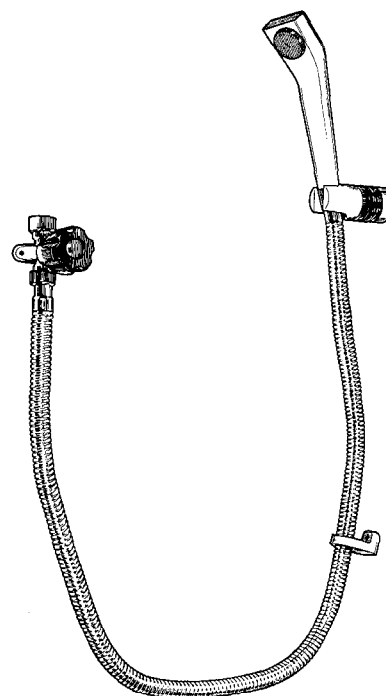
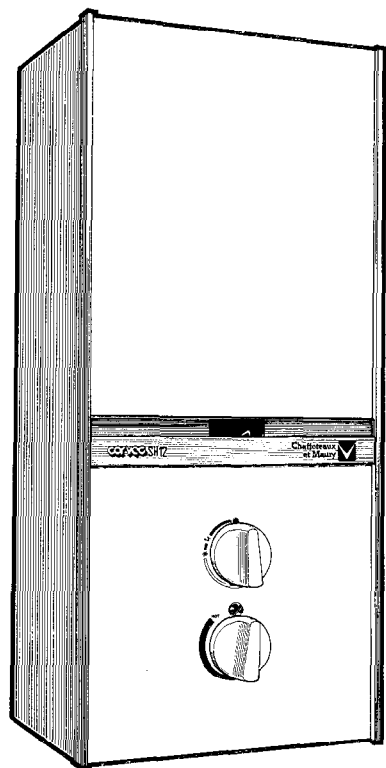


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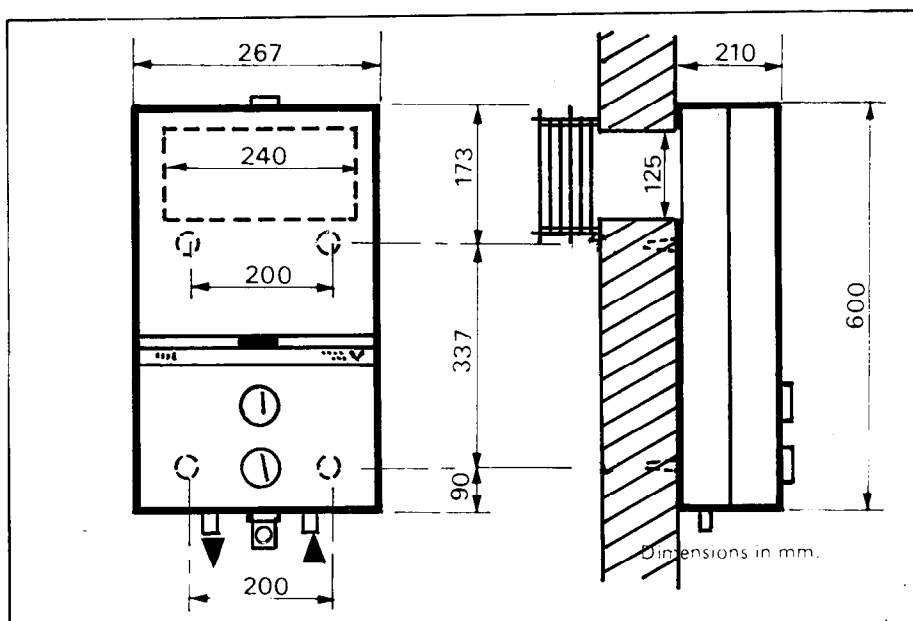
CORVEG SH12

installation

servicing instructions

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GENERAL

The CORVEC SH 12 is a balanced-flued instantaneous gas fired shower heater. It has been specifically designed to be used with a shower, and be connected directly to the mains cold water supply. No purpose provided ventilation is required for the SH 12. It should be installed adjacent to the proposed shower location providing that the terminal is positioned as recommended in the appropriate section of these instructions.

