

INSTANTANEOUS GAS WATER-HEATER



Saunier Duval

Instructions for use
Installation and servicing

Opalia

Opalia F 14 E





Instructions for use

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1 General points

The Opalia F 14 E instantaneous gas water-heater provides hot water to one or several water supply points, such as: wash basin, shower, sink, bath.

This water-heater is of the room-sealed type and is equipped with a flue exhaust and air intake for combustion products called the flue system. This flue system connection principle offers the possibility to install the appliance in any room and with no specific ventilation requirements. In case of a malfunction or flue requirements blockage, an air pressure switch stops the appliance.

The appliance is equipped with an ionisation electronic igniter and an electrode which checks for the presence of a flame at the burner. This appliance, has no pilot, which decreases gas consumption.

The appliance is also equipped with an overheat cut-out system, which stops the appliance in case of an elevated temperature in the heat exchanger.

The installation and the commissioning of the appliance has to be carried out by a skilled professional who is responsible for the compliance of the installation and the commissioning according to current regulations.

All CORGI Registered Installers carry a CORGI ID card, and have a registration number. You can check your installer is CORGI registered by calling CORGI direct on: 01256 372300.

You also have to call on a skilled professional for the maintenance and the repairing of the appliance as well as for any gas adjustment.

Saunier Duval has specially designed different accessories for your appliance depending on your installation.

If you want to have a detailed list, please contact your supplier or visit our website www.saunier-duval.co.uk

2 Documents

- Please keep this manual as well as any documents enclosed with it safe for future reference.

We accept no liability in case of damage due to the non-compliance of the instructions of the present manual.

3 Safety

3.1 Gas Leak or Fault

- Turn off the gas emergency control valve immediatly.
- Eliminate all sources of ignition, i.e. smoking, blowlamps, hot air guns, etc.
- Do not operate electrical lights or turn switches either on or off..
- Open all doors and windows to ventilate the area.

3.2 Safety regulations and recommendations

This appliance contains metal parts (components) and care should be taken when handling and cleaning, with particular regard to edges of sheet metal parts to avoid any possibility of personal injury.

The appliance casing can be cleaned using a mild liquid detergent with a damp cloth, then a dry cloth to polish.

Please observe the following safety regulations and recommendations:

- Do not use any aerosols, solvents, abrasive cleaner, detergents with chlorine, paint, glue, etc. near the appliance. Under unfavourable conditions, these substances can be very corrosive even for the flue.
- Do not use or store any explosive material or easily flammable (for example, petrol, paint, etc.) in the room where the appliance is situated.
- Never switch off the safety devices and do not try to handle these devices as this could lead to a malfunction.
- Do not change:
 - The appliance,
 - The appliance environment,
 - Water, air, gas and electric supply,
 - Flue system.
- Never carry out by yourself maintenance or repairing operations on the appliance.
- In case of a water leakage, immediately close the cold water inlet of the appliance and call a skilled professional to repair the leakage.
- Do not break sealed mechanisms.
- Do not modify the technical conditions close to the appliance, as these are very important as far as the appliance safety is concerned.
For example: the minimum clearances of the external sides.

Warning!

We advise you to be very careful when adjusting hot water temperature: water can be very hot when releasing from the draw off tap.

In areas where the water is 'hard', more than 200mg/litre, it is recommended that a proprietary scale reducer is fitted in the cold water supply to the appliance.

4 Guarantee / Responsibility

Your appliance is guaranteed for a period of 24 months from the date of installation or 30 months from the date of manufacture whichever is the shorter and covers manufacturing defects only.

We, Saunier Duval, undertake to repair or replace parts free of charge which are recognised by us to be of faulty manufacture - if necessary after return to our factory for examination - on condition that :

- The appliance was installed by a qualified gas installer in accordance with installation instructions, and all the relevant codes of practice, standards and legislation in force.
- The appliance has been used for normal domestic purposes and in accordance with the manufacturer's operating and maintenance instructions.
- The appliance has not been serviced, maintained, repaired dismantled or tampered with during the guarantee period, by anyone other than an engineer approved by Saunier Duval.
- The appliance is still in the possession of the original user, and proof of purchase in the form of a receipt or invoice is shown to the service engineer on request.
- The repair or replacement of parts during the guarantee period does not have the effect of extending the period.

