







A/23 MFFI - A/27 MFFI

G.C.N. 47-116-10 / 47-116-12 Servicing Instructions Type C Boilers LEAVE THESE INSTRUCTIONS ADJACENT TO THE GAS METER

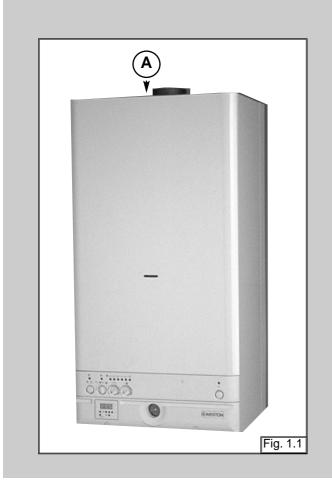
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To ensure efficient safe operation, it is recommended that the boiler is 1. SERVICING serviced annually by a competent person. **INSTRUCTIONS** Before starting any servicing work, ensure both the gas and electrical supplies to the boiler are isolated and the boiler is cool. Before and after servicing, a combustion analysis should be made via the flue sampling point (please refer to the Installation Manual for further details). After servicing, preliminary electrical system checks must be carried out to ensure electrical safety (i.e. polarity, earth continuity, resistance to earth and short circuit). The life of individual components vary and they will need servicing or 1.1 Replacement replacing as and when faults develop. of Parts The fault finding sequence chart in chapter 2 will help to locate which component is the cause of any malfunction, and instructions for removal, inspection and replacement of the individual parts are given in the following pages. All testing and maintenance operations on the boiler require the control panel 1.2 To Gain General to be lowered. This will also require the removal of the casing.

To dismantle the front part of the casing, proceed as follows:

- 1. Remove screw "A" (see fig. 1.1);
- 2. Lift the front panel up and forward (see fig. 1.2).



Access



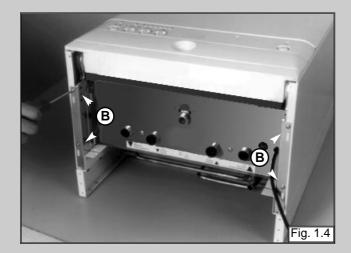


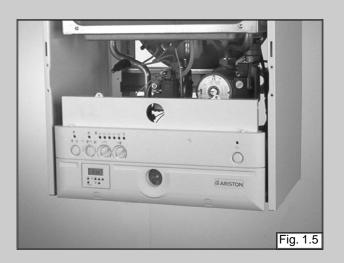
Removing the side panels

- 1. Remove the screws "B";
- 2. Pull the panel away from the boiler, then lift the panel up and away from the boiler (see fig. 1.2).

To lower control panel

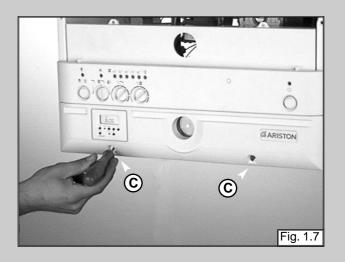
- 1. Remove the screws "B"
- 2. Push the two side panels outward slightly (fig. 1.5);
- 3. Rotate the control panel forward and down.



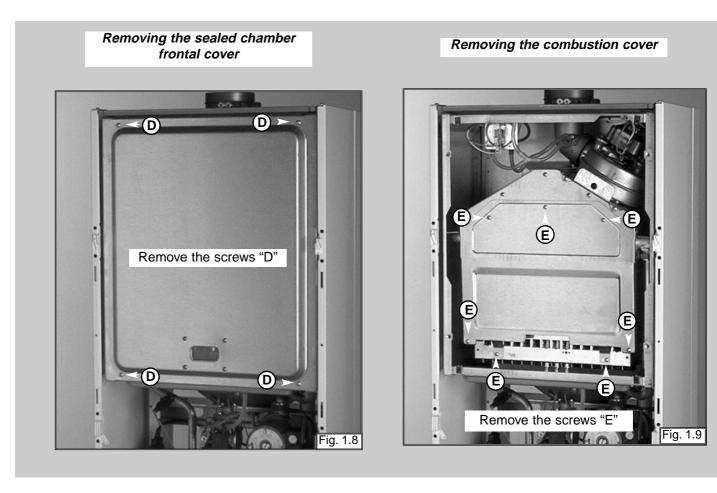


To access the areas where the adjustment and control devices are located, simply remove the plugs by pressing from the inside, unscrew the screws "C" and remove the bottom part of the instrument panel, rotating it upwards.



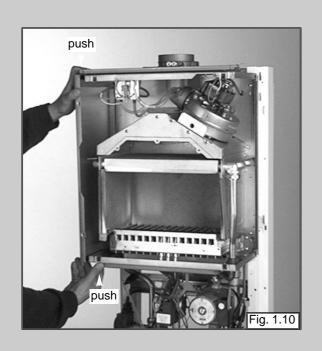


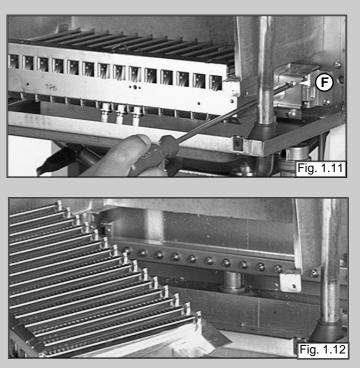
1.3 Access to the Combustion Chamber



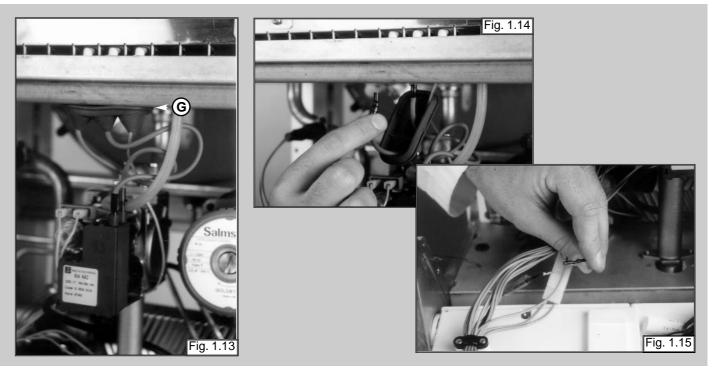
Removing the burner and the injectors

- 1. Remove the side panels of sealed chamber (fig. 1.10);
- 2. Remove the screws "F" of the burner (see fig. 1.11);
- 3. Remove the burner (see fig. 1.12);
- 4. Remove the injectors using a No. 7 socket spanner;
- 5. Replace in reverse order.

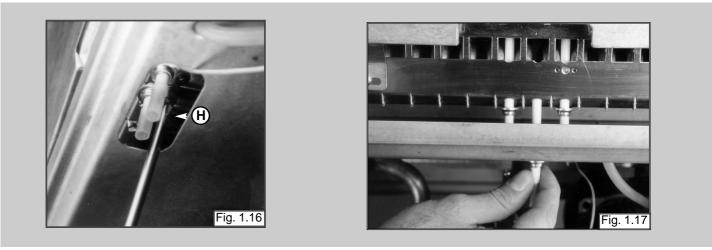




- 1. Remove rubber gasket "G" (see fig. 1.13);
- 2. Disconnect ignition leads by pulling downward (see fig. 1.14);
- 3. To remove the flame sensor, disconnect the cable at its only connection point close to the P.C.B. (see fig. 1.15);



- 5. Remove screw "H" using a Philips No. 2 star tip screwdriver (see fig. 1.16);
- 6. Slide the electrode gently downward (see fig. 1.17).

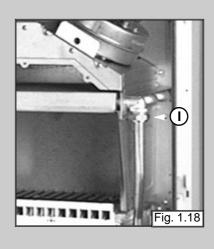


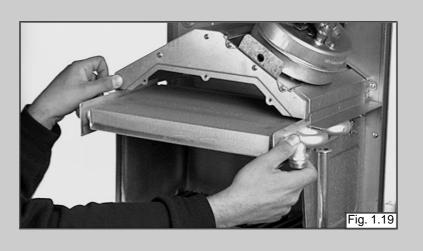
To replace, repeat the steps in reverse order, paying particular attention to the following:

- *a*-Centre the electrode in the positioning hole carefully, otherwise the electrode may break;
- **b**-Check that the cables have been connected correctly;
- *c* Check that the rubber gasket covers the cable/electrode connection point completely.

Removing the main heat exchanger

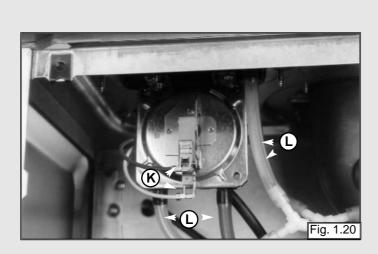
- 1. Drain the boiler of water;
- 2. Release the two connection nuts "I" connecting the exchanger to the flow and return pipes (see fig. 1.18);
- 3. Pull it straight out (see fig. 1.19).

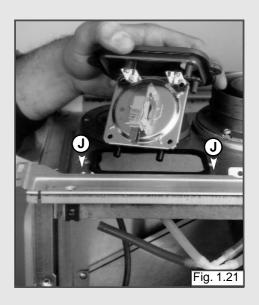




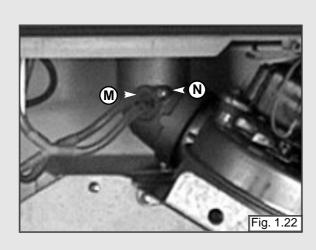
Removing the air pressure switch

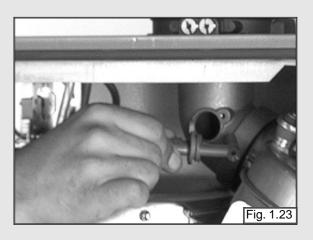
- 1. Disconnect the electrical connections "K" and silicone pipes "L" from their connection points (see fig. 1.20);
- **2.** Remove screws "J" on the top of the sealed chamber *(see fig. 1.21)*; Use a No. 2 star tip screwdriver to remove the switch from the plate.



