user must never change the unit’s power cable. If the cable gets damaged, switch off the unit and have it changed solely by professionally qualified personnel. If changing the electric power cable, use solely “HAR H05 VV-F” 3x0.75 mm² cable with a maximum outside diameter of 8 mm.

Room thermostat (optional)

IMPORTANT: THE ROOM THERMOSTAT MUST HAVE VOLTAGE-FREE CONTACTS. CONNECTING 230 V TO THE ROOM THERMOSTAT TERMINALS WILL PERMANENTLY DAMAGE THE ELECTRONIC BOARD.

When connecting time controls or a timer, do not take the power supply for these devices from their breaking contacts. Their power supply must be by means of direct connection from the mains or with batteries, depending on the kind of device.

Accessing the electrical terminal block

Undo the two screws “A” located on the top part of the control panel and remove the cover.
3.6 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, conversion, startup and maintenance operations described below must only be carried out by Qualified Personnel (meeting the professional technical requirements prescribed by current regulations) such as those of the Local After-Sales Technical Service.

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

4.1 Adjustments

TEST mode activation

Press the heating buttons (details 3 and 4 - fig. 1) together for 5 seconds to activate the TEST mode. The boiler lights at maximum power.

The heating symbol (detail 24 - fig. 1) and DHW symbol (detail 12 - fig. 1) flash on the display.

To deactivate the TEST mode, repeat the activation sequence.

The TEST mode is automatically disabled in any case after 15 minutes.

Burner adjustment

The burner is factory-set as given in table 2. The burner can be set to a different output by adjusting the pump pressure, nozzle, head setting, or air setting as described in the following paragraphs. In any case, the new power setting must come within the boiler's nominal working range. After making any adjustments, use a combustion analyser to check that the CO₂ content in the fumes is between 11% and 12%.

Table 2 - Burner adjustment

<table>
<thead>
<tr>
<th>Boiler model</th>
<th>Heating capacity</th>
<th>Burner model</th>
<th>Burner capacity</th>
<th>Nozzle</th>
<th>Pressure</th>
<th>Head adjustment</th>
<th>Air adjustment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>kW</td>
<td>US Gal/h</td>
<td>Angle Code</td>
<td>Bar</td>
<td>L</td>
<td>Notch</td>
<td></td>
</tr>
<tr>
<td>ATLAS D 30 UNIT</td>
<td>30.1</td>
<td>SUN G6 R</td>
<td>2.54</td>
<td>0.65</td>
<td>60°</td>
<td>35601320</td>
<td>10</td>
</tr>
<tr>
<td>ATLAS D 42 UNIT</td>
<td>36.4</td>
<td>SUN G6 R</td>
<td>3.07</td>
<td>0.85</td>
<td>60°</td>
<td>35601340</td>
<td>10</td>
</tr>
</tbody>
</table>

Oil nozzle flow rate table

The oil flow rates (in kg/h) according to the variation in pump pressure and nozzles are given in table 3.

N.B. - The values given below are approximate, since the nozzle deliveries can vary by ± 5%. Also, for burners with a preheater, the fuel flow rate decreases by approx. 10%.

Table 3

<table>
<thead>
<tr>
<th>Pump pressure (bar)</th>
<th>NOZZLE G.P.H.</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.40</td>
<td>1.44</td>
<td>1.52</td>
<td>1.59</td>
<td>1.67</td>
<td>1.73</td>
<td>1.80</td>
<td></td>
</tr>
<tr>
<td>0.50</td>
<td>1.80</td>
<td>1.90</td>
<td>1.99</td>
<td>2.08</td>
<td>2.17</td>
<td>2.25</td>
<td></td>
</tr>
<tr>
<td>0.60</td>
<td>2.76</td>
<td>2.86</td>
<td>2.95</td>
<td>3.06</td>
<td>3.16</td>
<td>3.26</td>
<td></td>
</tr>
<tr>
<td>0.75</td>
<td>3.70</td>
<td>3.82</td>
<td>3.92</td>
<td>4.04</td>
<td>4.16</td>
<td>4.33</td>
<td></td>
</tr>
<tr>
<td>0.85</td>
<td>3.80</td>
<td>3.99</td>
<td>4.15</td>
<td>4.33</td>
<td>4.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.00</td>
<td>4.11</td>
<td>4.35</td>
<td>4.52</td>
<td>4.74</td>
<td>4.95</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.10</td>
<td>4.80</td>
<td>5.10</td>
<td>5.41</td>
<td>5.75</td>
<td>6.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.20</td>
<td>5.50</td>
<td>5.80</td>
<td>6.15</td>
<td>6.50</td>
<td>6.80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.35</td>
<td>6.20</td>
<td>6.55</td>
<td>6.91</td>
<td>7.25</td>
<td>7.50</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Delivery at nozzle outlet in kg/h

