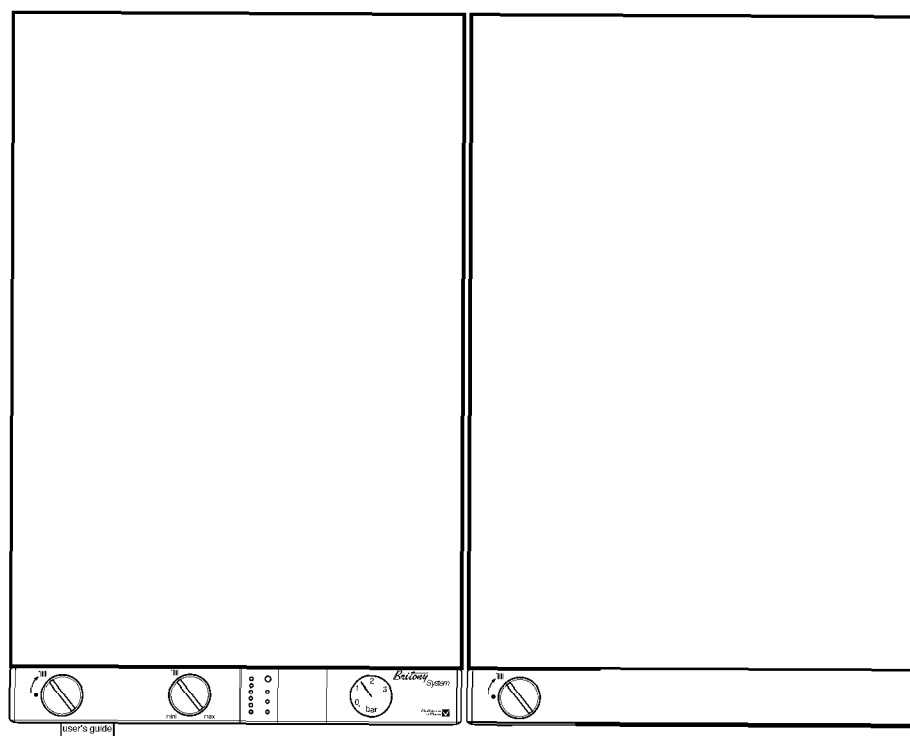


Britony Duo 55



Installation and Operating Instruction Manual

Including User Instructions

Customer Care

Chaffoteaux et Maury Ltd., as a leading manufacturer of domestic and commercial water heating appliances, as well as domestic unvented direct and indirect storage cylinders, is committed to providing high quality products and a first class after sales service. If it is necessary to contact an engineer, then telephone your local Chaffoteaux Service Centre.

LOCAL CHAFFOTEAUX SERVICE CENTRE
Tel: 0807 2430224

Advice on installation or servicing can also be obtained by contacting the Chaffoteaux Customer Services Department.

CUSTOMER SERVICES DEPARTMENT
Tel: 01952 222288 / Fax: 01952 224028

Guarantee

The manufacturer's guarantee against faulty manufacture or materials for the cylinder is 5 years and for the electrical components, thermal controls and safety valves is for 12 months, from the date of purchase.

The guarantee will be invalidated if the factory fitted temperature and pressure relief valve is tampered with or removed. The Manufacturer or Distributors cannot be held responsible for any damage howsoever caused and which is a consequence of the removal or tampering.

The guarantee may also be invalidated if the appliance is not installed by a competent person in accordance with the recommendations made herein, current

standards, regulations or in a manner not approved by the manufacturer, modified in any way, subjected to frost, misuse or neglect, and that factory fitted parts have had unauthorised repairs or replacements carried out. Evidence of purchase and the date of supply must be made available at the time of any claim.

To assist us in providing you with an efficient after sales service, please return the guarantee registration card enclosed with the cylinder without delay.

Statutory Requirements

The installation of this appliance must be carried out by a licenced installer and who is a CORGI Registered person or other competent person and in accordance with the requirements of the Gas Safety (Installation and Use) Regulations and the Building Regulation Approved Document G3.

In addition, the installation must also comply with the current byelaws of Local Water Undertakings, Building Regulations, IEE Wiring Regulations, Local Authority Building Standards (Scotland) Regulations and the Safety Document 635 The Electricity at work Regulation.

It should also be carried out in accordance with the current editions of the following British Standards Codes of practice: BS 6981, BS 5440 parts 1 and 2, BS 5449

part 1, BS 7593, BS 6789, BS 5546, BS 4814, BS 7074 parts 1 and 2, BS 7671 and BG DM2.

Precautions: During servicing, keep the dust generation to a minimum and avoid inhaling any dust and contact with the skin and eyes. Normal handling and use will not present any discomfort, although some people with a history of skin complaints may be susceptible to irritation. When disposing of the lining, ensure that it is securely wrapped and wash hands after contact.

Safety Notice

- Installation must be carried out by a suitably qualified installer and in accordance with current regulations and codes of practice.
 - Only the safety valves supplied with the DUO 55 cylinder should be used.
 - The DUO 55 cylinder must not be used without the safety valves and expansion vessel.
 - The boiler, cylinder and ancillary controls must be adequately maintained.
 - The installation must have a sufficient and constant supply of mains fed cold water.
 - No valve should be fitted between the expansion relief valve and the storage cylinder.
 - The discharge pipe must be terminated where it is visible and will not cause danger to people in the vicinity of the discharge.
- Note:** The discharge could consist of scalding water and steam.
- Only Chaffoteaux approved replacement parts should be used.

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Specifications

BRITONY SYSTEM PLUS 60

Appliance category	Cat II _{2H 3+}
Heat input C/H & DHW	
Maximum in kW	20.22
Maximum in Btu/h	69005
Heat output C/H & DHW	
Maximum in kW	18
Maximum in Btu/h	61428
C/H circuit pressures	
Min operating in bar	0.7
in ib/in ²	10
Max operating in bar	2.5
in ib/in ²	36.6
Safety discharge	
in bar	3
in ib/in ³	43.5
Expansion vessel	
Pre-charge pressure in bar	0.7
Pre-charge pressure in lb/in ²	9.4
Net capacity at 3 bar in litre	5.44

NATURAL GAS G20

Gas rate	
Maximum in m ³ /h	2.14
Maximum in ft ³ /h	76
Inlet pressure	
Nominal in mbar	20
Nominal in in wg	8
Burner pressure	
Nominal in mbar	6.7
Nominal in in wg	2.7
Burner injector diameter	
Natural gas G20 in mm	1.23

PROPANE L.P.G. G31

Gas rate	
Maximum in kg/h	1.55
Maximum in ft ³ /h	3.42
Inlet pressure	
Nominal in mbar	37
Nominal in in wg	14.8
Burner pressure	
Nominal in mbar	21.0
Nominal in in wg	8.4

BUTANE L.P.G. G30

Gas rate	
Maximum in kg/h	1.58
Maximum in Lbs/h	3.48
Inlet pressure	
Nominal mbar	28
Nominal in in wg	11.2
Burner pressure	
Nominal in mbar	
Nominal in in wg	
Burner injector diameter	
LPG G30 and G31 in mm	0.70

Adjustable by-pass	
Minimum flow rate in l/h	100
Minimum flow rate in gal/min	0.36
Maximum flow rate in l/h	700
Maximum flow rate in gal/min	2.56
Electrical characteristics	
Supply	230V - 50Hz
Consumption	150W
Protection	IP 44
Fuse n° 1	2A
Fuse n° 2	1.25A
External controls	24V

DUO 55 CYLINDER

Storage capacity in litre	55
Max water supply pressure to pressure reducing valve	12 bar
Operating pressure	3 bar
Expansion vessel charge pressure	3 bar
Expansion valve setting	6 bar
Maximum primary working pressure	3.5 bar
Set opening pressure of combined temperature and pressure relief valve	90°C
.....	7 bar
Heating capacity of the primary heat exchanger	23 kW
Heating duration	
(primary temperature 90°C flow @ 1m ³ /hr DHW temperature @ 15°C raised to 65°C in mins)	17 min
Consumption per day to maintain the temperature @ 65°C in kWhr/24hr	0.04
70% reheat time	13 min

WEIGHTS

Britony System Plus 60

With packaging	43.2 kg
Without packaging	41.2 kg
Lift weight	35.2 kg

Cylinder

Weight when empty	33 kg
Weight when full	90 kg

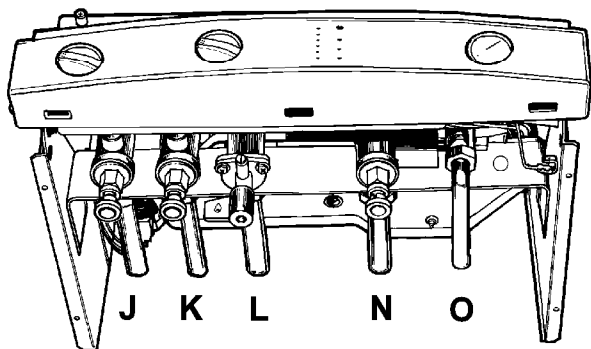
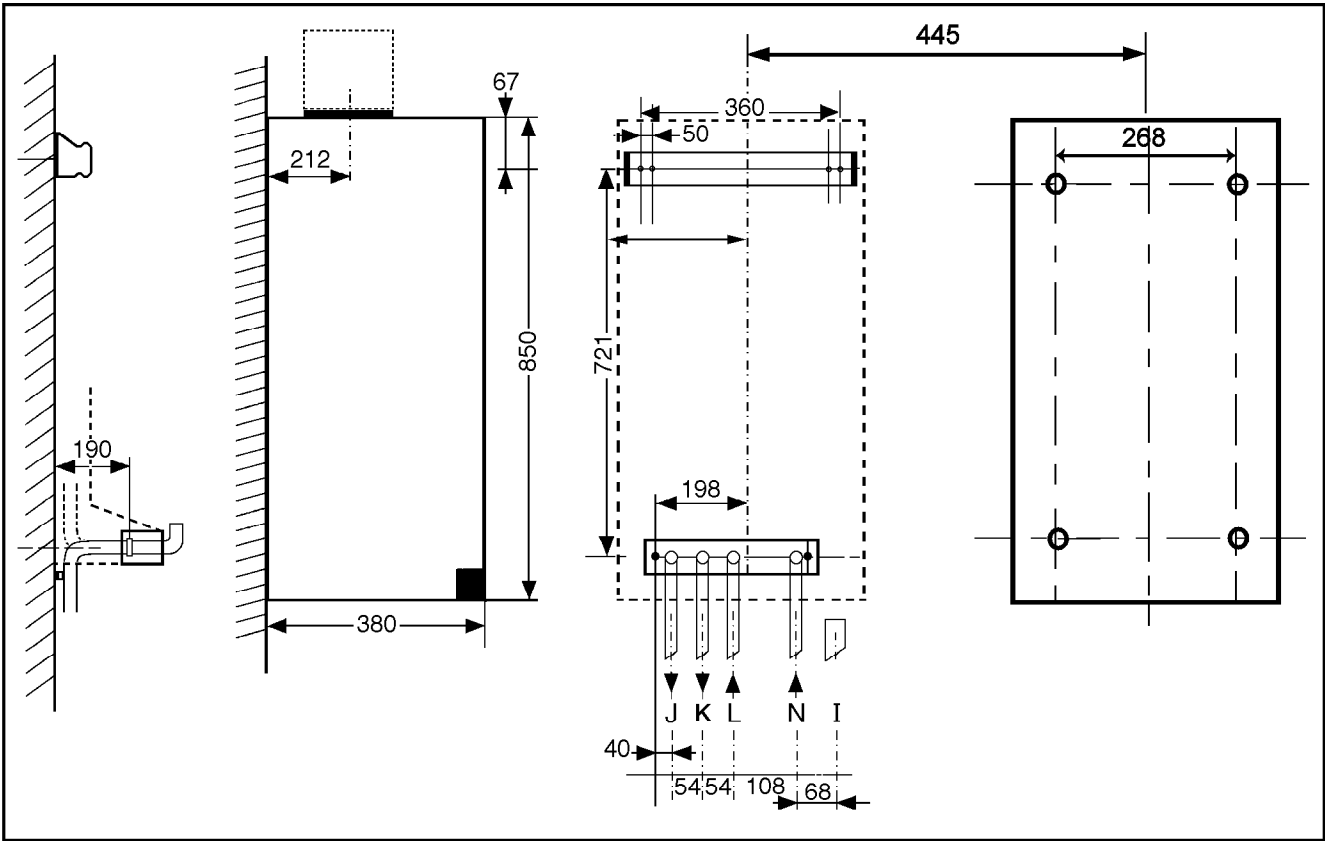
MINIMUM CLEARANCES