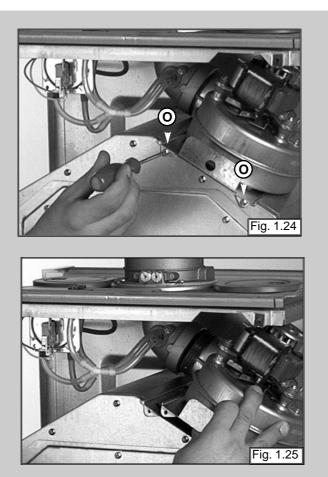


- Disconnect the silicone pipes "M" and remove the screw "N" (see fig. 1.22);
- 2. Extract the venturi (see fig. 1.23).

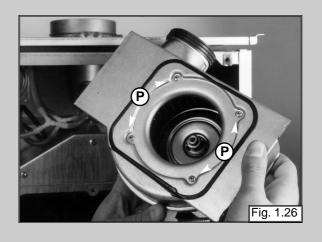




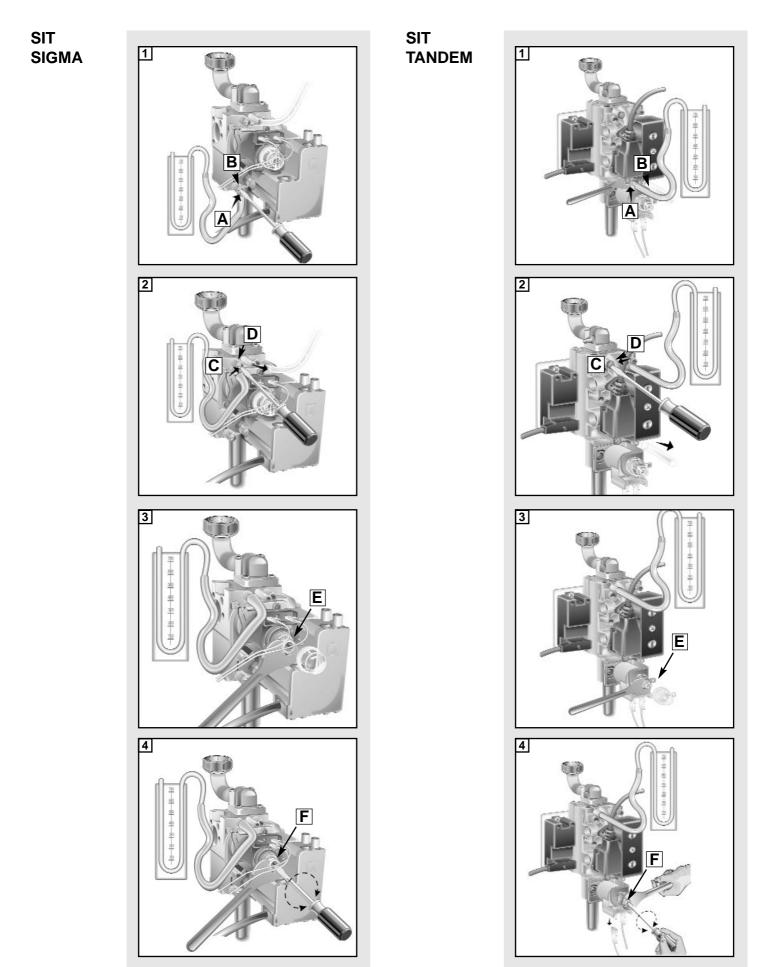
Removing the fan



- **1.** Disconnect electrical connections and remove screws "O" using a No. 2 star tipped screwdriver (see fig.1.24);
- 2. Pull fan to the right, forward and remove (see fig.1.25);
- 3. Remove fan from mounting plate;
- 4. Remove screws "P" (see fig. 1.26).



1.4 Servicing and Removal of the Gas Valve



Setting the minimum and the maximum power of the boiler

- 1. Check that the supply pressure to the gas valve is a minimum of 20 mbar for natural gas.
- 2. To do this, remove the screw "A".
 - Fit the pipe of the pressure gauge to the pressure connection of the gas valve "**B**".

When you have completed this operation, replace the screw "A" securely into its housing to seal off the gas.

 To check the pressure supplied by the gas valve to the burner, remove the screw "C". Fit the pipe of the pressure gauge to the pressure outlet of the gas valve "D".

Disconnect the compensation pipe either from the gas valve or from the sealed chamber.

4. Set the On/Off button to position $\langle (1) \rangle$ and the "summer/winter" switch to the winter position.

To set the maximum power, turn on the hot water tap and allow the hot water tap to run at a rate of about 8 litres/minute so that the main burner lights.

Adjust nut "**E**" on the modureg to set the gas pressure (displayed on the pressure gauge) corresponding to the maximum power (<u>see table "A" page 11</u>).

- To set the minimum power, disconnect a supply terminal from the modureg and adjust screw "F".
 Turn the screw clockwise to increase the pressure and counter-clockwise to decrease the pressure (displayed on the pressure gauge) corresponding to the minimum power (see table "A" page 11).
- 6. When you have completed the above operations, turn off the hot water tap, re-connect the supply terminal to the modureg on the gas valve and replace the cap on the screw of the modureg.

Setting the maximum heating circuit power

7. To set the maximum heating circuit power, place the On/Off button to position <(1) > and the "summer/winter" switch to winter position.

Turn the knob of the heating thermostat clockwise to maximum;

- **8.** Remove the left hand inspection panel of the P.C.B. and fit a small cross-head screwdriver in to the right hand potentiometer. Turn clockwise to increase the pressure or counter-clockwise to reduce the pressure. Adjust the setting to the required heating pressure value (displayed on the pressure gauge), as indicated in the diagrams shown in page 11.
- 9. Turn off the boiler by placing the main switch to the "Off" position.

Setting pressure for soft ignition.

Disconnect the detection electrode connection from the P.C.B. (see fig. 1.13).

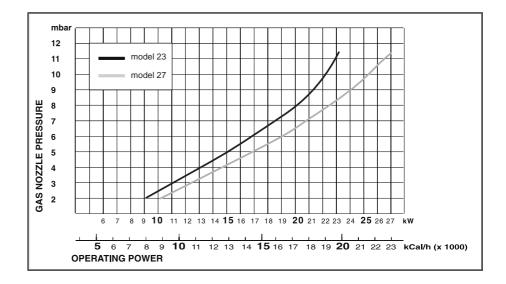
Start the boiler and during the ignition sequence adjust the centre potentiometer until the gas pressure reads the required gas pressure as per the table below.

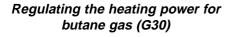
Once the gas pressure is set turn off the boiler and reconnect the connection to the P.C.B.

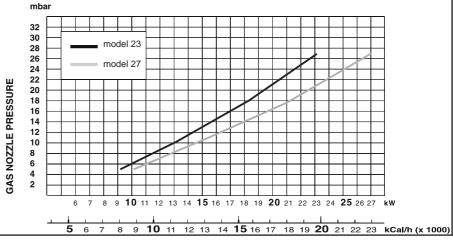
NB.: It may be necessary to reset the flame failure reset a number of times during this operation.

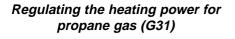
	NATURAL GAS (G20)	BUTANE GAS (G30)	PROPANE GAS (G31)
Recommended pressure for slow ignition	5 mbar - 1.95 in w.g.	18 mbar - 7.0 in w.g.	19 mbar - 7.4 in w.g.

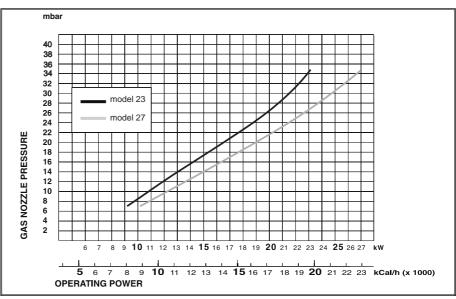
Regulating the heating power for natural gas (G20)



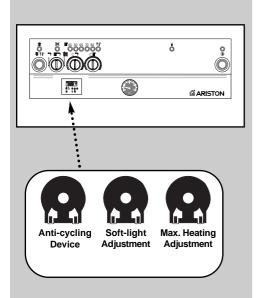








GAS REQUIREMENTS		NATURAL	GAS (G20)	BUTANE GAS (G30) PROPANE GAS		GAS (G31)	
Gas rate	max	3.0 m ³ /h	106.0 ft ³⁄h	0.88 m³/h	31.1 ft ³ /h	1.15 m ³ /h	40.6 ft³/h
Gas rate	min	1.2 m ³ /h	42.3 ft ³ /h	0.35 m ³ /h	12.3 ft ³ /h	0.46 m ³ /h	16.2 ft∛h
Inlet pressure		20 mbar	7.8 in w.g.	28 mbar	10.9 in w.g.	37 mbar	14.4 in w .g
Burner pressure	max	12.3 mbar	4.8 in w.g.	28 mbar	10.9 in w.g.	37 mbar	14.4 in w .g.
Burner pressure	min	2.0 mbar	0.8 in w.g.	5.1 mbar	2.0 in w.g.	7.0 mbar	2.7 in w.g.
Burner injectors		13 x 1.25		13 x 0.72		13 x 0.72	



- **10.** Remove the pipe from the pressure gauge and connect screw "**C**" to the pressure outlet in order to seal off the gas.
- **11**. Carefully check the pressure outlets for gas leaks (valve inlet and outlet).

IMPORTANT!

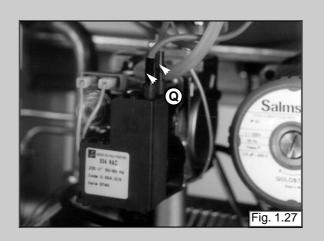
Whenever you disassemble and reassemble the gas connections, always check for leaks using a soap and water solution.