Pump pressure adjustment

The pump pressure is factory-set for optimum operation and should not normally be changed. However, if special needs require setting a different pressure, after applying the pressure gauge and lighting the burner, turn the adjuster screw "6" shown in fig. 24. In any case, make sure to keep within the range of 10 - 14 bar.
To adjust the air delivery, turn the screw C (fig. 27) after loosening the nut D. After making the adjustment, tighten the nut D.

To adjust the air delivery, turn the screw C (fig. 27) after loosening the nut D. After making the adjustment, tighten the nut D.

Position of electrodes - baffle
After fitting the nozzle, check correct positioning of the electrodes and baffle, according to the values given below. It is advisable to check the values after every operation on the head.

4.2 Commissioning

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

Before lighting the boiler
- Open any on-off valves between the boiler and the systems.
- Check the tightness of the fuel system.
- Check the pre-filling of the expansion tank
- Fill the water system and make sure that all air contained in the boiler and the system has been vented by opening the air vent valve on the boiler and any vent valves on the system.
- Make sure there are no water leaks in the system, hot water circuits, connections or boiler.
- Check the pre-filling of the expansion tank
- Fill the water system and make sure that all air contained in the boiler and the system has been vented by opening the air vent valve on the boiler and any vent valves on the system.
- Make sure there are no water leaks in the system, hot water circuits, connections or boiler.
- Make sure the electrical system is properly connected and the earth system works properly.
- Make sure there are no flammable liquids or materials in the immediate vicinity of the boiler.
- Fit the pressure gauge and the vacuum gauge on the pump (remove after starting).
- Open the gate valves along the diesel pipe

Start-up

When the thermostatic line closes, the burner motor starts turning together with the pump: all the oil sucked is sent to the return. The burner blower and the ignition transformer are also working, therefore the following stages are carried out:
- firebox pre-ventilation.
- prewash of a part of the oil circuit.
- pre-ignition, with discharge between electrode tips.

At the end of prewash, the unit opens the electromagnetic valve: the oil reaches the nozzle, where it is finely sprayed.

Its contact with the discharge between the electrode tips creates the flame.

The safety time begins simultaneously.

Unit cycle

R-SB-W
Thermostats/Pressure switches
OH Oil pre-heater
OW Operation enabling contact
M Burner motor
Z Ignition transformer
BV Electromagnetic valve
FR Photoresistance
A’ Starting with pre-heater
A Starting without pre-heater
B Flame present
C Normal operation
D Adjustment stop (TA-TC)

Pre-ventilation time
TSA Safety time
Pre-ignition time
Post-ignition time
Pre-heating time

Output signals from the unit
Necessary input signals

Checks during operation
- Ignite the appliance as described in sec. 2.3.
- Check that the fuel circuit and water systems are airtight.
- 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 proper ignition of the boiler by performing various tests, turning it on and off with the room thermostat or remote control.
- Check that the burner door and fume chamber are tight.
- Check that the burner works properly.
- Analyse the combustion (with the boiler unit stable) and check that the content of CO₂ in the fumes is between 11% and 12%.
- Check the parameters are programmed correctly and perform any required customization (compensation curve, power, temperatures, etc.).
4.3 Maintenance

Periodical check

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

- The control and safety devices must function correctly.
- The fume exhaust circuit must be perfectly efficient.
- Check there are no obstructions or dents in the fuel supply and return pipes.
- Clean the filter of the fuel suction line.
- Measure the correct fuel consumption.
- Clean the combustion head in the fuel outlet zone, on the swirl disc.
- Leave the burner running at full rate for approximately ten minutes, then analyse the combustion, checking:
  - All the elements specified in this manual are set correctly
  - Temperatures of the flames at the flue
  - CO2 percentage content
- The air-fume end piece and ducts must be free of obstructions and leaks
- The burner and exchanger must be clean and free of deposits. For possible cleaning do not use chemical products or wire brushes.
- The gas and water systems must be airtight.
- The water pressure in the cold water system must be approx. 1 bar; otherwise, bring it to that value.
- The circulating pump must not be blocked.
- The expansion tank must be filled.
- Check the magnesium anode and replace it if necessary.

The boiler casing, control panel and aesthetic parts can be cleaned with a soft and damp cloth, if necessary soaked in soapy water. Do not use any abrasive detergents and solvents.

