

## DIVAcondens F24/F28



**CE**

- IT** - ISTRUZIONE PER L'USO L'INSTALLAZIONE E LA MANUTENZIONE
- ES** - INSTRUCCIONES DE USO, INSTALACIÓN Y MANTENIMIENTO
- EN** - INSTRUCTIONS FOR USE, INSTALLATION AND MAINTENANCE
- FR** - INSTRUCTIONS D'UTILISATION, D'INSTALLATION ET D'ENTRETIEN
- RO** - INSTRUCȚIUNI DE UTILIZARE, INSTALARE ȘI ÎNTREȚINERE
- RU** - РУКОВОДСТВО ПО ЭКСПЛУАТАЦИИ, МОНТАЖУ И ТЕХОБСЛУЖИВАНИЮ
- TR** - KULLANMA, KURULUM VE BAKIM TALIMATLARI
- UA** - ІНСТРУКЦІЯ З ЕКСПЛУАТАЦІЇ, МОНТАЖУ ТА ОБСЛУГОВУВАННЯ

### 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,

**DIVAcondens F24/F28** is a high-efficiency sealed chamber **condensing** heat generator for heating and hot water production running on natural gas or LPG, and equipped with a microprocessor control system.

**THIS UNIT IS IDEAL FOR COMBINING WITH CONVENTIONAL HIGH TEMPERATURE SYSTEMS. IT CANNOT BE COMBINED OR INSTALLED WITH DIRECT DELIVERY TO LOW TEMPERATURE RADIANT PANEL SYSTEMS.**

#### 2.2 Control panel

Panel

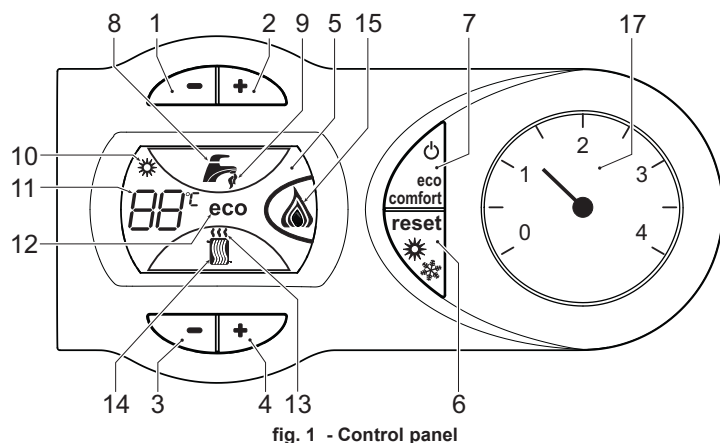


fig. 1 - Control panel

#### Panel key fig. 1

- |    |                                                     |
|----|-----------------------------------------------------|
| 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 - Reset button         |
| 7  | Unit On/Off - Economy/Comfort mode selection button |
| 8  | DHW symbol                                          |
| 9  | DHW mode                                            |
| 10 | Summer mode                                         |
| 11 | Multifunction                                       |
| 12 | Eco (Economy) mode                                  |
| 13 | Heating                                             |
| 14 | Heating symbol                                      |
| 15 | Burner lit and actual power level                   |
| 17 | Water gauge                                         |

### Indication during operation

#### Heating

A heating demand (generated by the Room Thermostat or Remote Timer Control) is indicated by flashing of the hot air above the radiator on the display.

The display (detail 11 - fig. 1) shows the actual heating delivery temperature and, during heating standby time, the message "d2".

#### Domestic hot water (DHW)

A DHW demand (generated by drawing domestic hot water) is indicated by flashing of the hot water under the tap on the display.

The display (detail 11 - fig. 1) shows the actual DHW outlet temperature and, during DHW standby time, the message "d1".

#### Comfort

A Comfort demand (reinstatement of temperature inside the boiler) is indicated by flashing of the water under the tap on the display. The display (detail 11 - fig. 1) shows the actual temperature of the water in the boiler.

#### Fault

In case of a fault (see cap. 4.4) the display shows the fault code (detail 11 - cap. 4.4) and during safety pause times the message "d3".

### 2.3 Lighting and shutdown

#### Connection to the power supply

- During the first 5 seconds the display will also show the card software release.
- Open the gas cock ahead of the boiler.
- The boiler is now ready to function automatically whenever domestic hot water is drawn or in case of a heating demand (generated by Room Thermostat or Remote Temperature Control).

#### Switching the boiler off and on

Press the **On/Off button** (detail 7 - fig. 1) for 5 seconds.

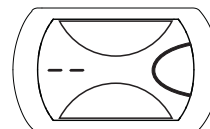


fig. 2 - Turning the boiler off

When the boiler is switched off, the electronic board 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 7 fig. 1) again for 5 seconds.

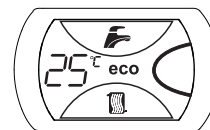


fig. 3

The boiler will be immediately ready to work whenever domestic hot water is drawn or in case of a heating demand (generated by the Room Thermostat or the Remote Timer control).



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 shutdowns in winter, it is advisable to drain all water from the boiler, the DHW circuit and the heating system water; or drain just the DHW circuit and add a suitable antifreeze to the heating system, as prescribed in sec. 3.3.

### 2.4 Adjustments

#### Summer/Winter Switchover

Press the **summer/winter button** (detail 6 - fig. 1) for 2 seconds.

The display activates the Summer symbol (detail 10 - 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** (detail 6 - fig. 1) again for 2 seconds.

#### Heating temperature adjustment

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.

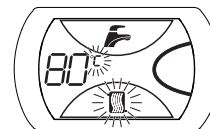


fig. 4

## DHW temperature adjustment

Use the DHW buttons (details 1 and 2 - fig. 1) to adjust the temperature from a min. of 40°C to a max. of 55°C.



fig. 5

## Room temperature adjustment (with optional room thermostat)

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

## Room temperature adjustment (with optional remote timer control)

Using the remote timer control, set the required temperature in the rooms. The boiler will adjust the system water according to the required room temperature. For operation with remote timer control, please refer to the relevant instruction manual.

## ECO/COMFORT selection

The unit has a function that ensures a high domestic hot water delivery speed and maximum comfort for the user. When the device is activated (COMFORT mode), the water contained in the boiler is kept hot, thereby ensuring immediate availability of hot water on opening the tap, without waiting times.

The user can deactivate the device (ECO mode) by pressing the **eco/comfort** button (detail 7 - fig. 1). In ECO mode the display activates the ECO symbol (detail 12 - fig. 1). To activate the COMFORT mode, press the **eco/comfort** button (detail 7 - fig. 1) again.

## Adjustments from Remote Timer Control

If the Remote Timer Control (optional) is connected to the boiler, the above adjustments are managed according to that given in table 1.

Table. 1

Heating temperature setting	Adjustment can be made from the Remote Timer Control menu and the boiler control panel.
Hot water temperature adjustment	Adjustment can be made from the Remote Timer Control menu and the boiler control panel.
Summer/Winter Switchover	Summer mode has priority over a possible Remote Timer Control heating demand.
Eco/Comfort selection	Adjustment can only be made from the boiler control panel.