This guarantee does not cover :

- Any defects or damage resulting from incorrect or poor installation, inadequate servicing, or maladjustment of the gas or water used.
- Any defects in the system to which the appliance is connected.
- Any deterioration or maladjustment following changes in the nature or pressure of the gas or the water used, or a change in the characteristics of the electrical supply voltage.

Notification of any fault should be made to the appliance installer. No repairs should be undertaken upon the appliance, intending it to be covered by the product guarantee without prior authorisation from Saunier Duval.

IMPORTANT : The appliance serial number must be quoted on all correspondence/contact made with Saunier Duval.

This guarantee is in addition to your statutory and other legal rights, which will not be excluded or diminished by the return of the guarantee registration card.

5 Appliance use

Saunier Duval's appliances are manufactured according to the latest technical evolutions and current safety regulations.

The instantaneous gas water-heater is used to produce hot water using gas. Any other use is considered as inappropriate and is forbidden.

The manufacturer shall not be responsible for any damage caused by another use. In that case the user shall be the responsible.

6 Servicing

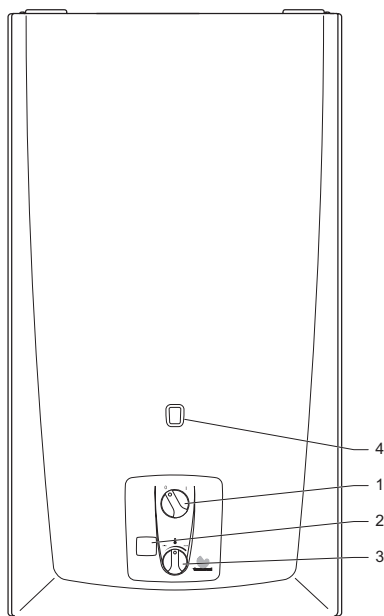
- Clean the case of the appliance with wet soapy cloth.
- Do not use any abrasive cleaning product as they could damage the housing or plastic parts.

7 Recycling

The appliance comprises many recyclable parts. The packaging, the appliance and the content of the package shall not be thrown together with domestic waste but eliminated according to the current regulations.

8 Appliance use

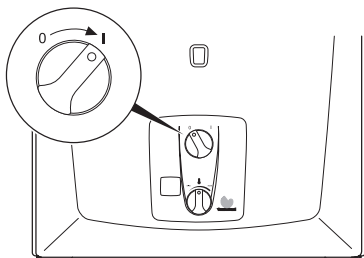
8.1 Appliance schematic



Legend

- 1 On/off switch
- 2 Display (preset temperature – fault code)
- 3 Temperature switch
- 4 Sight glass

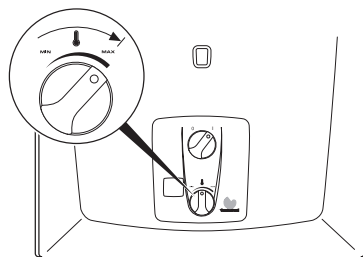
8.2 Commissioning and lighting



- Turn the ON/OFF switch ON (I). The display panel indicates the temperature set. After 10 seconds, the display changes to "On".
- Open the hot water tap, for example the wash basin or the sink, and the water-heater will activate, providing hot water.
- Check whether there is a flame via the sight glass. If there is no flame, see chapter Fault Finding.

8.3 Water temperature adjustment

The appliance provides a constant water temperature, which is not dependent upon flow rate or the cold water inlet temperature.



The temperature selector sets water temperature:

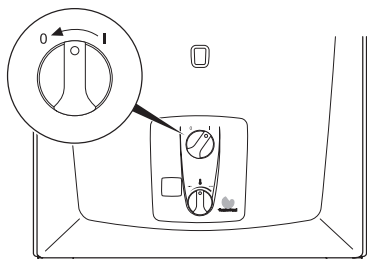
- Turn the selector to the right to increase the temperature.
- Turn the selector to the left to decrease the temperature.

If you do not activate the temperature selector, the display displays "On" after 10 seconds.

Warning! You can modify the temperature with the selector and take hot water at the same time.

During springtime, we advise you to decrease water temperature.

9 Stopping the water-heater



- Turn the ON/OFF switch OFF (0).
Gas inlet to the burner of the appliance then stops.



10 Fault finding

When a fault occurs, a code is displayed, symbolized by the letter F and a figure, for example F1.

As a user, you can only do what is mentioned below. If other codes appear, which are not mentioned in the following chart, please contact a skilled professional.