Setting the anti-cycling device

This appliance is equipped with a potentiometer which delays the ignition of the heating control and is situated on the P.C.B. (see the electrical diagrams). By adjusting the potentiometer, it is possible to change the time interval between the burner shutting down and its next ignition.

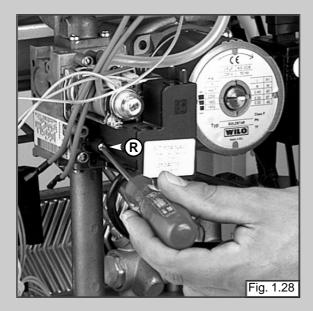
It is preset at 1 minute and can be adjusted from 0 to 2 minutes.

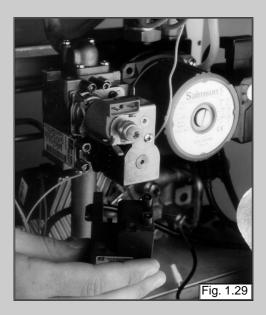
Use this control in particular situations where continuous shutting down and ignition of the main burner occurs.

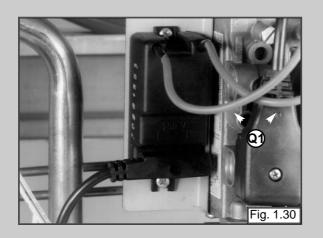


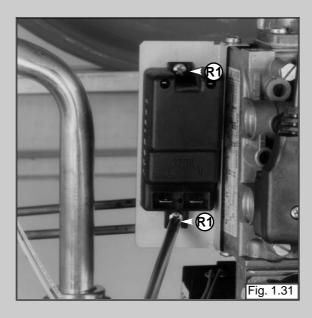
Removing the spark generator (SIT Sigma gas valve)

- 1. Disconnect ignition leads "Q" by pulling upwards (see fig. 1.27);
- 2. Remove the screws "R" *(see fig. 1.28)* with a Pozidrive No. 2 star tip screwdriver;
- 3. Remove the spark generator.



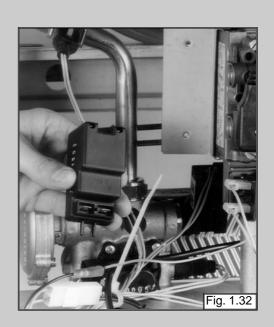






Removing the spark generator (SIT Tandem gas valve)

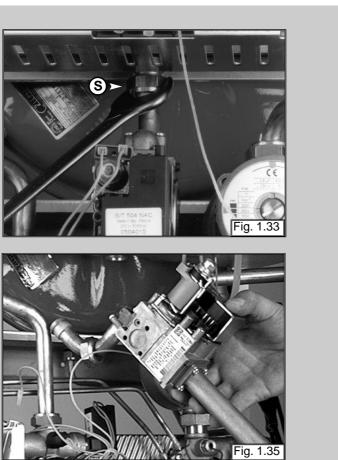
- Disconnect ignition leads "Q1" by pulling upwards (see fig. 1.30);
- 2. Remove the screws "R1" *(see fig. 1.31)* with a Pozidrive No. 2 star tip screwdriver;
- 3. Remove the spark generator.



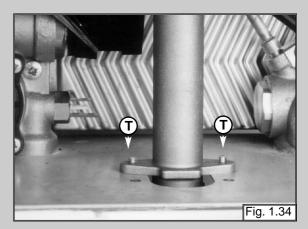
Removing the gas valve

- 1. Disconnect all the cables from the solenoid and modureg;
- 2. Remove the spark generator;
- 3. Release the top nut "S" using a 30 mm open ended spanner (see fig. 1.31);
- 4. Remove the screws "T" from the bottom of the gas valve pipe (see fig. 1.32).

Attention!! The gas valve is connected with the two pipes (as shown) with an O-ring connection.

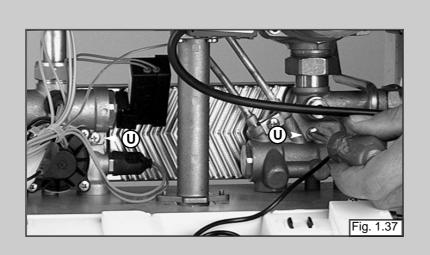


1.5 Access to the Hydraulic Circuits





<u>*Important!*</u> Before any component is removed, the boiler must be drained of all water.

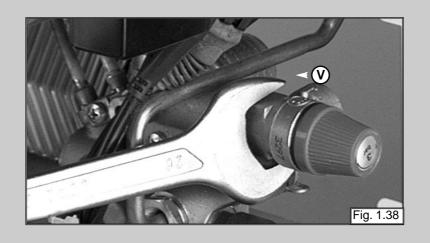


Removing the D.H.W. (secondary) exchanger

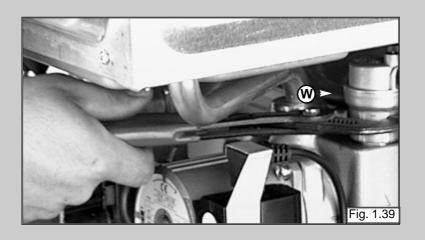
- 1. Remove the screw "U" (see fig. 1.37);
- Push the exchanger towards the rear of the boiler, lift upwards and remove out of the front of the boiler;
- **3.** Before replacing the exchanger ensure that the O-rings are in good condition and replace if necessary.

Removing the safety valve 1. Loosen nut "V" (*see fig. 1.38*);

2. Remove the valve.

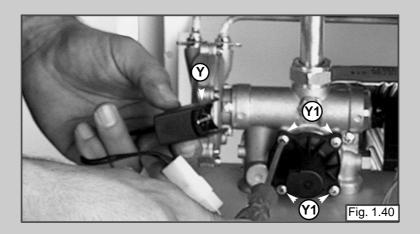


Removing the automatic air vent 1. Unscrew valve "W" (see fig. 1.39).



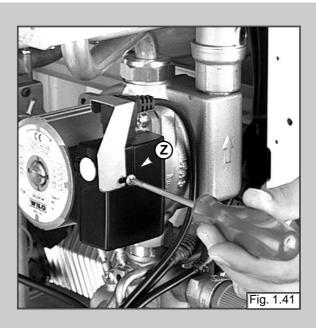
Removing the main circuit flow switch

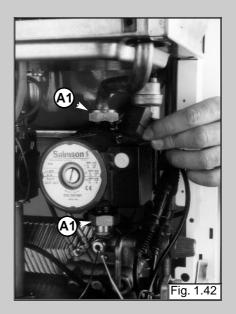
- Remove the cable of the main circuit flow switch "Y";
 Remove the screws "Y1" (see fig. 1.40);
- 3. Remove the main circuit flow switch.



Removing the pump

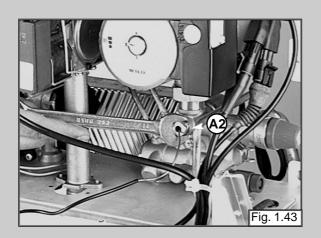
- 1. Unscrew "Z" and remove the electrical connection (see fig. 1.41);
- 2. Release the nuts "A1" and remove the pump (see fig. 1.42).

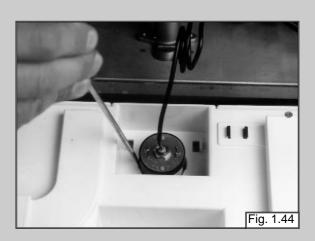


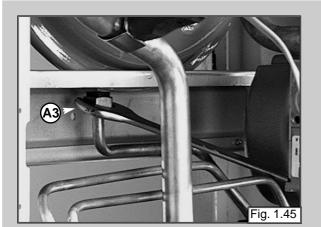


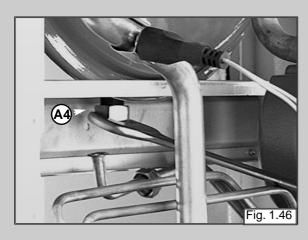
Removing the pressure gauge

- 1. Remove the inspection panel (see fig. 1.6 1.7);
- 2. Release coupling "A2" using a 14 mm open ended spanner (see fig. 1.43);
- **3.** Push the pressure gauge through the control panel from the rear (*see fig. 1.44*).





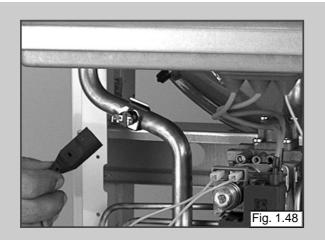




Removing the expansion vessel

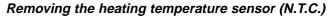
- 1. Remove nut "A3" away from the expansion vessel (see fig. 1.45);
- 2. Remove nut "A4" (see fig. 1.46);
- 3. Remove expansion vessel (see fig. 1.47).



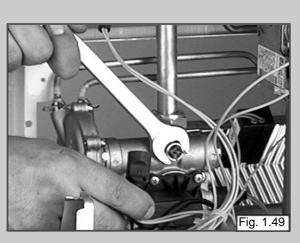


Removing the overheat thermostat

- 1. Remove the electrical connection from the overheat thermostat (see fig. 1.48);
- **2.** Then remove the thermostat from the pipe by releasing its securing clip.



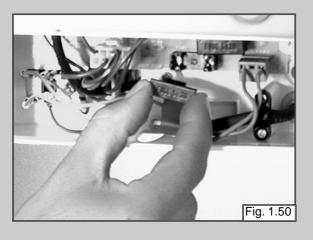
1. Remove the electrical connector by pulling off the thermostat connections and unscrewing the sensor probe with a 14 mm open ended spanner *(see fig. 1.49)*.