## System water pressure adjustment

The filling pressure with system cold, read on boiler water gauge (detail 17 - fig. 1), must be approx. 1.0 bar. If the system pressure falls to values below minimum, the boiler stops and the display shows fault **F37**. Operate the filling cock detail 1 fig. 6 and bring it to the initial value. Always close the filling cock at the end of the operation.

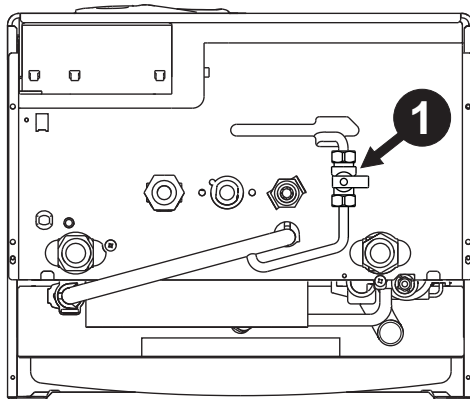


fig. 6 - Filling cock

## 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 combustion circuit is sealed with respect to the place of installation, therefore the unit can be installed in any room. The place of installation must be adequately ventilated to avoid the creation of dangerous conditions in case of any gas leaks. This safety standard is required by the EEC Directive no. 2009/142 for all gas units, including those with sealed chamber.

The unit is designed to operate in a partially protected place in accordance with EN 297 pr A6, with minimum temperature of -5°C. It is advisable to install the boiler under a roof slope, inside a balcony or in a protected recess.

In any case, the place of installation must be free of dust, flammable materials or objects or corrosive gases.

The boiler is arranged for wall mounting and comes standard with a hooking bracket. Fix the bracket to the wall according to the measurements given in fig. 17 and hook the boiler onto it. Wall fixing must ensure a stable and effective support for the generator.

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 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.

Before making the connection, check that the unit is arranged for operation with the type of fuel available and carefully clean all the system pipes.

Carry out the relevant connections according to the diagram in fig. 19 and the symbols on the unit.

**Note:** The unit is equipped with an internal bypass in the heating circuit.

#### Water system characteristics

In the presence of water harder than 25° Fr (1°F = 10ppm CaCO<sub>3</sub>), use suitably treated water in order to avoid possible scaling in the boiler.

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

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

### 3.4 Gas connection

The gas must be connected to the relevant connection (see fig. 19) in conformity with the current standards, using a rigid metal pipe or a continuous surface flexible s/steel tube and installing a gas cock between the system and boiler. Make sure all the gas connections are tight.

### 3.5 Electrical connections

#### Important

The unit must be connected to an efficient earthing system in conformity with current safety regulations. 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.

The boiler is prewired and provided with a "Y" type cable (without plug) for connection to the electric line. The connections to the power supply must be permanent and equipped with a double-pole switch with contact opening distance of at least 3 mm, installing fuses of max. 3A between the boiler and the line. Make sure to respect the polarities (LINE: brown wire / NEUTRAL: blue wire / EARTH: yellow/green wire) in connections to the electric line.

The unit's power cable must not be replaced by the user; if damaged, switch the unit off and have the cable replaced by professionally qualified personnel. If replacing the power cable, only use "HAR H05 VV-F" 3x0.75 mm<sup>2</sup> cable with max. ext. 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

The electrical terminal block can be accessed after removing the casing. The arrangement of the terminals for the various connections is also given in the wiring diagram in fig. 24.

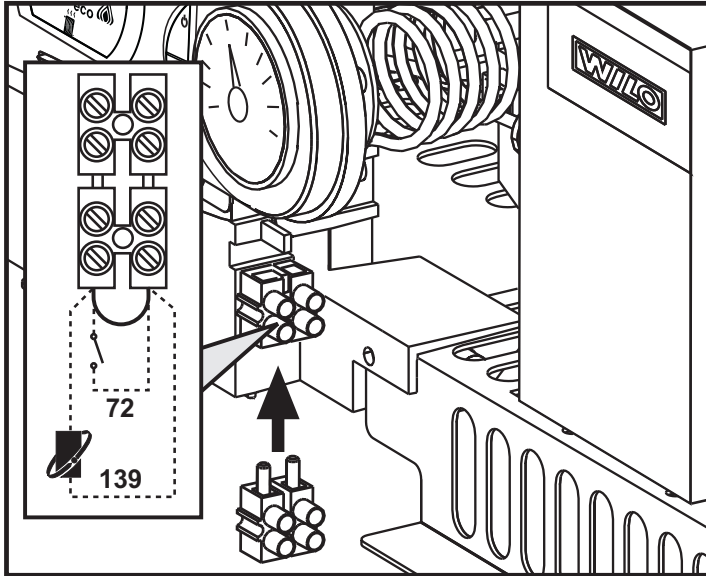


fig. 7 - Accessing the terminal block

### 3.6 Fume ducts

#### Important

The unit is a "C type" with sealed chamber and forced draught, the air inlet and fume outlet must be connected to one of the following extraction/suction systems. The unit is approved for operation with all the **Cny** flue configurations given on the dataplate. Some configurations may be expressly limited or not permitted by law, standards or local regulations. Before installation, check and carefully follow the instructions. Also, comply with the instructions on the positioning of wall and/or roof terminals and the minimum distances from windows, walls, ventilation openings, etc.

#### Baffles

Boiler operation requires fitting the baffles supplied with the unit, according to the following tables.

Before inserting the fume outlet pipe, it is therefore necessary to check there is the right diaphragm (when it is to be used) and that it is correctly positioned. Boilers are fitted as standard with the diaphragm with the smallest diameter. To replace the baffle (rif. 1 - fig. 8), proceed as indicated in fig. 8.



fig. 8

### Connection with coaxial pipes

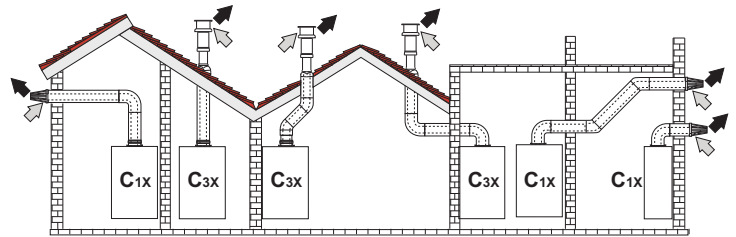


fig. 9 - Examples of connection with coaxial pipes (⇨ = Air / ⇨ = Fumes)

Table 2 - Typology

Type	Description
C1X	Wall horizontal exhaust and inlet
C3X	Roof vertical exhaust and inlet

For coaxial connection, fit the unit with one of the following starting accessories. For the wall hole dimensions, refer to the figure on the cover. Any horizontal sections of the fume exhaust must be kept sloping slightly towards the boiler, to prevent possible condensate from flowing back towards the outside and causing dripping.