Burner cleaning

1. Disconnect the power supply to the boiler.
2. Remove the front top and bottom panel.
3. Open the door by undoing the knobs.
4. Clean the inside of the boiler and the entire path of exhaust fumes, using a tube brush or compressed air.
5. Then close the door, securing it with the knob.

To clean the burner, refer to the Manufacturer's instructions.

Burner disassembly

- Remove the casing (B) by undoing the screw (A) to access all the accessories.
- Undo the nut (C) and position the burner in order to access the nozzle.

4.4 Troubleshooting

Diagnostics

The boiler is equipped with an advanced self-diagnosis system. In case of a boiler fault, the display will flash together with the fault symbol (detail 22 - fig. 1) indicating the fault code.

There are faults that cause permanent shutdown (marked with the letter "A"): to restore operation, press the RESET button (detail 8 - fig. 1) for 1 second or RESET on the optional remote timer control if installed; if the boiler fails to restart, it is necessary to eliminate the fault indicated by the operation LEDs.

Faults marked with the letter "F" cause temporary shutdowns that are automatically reset as soon as the value returns within the boiler's normal working range.

---

Table 4 - List of faults

<table>
<thead>
<tr>
<th>Fault code</th>
<th>Fault</th>
<th>Possible cause</th>
<th>Cure</th>
</tr>
</thead>
<tbody>
<tr>
<td>A01</td>
<td>Bumper block</td>
<td>Pump blocked</td>
<td>Replace</td>
</tr>
<tr>
<td>A02</td>
<td>Flame present signal with burner on</td>
<td>Photocell short circuit</td>
<td>Replace</td>
</tr>
<tr>
<td>A03</td>
<td>Overtemperature protection activation</td>
<td>Heating sensor damaged</td>
<td>Check the correct positioning and operation of the heating sensor</td>
</tr>
<tr>
<td>A04</td>
<td>Card parameter fault</td>
<td>Wrong card parameter setting</td>
<td>Check the card parameter and modify it if necessary</td>
</tr>
<tr>
<td>F07</td>
<td>Preheater fault (the contact fails to close within 120 seconds)</td>
<td>Preheater fault</td>
<td>Check the preheater</td>
</tr>
<tr>
<td>F09</td>
<td>Card parameter fault</td>
<td>Wrong card parameter setting</td>
<td>Check the card parameter and modify it if necessary</td>
</tr>
<tr>
<td>F10</td>
<td>Delivery sensor 1 fault</td>
<td>Sensor damaged</td>
<td>Check the wiring or replace the sensor</td>
</tr>
<tr>
<td>F11</td>
<td>DHW sensor fault</td>
<td>Sensor damaged</td>
<td>Check the wiring or replace the sensor</td>
</tr>
<tr>
<td>F12</td>
<td>Card parameter fault</td>
<td>Sensor damaged</td>
<td>Check the wiring or replace the sensor</td>
</tr>
<tr>
<td>F14</td>
<td>Delivery sensor 2 fault</td>
<td>Sensor damaged</td>
<td>Check the wiring or replace the sensor</td>
</tr>
<tr>
<td>F16</td>
<td>Card parameter fault</td>
<td>Wrong card parameter setting</td>
<td>Check the card parameter and modify it if necessary</td>
</tr>
<tr>
<td>F34</td>
<td>Supply voltage under 170V.</td>
<td>Electric mains trouble</td>
<td>Check the electrical system</td>
</tr>
<tr>
<td>F35</td>
<td>Faulty mains frequency</td>
<td>Electric mains trouble</td>
<td>Check the electrical system</td>
</tr>
<tr>
<td>F37</td>
<td>Incorrect system water pressure</td>
<td>Pressure too low</td>
<td>Fill the system</td>
</tr>
<tr>
<td>F39</td>
<td>External probe fault</td>
<td>Probe damaged or wiring shorted</td>
<td>Check the wiring or replace the sensor</td>
</tr>
<tr>
<td>F40</td>
<td>Incorrect system water pressure</td>
<td>Pressure too high</td>
<td>Check the system</td>
</tr>
<tr>
<td>A41</td>
<td>Sensor positioning</td>
<td>Delivery sensor not inserted in boiler shell</td>
<td>Check the correct positioning and operation of the heating sensor</td>
</tr>
<tr>
<td>F42</td>
<td>Heating sensor fault</td>
<td>Sensor damaged</td>
<td>Replace the sensor</td>
</tr>
<tr>
<td>F47</td>
<td>System water pressure sensor fault</td>
<td>Wiring disconnected</td>
<td>Check the wiring</td>
</tr>
</tbody>
</table>

