

*Heating and hot water for the professionals*

***ISOFAST***



THIS IS A CAT I2E+ APPLIANCE

IN WARRANTY

**TECHNICAL HELPLINE**

**01773 828400**

***HEATCALL***

**01773 828100**



**Saunier Duval**

# INSTALLATION AND OPERATING INSTRUCTIONS

## ISOFAST F 28 E - ISOFAST F 35 E

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### Note!

The boiler serial number is marked on the label attached to the inside of the drop down door. Refer to the **'Introduction'** section page 3 for a description of the basic functions of the boiler. The **'Users'** section describes how to safely operate the boiler.

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### USERS SECTION

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Mandatory warning for CEE countries

**Warning:** This appliance is designed, approved and inspected to meet the requirements of the English market. The identification plate located on the inside of the appliance **certifies the origin** where the product was manufactured and the **country** for which it is intended.

If you see any exception to this rule, please contact your nearest **Saunier Duval** dealer.

Thank you in advance for your assistance.

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# INTRODUCTION

The **ISOFAST F** boiler is a wall mounted modulating combination boiler with electronic ignition providing central heating and instantaneous hot water. The boiler is equipped with a 4 litre domestic hot water storage vessel that ensures maximum hot water temperature stability during domestic demand.

The boiler is of the **I2E+** category for use with Natural Gas (G20) as distributed in the United Kingdom, or Butane (G30), Propane (G31) or Towns Gas (G130) with the appropriate conversion kit.

The boiler has a fan assisted balanced flue which both discharges the products of combustion to and draws the combustion air from the outside of the room.

The boiler is suitable for top outlet flue connection only but, can be fitted with horizontal flue, vertical flue or twin-pipe flue. Refer to flue catalogue for further details.

Both the central heating and domestic hot water temperature are user adjustable from the boiler control panel.

Domestic hot water demand always has priority over heating demand.

The boiler is designed for use as part of a sealed water central heating system with fully pumped circulation. The pump, expansion vessel and associated safety devices are all fitted within the boiler.

The boiler can be installed against either an external wall or on an adjacent inside wall, that is, the

flue system will pass directly to the rear or to either side to the terminal fitted on the outside wall face.

The installation must be carried out by a competent person in accordance with the relevant requirements of The Building Regulations, The Water Byelaws, The Building Standards (Scotland) Regulations and any applicable local regulations.

These instructions should be carefully followed for the safe and economical use of your boiler.

## Ancillary equipment

A range of flue accessories are available including vertical flues, twin-pipe flues, bends etc. For further information contact your supplier.

## Substances Hazardous to Health

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

INSULATION PADS/CERAMIC FIBRE, GLASSYARN, MINERAL WOOL

These can cause irritation to skin, eyes and the respiratory tract. If you have a history skin complaint you may be susceptible to irritation. High dust levels are usual only if the material is broken.

Normal handling should not cause discomfort, but follow normal good hygiene and wash your hands before eating, drinking or going to the toilet.

If you do suffer irritation to the eyes or severe irritation to the skin, seek medical attention.

# COMMISSIONING

Gas safety (Installation and use) Regulations

In your interests and that of gas safety, it is the law that ALL gas appliances are installed and serviced by a competent person in accordance with the above regulations.

## Gas leak or fault

If a gas leak or fault exists or is suspected, turn the boiler off and consult the local gas supply company or your installation/service company.

## Air in the heating system

Persistent air in the heating system may indicate leaks in the system or corrosion taking place. Call your Installation/Service company.

## Overheating safety

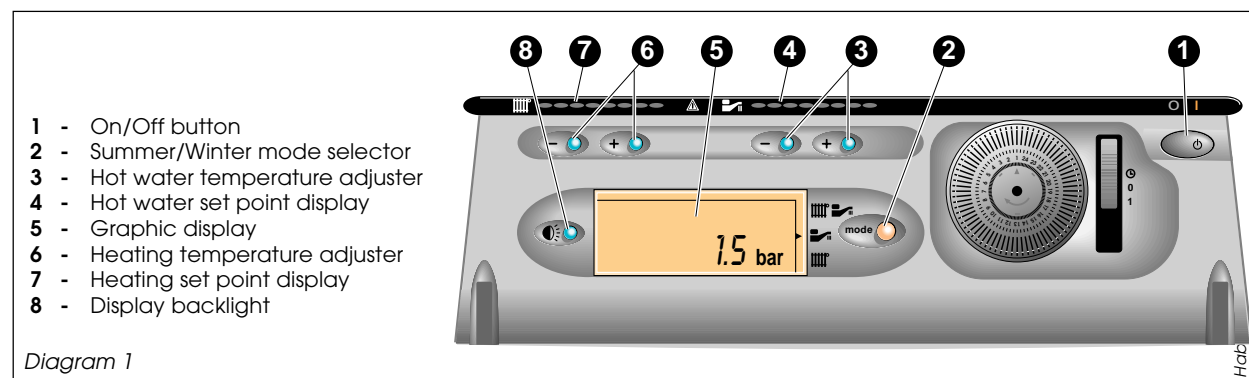
In the event of a problem, the overheating safety devices cause safety shutdown of the boiler. If this happens, call your Installation/Service company.

## Boiler controls

The control panel, located at the lower front of the boiler casing, **see diagram 1**, allows the boiler to be started, shut down, controlled and monitored during use.

## Flue

Do not obstruct the outside terminal of the boiler.



## Lighting the boiler :

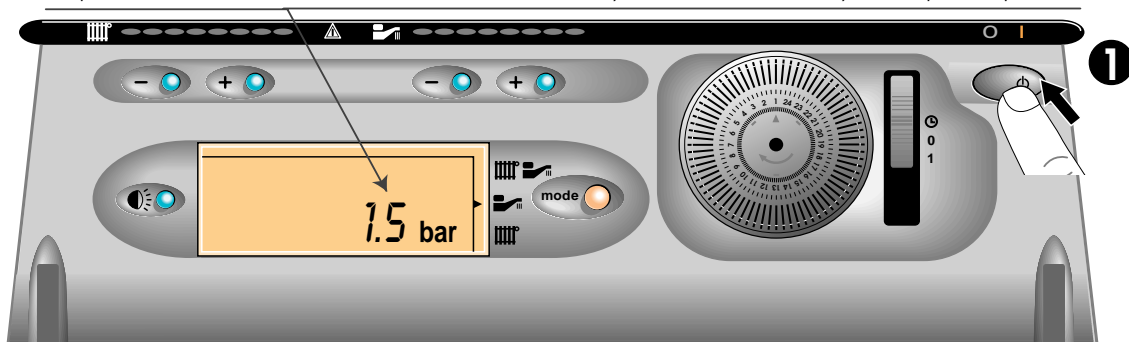
### Make sure that:

- The boiler is connected to the electrical supply.
- The gas service cock is open.

Then follow the instructions below :

### 1 Press the On/Off button (1)

*The pressure must be between 1 and 2 bar. If not, the system must be filled by a competent person.*

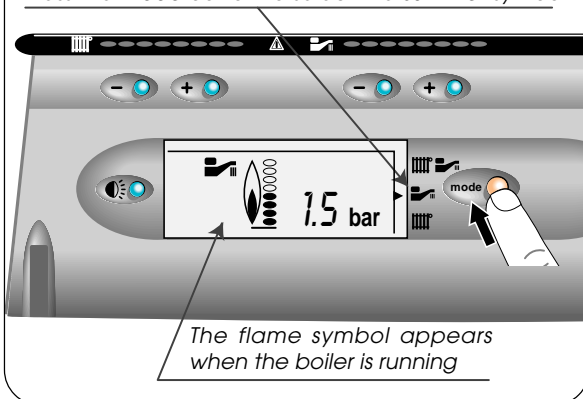


Hab 264

## To stop the boiler : Press button (1)

### Setting to the SUMMER position (Hot water only)

Press the **mode** button to select the **summer** symbol

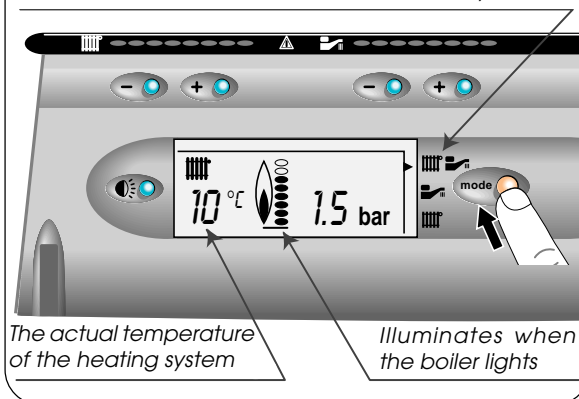


*The flame symbol appears when the boiler is running*

2

### Setting to the WINTER position (Heating + hot water)

Press the **mode** button to select the **winter** symbol



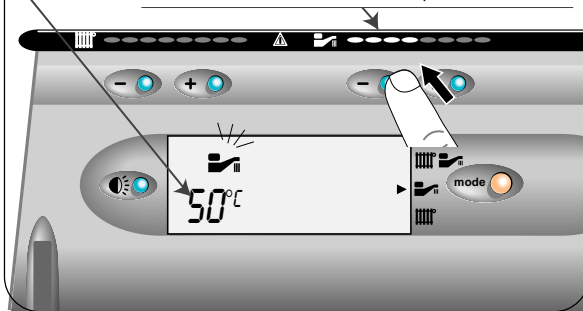
*The actual temperature of the heating system*

*Illuminates when the boiler lights*

### Adjusting the hot water temperature

Press + or - to adjust the maximum temperature of the hot water (38°C to 60°C)

*Visual indication of set temperature*

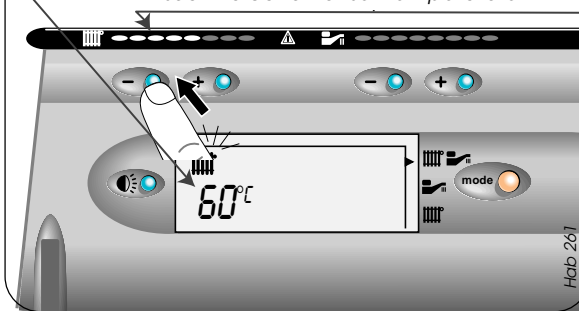


3

### Adjusting the heating temperature

Press + or - to adjust the maximum temperature of the heating (38°C to 87°C)

*Visual indication of set temperature*



Hab 261

To obtain domestic hot water, open a hot water tap. Hot water always has priority over central heating.

## CLOCK - INSTRUCTIONS FOR USE

The boiler must be connected to the electrical supply and switched on.

### Setting the time

Rotate the clock actuator mechanism clockwise, by hand, until the current time is indicated by the arrow, **see diagram 2**.

**Note:** The time is set in 24 hour format, for example, 1300 for 1pm.

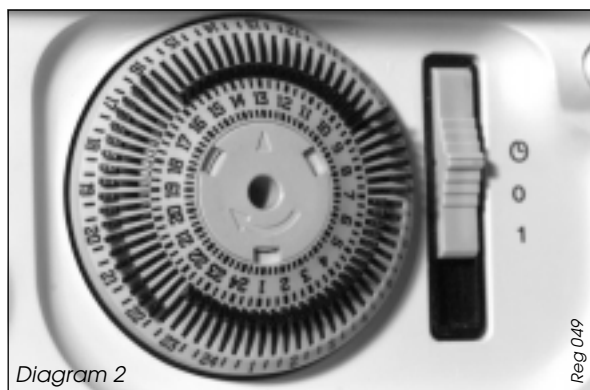


Diagram 2

### Setting the programme "On" and "Off" times

- Select the "On" times by pushing the white tappets to the outside, **see diagram 2**.
- Select the "Off" times by pushing the white tappets to the inside, **see diagram 2**.

The clock shown in **diagram 2** is set as follows:

|     |   |                    |         |
|-----|---|--------------------|---------|
| ON  | → | 07.00am to 09.00am | (7-9)   |
| OFF | → | 09.00am to 4.00pm  | (9-16)  |
| ON  | → | 4.00pm to 10.00pm  | (16-22) |
| OFF | → | 10.00pm to 07.00am | (22-7)  |



### To override or advance the clock

The clock has a manual On/Off switch, **see diagram 3**, which operates as follows :

- Upper position**  
Heating On/Off as set by the tappets.
- Middle position**  
Heating Off continuously
- Lower position**  
Heating On continuously

Diagram 3

Reg 050

## DRAINING

### Protection against freezing

If the boiler is to be out of use for any long periods during severe weather conditions, it is recommended that the whole system, including the boiler, be drained to avoid the risk of freezing.

If in doubt, consult your servicing company.

The **ISOFAST** has a built in frost protection device that protects the boiler from freezing. If the boiler is to be left and there is a risk of frost, ensure that the gas and electrical supplies are left connected. The frost protection device will light the boiler when the temperature of the boiler water falls below 6°C. When the temperature reaches 16°C, the boiler stops.

**Note:** This device works irrespective of any room thermostat setting and will protect the complete heating system.

### Draining and filling

Caution: The boiler is installed as part of a sealed system which must only be drained and filled by a competent person.

### Heating safety valve

**CAUTION:** A heating safety valve with a discharge pipe is fitted to this boiler.

The valve **MUST NOT BE TOUCHED** except by a competent person. If the valve discharges at any time, switch the boiler off and isolate it from the electrical supply. Contact your installation/service company.

### Pressure relief valve

**CAUTION:** A domestic hot water pressure relief valve, with a discharge pipe is fitted to this boiler.

The valve **MUST NOT BE TOUCHED** except by a competent person. If the valve discharges at any time, switch the boiler off and isolate it from the electrical supply. Contact your installation/service company.

## SERVICING/MAINTENANCE

To ensure the continued efficient and safe operation of the boiler, it is recommended that it is checked and serviced at regular intervals.

The frequency of servicing will depend upon the installation conditions and usage but, in general, once a year should be enough.

### Cleaning

The boiler casing can be cleaned with a damp cloth followed by a dry cloth to polish.

Do not use abrasive or solvent cleaners.

### Boiler casing

**CAUTION.** Do not remove or adjust the casing in any way, as incorrect fitting may result in faulty operation. If in doubt, consult your installation/service company.

# TECHNICAL DATA

|   | ISOFAST F 28 E | ISOFAST F 35 E |
|---|----------------|----------------|
| <b>Heating</b>                          |                |                |
| Heating output adjustable from ... (kW) | 10,4           | 11,7           |
| to ... (kW)                             | 27,6           | 34,6           |
| from ... (BTU/H)                        | 35,485         | 39,920         |
| to ... (BTU/H)                          | 94,170         | 118,053        |
| Efficiency (%)                          | 82             | 83             |
| Maximum heating temperature (°C)        | 87             | 87             |
| Expansion vessel effective capacity (l) | 7              | 12             |
| Expansion vessel charge pressure (bar)  | 0,5            | 0,5            |
| Maximum system capacity at 75°C (l)     | 160            | 275            |
| Safety valve,                           |                |                |
| maximum service pressure (bar)          | 3              | 3              |
| Products outlet diameter (mm)           | 60             | 60             |
| Fresh air inlet diameter (mm)           | 100            | 100            |

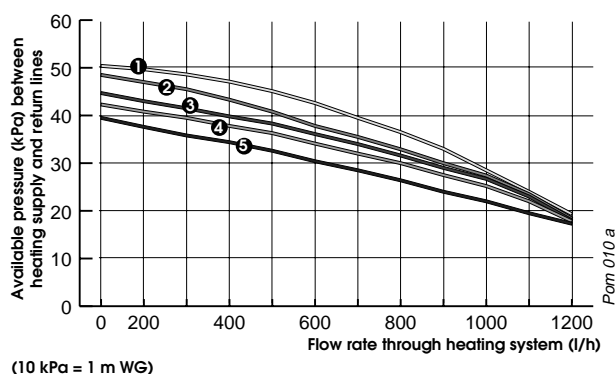
|                            |      |      |
|----------------------------|------|------|
| Electrical supply (V)      | 230  | 230  |
| Maximum absorbed power (W) | 220  | 220  |
| Level of protection        | IP44 | IP44 |

|   | ISOFAST F 28 E | ISOFAST F 35 E |
|---|----------------|----------------|
| <b>Hot water</b>                        |                |                |
| Hot water output                        |                |                |
| automatically variable from ... (kW)    | 10,4           | 11,7           |
| to ... (kW)                             | 27,6           | 34,6           |
| from ... (BTU/H)                        | 35,485         | 39,920         |
| to ... (BTU/H)                          | 94,170         | 118,053        |
| Maximum hot water temperature (°C)      | 60             | 60             |
| Specific flow rate (for 30°C temp rise) |                |                |
| (l/min.)                                | 13,2           | 16,5           |
| Threshold flow rate (l/min.)            | 1              | 1              |
| Nominal water flow rate (l/min.)        | 11,3           | 16,5           |
| Maximum supply pressure (bar)           | 8              | 8              |
| Minimum operating pressure (bar)        | 0,7            | 0,7            |

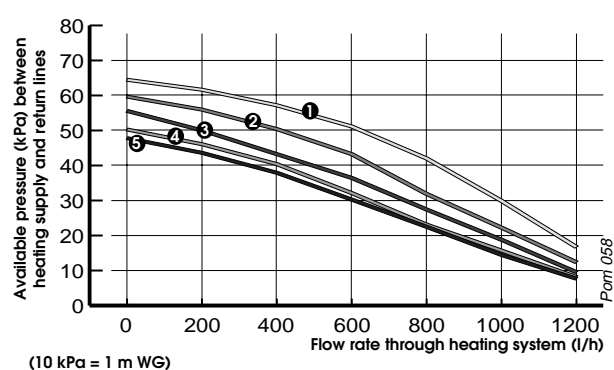
## Natural Gas (G20)

|                         |      |      |
|-------------------------|------|------|
| Ø Burner injector (mm)  | 1,20 | 1,20 |
| Inlet pressure (mbar)   | 20   | 20   |
| Burner pressure (mbar)  | 13,8 | 14,1 |
| Gas rate maximum (m³/h) | 3,20 | 3,98 |
| Gas rate minimum (m³/h) | 1,32 | 1,48 |

## Pump 28 kW



## Pump 35 kW



- 1** Bypass fully shut   
**2** Open 1/4 turn   
**3** Open 1/2 turn   
**4** Open 1 turn   
**5** Open 2 turns

## DIMENSIONS

The **ISOFAST** is delivered in three separate packages:

- the boiler itself
- the fixing jig
- the flue system

Weight: 51,2 kg

**X** = 470 (*Isofast F 28 E*)  
552 (*Isofast F 35 E*)

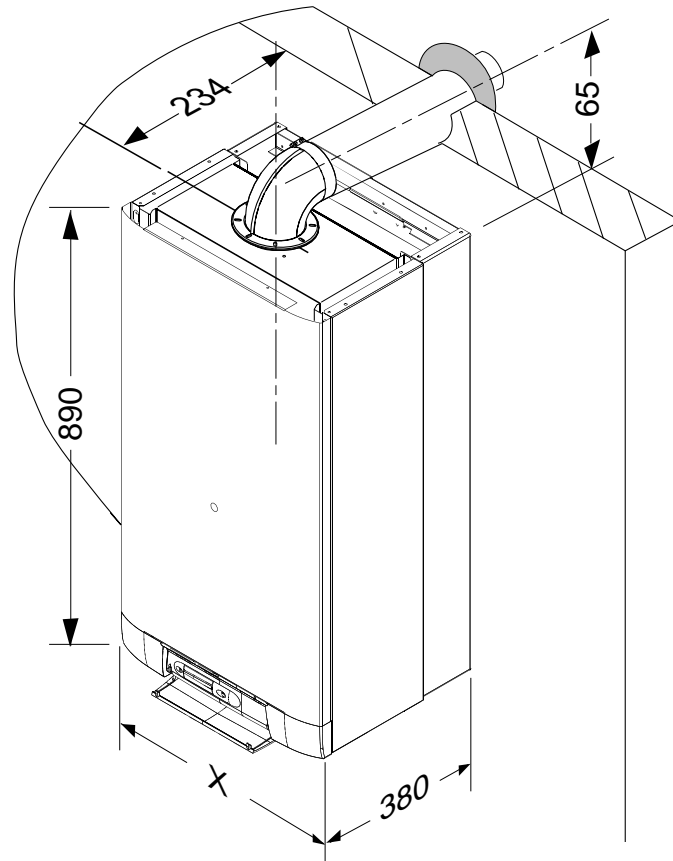


Diagram 5

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## HEATING SYSTEM DESIGN

- The **ISOFAST** is compatible with any type of installation.
- Heating surfaces may consist of radiators, convectors or fan assisted convectors.
- The **ISOFAST** can be piped directly to an under-floor heating system without the need for a mixing bottle. The maximum central heating flow temperature can be set to 53°C on the boiler printed circuit board during commissioning.
- Pipe sectional areas shall be determined in accordance with normal practices, using the output/pressure curve (**diagram 4**). The distribution system shall be calculated in accordance with the output requirements of the actual system, not the maximum output of the boiler. However, provision shall be made to ensure sufficient flow so that the temperature difference between the flow and return pipes be less than or equal to 20°C. The minimum flow is 400 l/h.
- The piping system shall be routed so as to avoid any air pockets and facilitate permanent venting of the installation. Bleed fittings must be provided at every high point of the system and on all radiators.

- The total volume of water permitted for the heating system depends, amongst other things, on the static head in the cold condition. The expansion vessel on the boiler is pressurised at 0,5 bar (corresponding to a static head of 5 m w.g.) and allows a maximum system volume of 160 litres for an average temperature of 75°C and a maximum service pressure of 3 bar. This pressure setting can be modified at commissioning stage if the static head differs. An additional expansion vessel can be fitted to the system if required, see **diagram 8**.

- Provision shall be made for a drain valve at the lowest point of the system.
- Where thermostatic radiator valves are fitted, not all radiators must be fitted with this type of valve, and in particular, where the room thermostat is installed.
- In the case of an existing installation, it is **ESSENTIAL** that the system is thoroughly flushed prior to installing the new boiler.

### Filling the system

The **ISOFAST** is supplied with a built-in filling device, see **diagram 7**.

## DOMESTIC HOT WATER SYSTEM DESIGN

- Copper tubing or plastic Hep 20 may be used for the domestic hot water system. Unnecessary pressure losses should be avoided.
- A flow restrictor limiting the flow through the boiler to a maximum of 16 l/min is fitted to the boiler.
- The boiler will operate with a minimum supply pressure of 0,7 bar, but under reduced flow rate. Best operating comfort will be obtained from a supply pressure of 1 bar.

### 'Hard Water Areas'

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 boiler.

## BOILER SCHEMATIC

- 1 - Domestic thermistor
  - 2 - Three way valve
  - 3 - Gas valve
  - 4 - Gas valve ignition module
  - 5 - Heating element
  - 6 - Micro accumulation vessel
  - 7 - Burner
  - 8 - Ignition electrode
  - 9 - Combustion chamber
  - 10 - Micro accumulation vessel thermistor
  - 11 - Main heat exchanger
  - 12 - Air pressure switch
  - 13 - Heating safety valve (3 bar)
  - 14 - Electronic control (PCB)
  - 15 - Domestic water flow sensor
  - 16 - Bypass
  - 17 - Domestic heat exchanger
  - 18 - Pump
  - 19 - Expansion vessel
  - 20 - Heating thermistor
  - 21 - Overheat safety thermostat
  - 22 - Flame sense electrode
  - 23 - Fan
  - 24 - Domestic safety valve
  - 25 - Loss of water sensor
- A - Heating return  
B - Cold water inlet  
C - Heating flow  
D - Domestic hot water outlet  
E - Gas

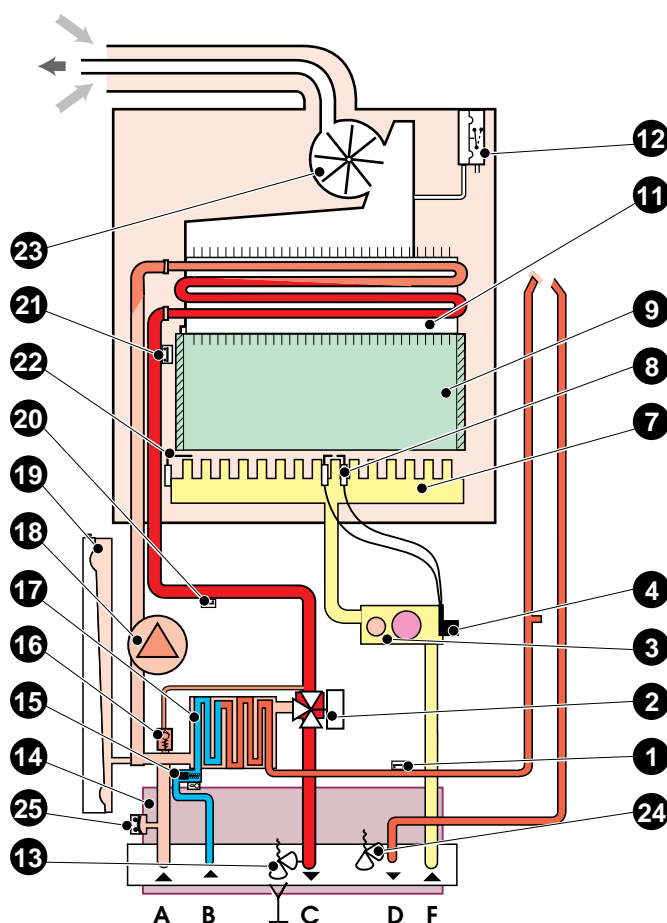


Diagram 6

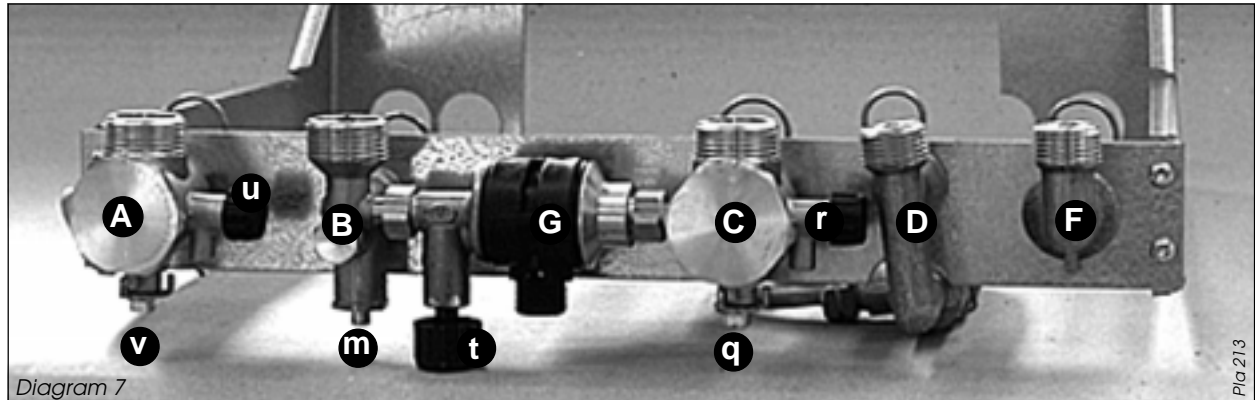
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## FIXING JIG

The fixing jig is made up, from left to right, as follows:

- A** - Heating return fitting with isolating valve (v) and drain knob (u).
- B** - Cold water inlet fitting with isolating valve (m) and factory fitted flow regulator and filter (not shown).
- C** - Heating flow fitting with isolating valve (q), drain knob (r) and safety valve (s1).
- D** - Domestic hot water outlet fitting with safety valve (s2).
- F** - Gas fitting.
- G** - Filling device.



## PIPING SYSTEM INSTALLATION

- Heating system connections - Pipe diam. 22mm
- Hot water system connections - Pipe diam. 15mm
- Gas connection - Pipe diam. 22mm
- Domestic safety valve connection - Pipe diam. 15mm
- Heating safety valve connection - Pipe diam. 15mm

### Water connection

Connect the copper connections supplied, to the fixing jig fittings, see **diagram 7**. Connect the system pipework to the boiler observing the correct flow and return format as shown in **diagram 8**.

### Safety valve discharge

Tee the domestic safety valve outlet pipe to the heating safety valve outlet pipe and extend horizontally to the outside wall.

**WARNING.** It must not discharge above an entrance or window or any type of public access area.

Connect the safety valve discharge pipe to the outlets of both the heating safety valve and the hot water safety valve, the discharge must be extended using not less than 15 m o.d. pipe, to discharge in a visible position outside the building, facing downward preferably over a drain.

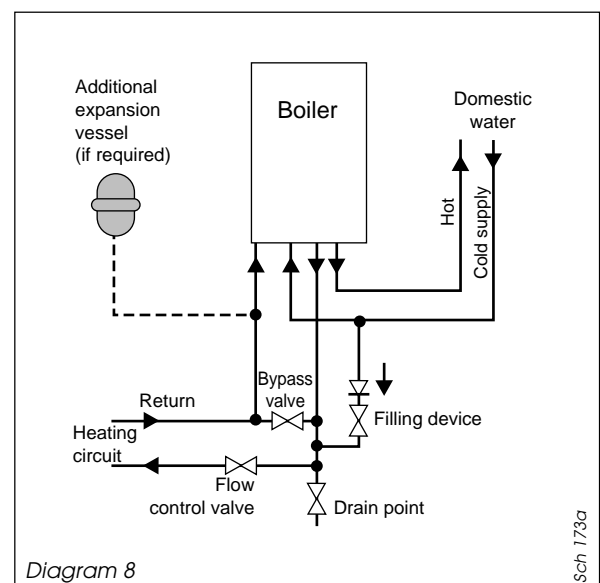
The pipe must have a continuous fall and be routed to a position so that any discharge of water, possibly boiling or steam, cannot create any danger to persons, damage to property or external electrical components and wiring. Tighten all pipe connection joints.

### Gas connection

- The supply from the governed gas meter must be of adequate size to provide a constant inlet working pressure of 20 mbar (8 in w.g.). To avoid low gas pressure problems, it is recommended that the gas supply is connected using 22 mm pipe.
- On completion, the gas installation must be tested using the pressure drop method and purged in accordance with the current issue of BS6891.

### Gas Safety (Installation and use) Regulations

In your interests and that of gas safety, it is the law that ALL gas appliances are installed and serviced by a competent person in accordance with the above regulations.



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# BOILER LOCATION

## Clearances

The position of the boiler must be such that there is adequate space for servicing.

The recommended clearances are:

- 20 mm either side of the boiler.
- 600 mm at the front of the boiler.
- 300 mm below the boiler.

- Place template on wall in required position, making allowances for the necessary clearances etc.

**Note:** It is permissible to install the boiler with smaller clearances than those quoted above PROVIDING that adequate consideration is given for Servicing/ Repairs at a later date. If any doubt exists, contact the **Saunier Duval Technical Helpline 01773 828400**.