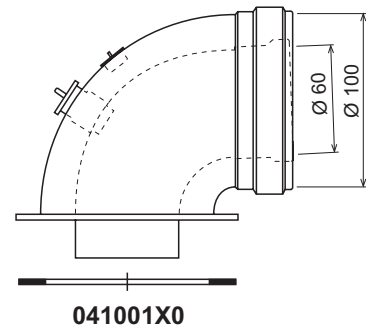
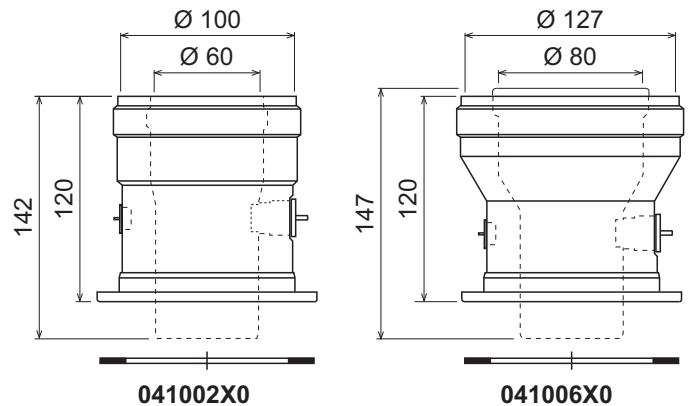


fig. 10 - Starting accessory for coaxial ducts

Table 3 - Baffles for coaxial ducts

	Coaxial 60/100		Coaxial 80/125	
Max. permissible length	6 m		12 m	
Reduction factor 90° bend	1 m		0.5 m	
Reduction factor 45° bend	0.5 m		0.25 m	
Baffle to use	0 + 2 m	Ø 45	0 + 6 m	Ø 45
	2 + 4 m	Ø 50	6 + 12 m	no baffle
	4 + 6 m	no baffle		

## Connection with separate pipes

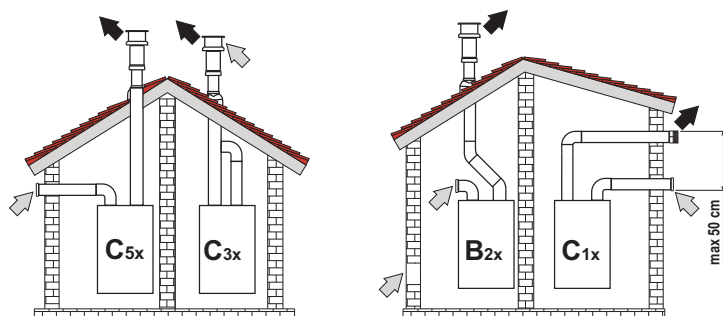


fig. 11 - Examples of connection with separate pipes (⇨ = Air / ⇨ = Fumes)

Table 4 - Typology

Type	Description
C1X	Wall horizontal exhaust and intake. The inlet/outlet terminals must be concentric or close enough to be undergo similar wind conditions (within 50 cm)
C3X	Roof vertical exhaust and intake. Inlet/outlet terminals like for C12
C5X	Wall or roof exhaust and intake separate or in any case in areas with different pressures. The exhaust and intake must not be positioned on opposite walls.
C6X	Intake and exhaust with separately certified pipes (EN 1856/1)
B2X	Intake from installation room and wall or roof exhaust
⚠ IMPORTANT - THE ROOM MUST BE PROVIDED WITH APPROPRIATE VENTILATION	

For connection of the separate ducts, fit the unit with the following starting accessory:

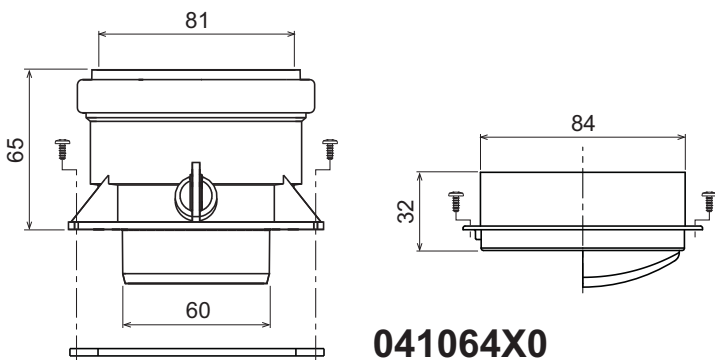


fig. 12 - Starting accessory for separate ducts

Before proceeding with installation make sure the maximum permissible length has not been exceeded, by means of a simple calculation:

1. Completely establish the layout of the system of split flues, including accessories and outlet terminals.
2. Consult the table 6 and identify the losses in meq (equivalent metres) of every component, according to the installation position.
3. Check that the sum total of losses is less than or equal to the maximum permissible length in table 5.

Table 5 - Baffles for separate ducts

Max. permissible length	Separate ducts	
	55 m <sub>eq</sub>	
Baffle to use	0 + 15 m <sub>eq</sub>	Ø 45
	15 + 35 m <sub>eq</sub>	Ø 50
	35 + 55 m <sub>eq</sub>	No baffle

Table 6 - Accessories

			Losses in m <sub>eq</sub>			
			Air inlet	Fume exhaust		
				Vertical	Horizontal	
Ø 80	PIPE	1 m M/F	1KWMA83W	1.0	1.6	2.0
	BEND	45° M/F	1KWMA65W	1.2	1.8	
		90° M/F	1KWMA01W	1,5	2.0	
	PIPE SECTION	with test point	1KWMA70W	0.3	0.3	
	TERMINAL	air, wall	1KWMA85A	2.0	-	
		fumes, wall with antiwind	1KWMA86A	-	5.0	
FLUE	Split air/fumes 80/80	010027X0	-	12.0		
	Fume outlet only Ø80	010026X0 + 1KWMA86U	-	4.0		
	PIPE	1 m M/F	1KWMA89W	6.0		
Ø 60	BEND	90° M/F	1KWMA88W	4.5		
	REDUCTION	80/60	041050X0	5.0		
	TERMINAL	fumes, wall with antiwind	1KWMA90A	7.0		
		ATTENTION: CONSIDER THE HIGH PRESSURE LOSSES OF Ø60 ACCESSORIES; USE THEM ONLY IF NECESSARY AND AT THE LAST FUME EXHAUST SECTION.				

## Connection to collective flues

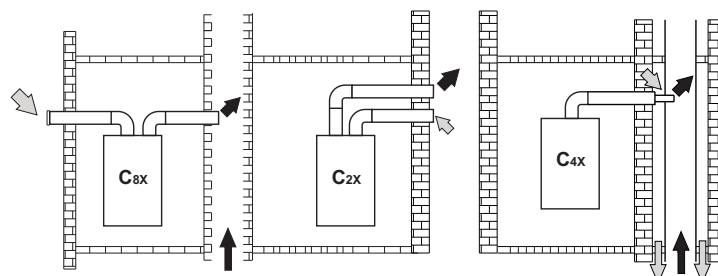


fig. 13 - Examples of connection to flues (⇨ = Air / ⇨ = Fumes)

Table 7 - Typology

Type	Description
C2X	Intake and exhaust in common flue (intake and exhaust in same flue)
C4X	Intake and exhaust in common and separate flues, but undergoing similar wind conditions
C8X	Exhaust in single or common flue and wall intake
B3X	Intake from installation room by means of concentric duct (that encloses the exhaust) and exhaust in common flue with natural draught
⚠ IMPORTANT - THE ROOM MUST BE PROVIDED WITH APPROPRIATE VENTILATION	

If the boiler is to be connected DIVAcondens F24/F28 to a collective flue or a single flue with natural draught, the flue or chimney must be expressly designed by professionally qualified technical personnel in conformity with the current regulations and be suitable for sealed chamber units equipped with fan.

