

Ideal-Standard E Type RS gas boilers servicing instructions

SfB (56)

UDC 697.326

August 1973

These instructions supersede all previous servicing instructions issued for these appliances.

Table 1

Boiler Size	RS 35	RS 50	RS 60	RS 80
No. of Main Burner Bars	1 (Bray Cat.3108 AB 14037)	2 (Bray Cat.3108 AB 14038)	2 (Bray Cat.3108 AB 14038)	3 (Bray Cat.3108 AB 14038)
Main Burner Injectors Towns Gas Groups 4 & 5 Bray Cat.10	1 x size 3600	2 x size 2600	2 x size 3200	3 x size 2700
Natural Gas Bray Cat.16	1 x size 900	2 x size 750	2 x size 900	3 x size 800
Honeywell Pilot Injector Towns Gas Groups 4 & 5 Natural Gas	CAR 22 BCR 18	CAR 22 BCR 18	CAR 22 BCR 18	CAR 22 BCR 18
Gas Supply Connection	$\frac{1}{2}$ " BSP	$\frac{1}{2}$ " BSP	$\frac{1}{2}$ " BSP	$\frac{3}{4}$ " BSP
Flow Connections	1" BSP	1" BSP	1" BSP	1" BSP
Return Connection (Pump)	$\frac{3}{4}$ " BSP	$\frac{3}{4}$ " BSP	$\frac{3}{4}$ " BSP	$\frac{3}{4}$ " BSP
Return Connections (Gravity) +	1" BSP	1" BSP	1" BSP	1" BSP
Maximum Static Water Head	36.6 m (120')	36.6 m (120')	36.6 m (120')	36.6 m (120')
Weight (Standard Model)	105 kg (230 lbs)	137 kg (302 lbs)	140 kg (307 lbs)	173 kg (380 lbs)
" (with SB Kit)	115 kg (252 lbs)	147 kg (324 lbs)	150 kg (329 lbs)	183 kg (402 lbs)
Electricity Supply	200/250 Volts AC - 50 Hz single phase			
External Fuse Rating	3 amps	3 amps	3 amps	3 amps
Water Content	8.9 litres (2.0 gall)	13.4 litres (3.0 gall)	13.4 litres (3.0 gall)	18.2 litres (4.0 gall)
British Gas Appliance Number	41 399 47	41 399 39	41 399 40	41 399 41

+ IMPORTANT. These return tappings are for gravity circuits only, in no circumstances should they be connected

to a pumped circuit. The pumped $\frac{3}{4}$ " BSP return tapping incorporates a distributor tube.

Table 2

Boiler	RS 35				RS 50				RS 60				RS 80			
	1000		1000		1000		1000		1000		1000		1000		1000	
	kW	Btu/h	kW	Btu/h	kW	Btu/h	kW	Btu/h	kW	Btu/h	kW	Btu/h	kW	Btu/h	kW	Btu/h
Boiler Input *	12.3	42.0	13.5	46.0	15.5	53.0	19.3	66.0	20.2	69.0	24.0	82.0	22.8	78.0	30.2	104.0
Boiler Output To Water	8.8	30.0	9.7	33.0	11.7	40.0	14.7	50.0	14.7	50.0	17.6	60.0	17.6	60.0	23.4	80.0
	mbar (gauge) "WG.		mbar (gauge) "WG.		mbar (gauge) "WG.		mbar (gauge) "WG.		mbar (gauge) "WG.		mbar (gauge) "WG.		mbar (gauge) "WG.		mbar (gauge) "WG.	
Manifold Pressure																
Town Gas Group 4	3.5	1.4	4.3	1.7	3.0	1.2	4.5	1.8	3.1	1.25	4.3	1.7	2.6	1.05	4.3	1.7
Town Gas Group 5	4.1	1.65	5.0	2.1	3.5	1.4	5.2	2.1	3.7	1.5	5.0	2.0	3.1	1.25	5.0	2.0
Natural Gas	13.4	5.4	16.5	6.6	8.2	3.3	12.2	4.9	10.0	4.0	13.4	5.4	7.5	3.0	12.2	4.9

* To obtain gas consumption (a) in cu.ft/h - Divide heat input (Btu/h) by C.V. of the gas (Btu/cu.ft). (b) In

litres/second - Divide heat input (kW) by C.V. of the gas (MJ/m³).

WARNING

1. Always switch off and disconnect the electricity supply and close the main gas cock before carrying out maintenance work on the boiler.
2. Never attempt to light the boiler unless the main gas cock has been turned off for at least three minutes and always then follow the "Initial Lighting" procedure.

General

Full maintenance should be undertaken not less than once a year. The user is recommended to take out a contract with the Local Gas Board or a Heating Engineer for this work to be done.

Burner Assembly

Remove the front panel of the cabinet. Unscrew the union nut at the main gas cock and remove the two screws and two wing nuts securing the front burner plate. Disconnect the electrical leads from the gas control. Remove the complete burner bar assembly from the boiler.

Main Burners and Pilot Burner (Fig.1)

Inspect the main burner bars. Brush the top of the bars to dislodge any debris which may have accumulated. Use a hard brush with stiff bristles. Metallic bristle brushes must not be used as damage to the flame parts could occur. Examine the injectors; if damaged or deteriorated replace with new ones of the correct size as listed in Table 1.

The injectors screw into the manifold and may be removed and replaced without disturbing the burner bars, but the bars may be removed to give easier access if desired (see under "Replacement of Faulty Burner Bars").