Both sides	5 mm
Above casing	170 mm
Below casing	200 mm
Front (for servicing)	500 mm
Front (in operation)	5 mm

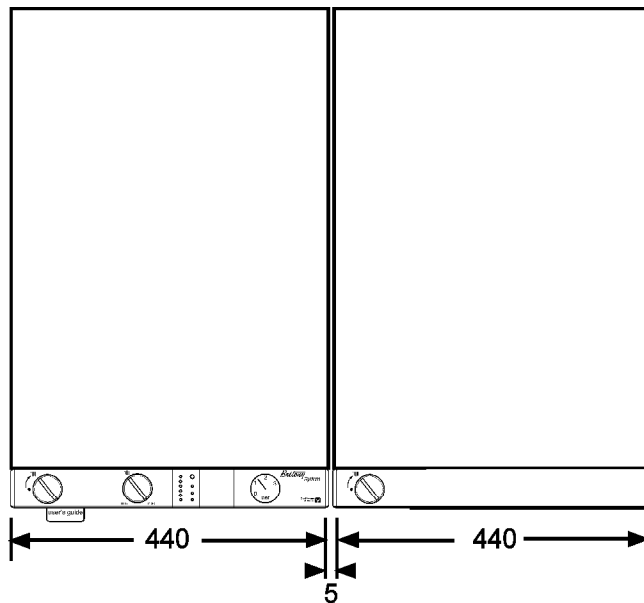
OUTER CASE DIMENSIONS FOR CYLINDER & BOILER

Width	440
(minimum space required 450)	
Height	850
Depth	380
Minimum space required when cylinder and boiler fitted side by side	895

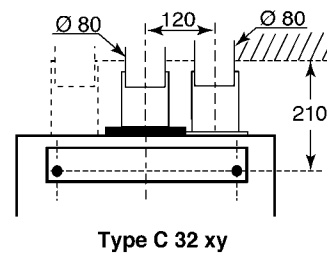
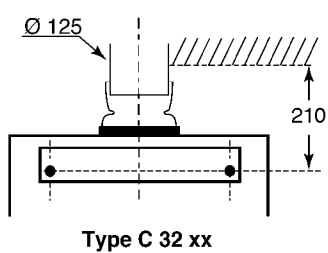
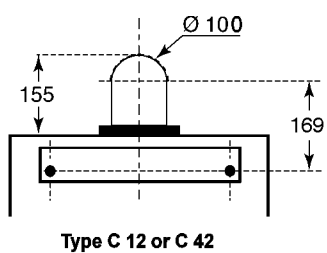
Dimensions



- | | | |
|----------|------------------------|---------|
| J | Heating flow | Ø 22 mm |
| K | H.W. flow | Ø 22 mm |
| L | Gas supply | Ø 22 mm |
| N | Heating return | Ø 22 mm |
| O | Pressure relief outlet | Ø 15 mm |



The boiler is suitable for the 4 flue types: •type C12 or C42 • type C32 xx or C32 xy



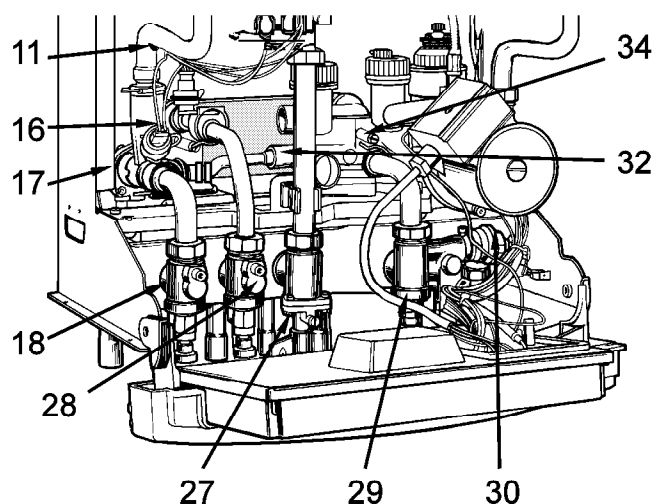
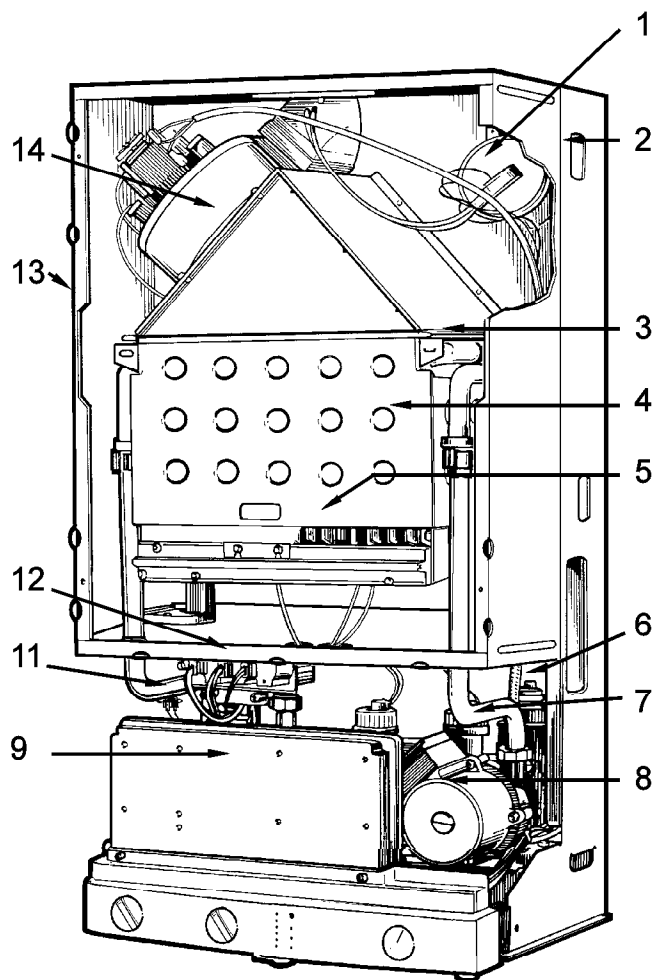
Location of Components

The Cylinder

The Chaffoteaux et Maury BRITONY DUO 55 is designed for use as an unvented storage cylinder heated indirectly by a BRITONY SYSTEM PLUS 60 boiler. The cylinder is supplied with a safety controls pack and expansion vessel to allow it to be connected to the main cold water supply. The cylinder is stainless steel with a high power coil. It is contained within a white case insulated with a preformed polystyrene jacket.

Location of components

1. Air pressure switch
2. Steel chassis complete with expansion vessel
3. Main heat exchanger
4. Combustion chamber
5. Multi-gas burner assembly comprising ignition and ionisation electrodes
6. Automatic air separator and automatic vent
7. Heating circuit flow switch
8. Pump
9. Electrical box
11. Overheat thermostat
12. Gas valve assembly
13. Sealed chamber
14. Flue hood with fan
16. Primary circuit control thermistor
17. Three way valve
18. CH Flow isolating valve
19. Two position selector switch
20. User's instruction panel
21. Heating flow temperature adjustment
22. Green indicator - Power ON
23. Orange indicator - Burner ON
24. Red indicator - Lock out / flame failure
25. Reset button
26. Pressure gauge
27. Gas service tap
28. Hot water flow isolating valve
29. CH Return isolating valve
30. Pressure relief valve (boiler)
32. By pass
33. By pass adjustment screw
34. Location of central heating filter
35. Expansion relief valve also used for draining cylinder
36. Pressure reducing valve
37. Discharge pipe to tundish
38. Cold water inlet
39. Return to boiler
40. Hot water outlet
41. Cylinder thermostat phial position
42. Flow to coil



Location of Components - continued

- 44. Temperature selector
- Flow and Return flexible pipes (not visible)
- 45. Temperature and pressure relief valve
- 46. Chassis
- 47. DHW expansion vessel
- 48. Cylinder
- 49. Pressure test point

The Safety Controls Pack

To enable the cylinder to comply with the current regulations it is supplied with a safety controls pack. This comprises:

Pressure regulator with integral strainer to ensure a constant pressure to the hot water system

Check valve (non return valve) to prevent the back feeding of hot water to the cold main.

Expansion vessel to take up the expansion of the water when it is heated.

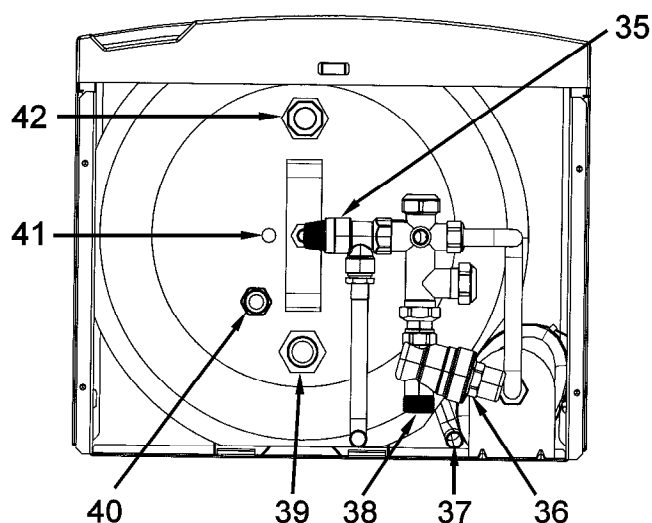
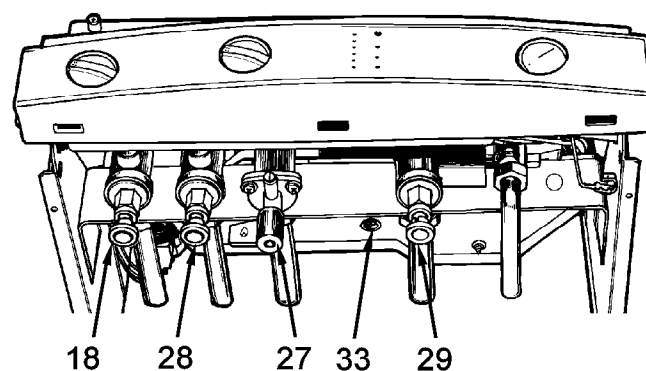
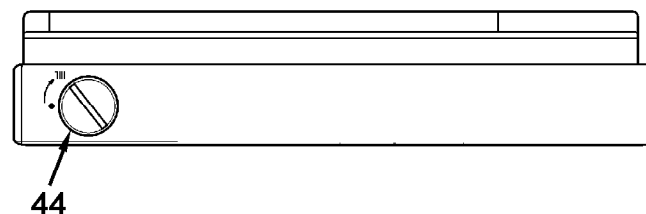
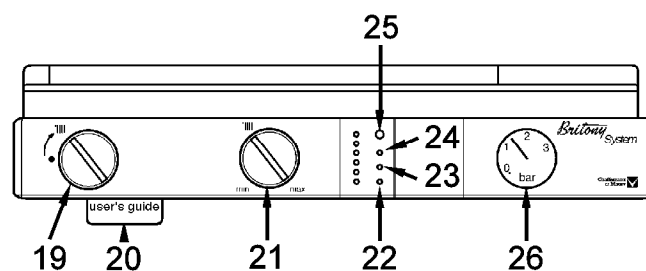
Expansion relief valve to prevent over expansion of the water in the system (also used as drain-off for cylinder).