## 4. SERVICE AND MAINTENANCE

### 4.1 Adjustments

#### Gas conversion

The unit can work on natural gas or LPG and is factory-set for use with one of these two gases, as clearly shown on the packing and data plate. Whenever a different gas to that for which the unit is arranged has to be used, the special conversion kit will be required, proceeding as follows:

1. Disconnect the power supply ahead of the boiler and close the gas cock;
2. Replace the nozzles at the main burner and pilot burner, fitting the nozzles indicated in the technical data table in cap. 5, depending on the type of gas used
3. Connect the power supply ahead of the boiler and open the gas cock;
4. Modify the parameter for the type of gas:
  - put the boiler in standby mode
  - press the DHW buttons details 1 and 2 - fig. 1 for 10 seconds: the display shows "b01" flashing.
  - press the DHW buttons details 1 and 2 - fig. 1) to set parameter **00** (for operation with natural gas) or **01** (for operation with LPG).
  - press the DHW buttons details 1 and 2 - fig. 1 for 10 seconds.
  - the boiler will return to standby mode
5. Adjust the minimum and maximum pressures at the burner (ref. relevant paragraph), setting the values given in the technical data table for the type of gas used
6. Apply the sticker, contained in the conversion kit, near the data plate as proof of the conversion.

#### TEST mode activation

Press the heating buttons (detail 3 - fig. 1) together for 5 seconds to activate the **TEST mode**. The boiler lights at the maximum heating power set as described in the following section.

The heating and DHW symbols (fig. 14) flash on the display; the heating power will appear alongside.

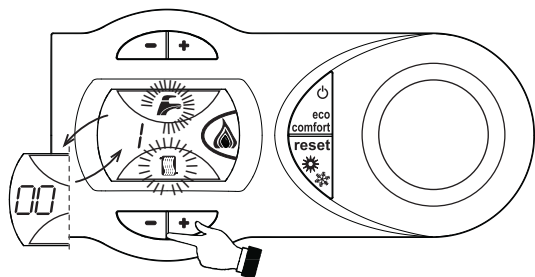


fig. 14 - TEST mode (heating power = 100%)

Press the heating buttons (details 3 and 4 - fig. 1) to increase or decrease the power (Min.=0%, Max.=100%).

If the TEST mode is activated and enough hot water is drawn to activate the DHW mode, the boiler remains in TEST mode but the 3-way valve goes to DHW.


To deactivate the TEST mode, press the heating buttons (details 3 and 4 - fig. 1) together for 5 seconds.

The TEST mode is automatically deactivated in any case after 15 minutes or on stopping of hot water drawing (if enough hot water has been drawn to activate the DHW mode).

#### Adjustment of pressure at the burner

Since this unit has flame modulation, there are two fixed pressure values: the minimum and maximum, which must be those given in the technical data table according to the type of gas.

- Connect a suitable pressure gauge to pressure point "B" located downstream of the gas valve
- Remove the protection cap "D" undoing screw "A".
- Operate the boiler in **TEST mode**.
- Adjust the power to the max. value.
- Adjust the max. pressure with screw "G", clockwise to increase the pressure and anticlockwise to decrease it
- Disconnect one of the two Faston connectors from the modureg "C" on the gas valve.
- Adjust the min. pressure with screw "E", clockwise to decrease the pressure and anticlockwise to increase it.
- Reconnect the Faston connector detached from the modureg on the gas valve.
- Check that the maximum pressure has not changed.
- Refit protection cap "D".
- To end the **TEST mode** repeat the activation sequence or wait 15 minutes.

 **After checking or adjusting the pressure, make sure to seal the adjustment screw with paint or a specific seal.**

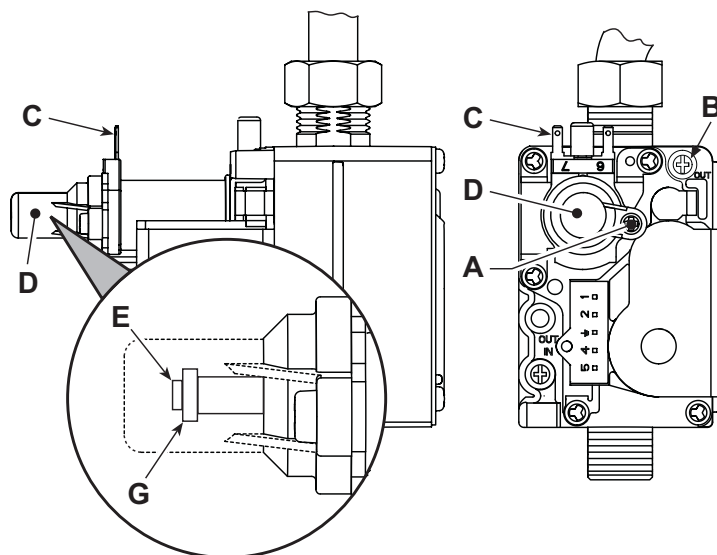


fig. 15 - Gas valve

- A - Protection cap screw
- B - Pressure point downstream
- C - Modureg cable
- D - Protection cap
- E - Min. pressure adjustment
- G - Max. pressure adjustment

#### Heating power adjustment

To adjust the heating power, switch the boiler to TEST mode (see sec. 4.1). Press the heating buttons detail 3 - fig. 1 to increase or decrease the power (min. = 00 - max. = 100). Press the **reset** button within 5 seconds and the max. power will remain that just set. Exit TEST mode (see sec. 4.1).

#### Lighting power adjustment

To adjust the lighting power, switch the boiler to TEST mode (see sec. 4.1). Press the DHW buttons (detail 1 - fig. 1) to increase or decrease the power (min. = 00 - max. = 60). Press the **reset** button within 5 seconds and the lighting power will remain that just set. Exit TEST mode (see sec. 4.1).

### 4.2 Startup

#### Before lighting the boiler

- Check the seal of the gas system.
- Check correct prefilling of the expansion tank.
- Fill the water system and make sure all air contained in the boiler and the system has been vented.
- Make sure there are no water leaks in the system, DHW circuits, connections or boiler.
- Check correct connection of the electrical system and efficiency of the earthing system.
- Make sure the gas pressure for heating is that required.
- Make sure there are no flammable liquids or materials in the immediate vicinity of the boiler

#### Checks during operation

- Switch the unit on.
- Check the tightness of the fuel circuit and water systems.
- Check the efficiency of the flue and air/fume ducts while the boiler is working.
- Make sure the water is circulating properly between the boiler and the systems.
- Make sure the gas valve modulates correctly in the heating and domestic hot water production stages.
- Check correct boiler lighting by performing various tests, turning it on and off with the room thermostat or remote control.
- Make sure the fuel consumption indicated on the meter matches that given in the technical data table in cap. 5.
- Make sure that with no demand for heating, the burner lights correctly on opening a hot water tap. Check that in heating mode, on opening a hot water tap, the heating circulating pump stops and there is regular production of hot water.
- Make sure the parameters are programmed correctly and carry out any required customisation (compensation curve, power, temperatures, etc.).