- Mark the position of the holes for the hanging bracket.
- Drill, plug and fix the hanging bracket to the wall using suitable screws.
- Check that the hanging bracket is level.
- For horizontal flue system, mark the position for the flue hole as follows:

## Flue to rear of boiler

- Mark correct position of hole from template.

## Flue to side of boiler

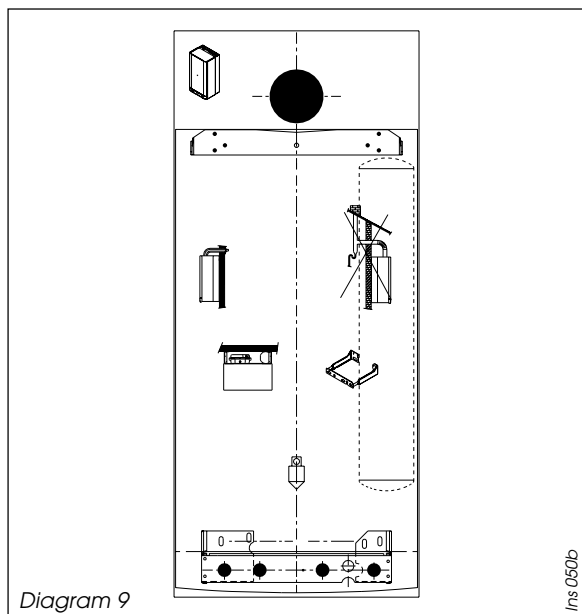
- Mark the horizontal centre line for the hole on the rear wall. Extend the horizontal centre line to the side wall and mark the vertical centre line of flue hole as shown in **diagram 9**.

## Cutting the flue hole

- Making allowance for the slope of the flue, cut hole in external wall, preferably using a core drill. For installations with internal and external access use a 105 mm diameter core drill. For installations with internal access only use a 125 mm diameter core drill.

## Important

When cutting the flue hole and when extending the flue centre line to a side wall, remember that the flue system must have a fall of about 35 mm per metre of flue DOWNWARD towards the termi-



nal. There must NEVER be a downward incline towards the boiler.

## Terminal position

The minimum acceptable spacings from the terminal to obstructions and ventilation openings are shown in **diagram 10**.

The boiler must be installed so that the terminal is exposed to the external air.

Should any doubt exist as to the permissible position of the terminal, contact the **Saunier Duval Technical Helpline 01773 828400**.

## Terminal guard

If a terminal guard is required, a suitable guard can be obtained from your supplier, **Saunier Duval** part number 85373.

## Cupboard or compartment ventilation

The boiler can be fitted in a cupboard or compartment without the need for permanent ventilation.

## Minimum dimensions (in mm) for the positioning of flue terminals

|  |      |
|--|------|
| <b>A</b> - Under a window .....                          | 300  |
| <b>B</b> - Under an air vent .....                       | 300  |
| <b>C</b> - Under a gutter .....                          | 75   |
| <b>D</b> - Under a balcony .....                         | 300  |
| <b>E</b> - From an adjacent window .....                 | 300  |
| <b>F</b> - From an adjacent air vent .....               | 300  |
| <b>G</b> - From vertical or horizontal air pipes .....   | 300  |
| <b>H</b> - From an external corner of the building ..... | 300  |
| <b>I</b> - From an internal corner of the building ..... | 300  |
| <b>L</b> - From the ground or from another floor .....   | 300  |
| <b>M</b> - Between two terminals vertically .....        | 1500 |
| <b>N</b> - Between two terminals horizontally .....      | 600  |

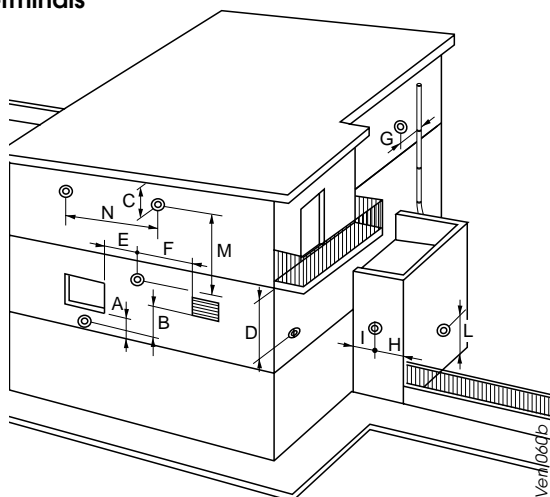


Diagram 10

# BOILER INSTALLATION

## Statutory requirements

The installation of this boiler must be carried out by a competent person in accordance with the relevant requirements of the current issue of:

The Gas Safety (Installation and Use) Regulations  
The Building Regulations  
The local water company Byelaws  
The Building Standards Regulations (Scotland)  
The Health and Safety at Work Act

## Sheet metal parts

**WARNING.** When installing or servicing this boiler, care should be taken when handling the edges of sheet metal parts to avoid the possibility of personal injury.

# FLUE INSTALLATION

## Top outlet flue - kit 85090

The boiler is only suitable for top outlet flue connection.

## Calculation of flue cutting lengths

- Measure wall thickness **e** (mm), see diagram 11.
- For side flues, measure distance from inside face of side wall to centre line of boiler and subtract 235 to get dimension **a** (mm).
- Refer to **table 2** for cutting lengths of both inner and outer flue pipes for each of the various flue options available.

**Important:** All flue cutting lengths must be measured from the terminal end of the flue pipes, see diagram 12.

When the dimension **X** measured on site is greater than that given in **table 2**, a flue extension kit will be required, refer to **table 3** for details.

## Extended flue

The horizontal flue is extended by using one or more of the 1000 mm extension pipes, **Saunier Duval** part number 85091. These are connected together by push fit type joints, clamps and seals.

## Calculation of flue cutting lengths for extended flue

- Using the correct number of extension kits as **table 3**, measure dimensions **a** and **e**, see diagram 12. Cut both the inner and outer pipes to the dimensions given in **table 4**

**Important:** All cutting lengths should be measured from the push fit joint end of the extension pipe. Do not leave any burrs or sharp edges on the cut ends of the pipes.

Table 3

Number of extension kits required

| Flue option               | Dimension 'X'   | No. of extension kits |
|---------------------------|-----------------|-----------------------|
| Side flue (left or right) | 991 to 1991 mm  | 1                     |
|                           | 1991 to 2991 mm | 2                     |

**Note:** Maximum flue length for 35kW model is 2 metres

## Installing the boiler

Prior to starting work, the system must be thoroughly flushed using a propriety cleanser such as **Sentinel X300** to eliminate any foreign matter and contamination e.g. metal filings, solder particles, oil, grease etc.

**Note.** Solvent products could cause damage to the system.

- Engage boiler upper part onto the hanging bracket.
- Fit the washers between the boiler pipes and the inlet and outlet fittings on the fixing jig and connect the various couplings between the boiler and jig.

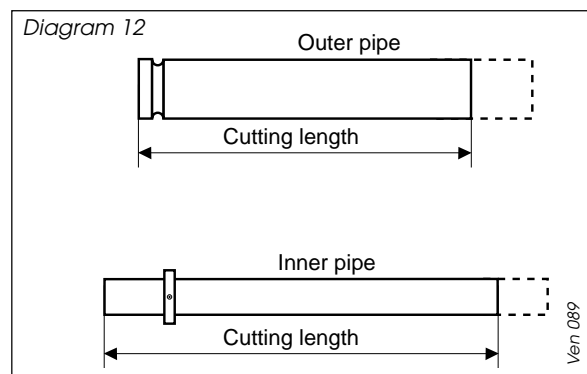
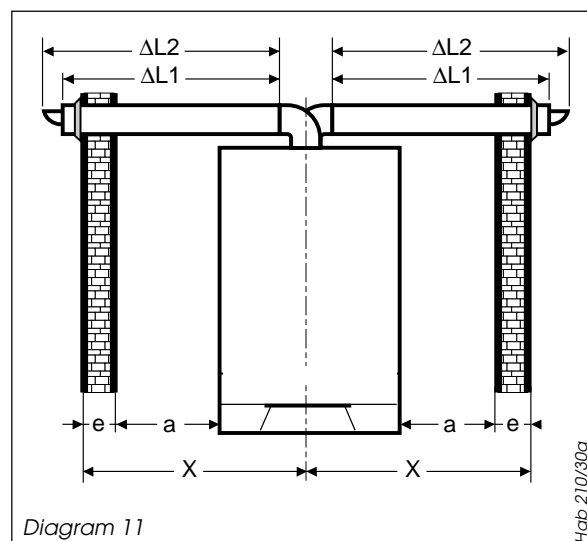


Table 2

Flue cutting lengths

| Flue option               | Cutting length (mm) |               | Comments  |
|---------------------------|---------------------|---------------|---|
|                           | outer pipe          | inner pipe    |   |
| Rear flue                 | $e + 160$           | $e + 244$     | maximum wall thickness 'e' without extension 756 mm |
| side flue (left or right) | $e + a + 145$       | $e + a + 229$ | maximum distance 'x' without extension 990 mm       |

# FLUE INSTALLATION

Table 4  
Flue extension cutting lengths

| Flue option                  | Cutting length |             | Comments  |
|------------------------------|----------------|-------------|---|
|                              | outer pipe     | inner pipe  |   |
| Side flue<br>(left or right) | e + a - 755    | e + a - 755 | maximum<br>dimension 'X'<br>without<br>extension 990 mm |

## Installation of flue assembly

- Fit rubber sealing collar (A), see diagram 13, into groove at the outer end of pipe (B).
- Fit outer pipe (B) into wall with groove to the outside.
- Pull pipe inwards to bring rubber sealing collar hard up against external wall, see diagram 14.
- Fit internal plastic flange (C) onto outer pipe. Push along the pipe until engaged against internal wall.
- From inside, insert inner pipe (D) into outer pipe.
- Fit both 'O' rings (E) into the flue elbow (F), one at the inlet, one at the outlet. By necessity, they are a loose fit, apply a small amount of silicone grease to each 'O' ring when fitting.
- Slacken the two screws and fit the clamp and seal (G) onto the elbow.
- Take hold of the inner flue and push gently onto the elbow outlet taking care not to tear the 'O' ring.

**Important:** If the flue has been cut, ensure that there are no burrs that could damage the 'O' ring.

- Push the elbow clamp and seal over the outer flue.
- For flue systems less than 1,5 m long, leave the restrictor (a) fitted in the fan outlet, see diagram 15.

The standard flue kit 85090, see **diag. 13**, comprises :

- External rubber sealing collar ..... **A**
- Outer pipe ..... **B**
- Plastic flange ..... **C**
- Inner pipe ..... **D**
- 2 'O' rings ..... **E**
- Elbow ..... **F**
- Clamp and seal ..... **G**
- Gasket ..... **H**
- Four screws ..... **I**

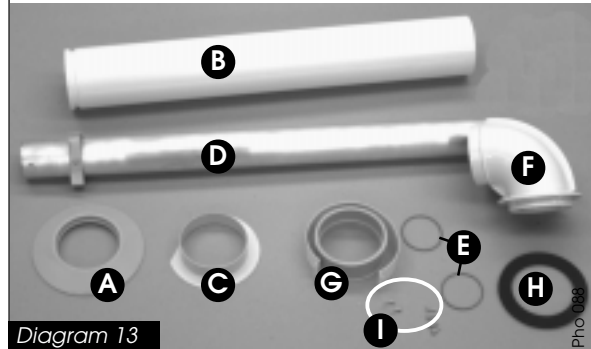


Diagram 13

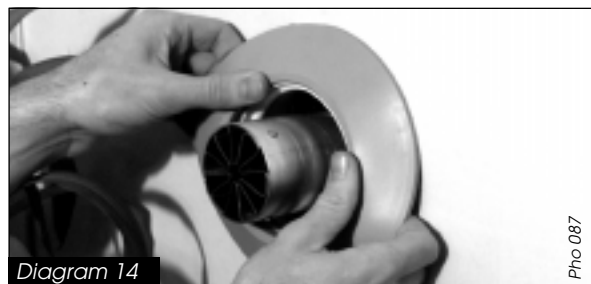


Diagram 14

- Remove the backing from the self adhesive gasket (H) and carefully fit gasket to base of flue elbow.
- Fit elbow onto boiler and secure with the four screws (I).

## Concentric flue system

The maximum permissible length (L) for the concentric flue system is 3,5 m (F 28 E) or 2 m (F 35 E). For flue systems up to 1,5 m length, the restrictor (a) supplied fitted to the boiler, inside the fan outlet, must be left in place. For longer flue systems, the restrictor must be removed.

For each 90° flue elbow used, (or two 45° elbows) the maximum permissible length (L) must be reduced by 1 metre.

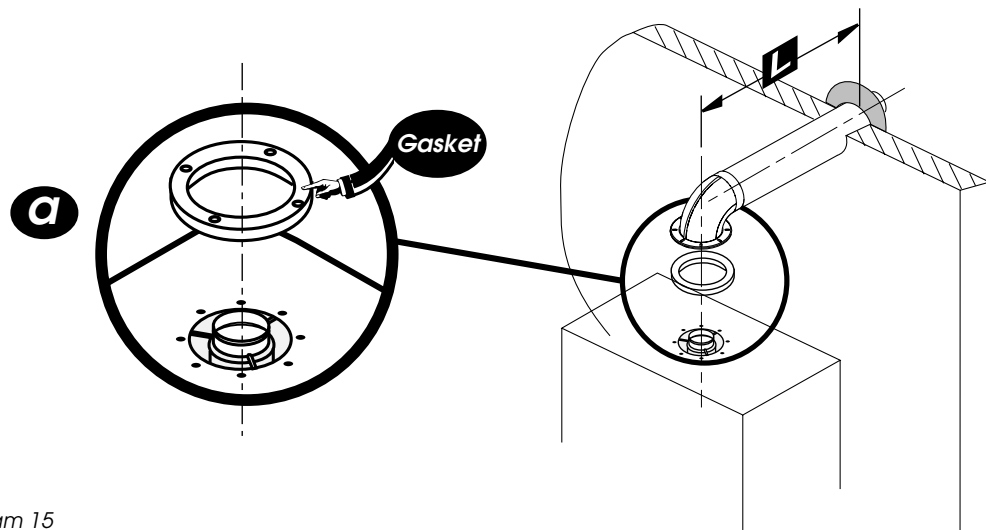


Diagram 15

Hab 249a

## ELECTRICAL CONNECTION

**Warning.** This boiler must be earthed. All system components must be of an approved type.

Connection of the whole electrical system and any heating system controls to the electrical supply must be through a common isolator.

Isolation should preferably be by a double pole switched fused spur box having a minimum contact separation of 3 mm on each pole. The fused spur box should be readily accessible and preferably adjacent to the boiler. It should be identified as to its use.

A fused three pin plug and shuttered socket outlet may be used instead of a fused spur box provided that:

a) They are not used in a room containing a fixed bath or shower.

b) Both the plug and socket comply with the current issue of BS1363.

The mains electrical supply must be maintained at all times in order to provide domestic hot water. Do not interrupt the mains supply with a time switch or programmer.

**WARNING: ON NO ACCOUNT MUST ANY EXTERNAL VOLTAGE BE APPLIED TO ANY OF THE TERMINALS ON THE HEATING CONTROLS CONNECTION PLUG.**

**Warning:** 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.

### External controls

The **ISOFAST** boiler is designed to operate at maximum efficiency at all times, but will be most efficient and economical when connected to a room thermostat.

A suitable room thermostat is available as an ac-

cessory, **Saunier Duval part number 40011**. Please contact your supplier.

The boiler will work for heating without a room thermostat being connected provided that the wire link fitted between the two terminals of the connector (**E**) is left in place, see **diagram 17**.

Alternatively, a 230V room thermostat can be used but do not make any connection to the compensating resistor, see **diagram 17**.

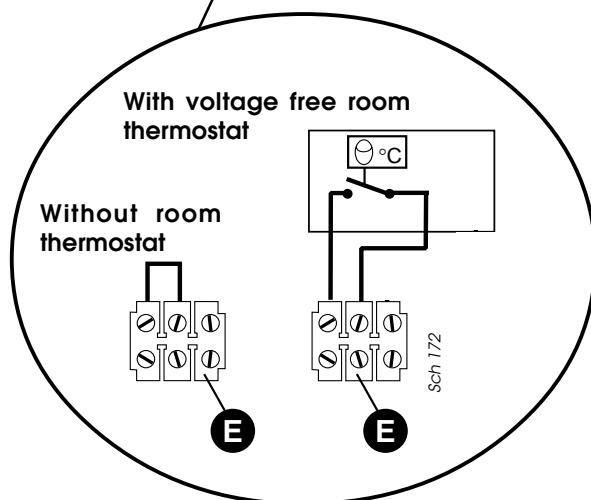
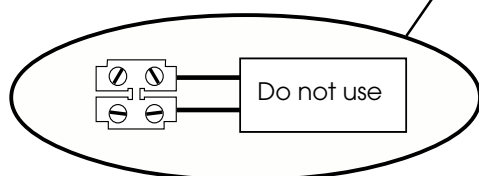
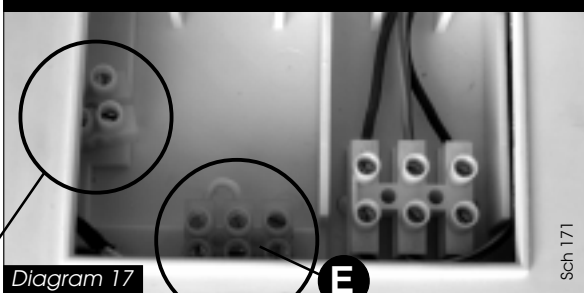
**ON NO ACCOUNT** must any electrical voltage be applied to any of the terminals of the external controls plug.

**Note:** For further information, see the building regulations 1991 - Conservation of Fuel and Power - 1995 edition - appendix G, Table 4b.

**The boiler is supplied with a mains lead attached. Connect this to the electrical supply.**



**Leave link in place for no external controls.**



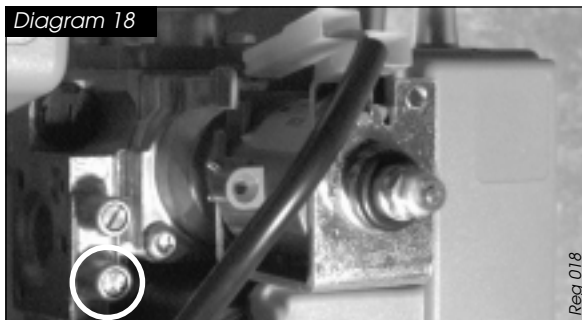
# COMMISSIONING

The commissioning and first firing of the boiler must only be done by a competent person.

## Gas installation

It is recommended that any air is purged from the supply at the gas inlet test point on the gas valve, see **diagram 18**.

Diagram 18

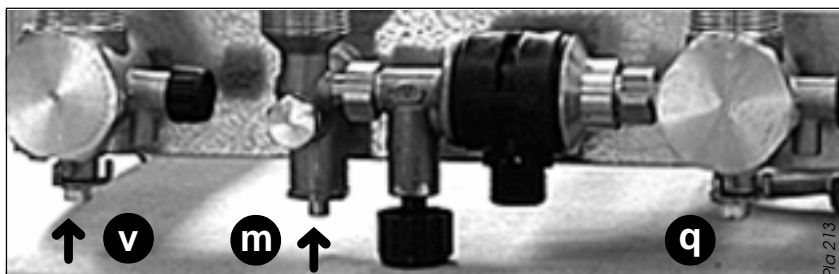
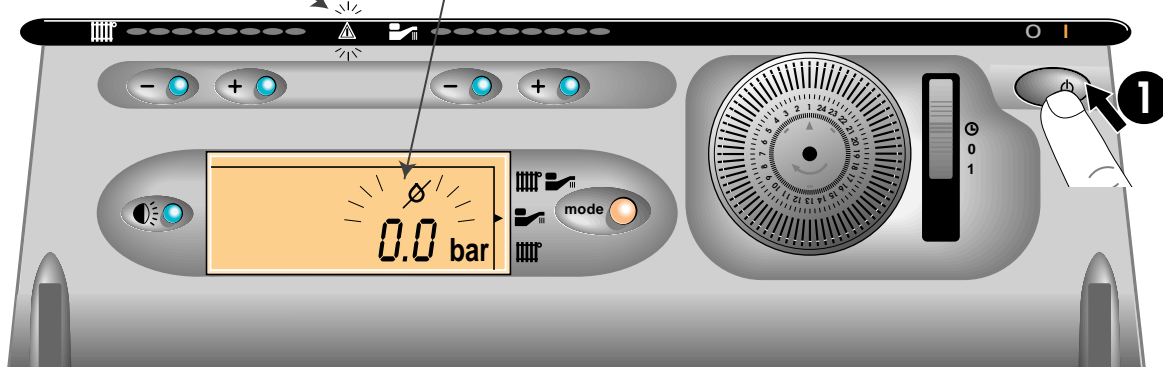


## Filling the system

- 1 Press the mains 'On/Off' button

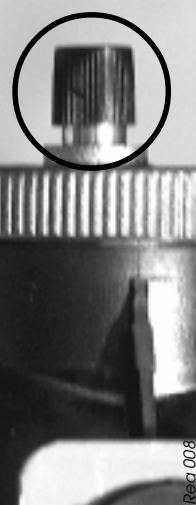
The warning light will illuminate

The display will indicate 0 bar pressure in the system



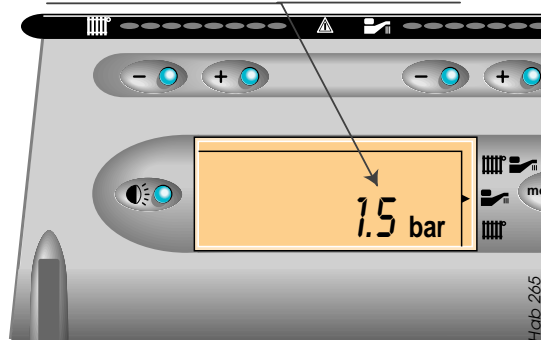
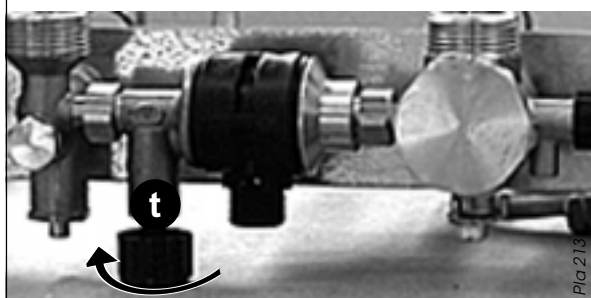
- 2 Open the boiler isolating valves (**v** and **q**), the slot of the screw corresponds to flow direction. Fully open valve **m** by unscrewing anti-clockwise.

- 3 Undo cap on automatic air vent on top of pump and leave undone.



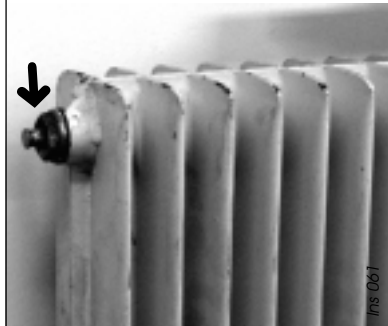
- 4 Open the tap (**t**) on the filling device and fill the system until the pressure indicated on the display is between 1 and 2 bar.

The pressure must be between 1 and 2 bar

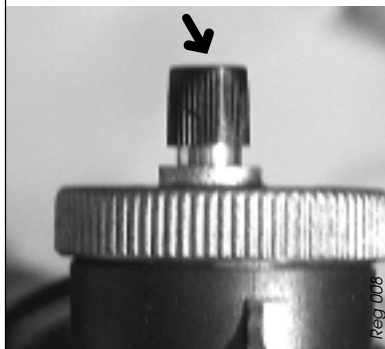


## COMMISSIONING

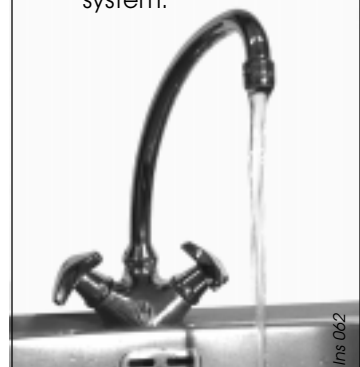
- 5** Bleed each radiator to remove the air, re-tighten bleed screws.



- 6** Leave the cap on the pump auto air vent open.

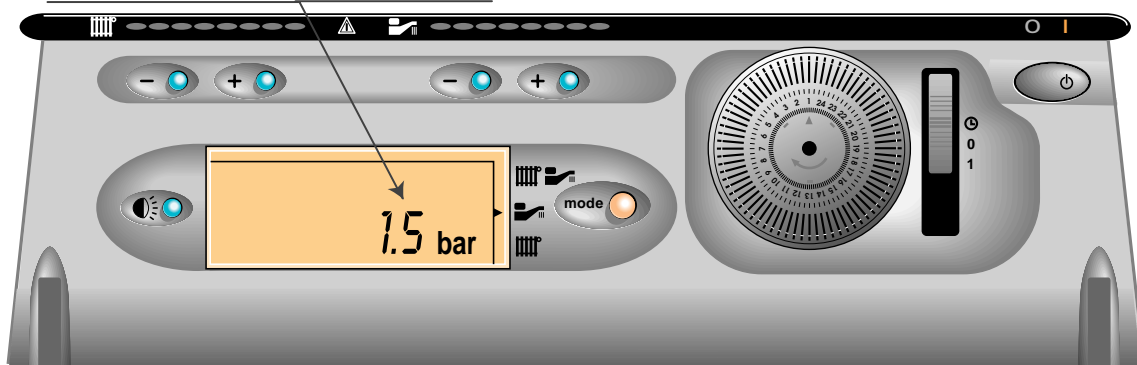


- 7** Open various hot water taps to bleed system.



- 8** Make sure the display indicates a system pressure of between 1 and 2 bar. Re-fill system as necessary.

*The pressure must be between 1 and 2 bar*



## Lighting the boiler :

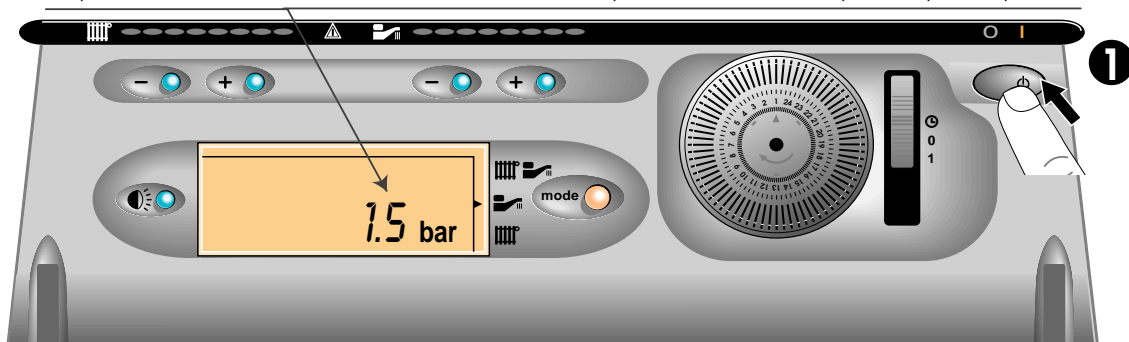
### Make sure that:

- The boiler is connected to the electrical supply.
- The gas service cock is open.

Then follow the instructions below :

### 1 Press the On/Off button (1)

*The pressure must be between 1 and 2 bar. If not, the system must be filled by a competent person.*

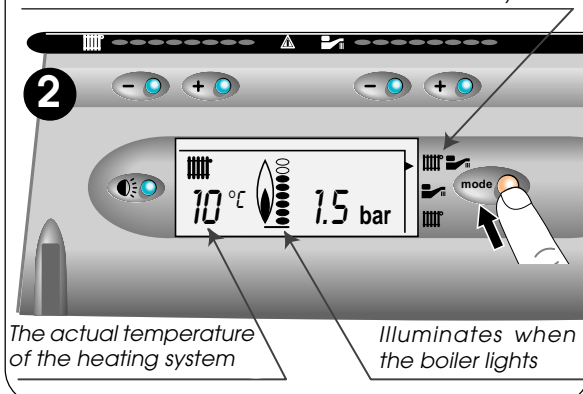


Hab 264

## To stop the boiler : Press button (1)

## Setting to the WINTER position (Heating + hot water)

Press the **mode** button to select the **winter** symbol



The actual temperature of the heating system

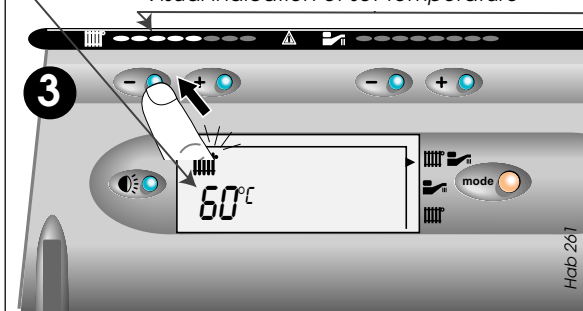
Illuminates when the boiler lights

- Adjust heating temperature to maximum .
- Check that any external controls, if fitted, are calling for heat (set room thermostat to maximum).
- Allow the temperature to rise to the maximum value, with all radiator valves open. The temperature rise will cause release of the gases contained in the water of the central heating system.
- Gases driven towards the boiler will be automatically released through the automatic air vent.
- The gases trapped at the highest point of the system must be released by bleeding the radiators. On reaching maximum temperature, the boiler should be turned off and the system drained as rapidly as possible whilst still hot.
- Refill system to a pressure of between 1 and 2 bar and vent as before.
- Restart boiler and operate until a maximum temperature is reached. Shut down boiler and vent heating system. If necessary, top up heating system and make sure that a pressure of 1 bar is indicated when system is COLD.

## Adjusting the heating temperature

Press + or - to adjust the maximum temperature of the heating (38°C to 87°C)

Visual indication of set temperature



Hab 267



# COMMISSIONING

## Setting the heating output

The heating output can be set without the use of a pressure gauge; proceed as follows:

- Press the display light button and keep pressed for 5 seconds, **see diagram 20**.

**Note:** The boiler has now been put into 'Service Mode', allowing certain adjustments to be made and diagnostic fault codes to be displayed. Refer to the '**Servicing Instructions**' for further details.

The heating output, in kW, is shown on the left hand side of the display, **see diagram 21**.

- Remove the blanking plug from the front of the control panel to gain access to the heating adjusting screw.

- Adjust the heating output by turning the screw clockwise to increase, anti-clockwise to decrease.

- Refit blanking plug.

**Note:** Adjustment of the heating output does not affect the domestic hot water output.

For kW to Btu/hr conversion refer to **table 5**.