The installation of the shower heater must be in accordance with the relevant requirements of the Gas Safety Regulations, Building Regulations and the Byelaws of the local Water Undertaking. It should be in accordance also with any relevant requirements of the local gas region and local authority, and the relevant recommendations of the following British Standard Codes of Practice :

- CP 331 Installation of pipes and meters for town gas
Part 3 Low pressure installation pipes
- CP 333 Selection and installation of town gas hot water supplies
Part 1 Domestic premises
- BS 5440 Flues and air supply for gas appliances of rated input not exceeding 60 kW (1st and 2nd family gases)
Part 1 Flues

technical data

NATURAL GAS

TABLE 1

Heat input	11.3 kW	38,600 Btu/h
Heat output	8.5 kW	29,000 Btu/h
Gas rate	1.08 m ³ /h	38.14 ft ³ /h
Burner pressure	12.7 mbar	5.1 ins w.g.
Main burner injectors marking	113	113
Pilot burner injectors marking	25	25
Water flow rate - raised 20° C (36° F)	380 l/h	1.39 g.p.m.
Water flow rate - raised 35° C (63° F)	215 l/h	0.79 g.p.m.
Minimum water pressure (heater only)	0.5 bar	7.5 lb/in ²
Maximum water pressure	10 bar	150 lb/in ²

Note : The minimum water pressure is for the correct operation of the heater only. An additional allowance must be made for the resistance of the shower and associated pipework and fittings. This should be approximately 0-2 bar (3 lb/in²).

Water inlet	Right hand connection	15 mm copper
Water outlet	Left hand connection	15 mm copper
Gas	Centre connection	15 mm copper
Height	600 mm	23.6 ins
Width	267 mm	10.5 ins
Depth	210 mm	8.25 ins
Weight	10.7 kg	23.5 lbs
Space for fixing Top	100 mm	4.0 ins
Space for fixing Bottom	152 mm	6.0 ins
Space for fixing Sides	NIL	NIL
Space for fixing Front	130 mm	5.1 ins
HOLE FOR WALL LINER		
Width	240 mm	9.5 ins
Height	125 mm	4.9 ins
WALL THICKNESS		
Standard flue set	75-355 mm	3-14 ins
Extra available	75-610 mm	3-24 ins

installation

The SH 12 is supplied in two cartons, one containing the heater, the other containing the flue set and shower fittings.

INSTALLING THE BALANCED FLUE

The standard flue set is suitable for walls having a thickness of 75 mm (3 in) to 355 mm (14 in). A flue set for wall thicknesses up to 610 mm (24 in) is available to special order.

Detailed recommendations for flueing are given in BS 5440 : 1. The following notes are intended to give general guidance.

The shower heater must be installed so that the flue terminal is exposed to the external air.

Termination should be on a clear expanse of wall ; the terminal being preferably not less than 600 mm (2 ft) away from a corner, recess or projection.

DO NOT install the terminal :

- within 300 mm (1 ft), measured vertically, from the bottom of an openable window, air vent or any other ventilation opening.
- within 300 mm (1 ft) above adjacent ground level.
- within 600 mm (2 ft) of any surface facing the terminal.
- immediately beneath eaves or a balcony.

Where the lowest part of the terminal is less than 2 m (6.6 ft) above the level of any ground, balcony, flat roof or place to which any person has access and which adjoins the wall in which the terminal is situated, the terminal must be protected by a guard of durable material. (A terminal guard may be obtained from Chaffoteaux Limited).

The air inlet, products outlet duct and the terminal of the heater must be not closer than 50 mm (2 in) to combustible material. Detailed recommendations on protection of combustible material are given in BS 5440 : 1.

Preparing the Wall

The heater should be installed on a wall of flat non-combustible material that will not reverberate. Whatever the thickness of the wall, make a hole 240 mm (9.5 ins) wide x 125 mm (4.9 ins) high. If the hole is cut accurately there is no need to line it, since the wall liner will seal off the cavity.

A minimum clearance of 75 mm (3.0 in) should be left above the top of the wall opening. No allowance is necessary at the side of the heater. For dimensions see Diagram Page 2.