Inspect the pilot burner thermocouple and ignition electrode and make sure that they are clean and in good condition. In particular check that:-

- (a) The pilot burner is firmly secured to the front plate.
- (b) The pilot shield is clean and un-obstructed.
- (c) The ignition electrode is clean and not broken or damaged and correctly fastened to the pilot shield; the ignition lead is neither broken, chafed nor burnt.
- (d) The thermocouple terminal nut at the gas control is secure but not over-tightened. The terminal must be clean to ensure a good electrical connection.
- (e) The pilot observation window is clean and undamaged.

Flueways

Having removed the burner assembly, remove the flue clean out cover plate on top of the boiler body and clean the heat exchanger flueways with a flexible brush.

Check that the heat exchanger flueways are quite clean and that all loose deposits are brushed away. After doing so, remove all loose debris from the floor of the heat exchanger.

Refit the flue cleanout cover to the boiler after checking that the sealing gasket is in good condition.

Refit the burner assembly to the boiler after checking that the sealing gasket is in good condition. Complete the gas

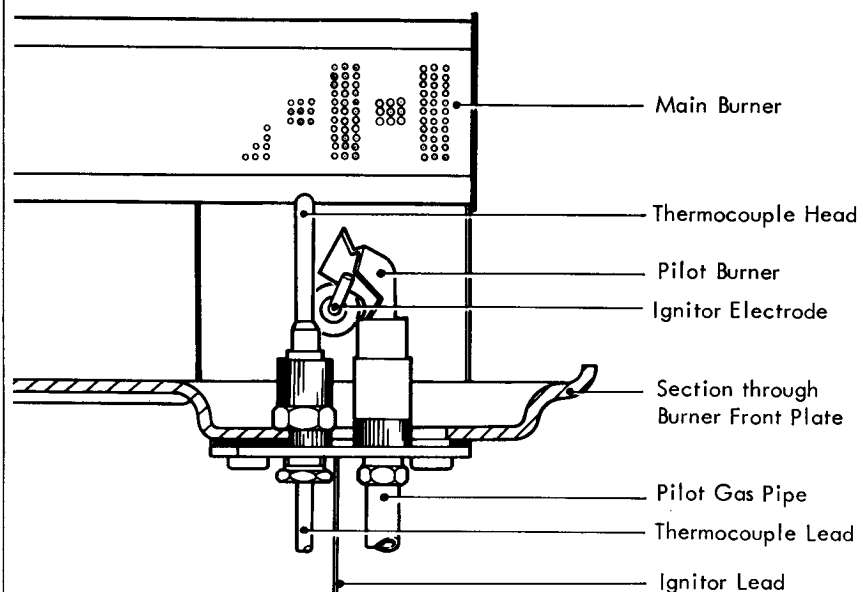


Figure 1

and electric connections.

Note: The flue cleanout cover and burner assembly gaskets must be replaced if found to be damaged or deteriorated.

Pilot Burner

Light the boiler and check that:-

1. The pilot flame impinges on the thermocouple head and that the position of the thermocouple relative to the pilot burner and the main burner is as shown (see Fig.1).
2. The pilot flame is about 25 mm (1") long (to adjust, remove the protective screw cap adjacent to the gas control buttons (Fig.2) and turn the screw then revealed clockwise to decrease or anticlockwise to increase the pilot flame length).

Setting and Adjustment of Gas Pressure

Table 2 gives details of rated boiler output with related manifold gas pressure and heat inputs. The location of the manifold pressure adjustment screw on the gas control is shown in Figure 2. A pressure test nipple for checking the burner manifold gas pressure is provided on the gas control outlet pipe.

Replacement of Faulty Gas Control

Remove the burner assembly from the boiler as already described. Disconnect the thermocouple and the pilot gas pipe at both ends and unplug the ignition lead. Disconnect the gas inlet and outlet pipes from the gas control. Remove the ignition unit from the old gas control (held by two screws) and fit it to the replacement gas control. Fit the replacement control using an appropriate jointing compound. (An arrow on the underside of the valve

indicates the direction of gas flow).

Reconnect the pilot pipe and thermocouple. Refit the burner assembly to the boiler and the electrical leads to the gas control. Plug in the ignition lead (Fig.2).

Turn on the main gas cock and check for leaks up to the gas control. Reconnect the electricity and light the boiler following the procedure on the lighting plate on the inside of the cabinet door. After lighting the main burner check for gas leaks at all joints with soap solution.

Replacement of Faulty Burner Bars

NOTE:- Air baffles are not fitted to 30/35 size boilers).

Straighten the tab(s) locating the air baffle(s) and remove the baffle(s) by lifting upward. Remove the nut and washer securing the burner and slide the burner off horizontally. Fit the new burner in the same position and secure with nut and washer. Do not over-tighten the nut. Replace the air baffle(s) in position and secure by bending over the tab(s).

Replacement of Faulty Ignition Unit

The ignition unit is fastened to the side of the gas control by two screws. To replace, unplug the ignition lead, remove the two securing screws, discard the faulty unit and screw the new unit to the gas control. Plug in the ignition lead.

Replacement of Fuse

Access to the fuse is obtained by removing the cover of the control box. The fuse is of the 32 mm (1½") glass cartridge type and is rated at 1 amp.