Pressure relief valve to prevent over pressurisation of the system.

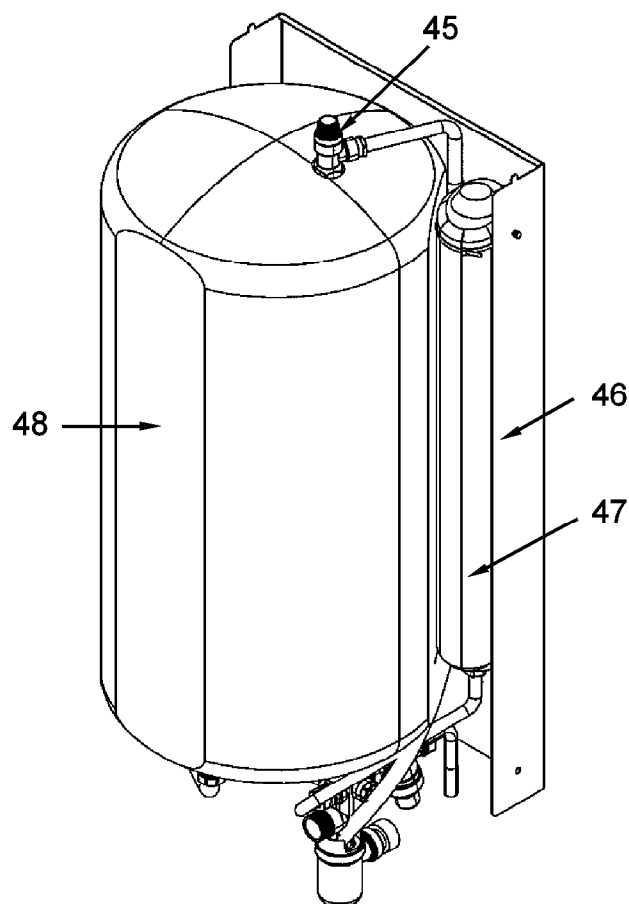
Temperature relief valve to provide a safety outlet in the event of overheating.

Cylinder thermostat to control the temperature of water in the cylinder.

Tundish to collect and provide an air break for the discharge pipes from the temperature and pressure relief valves. The discharge must be terminated in a safe and visible location.



View from underneath cylinder



Introduction

The Chaffoteaux et Maury BRITONY DUO 55 is a combination of an unvented stainless steel storage cylinder heated indirectly by a fanned flued sealed system boiler within matching outer cases. It benefits from the high efficiency provided by the modern low water content BRITONY System Plus 60 boiler and a high power coil within the cylinder. A combination providing very fast reheating of the hot water.

For greater flexibility of installation, the cylinder could be fitted below, on the right or the left of the boiler or separately from the boiler. Supplied directly from the main water supply the cylinder does not need a separate feed cistern or vent pipe in the loft space.

The BRITONY DUO 55 provides central heating as well as hot water. The boiler is designed for sealed systems only and a circulating pump, diverter valve, expansion vessel, a pressure gauge and safety valve are included within the boiler.

The cylinder has a capacity of 55 litres and provides the advantages of mains pressure and greater volumes of hot water to taps and showers. It is supplied complete

with an expansion vessel, pressure reducer, strainer, check valve, temperature and pressure relief valve, expansion relief valve. The cylinder has been tested and approved by the WRc as meeting with the requirements of EN 60335 2.21 and EN 60529. The boiler has been tested and approved to carry the CE mark.

The BRITONY DUO 55 can be installed with the standard horizontal flue, raised horizontal, concentric vertical, twin pipe or SE duct flue arrangements. Adapters, bends and other accessories are available on request.

The DUO 55 is packed in four cartons:

1. The boiler
2. The flue assembly and fixing kit
3. The cylinder with the safety controls pack, fitting template and instructions manual
4. Connections and plinth to close couple the boiler and cylinder.

Operation

Domestic Hot Water Mode

To be able to supply hot water, the selector switch (19 Fig. 1) must be in either in  or  position. This will be confirmed by the green indicator light  (22 Fig. 1).

The hot water temperature in the cylinder can be adjusted between 50°C and 70°C using the control knob on the control panel of the cylinder (44 Fig. 2).

When the cylinder thermostat is calling for heat, it switches the 3-way valve (17 Fig. 3) to the hot water position. The hot water from the primary circuit is then diverted through the cylinder coil to heat DHW.

The first stage solenoid (12a Fig. 3) and safety solenoid (12c Fig. 3) open together to allow gas to the burner.

The ignition sequence begins and a continuous high speed spark ignites the gas. As soon as a flame is detected the orange indicator bulb  (23 Fig. 1) will light and the second stage solenoid (12b Fig. 3) opens to allow the full gas rate.

If a flame is not detected, after eight seconds, the security solenoid closes and shuts off the gas.

The red lockout indicator bulb  (24 Fig. 1) will light. Press the RESET button to attempt to relight.

The hot water flow temperature is controlled by the primary circuit control thermistor (16 Fig. 3).

When the cylinder thermostat is satisfied, the burner is extinguished and the pump stops.

The boiler will now stay in the hot water mode for three minutes (this can be set to 30 seconds if required. See Commissioning section).

Priority will be given to a demand for reheating the cylinder.

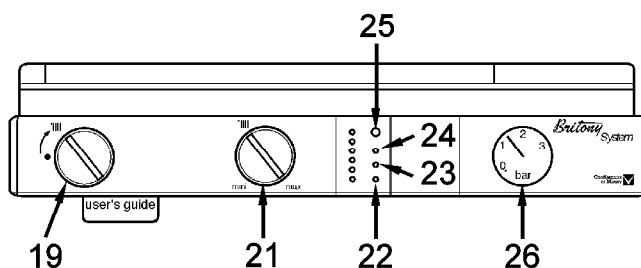


Fig. 1

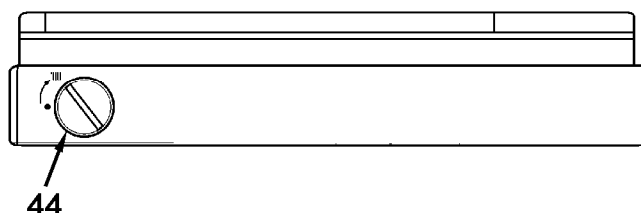


Fig. 2

Central Heating Mode

To be able to supply central heating, the selector switch (19 Fig. 1) must be in 'III' position. This will be confirmed by the green indicator light (22 Fig. 1).

When there is a demand for heating (either from the room thermostat or the external programmer) and the boiler temperature control is calling for heat.

The pump starts and at a flow rate of 4ltr/min the central heating flow switch operates allowing the ignition sequence to begin.

The first stage solenoid (12a Fig. 3) and safety solenoid (12c Fig. 3) open together to allow gas to the burner.

The ignition sequence begins and a continuous high speed spark ignites the gas. As soon as a flame is detected the orange indicator bulb (23 Fig. 1) will light. After 45 seconds the second stage solenoid (12b Fig. 3) opens to allow the full gas rate.

If a flame is not detected, after eight seconds, the security solenoid closes and shuts off the gas. The red lockout indicator bulb (24 Fig. 1) will light. Press the RESET button to attempt to relight.

The central heating flow temperature is controlled by the central heating control thermistor (16 Fig. 3).

The boiler has been designed to minimise cycling and will not attempt to relight for at least 3 minutes after the boiler thermostat has been satisfied (this can be set to 30 seconds if required, see maintenance and service guide).

When the room thermostat is satisfied the burner will switch off and the pump will remain running for a further 3 minutes.

Note: It is possible to override the 3 minute delay by pressing the RESET button (25 Fig. 1).

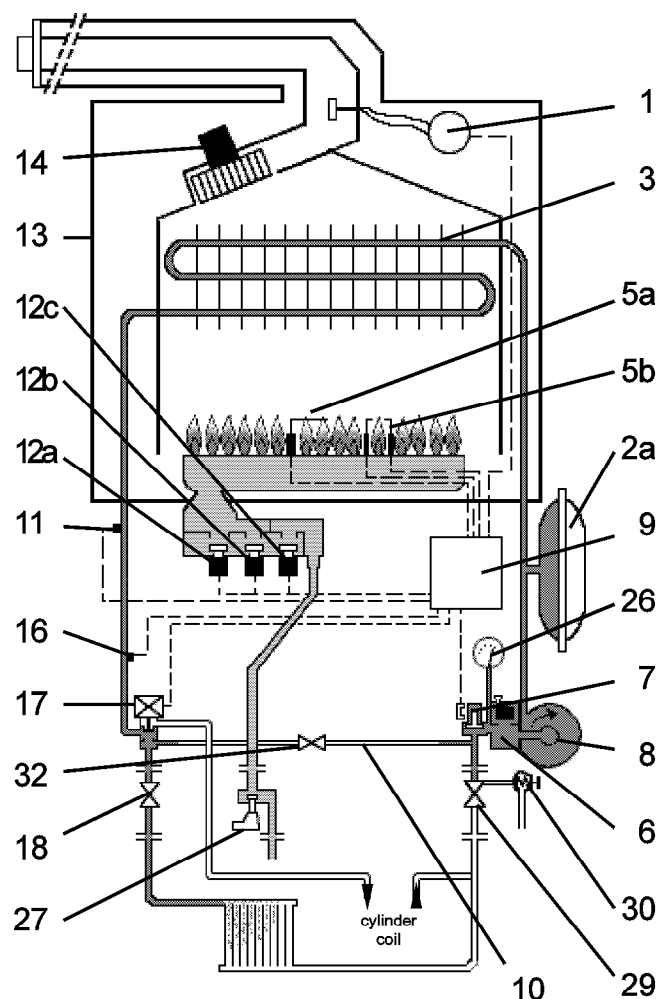


Fig. 3

Installing the Boiler

Planning

Please ensure that you are familiar with the installation requirements as well as the relevant British Standards and Statutory Regulations (see page 2) before commencing work.

Location

The DUO 55 can be installed on any suitable internal wall. Provision must be made to allow the correct routing of the flue and siting of the terminal to allow the safe and efficient removal of the flue products. The appliance may be installed in any room, although reference must be made to the IEE regulations if it contains a bath or shower. A compartment or cupboard may be used provided that it has been purpose-built or modified for the purpose. It is not necessary to provide permanent ventilation for cooling purposes. Detailed recommendations are given in BS 5440 pt. 2. If it is proposed that it is installed in a timber framed building then reference must be made to British Gas Document DM2, or advice sought from CORGI.