Slide the wall liner through the wall ensuring that it is horizontal and that the flanged end is flush with the face of the wall. Trim to length if necessary, so that the outer end of the liner is level with the face of the outside wall. Make good around the wall liner (fig. 1).

FITTING THE TERMINAL

The terminal is fitted from the outside of the building by fixing the two spring loaded chains over the hooks on the inside of the wall liner (fig. 2). If the chains can not be fitted to the hooks, fit them into the slots on the flue bend brackets. Turn the hook through 90° if necessary.

If access to the outside of the building is difficult, the terminal can be raised on a length of string and the chains attached from the inside. If this procedure is adopted, it must be ensured that there is no risk of damage to the terminal, the building, or danger to persons in or about the building.

INSTALLING THE HEATER

The heater is attached to the wall by 2 studs at the top and 2 screws at the bottom. These are supplied with the gas service tap and foam gasket, and packed in a box placed in the flue outlet.

Remove the front case, place the heater in position and mark the fixing holes. Drill and plug the wall, and fasten the wall studs in position. These studs can be screwed in the wall by first locking two nuts together on the parallel thread and then use a spanner. Attach the self adhesive foam gasket to the flat surface of the heater around the air inlet spigot on the heater. Pull off the protective paper while sticking down the gasket. Lift the heater into position on the wall, locating on the studs and the air inlet spigot into the wall liner. Secure the heater to the wall using the nuts, washers and wood screws supplied. Unscrew the screws A (fig. 3), then lift off the flue bend. Slide the flue duct through the rectangular hole in the wall box and engage it into the terminal by at least 25 mm (1 in), and onto the flue bend as far as it will go. The duct must be cut to length where necessary (fig. 4). Replace the screws securing the flue bend.

GAS CONNECTION

The gas service tap supplied should be fitted to the centre connection below the heater using the "filter washer". A 15 mm dia. copper tail is also provided for direct fixing to the gas supply.

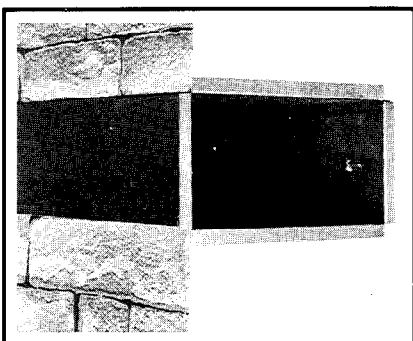


Fig. 1

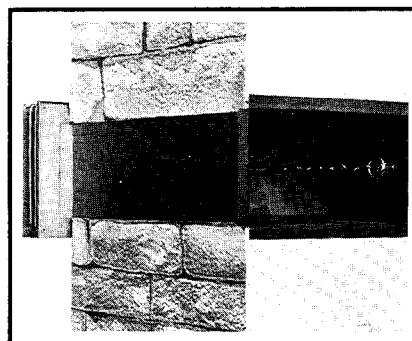


Fig. 2

installation

Water CONNECTIONS

The installation of the water supply to the shower must be in accordance with the relevant requirements of the Byelaws of the local Water Undertaking. The cold water connection to the heater is on the right with the hot flow on the left. The connections on the heater are 15 mm copper tubing. See diagram Page 2.

The heater is supplied with the water outlet connection at the bottom. This can be changed to a top outlet by removing the outlet bend and replacing it with the short bend supplied in the accessory box (fig. 5). The blanking disc fitted to the top of the heater should be transferred to the base and the sealing ring and disc transferred to the top.

A Water Council approved Service tap must be fitted in the cold mains water supply to the heater. It must be a type having a fixed jumper washer. This tap is not supplied by Chaffoteaux Limited.

INSTALLING THE SHOWER

The shower set consists of :

- Handset
- Handset holder and bracket
- Hose and washers
- Hose retainer
- Control tap 15 mm compression x 1/2" BSP
- Secure the control tap to the wall in a suitable position adjacent to the shower. Connect the pipe from the SH 12 to the tap.
- Insert a screwdriver into the slot on the back of the handset holder and twist to detach the bracket.
- Fix the bracket in the required position with the arrow pointing UP.
- Replace the handset holder onto the bracket, slide it downward and snap into position.
- Position the hose retainer in a similar manner.