1.6 Access to the Control System

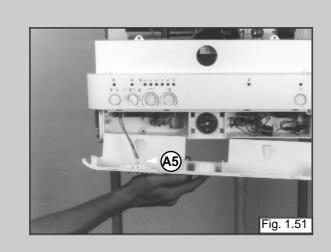
Checking fuse

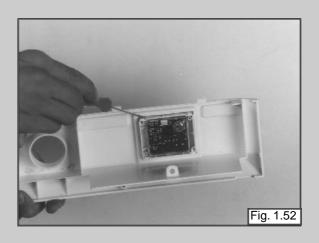
 Remove the inspection panel (see fig. 1.6 - 1.7);
 Remove fuse (see fig. 1.50).



Removing the time clock

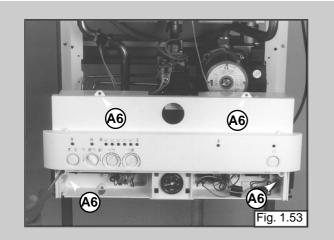
- 1. Remove the inspection panel (see fig. 1.6 1.7);
- 2. Remove electrical connection of the clock "A5" (see fig. 1.51);
- 3. Unclip the clock from the panel and remove (see fig. 1.52).





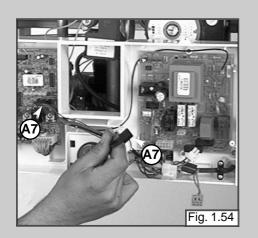
N.B.

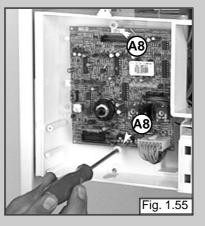
It is possible to by-pass the time clock in the event of failure by simply unplugging the electrical connection from the P.C.B. *(see fig. 1.48)*. This will revert control of the central heating to the room stat connection on the reverse of the control panel.

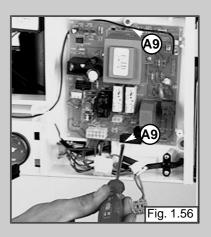


Removing the P.C.B.s

- 1. Isolate electricity;
- 2. Remove the front cover of the boiler;
- 3. Remove the inspection panel (see fig. 1.6-1.7);
- 5. Remove the mounting screws "A6' (see fig. 1.53);
- 6. Disconnect the connection cable"A7" (see fig. 1.54);
- 7. To remove the 24V P.C.B.: remove the electrical plug connectors and screws "A8" (see fig. 1.55);
- 8. To remove the 240V P.C.B.: remove the electrical plug connectors and screws "A9" (see fig. 1.56);
- 9. Replace either P.C.B. in reverse order.

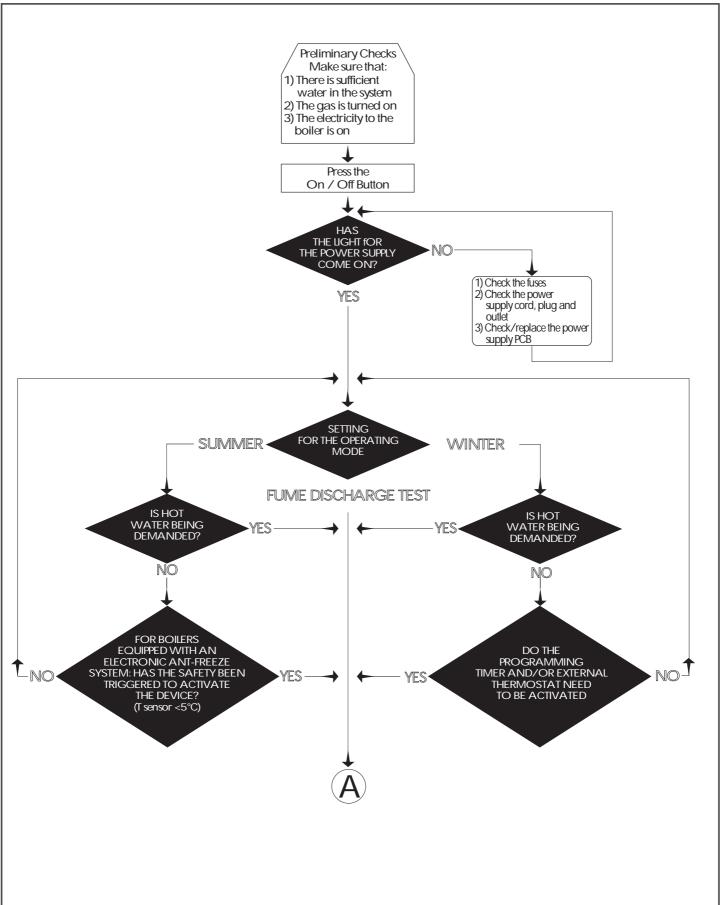


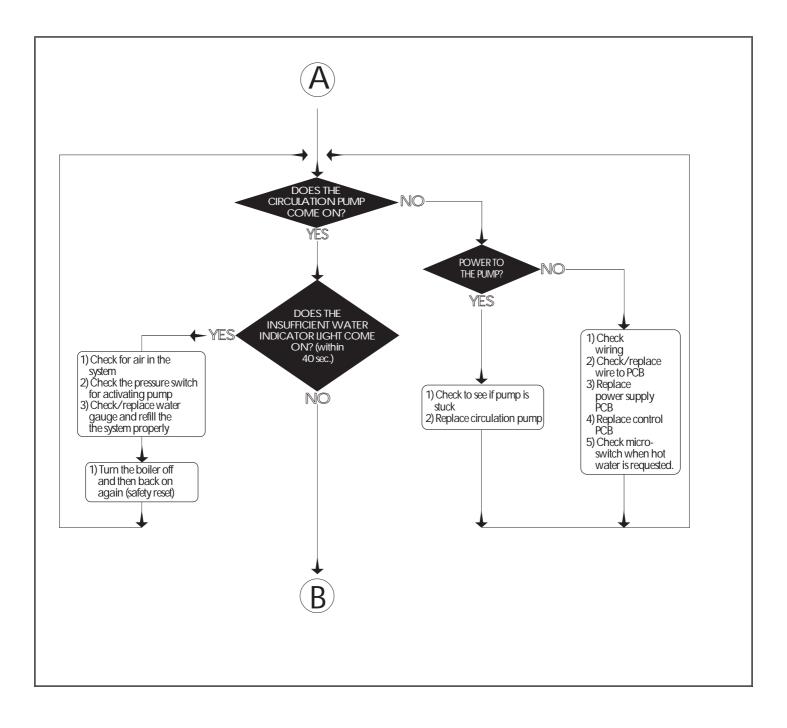


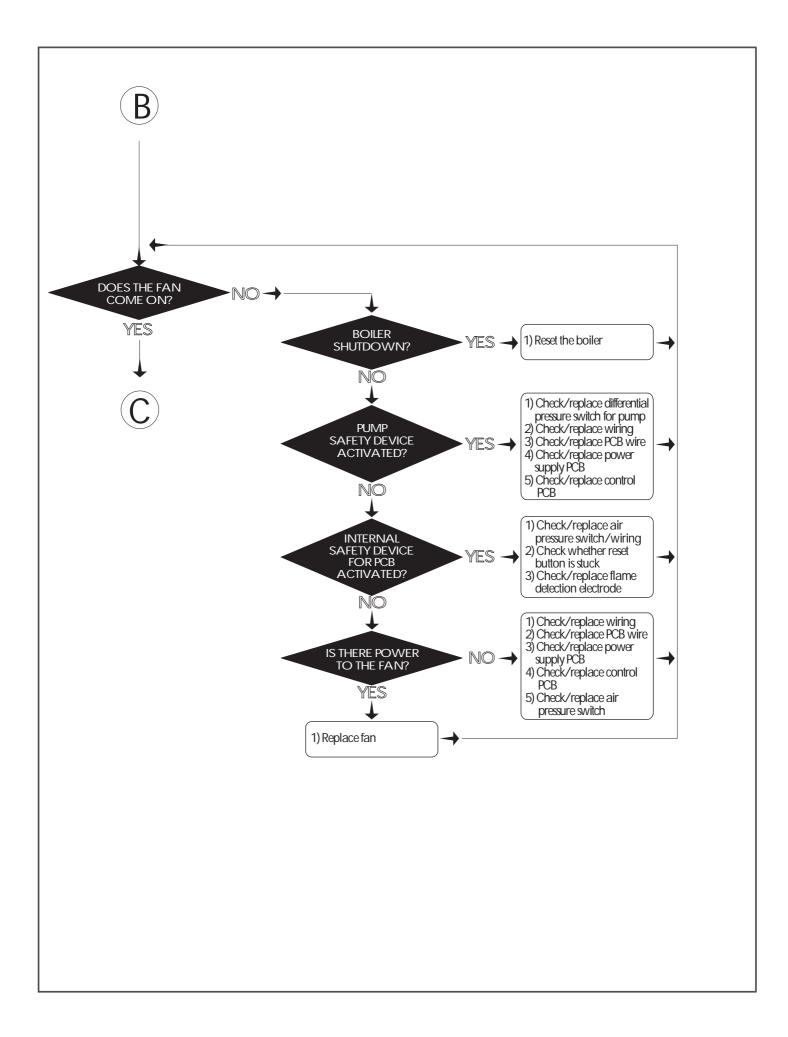


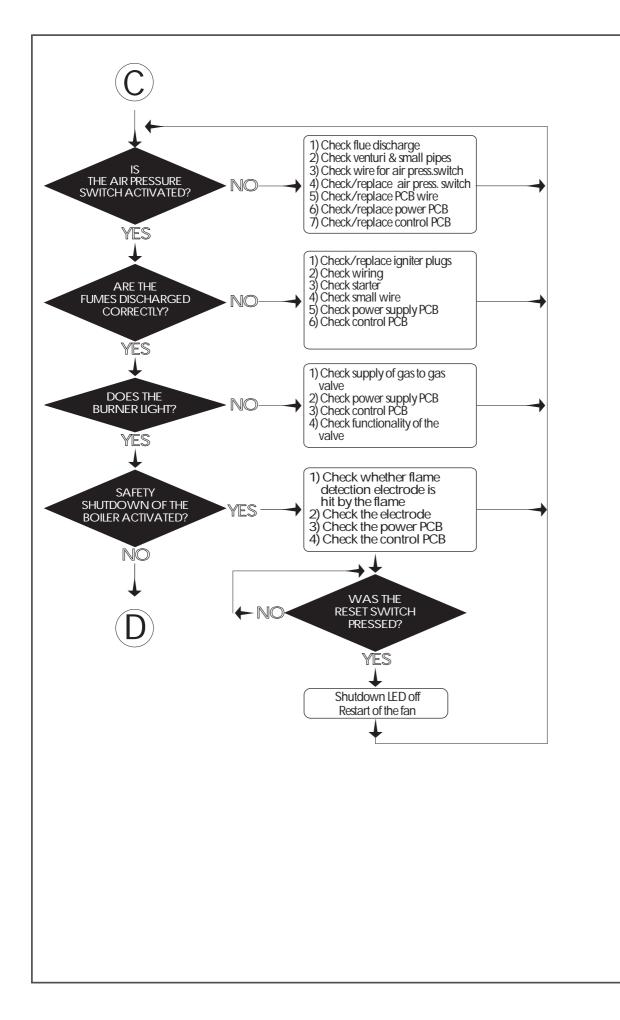
2. FAULT FINDING

2.1 *Fault Finding Guide* It is possible to detect and correct any defect by using the standard fault finding diagrams described in this chapter.