Table 5  
kW to Btu/hr conversion

| kW | Btu/hr | kW | Btu/hr |
|----|--------|----|--------|
| 10 | 34,120 | 20 | 68,240 |
| 12 | 40,940 | 22 | 75,060 |
| 14 | 47,770 | 24 | 81,890 |
| 16 | 54,590 | 26 | 88,710 |
| 18 | 61,420 | 28 | 95,540 |

| kW | Btu/hr  |
|----|---------|
| 30 | 102,360 |
| 32 | 109,180 |
| 34 | 116,000 |
| 35 | 119,420 |

## Setting the maximum heating temperature

The maximum heating temperature can be preset at commissioning stage to suit the type of heating system.

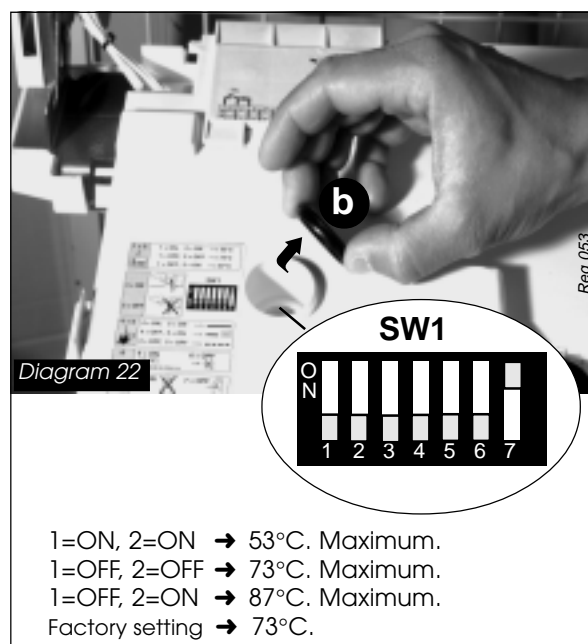
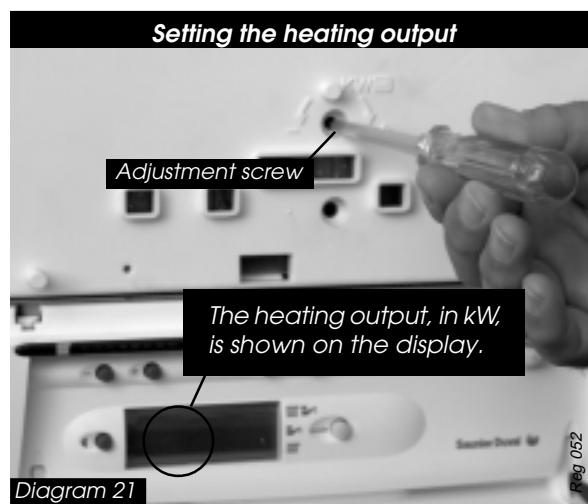
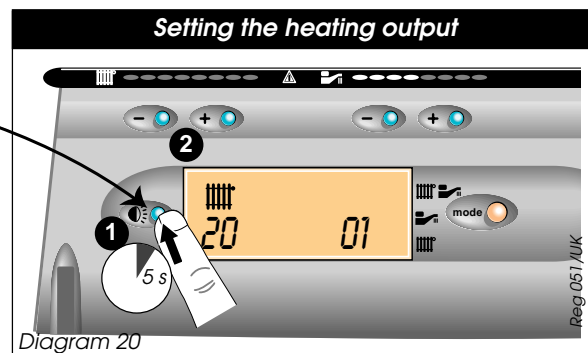
For example, for use with underfloor heating, the maximum heating temperature can be set to 53°C. To adjust the maximum temperature, proceed as follows:

- Remove the blanking plug (**b**) from the rear of the control panel to gain access to selector switch SW1 (**see diagram 22**).

Adjust toggles **1** and **2** to give the desired maximum heating temperature, **see diagram**

**Note:** To adjust the maximum heating temperature it is only necessary to change toggles **1** and **2**. Do NOT touch any other toggles.

- Refit blanking plug.



# SAFETY DEVICES

The **ISOFAST** incorporates a visual display that indicates fault conditions, should they occur.

In the event of a fault, the display will indicate, by means of pictograms and/or letters and numbers, exactly in which area the fault lies.

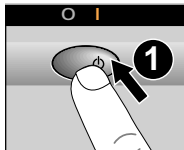
Should the boiler fail to operate during Commissioning, the most likely fault is that the gas supply to the boiler has not been turned on or purged sufficiently or that there is no pressure in the heating system. These are indicated as follows :

## No gas supply

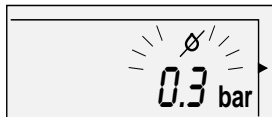


→ This will be indicated on the display as a pictogram of a spark. To rectify this, proceed as follows:

- Switch off the boiler at the On/Off push button.
- Rectify the gas supply problem.
- Restart the boiler by pressing the On/Off button.



## Insufficient system pressure



This will be indicated on the display as a flashing warning indicating the system pressure is low.

To rectify this the system must be re-filled, refer to 'Commissioning'.

## Other faults

These are indicated on the display by a fault code and a telephone symbol. Further information on the fault codes can be found in the 'Servicing Instructions'.

## General safety devices

### Air flow rate safety device

If an obstruction, even partial, of the flue occurs, for any reason whatsoever, the built in safety system of the boiler will turn the boiler OFF and the fan will continue to run.

The boiler will be ready to operate when the fault has been cleared.

### Overheat safety

In case of boiler overheating, the overheat thermostat will turn the boiler off. The thermostat, located on the heat exchanger flow pipe, will need to be manually reset.

### In case of power supply failure

The boiler no longer operates.

As soon as power supply is restored, the boiler will be automatically restarted.

### Frost protection

The ISOFAST has a built in frost protection device that protects the boiler from freezing. If the boiler is to be left and there is a risk of frost, ensure that the gas and electrical supplies are left connected. The frost protection device will light the boiler when the temperature of the boiler water falls below 6°C. When the temperature reaches 16°C, the boiler stops.

**Note :** This device works irrespective of any room thermostat setting and will protect the complete heating system.

## SETTINGS

### Gas valve setting

All boilers are tested and factory set during manufacture. Should it be necessary to reset a gas valve, for example, after replacement, proceed as follows:

- Shut down boiler.

### Minimum setting

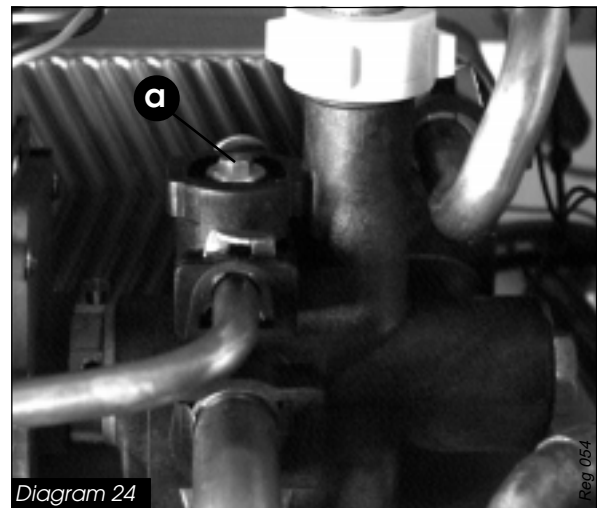
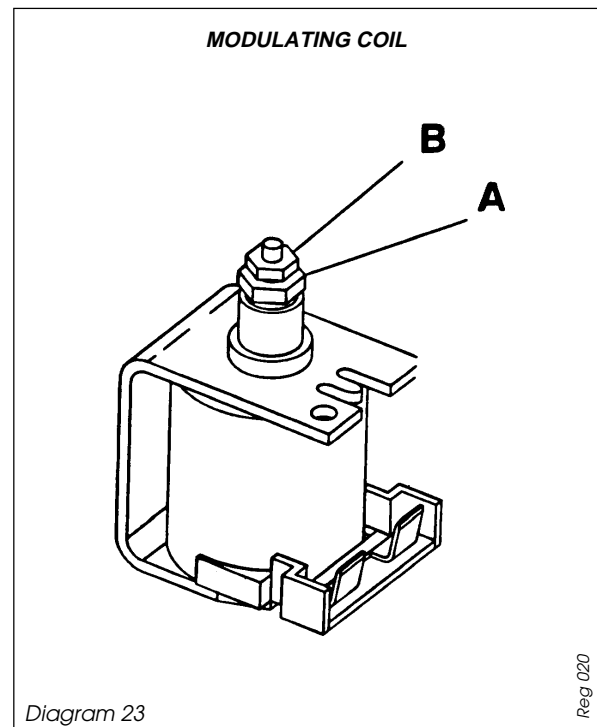
- Remove one electrical connector from the modulating gas valve coil, see **diagram 23**.
- Connect a suitable pressure gauge.
- Turn the OFF/Summer/Winter switch to the 'Summer' position.
- Turn the domestic hot water temperature adjuster to maximum setting.
- Remove the protective cover from the gas valve adjuster.
- Turn nut 'A', see **diagram 23**:  
CLOCKWISE: To increase the pressure.  
ANTICLOCKWISE: To decrease the pressure.

### Maximum setting

- Reconnect the electrical connector removed from the modulating gas valve coil.
  - Remove the protective cover from the gas valve adjuster.
  - Turn nut 'B', see **diagram 23**:  
CLOCKWISE: To increase the pressure.  
ANTICLOCKWISE: To decrease the pressure.
- After adjustment, refit the cover to the gas valve adjuster.

### Bypass

The **ISOFAST** has a built-in bypass. This must be adjusted according to the requirements of the system, refer to the flow rate pressure curve (**diagram 4**). The boiler is supplied with the built-in bypass open a half a turn. It is adjusted by turning the bypass screw (a), see **diagram 24**. Turn the screw clockwise to close the bypass. When using thermostatic radiator valves (TRV's) on all of the radiators, it is essential that a separate, adjustable bypass of 15 mm minimum diameter is fitted between the flow and return of the heating circuit, see **diagram 8**. Any bypass must be fitted before system controls.



## ROUTINE CLEANING AND INSPECTION

To ensure the continued efficient and safe operation of the boiler it is recommended that it is checked and serviced at regular intervals. The frequency of servicing will depend upon the particular installation conditions and usage, but in general once a year should be enough.

It is the law that any servicing is carried out by a competent person.

### Service Check and Preparation.

- Operate boiler and check for any faults that need to be put right.
- Isolate boiler from the gas and electrical supplies.
- On completion check all gas carrying parts for soundness with leak detection fluid.
- Remove boiler casing as follows:

### Upper front panel

- Remove the two front panel retaining brackets from the top of the boiler.
- Remove panel by lifting up and forward.

### Sealed chamber cover

- Unclip two toggle clips holding the sealed chamber cover, **see diagram. 1**.
- Lift cover up and off boiler.

### Front control panel

- Lift control panel up and lower forwards to gain access to lower part of boiler.

### Side panels

- Unscrew and remove the four screws securing lower grille onto boiler. Unhook grille from rear of boiler and remove.
- Remove three screws from front of each side panel.
- Unclip the toggle clips securing top of each panel. Lift each panel up and then forward to remove.

### Combustion chamber cover

- Unclip two toggle clips and unscrew two screws securing combustion chamber cover to combustion chamber, **see diagram 2**.
- Remove combustion chamber cover from boiler.
- Undo, but do not remove, two burner support screws at rear of burner chamber.

### Burner

- Undo main gas supply nut from burner.
- Pull off the ignition and flame sense leads from the gas valve remove burner from boiler by lifting up and pulling forwards from keyhole slots.

**Note:** The washer between main burner and main burner gas supply must be kept for use on reassembly.

- Remove ignition and flame sense electrodes from burner.
- Unscrew and remove injector bar retaining screws and separate injector bar from burner.
- Examine and clean injectors as necessary.

**Note:** DO NOT use a wire or sharp instrument on the holes.

Clean burner by washing in soapy water. Dry thoroughly before re-fitting.



Diagram 1

Car 025

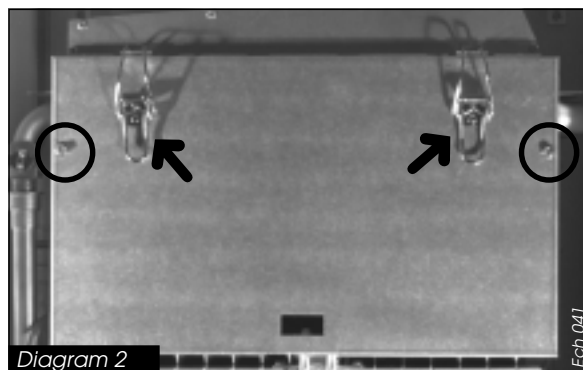


Diagram 2

Ech 041

### Heat exchanger

- Disconnect power supply leads and earth lead from fan.
- Unscrew and remove, two fan retaining screws at front edge of fan mounting plate.
- Remove fan with mounting plate attached by pulling forwards out of boiler.
- Remove air pressure switch sensing tube from sensing probe on flue hood.
- Unscrew and remove screws securing flue hood to rear panel.
- Withdraw flue hood from boiler.
- Examine heat exchanger for any blockages or build up of deposits.
- Clean heat exchanger with soft brush or vacuum cleaner. **Do not use any tool likely to damage painted finish of heat exchanger.**

### Reassembly of parts removed for servicing

All parts are replaced in reverse order to removal.

## ROUTINE CLEANING AND INSPECTION

### Flue system

- Check externally to make sure that flue is not blocked
- Inspect flue system to make sure that all fittings are secure.

### Operation of fan

- Switch on electrical supply and turn on gas.
- Light burner by opening a hot water tap.
- Without sealed chamber cover in place, burner should be automatically prevented from lighting by air flow detection system.
- Refit sealed chamber cover.
- Check that fan operates when burner lights and stops when it goes out.

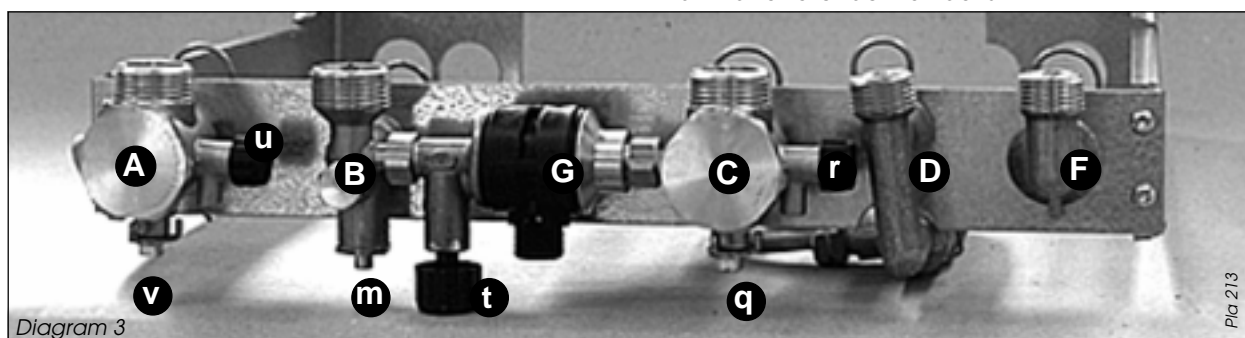
### Cold water inlet filter

Drain down hot water circuit of boiler only, as follows:

- Close isolating valve/throttle (**m**) on cold water isolating cock, **see diagram 3**.

**Note:** This valve is closed when screwed fully clockwise.

- Open one or more hot water taps to drain boiler circuit.
- Undo connecting nut from cold water inlet connection.
- Clean and inspect filter, replace if necessary.
- With both filter and restrictor in place, reconnect connecting pipe to inlet connection and tighten.
- Fully open isolating valve/throttle on cold water inlet and check for leaks.



## REPLACEMENT OF PARTS

For replacement of the following components it will be necessary to remove boiler casing panels as described in 'Routine Cleaning and Inspection'.

**WARNING:** Before commencing the replacement of any component, isolate appliance from electrical supply and turn off gas at service cock.

### To replace domestic hot water thermistor

- Locate domestic hot water thermistor on hot water flow pipe on right hand side of boiler adjacent to gas valve.
- Unclip thermistor from pipe.
- Disconnect leads from thermistor.
- Fit replacement thermistor.
- Fit leads to replacement thermistor, the polarity is not important.

### To replace central heating thermistor

- Locate central heating thermistor on heating flow pipe on centre of boiler.
- Unclip thermistor from pipe.
- Disconnect leads from thermistor.
- Fit replacement thermistor.
- Fit leads to replacement thermistor, the polarity is not important.

### To replace storage vessel thermistor

For this operation the boiler must be removed from the wall.

- Drain down heating and hot water circuit of the boiler only, as follows:
  - Close isolating valves (**q**) and (**v**) on central heating isolating cocks (**a**) and (**c**), **see diagram 3**.

**Note:** These valves are closed when slots are at right angles to direction of flow.

- Drain boiler by opening drain valves (**r**) and (**u**), **see diagram 3**.

**Note:** It is not necessary to drain down entire heating system to carry out this work.

- Close isolating valve/throttle (**m**) on cold water isolating cock, **see diagram 3**.

**Note:** This valve is closed when screwed fully clockwise.

- Open one or more hot water taps to drain boiler circuit.
- Disconnect flue system.
- Disconnect boiler pipes onto fixing jig.
- Disconnect mains cable and any external controls cables.
- Remove boiler from wall.
- From rear of boiler, disconnect domestic pipes from storage vessel.
- Disconnect electrical connections from vessel.
- Unclip vessel from boiler frame and remove from boiler.
- Slide off plastic strap and separate two halves of vessel insulation.
- Locate thermistor at top of insulation.
- Replace thermistor in same position as old thermistor.
- Refit vessel in reverse order to removal.
- Refit boiler onto fixing jig, tighten all connections ensuring that all sealing washers are fitted before tightening.
- Reconnect flue making sure that all joints are properly connected.

## REPLACEMENT OF PARTS

- Open isolating valves on flow and return connections, refill, vent and pressurise boiler.
- Check for leaks.
- Reconnect all electrical connections and restore electrical supply.
- Open gas cock, operate boiler and re-check all joints for soundness.

### To replace fan

- Remove fan as described in 'Routine Cleaning and Inspection'.
- Fit replacement fan in reverse order to removal.
- Reconnect electrical leads.

### To replace air pressure switch

- Locate air pressure switch situated inside sealed chamber on top right hand side.
- Remove air pressure switch tube from sensing probe on flue hood.
- Disconnect air pressure switch electrical connections.
- Undo screws on top of boiler securing air pressure switch to boiler and remove switch.
- Pull sensing tube off switch.
- Fit replacement switch to boiler in reverse order to removal, noting that pressure sensing tube fits to left hand connection on switch.

### To replace domestic water flow sensor

- Drain down hot water circuit of boiler only as described previously.
- Undo connecting nut from cold water inlet connection.
- Locate flow sensor on cold water inlet pipe to boiler inside controls area, see diagram 4.
- Carefully pull off electrical connector from flow sensor.
- Pull out slotted metal clip securing cold water in-

let pipe to flow sensor and carefully remove from sensor.

- Pull out slotted metal clip securing flow sensor to pump mounting and carefully remove sensor from boiler.
- Fit replacement sensor to boiler in reverse order to removal.

### To replace printed circuit board (PCB)

- Gain access to rear of control panel.
- Unclip and remove external controls/mains connection access cover.
- Unclip side clips and hinge up control panel cover to gain access to PCB, **see diagram 5.**
- Carefully pull off electrical connections to PCB.
- Unclip and lift out PCB.
- Fit replacement PCB in reverse order to removal.

**Note: 1)** Make sure that PCB connections are fully pushed onto replacement PCB.

**2)** Set the heating temperature option to the same value as the old PCB, refer to 'Installation and User' instructions.

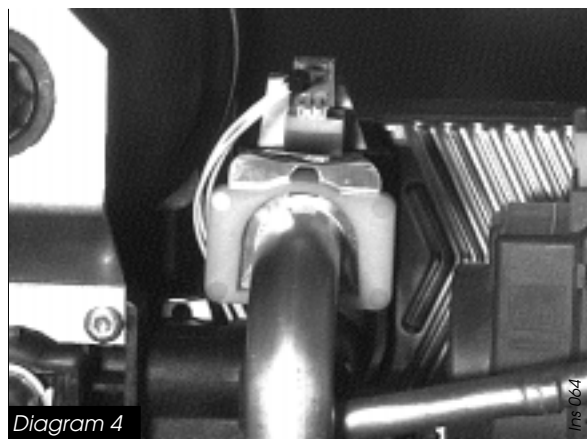


Diagram 4

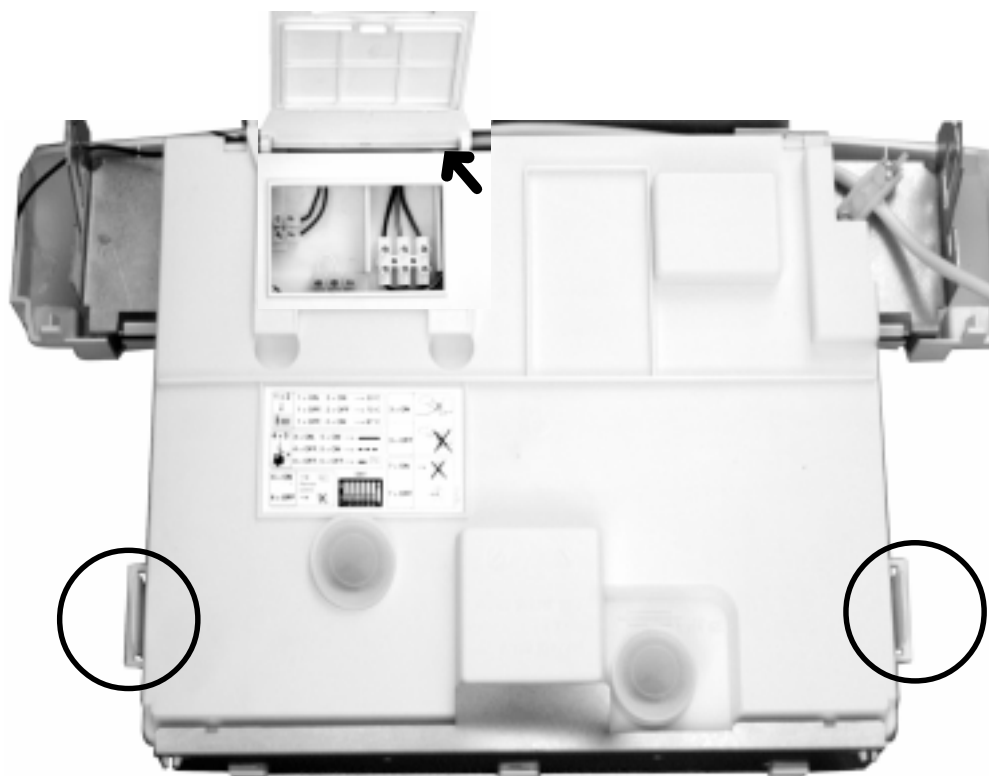


Diagram 5

## REPLACEMENT OF PARTS

### To replace pump

- Drain down heating circuit of the boiler only, as described previously.

**Note:** It is not necessary to drain down entire heating system to carry out this work.

- Undo two fixing screws and remove pump retaining bracket from front of pump.
- Undo clips securing pump outlet hose connection to pump.
- Slide hose along pipe to clear pump outlet.
- Disconnect pump electrical connection from PCB.
- Transfer automatic air vent to replacement pump using new washers supplied.
- Re-connect electrical connection to PCB.
- Fit replacement pump in reverse order to removal.
- Open isolating valves on flow and return connections, refill, vent and pressurise boiler.
- Check for leaks.

### To replace domestic hot water heat exchanger

- Drain down heating and hot water circuits of boiler only as described previously.

**Note:** It is not necessary to drain down entire heating system to carry out this work.

- Unscrew and remove cold water inlet pipe from fixing jig to water flow sensor.
- Supporting domestic heat exchanger, unscrew and remove two screws securing it onto pump mounting and 3-way valve/bypass housing.
- Remove heat exchanger from boiler.
- Fit replacement heat exchanger in reverse order to removal using new seals, supplied.

**Note:** Heat exchanger mounting screws are offset to ensure correct fitting of replacement.

### To replace 3-way valve head

- Locate 3-way valve in centre of lower controls area.
- Remove electrical plug from valve head.
- Pull out slotted metal clip from valve body and remove valve head from body.
- Fit replacement valve head in reverse order to removal.

**Note :**

1) When refitting clip, ensure that letters OK are as shown in **diagram 6**.

2) It is not necessary to drain boiler to carry out this work.

### To replace 3-way valve/bypass housing

- Drain down heating and hot water circuit of boiler only as described previously.

**Note:** It is not necessary to drain down entire heating system to carry out this work.

- Remove 3-way valve head as described previously.
- Remove domestic hot water heat exchanger as described previously.
- Undo pipe connection from 3-way valve/bypass housing to primary heat exchanger, **see diagram 7**.
- Pull out slotted metal clips and remove bypass pipe.
- Pull out slotted metal clip and remove domestic

pipe from 3-way valve/bypass housing to storage vessel.

- Undo pipe from 3-way valve/bypass housing to fixing jig.
- From underneath boiler, undo two screws securing 3-way valve/bypass housing and lift out of boiler.
- Fit replacement 3-way valve/bypass housing in reverse order to removal.

### To replace system pressure sensor

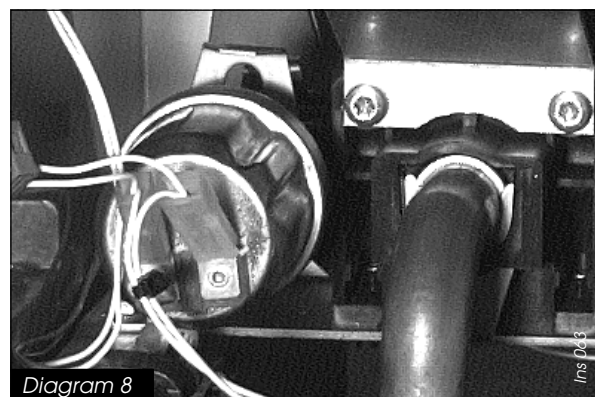
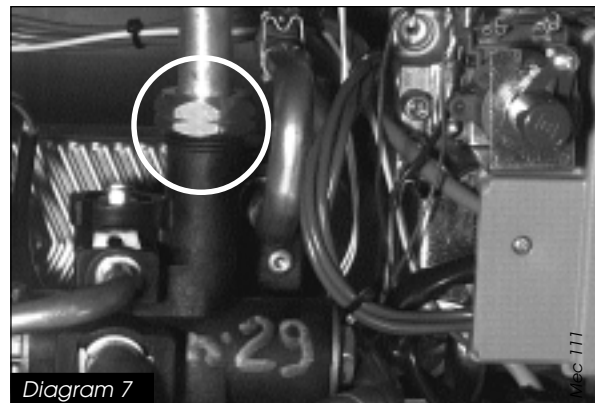
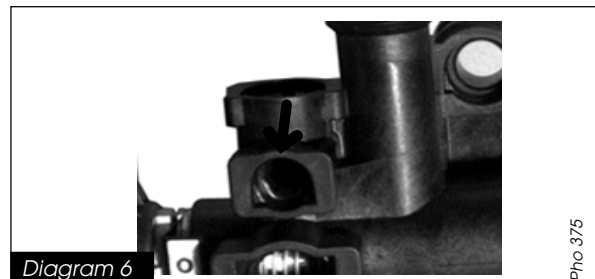
- Drain down heating circuit of boiler only as described previously.

**Note:** It is not necessary to drain down entire heating system to carry out this work.

- Locate system pressure sensor at front left hand side of boiler, **see diagram 8**.
- Remove electrical connections from sensor.
- Pull off slotted metal clip and remove sensor from boiler.
- Fit replacement sensor in reverse order to removal.

### To replace gas valve module

- Locate gas valve module attached to side of gas valve.





- Remove screw securing cover onto gas valve module, **see diagram 9**.
- Remove cover and disconnect multi-plug from module.
- Disconnect ignition and flame sense leads from module.
- Withdraw module from gas valve.
- Fit replacement module, ensuring it is of the correct type for the boiler, in reverse order to removal.
- Reconnect ignition and flame sense leads, the connections are uniquely sized to ensure correct replacement.
- Reconnect multi-plug onto replacement module.
- Refit cover ensuring all sealing grommets are correctly located in module body.

### To replace gas valve

- Ensure that gas supply to boiler is turned off at gas cock.
- Remove gas valve module as described previously.
- Disconnect electrical connections to gas valve modulating coil, **see diagram 9**.
- Undo main gas supply nut from main burner.

**Note:** The washer must be kept for use on reassembly.

- Undo main gas union nut between gas valve supply pipe and gas inlet valve.

**Note:** The washer must be kept for use on reassembly.

- Disconnect plastic sensing pipe from gas valve to base of sealed chamber.
- Unscrew and remove screws securing gas valve bracket to boiler frame.
- Withdraw gas valve assembly.
- Using old gas valve as a guide, transfer gas pipes from old gas valve to replacement gas valve.
- Fit replacement gas valve into boiler.
- Reconnect gas pipes in reverse order to removal.
- Refit electrical connections in reverse order to removal, the polarity of the wires to the modulating coil is not important.

### To replace modulating coil

- Ensure that gas supply to boiler is turned off at gas cock.
- Disconnect electrical connections to gas valve modulating coil, **see diagram 9**.
- Undo two screws securing modulating coil to gas valve and remove coil.

- Fit replacement coil in reverse order to removal.
- Refit electrical connections in reverse order to removal, the polarity of the wires to the modulating coil is not important.

### To replace central heating safety valve

If safety valve seating is damaged, it will be necessary to replace safety valve as a complete unit, repair is not possible.

- Drain down heating circuit of boiler only as described previously.
- Disconnect safety valve discharge pipe from safety valve.
- Remove wire clip securing safety valve to fixing jig and remove safety valve, **see diagram 10**.
- Fit replacement safety valve in reverse order to removal.

**Note:** Apply a small quantity of silicon grease to the safety valve 'O' ring prior to fitting.

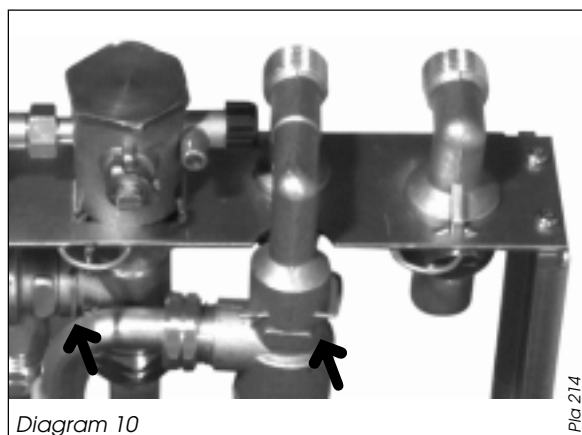
- Open isolating valves on flow and return connections, refill, vent and pressurise boiler.
- Check for leaks.