Fault	Cause	Corrective action
The display is OFF.	Temporary power supply cut.	Check the mains power supply is on and that the appliance is switched on at the spur or socket. The appliance starts automatically once the power supply is on. If the fault persists, please contact a skilled professional.
No flame	The burner does not light. Gas inlet or power supply stops.	Check that the main gas stop valve is turned on. Check that the display indicates "On". If you have both conditions, stop the appliance by turning the selector (0), and then start it again (I). Once the fault is repaired, the appliance starts automatically. If the fault persists, please contact a skilled professional.
F1	Ignition fault.	Check that the main gas stop valve is turned on. Stop the appliance by turning the selector (0), and then start it again (I). Once the fault is repaired, the appliance starts automatically. If the fault persists, please contact a skilled professional.
F2	Partial or total flue system blockage.	Stop the appliance by turning the selector (0). Check that the flue is connected properly and that the air passes naturally without any blockage. Clean if necessary. Start the appliance again (I). If the fault persists, please contact a skilled professional.
F4	Gas supply fault.	Check that the main gas stop valve is turned on. Stop the appliance by turning the selector (0), and then start it again (I). Once the fault is repaired, the appliance starts automatically. If the fault persists, please contact a skilled professional.
F5	Pipes scaling or appliance malfunction.	Please contact a skilled professional.

Once the problem is solved, the display indicates the temperature set. After about 10 seconds, the display turns "On". The appliance starts up automatically.

Warning! Never try to service or repair the appliance by yourself and only start the appliance once a skilled professional repaired the fault.

11 Frost protection

The location of the appliance should be protected from frost all year round. If you do not observe this condition, take the appropriate precautions.

In case of frost risk, you should drain the appliance. Do as follows:

- Stop the appliance.
- Turn off the gas inlet.
- Turn off the cold water inlet.
- Open the entire hot water taps to drain the appliance and the pipes.

12 Maintenance/After Sales Service

If the appliance is cleaned and adjusted properly, it will consume less and will last longer. So a regular servicing of the appliance and its pipes by a skilled professional is worth doing for you to have a correct running of the appliance. That way the appliance service life is longer, it decreases its energy consumption and its contaminant dumpings.

Take into account that an incorrect servicing can affect the safety of the appliance and can lead to injury.

To ensure the continued efficient and safe operation of the appliance it is recommended that it is checked and serviced as necessary at regular intervals. The frequency of servicing will depend upon the particular installation conditions and usage, refer to guarantee registration.

If this appliance is installed in a rented property there is a duty of care imposed on the owner of the property by the current issue of the Gas Safety (Installation and Use) Regulations, Section 35. Servicing/maintenance should be carried out by a competent person in accordance with the rules in force in the countries of destination. To obtain service, please call your installer or Saunier Duval service.

Installation and servicing instructions

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Installation and servicing instructions strictly reserved
for qualified gas installers



1 Comments on the instructions

- Please give all of the instructions to the user. The user shall keep them for future reference.

We accept no liability in case of damage due to the non-compliance of the instruction manual.

2 Appliance description

2.1 Data label

The data label certifies the origin where the product was manufactured and the country for which it is intended.

Warning! The appliance shall only be used with the gas types indicated on the data label.

2.2 Mandatory WARNING for EEC countries

This appliance is designed, approved and inspected to meet the requirements of the intended market. The data label indicates where the product was manufactured and the country for which it is intended.

This appliance meets the requirements of Statutory Instrument, No. 3083 The Appliance (Efficiency) Regulations, and therefore is deemed to meet the requirements of Directive 92/42/EEC on the efficiency requirements for new hot water appliances fired with liquid or gaseous fuels.

Type test for purposes of Regulation 5 certified by: Notified body 0063. Product/production certified by: Notified body 0086.