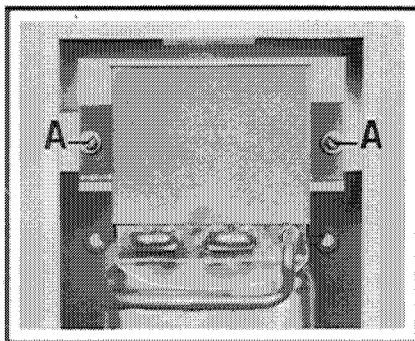


Fig. 3

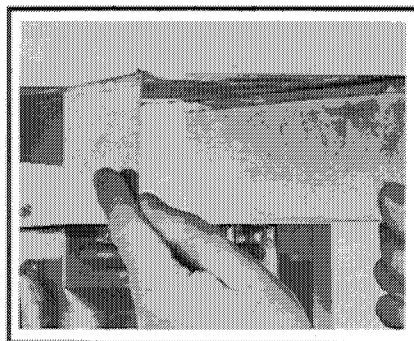


Fig. 4

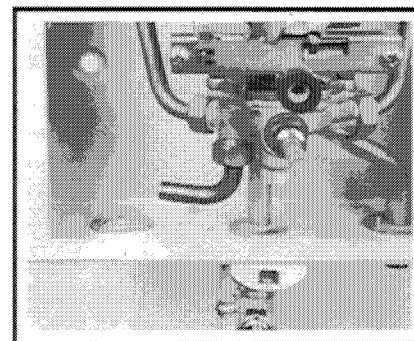


Fig. 5

NOTE - In accordance with the requirements of Water Byelaws, the installer of a shower which is supplied with water direct from a water service pipe and which incorporates a shower outlet with a flexible connection, must ensure that the shower outlet cannot reach a level lower than 13 mm (1/2 in) above the spill-over level of the receptacle that receives the water from the shower.

- Thread the flexible shower hose through the retainer and attach at one end to the tap, and the other to the handset.

PUTTING INTO SERVICE

- Open the gas and water service taps. Purge the gas and water supplies. Check for gas and water soundness.
- Fit the gas control knob and light the pilot by turning 90° anti-clockwise. It may be necessary to wait for the pilot to purge, if so, wait a few moments then turn to the "off" position and repeat.
- Turn the gas control fully anti-clockwise to the main gas position.
- Turn on the shower, the heater will now light.
- Check for gas soundness around heater gas components using sense of smell and leak detection fluid.
- Check the burner pressure by fitting a gauge on to the pressure test point on the end of the burner manifold. The correct pressure is given in Table 1, Page 3. If the pressure is not correct, check the pressure at the meter outlet. This should be 20 mbar (8 ins w.g.), the gas installation should be examined for any possible blockage if the pressure is not correct. If the pressure is not correct, consult the local gas region. The heat input is pre-set and non-adjustable.
- Remove the gas control knob.
- Replace the front case, gas control knob and water temperature selector knob. The temperature selector spindle should be screwed fully in, and the knob then positioned opposite the word "hot".
- Hand the User's Instructions to the consumer and instruct in the safe operation of the shower heater.

servicing instructions

Turn off the gas at the gas inlet tap on the appliance and water at the inlet water service tap commencing servicing.

1) Front Casing

- To remove, pull off the gas control and temperature control knobs.
- Unscrew the centre fixing screw on the front of the case, also the top and bottom fixing screws.
- Pull off the case taking care not to loose the rubber spacer behind the centre fixing point.

2) Burner (fig. 6).

- Unscrew the pilot tube clamping screw A. and remove clamp and tube.
- Remove burner manifold by unscrewing fixing screws B.
- Pull burner head assembly forward to remove, take care not to trap the thermocouple or ignitor wires.
- The burner heads can be cleaned by brushing.
- Replace in reverse order, make sure that the gasket between the manifold and the gas section is in place and that the burner head assembly is correctly located on the spigot at the rear.