Safety Notice

- Installation must be carried out by a suitably qualified installer and in accordance with current regulations and codes of practice.
- Only the safety valves supplied with the cylinder should be used.
- The cylinder must not be used without the safety valves and expansion vessel.
- The boiler, cylinder and ancillary controls must be adequately maintained.
- The installation must have a sufficient and constant supply of mains fed cold water.
- No valve should be fitted between the expansion relief valve and the storage cylinder.
- The discharge pipe must be terminated where it is visible and will not cause danger to people in the vicinity of the discharge.

Note: The discharge could consist of scalding water and steam.

- Only Chaffoteaux approved replacement parts should be used.

Installation

The installation kit comprises four cartons:

1. The Boiler

- Installation and Maintenance Instructions (for the boiler only)
- Accessory bag 1
 - ★ Safety valve discharge elbow
 - ★ Silicone tube
 - ★ Washers for connecting tails:
(2 x 22mm, 2 x 15mm, 1 x gas washer)
- Accessory bag 2
 - ★ Flue gasket and 4 x securing bolts

2. The Cylinder

- Installation and Maintenance Instructions (cylinder and boiler)

3. The Horizontal Flue Starter Pack

- Pre-piping fixing jig
- Hanging bracket
- Connecting tails for the boiler
- Flue turret
- 600mm flue pipe including terminal
- Inner flue
- Rubber seal
- Fixing screws and wallplugs
- Flue restrictor ring

- Water filter and washers:
(4 x 22mm, 1 x gas washer)
- Paper template for the boiler only (showing the dimensions of the boiler and the required 5mm clearance on either side)

4. The Cylinder Installation Pack

- Paper template showing the fixing positions for the boiler and cylinder
- Flexible connecting pipes
- Tundish
- Thermostat clip and 'O' ring
- Tee

Positioning the Boiler and Cylinder on the Wall

Before commencing installation, decide if the cylinder is to be fitted to the right or left of the boiler. If it is to be fitted beneath the boiler *an additional pipe kit will be required, OR the connections to the boiler can be made in copper pipe by using the pre-piping kit supplied with the flue starter pack.*

The Boiler

The template provides the fixing positions of the boiler and the cylinder when fitted to the right of the boiler or to the left of the boiler.

It can also be used to ensure the correct spacing of kitchen cabinets etc.

The template is fixed to the wall and used to locate the fixing holes for the boiler hanging bracket, the pre-piping bracket and the cylinder chassis. It should also be used to locate the centre of the flue hole. There is space to allow pipes to pass behind the boiler without the need for an additional spacer.

Drill and plug the wall and secure the hanging bracket using the screws provided.

Remove the boiler from its packaging as shown in Fig. 4 and remove the outer case as shown in Fig. 5.

Hang the boiler on the bracket.

Note: If the pre-piping bracket has been used, it must be removed before attempting to hang the boiler.

Connecting the Boiler to the System

To gain access to the valve connections, press tab (P Fig. 6) to release the catch on either side of the boiler and pivot the electrical box forward.

3 x fibre washers for the cylinder flow, the C/H flow and return connections.

1 x rubber washer 'R' is for the gas connection.

Before making the connections to the boiler all the system valves should be opened and the pipework thoroughly flushed through with cold water to remove any loose debris.

Using Fig 7 for reference, connect the gas and water pipes to the valves using the tails and gaskets provided with the flue starter pack and the cylinder.

There is 190mm space, between the valves on the boiler and the wall, to make these connections.

Provision must be made to fill and recharge the system pressure. This can be achieved using a filling loop or other methods approved by the Local Water Authority.

The Cylinder

The four fixing holes should have been pre-drilled while the paper template was in position.

The cylinder must be unpacked and the outer case removed as shown in Fig. 5. The cylinder can now be lifted off the chassis.

To gain access to the fixing holes on the chassis, disconnect and remove the expansion vessel by releasing and removing both the locking nut and retaining nut at the inlet. See Fig. 8, position A.

The chassis can now be offered up to its position on the wall and secured by the screws provided.

The expansion vessel and the cylinder can now be remounted.

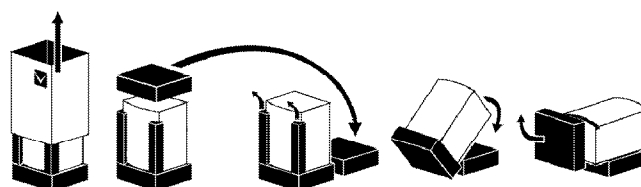


Fig. 4

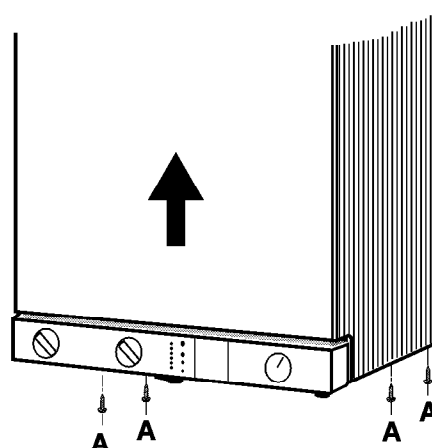


Fig. 5

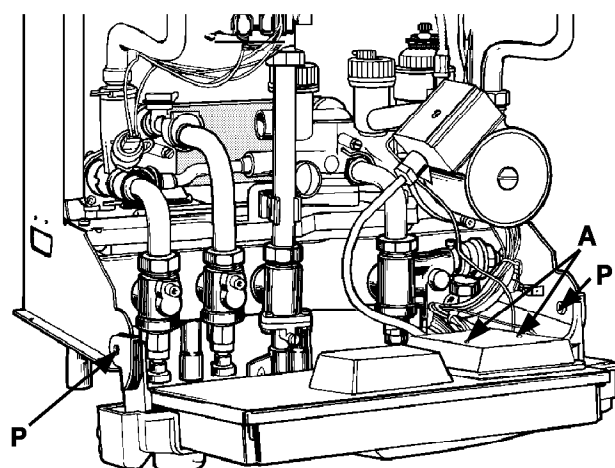


Fig. 6

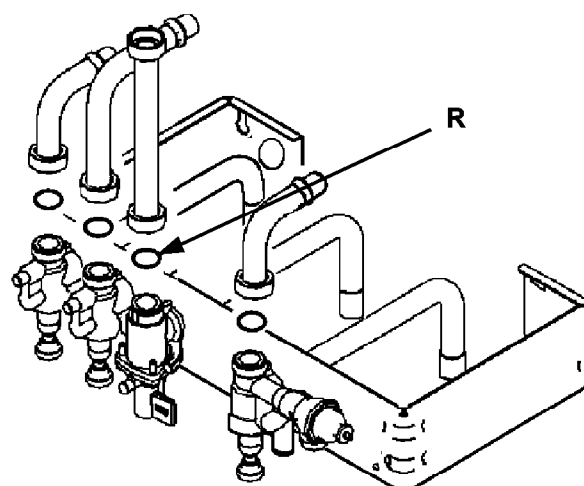


Fig. 7

Locate the thermostat phial in its sleeve using the clip and rubber plug supplied. See Fig. 8.

Connecting the Cylinder

The main water supply should be carefully flushed through, to clear any debris, before connecting to the cylinder.

For cylinders fitted to the right of the boiler

Connect the long flexible tube (A Fig. 10) between the hot water isolating valve (32 Fig. 10) and the inlet of the coil (42 Fig. 10) using the tail (D Fig. 10). The short flexible pipe (B) is connected between the outlet of the coil (39 Fig. 10) and the central heating return pipe using the tee supplied which must be soldered on to the return tail (C Fig. 10).

Connect the cold water supply (EF) to the combination safety valve (G Fig. 10) using the short tail. Use the long tail to connect the hot water outlet (EC).

For cylinders fitted to the left of the boiler

Connect the short flexible pipe (B) between the hot water flow isolating valve (32 Fig. 11) and the inlet of the coil (42 Fig. 11) using tail (D Fig. 11). The long flexible pipe (A Fig. 11) should be connected between the outlet of the coil (39 Fig. 11) and the central heating return using the tee, which must be soldered onto the return tail (35 Fig. 11). Connect the cold water supply (EF) to the combination safety valve (G Fig. 11) using the short tail. Use the long tail to connect to the hot water outlet (EC).

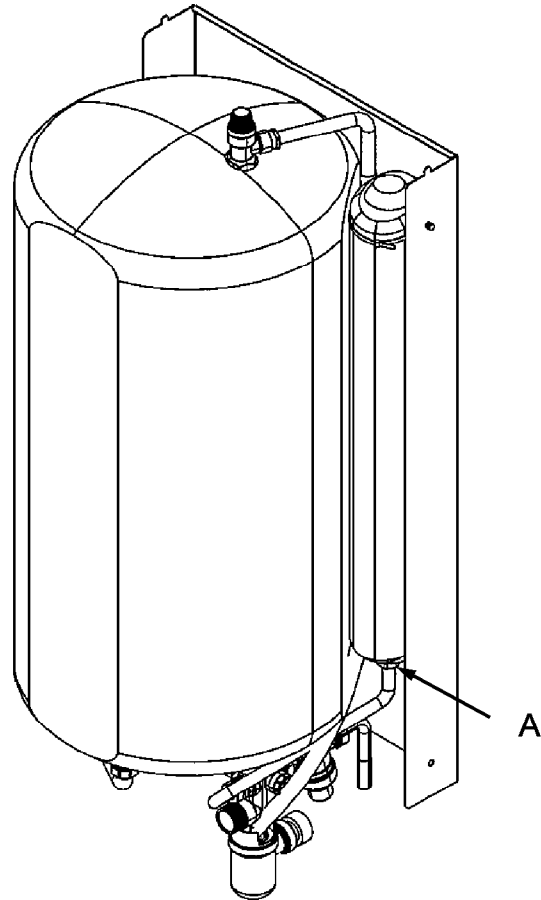


Fig. 9

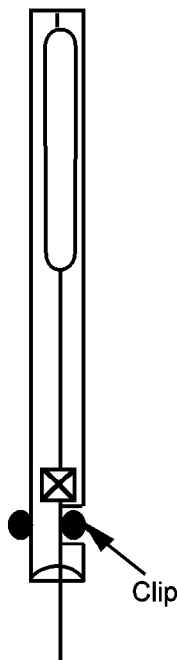


Fig. 8

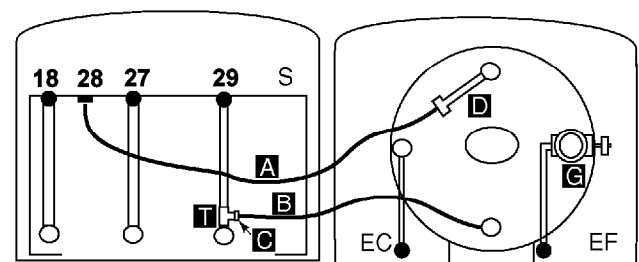


Fig. 10

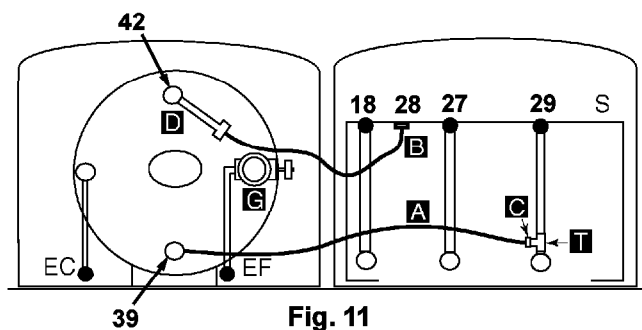


Fig. 11

Wiring

Making the electrical connections

To gain access to the electrical connections, press tabs (P Fig 12) to release the catches on either side of the boiler and pivot the electrical box forward.