The CE mark on this appliance shows compliance with:

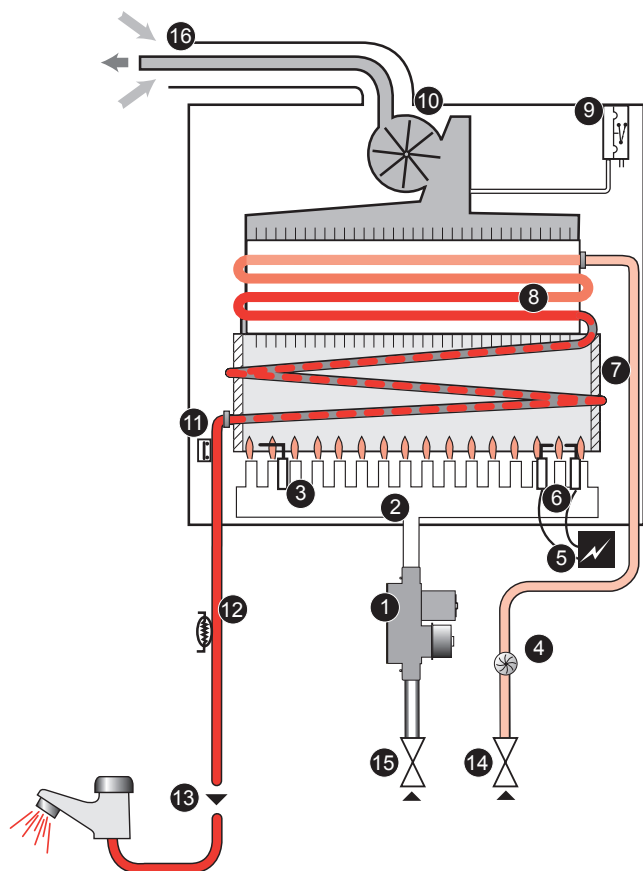
- Directive 90/396/EEC on the approximation of the laws of the Member States relating to appliances burning gaseous fuels.
- Directive 73/23/EEC on the harmonisation of the Laws of the Member States relating to electrical equipment designed for use within certain voltage limits.
- Directive 89/336/EEC on the approximation of the Laws of the Member States relating to electromagnetic compatibility.

IMPORTANT. With regards to the Manual Handling Operations, 1992 Regulations, the following lift operations are recommended as the appliance weight exceeds a one-man lift.

Manufacturer's instructions must not be taken as overriding statutory requirements. Reference in these instructions to British standards and statutory regulations/requirements apply only to the United Kingdom. For Ireland the current edition of I.S.813 «Domestic Gas Installations» must be used.

This appliance certificated to the current issue of EN 483 : 2000 for performance and safety. It is important that no alteration is made to the appliance, without permission, in writing, from Saunier Duval. Any alteration that is not approved by Saunier Duval could invalidate the warranty and could also infringe the current issue of the Statutory Requirements.

2.3 Block diagram



Opalia F 14 E - Legend

- | | | | |
|---|-----------------------|----|-------------------------|
| 1 | Gas valve | 9 | Air pressure switch |
| 2 | Burner | 10 | Fan |
| 3 | Flame sense electrode | 11 | Overheat cut-out system |
| 4 | Flow sensor | 12 | Temperature sensor |
| 5 | Electronic igniter | 13 | Hot water connection |
| 6 | Ignition electrode | 14 | Cold water connection |
| 7 | Combustion chamber | 15 | Gas connection |
| 8 | Heat exchanger | | |

Installation and servicing instructions strictly reserved for qualified gas installers

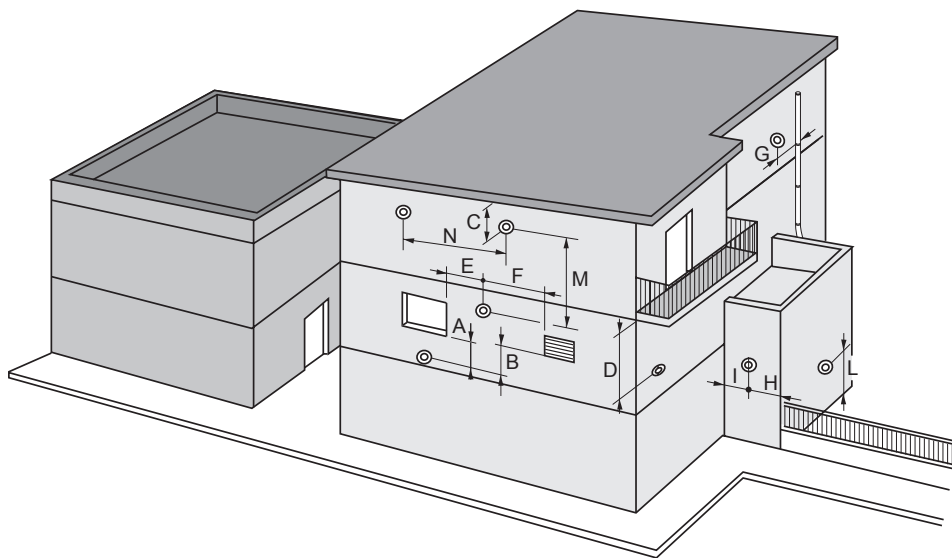


3 Appliance location

- This appliance is not suitable for outdoor installation.
- This appliance may be installed in any room, although particular attention is drawn to the installation of an appliance in a room containing a bath or shower where reference must be made to the relevant requirements. In GB this is the