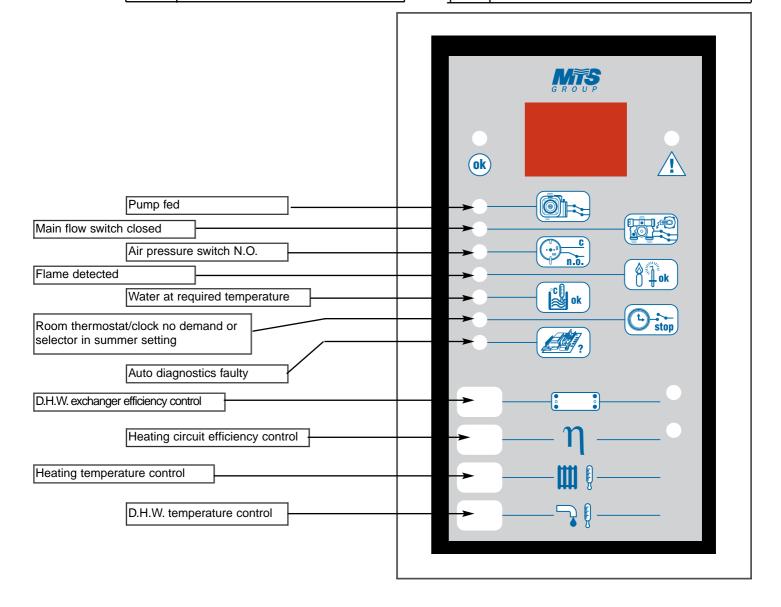


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	↓ ←	
чь	IS RE STILL A	
	PROBLEM?	
	NO	
	+	
	UNCTIONS NORMALLY	
4	LIST OF MALFUNCTIONS	POSSIBLE CAUSES
1	Delivery of hot water for domestic use: when the tap is turned on, the burner goes out.	 Air in the secondary exchanger Hot water pressure switch is defective 3-way valve is defective
2	Delivery of hot water for domestic use: the radiatores are heated in summer mode.	- 3-way valve is defective
(rv)	Delivery of hot water for domestic use: water temperature is not satisfactory.	 Check heating sensors Check gas settings and regulation Check water flow rate Check exchanger for domestic hot water
4	Delivery of hot water for domestic use: noisy operation.	 Primary exchanger is defective Low water pressure in heating system Check gas settings and regulation
(C)	Drop/increase in pressure in primary circuit.	 Check for leaks in heating circuit Defective water supply inlet valve Secondary exchanger is defective Expansion vessal is empty
6	Repeated shutdowns.	 Detection electrodes are defective Check gas settings and regulation Check electrical circuit for flame detection
7	Safety thermostat is triggered repeatedly.	 Faulty (contacts) ntc heating sensors- Defective (poorly calibrated) safety thermostat Presence of air in the primary water circuit
8	When the cold water tap is turned off, the boiler comes on.	- Drop in pressure in the water mains, resulting in water hammering
(O)	Temperature of radiators not satisfactory.	 Check ntc heating sensor Check by-pass Check gas settings and regulation

2.2 Fault Finding Using the Total Check System

	Signalling
_	
	Boiler Off
1	Auto diagnostic state
2	Spark ignition state
3	Boiler functioning normally
4	Lockout
5	Boiler thermostat satisfied
6	Room thermostat/clock no demand o
	selector in summer setting

	Malfunction
Α	Faulty ventilation system
b	Air pressure switch stuck in N.O. position
С	Faulty reset switch
d	Faulty main circuit flow switch
Е	Faulty flame detection
F	Faulty overheat thermostat
G	Faulty exhaust fumes sensor
	Faulty heating sensor (N.T.C.)
m	Faulty D.H.W. sensor (N.T.C.)



3. ELECTRICAL DIAGRAMS

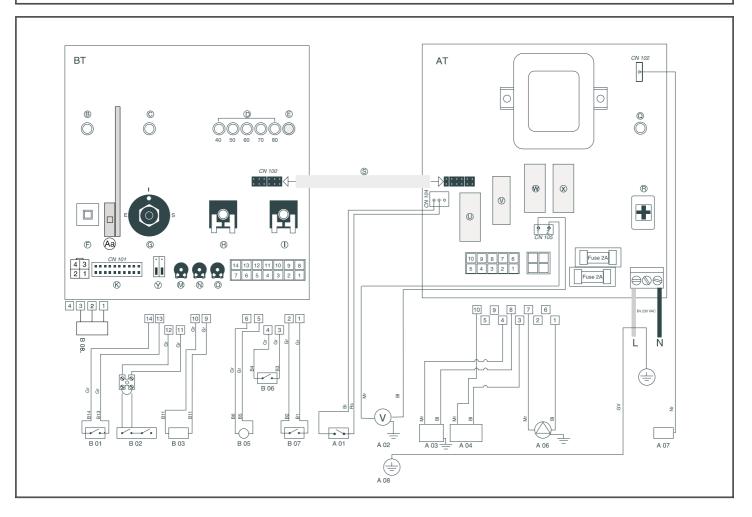
Legend:

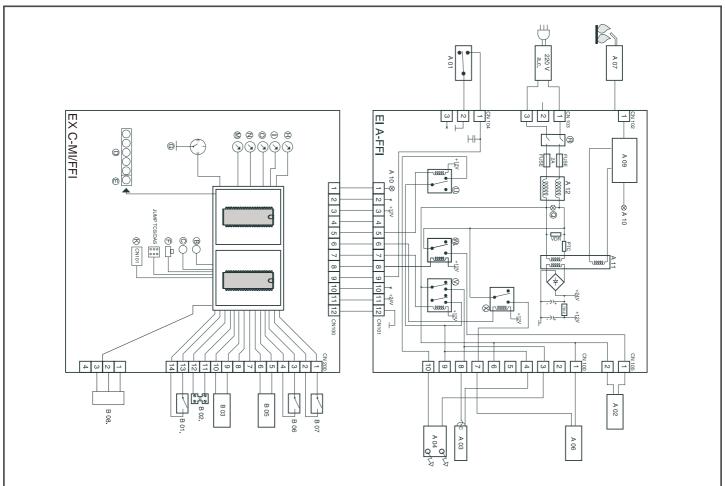
- AT = High Voltage P.C.B.
- BT = Low Voltage P.C.B.
- B = Flame Failure L.E.D.
- C = Insufficient Water Pressure L.E.D.
- D = Water Temperature Indicator L.E.D.s
- E = Overheat Thermostat Warning L.E.D.
- F = System Reset Button
- G = Selector Knob for Operating Mode
- H = Domestic Hot Water Temp. Adjustment
- I = Central Heating Temp. Adjustment
- J = Wire Connector for Room Thermostat
- K = Connector for Total Check System
- M = Anti-cycling Device Adjustment for Heating
- N = Soft-light Adjustment
- O = Max Heating Temperature Adjustment
- P = Time Clock Connection
- Q = On/Off L.E.D.
- R = On/Off Switch
- S = Interface Wire for P.C.B.s
- T = Relay Motorised Valve
- U = Ignitor Relay
- V = Gas Valve Relay
- W = Fan Relay
- X = Circulation Pump Relay
- Y = Selector TCS2
- Aa = Adaptor (British Gas use only)
- A01 = Air Pressure Switch
- A02 = Fan
- A03 = Gas Valve
- A04 = Ignitor
- A05 = Motorised Valve
- A06 = Circulation Pump
- A07 = Flame Detector
- A08 = Earth Terminal
- A09 = Flame Detection Circuit
- A10 = Flame Indicator L.E.D.
- A11 = Transformer
- A12 = Filter
- B01 = Over Heat Thermostat
- B02 = Room Thermostat
- B03 = Gas Valve Modulator
- B05 = Heating Sensor
- B06 = Pressure Switch for Heating Circuit
- B07 = Microswitch for Diverter Valve
- B08 = Time Clock

Colours

- Gry = Grey
- Rd = Red
- BI = Blue
- Grn/YII = Yellow/Green
- Wh = White
- Brn = Brown
- Blk = Black
- Wh/Rd = White/Red