Remove the two retaining screws (A Fig 12), lift the cover and turn over to reveal an interface PCB and connecting block (Fig 13).

Connect the live and neutral wires to the connector (D Fig 13) on the interface PCB leaving sufficient earth wire to connect to the main earthing point.

The connecting cable for the cylinder thermostat is coiled behind the temperature adjuster on the cylinder. This cable is led through the cable clamp on the boiler electrical box and is connected to connecting block (D) as shown in Fig 13.

If a room thermostat is to be fitted, the link wire on the main connector plug (C Fig 13) must be removed and the room thermostat connected in its place. **These connections are for use with voltage free switching.**

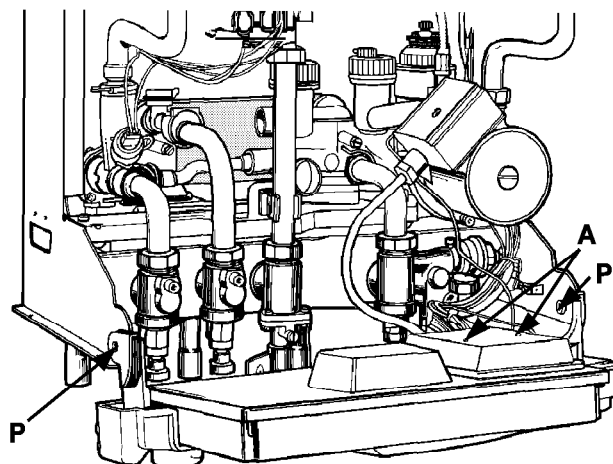


Fig. 12

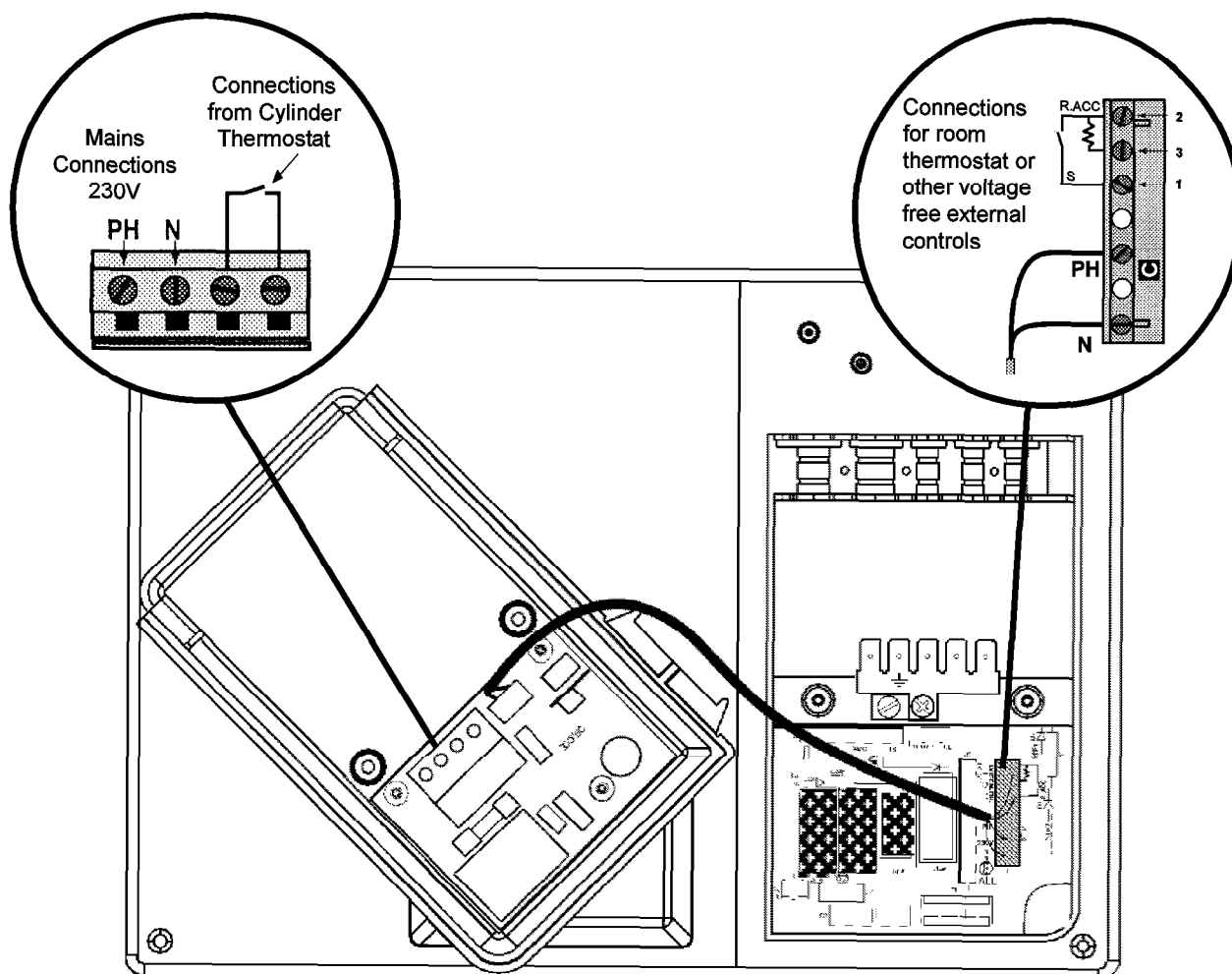
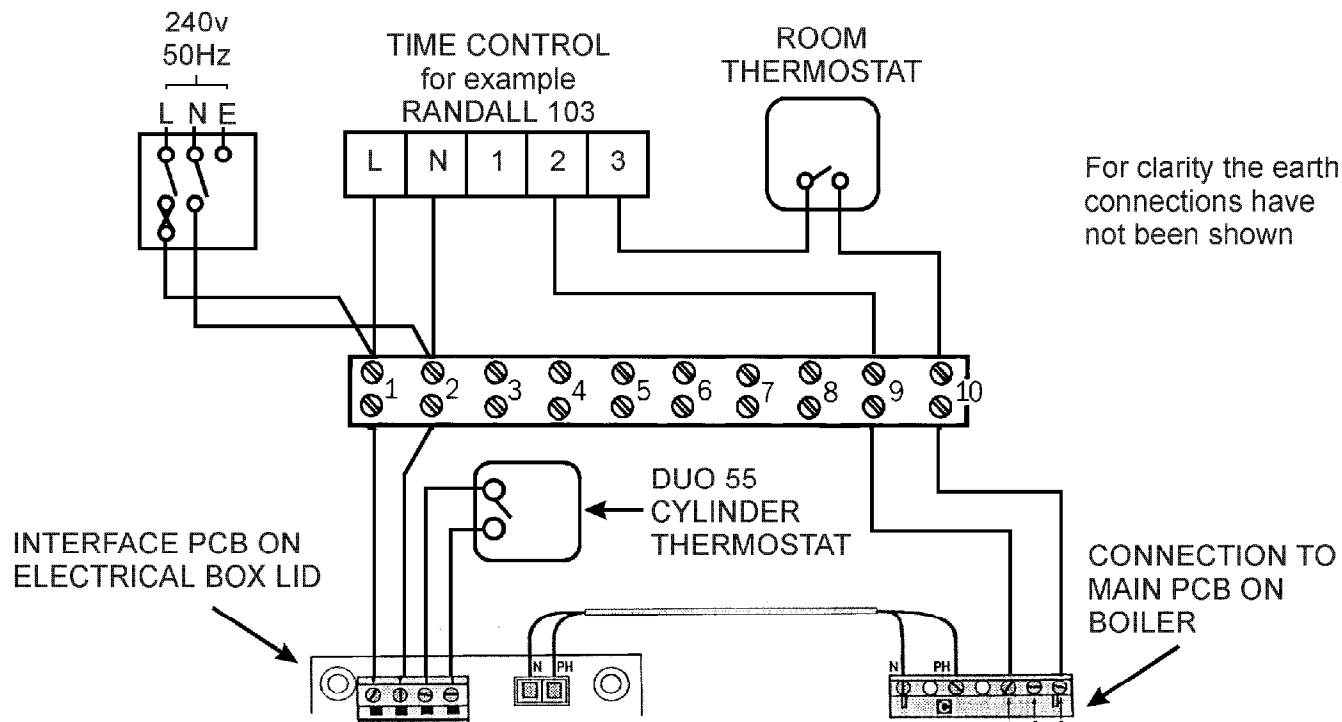


Fig. 13



DUO 55 WITH CONSTANT HOT WATER AND TIMED CENTRAL HEATING

Safety Valves

The DUO 55 has a pressure relief valve fitted to the boiler and a temperature and pressure relief valve fitted to the cylinder. It is most important that they are terminated below the boiler and over the tundish which in turn should terminate safely outside the premises (see Fig. 14). It is recommended that the tundish is installed directly below the discharge pipe from the temperature and pressure relief valve (37 Fig. 15). If necessary, the pressure relief discharge pipe from the boiler may also terminate over this tundish (Fig. 14a).

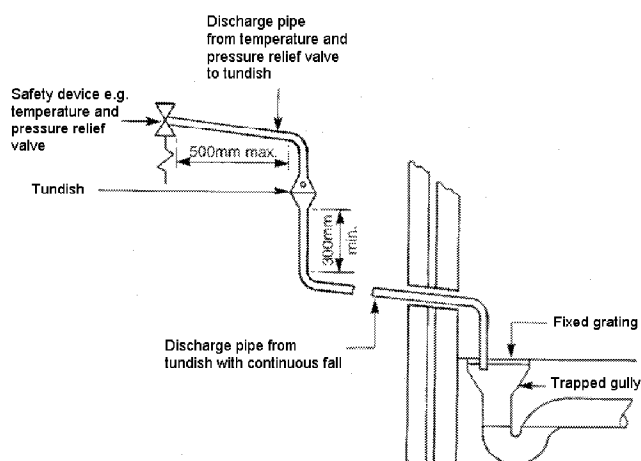


Fig. 14

Valve outlet size	Minimum size of discharge pipe	Minimum size of discharge pipe from tundish	Maximum resistance allowed, expressed as a length of straight pipe (i.e. no elbows or bends)	Resistance created by each elbow or bend
G1/2	15mm	22mm	Up to 9m	0.8m
		28mm	Up to 18m	1.0m
		35mm	Up to 27m	1.4m

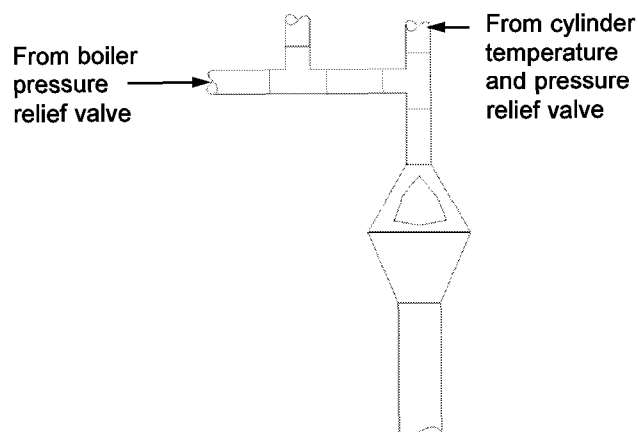


Fig. 14a

Fitting the Horizontal Flue

The standard horizontal flue kit is suitable for lengths from 300mm up to 610mm. With extensions, the maximum length is 3m. For rear flueing, the standard pack will accommodate a maximum wall thickness of 490mm and for side flueing a maximum wall thickness of 477mm. This takes into account the minimum side clearance of 5mm.