### To replace storage vessel safety valve

If safety valve seating is damaged, it will be necessary to replace safety valve as a complete unit, repair is not possible.

- Drain down hot water circuit of boiler only as described previously.
- Disconnect safety valve discharge pipe from safety valve.
- Remove wire clip securing safety valve to fixing jig and remove safety valve, **see diagram 10**.
- Fit replacement safety valve in reverse order to removal.

**Note:** Apply a small quantity of silicon grease to the safety valve 'O' ring prior to fitting.



- Open isolating valve on cold water inlet connection.
- Check for leaks.

### To replace heat exchanger

- Drain down heating circuit of boiler only as described previously.

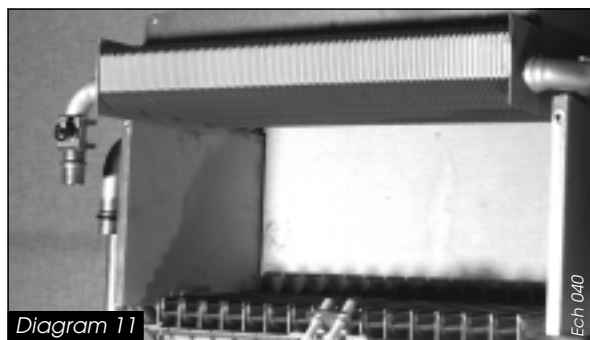
**Note:** It is not necessary to drain down entire heating system to carry out this work.

- Remove combustion chamber cover, as described in '**Routine Cleaning and Inspection**'.
- Disconnect electrical connector from high limit thermostat.



## REPLACEMENT OF PARTS

- Remove slotted metal clips from heat exchanger connection pipes.
- Undo nut securing pipe from heat exchanger to 3-way valve/bypass housing.
- Swing pipe away from 3-way valve/bypass housing and pull down to disengage from heat exchanger pipe.
- Pull down pipe from pump to heat exchanger to disengage from heat exchanger pipe.
- Slide heat exchanger forwards and remove from boiler, **see diagram 11**.
- Fit replacement heat exchanger in reverse order to removal.
- Reconnect electrical connector to high limit thermostat.
- Open isolating valves on flow and return connections, refill, vent and pressurise boiler.
- Check for leaks.



### To replace central heating expansion vessel

Replacement of the expansion vessel is not possible with the boiler on the wall.

Remove boiler from wall as described in **'To replace storage vessel thermistor'**.

- Undo pipe coupling on expansion vessel.
- Supporting expansion vessel, unscrew and remove screw securing expansion vessel to boiler.
- Lift vessel out of boiler.
- Fit replacement vessel to boiler in reverse order to removal, ensuring that sealing washer is fitted to pipe connection before tightening.
- Ensure that expansion vessel charge pressure is 0.5 bar (7.5 psi) using a pressure gauge. If necessary, increase pressure using a car or cycle tyre pump connected to the Schrader valve.
- Refit boiler onto fixing jig, tighten all connections ensuring that all sealing washers are fitted before tightening.
- Reconnect flue making sure that all joints are properly connected.
- Open isolating valves on flow and return connections, refill, vent and pressurise boiler.
- Check for leaks.
- Reconnect all electrical connections and restore electrical supply.
- Open gas cock, operate boiler and re-check all joints for soundness.

### To replace high limit thermostat

- Locate high limit thermostat on heating flow pipe on left hand side of boiler.
- Disconnect electrical connection from thermostat
- Unclip thermostat from heating flow pipe.
- Fit replacement thermostat in reverse order to removal.
- Refit connection to thermostat.

### To replace combustion chamber insulation

- Remove combustion chamber cover as described in **'Routine Cleaning and Inspection'**.
- Remove heat exchanger as described previously.
- Remove fan and flue hood as described in **'Routine Cleaning and Inspection'**.

#### Front panel:

- Lift front insulation panel free from retaining lugs on combustion chamber cover.

#### Rear panel:

- Pull rear insulation panel free from retaining lug at rear of combustion chamber by tilting forward.
- Fit replacement insulation panels in reverse order to removal
- Refit combustion chamber cover.

#### Side panels:

- Pull out side panels.

### To replace burner

- Remove burner as described in **'Routine Cleaning and Inspection'**.

Assemble replacement burner, supplied in parts, as follows:

- Fit burner injectors to burner injector bar and tighten.

**Note:** Make sure that injector size, marked on each injector, is the same as that given in **'Technical Data'** for the type of gas being used.

- Fit injector bar into burner, secure with retaining rods.
- Fit replacement burner into boiler in reverse order to removal.

### To replace burner injectors

- Remove burner as described in **'Routine Cleaning and Inspection'**.
- Pull out injector bar retaining rods and separate injector bar from burner.
- Unscrew and remove injectors from injector bar.
- Fit replacement injectors to injector bar and tighten.

**Note:** Make sure that injector size, marked on each injector, is the same as that given in **'Technical Data'** for the type of gas being used.

- Reassemble burner and fit into boiler in reverse order to removal.

### To replace ignition electrode

- Remove burner as described in **'Routine Cleaning and Inspection'**.
- Undo and remove screw securing electrode onto burner.
- Fit replacement electrode onto burner in reverse order to removal.
- Refit burner into boiler in reverse order to removal.

### To replace flame sense electrode

- Remove burner as described in **'Routine Cleaning and Inspection'**.
- Undo and remove screw securing electrode onto burner.
- Fit replacement electrode onto burner in reverse order to removal.
- Refit burner into boiler in reverse order to removal.

---

- A** - Heating return
- B** - Cold water inlet
- C** - Heating flow
- D** - Domestic hot water outlet
- E** - Gas



26

# TECHNICAL DATA

|   | ISOFAST F 28 E | ISOFAST F 35 E |
|---|----------------|----------------|
| <b>Heating</b>                          |                |                |
| Heating output adjustable from ... (kW) | 10,4           | 11,7           |
| to ... (kW)                             | 27,6           | 34,6           |
| from ... (BTU/H)                        | 35,485         | 39,920         |
| to ... (BTU/H)                          | 94,170         | 118,053        |
| Efficiency (%)                          | 82             | 83             |
| Maximum heating temperature (°C)        | 87             | 87             |
| Expansion vessel effective capacity (l) | 7              | 12             |
| Expansion vessel charge pressure (bar)  | 0,5            | 0,5            |
| Maximum system capacity at 75°C (l)     | 160            | 275            |
| Safety valve,                           |                |                |
| maximum service pressure (bar)          | 3              | 3              |
| Products outlet diameter (mm)           | 60             | 60             |
| Fresh air inlet diameter (mm)           | 100            | 100            |

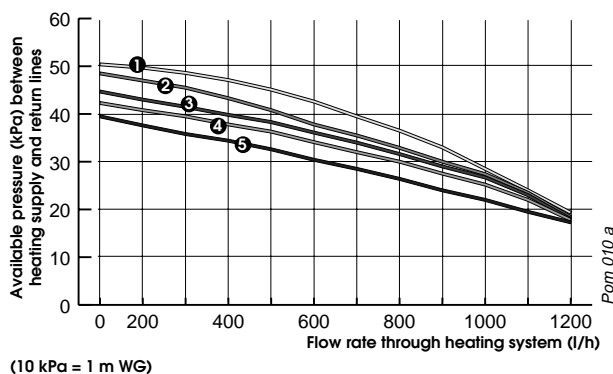
|                            |      |      |
|----------------------------|------|------|
| Electrical supply (V)      | 230  | 230  |
| Maximum absorbed power (W) | 220  | 220  |
| Level of protection        | IP44 | IP44 |

|   | ISOFAST F 28 E | ISOFAST F 35 E |
|---|----------------|----------------|
| <b>Hot water</b>                        |                |                |
| Hot water output                        |                |                |
| automatically variable from ... (kW)    | 10,4           | 11,7           |
| to ... (kW)                             | 27,6           | 34,6           |
| from ... (BTU/H)                        | 35,485         | 39,920         |
| to ... (BTU/H)                          | 94,170         | 118,053        |
| Maximum hot water temperature (°C)      | 60             | 60             |
| Specific flow rate (for 30°C temp rise) |                |                |
| (l/min.)                                | 13,2           | 16,5           |
| Threshold flow rate (l/min.)            | 1              | 1              |
| Nominal water flow rate (l/min.)        | 11,3           | 16,5           |
| Maximum supply pressure (bar)           | 8              | 8              |
| Minimum operating pressure (bar)        | 0,7            | 0,7            |

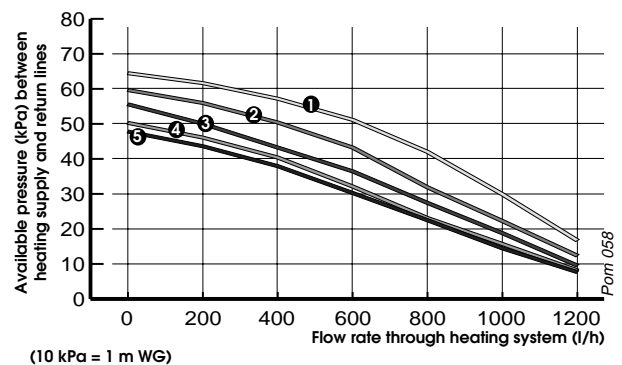
## Natural Gas (G20)

|                         |      |      |
|-------------------------|------|------|
| Ø Burner injector (mm)  | 1,20 | 1,20 |
| Inlet pressure (mbar)   | 20   | 20   |
| Burner pressure (mbar)  | 13,8 | 14,1 |
| Gas rate maximum (m³/h) | 3,20 | 3,98 |
| Gas rate minimum (m³/h) | 1,32 | 1,48 |

## Pump 28 kW

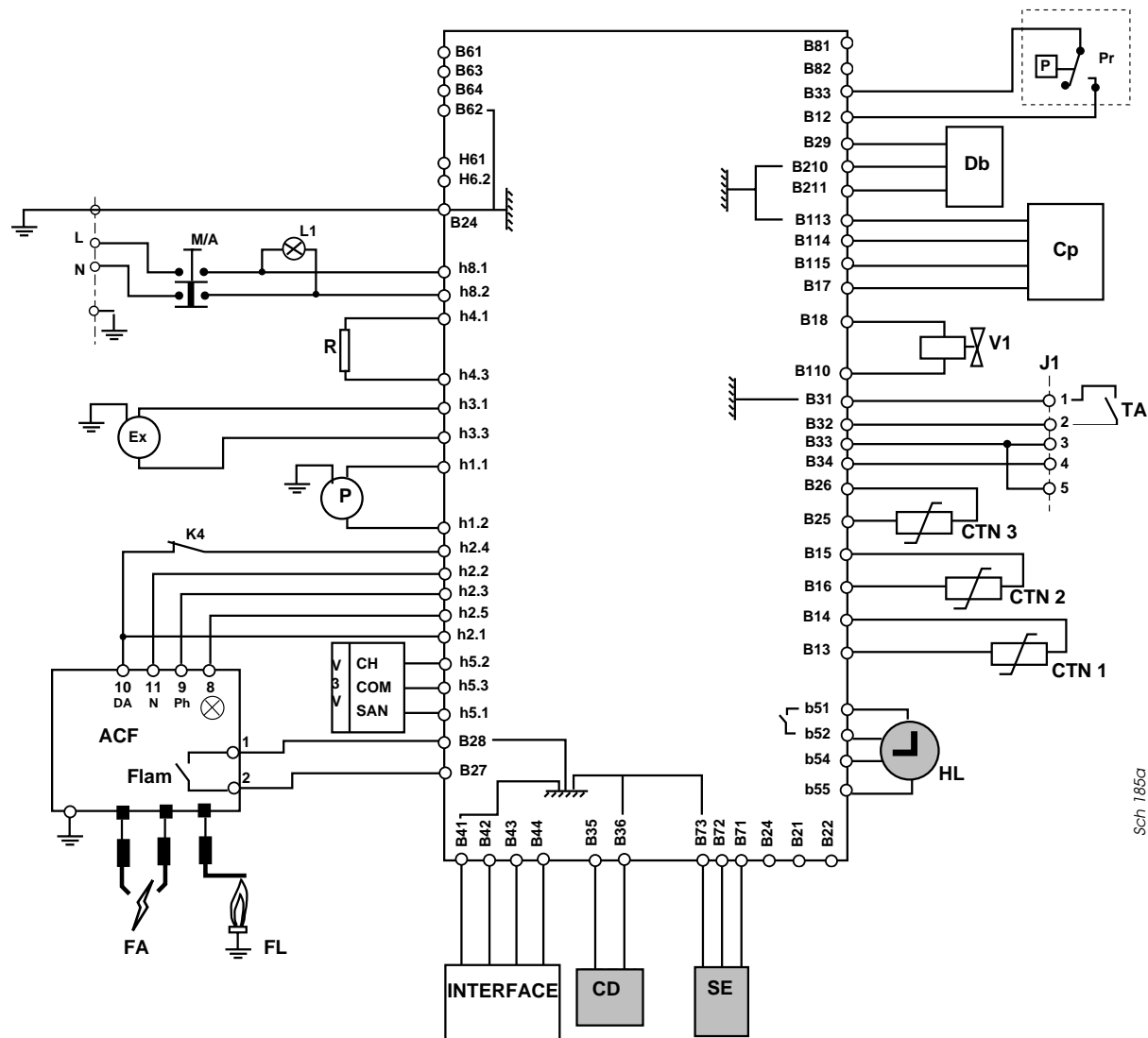


## Pump 35 kW




- 1** Bypass fully shut   
**2** Open 1/4 turn   
**3** Open 1/2 turn   
**4** Open 1 turn   
**5** Open 2 turns

# SCHEMATIC WIRING DIAGRAM



Sch 185a

- M/A** - ON/OFF switch
- L1** - Mains light
- P** - Pump
- ACF** - Gas valve module
- DA** - Lighting demand
-  - Safety light
- Flam** - Flame sense contacts
- R** - MICROFAST® heating element
- V3V** - 3 way-valve
- CH** - Heating
- COM** - common
- SAN** - Domestic
- INTERFACE** - User display
- CD** - Remote control (if fitted)
- SE** - Outside sensor (if fitted)

- HL** - Clock
- Db** - Domestic flow sensor
- Cp** - System pressure sensor
- V1** - Modulating coil
- J1** - Room thermostat connection
- TA** - Room thermostat
- FA** - Ignition electrodes
- FL** - Flame sense electrode
- CTN1** - Domestic thermistor
- CTN2** - Heating thermistor
- CTN3** - Storage cylinder thermistor
- K4** - High limit thermostat
- Pr** - Air pressure switch
- Ex** - Fan

Diagram 14

xxx xxx

## FAULT FINDING

Before trying to operate the boiler make sure that :

- All gas supply cocks are open and that the gas supply has been purged of air.
- The heating system pressure is at least 1 bar.
- There is a permanent mains supply to the boiler.
- The fuse on the PCB is intact.

**WARNING.** Always isolate the boiler from the electrical supply before carrying out any electrical replacement work.


Always check for gas soundness after any service work.

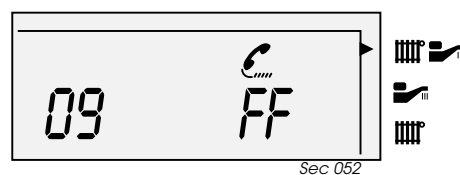
Should there be any doubt about the voltage supply to any of the components, it is possible to carry out a simple electrical test to ensure all is operational in that area.

To carry out the electrical test, gain access to the main Printed Circuit Board (PCB), as described previously, and measure the voltages according to table 1.

Table 1

| Voltage  | Measured value                   | Measuring point                 |
|----------|----------------------------------|---------------------------------|
| 230 Volt | 230 V AC                         | Between terminals H8.1 and H8.2 |
| 24 Volt  | maximum 33V DC<br>minimum 20V DC | Between terminals B2.4 and B2.7 |
| 15 Volt  | 15V $\pm$ 0.5V                   | Between terminals B2.4 and B2.2 |
| Display  | 5V $\pm$ 0.5V                    | Between terminals B2.4 and B4.2 |
















The **ISOFAST** has an on-board fault diagnostic system. Should a fault occur on the boiler, the warning LED at the top of the user display  will illuminate and the LCD display will indicate the precise area where the fault has occurred.



A fault code is displayed on the left hand side of the LCD display, whilst at the same time, the letters **FF** appear with a telephone symbol.

## FAULT FINDING

### List of fault codes

| Code | Fault                                      | Additional display information   |
|------|--|--|
| 00   | No fault                                   |       |
| 02   | Air flow fault                             |  FF   |
| 04   | Ignition fault -flame detection            |       |
| 05   | Overheating                                |  FF   |
| 06   | Central heating thermistor/wiring fault    |  FF   |
| 07   | Domestic hot water thermistor/wiring fault |  FF   |
| 08   | Storage vessel thermistor/wiring fault     |  FF   |
| 09   | System pressure sensor fault               |  FF   |
| 10   | Fan fault                                  |  FF   |
| 11   | Pump blockage                              |  FF   |
| 12   | User interface fault                       |  FF  |
| 13   | Main PCB fault                             |  FF |
| 14   | CTN2 > 97°C - pump will run                |  FF |
| 15   | Gas mechanism fault                        |  FF |
| 20   | Communication fault                        |  FF |

## FAULT FINDING

### Thermistor values

The following table applies to the central heating, domestic hot water and storage vessel thermistors:

| Temperature (°C) | Resistance (Ω) |
|------------------|----------------|
| 0 .....          | 32565          |
| 5 .....          | 25345          |
| 10 .....         | 19875          |
| 15 .....         | 15700          |
| 20 .....         | 12500          |
| 25 .....         | 10000          |
| 30 .....         | 8060           |
| 35 .....         | 6535           |
| 40 .....         | 5330           |
| 45 .....         | 4370           |
| 50 .....         | 3605           |
| 55 .....         | 2989           |
| 60 .....         | 2490           |
| 65 .....         | 2085           |
| 70 .....         | 1755           |
| 75 .....         | 1480           |
| 80 .....         | 1260           |
| 85 .....         | 1070           |
| 90 .....         | 920            |
| 95 .....         | 785            |
| 100 .....        | 680            |

### System pressure sensor

The resistance of the sensor at various pressures is as follows :

|             |                         |
|-------------|-------------------------|
| 0 bar ..... | between 280 Ω and 320 Ω |
| 1 bar ..... | between 195 Ω and 220 Ω |
| 3 bar ..... | between 93 Ω and 143 Ω  |

## SPARE PARTS

When ordering spare parts, quote the part number and description, stating the appliance model number and serial number from the data badge.

### Short parts list

| No.      | Description                         | Part No. |
|----------|-------------------------------------|----------|
| 1 .....  | Domestic hot water thermistor ..... | 57213    |
| 2 .....  | Central heating thermistor .....    | 57215    |
| 3 .....  | Storage vessel thermistor .....     | 57250    |
| 4 .....  | Fan .....                           | 57238    |
| 5 .....  | Air pressure switch .....           | 57237    |
| 6 .....  | Domestic water flow sensor .....    | 57202    |
| 7 .....  | Printed circuit board .....         | 57248    |
| 8 .....  | Pump .....                          | 57207    |
| 9 .....  | 3-way valve head .....              | 57206    |
| 10 ..... | System pressure sensor .....        | 57205    |
| 11 ..... | Gas valve module .....              | 57079    |
| 12 ..... | Central heating safety valve .....  | 57228    |
| 13 ..... | Storage vessel safety valve .....   | 57229    |
| 14 ..... | High limit thermostat .....         | 57212    |
| 15 ..... | Ignition electrode .....            | 57194    |
| 16 ..... | Flame sense electrode .....         | 57195    |
| 17 ..... | Clock .....                         | 57245    |





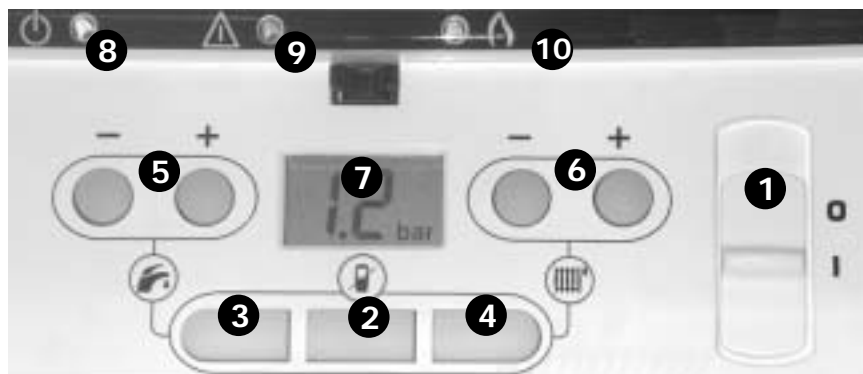
ISOFAST<sup>®</sup>  
CONDENS



Saunier Duval

# INSTRUCTIONS FOR USE

## INSTRUCTIONS FOR USE, INSTALLATION AND SERVICING FOR ISOFAST CONDENS F 35 E



### Lighting/switch off the boiler

**Lighting** : make sure that :

- the boiler is connected to the electrical supply,
- the gas service tap is open,
- Switch ON (I).

**Switch off the boiler** : Switch to OFF (0) : the electrical supply is off. Stop the gas supply if the boiler is to be out of use for a long time.



### Operation without room thermostat

- Press the key (the key will light-up)
- Press the and/or buttons to activate the heating and/or hot water functions
- Use buttons and to determine the heating and hot water temperatures.
- To revert to the operating mode with room thermostat, again press the key (the light will turn OFF);

**Important notice** : The settings performed on the boiler control panel are not transmitted to the room thermostat.

**Perform the temperature settings from the wireless room thermostat supplied together with the boiler, strictly adhering to the instructions given in this manual, pages 10 through 17.**

- 1 - On/Off switch.
- 2 - Room thermostat disabled when the button light is ON
- 3 - Sanitary function enabled when the button light is ON
- 4 - Heating function enabled when the button light is ON
- 5 - Hot water temperature adjuster.
- 6 - Heating temperature adjuster.
- 7 - Graphic display.
- 8 - Green running light.
- 9 - Red, flashing fault light.
- 10 - Yellow running lamp for the burner.

### Fault indication

In case of fault, the red warning light will flash and a code appears on the boiler display .

**Code 21**: Water pressure too low: open the blue tap situated under the boiler until a pressure of 1.5 bar is obtained.

**Other codes**: press the key of the room thermostat and read the indications given by the display.



## Important information

The instructions consist of three parts, User, Installation and Servicing Instructions, which includes the Guarantee Registration Card. The instructions are an integral part of the appliance and must, to comply with the current issue of the Gas Safety (Installation and Use) Regulations, be handed to the user on completion of the installation.

### General

This combination boiler is able to provide room heating as part of a central heating system, and domestic hot water direct from the cold water supply without the need for secondary storage. The central heating water temperature and domestic hot water temperature can both be adjusted on the boiler.

Once the controls are set the boiler operates automatically. A frost protection program is also included.

Please read these instructions and follow them carefully for the safe and economical use of your boiler.

### Gas Category

This boiler is for use only on Natural gas (G20) or propane (G31).

### Gas Safety (Installation and Use) Regulations

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

### Gas Testing and Certification

The boiler is tested and certificated for safety and performance.

It is, therefore, important that no alteration is made to the boiler unless approved, in writing, by Saunier Duval. Any alteration not approved by Saunier Duval, could invalidate the certification, boiler warranty and may also infringe the current issue of the statutory requirements.

### CE Mark

This boiler meets the requirements of Statutory Instrument, No. 3083 The Boiler (Efficiency) Regulations, and therefore is deemed to meet the requirements of Directive 92/42/EEC on the efficiency requirements for new hot water boilers fired with liquid or gaseous fuels. Type test for purposes of Regulation 5 certified by : Notified body 0086. Product/production certified by : Notified body 0086.

## Contents

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## Important information

### The CE mark on this appliance shows compliance with :

1. Directive 90/396/EEC on the approximation of the laws of the Member States relating to appliances burning gaseous fuels.

2. 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.

3. Directive 89/336/EEC on the approximation of the Laws of the Member States relating to electromagnetic compatibility.

### Control of Substances Hazardous to Health

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.

### Insulation Pads

These can cause irritation to skin, eyes and the respiratory tract.

If you have a history of skin complaint you may be susceptible to irritation. High dust levels are usual only if the material is broken.

Normal handling should not

cause discomfort, but follow normal good hygiene and wash your hands before eating, drinking or going to the lavatory. If you do suffer irritation to the eyes or severe irritation to the skin seek medical attention.

### 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 authorised by Saunier Duval.

### Manual Handling Guidance

During the appliance installation and the replacement of the heat exchanger it will be necessary to employ caution and assistance whilst lifting as the appliance or component exceeds the recommended weight for a one man lift.

In certain situations it may be required to use a mechanical handling aid. Take care to avoid trip hazards, slippery or wet surfaces.

### Gas Leak or Fault

If a gas leak or fault exists or

is suspected, turn the boiler mains electrical supply off and turn off the gas supply at the meter. Consult your local gas company or your local installation/ servicing company.

### Electrical Supply Failure

The boiler must be earthed.

The boiler will not work without an electrical supply. Normal operation of the boiler should resume when the electrical supply is restored.

Reset any external controls, to resume normal operation of the central heating. If the boiler does not resume normal operation turn the mains reset switch off and on. If the boiler does not resume normal operation after this the overheat stat may have operated. The overheat stat would only operate under abnormal conditions and, under these circumstances; it would be advisable to consult your installation / servicing company.

### Boilers Installed in a Compartment or Cupboard

If the boiler is fitted into a compartment or cupboard, it does not require any ventilation openings. Do not use the compartment or cupboard for storage.

### Plumbing from flue terminal


Like all condensing boilers this appliance will produce a plume of condensation from the flue terminal in cool weather. This is due to the high efficiency and hence low flue gas temperature of the boiler. It is normal and not a fault indication.

### Replacement Parts

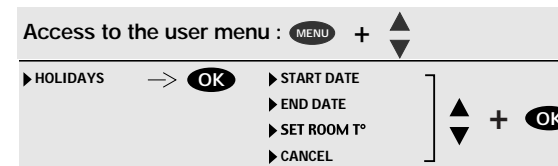
If replacement parts are required contact Saunier Duval service using the telephone number on the back cover of this booklet.

Please quote the name of the appliance this information will be on the front of the appliance.

### Protection Against Freezing

The room thermostat automatically ensures a minimum installation temperature of 6°C. This protection is ensured by the room thermostat as long as it is active. This means that the  button of the boiler must not be lit and that the batteries of the room thermostat must be in good condition.

If you are out of home for a few days, use the holidays mode of your room thermostat, and set the Start and End dates, as well as the desired temperature.



If the mains electricity and gas are to be turned off for any long periods during severe weather, it is recommended that the whole system, including the boiler, should be drained to avoid the risk of freezing.

Contact your installation/servicing company as draining, refilling and pressurising **MUST** be carried out by a competent person.

As a safety feature the boiler will stop working if the condensate drain becomes blocked. During freezing conditions this may be due to the forming of ice in the condensate drain external to the house. Release an ice blockage by the use of

warm cloths on the pipe. The boiler should then restart. Contact your installation/servicing company if the fault persists.

### Draining and Filling

This boiler works in a pressurised system, which must only be drained, refilled and pressurised by a competent person.

### Pressure Relief Safety Valve

A pressure relief safety valve and discharge pipe is fitted to the boiler. This valve must not be touched. Should there be any discharge from the pipe, isolate the boiler electrical supply and call your installer or Saunier Duval service using the telephone number on the back cover of this booklet.

# USERS

## Welcome users

**Many thanks for choosing Saunier Duval market leaders in boiler manufacture,**

**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 :

- a) 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.
- b) The appliance has been used for normal domestic purposes and in accordance with the manufacturer's operating and maintenance



instructions.

- c) 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.
  - d) 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 :**

- a) Any defects or damage resulting from incorrect or poor installation, inadequate servicing, or maladjustment of the gas or water used.
- b) Any defects in the system to which the appliance is connected.
- c) 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.

## Servicing, all you need to know

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, but in general once a year should be enough. Refer to Section «Routine Cleaning and Inspection».

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 using the telephone number on the back cover of this booklet.

Please be advised that the 'Benchmark' logbook



should be completed by the installation engineer on completion of commissioning and servicing.

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

### **Cleaning**

The boiler casing can be cleaned with a damp cloth followed by a dry cloth to polish. Do not use abrasive or solvent cleaners.

### **Boiler casing**

**CAUTION.** Do not remove or adjust the casing in any way, as incorrect fitting may result in faulty operation. If in doubt, consult your installation/service company.



# USERS

## Control as a source of savings

Your Isofast boiler is factory set to operate within a customary installation.

Nevertheless, as many installations may incorporate specific features, feel free to contact your installer who will be able – by adapting the parameters of the boiler (maximum temperature and/or maximum power of the heating system) - to warrant you the best operating performance of your installation.

These settings being made, you still have the possibility of selecting the ambient temperature to suit your own requirements not only when you are at home, but also during nighttime or when you are out

All these settings are achieved from the room thermostat supplied together with your boiler: if you accurately determine the temperatures that best suit to your needs, you will make significant savings in terms of gas consumption.

### Essential adjustments to the wireless room thermostat :

- A** – Setting the time
- B** – Setting the date

### The thermostat's weekly programme functions enable you :

- C** – To activate or deactivate the heating function.

- D** – To have a **standard weekly programme** by activating the programme pre-set at the factory.

- E** – To **bypass** the current programme, temporarily, to increase or lower the temperature at any time during the day.

- F** – To set up a custom programme for each day of the week, with 2 temperature levels, for example:
  - COMFORT for the periods you are present and.
  - ECO at night or when you are away.

- G** – To have the same temperature **24 hours a day** by deactivating the programme.

- H** – To leave on **holiday**, determining the desired temperature according to the date you leave and when you return.

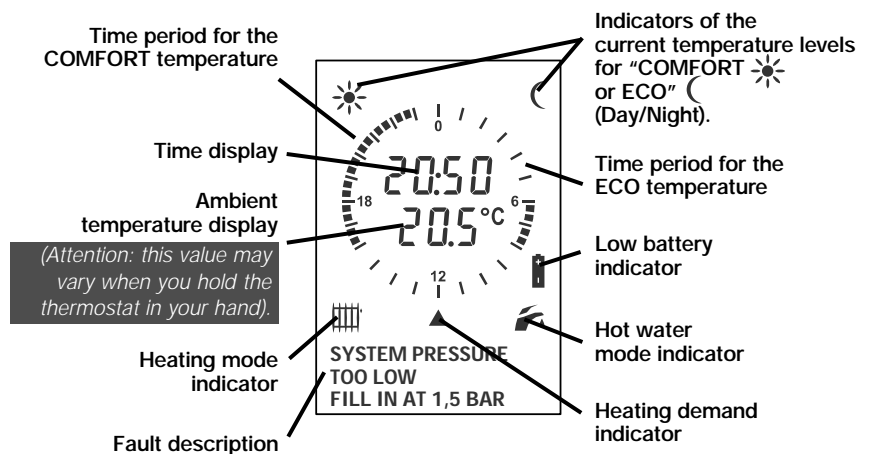
- I** – To select the temperature of your **domestic hot water** from 38°C to 60°C. However, keeping the temperature below 50°C, reduces gas consumption and provides good protection against scalds.