Control Box

Fig.3 shows the control box circuit. Check that all external wiring and electrical connections are in good condition and correctly made. If a fault develops in the control box and it cannot readily be detected, the complete box should be replaced as follows:-

1. Disconnect all leads to the control box.
2. Remove the thermostat phial from its pocket.
3. Unfasten the four control box securing screws and remove box from boiler.
4. Fit new control box and reconnect all electrical leads.

5. Replace thermostat phial in its pocket.

A faulty thermostat may be replaced on site as follows:-

1. Switch off the electricity supply.
2. Remove thermostat phial from its pocket in boiler.
3. Remove the four screws securing the front panel assembly and withdraw from boiler.
4. Pull off the thermostat knob. Unscrew and remove the locknut and washer recessed behind the panel.
5. Disconnect electrical leads to thermostat and remove instrument from control box.
6. Fit replacement thermostat to control box using the locknut and washer.
7. Replace front panel assembly in control box and fasten securing screws.
8. Reconnect electrical leads to control box.
9. Replace thermostat phial in boiler pocket.

Checking Operation of Controls

The initial lighting procedure is in itself a test of the gas controls and ancillary equipment.

Pump and Room Thermostat (SB models only)

The operation of the pump and room thermostat may be checked by turning the room thermostat ON and OFF and, by placing a hand on the pump, feeling the slight vibration when the pump is operating. The pump only may be checked by using the pump switch located on the control box. Unions and isolating valves facilitate the replacement of a faulty pump.

Spare Parts

An illustrated list of spare parts follows. When ordering, please quote the description and the maker's part number.