The paper template will provide the position for the centre for drilling the flue hole with a core drill. If the flue is a side exit installation, calculate the position of the hole by drawing a line from the centre position on the template to the corner of the wall (sloping downwards away from the boiler at 5mm per 1000mm). Then measure horizontally 212mm. This will be the centre position of the flue hole. For greater detail please refer to the instructions enclosed with the flue kit.

The instructions for fitting the raised horizontal, vertical concentric, twin pipe and SE duct flue options can be found in the relevant flue starter packs.

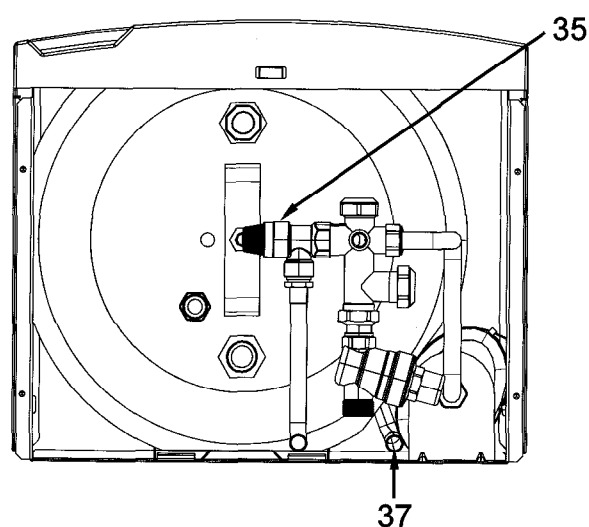


Fig. 15

Refitting the Outer Cases

The outer cases of the boiler and cylinder can now be refitted. Before fully tightening the retaining screws, the plinths can be placed in position using the keyhole slots and then the screws tightened to hold the case and the plinths in place.

Please Note: The cutaway sides of the plinth are to be placed together (Fig. 16) so that the connecting pipework and wiring may be hidden behind the plinth.

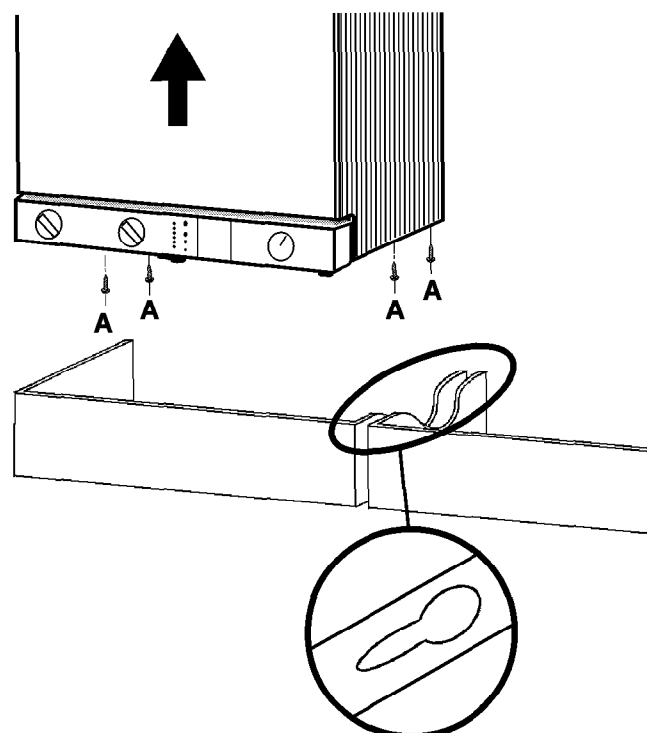


Fig. 16

DHW

Filling the Cylinder

- Ensure that all fittings and valves are correctly installed and are water tight
- Flush all debris from the supply pipes before connecting to the cylinder
- Open the furthest hot water tap from the DUO 55 cylinder
- Open the mains water inlet valve and allow the cylinder to fill. Allow water to flow from the tap for a few minutes to ensure any installation debris is flushed through the system
- Open all other taps in turn to purge any remaining air from the system
- Check all connections for leaks

Check the operation of the safety valves

- Manually open the temperature and pressure relief valve (39 Fig. 17) for a few seconds.
- Check that the water flows away through the tundish and discharge pipework and does not overflow.
- Ensure that the flow of water has stopped and that the valve has reseated itself.
- Repeat the above check for the expansion relief valve.

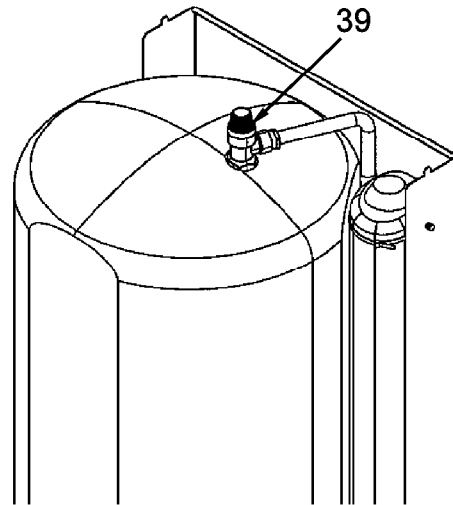


Fig. 17

Central Heating

- Open flow and return valves on the boiler (28 & 29 Fig. 18)
- Open the automatic air vent (20 Fig. 19)
- Fill system and vent radiators
- Set system pressure and remove filling loop
- Check for leaks
- Manually check pump is free to turn
- Switch on electrical supply
- Turn selector switch (19 Fig. 20) to heating and hot water position
- Allow pump to run for several minutes.
- Isolate electrical supply.
- Drain boiler and check water filter (34 Fig. 19) for installation debris.
- Replace filter and recharge system.

Indirect Heating

- Ensure that the cylinder heating coils are filled and purged of air.

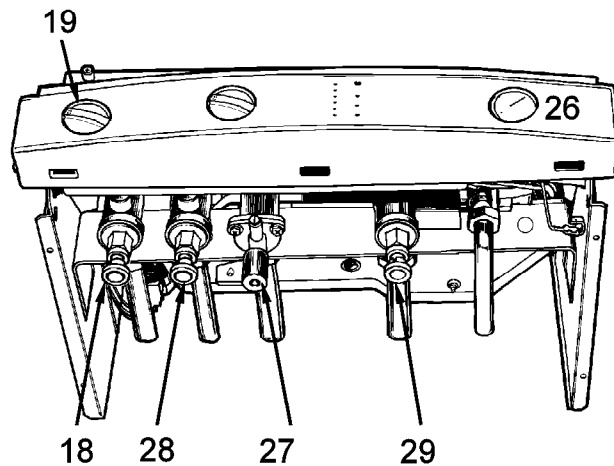


Fig. 18

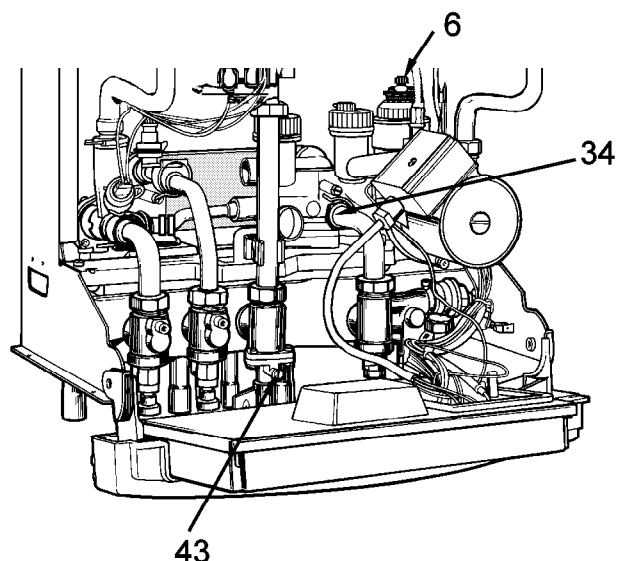


Fig. 19

Lighting the Boiler

- Connect gas pressure gauge to set test point (43 Fig. 19).
- Turn on the gas supply and boiler gas tap (27 Fig. 18).
- Check all boiler connections for gas soundness.
- Ensure electrical supply is on.
- Ensure all external controls are calling for heat.
- Turn selector switch (19 Fig. 20) to heating and hot water position
- Turn the boiler thermostat to maximum (21 Fig.20).
- The boiler will light.
- Allow the boiler to heat system.
- Check that the inlet gas pressure (working pressure) while the boiler is operating. (Refer to technical data).
- Check the operation of the boiler controls and safety devices. (See separate servicing leaflet for details).
- Re-flush the system to remove any dissolved oils and fluxes.
- Recharge system pressure and introduce any water treatment as required.

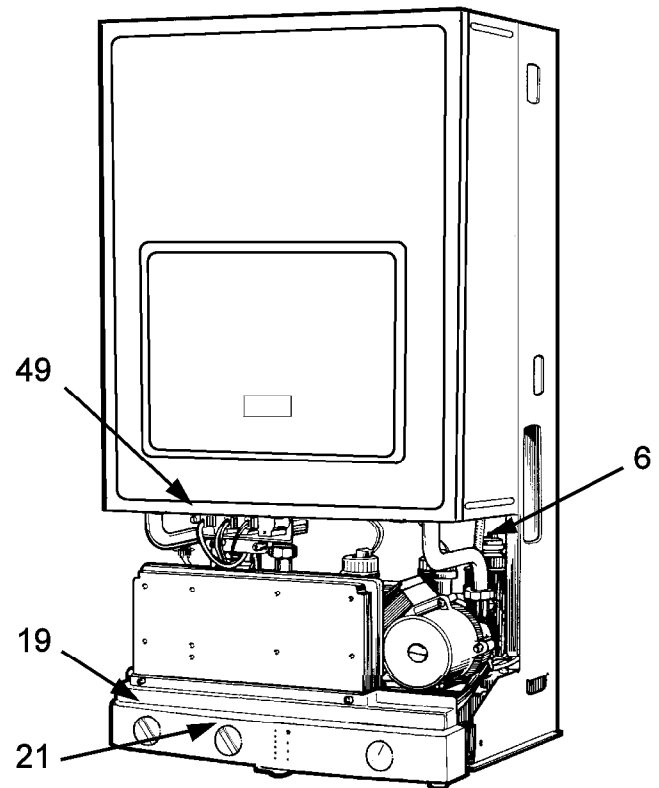


Fig. 20

Post Commissioning

Handing Over to the Householder

- Ensure system pressure has been set correctly.
- Set the boiler and cylinder thermostat and controls.
- Demonstrate the lighting and operation of the boiler.
- Demonstrate how to maintain the system pressure.
- Explain to the customer:
 1. the operation of the appliance and safety controls
 2. things to look out for such as continual leak of water noticed at the tundish
 3. Explain the necessity of annual maintenance by a competent person
 4. what to do in an emergency
- Leave users instructions, installation manual and all other documentation with the householder.
- Fill out and register the guarantee card and send it back to Chaffoteaux et Maury

Flue

The boiler must be installed so that the flue terminal is exposed to the free passage of external air at all times. It must not be allowed to discharge into another room or space such as an outhouse or closed lean-to.