## 4.3 Maintenance

### Periodical inspection

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

- The control and safety devices (gas valve, flow switch, thermostats, etc.) must function correctly.
- The fume exhaust circuit must be perfectly efficient.  
(Sealed chamber boiler: fan, pressure switch, etc. - The sealed chamber must be tight: seals, cable glands, etc.)  
(Open chamber boiler: anti-backflow device, fume thermostat, etc.)
- The air/fume terminal and ducts must be free of obstructions and leaks
- The burner and exchanger must be clean and free of deposits. Do not use chemical products or wire brushes to clean.
- The electrode must be properly positioned and free of deposits.

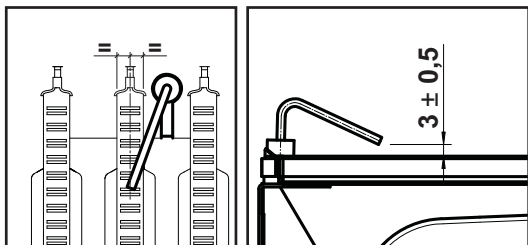


fig. 16 - Electrode positioning

- The gas and water systems must be tight.
- The pressure of the water 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.
- The gas flow and pressure must match that given in the respective tables.

## 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 11 - 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 6 - fig. 1) for 1 second or RESET on the optional remote timer control if installed; if the boiler fails to start, it is necessary to eliminate the fault.

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 of faults

Table. 8 - List of faults

Fault code	Faults	Possible cause	Cure
A01	No burner ignition	No gas	Check the regular gas flow to the boiler and that the air has been eliminated from the pipes
		Ignition/detection electrode fault	Check the wiring of the electrode and that it is correctly positioned and free of any deposits
		Faulty gas valve	Check the gas valve and replace it if necessary
		Ignition power too low	Adjust the ignition power
		Excessive condensate level	Empty / clean the trap
A02	Flame present signal with burner off	Electrode fault	Check the ionisation electrode wiring
		Card fault	Check the card
A03	Overtemperature protection intervention	Heating sensor damaged	Check the correct positioning and operation of the heating sensor
		No water circulation in the system	Check the circulating pump
		Air in the system	Vent the system
		Safety thermostat intervention	Check safety thermostat operation
F04	Card parameter fault	Wrong card parameter setting	Check the card parameter and modify it if necessary

Fault code	Faults	Possible cause	Cure
F05	Air pressure switch (fails to close contacts within 20 sec. of fan activation)	Air pressure switch contact open	Check the pressure switch / Fan / Fan socket
		Faulty air pressure switch wiring	Check the wiring
		Wrong baffle	Make sure the baffle is correct
		Flue obstructed or not correctly sized	Check the length of the flues / Clean the flues
A06	No flame after the ignition phase	Air pressure switch (fails to close contacts within 20 sec. of fan activation) due to activation of the fume thermostat	Clean the exchangers
		Faulty water circulation	
A09	Gas valve fault	Low pressure in the gas system	Check the gas pressure
		Burner minimum pressure setting	Check the gas pressures
F07	Air pressure switch (contacts closed on activation of fan)	Air pressure switch contact open	Check the pressure switch / Fan / Fan socket
		Faulty air pressure switch wiring	Check the wiring
		Wrong baffle	Make sure the baffle is correct
		Flue obstructed or not correctly sized	Check the length of the flues / Clean the flues
A09	Gas valve fault	Wiring disconnected	Check the wiring
		Faulty gas valve	Check the gas valve and replace it if necessary
F10	Delivery sensor fault	Sensor damaged	Check the wiring or replace the sensor
		Wiring shorted	
		Wiring disconnected	
F11	DHW sensor fault	Sensor damaged	Check the wiring or replace the sensor
		Wiring shorted	
		Wiring disconnected	
A15	Air pressure switch (fails to close contacts within 20 sec. of fan activation)	Fault F05 generated 5 times in the last 24 hours	See fault F05
A16	Gas valve fault	Wiring disconnected	Check the wiring
		Faulty gas valve	Check the gas valve and replace it if necessary
A23	Card parameter fault	Wrong card parameter setting	Check the card parameter and modify it if necessary
A24	Card parameter fault	Wrong card parameter setting	Check the card parameter and modify it if necessary
F34	Supply voltage under 140VAC	Electric mains trouble	Check the electrical system
F35	Faulty mains frequency	Electric mains trouble	Check the electrical system
F37	Incorrect system water pressure	Pressure too low	Fill the system
		Water pressure switch damaged or not connected	Check the sensor
F43	Exchanger protection intervention	No system H <sub>2</sub> O circulation	Check the circulating pump
		Air in the system	Vent the system
F50	Controller DBM32 fault	Controller DBM32 internal error	Check the earth connection and replace the controller if necessary.
F51	Controller DBM32 fault	Controller DBM32 internal error	Check the earth connection and replace the controller if necessary.

## 5. TECHNICAL DATA AND CHARACTERISTICS

Table. 9 - Key fig. 19, fig. 21, fig. 22 and fig. 23

5 Sealed chamber	37 Cold water inlet filter
7 Gas inlet Ø 1/2"	38 Flow switch
8 Domestic hot water outlet Ø 1/2"	39 Water flow limiter
9 Cold water inlet Ø 1/2"	42 DHW temperature sensor
10 System delivery Ø 3/4"	43 Air pressure switch
11 System return Ø 3/4"	44 Gas valve
14 Safety valve	49 Safety thermostat
16 Fan	56 Expansion tank
19 Combustion chamber	74 System filling cock
22 Burner	81 Ignition and detection electrode
27 Copper exchanger for heating and hot water	95 Diverter valve
28 Fume manifold	114 Water pressure switch
29 Fume outlet manifold	187 Fume baffle
32 Heating circulating pump	194 DHW exchanger
34 Heating temperature sensor	241 Automatic bypass
36 Automatic air vent	364 Condensate union