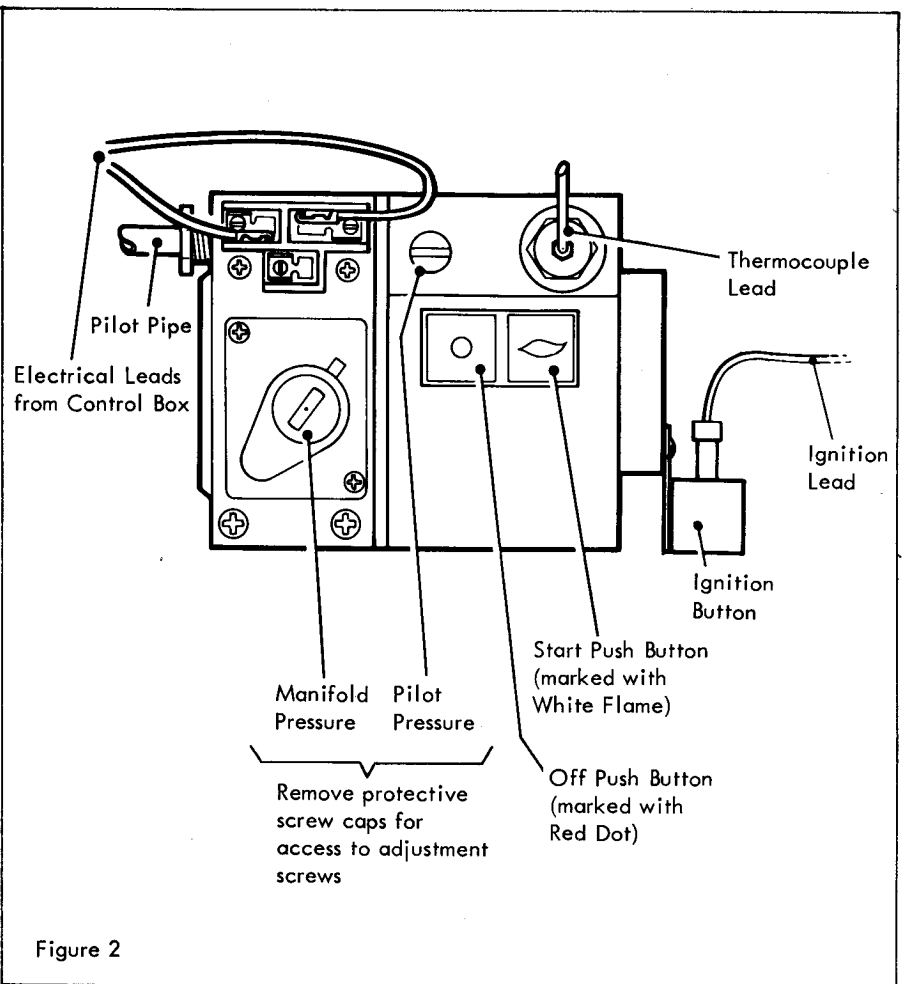


Figure 2

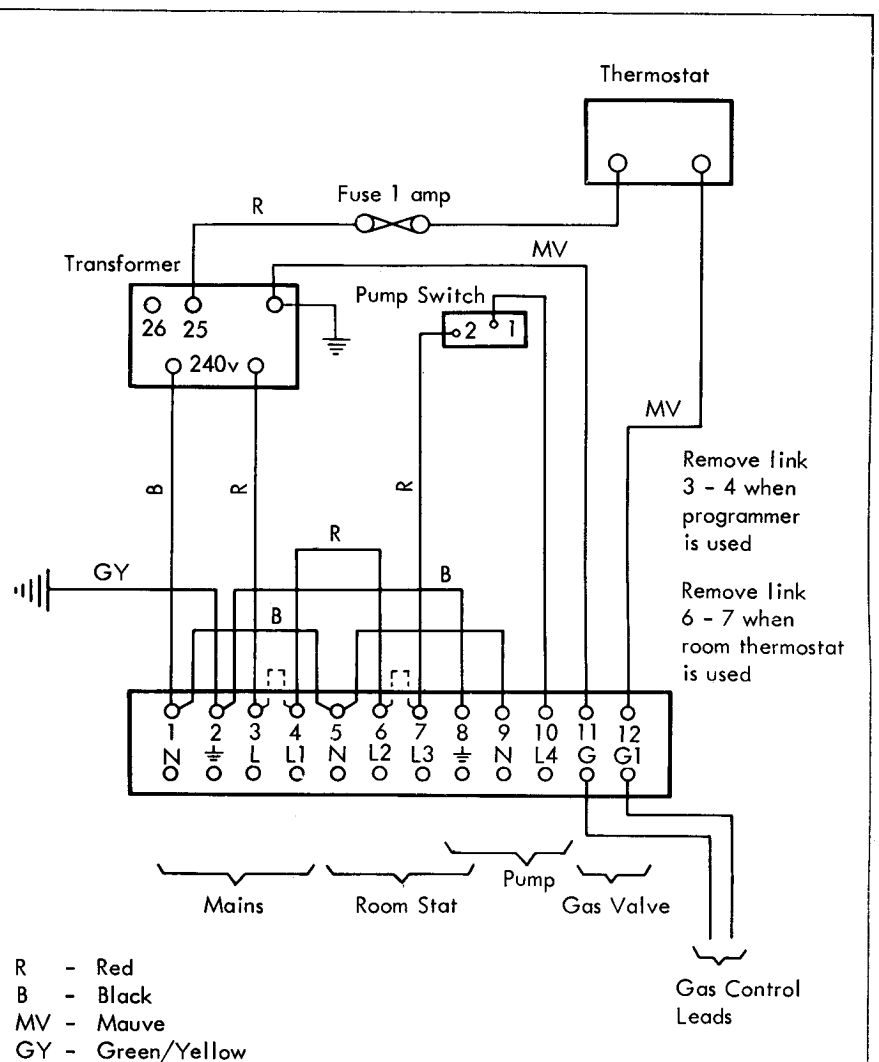
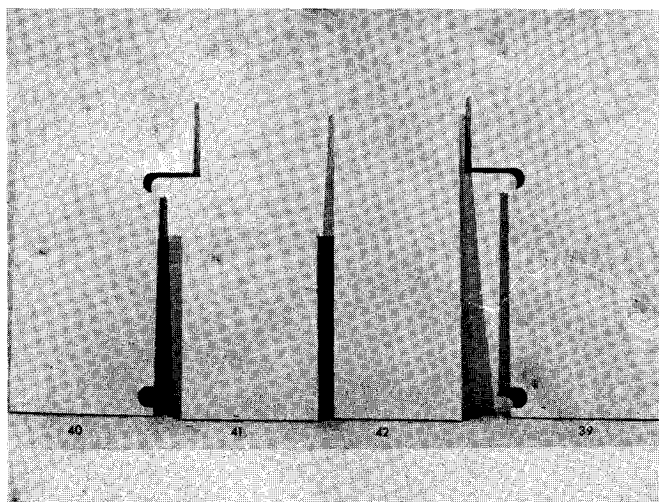
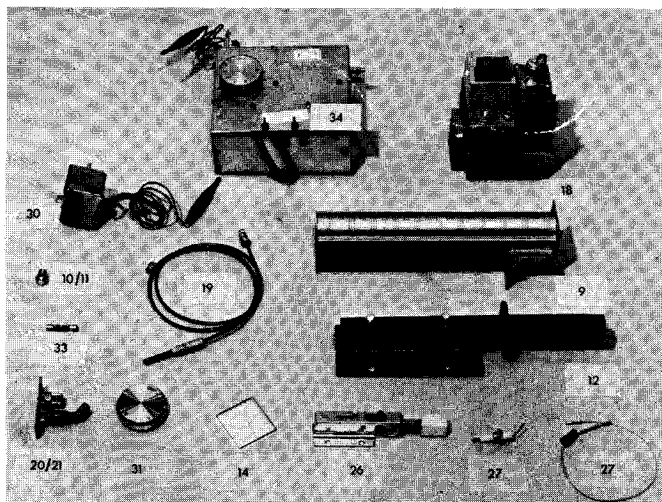
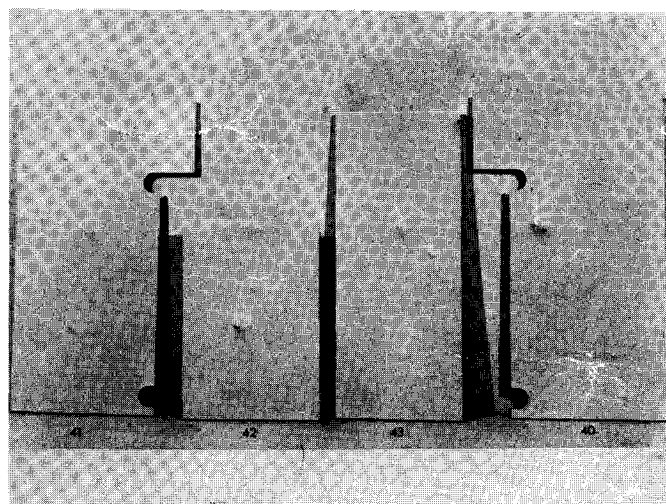
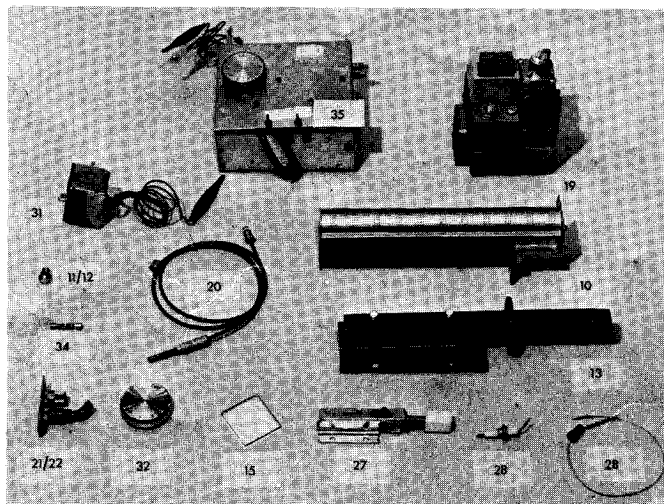