The minimum acceptable clearances are shown below:

A	Directly below an opening, window etc.	300 mm
B	Below gutters soils pipes or drain pipes	75 mm
C	Below eaves	200 mm
D	Below balconies or car port roof	200 mm
E	From a vertical drain pipe or soil pipe	75 mm
F	From an internal or external corner	150 mm
G	Above ground roof or balcony level	300 mm
H	From a surface facing the terminal	600 mm
I	From another terminal facing the terminal	600 mm
J	From an opening into the dwelling when under a car port	1200 mm
K	Vertically from a terminal on the same wall	1500 mm
L	Horizontally from a terminal on the same wall	300 mm
M	Fixed by the flat roof ubbink rolux 4GM flue terminal	
N	Fixed by a pitched roof ubbink rolux 4GM flue terminal	

It may be necessary to protect the terminal with a guard if it is accessible and could be damaged. Reference should be made to the Building Regulations for guidance.

Suitable guards may be obtained from your local merchant.

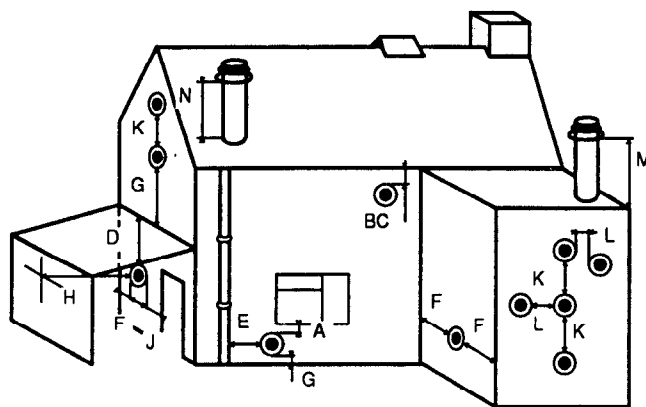


Fig. 21

Ventilation

The room in which the boiler is installed does not require specific ventilation. If it is installed in a cupboard or compartment permanent ventilation is **not** required for cooling purposes.

Gas Supply

The gas installation and soundness testing must be in accordance with the requirements of BS 6891. The boiler requires a 22mm supply. Ensure that the pipe size is adequate for the demand including other gas appliances on the same supply.

Electrical Supply

The appliance requires an earthed 230V - 50Hz supply and must be in accordance with current I.E.E. It must also be possible to be able to completely isolate the appliance electrically. Connection should be via a 3 amp fused double pole isolating switch with contact separation of at least 3mm on both poles. Alternatively, a fused 3 amp / 3 pin plug and unswitched socket may be used, provided it is not used in a room containing a bath or shower. It should only supply the appliance.

System Pressure

The boiler is suitable for sealed systems only. The maximum working pressure for the appliance is 3 bar.

All fittings and pipework connected to the appliance should be of the same standard.

Flushing and Water Treatment

The performance of the appliance could be impaired by system debris or the effects of corrosion.

The system must be flushed thoroughly to remove metal filings, solder, machining oils and other fluxes and greases before connecting the boiler.

An appropriate flushing and descaling agent should be used, particularly if it is an existing system.

Refer to BS 7593 (1992) for guidance).

For more information on the use of corrosion inhibitors, flushing and descaling agents, advice can be sought from the manufacturers of water treatment products such as:

Betz Dearbon Ltd
Foundry Lane
Widnes
Cheshire
WA8 8UD
Tel: 0151 424 5351

Fernox-Fry Technology UK
Tandem House
Marlowe Way
Beddington Farm Lane
Croydon,
Surrey CR0 4XS
Tel: 01799 550811

System Controls

The boiler is electronically controlled and is suitable for most modern electronic time and temperature controls. The addition of such external controls can be beneficial to the efficient operation of the system. The boiler connections for external controls are 24V and so only controls of 24V or that have voltage free contacts should be used.

They must not be connected to a 230V supply.

By pass and Pump

The boiler is fitted with a pre-adjusted by pass. Although adjustment is not normally necessary, the by pass can

be reset by turning a screw (D Fig. 22) anti-clockwise to open the by-pass using the chart below for guidance.

If used on a system with thermostatic radiator valves, the flow rate with thermostatic valves closed should be adjusted to at least 100 l/hr.

The chart below indicates the residual head of the pump available for the system.

Expansion Vessels

Boiler

The expansion vessel is pre-charged to 0.7 bar (10lb/in²). The vessel is suitable for systems up to 145 litres capacity. For systems of greater capacity an additional expansion vessel will be required. Refer to the chart below and BS 7074 pt. 1 or BS 5449.

Cylinder

The domestic hot water expansion vessel is pre-charged to 3 bar (45.5lb/in²).

The vessel is suitable for the 55 litre of water in the cylinder.

Filling Point

Provision must be made to be able to charge the system on commissioning and to make up any subsequent pressure loss. The method of connection must utilise approved equipment and must comply with the water regulations. A filling loop can be so installed as to be hidden beneath the boiler.

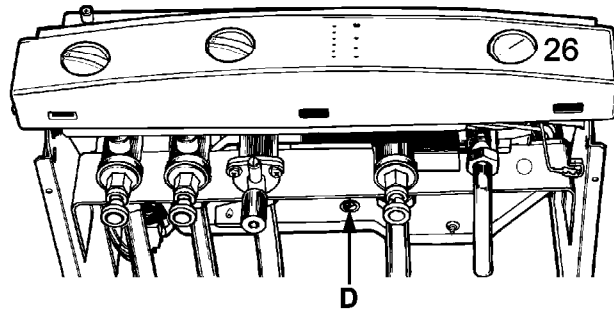


Fig. 22

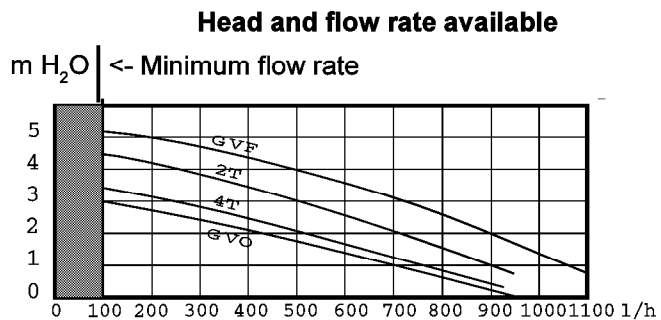


Fig. 23

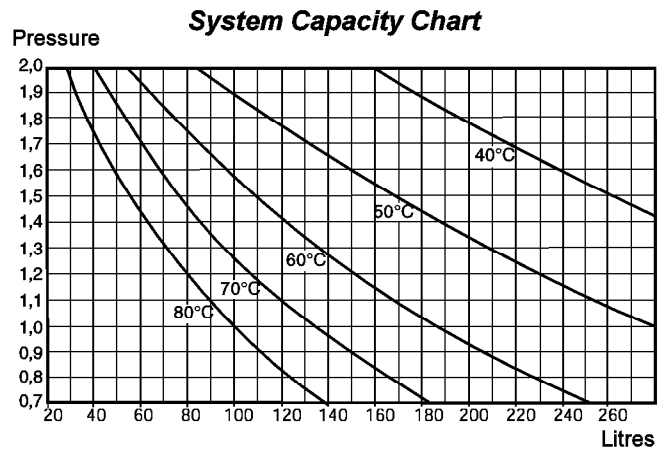


Fig. 24

Maintenance

In order to ensure that the BRITONY DUO 55 continues to operate efficiently and safely, it is essential that the boiler and the cylinder are maintained annually.

- Servicing and repairs should only be carried out by a competent engineer
- Any part replaced should be genuine Chaffoteaux et Maury spare parts

Routine Maintenance

1. Strainer

- While the cylinder is partially drained the strainer can be removed and cleaned

2. Expansion Vessel

- While there is no pressure in the system the pressure in the expansion vessel can be checked against the pressure on the data badge.

Refill and repressurise the system as set out in the commissioning instructions.

3. Safety Valves

- Manually operate the temperature, pressure and expansion relief valves. Check that water runs freely through the tundish and that the discharge point without overflowing.
- Check that the flow of water stops and that the valves reseal satisfactorily.

For details on boiler maintenance, refer to the separate Britony System Plus Maintenance and Servicing Instructions.

User's Instructions

Except for the temperature adjuster (44 Fig. 26), there are no user adjustable controls on the DUO. Any adjustments or maintenance must be carried out by a suitably qualified engineer, installer or electrician.

If water is seen discharging from the DUO safety valves, turn off the boiler.

Do not turn off the water supply. Contact the installer or other suitably qualified engineer.

Ensure that the appliance is serviced and inspected at least annually.

19. Two position Selector switch

● = Switched OFF

|||| = Central heating

20. User's instruction panel.

21. |||| Heating flow temperature adjustment

22. ○ Green indicator - Power ON

23. ● Orange indicator - Burner ON

24. ■ Red indicator - Lock out / flame failure

25. 'RESET' Reset button

26. ⌚ Pressure gauge

Isolating Taps

18. CH Flow isolating valve

27. Gas service tap

29. CH Return isolating valve

Cylinder Control Panel

44. Temperature control

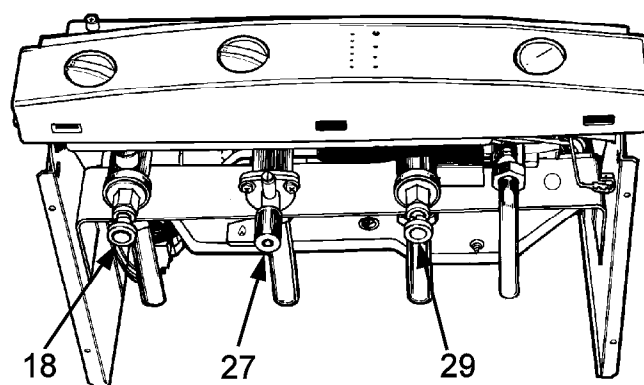


Fig. 25

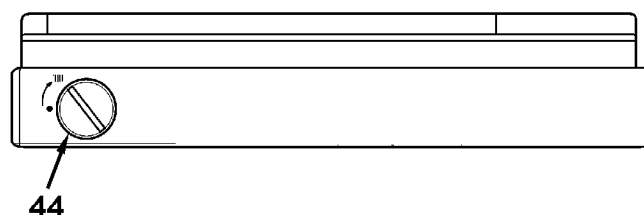
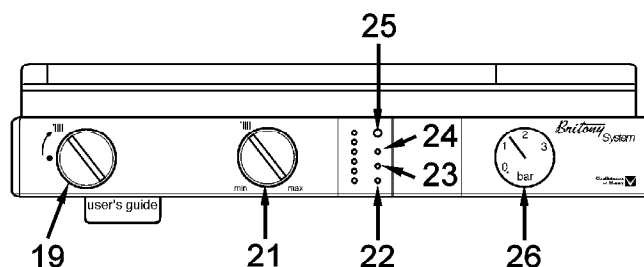


Fig. 26

Switching On

1. Check that the gas service tap is opened at the gasmeter and main power is on.
2. Check that pressure in central heating system is above 0.7 bar and below 2.5 bar with the pressure gauge  (26).
3. Open the gas tap (27) by turning from right to left. 
4. The boiler is now ready to use.

Heating

1. Turn selector switch (19) fully clockwise to position '||||'. The green 'power on' indicator  will light.
2. If the room thermostat (if fitted), the boiler temperature control '||||' and the clock (if fitted) are all calling for heat, the orange 'burner on' indicator  will light and the heating will be on.

Note: If the boiler has been turned off for some time the first attempt to light it may result in a lockout . If this happens press the reset button (25) and the boiler will light.

Hot Water

Turn selector switch (19) clockwise from the 'off' position to the first setting (hot water only)  or the second setting (heating and hot water) '||||' . The green indicator  will light.