3) Heating Body

- With the burner and flue bend removed, the heating body can be inspected and cleaned in position.
- To remove, drain the heater by unscrewing the water governor A (fig. 10), collecting the water in a basin below the heater.
- Remove the burner, see Section 2.
- Remove the screw holding the bottom of the heating body skirt to the rear case.
- Release the two union nuts joining the heating body legs to the water section.
- Remove the heating body.

- Clean the heating body by brushing with hot water and detergent.
- Re-assemble in reverse order, do not forget to replace the skirt fixing screw and reinforcing strip.

4) Pilot

- Unscrew the pilot tube clamping screw A (fig. 7) and remove the clamp and tube.

- Blow through the tube to remove any dust.
- Remove the burner, see section 2.
- Unscrew the knurled pilot burner outer ring A (fig. 7).
- Unscrew the pilot body B with a 15 mm spanner. It may be necessary to remove the heating body. Clean by blowing or washing in water. Do not clean the holes with a wire.
- Blow any dust out of the gas section.
- Re-assemble in reverse order.

5) Thermocouple (fig. 8).

- Remove the burner, see Section 2.
- Remove the pilot, see Section 4.
- Unscrew the thermocouple nut D from the thermo-electric valve and remove it from the wire (fig. 6).
- With a 7 mm box spanner, unscrew the nut E holding the thermocouple into the gas section.
- Thread the thermocouple and wire up through the gas section.
- Replace in reverse order.

6) Spark Electrode (fig. 8).

- Remove the burner, see Section 2.
- Remove the electrode fixing screw F with a screwdriver placed inside the heating body skirt.
- Pull off the electrode cable from the piezo cartridge.
- Lift the electrode out of the gas section.
- Re-assemble in reverse order, and note that the slot in the connector on the end of the electrode cable is vertical when pushed onto the cartridge.

7) Thermoelectric Valve

- To replace, remove the thermocouple nut A (fig. 9).
- Unscrew cap from the side of the gas section and withdraw the thermoelectric valve.

NOTE – This heater is fitted with a safety interlock. When the pilot is turned off the heater can not be relit until the thermocouple cools down and the lighting sequence is repeated.

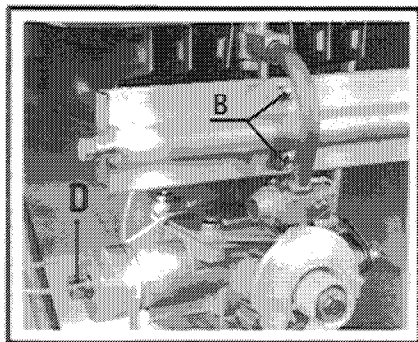


Fig. 6

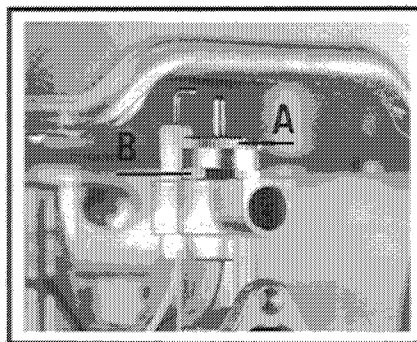


Fig. 7

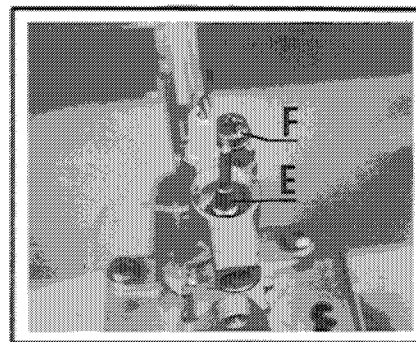


Fig. 8

servicing instructions

Main Gas valve

- To inspect and clean, remove burner.
- Disconnect the thermocouple and the ignitor lead.
- Remove the four fixing screws fastening the top of the gas section to the base B (fig. 9). Also the two screws at the back holding it to the rear case.
- Lift the gas section top off the base.
- Remove the gas valve spring.
- Lift out the gas valve.
- Clean the valve seating.
- Replace the facing rubber if necessary.
- Replace in reverse order.

Diaphragm (fig. 10).