Figure 3 Control Box Wiring Diagram

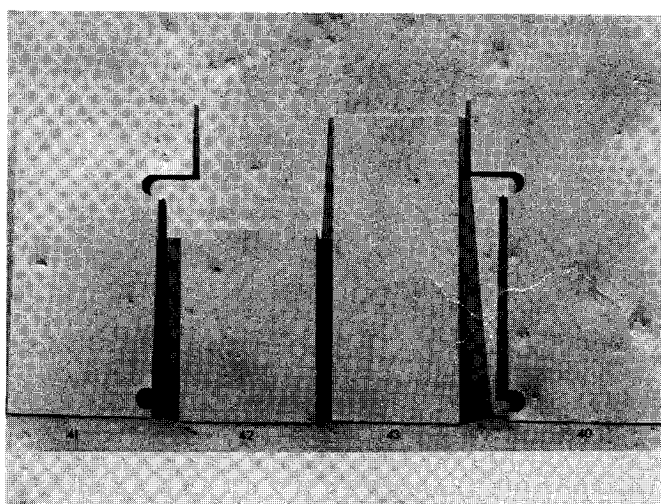
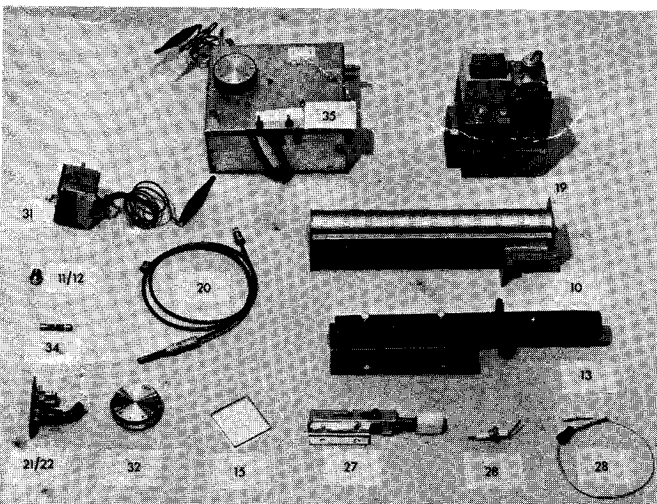
Key Number	British Gas Parts Number	Maker's Part Number	Description	Quantity
9	399 920	129818040	Multigas Burner Bar (Bray Cat.3108 AB 14037) with 1 M5 hex. nut and washer	1
10		129003600	Burner Injector (Town Gas) Bray single hole Cat.10 size 3600	1
11		169120452	Burner Injector (Natural Gas) Bray multihole Cat.16 size 900	1
12	399 921	129548090	Burner Manifold (Bray Cat.3400 AB 14013) 1/8" BSP test nipple, 3 M6 x 12 pozi drive recess pan head screw	1
14	319 926	129838033	Sightglass and gasket (1.5 mm asbestos millboard)	1
15		129838035	Sightglass Frame with sightglass and gasket (1.5 mm asbestos millboard) with 2 - M5 x 20 stud 2 - M5 wingnut	1
18	392 514	586521900	Combination gas control valve (24 v nominal) 1/2" BSP Honeywell V8800A1014	1
19		586811710	Thermocouple, Honeywell Q309A1202	1
20	390 426	586521502	Pilot Burner, Honeywell Q314 A4636 with Towns Gas Injector (CAR 22), pilot/thermocouple gasket (1.5 mm millboard) 2 - M5 x 12 pozidrive recess pan head screw	1
21	390 427	586521509	Pilot Burner, Honeywell Q314 A4636 with Natural Gas Injector (BCR 18), pilot/thermocouple gasket (1.5 mm millboard), 2 - M5 x 12 pozidrive recess pan hd. screw	1
26	387 820	586001101	Spark Generator, Kigass MK3P E4263 with 2 - M5 x 6 pozidrive recess pan hd. screw	1
27	387 822	586001102	Electrode, (Kigass E4264) with H.T. lead (350 lg.0/A), Kigass E4265	1
30	382 214	586811511	Thermostat (Ranco C26-527)	1
31	354 379	586811517	Thermostat Knob	1
33	319 924	586811800	Fuse, 1 Amp, glass cartridge 1/4" dia. x 1 1/4" long	1
34	354 378	586811250	Control Box complete (including Key No's. 30,31,33)	1
35	354 477	129708072	Balanced Flue Terminal grille (stainless steel) (283 sq. x 114 deep)	1
39	354 369	129558112	LH side Jacket Panel (white stove enamel) with tie piece and 2 cable clip	1
40		129558114	RH side Jacket Panel (white stove enamel) with tie piece bracket and 2 cable clip	1
41	354 388	129558116	Jacket Top Panel (white stove enamel) with magnet BM4	1
42	354 390	129558118	Jacket Front Panel (white stove enamel), instruction plate, nameplate	1
44		129558119	Jacket side Panel fixings pack	1