current I.E.E. WIRING REGULATIONS and BUILDING REGULATIONS.

- In IE reference should be made to the current edition of I.S.813 «Domestic Gas Installations» and the current ETCI rules.
- Whatever the kind of flue system chosen, observe the minimum distances indicated in the chart below to fix the flue terminals.



Position	Position of the flue terminal	mm
A	Under a window	600
B	Under an air vent	600
C	Under a gutter	300
D	Under a balcony	300
E	From an adjacent window	400
F	From an adjacent air vent	600
G	From vertical or horizontal air pipes	600

H	From an external corner of the building	300
I	From an internal corner of the building	1000
L	From the ground or from another floor	1800
M	Between two vertical terminals	1500
N	Between two horizontal terminals	600

- The appliance must be mounted on a flat wall, which is sufficiently robust to take its weight.
- The appliance is room sealed, so when it is installed in a room or space, a permanent air vent is not required.
- Make sure you keep an approx. distance of 30mm between the sides of the appliance to ensure total accessibility for servicing.
- Do not install the appliance above another appliance that could damage it (for example, above a cooker that might emit steam or grease) or in a room, which has a lot of dust in the atmosphere which is corrosive.
- The location of the appliance should not be exposed to temperatures below 3°C as the appliance can be damaged by frost. If you cannot observe this condition, please inform the user and advise them to take the appropriate measures.
- Explain these instructions to the user.

4 Safety instructions and regulations

This appliance is tested and certificated for safety and performance. It is, therefore, important that no alteration is made to the appliance, without permission, in writing, from Saunier Duval.

Any alteration not approved by Saunier Duval, could invalidate the certification, appliance warranty and may also infringe the current issue of the statutory requirements.

4.1 Safety instructions

If the gas pressure at the input of the appliance is located outside the range mentioned, you shall not start the appliance. If the cause of the problem cannot be defined nor solved, please contact the Gas Utility company.

Warning! Incorrect installation can cause electric shock or appliance damage.

- When making the connections, locate the sealing washers properly so as to avoid any gas or water leakage.
- When dismantling or installing the heat exchanger, try not to buckle it.
- Never use a wire brush or stiff-bristle scrubbing brush to clean the heat exchanger as this could damage the appliance.
- Under no circumstances must the User interfere with or adjust sealed parts.

Under Section 6 of The Health and Safety at Work Act 1974, we are required to provide information on substances hazardous to health.

The adhesives and sealants used in this appliance are cured and give no known hazard in this state.

In the event of the appliance overheating the safety devices will cause a safety shutdown. If this happens, call your installation/servicing company.

Warning! This appliance must be earthed. This appliance must be wired in accordance with these instructions. Any fault arising from incorrect wiring cannot be put right under the terms of the Saunier Duval guarantee.

Installation and servicing instructions strictly reserved for qualified gas installers



4.2 Regulations

When installing and commissioning the appliance, the regulations below shall be observed in their current version:

In your own interests and that of safety, it is the Law that ALL gas appliances must be installed by a competent person only, in accordance with the current issue of the above regulations.

In GB the installation of the appliance must be carried out by a competent person as described in the following regulations:

- The manufacturer's instructions supplied.
- The Gas Safety (Installation and Use) Regulations.
- The appropriate Buildings Regulations either The Building Regulations, The Building Regulations (Scotland), The Building Regulations (Northern Ireland).
- The Water Fittings Regulations or Water byelaws in Scotland.
- The Health and Safety at Work Act, Control of Substances Hazardous to Health (COSHH).
- The Current I.E.E. Wiring Regulations.

Where no specific instructions are given, reference should be made to the relevant British Standard Code of Practice.