- To replace, turn off the cold water supply and gas.
- Drain the heater by removing the water governor plug A situated in the base of the water section.
- Unscrew the four water unions B on the water section.
- Unscrew the six screws C holding the water section to the gas section.
- Remove the water section complete with the diaphragm and bearing plate.
- Replace in reverse order - NOTE - fit the water governor last. It is easier if the cold water inlet connection is partially engaged before fitting the screws and re-connecting the union nuts.

10) Water Governor

To clean, turn off the cold water supply to the heater.

- Remove the governor situated in the base of the water section.
- Clean the components with water.
- Check that the spring loaded piston moves freely.
- Replace in reverse order.

11) Gas Filter (fig. 11).

A gas filter is fitted between the gas service tap and the heater.

- To clean, turn off the gas at the service tap.
- Unscrew the union nut attaching the tap to the heater.
- Lower the union nut and withdraw the filter which also acts as a washer.
- Clean the filter by blowing or washing in water, do not use solvents since the filter is made of nylon and may dissolve.
- Replace in reverse order.

12) Heat Input

The heat input is pre-set and non-adjustable. The heat input and burner pressure should be checked against Table 1. If the heat input/burner pressure is not correct, check the working pressure at the pressure test point on the gas service tap. This should be 20 mbar (8 ins. w.g.). The gas installation should be examined for any possible blockage if the pressure is incorrect.

RECOMMENDED SERVICING SCHEDULE

For efficient and trouble free operation, it is recommended that this heater is serviced annually. The following work should be carried out by a competent person.

- 1) Clean the burner.
- 2) Clean the heating body by brushing.
- 3) In hard water areas it may be necessary to descale the heating body. Use a solution consisting of 5 parts water to 1 part hydrochloric acid. The water should preferably be hot - ADD ACID TO WATER, NOT WATER TO ACID.
- 4) Clean the pilot and thermocouple.
- 5) Clean the gas filter.
- 6) Clean the water governor.
- 7) Change the diaphragm every three years.