Key Number	British Gas Parts Number	Maker's Part Number	Description	Quantity
10		129838040	Multigas Burner Bar (Bray Cat.3108 AB14038) with 1 M5 hex. nut and washer	2
11	398 068	129003601	Burner Injector (Town Gas) Bray single hole Cat.10 size 2600	2
12	398 315	169110435	Burner Injector (Natural Gas) Bray multihole Cat.16 size 750	2
13	399 923	129708090	Burner Manifold (Bray Cat.3400 AB14014) with 1 burner baffle (aludip), 1/8" BSP test nipple, 3 M6 x 12 pozidrive recess pan head screw, 1 retaining strip (30 lg. x 20 wide)	1
15	319 926	129838033	Sightglass and gasket (1.5 mm asbestos millboard)	1
16		129838035	Sightglass Frame with sightglass and gasket (1.5 mm asbestos millboard) with 2 - M5 x 20 stud, 2 - M5 wingnut	1
19	392 514	586521900	Combination Gas Control Valve (24 v nominal) 1/2" BSP Honeywell V8800A1014	1
20		586811710	Thermocouple, Honeywell Q309A1202	1
21	390 426	586521502	Pilot Burner, Honeywell Q314 A4636 with Towns Gas Injector (CAR 22) Pilot/thermocouple gasket (1.5 millboard), 2 - M5 x 12 pozidrive recess pan head screw	1
22	390 427	586521509	Pilot Burner, Honeywell Q314 A4636 with Natural Gas Injector (BCR 18), pilot /thermocouple gasket (1.5 mm millboard), 2 - M5 x 12 pozidrive recess pan head screw	1
27	387 820	586001101	Spark Generator, Kigass MK3P E4263 with 2 M5 x 6 pozidrive recess pan head screw	1
28	387 822	586001102	Electrode, (Kigass E4264) with H.T. lead (350 lg.O/A), Kigass E4265	1
31	382 214	586811511	Thermostat (Ranco C26-527)	1
32	354 379	586811517	Thermostat Knob	1
34	319 924	586811800	Fuse, 1 Amp, glass cartridge 1/4" dia. x 1 1/2" long	1
35	354 378	586811250	Control Box complete (including Key No's. 31,32,34)	1
36	354 477	129708072	Balanced Flue Terminal Grille (stainless steel) (283 sq. x 114)	1
40	354 369	129558112	LH side Jacket Panel (white stove enamel) with tie piece and 2 cable clip	1
41	354 370	129558114	RH side Jacket Panel (white stove enamel) with tie piece bracket and 2 cable clip	1
42	354 388	129558116	Jacket Top Panel (white stove enamel) with magnet BM4	1
43	354 390	129558118	Jacket Front Panel (white stove enamel), instruction plate, nameplate	1
45		129558119	Jacket Side Panel fixings pack	1

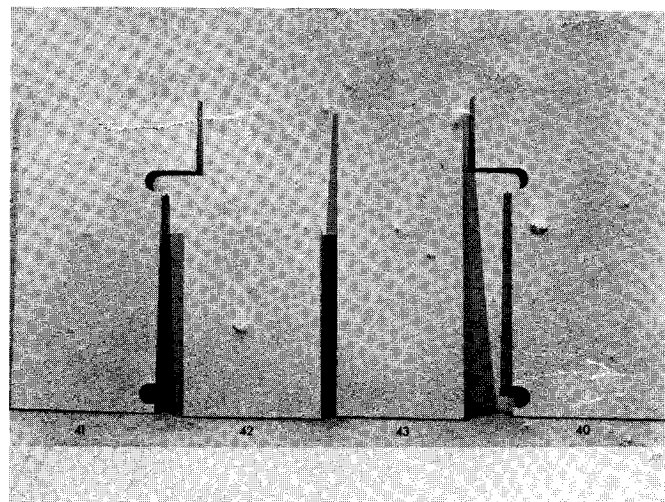
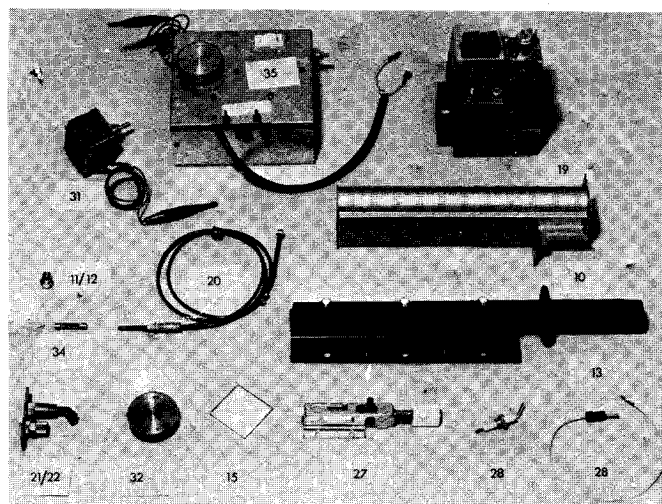