In IE, the installation must be carried out by a competent person and installed in accordance with the current edition of I.S.813 «Domestic Gas Installations», the current Building Regulations and reference should be made to the current ETCI rules for Electrical Installation.

In GB the following Codes of Practice apply: BS4814, BS6798, BS5440 Part 1 and 2, BS5546 Part 1, BS5449, BS6891, BS6700, BS7074 Part 1 and 2, BS7593, BS7671.

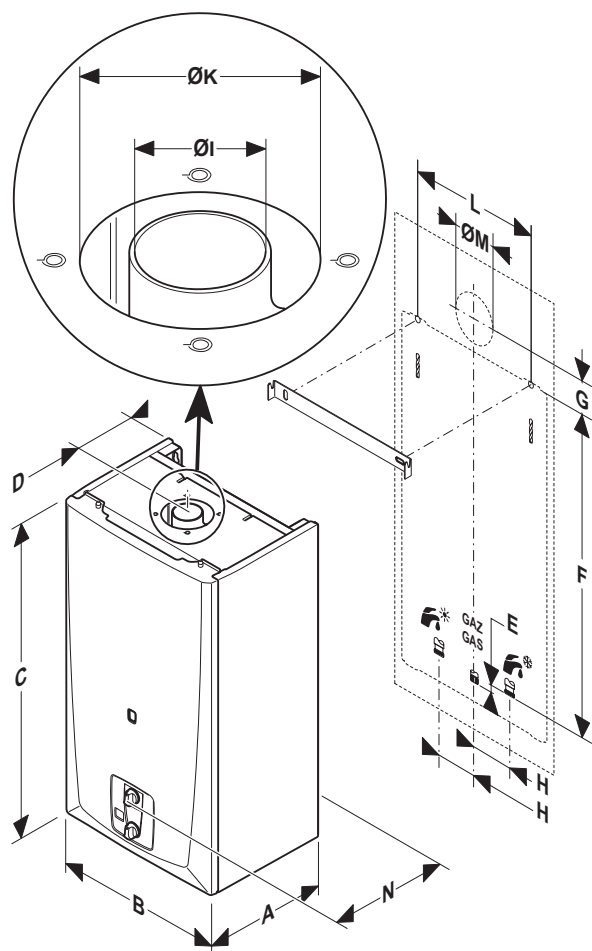
In IE: I.S.813, BS5546, BS 5449, BS 7074, BS 7593.

Where no British Standard exists, materials and equipment should be fit for their purpose and of suitable quality and workmanship. The installation of this appliance must be carried out by a competent person in accordance the rules in force in the countries of destination. Manufacturer's instructions must not be taken as overriding statutory requirements.

If the appliance is to be installed in a timber frame building it should be fitted in accordance with the Institute of Gas Engineers document IGE/UP/7/1998. If in doubt seek advice from the local gas undertaking or Saunier Duval.

5 Appliance installation

5.1 Dimensions



Dim.	mm
A	266
B	352
C	682
D	167
E	6,5
F	582,5

G	116
H	100
I	56,2
K	102
L	250
M	105
N	279

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5.2 Fixing to the wall

- Chose the location of the water-heater. See chapter "Appliance location".
- To fix the appliance to the wall, use the hanging bracket enclosed with the appliance, above which the water-heater is hung.
- Drill the holes for the security screws in accordance to the diagram in chapter Dimensions.
- Securely screw the hanging bracket to the wall ensuring fixings used are adequate to support the appliance.
- Place the gas water-heater on the hanging bracket and let it lay onto the suspension strips.

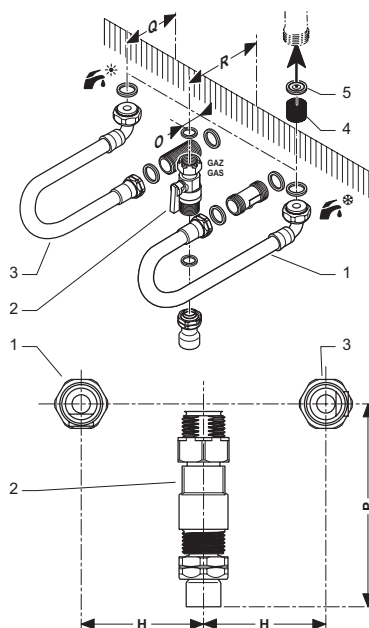
5.3 Gas and water connection

Appliance connections:

Water 3/4"

Gas 1/2"

- Clean the pipes so as to remove fretting corrosion and other foreign matter present.
- Connect the pipework to the water and gas bushes.
- Install the gaskets and tighten water and gas connection.
- Check that there is no leakage. Repair if need be.