- J** – To prevent undesired alterations to your settings by **locking** the thermostat's buttons.

- K** – To be **informed of any operating faults** in the boiler and be instructed in the procedure to follow.



- 1 - Display.
- 2 - Fault indicator.
- 3 - Return to previous menu
- 4 - Confirm OK.
- 5 - Access to the menus.
- 6 - Menu scrolling
- 7 - Changing the mode
- 8 - Wall bracket
- 9 - Mains power plug





# USERS

## Control as a source of savings

### (A) and (B) Settings for the time and the date

**Progress of the operations** : Please note that pressing button **(C)** at any time takes you back to the previous step

#### 1 - Accessing the user menu

- Press **(MENU)** to call up the next menu:
  - SET COMFORT T<sub>i</sub>
  - SET ECO T<sub>i</sub>
  - PROGRAMME
  - SET HOT WATER T<sub>i</sub>
  - ON/OFF HEATING
  - HOLIDAYS
  - SET TIME
  - SET DATE

#### 2 - Setting the time

- Use the buttons to select the "Set time" menu:
- ▶ SET TIME → **(OK)** → 17:23 → + **(OK)**

#### 3 - Setting the date

- Use the buttons to select the "Set date" menu:
- ▶ SET DATE → **(OK)** → TUE 14/JUA/ 03 → + **(OK)**

### (C) Activating/deactivating the heating function

- Press **(MENU)** + to select the "ON/OFF heating " menu:
  - PROGRAMME
  - SET HOT WATER T<sub>i</sub>
  - ON/OFF HEATING
  - ...
 → **(OK)**

#### 1 - Activate the heating

- ▶ ON/OFF HEATING → **(OK)** → OFF → → ON → **(OK)**

#### 2 - Deactivate the heating

- ▶ ON/OFF HEATING → **(OK)** → ON → → OFF → **(OK)**

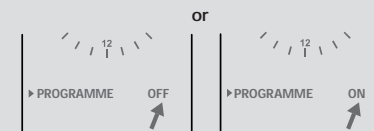
### (D) Activating the initial programme

**Progress of the operations:** Please note that pressing button **(C)** at any time takes you back to the previous step.

#### 1 - Activating the weekly programme

- Press **(PROG)**, the room thermostat shows this display:

- Pressing **(PROG)** reverses ON and OFF mode every time



- When the ON mode appears, wait 5 seconds for the display to return to normal position and automatically validate the selection.

#### 2 - Accessing the initial programme

- Press **(MENU)** + to select the "Programme" menu :
  - SET COMFORT T<sub>i</sub>
  - SET ECO T<sub>i</sub>
  - PROGRAMME → **(OK)**
  - ...

- ▶ PROGRAMME → **(OK)** + → ▶ INITIAL PROGRAMME MONDAY → **(OK)**

- Exit from the menu by pressing **(C)**, which initiates the standard weekly programme pre-set at the factory :



### (E) Temporarily bypassing the weekly programme

- Pressing one of the scroll buttons calls up the menu for setting the ambient temperature :

- ▶ SET ROOM T<sub>i</sub> 22°C → → ▶ SET ROOM T<sub>i</sub> 20°C → **(OK)**
- Confirm by pressing **(OK)**

This setting is automatically cancelled when the programme changes to Eco or Confort temperature level.

# USERS

## Control as a source of savings

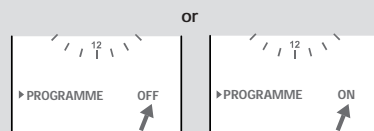
### (F) Setting the custom weekly programme

**Progress of the operations :** Please note that pressing button **(C)** at any time takes you back to the previous step.

#### 1 - Activating the weekly programme

• Press **PROG**, the room thermostat shows this display:

• Pressing **PROG** reverses ON and OFF mode every time.



• When the ON mode appears, wait 5 seconds for the display to return to normal position and automatically validate the selection.

#### 2 - Access to the user menu

• Press **MENU** to call up the next menu:

► SET COMFORT T<sub>i</sub>  
SET ECO T<sub>i</sub>  
PROGRAMME  
...

#### 3 - Setting the Comfort temperature

► SET COMFORT T<sub>i</sub> → **OK** → 19.0°C → **▲** → 20.0°C  
19.5°C → **OK**  
(to set the desired temperature during the day)

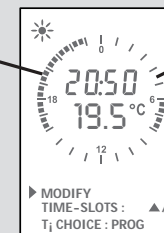
#### 4 - Setting the Eco temperature

► SET ECO T<sub>i</sub> → **OK** → 16.0°C → **▲** → 17.0°C  
16.5°C → **OK**  
(to set the desired temperature during the night or while you are away)

#### 5 - Programme

► PROGRAMME → **OK** → MONDAY → **OK** → MONDAY → **OK** →  
(to allocate time periods for the Comfort and Eco temperatures)  
TUESDAY  
WEDNESDAY  
THURSDAY  
FRIDAY  
SATURDAY  
SUNDAY  
INITIAL PROGRAMME

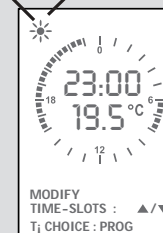
The squares indicate the time periods when the boiler will provide the COMFORT temperature level  
(e.g.: 19.5°C between 4 PM and 11 PM and 6 AM and 8 AM)



The blanks indicate the time periods when the boiler will provide the ECO temperature level.  
(e.g.: 16.5°C between 8 AM and 4 PM and 11 PM and 6 AM)

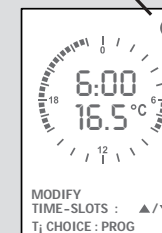
This symbol indicates the mode authorising additional operating periods at the stated COMFORT temperature (black squares) using the buttons ▼/▲

Press **PROG** to switch from COMFORT to ECO temperature



E.g. :  
In the case of the illustration opposite, each press of the button **▲** adds a square from 11 PM onwards, corresponding to an extra 30 minutes heating at 19.5°C.

This symbol indicates the mode authorising deletion of black squares to set up operating periods at the stated ECO temperature using the buttons ▼/▲



E.g. :  
In the case of the illustration opposite, each press of the button **▲** adds a blank from 6 AM onwards, corresponding to an extra 30 minutes heating at 16.5°C.

• Press **OK** to confirm the parameters you have set for the day.

• Follow the same procedure for every day of the week or use the duplication function, as explained below.

#### Duplicating a programme

• To save time, you can copy the parameters you have set onto another day via the menu :

► MONDAY → **OK** → MONDAY → **OK** →  
TUESDAY  
► COPY TO  
TUESDAY → **OK**

# USERS

## Control as a source of savings

### G Setting the heating temperatures outside Programme mode

**Progress of the operations :** Please note that pressing button **C** at any time takes you back to the previous step.

#### 1 - Deactivating the weekly programme

- Pressing **PROG** activates or deactivates the programme mode each time :

**PROG** → PROGRAMME ON → **PROG** → PROGRAMME OFF

- Retain the **PROGRAMME OFF** position. After 5 seconds, the display returns to its normal position and automatically validates this selection.

#### 2 - Access to the user menu

- Press **MENU** to call up the next menu : ▶ SET ROOM T<sub>i</sub> ...

#### 3 - Setting the ambient temperature

- ▶ SET ROOM T<sub>i</sub> → **OK** → 19.0°C → **▲** → 20.0°C → 19.5°C → 18.5°C → **OK**  
(to set the constant temperature desired)

### H Holiday programme

#### 1 - Access to the user menu

- Press **MENU** + **▲** to call up the next menu : ▶ SET HOT WATER T<sub>i</sub> ON/OFF HEATING HOLIDAYS ...

#### 2 - Activating the Holiday programme

- Determine the temperatures you wish according to your departure and return dates.

- ▶ HOLIDAYS → **OK** ▶ START DATE  
▶ END DATE  
▶ SET ROOM T<sub>i</sub>  
▶ CANCEL ] **▲** + **OK**

### I Setting the hot water temperature

**Progress of the operations :** Please note that pressing button **C** at any time takes you back to the previous step.

#### 1 - Access to the user menu

- Press **MENU** + **▲** to call up the next menu :

SET ECO T<sub>i</sub>  
PROGRAMME  
▶ SET HOT WATER T<sub>i</sub>  
...

#### 2 - Setting the hot water temperature

- ▶ SET HOT WATER T<sub>i</sub> → **OK** → 50°C → **▲** → 52°C → 51°C → 49°C → **OK**  
(to set the hot water to the desired temperature)

### J Locking/unlocking the thermostat's buttons

- Holding down the **C** and **OK** buttons simultaneously for 3 seconds locks the room thermostat's buttons.

Press for 3 seconds

- Follow the same procedure to unlock the buttons.



# USERS

## Control as a source of savings

Fault indicators

- If a fault occurs, the red lights on the boiler and on the room thermostat flash and a pictogram is displayed on the thermostat : , , , or
- Press the button on the thermostat:

Fault level 1

- The thermostat shows the procedure to follow:

SYSTEM PRESSURE  
TOO LOW  
FILL IN AT 1.5 BAR

- At the same time, the boiler's screen shows the code for the fault:

Fault level 2

- The thermostat asks you to call your After-Sales service engineer, informing him of the fault code flashing on the boiler to assist in his diagnosis.

FLOW RATE FAULT  
CALL AFTERSALES  
TEL 00 00 00 00 00

- At the same time, the boiler's screen shows the code for the fault:

## Glossary for the user menu

Set room T°

Setting the ambient temperature when the programme has not been activated (Programme inactive).

Set comfort T°

Setting the Comfort temperature for the periods set in "Programme" menu.

Set eco T°

Setting the reduced temperature for the periods set in the "Programme" menu.

Programme

Allocating operating periods for Comfort and Eco temperature for each day of the week. **In the morning, for example, you are recommended to start heating approximately 1 hour before you get up.**

Outdoor T°

Displaying the external temperature when an external sensor is installed.

Set hot water T°

Setting the hot water temperature.

ON/OFF heating

Starting / stopping heating

**On** = Heating + hot water

**Off** = Hot water only

**Outdoor T°** = displayed when an external sensor is connected. When "Driven by ext. T°" is selected, the boiler automatically cuts off the heating when the temperature is higher than 18°C (factory setting).

Set radiator T°  
or  
Floor heating T°

Displayed if your installer has selected "consigne "manual" in the "heating control" menu under the "installer" menu

Holidays

Setting the ambient temperature for while you are away.

Set time

Setting the time.

Set date

Setting the date.

# INSTALLERS

## General Information

### IMPORTANT NOTICE

The boiler and pipes are supplied in one pack, the flue is supplied separately. This boiler is factory set for use only on G20 natural gas.

Where no British Standards exists, materials and equipment should be fit for their purpose and of suitable quality and workmanship. Refer to Manual Handling Operations, 1992 regulations.

The installation of this boiler 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.

### Sheet Metal Parts

**WARNING:** When installing the appliance, care should be taken to avoid any possibility of personal injury when handling sheet metal parts.

### Statutory Requirements

The installation of the boiler **MUST** be carried out by a competent person in accordance with the relevant

requirements of the current issue of : Manufacturer's instructions, supplied.

The Gas Safety (Installation and Use) Regulations, The Building Regulations, The Building Standards (Scotland) Regulations (applicable in Scotland), local Water Company Bylaws, The Health and Safety at Work Act, Control of Substances Hazardous to Health, The Electricity at Work Regulations and any applicable local regulations. Detailed recommendations are contained in the current issue of the following British Standards and Codes of Practice, BS4814, BS5440 Part 1 and 2, BS5449, BS5546, BS6700, BS6798, BS6891 and BS7074 Part 1 and 2, BS7478, BS7593, BS7671.

We also suggest that you have to hand a copy of the British Gas publication, "Guidance Notes for the Installation of Domestic Condensing Boilers".

Manufacturer's notes must not be taken as overriding statutory obligations.

### Certification

This boiler certificated to the current issue of EN 483 for

performance and safety. It is important that no alteration is made to the boiler, 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.

### Electrical Supply

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". The boiler must be connected to a permanent 230V ac, 50Hz supply. Connection of the whole electrical system of the boiler, including any heating controls, to the electrical supply must be through one common isolator and must be fused 3 Amp maximum.

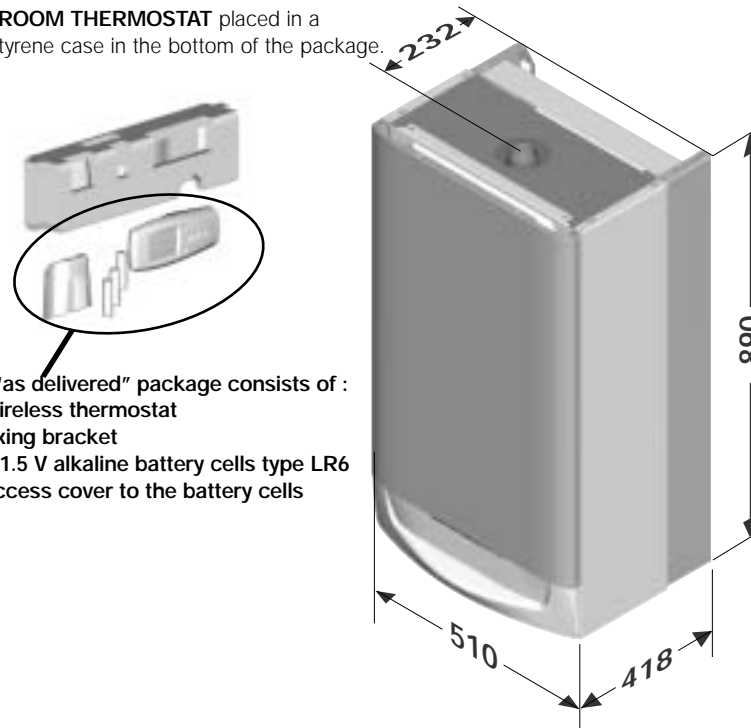
Wiring to the boiler must be PVC 85°C insulated cable, not less than 0.75mm<sup>2</sup> (24/0.20mm).

## Dimensions

**The boiler is delivered in one package :**  
the boiler itself, the wireless thermostat, the fixing bracket, the template and pipe connections .

The different packages relating to the flue system will be ordered depending on the actual configuration of the installation

**ATTENTION: DO NOT FORGET TO RECOVER THE ROOM THERMOSTAT** placed in a polystyrene case in the bottom of the package.



The "as delivered" package consists of :  
- 1 wireless thermostat  
- 1 fixing bracket  
- 3 x 1.5 V alkaline battery cells type LR6  
- 1 access cover to the battery cells

### Isofast

|              |      |
|--------------|------|
| Net weight   | (kg) |
| Gross weight | (kg) |

### F 35 E

|    |
|----|
| 52 |
| 60 |

# INSTALLERS

## Technical Data Isofast

| Heating                                      |                 | F 35 E                |
|--|-----------------|-----------------------|
| Heating output at 80°C/60°C (P)              | adjustable (kW) | from 7,6 to 28        |
|  | (BTU/H)         | from 25,930 to 95,536 |
| Heating input min. (Q)                       | (kW)/(BTU/H)    | 8 / 27,296            |
| Heating input max. (Q)                       | (kW)/(BTU/H)    | 28,6 / 97,583         |
| SEDBUK efficiency                            | (%)             | ?                     |
| Heating output at 50°C/30°C                  | adjustable (kW) | from 8,6 to 30,6      |
| Maximum heating temperature                  | (°C)            | 80                    |
| Minimum heating temperature                  | (°C)            | 22                    |
| Expansion vessel charge pressure             | (bar)           | 0,5                   |
| Maximum system capacity at 75°C              | (l)             | 215                   |
| Safety valve, maximum service pressure (PMS) | (bar)           | 3,0                   |

| Hot water                                     |                                 | F 35 E         |
|---|---------------------------------|----------------|
| Heating output (P)                            | adjustable from... (kW)/(BTU/H) | 34,2 / 116,690 |
|   | to... (kW)/(BTU/H)              | 7,6 / 25,931   |
| Maximum hot water temperature                 | (°C)                            | 60             |
| Threshold flow rate                           | (l/min.)                        | 1              |
| Specific flow rate (D) (for 30°C temp rise)   | (l/min.)                        | 16,3           |
| Storage capacity                              | (l)                             | 4              |
| Expansion valve setting                       | (bar)                           | 10             |
| Minimum operating pressure                    | (bar)                           | 0,7            |
| Maximum operating pressure (P <sub>MW</sub> ) | (bar)                           | 10             |

| Combustion                            |                    | F 35 E       |
|---------------------------------------|--------------------|--------------|
| Product outlet diameter               | (mm)               | 60           |
| Fresh air inlet diameter              | (mm)               | 100          |
| Fresh air flow rate (1013 mbar - 0°C) | (m³/h)             | 43           |
| Product outlet flow rate              | (g/s)              | 15,3         |
| Product outlet temperature            | (°C)               | 68           |
| Values of product outlet              | CO (ppm o mg/kWh)  | 100 or 176   |
|                                       | CO2 (%)            | 9,2          |
|                                       | NOx (ppm o mg/kWh) | 21,1 or 37,3 |

| Gas category | F 35 E |
|--------------|--------|
|              | II2H3P |

| Electricity            |     | F 35 E |
|------------------------|-----|--------|
| Electrical supply      | (V) | 230    |
| Electrical rating      | (A) | 0,9    |
| Maximum absorbed power | (W) | 206    |
| IP classification      |     | IPX4D  |
| Class                  |     | 1      |

| Natural Gas (G 20)                  |        | F 35 E |
|-------------------------------------|--------|--------|
| Ø burner injector                   | (mm)   | 5,65   |
| inlet pressure                      | (mbar) | 20     |
| Sanitary flow rate at maximum input | (m³/h) | 3,62   |
| Heating flow rate at maximum input  | (m³/h) | 3,02   |
| Flow rate at minimum input          | (m³/h) | 0,85   |

### Gas Supply

The gas installation must be in accordance with the relevant standards. In GB this is BS6891. In IE this is the current edition of I.S.813 "Domestic Gas Installations".

The supply from the governed meter must be of adequate size to provide a steady inlet working pressure of 20mbar (8in wg) at the boiler.

On completion, test the gas installation for soundness using the pressure drop method and suitable leak detection fluid, purge in accordance with the above standard.

### Technical Data

All dimensions are given in millimetres (except as noted).

The data label is positioned on the inner door.

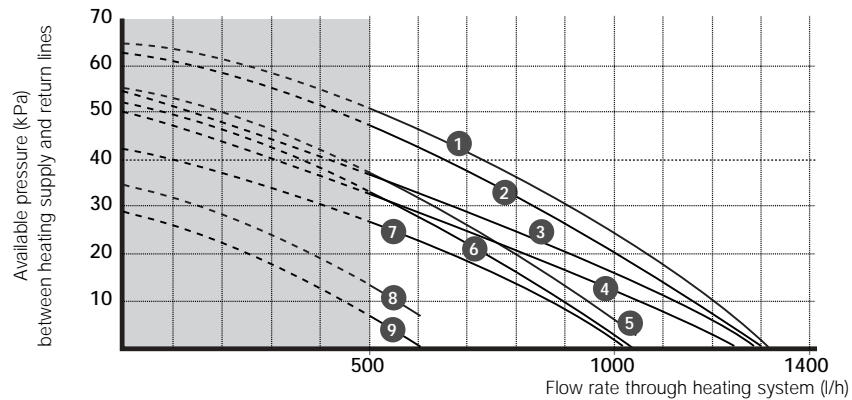
The Seasonal Efficiency Domestic Boilers UK (SEDBUK) is Band 'A'.

The value is used in the UK Government's Standard Assessment Procedure (SAP) for energy rating of dwellings. The test data from which it has been calculated has been certified by B.S.I.

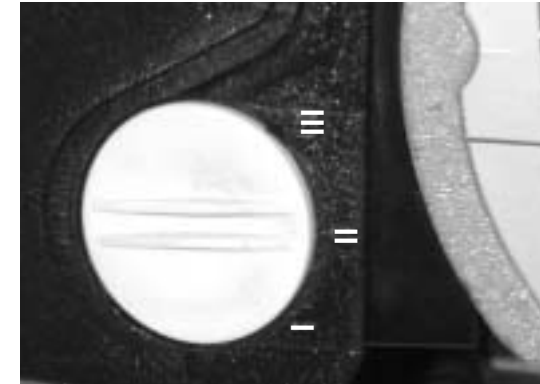
# INSTALLERS

## Technical Data

Curve output/pressure



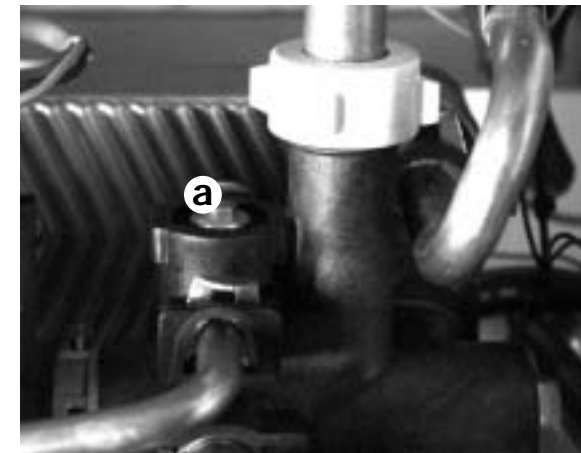
- |           |                      |
|-----------|----------------------|
| Speed III | 1 By-pass fully shut |
|           | 2 Open 1/4 turn      |
|           | 3 Open 1/2 turn      |
|           | 4 Open 2 turns       |
| Speed II  | 5 By-pass fully shut |
|           | 6 Open 1/4 turn      |
|           | 7 Open 1/2 turn      |
| Speed I   | 8 By-pass fully shut |
|           | 9 Open 1/2 turn      |



NB : Factory setting : Speed II

### Bypass

The Isofast boiler has a built-in bypass. This must be adjusted according to the requirements of the system, refer to the flow rate pressure curve. The boiler is supplied with the built-in bypass open a half a turn. It is adjusted by turning the bypass screw (a). Turn the screw clockwise to close the bypass. When using thermostatic radiator valves (TRVs) on all of the radiators, it is essential that a separate, adjustable bypass of 15 mm minimum diameter is fitted between the flow and return



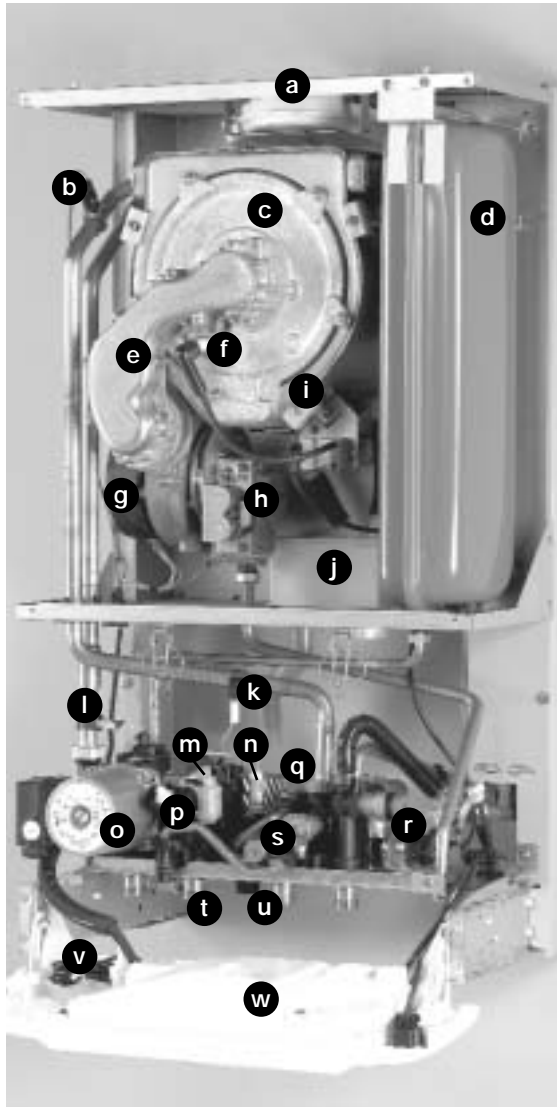
of the heating circuit. Any bypass must be fitted before system controls.

# INSTALLERS

## Boiler components

### Isofast F 35 E

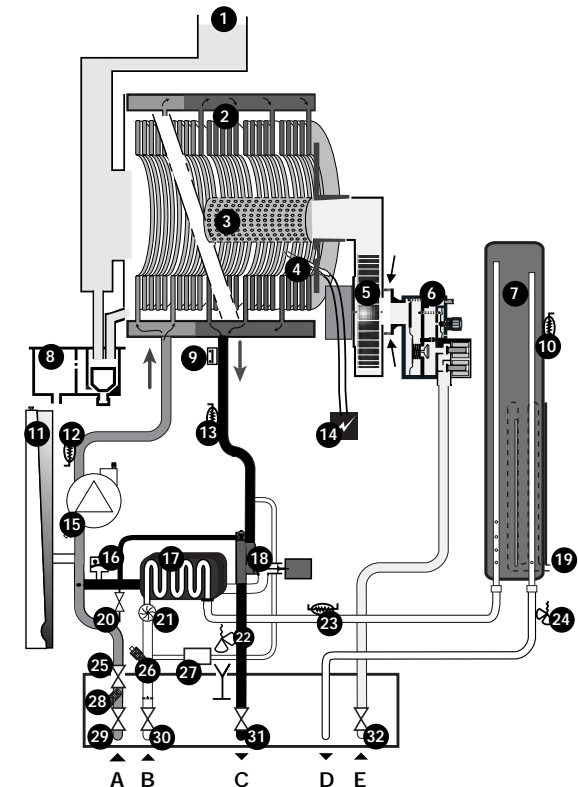
- a - Flue outlet
- b - Overheat safety thermostat.
- c - Combustion chamber
- d - Expansion vessel
- e - Air/Gas mixture inlet
- f - Ignition and control electrode
- g - Fan
- h - Gas control valve
- i - Ignition module
- j - Condensate drain
- k - Heating flow thermistor
- l - Heating return thermistor
- m - Water flow sensor
- n - Water pressure sensor
- o - Pump
- p - Filter on cold water inlet
- q - Domestic plate to plate heat exchanger
- r - Discharge safety valve 10 bar
- s - Discharge safety valve 3 bar
- t - Filling system
- u - Drain cock
- v - Room thermostat plug
- w - Control panel



## Schematic layout of boiler

### Isofast F 35 E

- 1 - Flue outlet
- 2 - Main heat exchanger
- 3 - Burner
- 4 - Ignition and control electrode
- 5 - Fan
- 6 - Gas control valve
- 7 - DHW storage vessel
- 8 - Condensate drain
- 9 - Overheat safety thermostat.
- 10 - Temperature sensor for DHW storage vessel
- 11 - Expansion vessel
- 12 - Heating return thermistor
- 13 - Heating outlet thermistor
- 14 - Ignition module
- 15 - Pump
- 16 - Water pressure sensor
- 17 - Domestic plate to plate heat exchanger
- 18 - Three way valve
- 19 - Heating element
- 20 - Drain cock
- 21 - Water flow sensor
- 22 - Discharge safety valve 3 bars
- 23 - DHW temperature sensor
- 24 - Discharge safety valve 10 bar



25 - Isolating valve

26 - Filter on cold water inlet

27 - Filling system

28 - Filter on heating circuit

29 - Isolating valve

30 - Isolating valve

31 - Isolating valve

32 - Isolating valve

A - Heating return

B - Cold water inlet

C - Heating flow

D - Domestic hot water outlet

E - Gas

# INSTALLERS

## Boiler location

- This boiler is not suitable for outdoor installation.
- This boiler may be installed in any room, although particular attention is drawn to the installation of a boiler 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 ETCl rules.

- The boiler should be positioned so that at least the minimum operational and servicing clearances are provided, see diagram opposite. Additional clearances may be beneficial around the boiler for installation and servicing. For flue installations where external access is not practicable, consideration should be given for the space required to insert the flue internally, which may necessitate clearance larger than those specified in diagram.

- If the boiler is to be

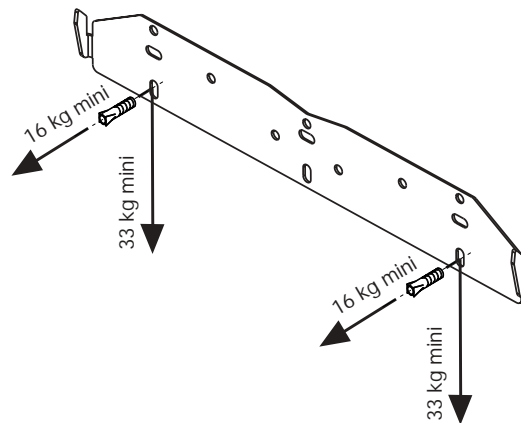
installed in a timber frame building it should be fitted in accordance with the Institute of Gas Engineers document IGE/UP/7/1998. If in doubt seek advice from the local gas undertaking or Saunier Duval.

- The boiler is room sealed, so when it is installed in a room or space, a permanent air vent is not required.

- Due to the high efficiency and hence low casing temperature of this boiler, cupboard or compartment ventilation is not necessary.

Leave existing air vents. A template is supplied with the fixing bracket. Position setting of the assembly shall be performed in compliance with the indications shown on the template. Use two or three screws for the fixing bracket.