---

fig. 31 - Burner disassembly

---

cod. 35405524 - 07/2012 (Rev. 00)
5. TECHNICAL DATA AND CHARACTERISTICS

5.1 Dimensions, connections and main components

**Table 5**

<table>
<thead>
<tr>
<th>Component</th>
<th>A</th>
<th>B</th>
<th>a4</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATLAS D 30 UNIT</td>
<td>632</td>
<td>589</td>
<td>Ø 120 to 130</td>
</tr>
<tr>
<td>ATLAS D 42 UNIT</td>
<td>732</td>
<td>689</td>
<td>Ø 120 to 130</td>
</tr>
</tbody>
</table>

10. System delivery 3/4"
11. System return 1"
14. Heating safety valve
32. Heating circulating pump
36. Automatic air vent
56. Expansion tank
246. Pressure transducer
278. Double sensor (Heating + Safety)
275. Heating system drain cock
295. Burner

5.2 Pressure loss

Pressure loss on water side

<table>
<thead>
<tr>
<th>A = Flow rate m³/h</th>
<th>B = mbar</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5.3 Technical data table

<table>
<thead>
<tr>
<th>Data</th>
<th>Unit</th>
<th>ATLAS D 30 UNIT</th>
<th>ATLAS D 42 UNIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of elements</td>
<td>no</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Max. heating capacity (Q)</td>
<td>kW</td>
<td>32.2</td>
<td>45</td>
</tr>
<tr>
<td>Min. heating capacity (Q)</td>
<td>kW</td>
<td>16.9</td>
<td>31.8</td>
</tr>
<tr>
<td>Max. heat output in heating (P)</td>
<td>kW</td>
<td>30</td>
<td>42</td>
</tr>
<tr>
<td>Min. heat output in heating (P)</td>
<td>kW</td>
<td>16</td>
<td>30</td>
</tr>
<tr>
<td>Efficiency Pmax (80-60°C)</td>
<td>%</td>
<td>93</td>
<td>93.3</td>
</tr>
<tr>
<td>Efficiency 30%</td>
<td>%</td>
<td>94.6</td>
<td>94.1</td>
</tr>
<tr>
<td>Efficiency class Directive 92/42 EEC</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Max. working pressure in heating (PMS)</td>
<td>bar</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Min. working pressure in heating</td>
<td>bar</td>
<td>0.8</td>
<td>0.8</td>
</tr>
<tr>
<td>Max. heating temperature (°C)</td>
<td>°C</td>
<td>96</td>
<td>95</td>
</tr>
<tr>
<td>Heating water content</td>
<td>liters</td>
<td>18</td>
<td>23</td>
</tr>
<tr>
<td>Heating expansion tank capacity</td>
<td>liters</td>
<td>10</td>
<td>12</td>
</tr>
<tr>
<td>Heating expansion tank prefilling pressure</td>
<td>bar</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Protection rating</td>
<td>IP</td>
<td>X00</td>
<td>X00</td>
</tr>
<tr>
<td>Power supply voltage</td>
<td>V/Hz</td>
<td>230/50</td>
<td>230/50</td>
</tr>
<tr>
<td>Electrical power input</td>
<td>W</td>
<td>320</td>
<td>320</td>
</tr>
<tr>
<td>Empty weight</td>
<td>kg</td>
<td>157</td>
<td>196</td>
</tr>
<tr>
<td>Combustion chamber length</td>
<td>mm</td>
<td>350</td>
<td>450</td>
</tr>
<tr>
<td>Combustion chamber diameter</td>
<td>mm</td>
<td>300</td>
<td>300</td>
</tr>
<tr>
<td>Pressure loss fumes side</td>
<td>mbar</td>
<td>0.22</td>
<td>0.30</td>
</tr>
</tbody>
</table>
5.4 Wiring diagram

fig. 36 - Wiring diagram

32 Heating circulating pump
42 DHW temperature probe (optional)
72 Room thermostat (optional)
95 3-way valve - 2 wires with spring return (not provided)
138 External sensor (optional)
139 Room unit (optional)
246 Pressure transducer
278 Double sensor (Safety + Heating)
TR Ignition transformer
PR Pre-heater
FR Photoresistor
MB Burner motor
VE Electromagnetic valve
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:

• Efficiency Directive 92/42
• Low Voltage Directive 2006/95
• Electromagnetic Compatibility Directive 2004/108