Legend

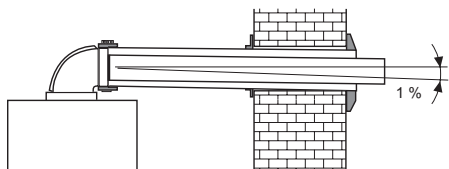
- 1 Cold water connection
- 2 Gas connection
- 3 Hot water connection
- 4 Cold water filter
- 5 Flow limiteur

Dim.	mm
H	100
O	15
P	99,5 max
Q	35
R	50

5.4 Flue connection

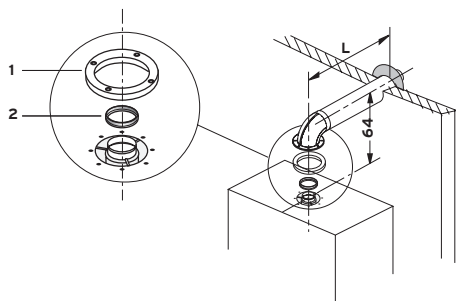
Different flue outlet configurations can be carried out. Consult your supplier for more information about the other possibilities and associated accessories.

Warning! You can only use flue accessories approved for the Opalia.



Warning! The flue pipes should be fitted with a minimum slope of 1% towards the terminal so as to clear condensation.

5.4.1 Horizontal concentric flue Ø 60/100 mm (C12 type installation)



Legend

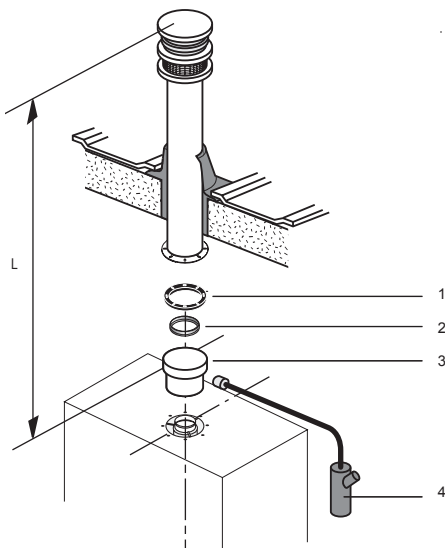
- 1 Gasket
- 2 Flue restrictor

Maximum flue index: 60 Pa

This value is reached with the length of the maximum duct (L) + 1 90° elbow. Every time a 90° elbow is used (or 2 at 45°), the length (L) should be reduced at 1 m.

Model	Max. length	Max. length with flue restrictor	Min. length
F 14 E	5 m	0,50 m	0,50 m

5.4.2 Vertical concentric flue Ø 60/100 mm (C32 type installation)



Legend

- 1 Gasket
- 2 Flue restrictor
- 3 Adapter
- 4 Trap

Maximum flue index: 60 Pa

This value is reached with the length of the maximum duct (L) + 1 90° elbow.

Every time an extra 90° elbow is used (or 2 at 45°), the length (L) should be reduced at 1 m.

Flue model	Max. length	Max. length with flue restrictor	Min. length
Ø 60/100	5 m	2 m	1 m

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5.5 Electrical connection

Warning! Incorrect installation can cause electric shock or appliance damage.

The appliance will not operate without an electrical supply.

Wiring to the appliance must be PVC 850C insulated cable, not less than 0.75mm² (24/0.20mm).

Warning! The power supply must be A.C. The appliance must be earthed.

All system components shall be of an approved type and all wiring to current I.E.E. wiring regulations. External wiring must be correctly earthed, polarised and in accordance with the relevant standards. In GB this is BS 6891. In IE this is the current edition of I.S.813 «Domestic Gas Installations».

Connection of the whole electrical system of the appliance, including any heating controls, to the electrical supply must be through one common isolator and must be fused 3 Amp maximum.

Isolation should be by a double pole switched fused spur box, with a minimum gap of 3mm for both poles.

The fused spur box should be readily accessible and preferably adjacent to the appliance. It should be identified as to its use.

Alternatively connection can be made through an unswitched shuttered socket and 3A fused 3-pin plug both to the current issue of BS 1363 may be used, provided they are not used in a room containing a bath or shower.