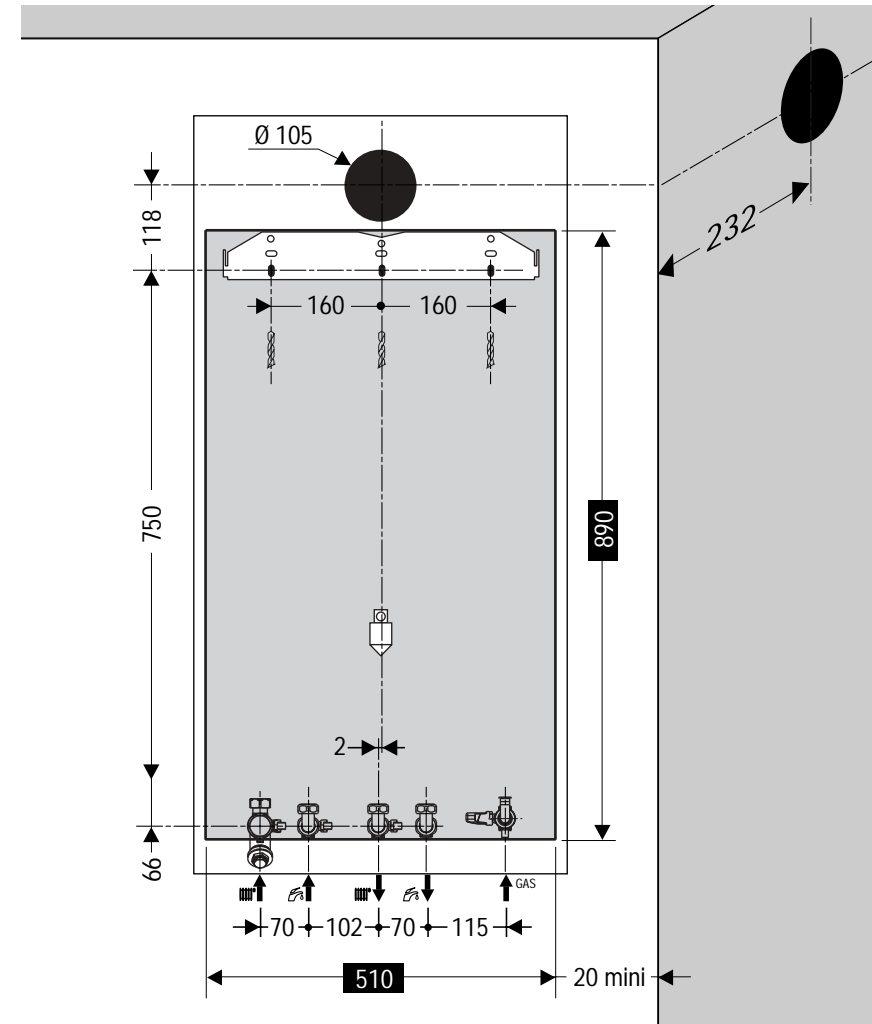
The mechanical characteristics of the screws shall – at least – meet the requirements specified on the sketches below. Also, they shall be suited to the characteristics of the carrier wall.



If the boiler is not immediately installed, protect the different

couplings so that no plaster or paint could jeopardize the tightness of subsequent

connections.



# INSTALLERS

## Flue location and Ventilation

### Warning notice :

Use only flue accessories developed for Saunier Duval condensing boilers.

### Flue Position and Length

The standard horizontal flue is fitted onto the top of the boiler using the flue elbow. See diagrams to determine whether a standard flue can be used.

An elevated flue system can be installed with the addition of a vertical flue adapter, extension kits and elbow, see section flue options.

When extension pipes are used the flue system must be designed to have a continuous fall to the boiler of at least 3% to allow condensate to run back into the boiler and out via the drain.

### Internal Flue Installation

The flue can be installed from inside the building, when access to the outside wall face is not practicable.

Additional accessories are available.

See Saunier Duval "Flue Options Guide" for configurations available.

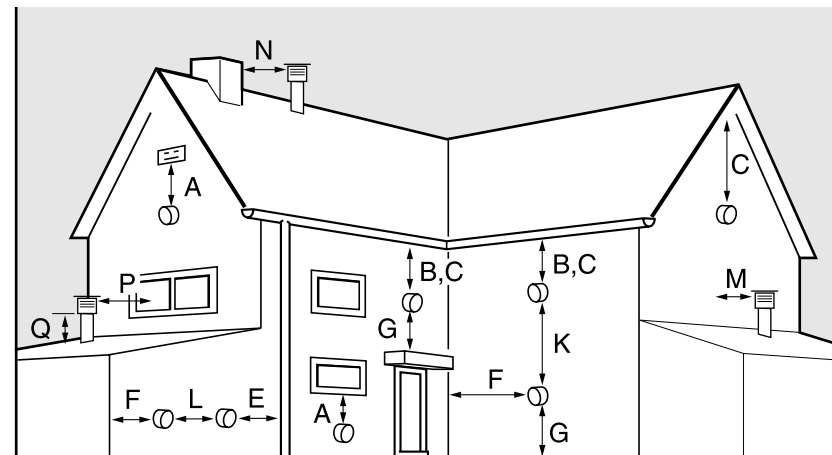
### Minimum siting dimensions for fanned flues terminals positions

#### Horizontal flues

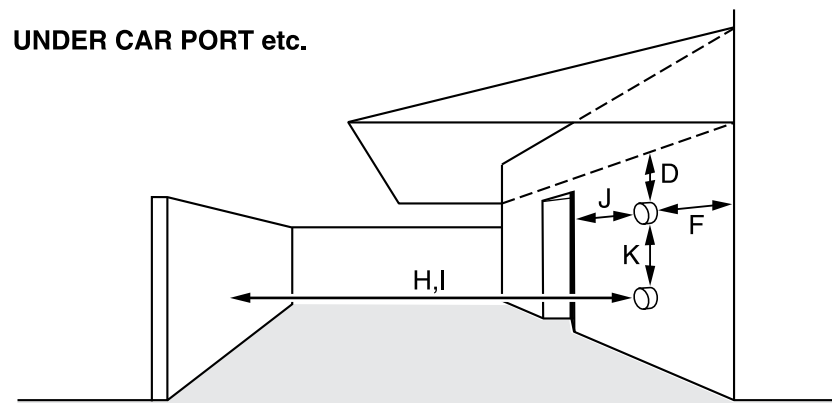
|   |       |
|---|-------|
| <b>A</b> - directly below an opening, air brick, opening windows  | .300  |
| <b>B</b> - above an opening, air brick, opening windows           | .300  |
| <b>C</b> - horizontally to an opening, air brick, opening windows | .300  |
| <b>D</b> - below gutter, drain/soil pipe                          | .25   |
| <b>E</b> - below eaves  | .25   |
| <b>F</b> - below a balcony or car port                            | .25   |
| <b>G</b> - from vertical drain pipes and soil pipes               | .25   |
| <b>H</b> - from internal/external corners                         | .25   |
| <b>H*</b> - to a boundary alongside the terminal                  | .300  |
| <b>I</b> - above adjacent ground or balcony level                 | .300  |
| <b>J</b> - from surface or a boundary facing the terminal         | .600  |
| <b>K</b> - facing terminals                                       | .1200 |
| <b>L</b> - from opening (door/window) in car port into dwelling   | .1200 |
| <b>M</b> - vertical from a terminal                               | .1500 |
| <b>N</b> - horizontally from a terminal                           | .300  |

#### Vertical flues

|   |       |
|---|-------|
| <b>P</b> - from another terminal        | .600  |
| <b>Q</b> - above roof level             | .300  |
| <b>R</b> - from adjacent opening window | .1000 |
| <b>S</b> - from adjacent wall to flue   | .300  |



### UNDER CAR PORT etc.



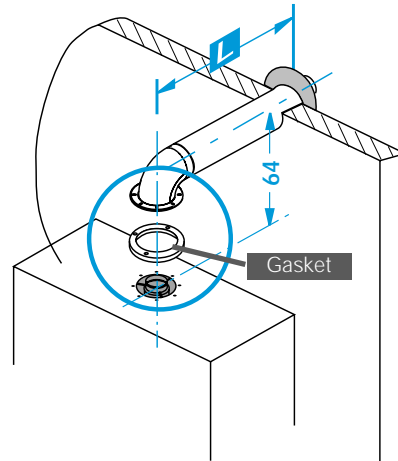
H\* and J\* : These dimensions comply with the building regulations, but they may need to be increased to avoid wall staining and nuisance from pluming depending on site conditions.

# INSTALLERS

## Flue location and Ventilation

### Horizontal flues (installation type C13)

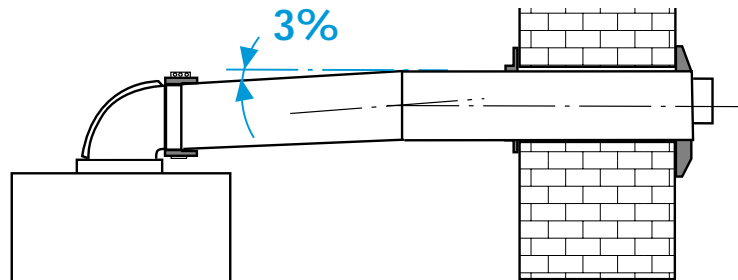
The maximum head loss is reached with an elbow and flue system length (L) of **10 m**.



The flue system pipes must feature a slope of 3% towards the boiler in order to recover any condensates.

**Attention :** The flue system terminal supplied by Saunier Duval already integrates this slope. Therefore, it shall be

applied to any flue system extensions.



### • Terminal Position

The minimum acceptable siting dimensions for the terminal from obstructions, other terminals and ventilation openings are shown in **page 29**. For Ireland the minimum distances for flue terminal positioning must be those detailed in I.S.813 "Domestic Gas Installations".

The terminal must be exposed to the external air, allowing free passage of air across it at all times.

Being a condensing boiler some pluming may occur from the flue outlet. This

should be taken into consideration when selecting the position for the terminal.

It may be necessary to increase dimensions H & J if there is a risk that the boiler products could stain any adjoining surface.

Carports or similar extensions of a roof only, or a roof and one wall, require special consideration with respect to any openings, doors, vents or windows under the roof. Care is required to protect the roof if the carport comprises of a

roof and two or more walls, seek advice from the local gas supply company before installing the boiler.

### • Terminal Guard

A terminal guard is required if persons could come into contact with the terminal or the terminal could be subject to damage. If a terminal guard is required, it must be positioned to provide minimum of 50mm clearance from any part of the terminal and be central over the terminal.



# INSTALLERS

## Heating system

### General

The boiler is for use only with sealed central heating systems. The safety valve is an integral part of the boiler and it cannot be adjusted. The digital readout on the controls fascia indicates the system pressure when there is no central heating demand. The circulation pump is integral with the boiler.

### Expansion vessel

The boiler has an integral expansion vessel with a capacity of 10 litres, with a charge pressure of 0.5 bar. **Note :** The expansion vessel volume depends on the total water system volume and the initial system design pressure. Guidance on vessel sizing is also given in the current issue of BS5449 and BS7074 Part 1, for IE refer to the current edition of I.S.813 "Domestic Gas Installations".

### Flow rate

If it is necessary to alter the flow rate, the system can be fitted with a lockable balancing valve in the main flow or return pipes shown as valve "A" in diagram. The flow rate through the boiler must not be allowed to fall below 14 l/min.

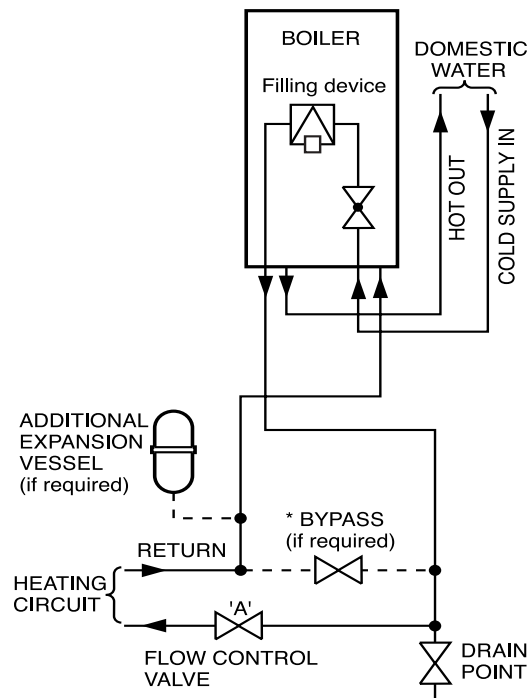
### Bypass

The boiler is fitted with an adjustable automatic bypass. Ensure that under no circumstances does the flow rate drop below 14l/min.

The installation of the boiler must comply with the requirements of the current issue of BS6798, in Ireland, refer also to the current edition of I.S.813 "Domestic Gas Installations".

In GB it is necessary to comply with the Water Supply (Water Fittings) Regulations 1999 (for Scotland, the Water Byelaws 2000, Scotland).

To comply with the Water regulations your attention is drawn to : The Water Regulations guide published by the Water Regulations Advisory Service (WRAS) gives full details of the requirements.



## Heating system

In IE the requirements given in the current edition of I.S.813 "Domestic Gas Installations" and the current Building Regulations must be followed.

### Water treatment

In the case of an existing installation, it is ESSENTIAL that prior to installing the new boiler the system is thoroughly flushed. For optimum performance after installation of a new system, the boiler and its associated central heating system should also be flushed. Flushing should be carried

out in accordance with BS7593: 1992 using a cleanser such as Sentinel X300 or X400, Fernox Superfloc or Salamander corrosion guard cleaner. For long-term corrosion protection, after flushing, an inhibitor suitable for stainless steel heat exchangers should be used, refer to the current issue of BS 5449 and BS 7593 on the use of inhibitors in central heating systems. Examples are Sentinel X100 Fernox or Salamander corrosion guard inhibitor.

### Draining Tap

A draining tap must be provided at the lowest points of the system, which will allow the entire system to be drained. A drain tap for the appliance is provided as an integral part of the hydroblock, see diagram **page 24**. General - All domestic hot water circuits, connections, fittings must be in accordance with the relevant standards and water supply regulations.

## Domestic Hot Water System

For GB: Guidance G17 to G24 and recommendation R17 to R24 of the Water Regulations Guide.

For IE: The current edition of I.S.813 "Domestic Gas Installations".

### Water Pressure

The maximum working pressure of the domestic hot water circuit is 10 bar. If the cold water supply pressure exceeds this, then

a pressure-reducing valve must be fitted in the supply to the boiler.

### 'Hard' Water Areas

The temperatures within the heat exchanger are limited by the boiler control system to minimise scale formation within the hot water pipework. However, in areas where the water is 'hard' (i.e. more than 200mg/litre), it is recommended that the hot

water setting is reduced and that a scale reducer is fitted. Refer to the manufacturer's instructions or consult the local water company for additional advice.

### Domestic Water Flow Rate

The water flow rate is restricted to a maximum 16 l/min by a restrictor fitted on the cold water inlet.

# INSTALLERS

## Boiler installation

Prior to performing any operation, it is essential that the piping systems be flushed with a suitable product in order to eliminate any impurities such as fillings, weld spatters, oils and greases.

Such foreign materials could be driven into the boiler, and could impair its operation. NB: Solvents may cause damages to the piping system. Remove the wooden beam placed behind the boiler.

### Appliance Connection

IMPORTANT: With regards to the Manual Handling Operations, 1992

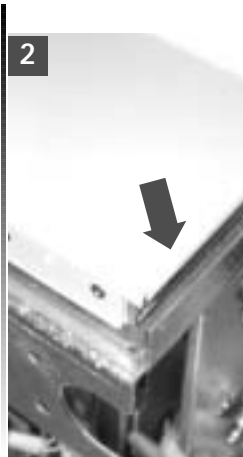
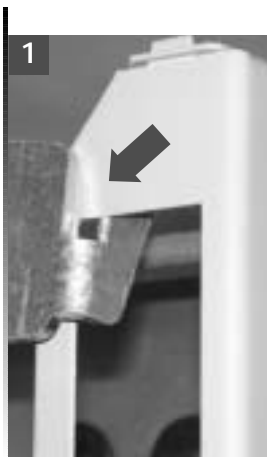
Regulations, the following lift operation exceeds the recommended weight for a one man lift, refer to Manual Handling section, **on page 4**. The appliance will contain a small amount of water, place a water container beneath the boiler connections before removing the protective caps.

**1** - Lifting the boiler into position, lean the top of the boiler slightly to the wall and position just above the hanging bracket.

**2** - Lower the boiler slowly and engage onto the hanging bracket.

Connect isolating valves using washers and domestic flow restrictor supplied with the boiler.

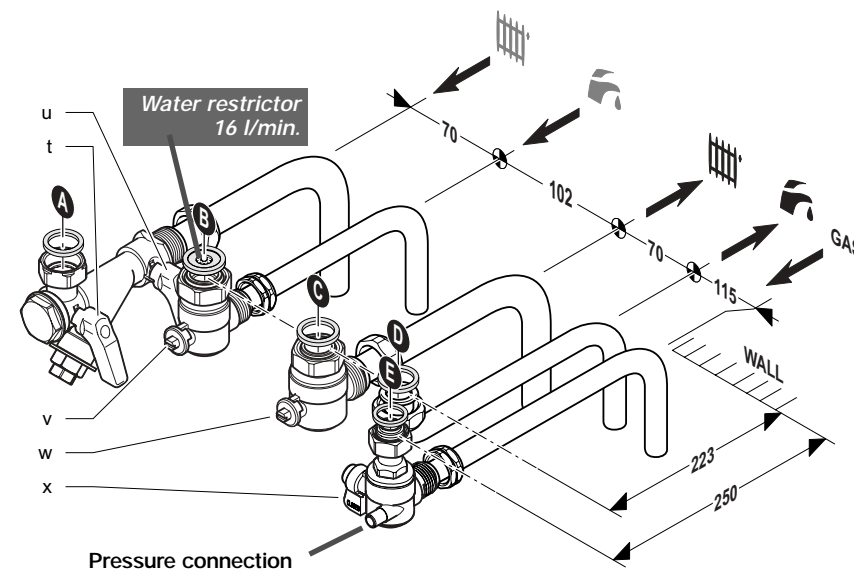
**3** - Do not forget to connect the blue extension on the filling tap, as shown on the picture below.



## Piping installation

Make connections to boiler, gas, water and heating cocks with the tube assemblies supplied in piping pack as shown in the diagram below :

- A** - Heating return with isolating tap (**t**) and (**u**),
- B** - Cold water inlet with isolating tap (**v**) and water restrictor to 16 l/min,
- C** - Heating flow with isolating tap (**w**),
- D** - Domestic hot water outlet,
- E** - Gas inlet with isolating tap (**x**).



### Gas Connection

Before connection check supply of local gas. Refer also to **page 18**. Do not subject the gas service cock to heat. Fit the sealing washer into the union nut and make good the connection to the gas service cock on the wall.

Make sure the on / off lever is accessible. The whole of the gas installation, including the meter, should be inspected, tested for soundness and purged in accordance with the current issue of BS6891 and in IE the current edition of I.S.813 "Domestic Gas Installations".

**A - C : Central heating**  
Ø 22 mm

**B - D : Domestic hot water**  
Ø 15 mm

**E : Gas supply** Ø 15 mm

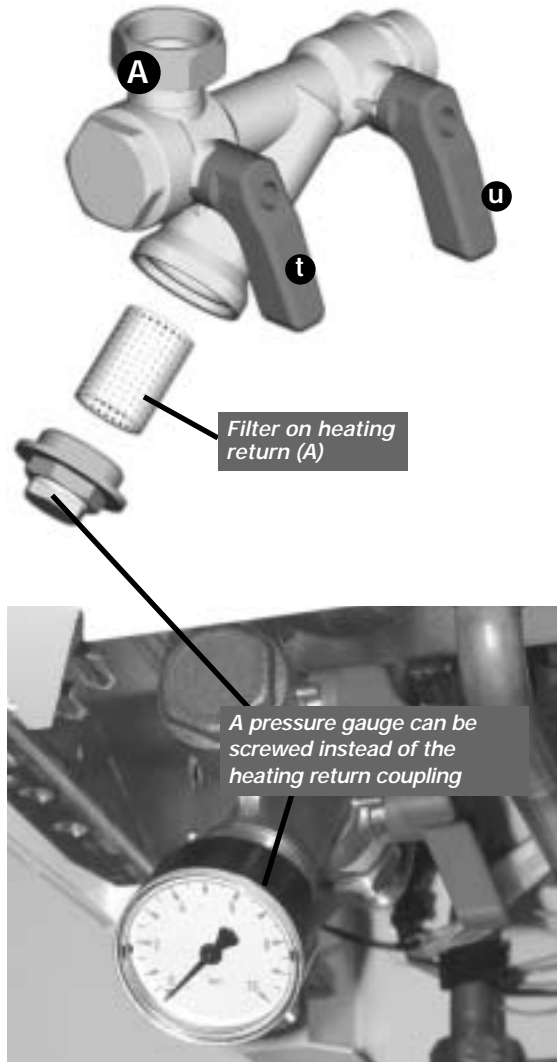
# INSTALLERS

## Piping installation

### Water Connections

Flush out the domestic hot water and the heating systems before connecting to the boiler.  
Make the connections to the domestic hot water and heating systems by fitting the sealing washers into the securing nuts and make good the connection to the isolating valves.  
Do not subject the isolation valves to heat.  
Make sure the drain point is accessible.

- The heating return coupling is equipped with a filter, accessible after removing the end nut.
- The proof-test pressure can be read on a pressure gauge screwed instead of the heating return coupling end nut (A).

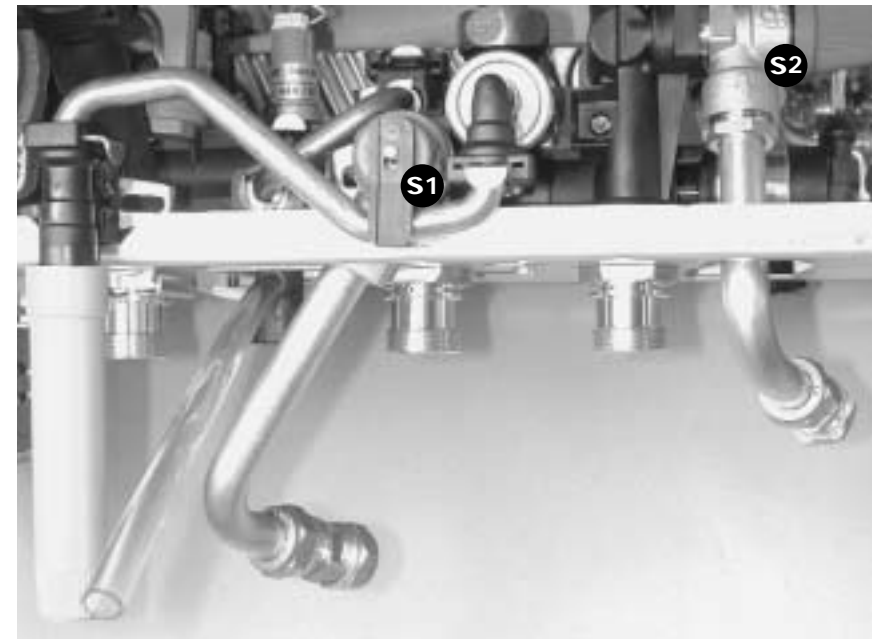


### Safety Discharge Valve

The pipes from the safety discharge valves **S1** and **S2** must not discharge above an entrance, window or any type of public access area. Take the short safety discharge tube, union nut and seal, supplied loose in the boiler fittings pack and fit as shown in diagram below.  
This must be extended, using not less than 15mm

o.d. pipe, to discharge, in a visible position, outside the building, facing downwards, preferably over a drain. The pipe must have a continuous fall and be routed to a position so that any discharge of water, possibly boiling, or steam cannot create any danger to persons, damage to property or external electrical components and wiring.

To ease future servicing it is advisable to use a compression type fitting supplied with the boiler to extend the safety discharge valve tube.



# INSTALLERS

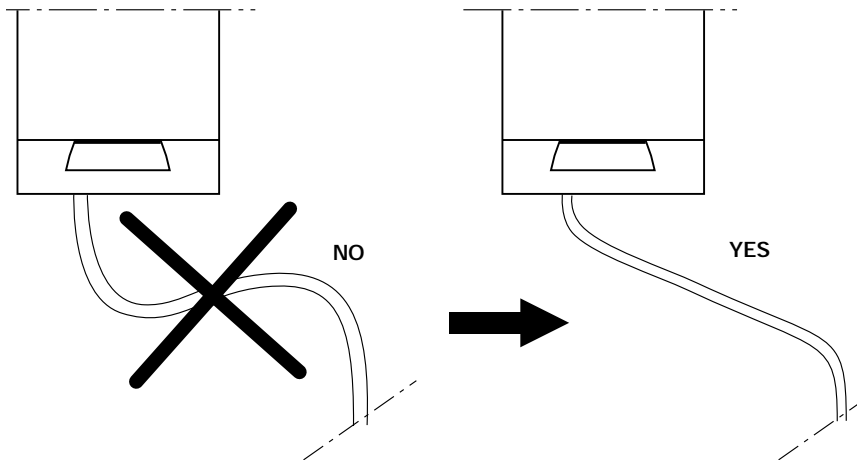
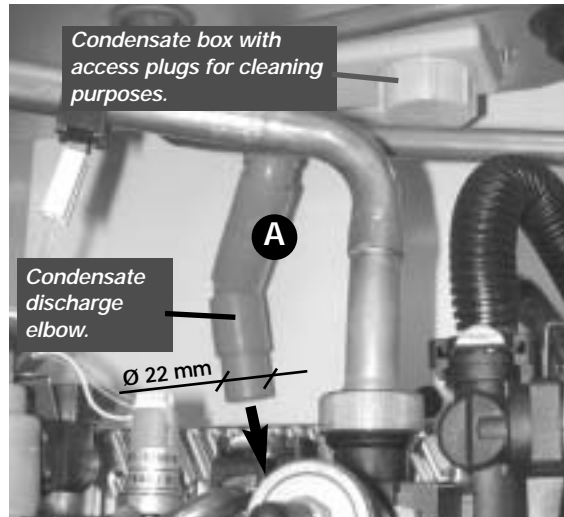
## Piping installation

**Connect the A elbow**  
**Ø 22 mm** to a discharge system leading to the sewer, in compliance with the instructions below:

- Use a rigid PVC tube or a flexible silicon pipe resistant to condensate.
- The pipe must have a continuous fall.
- Do not use copper pipes

**Important notice :**

The float of the condensate recovery system also ensures fume tightness. Therefore, it is useless to add water in the condensate box.



## Electrical connection

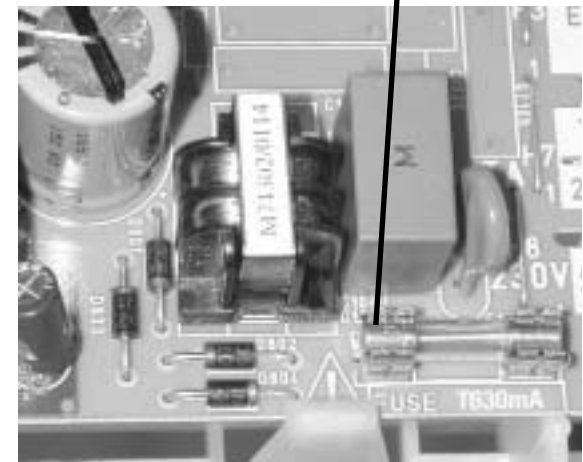


**WARNING :** This appliance must be earthed.

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. All system components must be of an approved type.

Electrical components have been tested to meet the equivalent requirements of the BEAB. Do not interrupt the mains supply with a time switch or programmer. Connection of the whole electrical system and any heating system controls to the electrical supply must be through a common isolator.

Isolation should preferably be by a double pole switched fused spur box having a minimum contact separation of 3mm on each pole. The fused spur box should be readily accessible and preferably adjacent to the boiler. It should be identified as to its use.



**Mains Cable**

Important: If a replacement supply cable is required it must be purchased from Saunier Duval.

- The 630 mA fuse of the PCB must be connected to the neutral.

# INSTALLERS

## Commissioning on boiler

Please ensure the "Benchmark" logbook is completed and left with the user .

The commissioning and first firing of the boiler must only be done by a qualified registered person.

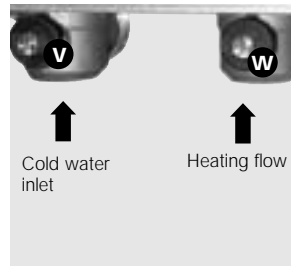
Make sure that the boiler is connected to the electrical supply and the gas service cock is open.

### Filling the system 1 to 8

**1** Switch ON (I).



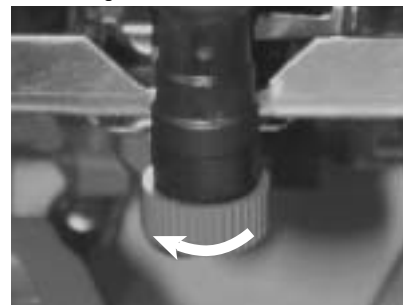
**2** Open the isolating taps (t), (u), (v) and (w) on boiler: slot in line with the length of the valve



**3** Undo cap on automatic air vent on top of pump and leave undone.



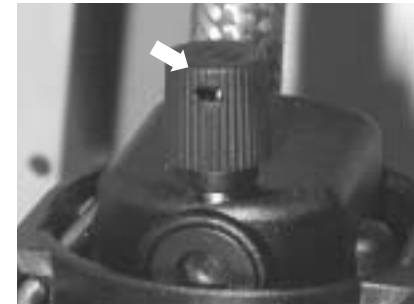
**4** Fill the system until the pressure indicated on the display is between 1 and 2 bar. Close filling device.



**5** Bleed each radiator to remove the air, re-tighten bleed screws.



**6** Leave the cap on the pump auto air vent open.



**7** Open various hot water taps to bleed system.



**8** Make sure the display indicates a system pressure of between 1 and 2 bar. Re-fill system as necessary.



## Commissioning on boiler

Press the  key to operate the boiler without room thermostat.

- Adjust heating temperature to maximum.

• Allow the temperature to rise to the maximum value, with all radiator valves open. The temperature rise will cause release of the gases contained in the water of the central heating system.

• Gases driven towards the boiler will be automatically released through the automatic air vent.

• The gases trapped at the highest point of the system must be released by bleeding the radiators. Check the burner gas rate required, ten minutes from lighting. Refer to Data Label on electrical controls box. Should there be any doubt about the gas rate it should be checked at

the meter. On reaching maximum temperature, the boiler should be turned off and the system drained as rapidly as possible whilst still hot.

• Refill system to a pressure of between 1 and 2 bar and vent as before.

• Restart boiler and operate until a maximum temperature is reached. Shut down boiler and vent heating system. If necessary, top up heating system and make sure that a pressure of at least 1 bar is indicated when system is COLD.

Flush the domestic hot water system by opening the hot water taps for several minutes.

### Instruct the User

- Instruct and demonstrate the lighting procedure and advise the user on the safe

and efficient operation of the boiler.

- Instruct on and demonstrate the operation of heating system control.

• Advise the user on the use and maintenance of any scale reducer and pass on any relevant instructional documents.

• Advise that to ensure the continued efficient and safe operation of the boiler it is recommended that it is checked and serviced at regular intervals. The frequency of servicing will depend upon the installation conditions and usage, but in general, once a year should be enough.

- Draw attention, if applicable, to the current issue of the Gas Safety (Installation and Use) Regulations, Section 35,

which imposes a duty of care on all persons who let out any property containing a gas appliance in the UK.

- The user shall not interfere with or adjust sealed components.

• It is the Law that any servicing is carried out by a competent person.

• Advise the user that, like all condensing boilers this appliance will produce a plume of condensation from the flue terminal in cool weather. This is due to the high efficiency and hence low flue gas temperature of the boiler.

- Advise the user of the precautions necessary to prevent damage to the system, boiler and the building, in the event of the heating system being out of

use during frost or freezing conditions.