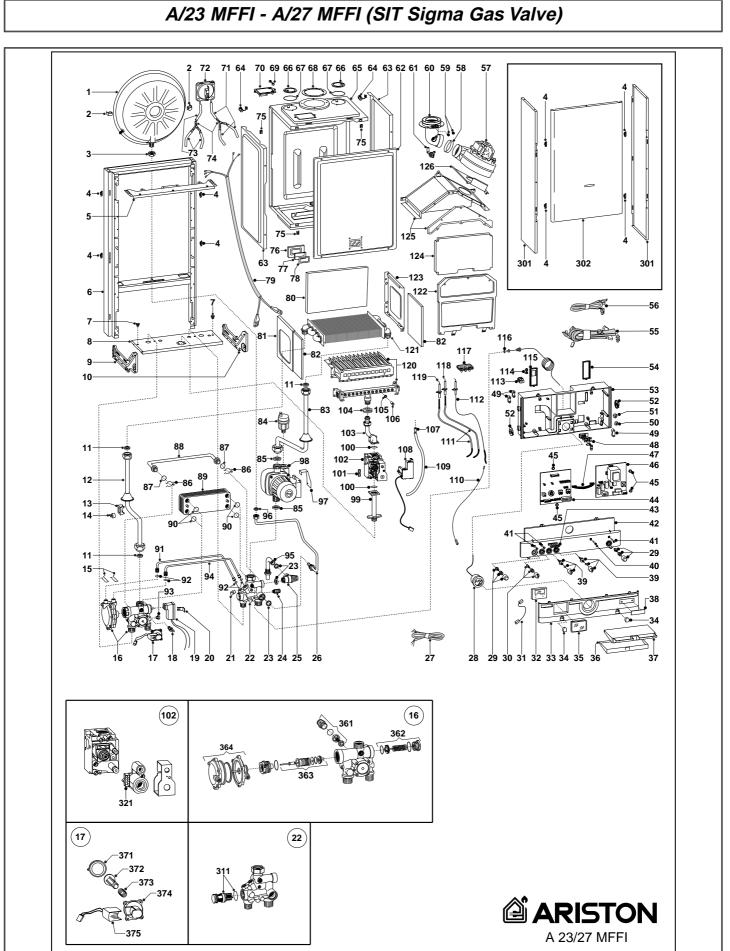
A/23 MFFI - A/27 MFFI





4. SHORT SPARE

PARTS LIST



A/23 MFFI - A/27 MFFI (SIT Sigma Gas Valve)