Key Number	British Gas Parts Number	Maker's Part Number	Description	Quantity
10		129838040	Multigas Burner Bar (Bray Cat.3108 AB14038) with 1 M5 hex. nut and washer	2
11		129003602	Burner Injector (Town Gas) Bray single hole Cat.10 size 3200	2
12	398 344	169120452	Burner Injector (Natural Gas) Bray multihole Cat.16 size 900	2
13	399 923	129708090	Burner Manifold (Bray Cat.3400 AB14014) with 1 burner baffle (aludip), 1/8" BSP test nipple 3 M6 x 12 pozidrive recess pan head screw 1 retaining strip (30 lg. x 20 wide)	1
15	319 926	129838033	Sightglass and gasket (1.5 mm asbestos millboard)	1
16		129838035	Sightglass frame with sightglass and gasket (1.5 mm asbestos millboard) with 2 - M5 x 20 stud, 2 - M5 wingnut	1
19	392 514	586521900	Combination Gas Control Valve (24 v nominal) 1/2" BSP Honeywell V8800A1014	1
20		586811710	Thermocouple, Honeywell Q309A1202	1
21	390 426	586521502	Pilot Burner, Honeywell Q314 A4636 with Towns Gas Injector (CAR 22), pilot/thermocouple gasket (1.5 mm millboard), 2 - M5 x 12 pozidrive recess pan head screw	1
22	390 427	586521509	Pilot Burner, Honeywell Q314 A4636 with Natural Gas Injector (BCR 18), pilot/thermocouple gasket (1.5 mm millboard), 2 - M5 x 12 pozidrive recess pan head screw	1
27	387 820	586001101	Spark Generator, Kigass MK3P E4263 with 2 - M5 x 6 pozidrive recess pan head screw	1
28	387 822	586001102	Electrode, (Kigass E4264) with H.T. lead (350 lg.O/A) Kigass E4265	1
31	382 214	586811511	Thermostat (Ranco C26-527)	1
32	354 379	586811517	Thermostat Knob	1
34	319 924	586811800	Fuse, 1 Amp, glass cartridge 1/4" dia. x 1 1/4" long	1
35	354 378	586811250	Control Box complete (including Key No's.31,32,34)	1
36		129718072	Balanced Flue Terminal Grille (stainless steel) (366 sq. x 141 deep)	1
40	354 369	129558112	LH side Jacket Panel (white stove enamel) with tie piece and 2 cable clip	1
41	354 370	129558114	RH side Jacket Panel (white stove enamel) with tie piece bracket and 2 cable clip	1
42	354 388	129558116	Jacket top panel (white stove enamel) with magnet BM4	1
43	354 390	129558118	Jacket Front Panel (white stove enamel), instruction plate, nameplate	1
45		129558119	Jacket side panel fixings pack	1



British Gas Parts List
 Manufacturer: Ideal-Standard
 Appliance: E Type RS 80
 British Gas Number 41 399 41

Key Number	British Gas Parts Number	Maker's Part Number	Description	Quantity
10		129838040	Multigas Burner Bar (Bray Cat.3108 AB14038) with 1 M5 hex. nut and washer	3
11		129003603	Burner Injector (Town Gas) Bray single hole Cat.10 size 2700	3
12		169110437	Burner Injector (Natural Gas) Bray multihole Cat.16 size 800	3
13	399 924	129858090	Burner Manifold (Bray Cat.3400AB14015) with 2 - burner baffles (aludip), 1/8" BSP test nipple 3 M6 x 12 pozidrive recess pan head screw 2 retaining strips (30 lg. x 20 wide)	1
15	319 926	129838033	Sightglass and gasket (1.5 mm asbestos millboard)	1
16		129838035	Sightglass frame with sightglass and gasket (1.5 mm asbestos millboard) with 2 - M5 x 20 stud, 2 - M5 wingnut	1
19	392 559	586522000	Combination Gas Control Valve (24 v nominal) 3/4" BSP Honeywell V8800A1006	1
20		586811710	Thermocouple, Honeywell Q309A1202	1
21	390 426	586521502	Pilot Burner, Honeywell Q314A4636 with Towns Gas Injector (CAR 22), pilot/thermocouple gasket (1.5 mm millboard), 2 - M5 x 12 pozidrive recess pan head screw	1
22	390 427	586521509	Pilot Burner, Honeywell Q314A4636 with Natural Gas Injector (BCR 18) pilot/thermocouple gasket (1.5 mm millboard), 2 - M5 x 12 pozidrive recess pan head screw	1
27	387 820	586001101	Spark generator, Kigass MK3P E4263 with 2 - M5 x 6 pozidrive recess pan head screw	1
28	387 822	586001102	Electrode, (Kigass E4264) with H.T. lead (350 lg.O/A), Kigass E4265	1
31	382 214	586811511	Thermostat (Ranco C26-527)	1
32	354 379	586811517	Thermostat Knob	1
34	319 924	586811800	Fuse, 1 Amp, glass cartridge 1/4" dia. x 1 1/4" long	1
35	354 378	586811250	Control Box complete (including Key No's.31,32,34)	1
36		129718702	Balanced Flue Terminal Grille (stainless steel) (360 sq. x 141 deep)	1
40	354 369	129558112	LH side Jacket Panel (white stove enamel) with tie piece and 2 cable clip	1
41	354 370	129558114	RH side Jacket Panel (white stove enamel) with tie piece bracket and 2 cable clip	1
42	354 388	129558116	Jacket Top Panel (white stove enamel) with magnet BM4	1
43	354 390	129558118	Jacket Front Panel (white stove enamel), instruction plate, nameplate	1
45		129558119	Jacket Side Panel fixings pack	1



Ideal-Standard E Type RS gas boilers user's instructions

0097.326

August 1973

WARNING - THIS APPLIANCE MUST BE EARTHED

It is essential that the instructions in this booklet are strictly followed for safe and economical operation of your E Type Boiler.