### 5.1 Dimensions and connections

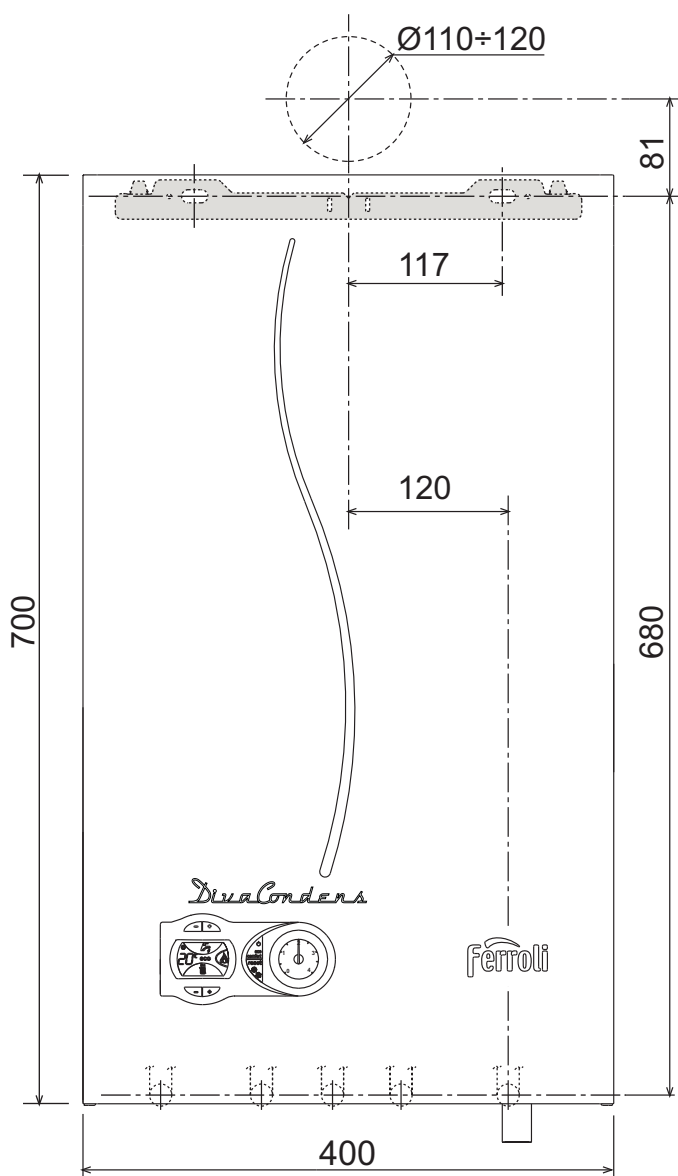


fig. 17 - Front view

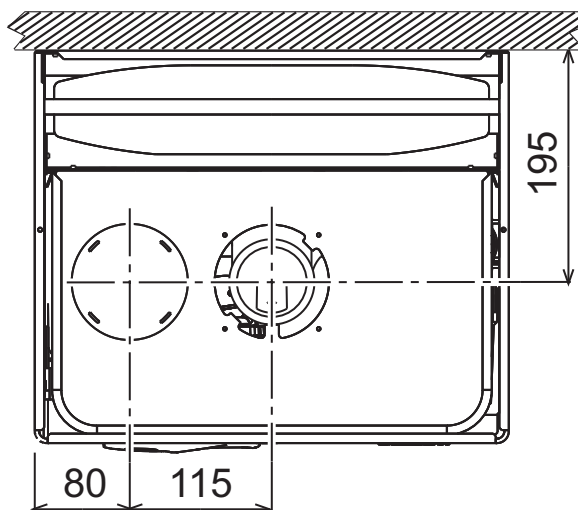


fig. 18 - Top view

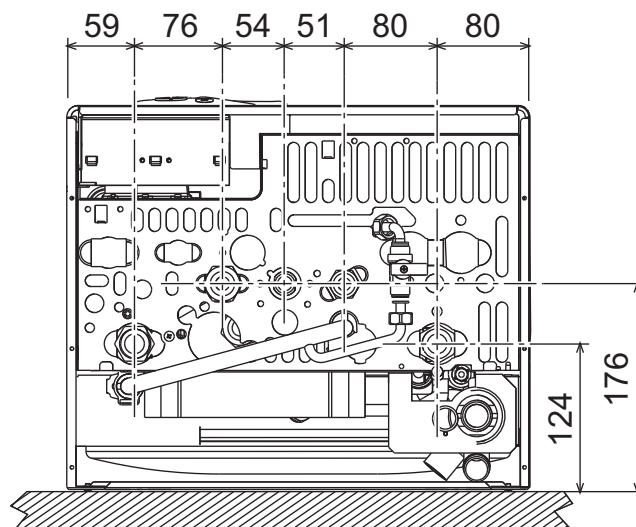


fig. 19 - Bottom view

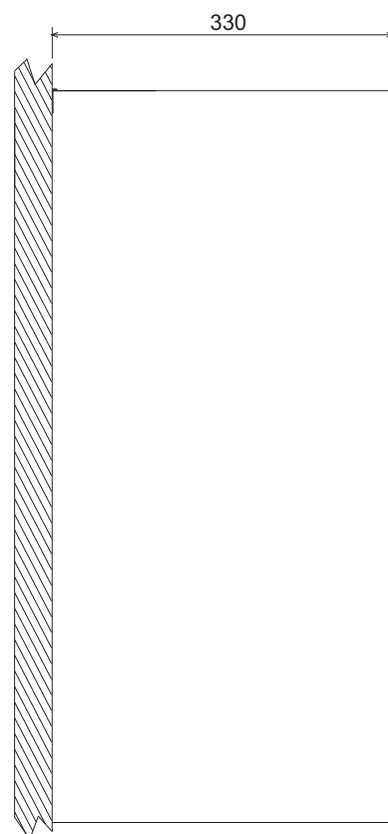


fig. 20 - Side view

## 5.2 General view and main components

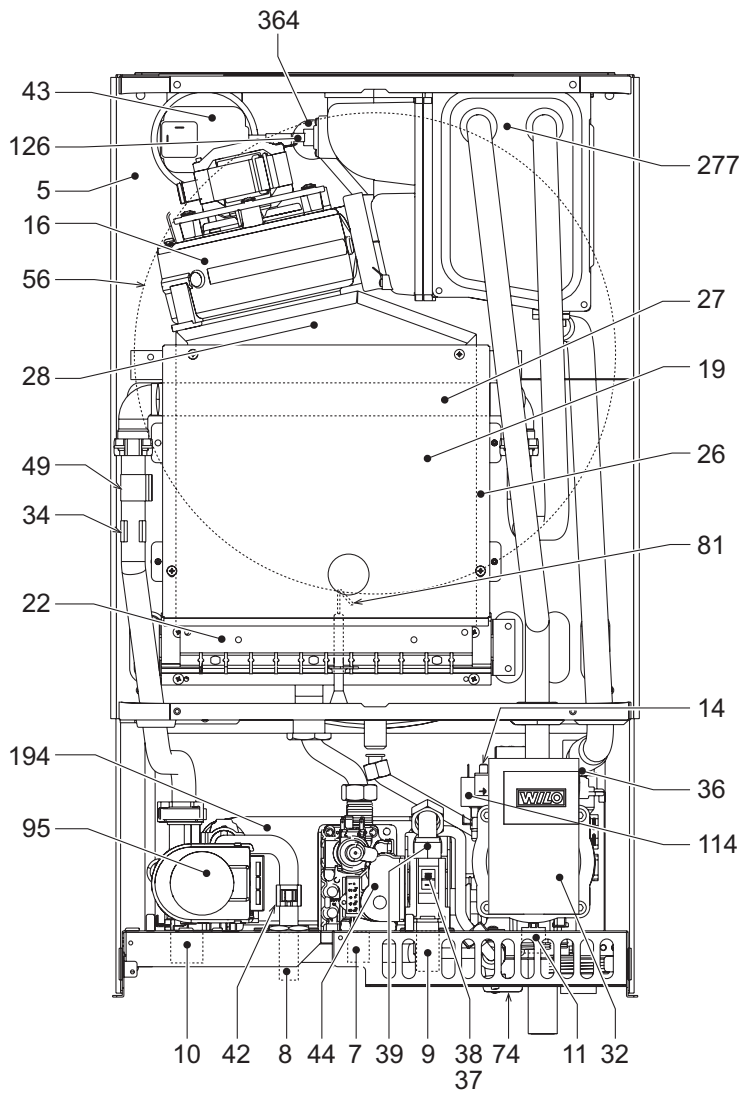


fig. 21 - General view

## 5.3 Hydraulic circuit

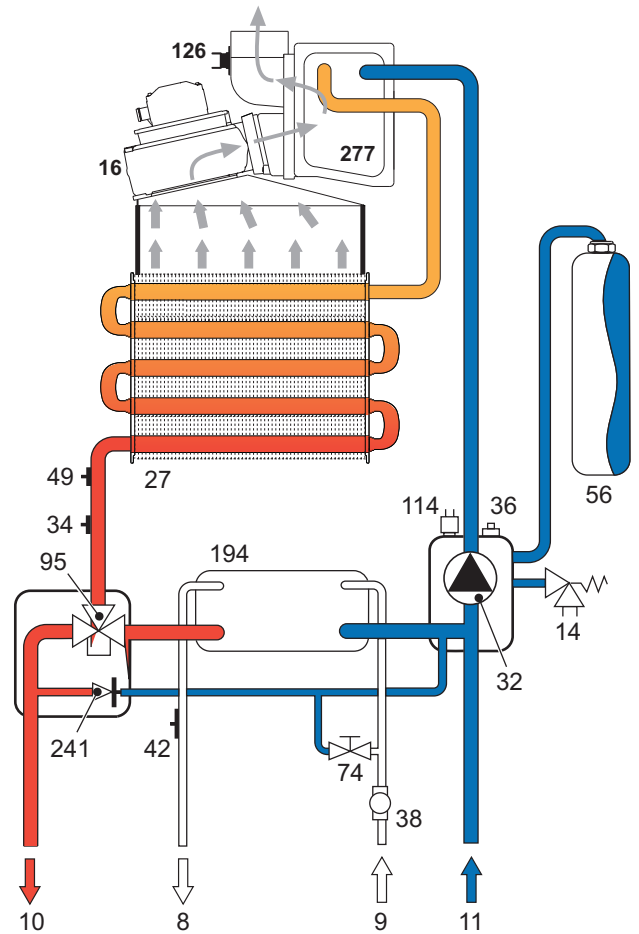


fig. 22 - Heating circuit

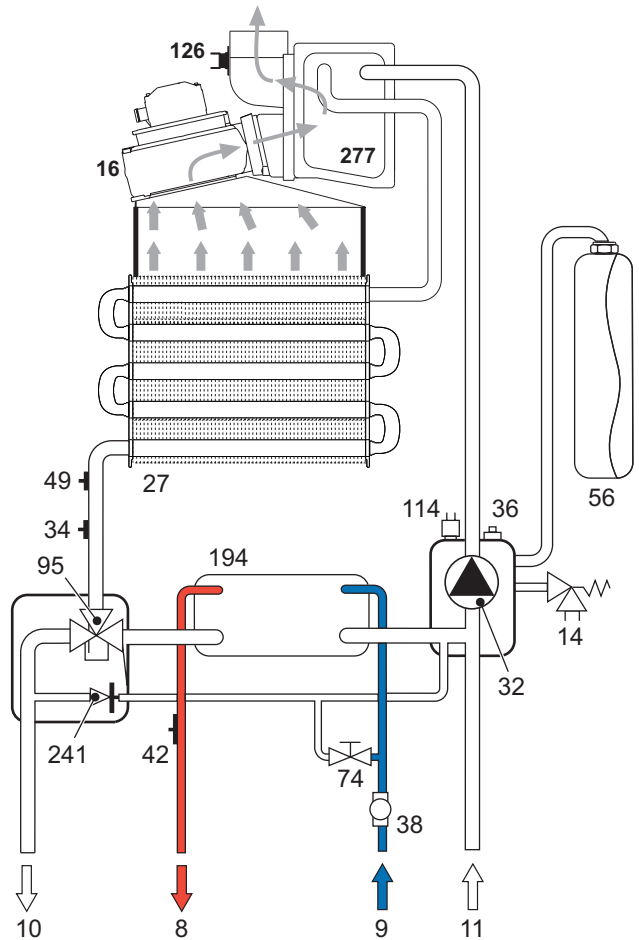


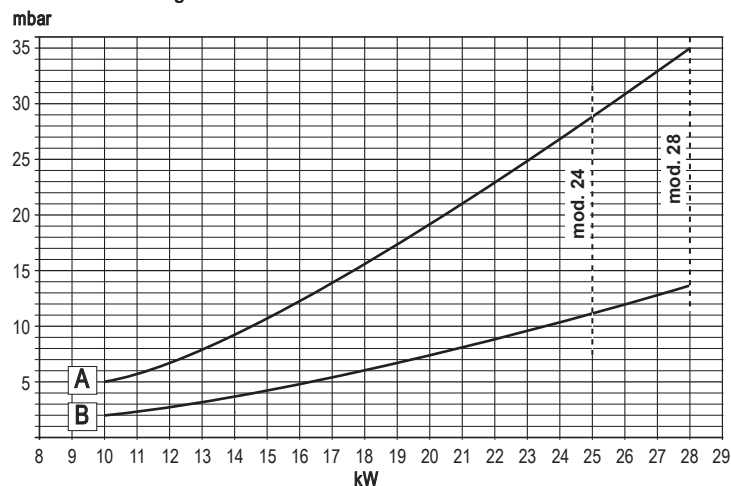
fig. 23 - DHW circuit

## 5.4 Technical Data Table

Date	Unit	DIVAcondens F24	DIVAcondens F28	
Max. heating capacity	kW	25.0	28.0	(Q)
Min. heating capacity	kW	10.0	10.0	(Q)
Max. Heat Output in heating (80/60°C)	kW	24.1	27	(P)
Min. Heat Output in heating (80/60°C)	kW	9.2	9.2	(P)
Max. Heat Output in heating (50/30°C)	kW	25.9	29	
Min. Heat Output in heating (50/30°C)	kW	9.6	9.6	
Efficiency Pmax (80-60°C)	%	96.5	96.5	
Efficiency Pmin (80-60°C)	%	92.0	92.0	
Efficiency Pmax (50-30°C)	%	103.5	103.5	
Efficiency Pmin (50-30°C)	%	96.0	96.0	
Efficiency 30%	%	100.2	100.2	
Burner nozzles G20	no. x Ø	11 x 1.35	11 x 1.35	
Gas feed pressure G20	mbar	20	20	
Max. pressure at burner G20	mbar	11	13.5	
Min. pressure at burner G20	mbar	2	2	
Max. gas flow G20	m <sup>3</sup> /h	2.64	2.96	
Min. gas flow G20	m <sup>3</sup> /h	1.06	1.06	
Burner nozzles G31	no. x Ø	11 x 0.82	11 x 0.82	
Gas feed pressure G31	mbar	37	37	
Max. pressure at burner G31	mbar	29	35	
Min. pressure at burner G31	mbar	5	5	
Max. gas flow G31	kg/h	1.96	2.19	
Portata gas min G31	kg/h	0.78	0.78	
Efficiency class Directive 92/42 EEC	-	★★★★		
NOx emissions class	-	3	3	(NOx)
Max. working pressure in heating	bar	3	3	(PMS)
Min. working pressure in heating	bar	0.8	0.8	
Max. heating temperature	°C	90	90	(tmax)
Heating water content	litres	1.5	1.5	
Heating expansion tank capacity	litres	8	8	
Heating expansion tank prefilling pressure	bar	1	1	
Max. working pressure in DHW	bar	9	9	(PMW)