14 17 18 11 19	64 225 64 338 64 229 378 814 578 814 502 071 64 230 64 282	Expansion vesselGasket 3/4"Overheat thermostatMain flow SwitchTemp probe (C.H.W.)Microswitch for 3-way/main flow groupGasket 1/2"Manual vent cockSafety valve 3 bar 1/2"Pressure gaugeTime clockP.C.B. EX C-MI/FFIP.C.B. EX C-MI/FFIP.C.B. cableFanFanFanFan inlet gasketVenturi (exhaust manifold/header)Air pressure switchAir pressure switchFastening springAutomatic air release valveGasket 1"O-ringSecondary exchanger (plate-type) exchanger 23kWSecondary exchanger (plate-type) exchanger 27kWO-ring (secondary exchanger)20-18 O-ringGasket 3/8"Pump	573294 573520 997206 573224 569236 573528 573528 573727 573172 573172 573172 573172 573172 573172 573172 573172 573172 573172 573727 573727 573727 573172 573172 573172 573172 573172 573172 573172 573172 573172 5730 952981 952610 572990 573343 573343 573343 573314 571651 571652 570717 564254 569387 573825 573825 573825 573521 9971
14 17 18 11 19 23 23 11 24 3 25 28 32 45 46 47 57AB 57CD 58 61 72AB E 72CD E 75 84 89AB 89CD 90 92 96 11 98AB 98CD 100 101 102 108 112 3 116 11 120A E 120B 120C	64 338 64 229 378 814 503 818 502 071 379 079 64 230	Gasket 3/4" Overheat thermostat Main flow Switch Temp probe (C.H.W.) Microswitch for 3-way/main flow group Gasket 1/2" Manual vent cock Safety valve 3 bar 1/2" Pressure gauge Time clock P.C.B. EX C-MI/FFI P.C.B. EX C-MI/FFI P.C.B. cable Fan Fastening syring Automatic air release valve Gasket 1" O-ring Secondary exchanger (plate-type) exchanger 23kW Secondary exchanger (plate-type) exchanger 27kW O-ring (secondary exchanger) 20-18 O-ring Gasket 3/8"	997206 573224 569236 573340 573528 573727 573172 573172 573172 573172 573172 573172 573172 573172 573172 573172 573172 573172 573172 573172 573172 573172 573172 573172 952981 952981 952981 952610 572989 572990 573343 573343 573314 571651 571652 570717 564254 569387 571449 573825 571807 573521 997150
17 18 11 19 19 23 11 24 3 25 28 32 45 46 47 57AB 57CD 58 61 72AB E 72CD E 75 84 89AB 89CD 90 90 92 96 98AB 98CD 100 101 102 108 118 33 119 33 120A E 120B 120C 120D 120D	64 229 378 814 503 818 502 071 379 079 64 230	Main flow SwitchTemp probe (C.H.W.)Microswitch for 3-way/main flow groupGasket 1/2"Manual vent cockSafety valve 3 bar 1/2"Pressure gaugeTime clockP.C.B. EX C-MI/FFIP.C.B. EI A-MFFIP.C.B. cableFanFanFanFanFan inlet gasketVenturi (exhaust manifold/header)Air pressure switchAir pressure switchFastening springAutomatic air release valveGasket 1"O-ringSecondary exchanger (plate-type) exchanger 23kWSecondary exchanger (plate-type) exchanger 27kWO-ring (secondary exchanger)20-18 O-ringGasket 3/8"	573224 569236 573340 573528 573727 573172 573172 573172 573172 573172 573172 573172 573172 573172 573172 573172 573172 573172 571649 997208 952981 952981 952610 572989 572989 572989 572990 573343 573314 571651 571652 570717 564254 569387 571646 573295 573825 571807 573521 997150
18 1 19 1 23 1 24 3 25 28 32 45 45 46 47 57AB 57CD 58 61 72AB 72AB E 72CD E 75 84 89AB 990 90 92 96 1 98AB 98CD 100 101 102 108 112 3 116 1 118 3 119 3 120A E 120B 120C 120D 120D	64 229 378 814 503 818 502 071 379 079 64 230	Main flow SwitchTemp probe (C.H.W.)Microswitch for 3-way/main flow groupGasket 1/2"Manual vent cockSafety valve 3 bar 1/2"Pressure gaugeTime clockP.C.B. EX C-MI/FFIP.C.B. EI A-MFFIP.C.B. cableFanFanFanFanFan inlet gasketVenturi (exhaust manifold/header)Air pressure switchAir pressure switchFastening springAutomatic air release valveGasket 1"O-ringSecondary exchanger (plate-type) exchanger 23kWSecondary exchanger (plate-type) exchanger 27kWO-ring (secondary exchanger)20-18 O-ringGasket 3/8"	569236 573340 573528 573727 573172 573172 573172 573172 573172 573172 573172 573172 573172 573172 573172 573172 97208 997208 952981 952981 952981 952981 952981 952981 952981 952981 952981 952981 957398 573825 571807 573521 997150
19 23 11 24 3 25 28 32 45 45 46 47 57AB 57CD 58 61 72AB 72AB E 72CD E 75 84 89AB 98 90 92 96 11 98AB 98 98CD 100 100 101 102 108 112 3 118 3 119 3 120A E 120B 120C 120D	64 229 378 814 503 818 502 071 379 079 64 230	Microswitch for 3-way/main flow group Gasket 1/2" Manual vent cock Safety valve 3 bar 1/2" Pressure gauge Time clock P.C.B. EX C-MI/FFI P.C.B. EI A-MFFI P.C.B. cable Fan Fan Fan Fan Fan Fan Fansure switch Air pressure switch Air pressure switch Fastening spring Automatic air release valve Gasket 1" O-ring Secondary exchanger (plate-type) exchanger 23kW Secondary exchanger (plate-type) exchanger 27kW O-ring (secondary exchanger) 20-18 O-ring Gasket 3/8"	573340 573528 573727 573172 573172 573172 573172 573172 571649 997208 952981 952981 952610 572989 572990 573343 573314 571651 571652 570717 564254 569387 571449 571646 573295 573825 571807 573521 997150
23 1 24 3 25 28 32 45 45 46 47 57AB 57CD 58 61 72AB 72AB E 72CD E 75 84 89AB 90 90 92 96 1 98AB 98 98CD 100 100 101 102 108 112 3 118 3 120A E 120B 120C 120D	203 814 203 818 202 071 279 079 64 230	Gasket 1/2" Manual vent cock Safety valve 3 bar 1/2" Pressure gauge Time clock P.C.B. EX C-MI/FFI P.C.B. EI A-MFFI P.C.B. cable Fan Fan Fan Fan inlet gasket Venturi (exhaust manifold/header) Air pressure switch Fastening spring Automatic air release valve Gasket 1" O-ring Secondary exchanger (plate-type) exchanger 23kW Secondary exchanger (plate-type) exchanger 27kW O-ring (secondary exchanger) 20-18 O-ring Gasket 3/8"	573528 573727 573172 573172 571649 997208 953730 952981 952610 5772989 577343 573343 573314 571651 571652 570717 564254 569387 571646 573295 573825 571807 573521 997150
24 3 25 32 28 32 45 46 47 57AB 57CD 58 61 72AB 72AB E 72CD E 75 3 84 3 85 11 87 9 90 9 92 9 90 9 92 9 90 10 92 9 90 10 92 9 90 10 92 9 100 10 101 10 102 10 103 11 112 3 116 1 118 3 119 3 120A E 120B 120C 120D 120D	203 814 203 818 202 071 279 079 64 230	Manual vent cockSafety valve 3 bar 1/2"Pressure gaugeTime clockP.C.B. EX C-MI/FFIP.C.B. EI A-MFFIP.C.B. cableFanFanFanFan inlet gasketVenturi (exhaust manifold/header)Air pressure switchAir pressure switchFastening springAutomatic air release valveGasket 1"O-ringSecondary exchanger (plate-type) exchanger 23kWSecondary exchanger (plate-type) exchanger 27kWO-ring (secondary exchanger)20-18 O-ringGasket 3/8"	573727 573172 573172 571649 997208 953730 952981 952610 572989 572990 573343 573314 571651 571652 570717 564254 569387 571449 571646 573295 573825 571807 573521 997150
25 28 32 45 46 47 57AB 57CD 58 61 72AB 84 385 10 90 90 90 92 96 90 92 96 100 101 102 108 112 3 116 1 118 3 120A E 120B 1 120C E 120D	E03 818 E02 071 879 079 64 230	Safety valve 3 bar 1/2"Pressure gaugeTime clockP.C.B. EX C-MI/FFIP.C.B. EI A-MFFIP.C.B. cableFanFanFan inlet gasketVenturi (exhaust manifold/header)Air pressure switchAir pressure switchFastening springAutomatic air release valveGasket 1"O-ringSecondary exchanger (plate-type) exchanger 23kWSecondary exchanger (plate-type) exchanger 27kWO-ring (secondary exchanger)20-18 O-ringGasket 3/8"	573172 571649 997208 953730 952981 952610 572989 572990 573343 573314 571651 571652 570717 564254 569387 571449 571646 573295 573825 571807 573521 997150
28 32 45 46 47 57AB 57CD 58 61 72AB 72AB 72AB 72AB 72AB 72AB 72AB 72AB 72AB 89AB 89AB 89AB 90 92 96 100 101 102 100 101 102 108 112 3 116 1 118 3 120A E 120B 1 120C E 120D	E02 071 879 079 64 230	Pressure gauge	571649 997208 953730 952981 952610 572989 572990 573343 573314 571651 571652 570717 564254 569387 571449 571646 573295 573825 571807 573521 997150
32 45 46 47 57AB 57CD 58 61 72AB 89AB 90 92 96 98CD 100 101 102 108 112 3119 120A 120C 120D	E02 071 879 079 64 230	Time clock P.C.B. EX C-MI/FFI P.C.B. EI A-MFFI P.C.B. cable Fan Fan Fan Fan inlet gasket Venturi (exhaust manifold/header) Air pressure switch Air pressure switch Fastening spring Automatic air release valve Gasket 1" O-ring Secondary exchanger (plate-type) exchanger 23kW Secondary exchanger (plate-type) exchanger 27kW O-ring (secondary exchanger) 20-18 O-ring Gasket 3/8"	997208 953730 952981 952610 572989 572990 573343 573314 571651 571652 570717 564254 569387 571449 571646 573295 573825 571807 573521 997150
45 46 47 57AB 57CD 58 61 72AB 72AB 72AB 72AB 72AB 75 84 37 89AB 89CD 90 92 96 100 101 102 100 101 102 103 116 118 33 119 33 120A 120B 120C 120D	E02 071 879 079 64 230	P.C.B. EX C-MI/FFI P.C.B. EI A-MFFI P.C.B. cable Fan Fan Fan Fan inlet gasket Venturi (exhaust manifold/header) Air pressure switch Air pressure switch Fastening spring Automatic air release valve Gasket 1" O-ring Secondary exchanger (plate-type) exchanger 23kW Secondary exchanger (plate-type) exchanger 27kW O-ring (secondary exchanger) 20-18 O-ring Gasket 3/8"	953730 952981 952610 572989 572990 573343 573314 571651 571652 570717 564254 569387 571449 571646 573295 573825 571807 573521 997150
46 47 57AB 57CD 58 61 72AB 72AB 72AB 72AB 72AB 72AB 75 84 385 89AB 89CD 90 92 96 98AB 98CD 100 101 102 103 116 118 33 119 33 120A 120B 120C 120D	E02 071 879 079 64 230	P.C.B. EI A-MFFI P.C.B. cable Fan Fan Fan inlet gasket Venturi (exhaust manifold/header) Air pressure switch Air pressure switch Fastening spring Automatic air release valve Gasket 1" O-ring Secondary exchanger (plate-type) exchanger 23kW Secondary exchanger (plate-type) exchanger 27kW O-ring (secondary exchanger) 20-18 O-ring Gasket 3/8"	952981 952610 572989 572990 573343 573314 571651 571652 570717 564254 569387 571646 573295 573825 571807 573521 997150
47 57AB 57CD 58 61 72AB 72AB 72AB 72AB 72CD 75 84 385 89AB 89CD 90 92 96 98AB 98CD 100 101 102 108 112 3 116 1 118 3 120A E 120B 120C 120D E	E02 071 879 079 64 230	P.C.B. cable Fan Fan Fan Fan inlet gasket Venturi (exhaust manifold/header) Air pressure switch Air pressure switch Air pressure switch Fastening spring Automatic air release valve Gasket 1" O-ring O-ring Secondary exchanger (plate-type) exchanger 23kW Secondary exchanger (plate-type) exchanger 27kW O-ring (secondary exchanger) 20-18 O-ring Gasket 3/8"	952610 572989 572990 573343 573314 571651 571652 570717 564254 569387 571646 573295 573825 571807 573521 997150
57AB 57CD 58 61 72AB E 72CD E 75	E02 071 879 079 64 230	Fan Fan Fan inlet gasket Fan inlet gasket Venturi (exhaust manifold/header) Air pressure switch Air pressure switch Fastening spring Automatic air release valve Gasket 1" O-ring O-ring Secondary exchanger (plate-type) exchanger 23kW Secondary exchanger (plate-type) exchanger 27kW O-ring (secondary exchanger) 20-18 O-ring Gasket 3/8"	572989 572990 573343 573314 571651 571652 570717 564254 569387 571449 571646 573295 573825 571807 571807 573521 997150
57CD 58 61 72AB E 72CD E 75 84 85 11 87 89AB 89AB 90 90 92 96 11 98AB 98CD 100 101 102 100 101 102 108 112 116 11 118 33 119 33 120A E 120B 120C 120D 120D	E02 071 879 079 64 230	Fan Fan inlet gasket Venturi (exhaust manifold/header) Air pressure switch Air pressure switch Fastening spring Automatic air release valve Gasket 1" O-ring Secondary exchanger (plate-type) exchanger 23kW Secondary exchanger (plate-type) exchanger 27kW O-ring (secondary exchanger) 20-18 O-ring Gasket 3/8"	572990 573343 573314 571651 571652 570717 564254 569387 571449 571646 573295 573825 571807 571807 573521 997150
58 61 72AB E 72CD E 75 84 85 10 87 89AB 89CD 90 90 92 96 10 98AB 98CD 100 101 102 100 101 102 108 112 112 33 116 11 119 33 120A E 120B 120C 120D 120D	E02 071 879 079 64 230	Fan inlet gasket Venturi (exhaust manifold/header) Air pressure switch Air pressure switch Fastening spring Automatic air release valve Gasket 1" O-ring Secondary exchanger (plate-type) exchanger 23kW Secondary exchanger (plate-type) exchanger 27kW O-ring (secondary exchanger) 20-18 O-ring Gasket 3/8"	573343 573314 571651 571652 570717 564254 569387 571646 573295 573825 571807 573521 997150
61 72AB E 72CD E 75 84 3 85 11 87 89AB 89CD 90 90 92 96 11 98AB 98CD 100 101 102 100 103 112 33 116 11 118 33 119 33 120A E 120B 120C 120D 120D	E02 071 879 079 64 230	Venturi (exhaust manifold/header) Air pressure switch Air pressure switch Fastening spring Automatic air release valve Gasket 1" O-ring Secondary exchanger (plate-type) exchanger 23kW Secondary exchanger (plate-type) exchanger 27kW O-ring (secondary exchanger) 20-18 O-ring Gasket 3/8"	573314 571651 571652 570717 564254 569387 571449 571646 573295 573825 573825 571807 573521 997150
72AB E 72CD E 75 84 85 1 87 89AB 89AB 90 90 90 92 96 96 1 98AB 98CD 100 101 102 108 112 33 116 1 118 3° 120A E 120B 120C 120D 120D	E02 071 879 079 64 230	Air pressure switch Air pressure switch Fastening spring Automatic air release valve Gasket 1" O-ring Secondary exchanger (plate-type) exchanger 23kW Secondary exchanger (plate-type) exchanger 27kW O-ring (secondary exchanger) 20-18 O-ring Gasket 3/8"	571651 571652 570717 564254 569387 571449 571646 573295 573825 573825 571807 573521 997150
72CD E 75	E02 071 879 079 64 230	Air pressure switch Fastening spring Automatic air release valve Gasket 1" O-ring Secondary exchanger (plate-type) exchanger 23kW Secondary exchanger (plate-type) exchanger 27kW O-ring (secondary exchanger) 20-18 O-ring Gasket 3/8"	571652 570717 564254 569387 571449 571646 573295 573825 573825 571807 573521 997150
75 84 3 85 1 87 3 89AB 3 89CD 90 90 92 96 1 98AB 98CD 100 101 102 108 112 3 116 1 118 3 120A E 120B 120C 120D 120D	879 079 64 230	Fastening spring Automatic air release valve Gasket 1" Gasket 1" O-ring Secondary exchanger (plate-type) exchanger 23kW Secondary exchanger (plate-type) exchanger 27kW O-ring (secondary exchanger) 20-18 O-ring Gasket 3/8"	570717 564254 569387 571449 571646 573295 573825 571807 573521 997150
84 3 85 1 87 89AB 89CD 90 90 92 96 1 98AB 98CD 98CD 100 100 101 102 108 112 3 116 1 118 3 120A E 120B 120C 120D 5	64 230	Automatic air release valve Gasket 1" O-ring Secondary exchanger (plate-type) exchanger 23kW Secondary exchanger (plate-type) exchanger 27kW O-ring (secondary exchanger) 20-18 O-ring Gasket 3/8"	564254 569387 571449 571646 573295 573825 571807 573521 997150
85 1 87 89AB 89CD 90 90 92 96 1 98AB 98CD 98CD 100 100 101 102 108 112 3 116 1 118 3 120A E 120B 120C 120D E	64 230	Gasket 1" O-ring Secondary exchanger (plate-type) exchanger 23kW Secondary exchanger (plate-type) exchanger 27kW O-ring (secondary exchanger) 20-18 O-ring Gasket 3/8"	569387 571449 571646 573295 573825 571807 573521 997150
87 89AB 89CD 90 92 96 98AB 98CD 100 101 102 108 112 3 116 1 118 3 120A E 120B 1 120C E 120D		O-ring Secondary exchanger (plate-type) exchanger 23kW Secondary exchanger (plate-type) exchanger 27kW O-ring (secondary exchanger) 20-18 O-ring Gasket 3/8"	571449 571646 573295 573825 571807 573521 997150
89AB 89CD 90 92 96 10 98AB 98CD 100 101 102 108 112 3 116 10 118 3 119 3 120A E 120B 120C 120D E	64 282	Secondary exchanger (plate-type) exchanger 23kW Secondary exchanger (plate-type) exchanger 27kW O-ring (secondary exchanger) 20-18 O-ring Gasket 3/8"	571646 573295 573825 571807 573521 997150
89CD 90 92 96 10 98AB 98CD 100 101 102 108 112 3 116 1 118 3 119 3 120A E 120B 1 120C E 120D	64 282	Secondary exchanger (plate-type) exchanger 27kW O-ring (secondary exchanger) 20-18 O-ring Gasket 3/8"	573295 573825 571807 573521 997150
90 92 96 1 98AB 98CD 100 1 101 1 102 1 108 1 112 3 116 1 118 3 120A E 120B 1 120C E 120D	64 282	O-ring (secondary exchanger) 20-18 O-ring Gasket 3/8"	573825 571807 573521 997150
92 96 11 98AB 98CD 100 10 101 10 102 10 108 112 112 33 116 11 118 33 119 33 120A E 120B 120C 120D E	64 282	20-18 O-ring Gasket 3/8"	571807 573521 997150
96 1 98AB 98CD 100 101 102 108 112 33 116 1 118 3 120A E 120B 1 120C E 120D 1	64 282	Gasket 3/8"	573521 997150
98AB 98CD 100 101 102 108 112 33 116 11 118 33 119 33 120A E 120B 120C 120D E	04 202		997150
98CD 100 101 102 108 112 33 116 11 118 33 119 33 120A E 120B 120C 120D E			
100 101 102 108 112 3 116 1 118 3 119 3 120A E 120B 1 120C E 120D 1		Pump	
101 102 108 112 3 116 1 118 3 119 3 120A E 120B 1 120C E 120D 1		O-ring (13)	571965
102 108 112 3 116 1 118 3 119 3 120A E 120B 1 120C E 120D 1		Gasket	574279
108 112 3 116 1 118 3 119 3 120A E 120B 1 120C E 120D 1		Gas valve (SIT Sigma)	574232
112 3 116 1 118 3 119 3 120A E 120B 1 120C E 120D 1		Spark generator	574233
116 1 118 3 119 3 120A E 120B E 120C E 120D E	379 981	Detection electrode	573441
118 3 119 3 120A E 120B 1 120C E 120D 1	64 261	Gasket 1/4"	569390
119 3 120A E 120B 1 120C E 120D 1	379 979	Ignition electrode (R.H.)	569560
120A E 120B 120C E 120D	379 980	Ignition electrode (L.H.)	569561
120B 120C E 120D	E02 026	Main burner	572271
120C E 120D	-02 020	Main burner	572277
120D	02 078	Main burner	572343
		Main burner	572372
121AB		Main exchanger	572749
121CD		Main exchanger	572835
301		Front panel runner kit	571993
311		D.H.W. actuator kit	571444
321		SIT Sigma gas valve operator coils	997029
361		Heating by-pass kit	571443
362		D.H.W. pressure switch kit	571442
363		3-way spring kit	571447
364		D.H.W. diaphram valve	571446
371		Main flow switch diaphram	571547
372		Main flow switch magnet	571772
373		Main flow switch spring	571771
374		Main flow switch top cap	571770
375		Main flow switch reed system	573138
	64 311	Burner jet 1.25 full kit (Natural gas)	569281
382		Burner jet 0.72 full kit (LPG)	569282