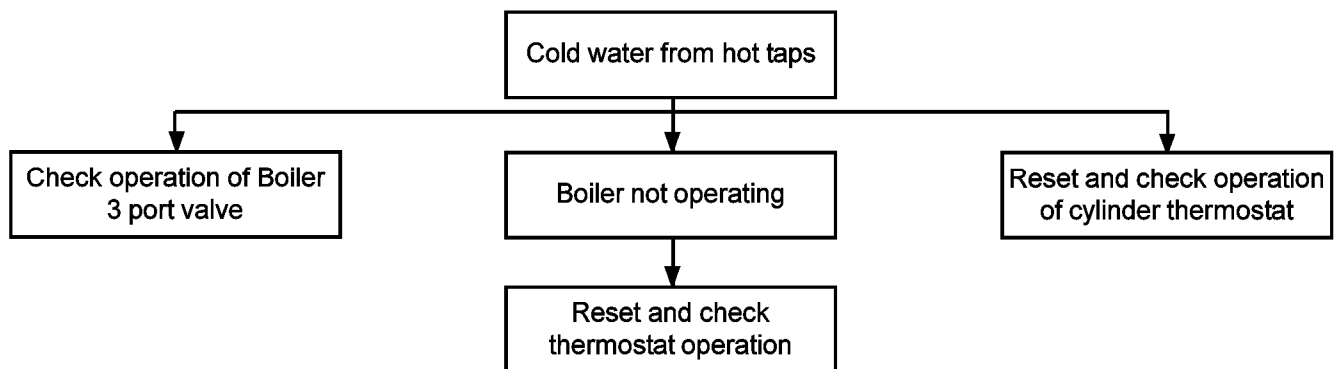
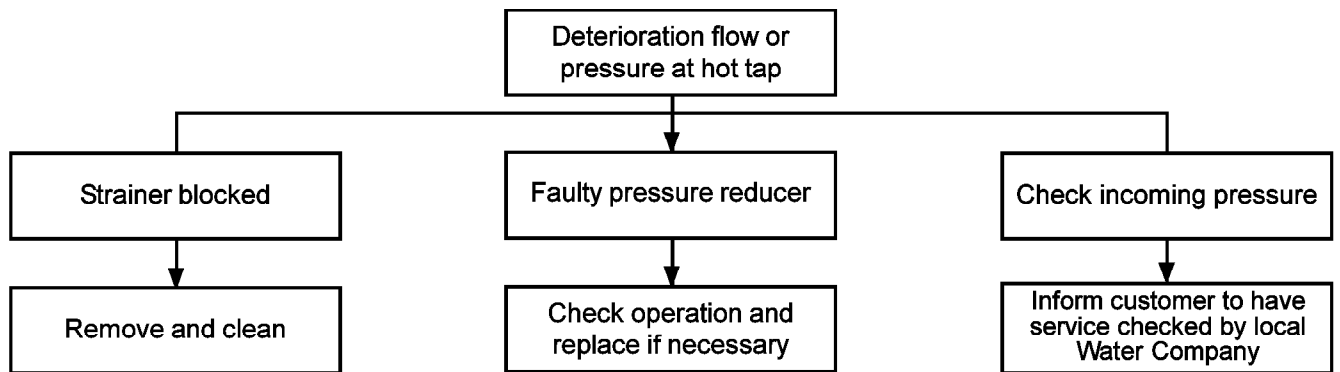
Turn the temperature selector on the cylinder fascia panel (44) to the desired position.

If the cylinder thermostat is calling for heat, the orange 'burner on' indicator  will light and the water in the cylinder will begin to heat up.

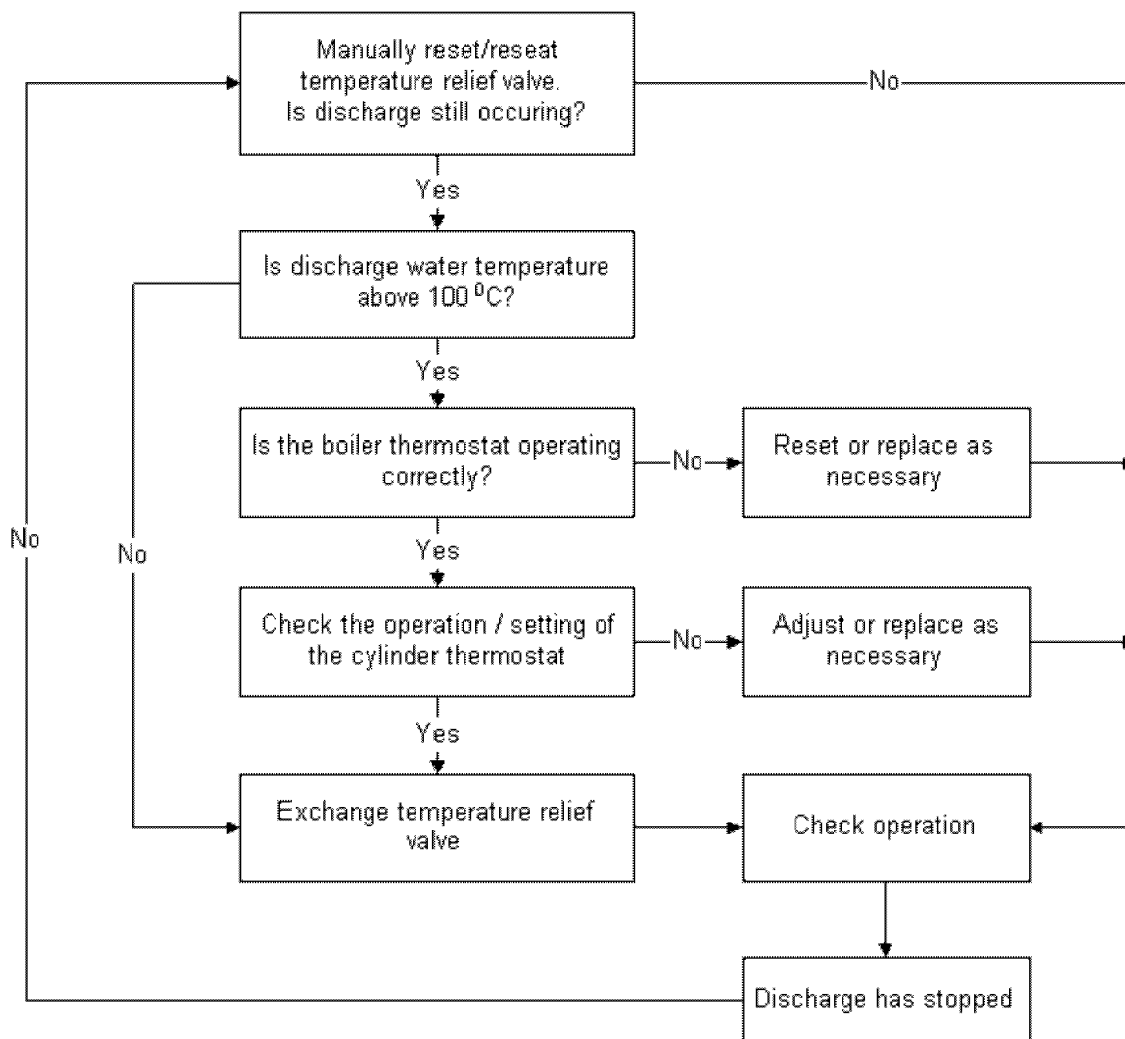
To Turn Boiler Off Completely

1. Turn the selector switch (19) to the off position .
2. Turn the gas tap (27) from left to right 'STOP'.

Operational Faults

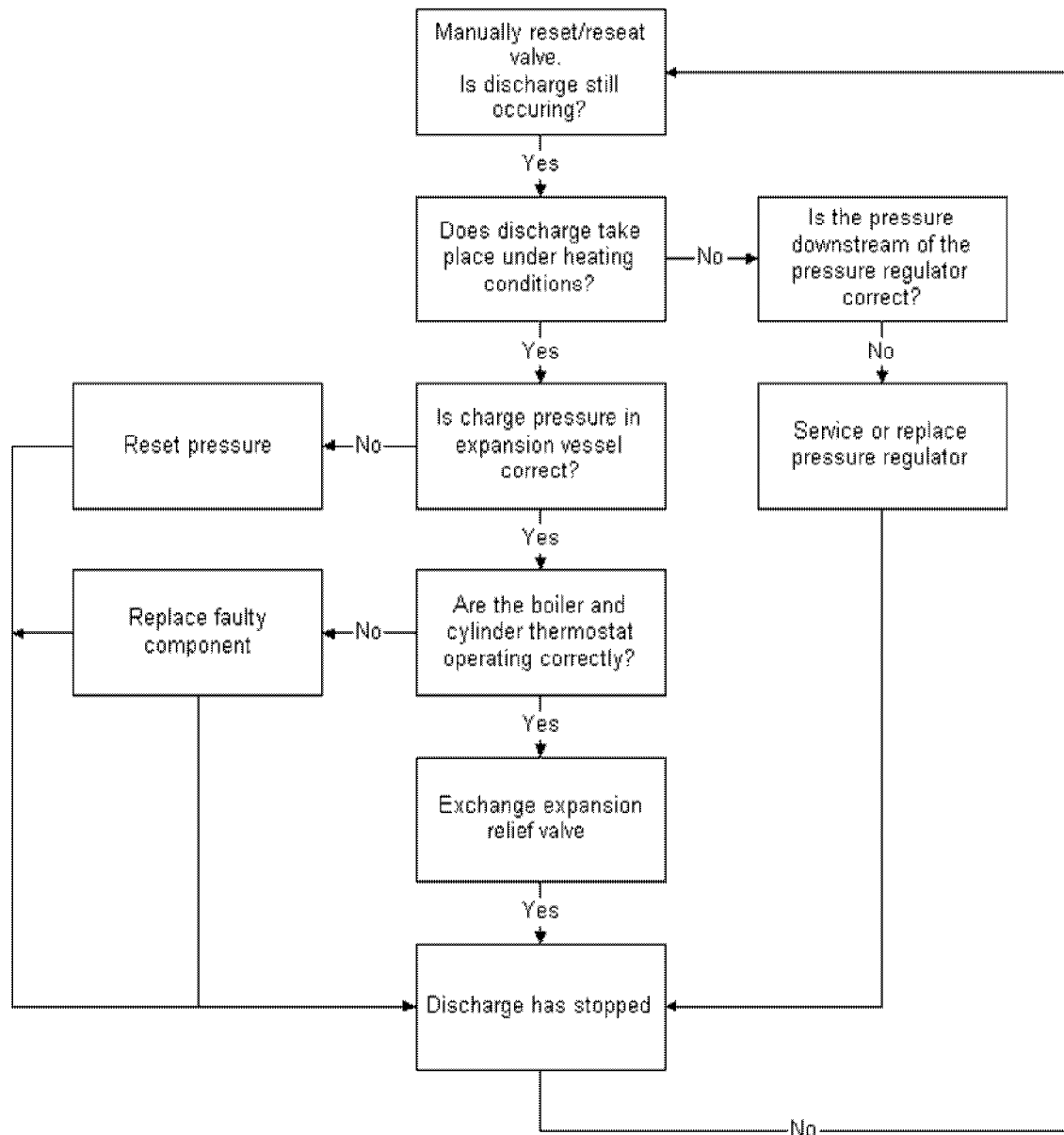


Discharge of Water from Temperature Relief Valve



Please Note:
Use only genuine Chaffoteaux replacement parts

Discharge of Water from the Expansion Relief Valve



Please Note:
Use only genuine Chaffoteaux replacement parts

Chaffoteaux et Maury are continuously improving their products and therefore reserve the right to change specifications without prior notice and accepts no liability for any errors or omission in the information contained in this document.

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