Min. working pressure in DHW	bar	0.25	0.25	
DHW flow rate Dt 25°C	l/min	14	15.7	
DHW flow rate Dt 30°C	l/min	11.6	13.0	
Protection rating	IP	X5D	X5D	
Power supply voltage	V/Hz	230V/50Hz	230V/50Hz	
Electrical power input	W	95	123	
Empty weight	kg	35	35	
Type of unit		C <sub>12</sub> -C <sub>22</sub> -C <sub>32</sub> -C <sub>42</sub> -C <sub>52</sub> -C <sub>62</sub> -C <sub>72</sub> -C <sub>82</sub> B <sub>22</sub> -B <sub>32</sub>		
PIN CE		0461CP1030		

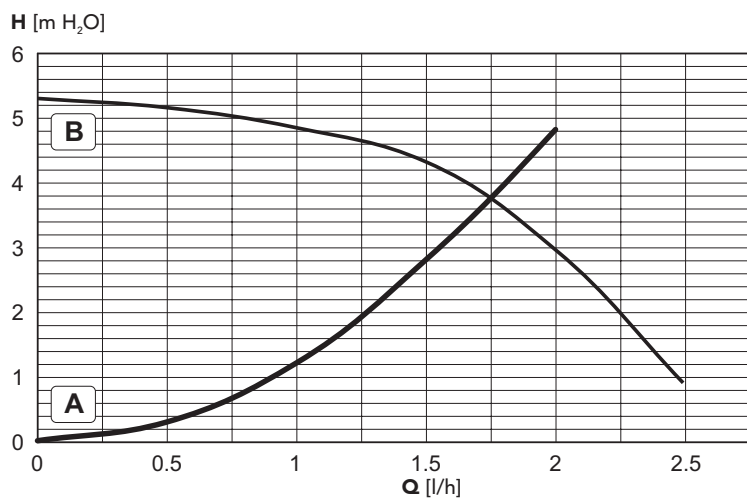
## 5.5 Diagrams

### Pressure - flow diagrams



A = LPG - B = NATURAL GAS

### Circulating pump head / pressure losses



A = Boiler pressure losses - B = Circulating pump speed

## ErP product fiche

### MODEL: DIVACONDENS F24

<b>Trademark: FERROLI</b>			
Condensing boiler: YES			
Low-temperature boiler (**): NO			
B1 Boiler: NO			
Combination heater: YES			
Cogeneration space heater: NO			
Item	Symbol	Unit	Value
Seasonal space heating energy efficiency class			B
Rated heat output	Pn	kW	24
Seasonal space heating energy efficiency	s	%	87
<b>Useful heat out put</b>			
Useful heat output at rated heat output and high-temperature regime (*)	P4	kW	24,1
Useful heat output at 30% of rated heat output and low-temperature regime (**)	P1	kW	5,3
<b>Useful efficiency</b>			
Useful efficiency at rated heat output and high-temperature regime (*)	4	%	86,9
Useful efficiency at 30% of rated heat output and low-temperature regime (**)	1	%	91,5
<b>Auxiliary electricity consumption</b>			
At full load	elmax	kW	0,058
At part load	elmin	kW	0,030
In standby mode	PSB	kW	0,003
<b>Other items</b>			
Standby heat loss	Pstby	kW	0,060
Ignition burner power consumption	Pign	kW	0,000
Annual energy consumption	QHE	GJ	55
Sound power level	LWA	dB	57
Emissions of nitrogen oxides	NOx	mg/kWh	130
<b>For combination heaters</b>			
Declared load profile			XL
Water heating energy efficiency class			A
Daily electricity consumption	Qelec	kWh	0,099
Annual electricity consumption	AEC	kWh	22
Water heating energy efficiency	wh	%	82