- Do not interrupt the mains supply with a time switch or programmer.

6 Control / Commissioning

Once the appliance is installed, check whether it runs:

- Start the appliance according to the indications of the operating instructions and check whether it runs.
- Check that the appliance is room-sealed (gas and water) and eliminate any eventual leakage.
- Check that the ignition is correct and that the flames of the burner are uniform.
- Check that the flue exhausts properly.
- Check the whole control and safety devices, their setting and their operating state.

7 User information

The user should know how to use the appliance.

- Explain to the user the appliance operating principles and demonstrate if required.
- Give the user all of the manuals and documents concerning the appliance and tell the user to keep them near the appliance.
- Explain more precisely the safety principles they should observe.
- Remind the user to regular service the appliance.

8 Control and servicing

To service the appliance, remove its casing.

- Drain the appliance according to the instructions in chapter "Frost protection" in the operating instructions.



- Clean the burner and the heat exchanger of the appliance.
If some oil and grease particles clog the appliance, clean the heat exchanger with a detergent that dissolves grease in hot water.
Warning! Never use any wire brush or stiff-bristle scrubbing brush to clean the heat exchanger.
Only press lightly with the brush. In case should you deform the blades!
- Once the servicing is completed, check that the appliance operates correctly by following the instructions in chapter "Control / Commissioning".

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9 Faults finding

You will find the list of the fault codes F1 to F5 in the operating instructions.

The faults described in this chapter should be carried out by a skilled professional and if need be by Saunier Duval's After Sales Service.

Fault	Cause	Corrective action
F7	Temperature sensor connection fault.	Check the connections and if the fault persists, contact Saunier Duval's After Sales Service
F11	Main/interface board communication error.	
F12	Main/interface board communication error.	
F13	Main board error.	
F14	Overheat fault.	Check the connections and the safety devices. If the fault persists, contact Saunier Duval service.
F15	Gas valve fault.	Contact Saunier Duval dealer.
F16	Electronic inner fault.	
F17	Power supply voltage < or equal to 170 V.	
F18	User interface fault.	
F19	Hot water temperature sensor fault.	Check if the fault persists contact Saunier Duval service.
F20	User interface incompatible with main board.	Contact Saunier Duval service.

10 Spare parts

Remember when replacing a part on this appliance:

- Use only spare parts that you can be assured conform to the safety and performance specification that we require.
- Do not use reconditioned or copy parts that have not been clearly authorized by Saunier Duval.
- If a part is required, contact Saunier Duval Service.
- Please quote the name of the appliance, this information will be on the name badge on the front of the appliance.
- If in doubt seek advice from Saunier Duval service organisation.

11 Technical data

The appliance is of the I2H category for use with Natural Gas (G20) as distributed in the United Kingdom and Ireland and cannot be used on any other gas.

Description	Unit	Opalia F 14 E
Gas category		I _{2H}
Maximum calorific flow rate (Qmax.)	kW	26,9
Minimum calorific flow rate (Qmin.)	kW	11,1
Maximum output (Pmax.)	kW	23,7
Minimum output (Pmin.)	kW	8,6
Regulation range	kW	8,6 - 23,7
Maximum hot water temperature	C°	63
Minimum cold water temperature	C°	38
Maximum water supply pressure authorized pw max.	bar	13
Minimum water supply pressure authorized pw min.	bar	0,2
Hot water minimum flow rate	l/min	2,1
Smokes temperature at maximum heating load	C°	195
Smokes temperature at minimum heating load	C°	136
Smokes flow rate at maximum heating load	g/s	11,5
Smokes flow rate at minimum heating load	g/s	8,9
Dimensions		
Height	mm	682
Width	mm	352
Depth (overall depth)	mm	266
Net weight	kg	21,4
Supply voltage (sinusoidal)	V/Hz	230/50
Maximum heating load absorbed	W	78
Integrated fuses	A	2
Fuses	A	10/16
Electric protection		IPX4d
CE number		1312BP4017
Technical data depending on the Natural gas G 20 :		
Gas flow rate at maximum heating load	m ³ /h	2.844
Gas supply pressure pw	mbar	20
Burner injector diameter	mm	1.25
Burner pressure at maximum supply	mbar	11.37
Gas inlet diaphragm	mm	5.65

Installation and servicing instructions strictly reserved
for qualified gas installers





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