- Advise the user that the permanent mains electrical supply SHOULD NOT be switched off, as the built in frost protection and pump/valve saver program would not be operable.

• Reminder, leave these instructions and the 'Benchmark' logbook with the user.

- For IE, it is necessary to complete a "Declaration of Conformity" to indicate compliance to I.S.813. An example of this is given in the current edition of I.S.813.

# INSTALLERS

## Commissioning on room thermostat

The wireless room thermostat (R.O.) has been specially developed for the Isofast.


- It is powered by 3 LR6 1.5V alkaline batteries.

• **The boiler's various functions are parametered from the room thermostat.**

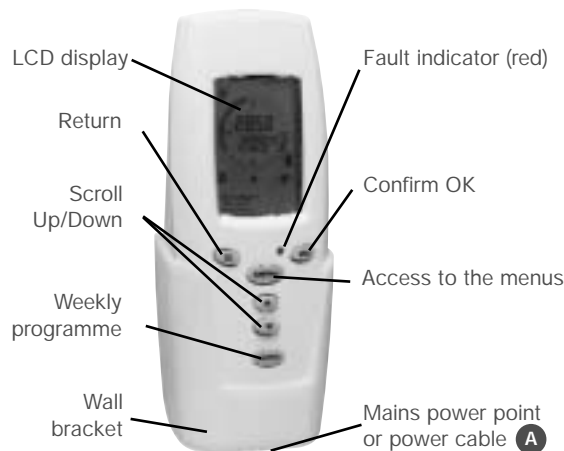
### Installing the room thermostat

- Fasten the bracket for the room thermostat on an internal wall approximately 1.50 m from the floor, in an area sheltered from direct sunlight and any source of interference, such as television, lamps, draughts, etc.

- Insert the batteries in the thermostat.

**When commissioning for the first time,** At initial commissioning stage, the boiler automatically shifts to manual mode (the control panel keys are lit, and the  key is blinking), thus meaning that the wireless room thermostat has not yet been acknowledged by the boiler. To do this :

- Open the control panel
- Locate connector (A) on the left-hand side and insert it in the thermostat for a few seconds as shown in the photo opposite.



When the red indicator light stops flashing, this shows that the boiler has recognised the thermostat.



## Settings

Access to the boiler's technical data (reserved for use by the installers and After-Sales service personnel). This enables adjustments to be made and any malfunctions to be analysed :

The description below specifies the operations to be performed to make adjustments to an installation fitted with radiators or for a direct floor system. For other types of

installation (for example with a floor-heating system) , follow the instructions in the appropriate accessories manual.

Your installation consists of a single radiator zone or direct floor system 1/3

**Progress of the operations :** Please note that pressing button **C** at any time takes you back to the previous step.

### 1 - Accessing the installer menu

- Connect connector (A) to the room thermostat as detailed on the previous page.

- Press **MENU** for 5 seconds to call up the following menu : **► INSTALLER MENU**  
AFTERSALES MENU  
FAULT HISTORY  
BOILER DATA

- Select installer menu :

**► INSTALLER MENU** → **OK** + **▲** → **► ACCESS CODE**  
**96** → **OK** → **► CHOOSE LANGUAGE**  
INSTALLATION TYPE  
RADIO SATELLITE  
HEATING REGULATION  
BOILER CONFIG.

### 2 - Select the language

**► SELECT THE LANGUAGE** → **OK** + **▲** → **ENGLISH** → **OK**

### 3 - Installation configuration

**► INSTALLATION TYPE** → **OK** + **▲** → **1 RADIATOR ZONE** → **OK**



# INSTALLERS

## Settings

Your installation consists of a single radiator zone or direct floor system 2/3

### 4 - Radio accessories

Warning : This menu must only be used when installing one or more of these accessories > please refer to the section on "Activating the accessories".

► RADIO SATELLITE → OK → ► IN OUTDOOR SENSOR REPEATER THERMOSTAT 2 MODEM OFF OFF OFF OFF

### 5 - Heating control

► HEATING CONTROL → OK → ► HEATING SETPOINT → OK → AUTO MANUAL

Selecting **AUTO** is recommended so that you can benefit from automatic circuit temperature control.

However, if you wish to adjust the radiator temperature yourself, select **MANUAL**. Then return to the user menu to set the radiator temperature.

a/ Press **MENU** for 5 seconds

b/ ▲ → ► SET RADIATOR T<sub>i</sub> → OK + ▲ → ► SET RADIATOR T<sub>i</sub> 50°C OK TO VALIDATE

### 6 - Boiler configuration

► BOILER CONFIG. → OK → ► MAX OUTPUT CHIMNEY SET MAX RADIATOR T<sub>i</sub> MIN RADIATOR T<sub>i</sub> PUMP MODE

6.1 Limiting the maximum heating power

► MAX OUTPUT → OK → 16kW 15kW 14kW → OK

Your installation consists of a single radiator zone or direct floor system 3/3

6.2 Adapting the length of the vent

► CHIMNEY SET → No setting is required for this type of boiler. Codes displayed do not affect functioning of the boiler.

6.3 Selecting the maximum radiator temperature

► MAX RADIATOR T<sub>i</sub> → OK → MAX 73°C MAX 65°C MAX 50°C → OK  
Warning : for direct floor systems, do not exceed a temperature of 50°C.

6.4 Selecting the minimum radiator temperature

► MIN RADIATOR T<sub>i</sub> → OK → MIN 50°C MIN 38°C MIN 28°C MIN 22°C → OK

6.5 Selecting the pump's operation

► PUMP MODE → OK → WITH BURNER WITH THERMOSTAT PERMANENT → OK

Operation **WITH THERMOSTAT** is recommended in all cases except for direct floor heating, in which case you should select: **PERMANENT**

6.6 Choice of preheat

► PREHEAT → OK → OFF AUTO ON

In ON mode, the boiler holds the exchanger at the required temperature between 5 O'clock a.m. and 11 O'clock p.m. in order to warrant optimal reactivity for the supply of sanitary hot water.

In AUTO mode, the boiler memorizes the day to day requirements of the family, and triggers the pre-heating a few minutes before the first use of sanitary hot water of the day.

In OFF mode, the function is inhibited.

WHEN YOU HAVE COMPLETED PARAMETERS, press **MENU** for approx. 5 seconds to return to the initial display.



# INSTALLERS

## Settings

### Accessories settings

1/3

**Progress of the operations :** Please note that pressing button **C** at any time takes you back to the previous step.

#### 1 - Access to the Radio accessories menu

• Connect connector (A) on the room thermostat as described page 44.

• Press **MENU** for 5 seconds to call up the following menu:

- ▶ **INSTALLER MENU**
- ▶ **AFTERSALES MENU**
- ▶ **FAULT HISTORY**
- ▶ **BOILER DATA**

• Select the installer menu:

▶ **INSTALLER MENU** → **OK** + **▲** → ▶ **ACCESS CODE**  
**96** → **OK** + **▲** → ▶ **RADIO ACCESSORIES**  
**HEATING REGULATION**  
**BOILER CONFIG.**

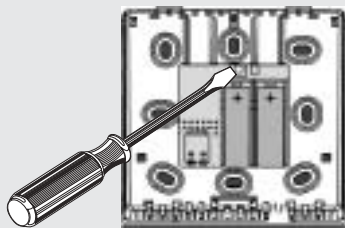
• Select the Radio accessories menu:

▶ **RADIO ACCESSORIES** → **OK** → ▶ **EXT. SENSOR** **OFF**  
**REPEATER** **OFF**  
**THERMOSTAT 2** **OFF**  
**MODEM** **OFF**

#### 2 - External sensor

##### 2.1 External sensor recognition

▶ **EXT. SENSOR** **OFF** → **OK** → ▶ **CONNECT** → **OK**



Hold the satellite button, situated on the backside of the external sensor box, depressed for 10 seconds. To establish connection, the sensor transmits signals – this may require several minutes – until it is acknowledged by the room thermostat which then validates the connection through the following display :

▶ **EXT. SENSOR** **ON**  
**REPEATER** **OFF**  
**THERMOSTAT 2** **OFF**  
**MODEM** **OFF**

The external sensor is now operating

### Accessories settings

2/3

#### 2.2 Heating setpoint

• Reach into the Heating Set Point menu to select the desired regulating mode.

▶ **EXT. SENSOR** **ON** → **C** + **▲** → ▶ **HEATING REGULATION** → **OK** →  
**BOILER CONFIG.**  
**CHOOSE LANGUAGE**

##### a/ Heating setpoint

▶ **HEATING SETPOINT** → **OK** → **AUTO**  
**T<sub>i</sub> HEATING OFF** **MANUAL**

The **AUTO** setting is recommended to obtain automatic regulation of circuit temperatures. In such case, no slope adjustment is required. The boiler will itself select, after a few days, the slope which is the most suited to the heating installation.

##### b/ T° heating off

▶ **T<sub>i</sub> HEATING OFF** → **OK** → **0°C ... 16°C 17°C 18°C ... 40°C** → **OK**

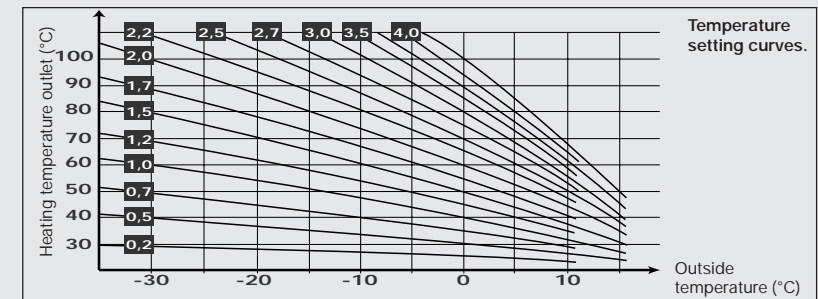
Note : we recommend selecting 17 or 18°C.

You may retain the advantages conferred by the external sensor, while setting yourself the slopes of the sensor. Select the **MANUAL** setting and adapt the following parameters :

▶ **SLOPE ZONE 1** → **OK** → **0,2 ... 0,6 0,8 0,7 ... 4,0** → **OK**  
**SLOPE ZONE 2** → **OK** → **0,2 ... 1,4 1,5 1,6 ... 4,0** → **OK**  
**CORRECT T<sub>i</sub> ZONE1** → **OK** → **-5°C ... -1°C 0°C 1°C ... 5°C** → **OK**  
**CORRECT T<sub>i</sub> ZONE2** → **OK** → **-5°C ... -1°C 0°C 1°C ... 5°C** → **OK**

Select the code following curves given on diagram below.

NB: Zone 2 settings are only displayed when two heating zones have been selected in the "config. Installation" menu.



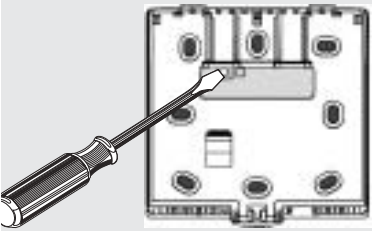
# INSTALLERS

## Settings

Accessories settings
3/3

**3 - Repeater**

► REPEATER OFF → **OK** → ► CONNECT



Hold the satellite button situated on the back side of the radio relay box depressed for 10 s.


To establish the connection, the radio relay transmits signals until it is recognized by the room thermostat which validate the connection by the following display :

|              |     |
|--------------|-----|
| ► REPEATER   | ON  |
| THERMOSTAT 2 | OFF |
| MODEM        | OFF |
| EXT. SENSOR  | OFF |

The repeater is now operating

**4 - Room thermostat 2**

► THERMOSTAT2 OFF → **OK** → ► CONNECT



Disconnect the cable of the zone 1 room thermostat, and connect it to thermostat 2. This is sufficient to have it recognized by the boiler.

Take the cable and reconnect it to zone 1 room thermostat and press the **C** key. The following display will confirm the connection:

|                |     |
|----------------|-----|
| ► THERMOSTAT 2 | ON  |
| MODEM          | OFF |
| EXT. SENSOR    | OFF |
| REPEATER       | OFF |

The room thermostat 2 is now operating

## Glossary for the installer menu

|                      |  |
|----------------------|--|
| Select the language  | Selecting the language on the thermostat's display.  |
| Installation config. | Selecting the type of heating installation.  |
| Clock zone 2         | The ON position of this menu assigns the TA1 clock function to the radiator zone. In such case, the ambient temperature at floor level is selected from the TA1 user's menu.   |
| Radio accessories    | Activating the various radio accessories on the installation.  |
| Heating regulation   | Selecting Automatic or Manual control mode. In Automatic mode, the radiator temperature adapts automatically to the heating requirements of the room in which the thermostat is located, operating between the maximum and minimum temperature values set. |
| Boiler config.       | Selecting the boiler's main operating parameters (power and heating circuit temperatures, pump mode and airflow configuration).  |

# INSTALLERS

## Gas conversion

Your **Isofast** boiler is factory-set to operate with **G20 gas**.

For operation with G31 gas, some adjustments must be made on the gas valve after removal of the sealed front cover in order to obtain the CO<sub>2</sub> values given in the adjacent table.

### 1/ Maximum hot water input setting, through the CO<sub>2</sub>.

**a** - Connect a CO<sub>2</sub> analyser to sample point **B** of the adapter or flue elbow.

**b** - Fully open a hot water tap.

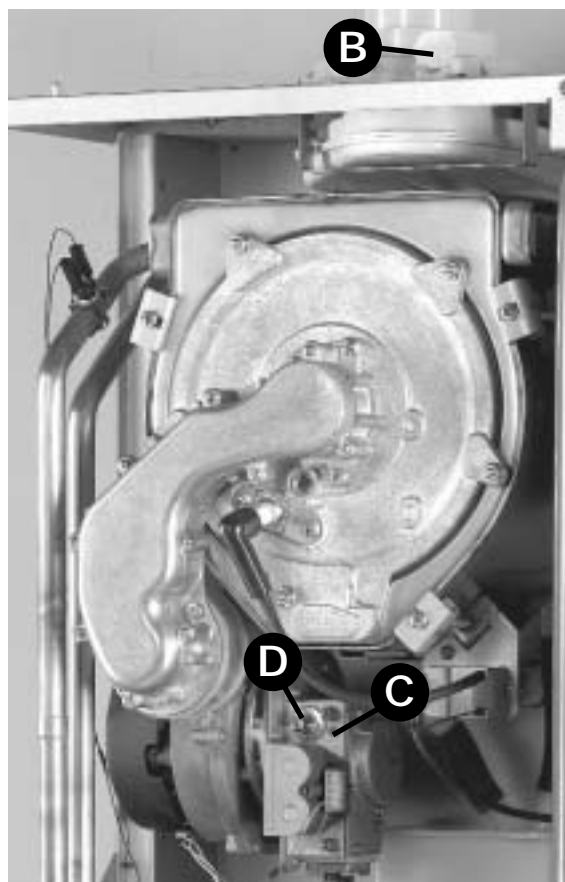
**c** - Wait for 2 minutes or so, until the CO<sub>2</sub> reading has stabilized.

**d** - Adjust the screw **C** to obtain the G31 CO<sub>2</sub> value stated in the table, taking the following principle into account:

**To increase the CO<sub>2</sub> value,** turn the screw anti-clockwise  
**To decrease the CO<sub>2</sub> value,** turn the screw clockwise

**Note** : After re-installation of the sealed front face, the CO<sub>2</sub> value changes, and must correspond to that given in the table.

| Isofast F 35 E                |    | G20     | G31      |
|-------------------------------|----|---------|----------|
| Heating output max. hot water | kW | 34,2    | 34,2     |
| Heating output max. heating   | kW | 6,4     | 6,4      |
| CO <sub>2</sub> case off      | %  | 9±0,2   | 10,3±0,2 |
| CO <sub>2</sub> case on       | %  | 9,2±0,3 | 10,5±0,3 |



### 2/ Minimum HEATING input setting, through the CO<sub>2</sub> :

**a** - Connect a CO<sub>2</sub> analyser to sample point **B** of the adapter or flue elbow.

**b** - Adjust the boiler at its minimum heating power using the room thermostat menus described in the below.

**c** - Perform a heating demand and record the

CO<sub>2</sub> value after stabilization (2 minutes or so).

**d** - Adjust the screw D to obtain the G31 CO<sub>2</sub> value stated in the table, taking the following principle into account :

**To increase the CO<sub>2</sub> value,** turn the screw clockwise  
**To decrease the CO<sub>2</sub> value,** turn the screw anti-clockwise

**Note** : After re-installation of the sealed front face, the CO<sub>2</sub> value changes, and must correspond to that given in the table.

**3/** After setting and reassembly, restore the maximum heating power to its initial value (20 kW) and stick the gas data tag close to the nameplate.

#### 1 - Access to the installer menu

• Connect A connector on the room thermostat as indicated page 44.

• Press **MENU** for 5 seconds to call up the following menu: ▶ **INSTALLER MENU**  
 AFTERSALES MENU  
 FAULT HISTORY  
 BOILER DATA

• Select the Installer menu:

▶ **INSTALLER MENU** → **OK** + **▲** → ▶ **ACCESS CODE**  
**96** → **OK** → ▶ **CHOOSE LANGUAGE**  
 INSTALLATION TYPE  
 RADIO SATELLITE  
 HEATING REGULATION  
 BOILER CONFIG.

#### 2 - Access to boiler configuration

▶ **BOILER CONFIG.** → **OK** → ▶ **MAX OUTPUT**  
 CHIMNEY SET  
 MAX. RADIATOR T<sub>i</sub> → **OK**

• Set MAX OUTPUT on the minimal value:

▶ **MAX OUTPUT** → **OK** + **▲** → **6 kW**  
**5 kW** → **OK**

WHEN YOU HAVE COMPLETED PARAMETERING, press **MENU** for approx. 5 seconds to return to the initial display.

# INSTALLERS

## Servicing

### Important Notes

To ensure the continued efficient and safe operation of the boiler it is recommended that it is checked and serviced at regular intervals. The frequency of servicing will depend upon the particular installation and usage, but in general once a year should be enough.

It is the Law that any servicing is carried out by a competent person. 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 authorised by Saunier Duval.

### General

Measurement of the products of combustion can be achieved by connection of a probe to the combustion analyser test point, see diagram 1.

### IMPORTANT NOTE :

Products of combustion will be discharged when the cap is removed. It is important to replace the cap immediately. Before commencing with a service or replacement of parts, the boiler should be

isolated from the electrical supply and the gas supply should be turned off at the gas isolation valve, see page 35.

All routine servicing requirements can be achieved by the removal of the front panel and inner panel only. To remove simply undo the two screws on the underside of the front panel and lift off. Undo the two screws on the front of inner panel and lift off, see diag. 2. Unless stated otherwise any part removed during servicing should be replaced in the reverse order to removal.

Servicing should always include the removal of any debris from the condensate pipe and siphon. After completing any servicing of gas carrying components, ALWAYS test for gas soundness and carry out a functional test of the controls.

### Spark Electrode

Disconnect the electrode lead and two securing screws. Withdraw the spark electrode carefully from the combustion chamber, see diagram 3. Inspect the tips for damage. Clean away any debris and check the spark gap is 3.5 to 4.5 mm.

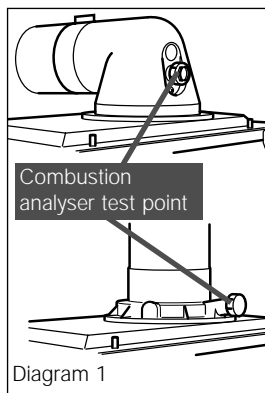


Diagram 1

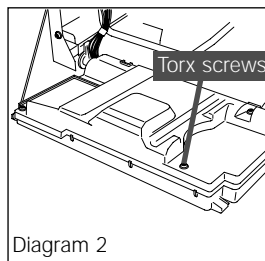


Diagram 2

Check the electrode gasket for signs of damage and replace if necessary.

### Burner

Drop down the control panel into the service position. Disconnect the gas supply at the gas service cock. Remove the two gas pipe retaining clips, one located below gas valve and the other one located on the underside of the boiler chassis. Pull sealing grommet down gas pipe diagram. 4.

Push the gas pipe upwards further into gas valve connection and then rotate anti-clockwise (looking down) until the gas pipe end is over the large hole in boiler chassis. Withdraw the gas pipe from gas valve connection and remove. Note : When replacing ensure that the sealing grommet, situated below the gas valve is correctly re-seated.

Disconnect the gas valve electrical plug at the gas valve.

Disconnect the electrical leads from the fan. Remove the five combustion chamber front retaining nuts, see diag. 5. Gently remove the fan, gas valve and burner assembly from the combustion chamber, see diag. 5. Clean the burner with a soft brush taking great care not to damage the front insulation. DO NOT use

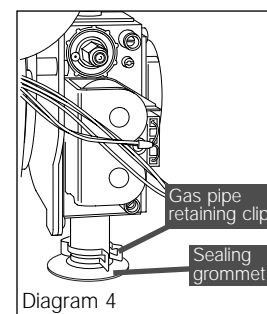


Diagram 4

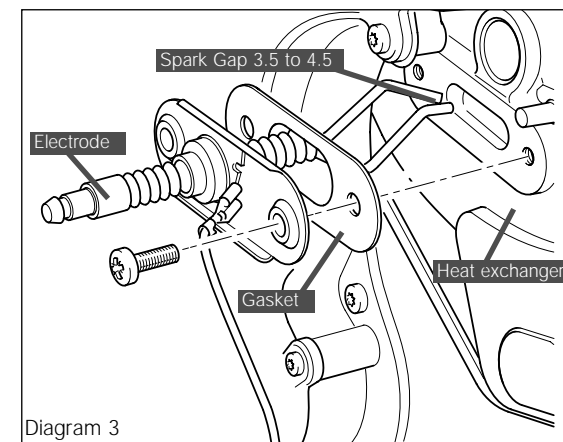


Diagram 3

wire or sharp instruments to clean the holes of the burner. Inspect the burner for any signs of damage. Inspect the sealing rings and replace if necessary.

Removal of the burner is not necessary during a normal service.

NOTE : IF THE BURNER HAS TO BE REMOVED IT WILL REQUIRE A NEW GASKET WHEN REFITTED.

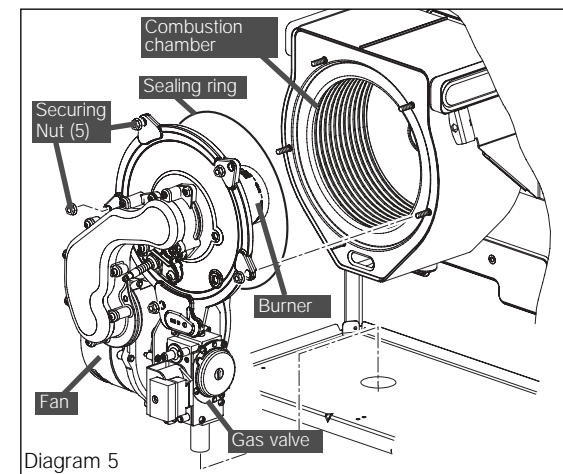


Diagram 5

# INSTALLERS

## Servicing

### Combustion Chamber and Heat Exchanger

Remove loose debris from combustion chamber using a soft brush and vacuum cleaner. Carefully flush by spraying water removing any remaining debris through the condensate trap (Ensure the water is kept away from electrical components).

### Condensate Drain

The condensate drain does not normally need removing during servicing. To flush the condensate drain carefully pour water into the heat exchanger and check that water flows freely to drain.

### Combustion Check.

If a gas carrying component has been replaced, the combustion of the appliance should be checked. Once the appliance has been re-assembled (apart from the front and inner casing panels) connect a CO2 combustion analyser to the test point on the flue adapter, and follow indications given on [page 52-53](#).

### Domestic Cold Water Inlet Filter

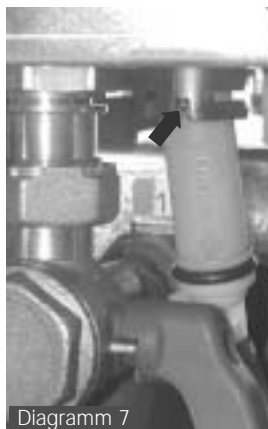
If the water flow rate through the appliance has reduced it may be necessary to clean or



replace the water inlet filter. Turn off the electrical supply to the boiler. Drain the domestic hot water circuit. Slide out the securing clip, and remove the filter to clean or renew if necessary, [see diag. 6](#). Replace the filter into its housing and replace the securing clip. Open the cold water isolating valve and test the Domestic Hot Water circuit for soundness. Check for leaks.

### "Mouss" Filter

Turn off the electrical supply to the boiler. Drain the heating circuit of the boiler. Remove the filter retaining clip under the pump [see diag. 7](#), and filter clean or renew if necessary. Refit the filter. Open the heating flow and return isolating valves and refill, vent and pressurise the heating circuit. Check for leaks.



### Central Heating Return Filter

Turn off the electrical supply to the boiler. Drain the heating circuit of the boiler. Unscrew the filter placed on heating return, [see diag. 8](#), and clean filter or renew if necessary. Refit the filter. Open the heating flow and return isolating taps and refill, vent and pressurise the heating circuit. Check for leaks.

### Draining of Boiler Heating Circuit

Drain down the Heating Circuit of the boiler only, by closing the heating flow and return isolating taps (**t**, **u** and **w**), on the boiler connections, [see diag. 10](#). Attach a length of hose to the drain point and open the drain valve (**r**), [see diag. 9](#). After servicing or replacing parts, close the drain valve and remove the hose. Open the heating flow and return isolating valves and refill, vent and pressurise the heating circuit. Check for leaks.

### Draining of Boiler Hot Water Circuit

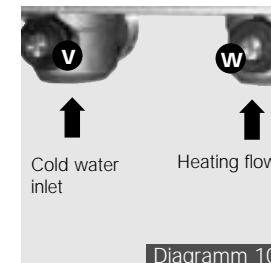
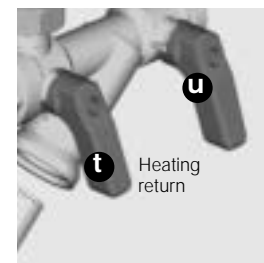
Drain the Domestic Hot Water circuit by closing the cold-water isolation tap (**v**) on the boiler connection. Open one or more hot water taps to drain the hot water circuit. After servicing or replacing parts open the cold-water isolation valve and slowly open a hot water tap to



remove air. Close the hot water tap and check for any leaks.

### Inner Casing Panel Seal Check.

Check the condition of the seal, replace as required. To replace remove the old seal, thoroughly clean the casing surfaces. Fit the new seal, it is supplied to the correct length.





# INSTALLERS

## Servicing

The use of the menus described here after is exclusively reserved for the after-sales personnel.

The after-sales menus, accessible from the room thermostat, allow investigating possible malfunctions and modifying certain factory set values.


### Access to the data menu

• Connect boiler connector (A) on the room thermostat as described page 44.

• Press **MENU** for 5 seconds to call up the following menu:

► **INSTALLER MENU**  
AFTERSALES MENU  
FAULT HISTORY  
BOILER DATA


### 1 - "Fault history" menu


• Use the  buttons to select the "Fault history" menu:

► **FAULT HISTORY**  
BOILER DATA  
INSTALLER MENU → **OK** → ► **FAULT HISTORY**  
TUE 04/02/03 10  
--/--/--

*The display shows the fault N° and its date of occurrence.*

### 2 - "Boiler data" menu

• Use the  buttons to select the "Boiler data" menu

► **BOILER DATA**  
INSTALLER MENU  
AFTERSALES MENU  
FAULT HISTORY → **OK** → ► **WATER PRESSURE**  
RADIATOR SETPOINT  
FLOW T<sub>i</sub>  
RETURN T<sub>i</sub>  
DHW T<sub>i</sub>  
TANK T<sub>i</sub>  
FAN SPEED  
DHW FLOW  
BURNER PHASE  
POWER →  + **OK**

*Every validation through the OK key will cause display of the corresponding value during boiler operation.*

WHEN YOU HAVE COMPLETED PARAMETERS, press **MENU** for approx. 5 seconds to return to the initial display.


### Accessing the Aftersales menu


• Connect boiler connector (A) to the room thermostat as described page 44 :


• Press **MENU** for 5 seconds to call up the following menu:


► **INSTALLER MENU**  
AFTERSALES MENU  
FAULT HISTORY  
BOILER DATA


• Select Aftersales menu


► **AFTERSALES MENU**  
FAULT HISTORY  
BOILER DATA → **OK** +  → ► **ACCESS CODE**  
XX → **OK** → ► **BOILER CODE**  
MIN. FAN SPEED  
MAX. FAN SPEED  
START FAN SPEED  
BURNER OVERRIDE  
FAULT RESET  
AFTERSALES TEL

► **BOILER CODE** → **OK** +  → Attention: The code is pre-recorded at the factory. Note: The code corresponding to the boiler is indicated on the nameplate.


► **MIN. FAN SPEED** → **OK** +  → This factory-set value corresponds to the minimum input.

► **MAX. FAN SPEED** → **OK** +  → This factory-set value corresponds to the maximum input.

► **START FAN SPEED** → **OK** +  → Fan start-up speed selection

► **BURNER OVERRIDE** → **OK** +  → Allows analysing boiler operation at its minimum or maximum power.

► **FAULT RESET** → **OK** → Erases the fault log.

► **AFTERSALES TEL** → **OK** +  → Recording of after sales service telephone No. This No. will be displayed on thermostat screen in case of malfunction requiring attendance by a professional.

WHEN YOU HAVE COMPLETED PARAMETERS, press **MENU** for approx. 5 seconds to return to the initial display.

### Communication test

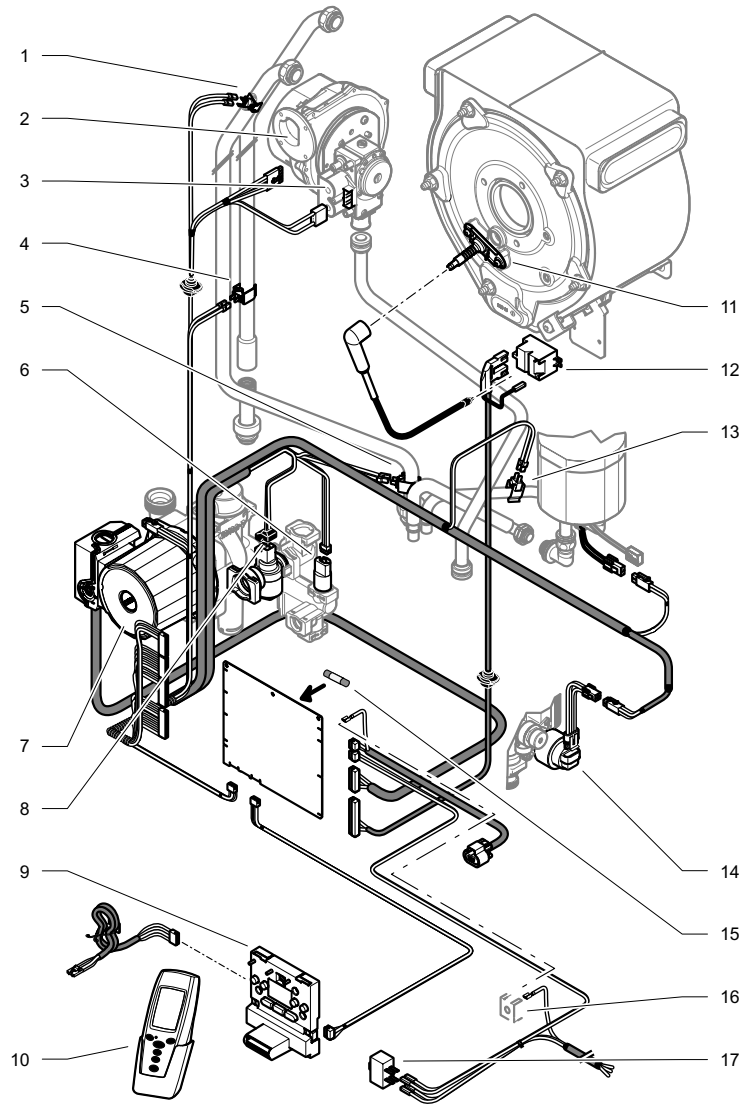
• DO NOT connect the boiler connector to the room thermostat.