A/23 MFFI - A/27 MFFI (SIT Tandem Gas Valve)

≺ey no.	G.C. part no.	Description	ARISTON Part No.
1		Expansion vessel	573294
11	164 225	Gasket 3/4"	573520
14		Overheat thermostat	997206
17		Main flow Switch	573224
18	164 338	Temp probe (C.H.W.)	569236
19		Microswitch for 3-way/main flow group	573340
23	164 229	Gasket 1/2"	573528
24	378 814	Manual vent cock	573727
25		Safety valve 3 bar 1/2"	573172
28		Pressure gauge	571649
31		Time clock	997207
44		P.C.B. EX C-MI/FFI	953730
46		P.C.B. EI A-MFFI	952981
47		P.C.B. cable	952610
57AB		Fan	572989
57CD		Fan	572990
58		Fan inlet gasket	573343
<u> </u>		Venturi (exhaust manifold/header)	573314
72AB	E03 818	Air pressure switch	571651
2AD 2CD	E02 071	Air pressure switch	571652
75		Fastening spring	570717
84	379 079	Automatic air release valve	564254
85	164 230	Gasket 1"	569387
87	104 230	O-ring	571449
89AB		Secondary exchanger (plate-type) exchanger 23kW	571646
B9CD			573295
		Secondary exchanger (plate-type) exchanger 27kW	
90 92		O-ring (secondary exchanger)	573825
-	404.000	O-ring (20-18)	571807
96	164 282	Gasket 3/8"	573521
BAB		Pump	997150
8CD		Pump	997151
101	379 976	Gas valve (SIT Tandem)	570732
103		Spark generator	573023
106	0=0.00/	O-ring (13)	571965
114	379 981	Detection electrode	573441
118	164 261	Gasket 1/4"	569390
120	379 979	Ignition electrode (R.H.)	569560
121	379 980	Ignition electrode (L.H.)	569561
22A	E02 026	Main burner	572271
22B		Main burner	572277
22C	E02 078	Main burner	572343
22D		Main burner	572372
23AB		Main exchanger	572749
23CD		Main exchanger	572835
311		D.H.W. actuator kit	571444
321	378 978	SIT Tandem gas valve operator coils	570712
322	378 815	SIT Tandem modureg coil	573740
323	164 303	Gas modulator cartridge	573745
361		Heating by-pass kit	571443
362		D.H.W. pressure switch kit	571442
363		3-way spring kit	571447
364		D.H.W. diaphram valve	571446
371		Main flow switch diaphram	571547
372		Main flow switch magnet	571772
373		Main flow switch spring	571771
374		Main flow switch top cap	571770
375		Main flow switch reed system	573138
381	164 311	Burner jet 1.25 full kit (Natural gas)	569281
382	104 311	Burner jet 0.72 full kit (LPG)	569282
J02			509202
		1	

A 23/27 MFFI (SIT Tandem Gas Valve)

Key no.	G.C. part no.	Description	ARISTON Part No.
1		Expansion vessel	573294
11	164 225	Gasket 3/4"	573520
14		Overheat thermostat	997206
17		Main flow Switch	573224
18	164 338	Temp probe (C.H.W.)	569236
19		Microswitch for 3-way/main flow group	573340
23	164 229	Gasket 1/2"	573528
24	378 814	Manual vent cock	573727
25	0/0011	Safety valve 3 bar 1/2"	573172
28		Pressure gauge	571649
31		Time clock	997207
44		P.C.B. EX C-MI/FFI	953730
44 46		P.C.B. EI A-MFFI	952981
40		P.C.B. cable	952981
57AB		Fan	572989
57CD		Fan	572990
58	ļ	Fan inlet gasket	573343
61		Venturi (exhaust manifold/header)	573314
72AB	E03 818	Air pressure switch	571651
72CD	E02 071	Air pressure switch	571652
75		Fastening spring	570717
84	379 079	Automatic air release valve	564254
85	164 230	Gasket 1"	569387
87		O-ring	571449
89AB		Secondary exchanger (plate-type) exchanger 23kW	571646
89CD		Secondary exchanger (plate-type) exchanger 27kW	573295
90		O-ring (secondary exchanger)	573825
92		O-ring (20-18)	571807
96	164 282	Gasket 3/8"	573521
98AB		Pump	997150
98CD		Pump	997151
101	379 976	Gas valve (SIT Tandem)	570732
103	010 010	Spark generator	573023
106		O-ring (13)	571965
114	379 981	Detection electrode	573441
118	164 261	Gasket 1/4"	569390
120	379 979	Ignition electrode (R.H.)	569560
121	379 980	Ignition electrode (L.H.)	569561
122A	E02 026	Main burner	572271
122B	F00.070	Main burner	572277
122C	E02 078	Main burner	572343
122D		Main burner	572372
123AB		Main exchanger	572749
123CD		Main exchanger	572835
311		D.H.W. actuator kit	571444
321	378 978	SIT Tandem gas valve operator coils	570712
322	378 815	SIT Tandem modureg coil	573740
323	164 303	Gas modulator cartridge	573745
361		Heating by-pass kit	571443
362		D.H.W. pressure switch kit	571442
363		3-way spring kit	571447
364		D.H.W. diaphram valve	571446
371		Main flow switch diaphram	571547
372		Main flow switch magnet	571772
373		Main flow switch spring	571771
374		Main flow switch top cap	571770
375		Main flow switch reed system	573138
<u>375</u> 381	164 311	Burner jet 1.25 full kit (Natural gas)	569281
381	104 311		569281
	I	Burner jet 0.72 full kit (LPG)	009202

Manufacturer:

Merloni TermoSanitari SpA - Italy

Commercial subsidiary: MTS (GB) LIMITED

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