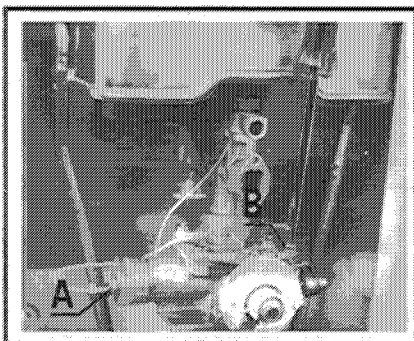


Fig. 9

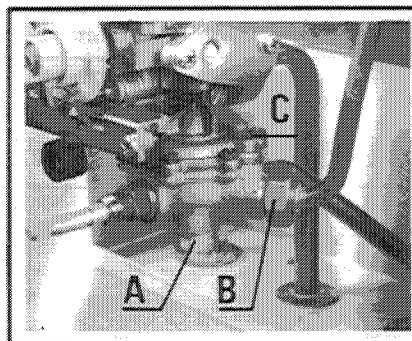


Fig. 10

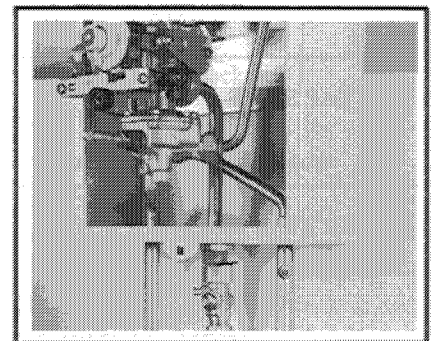


Fig. 11

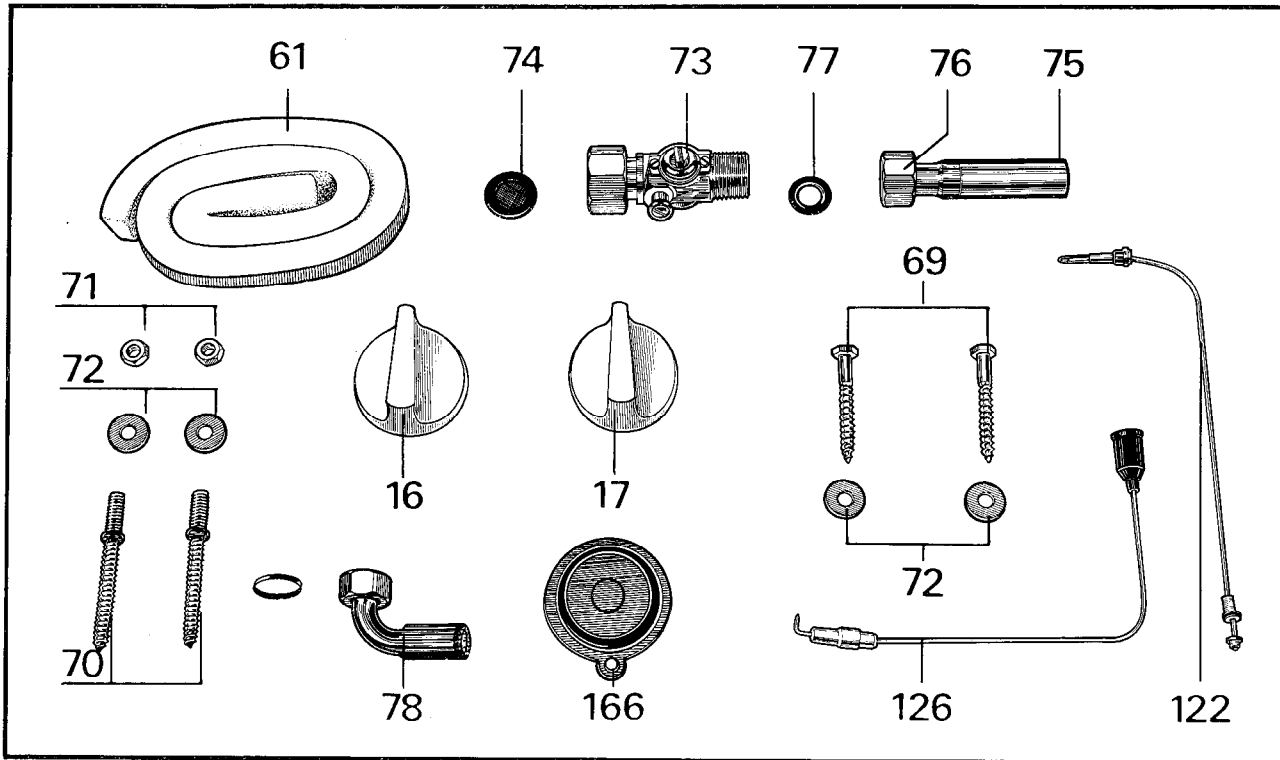
FAULT FINDING CHART FOR SH12 SHOWER HEATER

PROBLEM	CAUSE	REMEDY
PILOT FLAME DOES NOT LIGHT	<ul style="list-style-type: none"> i) Gas service tap closed ii) Air in pipe iii) Pilot injector blocked 	<ul style="list-style-type: none"> Open service tap Purge line Clean or change
POOR PILOT FLAME	<ul style="list-style-type: none"> i) Pilot injector dirty/damaged ii) Wrong injector iii) Pilot head blocked iv) Faulty pilot tube 	<ul style="list-style-type: none"> Clean or change Change for correct diameter Clean Clean or replace
PILOT WILL NOT STAY ALIGHT	<ul style="list-style-type: none"> i) Thermocouple not working ii) Thermo-electric valve faulty iii) Gas pressure low/variable iv) Terminal wrongly positioned v) Badly assembled flue vi) Gas pressure too high vii) Water rate too high viii) Incorrect venturi ix) No venturi fitted 	<ul style="list-style-type: none"> Change thermocouple Change valve Check at inlet to heater Re-position heater Refit - Check sealing Check working pressure at meter Check water governor Replace Fit
MAIN BURNER DOES NOT LIGHT/MAIN BURNER	<ul style="list-style-type: none"> i) Gas service tap not open fully ii) Gas pressure low iii) Water rate low iv) Gas valve push rod jammed v) Diaphragm punctured vi) Venturi blocked or loose vii) Gas control tap faulty viii) Injector size 	<ul style="list-style-type: none"> Open fully Check at manifold and at inlet with heater running Check if water rate is sufficient (page 3) Clean rod Change diaphragm Check venturi Check operation of User's gas control tap Check burner injectors are for natural gas 1.13 mm diameter
EXPLOSIVE IGNITION	<ul style="list-style-type: none"> i) Pilot 	<ul style="list-style-type: none"> Check length and clean injector
GAS TAP STIFF	<ul style="list-style-type: none"> i) Grease dried ii) Operating mechanism replaced incorrect 	<ul style="list-style-type: none"> Clean and regrease Refit
WATER TEMPERATURE LOW	<ul style="list-style-type: none"> i) Water rate too high ii) Insufficient gas flow iii) Water governor sticking 	<ul style="list-style-type: none"> Check water regulator rate Check rate and user's tap is open Remove and clean or replace