TO LIGHT THE BOILER

(Refer to Figure 1)

1. Check that the mains gas cock (A) is turned on (i.e. rotated fully anti-clockwise). Ensure that the boiler thermostat knob (C) is turned to "OFF" and press in and release the gas control button (B) marked with a RED DOT. Wait for 3 minutes.

2. Check that the electricity supply to the boiler is switched on and that all external controls fitted to the system (e.g. room thermostat, etc.) are in the "ON" position. Check that the pump switch (D) is on.

3. Press and hold down the gas control button (B) marked with a WHITE FLAME. Press and release the ignition button (H) until the pilot flame is seen through the pilot observation window (G). (Pressing the ignition button produces an ignition spark at the pilot burner). Maintain pressure on button (B) for at least a further twenty seconds after the pilot flame has lit. (If the pilot flame should go out when button (B) is released, press in and release the button marked with a RED DOT and wait for three minutes. Then repeat the lighting instructions above but wait for longer than twenty seconds after the pilot flame lights before releasing the button marked with a WHITE FLAME.

4. Adjust the boiler thermostat knob (C) to position 6; the boiler main burner will then light. The boiler thermostat and system controls should then be adjusted to the desired settings. Table 1 shows the approximate flow temperatures corresponding to the numbers on the thermostat knob.

Table 1

Knob Setting	Flow Temperature	
	°C	°F
1	57	135
2	63	145
3	68	155
4	74	165
5	79	175
6	85	185

TO SHUT OFF THE BOILER

1. For short periods turn the boiler thermostat knob (C) to "OFF" and switch off the pump. When heating is again required turn the boiler thermostat knob to the desired setting and switch on the pump.

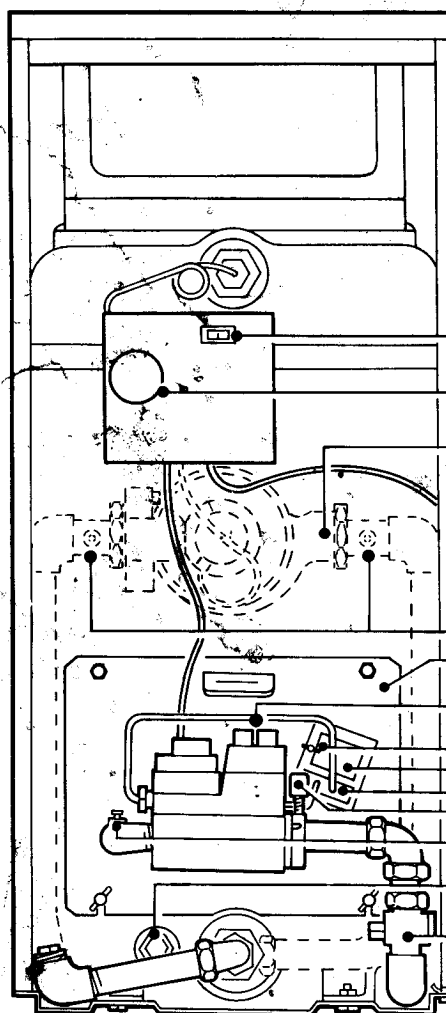


Figure 1

2. For longer periods (e.g. absence on holiday) turn the boiler thermostat knob to "OFF", press the button (B) on the gas control marked with a RED DOT and switch off the electricity. When relighting, follow the procedure explained under "To Light" above.

WARNING: If frost is likely during a short absence from home, however, leave the boiler running at a reduced temperature. For longer periods, the entire system should be drained, including the domestic water supply. If your system includes a frost-stat, seek the advice of your installer.

NOTE: In the unlikely event of failure of the electrical ignition equipment, the boiler may be manually lit. To do this, loosen the wing nuts (F), raise the pilot observation window (G) and insert a lighted match through the opening, positioning the flame adjacent to the pilot burner, at the same time pressing the gas control button (B) marked with a WHITE FLAME. After lighting, lower window (G) and retighten wing nuts (F). **DO NOT OVERTIGHTEN THE WING NUTS.**

Maintenance: Regular servicing is essential to maintain efficient and reliable service. The user is strongly recommended to make a contract with the Gas Board or Heating Engineer for servicing, at least annually, preferably at the end of the Heating Season.

IMPORTANT:

If a plug is used to connect to the mains it must be of 3-pin type wired as shown in Figure 2.

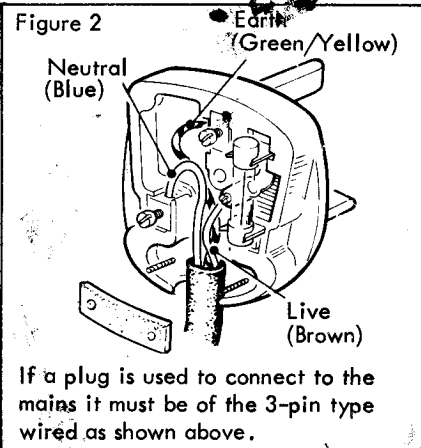


Figure 2