Daily fuel consumption	Qfuel	kWh	24,156
Annual fuel consumption	AFC	GJ	19

(\*) High-temperature regime means 60°C return temperature at heater inlet and 80°C feed temperature at heater outlet.

(\*\*) Low temperature means for condensing boilers 30°C, for low-temperature boilers 37°C and for other heaters 50°C return temperature (at heater inlet).

## ErP product fiche

### MODEL: DIVACONDENS F28

<b>Trademark: FERROLI</b>			
Condensing boiler: YES			
Low-temperature boiler (**): NO			
B1 Boiler: NO			
Combination heater: YES			
Cogeneration space heater: NO			
Item	Symbol	Unit	Value
Seasonal space heating energy efficiency class			B
Rated heat output	Pn	kW	27
Seasonal space heating energy efficiency	s	%	86
<b>Useful heat out put</b>			
Useful heat output at rated heat output and high-temperature regime (*)	P4	kW	27,0
Useful heat output at 30% of rated heat output and low-temperature regime (**)	P1	kW	5,8
<b>Useful efficiency</b>			
Useful efficiency at rated heat output and high-temperature regime (*)	4	%	86,9
Useful efficiency at 30% of rated heat output and low-temperature regime (**)	1	%	91,5
<b>Auxiliary electricity consumption</b>			
At full load	elmax	kW	0,082
At part load	elmin	kW	0,035
In standby mode	PSB	kW	0,003
<b>Other items</b>			
Standby heat loss	Pstby	kW	0,060
Ignition burner power consumption	Pign	kW	0,000
Annual energy consumption	QHE	GJ	60
Sound power level	LWA	dB	58
Emissions of nitrogen oxides	NOx	mg/kWh	130
<b>For combination heaters</b>			
Declared load profile			XL
Water heating energy efficiency class			A
Daily electricity consumption	Qelec	kWh	0,125
Annual electricity consumption	AEC	kWh	28
Water heating energy efficiency	wh	%	81
Daily fuel consumption	Qfuel	kWh	24,637
Annual fuel consumption	AFC	GJ	20

(\*) High-temperature regime means 60°C return temperature at heater inlet and 80°C feed temperature at heater outlet.

(\*\*) Low temperature means for condensing boilers 30°C, for low-temperature boilers 37°C and for other heaters 50°C return temperature (at heater inlet).