• Press **MENU** for 5 seconds to call up the following menu : ► **TEST RADIO SIGNAL**

*The room thermostat then transmits signals every 10 s. Successive display of the numbers 1, 2, 3, 4 means that the signals are properly routed.*

# INSTALLERS

## Wiring diagram



## Wiring diagram

- |                               |                                     |                        |
|-------------------------------|-------------------------------------|------------------------|
| 1 - Overheat thermostat       | 9 - User interface                  | 16 - Chassis earth     |
| 2 - Fan                       | 10 - Room thermostat                | 17 - Main reset switch |
| 3 - Gas valve                 | 11 - Ignition and control electrode |                        |
| 4 - Heating return thermistor | 12 - Ignition module                |                        |
| 5 - Heating flow thermistor   | 13 - DHW temperature sensor         |                        |
| 6 - Water pressure sensor     | 14 - Three way valve                |                        |
| 7 - Pump                      | 15 - Fuse 630 mA                    |                        |
| 8 - Water flow sensor         |                                     |                        |

## Fault finding

### NOTE

Before trying to operate the boiler make sure that :

- All gas supply cocks are open and that the gas supply has been purged of air.
- There is a permanent mains supply to the boiler.
- There is a heating demand from the external control.

### WARNING.

Always isolate the boiler from the electrical supply before carrying out any electrical replacement work.

Always check for gas soundness after any service work.

### Electrical Testing

Should there be any doubt about the voltage supply to any of the components, it is possible to carry out a simple electrical test.

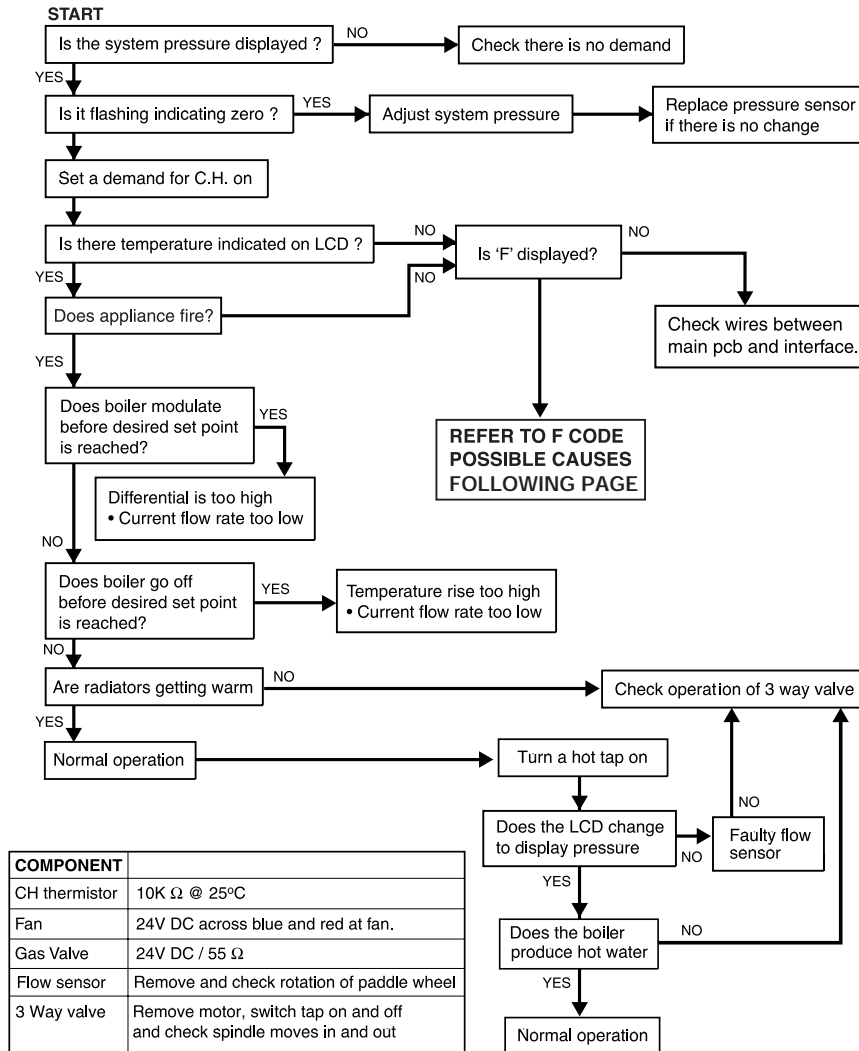
**Important.** On completion of the Service/Fault Finding tasks which have required the breaking and remaking of the electrical connections the earth continuity, polarity,

short circuit and resistance to earth checks must be repeated using a suitable multimeter.

To carry out the electrical test, gain access, as follows : Hinge down the control box and remove Torx screws and unhook the rear panel, refer **diagram 2 page 54**. Refer to the Wiring diagram and fault finding charts diagrams.

# INSTALLERS

## Fault finding



| CODE | DESCRIPTION   | POSSIBLE CAUSE  |
|------|---|---|
| F1   | Ignition fault (lockout) Boiler failed to light                                     | No gas<br>Insufficient gas<br>Incorrect gas valve adjustment<br>Electrode Ignition lead defect<br>Electronic igniter defective<br>Check air inlet duct<br>Check connections to igniter unit |
| F4   | Ignition fault (lockout) Went out when lit  | As F1 possible cause  |
| F5   | Overheat fault  | Overheat stat operated<br>Maximum temperature exceeded<br>Check thermistor connections<br>Air in system with thermistor at maximum setting<br>Faulty overheat stat connection               |
| F6   | Central heating flow thermistor fault   | Thermistor cable defective/broken, thermistor faulty<br>Check that thermistor attached correctly to pipe  |
| F7   | Domestic Hot Water thermistor fault   | Thermistor cable defective/broken, thermistor faulty<br>Check that thermistor attached correctly to pipe  |
| F9   | Water pressure sensor fault   | Faulty sensor connection<br>Check wiring  |
| F10  | Central heating return thermistor fault   | Thermistor cable defective/broken, thermistor faulty<br>Check that thermistor attached correctly to pipe  |
| F11  | Main board connection fault   | Check wiring between mainboard and user interface   |
| F12  | User interface connection fault   | Check wiring between mainboard and user interface   |
| F13  | Main PCB connection fault   | Check connections and wires   |
| F14  | Central heating flow temperature is greater than 95°C                               | System fault<br>Possible pump failure<br>Check Thermistor on flow   |
| F16  | Flame detection fault (flame presence for more than 5 seconds after burner stopped) | Gas valve defective   |
| F17  | Power supply is less than 170V  | Check electrical supply / polarity  |
| F18  | User interface fault  | Faulty User Interface   |
| F19  | Central heating thermistor unplugged  | Check Thermistor connection   |
| F20  | Software incompatibility  | Incorrect user interface or Main PCB  |
| F24  | Central heating return temperature is greater than 90°C                             | System fault<br>Possible pump failure<br>Check Thermistor on return   |
| F25  | Maximum temperature rise slope  | Possible pump failure<br>Air in system  |
| F26  | Maximum delta temperature   | Check Thermistor on return<br>System - too restrictive  |



# INSTALLERS

## Replacement of parts

### General

Replacement of parts must be carried out by a competent person. Before replacing any parts the boiler should be isolated from the mains electric supply and the gas should be turned off at the service cock on the boiler. Unless stated otherwise parts are replaced in the reverse order to removal. After replacing any parts always test for gas soundness and if necessary carry out functional test of the controls.

For replacement of parts the front casing and the inner casing panel of the boiler will need to be removed. To remove undo the two screws on the underside of the front casing and lift off. Undo the two screws on the front of the inner front panel and lift off.

The side panels can be hinged sideways to aid replacement of parts. To hinge a side panel undo and remove the three screws securing each side panel to the boiler, two at the front and one at the top.

### Spark Electrode

For access, refer to section "General". Remove the spark plug lead, earth lead and two

securing screws. Withdraw the spark electrode carefully from the combustion chamber, see diagram 3 page 55.

### Igniter Unit

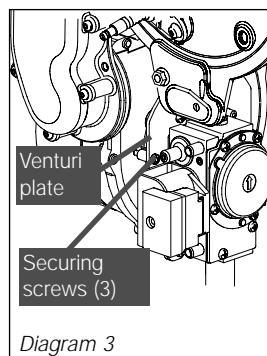
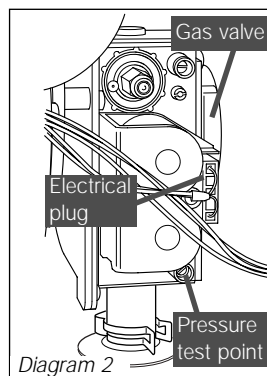
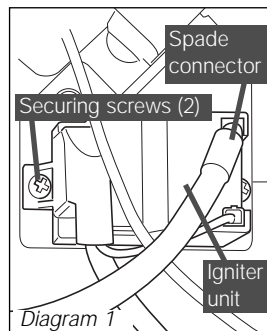
For access, refer to section "General". Remove ignition lead and electrical connections then remove igniter unit by removing two securing screws, see diagram 1.

### Ignition Lead

For access, refer to section "General". Pull the spark plug style connector off the spark electrode and the spade connector connected to the igniter unit, see diagram 1.

### Gas Valve

For access, refer to section "General". Remove the electrical plug from the gas valve, see diagram 2. Refer to pages 54 and 55 for removal of the fan, gas valve and burner assembly. Before removing the gas valve note its position on the fan. Remove the three securing screws, which fix the gas valve and plastic swirl plate to the venturi on the fan, see diagram 3. Remove the gas valve.



When re-fitting the gas valve take care as it can be fitted more than one way. After re-fitting check the combustion CO2 and adjust if necessary, see page 52-53.

After assembly test for gas soundness and purge in accordance with the current issue of BS6891 or in IE, the current edition of I.S.813 "Domestic Gas Installations".

### Fan

For access, refer to section "General". Refer to pages 54 and 55 for removal of the fan, gas valve and burner assembly. Remove the gas valve. Remove the venturi plate secured with three screws, see diagram 3. Remove the two screws securing the fan to the gas manifold, see diagram 4, check the gasket and replace if necessary.

### Burner

For access, refer to section "General". Refer to pages 54 and 55 for removal of the fan, gas valve and burner assembly. Remove the four screws that secure the burner, see diagram 5. NOTE : THE BURNER WILL REQUIRE A NEW GASKET WHEN REFITTED.

### Front Insulation

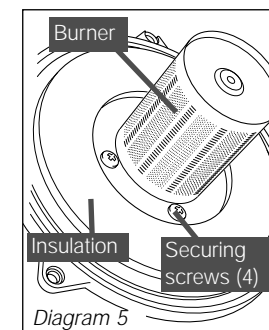
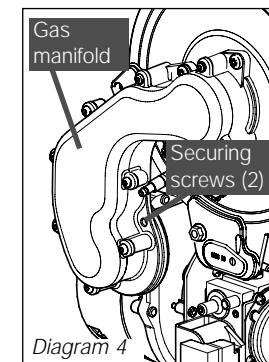
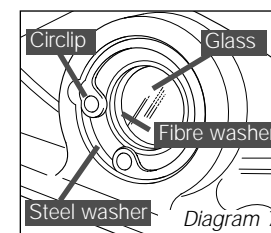
For access, refer to section "General". Refer to pages 56 and 57 for removal of the fan, gas valve and burner assembly. Remove burner as previous section. Remove spark electrode.. NOTE: THE BURNER WILL REQUIRE A NEW GASKET WHEN REFITTED.

### Rear Insulation

For access, refer to section "General". Refer to pages 54 and 55 for removal of the fan, gas valve and burner assembly. Remove securing screw and washer in the centre of the insulation and withdraw insulation, see diagram 6.

### Viewing Window

For access, refer to section "General". Refer to diagram 7. Remove circlip. Remove steel washer. Remove glass. Remove fibre washer. Replace in reverse order.



# INSTALLERS

## Replacement of parts

### Expansion Vessel

For access, refer to section "General".

Refer to **page 57** and drain the boiler heating circuit. Undo the coupling at the base of the vessel, see **diagram 8**.

While holding the vessel remove the securing bolt on the top panel of the boiler. Remove upper support bracket.

Lift the vessel up, draw bottom out to the left, lower and remove.

Fit the replacement unit.

Fit a new gasket between the expansion vessel and coupling.

Refill, vent and pressurise the boiler.

Check for leaks.

### Heat Exchanger

For access, refer to section "General".

Refer to **pages 54 and 55** for removal of the fan, gas valve and burner assembly. Drain the boiler heating circuit, and the hot water circuit see **page 57**.

Remove the clip securing the clear condense pipe to heat exchanger.

Pull to remove the clear condense pipe out of the bottom of the heat exchanger.

Undo the two nuts of the flow and return pipes from

the heat exchanger.

Move the pipes away from the heat exchanger.

Loosen the three heat exchanger securing screws and clamps (two at the top and one at the bottom) to remove the heat exchanger, see **diagram 9**.

CAUTION: There will be water in the heat exchanger. Remove condense pipe connector from bottom of heat exchanger.

Carefully ease heat exchanger out.

### Flue Hood

For access, refer to section "General".

Remove heat exchanger as per previous section.

Remove the two securing screws and pull the flue hood down and away from the flue hood bracket and flue elbow, see **diagram 10**.

### Diverter Valve Motor

For access, refer to section "General".

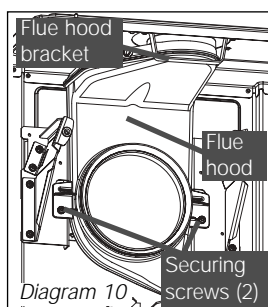
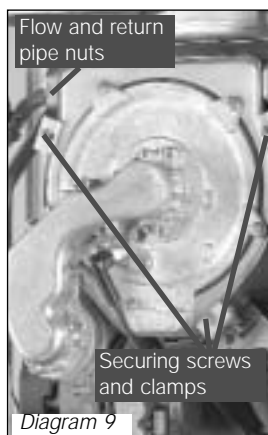
Refer to **diagram 11**.

Remove the electrical plug. Unscrew the retaining nut. Remove the diverter valve motor.

### Pump (head only)

For access, refer to section "General".

Drain the boiler heating circuit.



Refer to **diagram 12**.

Remove the four cap head screws.

Carefully remove the pump head together with cable.

Do not strain cable.

Support the pump head, unscrew cable cover at the side of pump head and take off.

Disconnect wiring from pump head.

Reconnect wiring to new pump head and fit cover.

Fit the new pump head with 'O' ring.

Refill, vent and pressurise the boiler.

Check for leaks.

### Safety Discharge Valve

For access, refer to section "General".

Drain the boiler heating circuit.

Refer to **diagram 13**.

Undo the safety discharge valve union and remove from the pipework.

Remove the securing clip and withdraw the safety discharge valve.

Fit new 'O' ring.

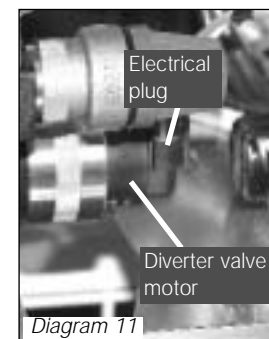
Refill, vent and pressurise the boiler.

Check for leaks.

### Domestic Hot Water Thermistor

For access, refer to section "General".

Drain the boiler domestic



hot water circuit.

Refer to **diagram 14**.

Disconnect the domestic hot water thermistor electrical connections

Remove retaining clip.

Withdraw domestic hot water thermistor from its housing.

Note : When reconnecting electrical connections, polarity is not important.

Fit new 'O' ring.

Carry out a functional test of the controls.



### Heating Flow Thermistor

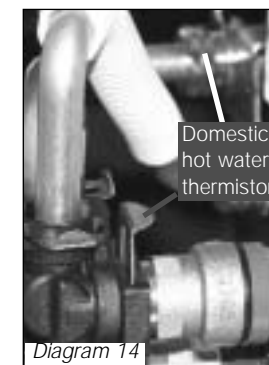
For access, refer to section "General".

Refer to **diagram 15**.

Remove the electrical connections from the thermistor.

Remove the retaining clip from the flow pipe.

Note: When reconnecting the polarity of the wiring to thermistors is unimportant.



# INSTALLERS

## Replacement of parts

### Heating Return Thermistor

For access, refer to section "General".

Refer to diagram 15.

Remove the electrical connections from the thermistor.

Remove the retaining clip from the flow pipe.

Note: When reconnecting the polarity of the wiring to thermistors is unimportant.

### Overheat Thermostat

For access, refer to section "General".

Refer to diagram 15.

Remove the electrical connections from the overheat thermostat.

Remove the retaining clip from the flow pipe.

Remove the overheat thermostat from the retaining clip.

NOTE. When fitting new thermostat, please ensure that it is located correctly onto the flat area of the pipe and the retaining clip is secure.

### Automatic Air Vent

For access, refer to section "General".

Drain the boiler heating circuit.

Refer to diagram 16.

Remove the retaining clip and remove the automatic air vent.

Fit the new automatic air

vent and 'O' ring ensuring the vent cap is left loose.

Refill, vent and pressurise the boiler.

Check for leaks.

### Flow Sensor

For access, refer to section "General".

Drain down the hot water circuit.

- Undo the union nut on the cold water inlet isolating valve.

- Pull out slotted metal clip securing filling system tap into housing, swing the tap forwards.

- Pull out the two slotted metal clips retaining the domestic water inlet filter housing.

- Remove domestic water inlet filter housing.

- Remove electrical connections from water flow sensor.

- Pull off slotted metal clip and remove water flow sensor.

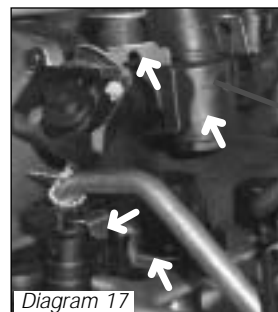


Diagram 17

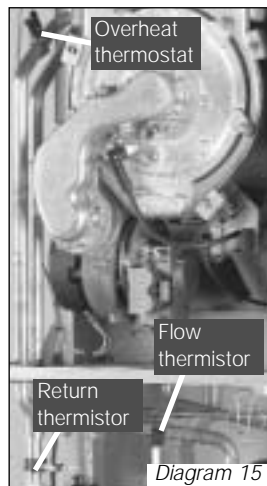


Diagram 15

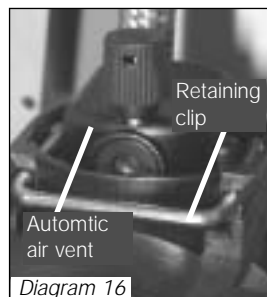


Diagram 16



### Low Water Pressure Sensor

For access, refer to section "General".

Drain the boiler heating circuit.

Refer to diagram 18.

Disconnect the electrical lead by pushing up retaining tab to withdraw the lead plug.

Remove the retaining clip to remove the low water pressure sensor.

Fit new 'O' ring.

Fit the new low water pressure sensor. Refill and pressurise the boiler. Check for leaks.

### Bypass Valve

For access, refer to section "General".

Drain the boiler heating circuit.

Refer to diagram 19.

Remove the retaining clip to remove the bypass valve.

Fit new 'O' rings.

Replace the bypass valve, refill, vent and pressurise the boiler.

Adjust the bypass as described pages 22-23.

Check for leaks.

### Filling Loop Tube

For access, refer to section "General".

Drain the boiler hot water circuit.

Refer to diagram 20.

Remove the retaining clips to remove the filling loop tube.

Fit new 'O' rings.

After replacing the filling loop tube open the cold-water isolation valve and slowly open a hot water tap to remove air. Close the hot water tap and check for any leaks.

### Filling Loop Valve

For access, refer to section "General".

Drain the boiler hot water circuit.

Refer to diagram 20.

Remove the clip securing the filling loop valve to the domestic water filter housing. Disengage by pulling forward.

Remove the clip securing the filling loop to the filling loop valve.

Remove the filling loop valve from the filling loop.

Fit new 'O' rings.

After replacing the filling

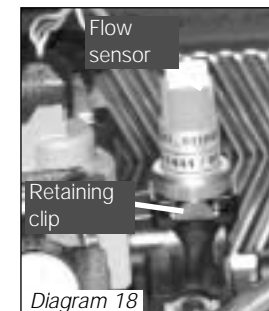


Diagram 18

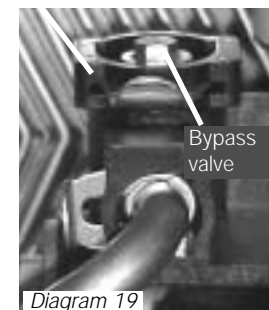


Diagram 19

loop valve open the cold water isolation valve and slowly open a hot water tap to remove air. Close the hot water tap and check for any leaks.

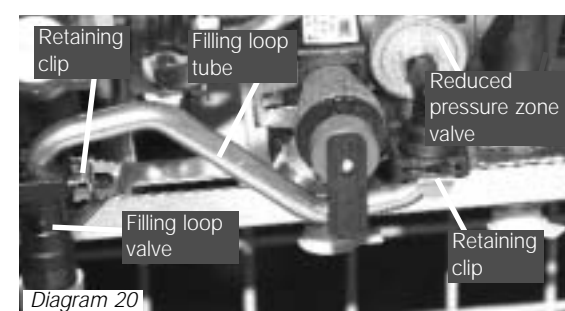


Diagram 20

# INSTALLERS

## Replacement of parts

### Reduced Pressure Zone Valve

For access, refer to section "General".  
Refer to diagram 20.  
Drain the boiler hot water circuit.  
Remove the filling loop  
Remove the retaining clip to remove the reduced pressure zone valve.  
Fit new 'O' rings.  
Replace the reduced pressure zone valve, refill, vent and pressurise the boiler.  
Check for leaks.

### Domestic Cold Water Inlet Filter

For access, refer to section "General".  
Refer to page 56.  
Fit new 'O' rings.

### Central Heating Filter

Refer to section page 56.  
Fit new 'O' rings.

### Heating Circuit Drain Point

Refer to page 57 to drain the boiler heating circuit.  
Refer to diagram 21.  
Remove the retaining clip to remove the drain point.  
Fit new 'O' rings.  
Replace the drain point, refill, vent and pressurise the boiler.  
Check for leaks.

### Inner Casing Panel Seal

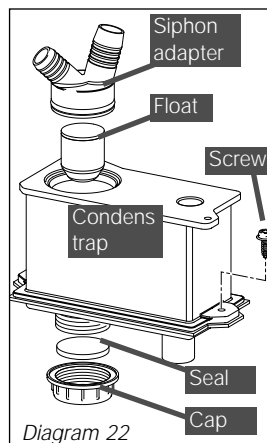
For access, refer to section "General".  
Remove the inner casing panel.  
To replace remove the old seal, thoroughly clean the casing surfaces. Fit the new seal, it is supplied to the correct length.  
Refit the inner casing panel.  
NOTE: Ensure the seal is fitted correctly giving an airtight joint.

### Condense Drain

For access, refer to section "General".  
Refer to diagram 22.  
Remove the clips securing the flexible tubes to the siphon adapter by twisting the clips slightly to disengage the clip jaws from each other.  
Remove black flexible tubes from siphon adapter.  
Lift off the siphon adapter.  
Remove the drain connection downstream of the condense trap.  
Remove the two condense trap securing screws. Lift up and carefully remove the condense trap taking care not to spill any water which may be left in the unit. As the unit is lifted remove the flexible pipe on the outlet.  
Remove the cap at the base of the condense trap.  
Remove any solids found.



Diagram 21



Remove the float to clean it. Flush water through the trap to remove any remaining solids.  
Check for any debris in the outlet pipe of the condensate drain and clean as necessary.  
Reassemble and refit the condense trap.  
When refitting the cap ensure that a watertight seal

is achieved, but do not use excessive force.  
Remove the siphon adaptor from the flexible tubes, using a suitable container, flush the heat exchanger until the water appears clear in the container.

### Plate-to-Plate Heat Exchanger

For access, refer to section "General".  
Drain the boiler heating and hot water circuits.  
Remove the water flow sensor, refer to previous section.  
Unclip the central heating thermistor.  
Unscrew the heating flow pipe union nut, swing pipe forwards.  
Remove the system water pressure sensor.  
Supporting domestic hot water plate to plate heat exchanger, unscrew and remove two screws securing it onto pump mounting and 3-way valve/bypass housing.  
Remove plate to plate heat exchanger from boiler.  
Fit replacement plate to plate heat exchanger in reverse order to removal using new seals, supplied.  
Note: Plate to plate heat exchanger mounting screws are offset to ensure correct fitting.



Diagram 23

### Domestic safety valve (10 bar BLUE), refer to diagram 24.

For access, refer to section "General".  
Drain down the hot water circuit only.  
Undo discharge pipe union nut.  
Pull out slotted metal clip from valve body and remove valve.

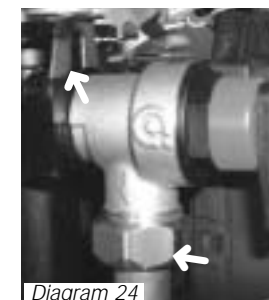


Diagram 24

### Micro accumulator vessel thermistor, refer to diagram 25.

For access, refer to section "General".  
For this operation the boiler must be removed from the wall.  
IMPORTANT: With regards to the manual handling operations, 1992 regulations, the following operation exceeds the recommended weight for one man lift.

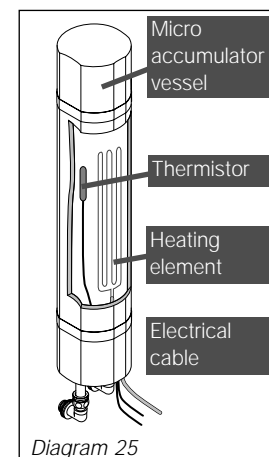


Diagram 25

# INSTALLERS

## Replacement of parts

Note : It is not necessary to drain down entire heating system to carry out this work.

Disconnect the flue system. Disconnect the boiler connections pipes .

Disconnect the pressure relief valve discharge pipes. Disconnect the mains cable and any external controls cables.

Lift up to remove the boiler from the wall.

Locate micro accumulator vessel thermistor, on side of the micro accumulation vessel.

Disconnect the inline electrical connection plug to the micro accumulator vessel thermistor.

Pull out to remove the thermistor.

### Micro accumulator vessel, refer to diagram 25.

For access, refer to section "General".

For this operation the boiler must be removed from the wall, see previous section.

From the rear of the boiler, disconnect the inline electrical connection plug to the micro accumulator vessel thermistor.

Remove the heating element electrical cable.

Unscrew the retaining nuts

pipes.

- Remove the vessel from the boiler.

### Micro accumulator vessel heating element, refer to diagram 25.

For access, refer to section "General".

For this operation the boiler must be removed from the wall, see previous section. Disconnect the electrical connection plug to the micro accumulator vessel heating element at the control board PCB connection.

- Release the micro accumulator vessel heating element cable from the securing clips, note the routing of the cable for reassembly.
- Pull out micro accumulator vessel heating element.

### Printed circuit board (PCB), refer to diagram 26

For access, refer to section "General".

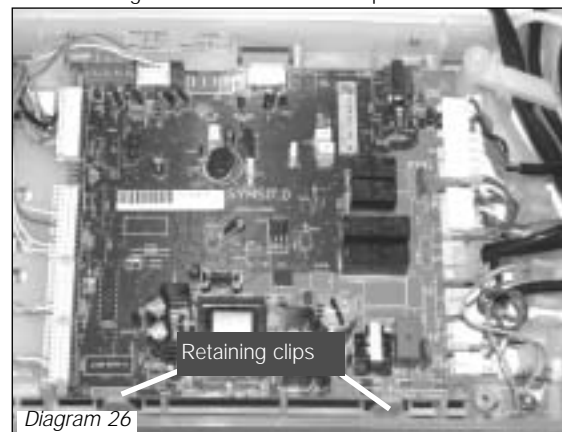
Gain access to rear of control panel.

Undo and remove the two front retaining screws.

Hinge up the control panel cover and ease forwards from the rear retaining lugs to gain access to PCB. Do not strain the cables attached to the PCB. Note the routing of the cables.

- Carefully pull off electrical connections to PCB. Unclip and lift out PCB. Fit replacement PCB in reverse order to removal. Be careful not trap any of the cables.

Make sure that PCB connections are fully pushed onto replacement PCB.



## Spare parts

When ordering spare parts, quote the part number and description, stating the appliance model number and serial number from the data badge.

### Short parts list

| No. | Description                          | Part No. | G.C. No. |
|-----|--------------------------------------|----------|----------|
| 1   | Central heating thermistor           | S5739800 | .....    |
| 2   | Fan                                  | S152000  | .....    |
| 3   | Domestic water flow sensor           | S5720200 | .....    |
| 4   | Printed circuit board - Main         | S1040000 | .....    |
| 5   | Pump head                            | S1024000 | .....    |
| 6   | System water pressure sensor         | S5720500 | .....    |
| 7   | Gas control valve                    | S1043900 | .....    |
| 8   | Overheat thermostat                  | S1040100 | .....    |
| 9   | Three way valve                      | S1025500 | .....    |
| 10  | Pressure relief valve                | S1006700 | .....    |
| 11  | Heat exchanger                       | S1041100 | .....    |
| 12  | Burner                               | S1042200 | .....    |
| 13  | Micro accumulation vessel            | S1025000 | .....    |
| 14  | Micro accumulation vessel thermistor | S1027300 | .....    |

Because of our constant endeavour for improvement, details may vary slightly from those shown in these instructions.



**PLEASE DO NOT FORGET  
TO COMPLETE YOUR  
GUARANTEE REGISTRATION  
CARD**



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