FAULT FINDING CHART FOR SH12 SHOWER HEATER

PROBLEM	CAUSE	REMEDY
BURNER STAYS ON	<ul style="list-style-type: none"> i) Air in hot pipe i i) Gas valve spindle jammed i i i) Venturi blocked i v) Gas valve "letting by" v) Loose jumper on house stop tap v i) Dead-leg on system v i i) Dirt in water section 	<ul style="list-style-type: none"> Purge line Clean spindle Remove and clean Change valve facing Replace water stop tap or pin down jumper Vent or remove Clean water section
YELLOW FLAMES SOOT FORMED	<ul style="list-style-type: none"> i) Heating body fins blocked i i) Primary air supply restricted i i i) Wrong injectors 	<ul style="list-style-type: none"> Remove heating body and clean Check manifold Check gas type and injector
UNSTABLE FLAMES	<ul style="list-style-type: none"> i) Water in gas line i i) Faulty flue 	<ul style="list-style-type: none"> Purge Check terminal position and flue ducts
HEATING BODY NOISE	<ul style="list-style-type: none"> i) Scale i i) Excessive gas 	<ul style="list-style-type: none"> Descale heating body Check gas pressure
INSUFFICIENT WATER FLOW	<ul style="list-style-type: none"> i) Water service tap partly closed i i) Blocked venturi i i i) Low water pressure i v) Water governor faulty v) Water governor sticking v i) Foreign matter in water section 	<ul style="list-style-type: none"> Check it is fully opened Remove and clean venturi Check water pressure Change governor Remove and clean or replace Remove and clean
HEATER "SMELLS" FROM INSIDE BUILDING	<ul style="list-style-type: none"> i) Appliance newness i i) Heater case not fitted correctly i i i) Defective sealing around heater case 	<ul style="list-style-type: none"> Smell will go within a short period of time Fit case correctly Replace sealing strip
HEATER "SMELLS" FROM OUTSIDE BUILDING AT POINT OF TERMINATION	<ul style="list-style-type: none"> i) Gas rate too high i i) Blocked flue i i i) Insufficient aeration i v) Delayed ignition due to poor pilot flame v) Heater case not fitted correctly v i) Defective sealing around heater case 	<ul style="list-style-type: none"> Adjust gas rate Check and remove blockage Check primary aeration See remedy for "poor pilot flame" Fit case correctly Replace sealing strip
HIGH WATER FLOW	<ul style="list-style-type: none"> i) Water governor sticking 	<ul style="list-style-type: none"> Replace

Short list



KEY No	G C No	DESCRIPTION	No OFF	MARKERS PART No
1	263 487	Front Case Assembly (not illustrated)	1	38741
16	263 488	Gas Control Knob	1	36246
17	263 489	Temperature Selector Knob	1	36732
61	366 096	Gasket Wall Liner to Rear Case	1	29091
69		Wall Fixing Screw	2	25617
70		Wall Fixing Stud	2	5787
71		Nut M7	2	29094
72		Washer	4	5369
73	366 160	Gas Service Tap	1	31281
74	263 545	Gas Filter	1	37309
75	366 152	Copper Tail	1	20677
76		Nut	1	20747/14
77		Washer	1	22835/14
78	263 365	Adaptor Bend for Top Outlet	1	26103
122	387 251	Thermocouple Assembly	1	35087
126	387 252	Electrode & Lead Assembly	1	34239
166	262 544	Diaphragm	1	18197/30

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