

SERVICE
MANUAL
for

Masport[®]

CARDRONA
MONACO Series 2
PICCOLO
SOFIA
MADRID
GAS FIRES

TO BE USED ONLY BY AUTHORISED PERSONNEL

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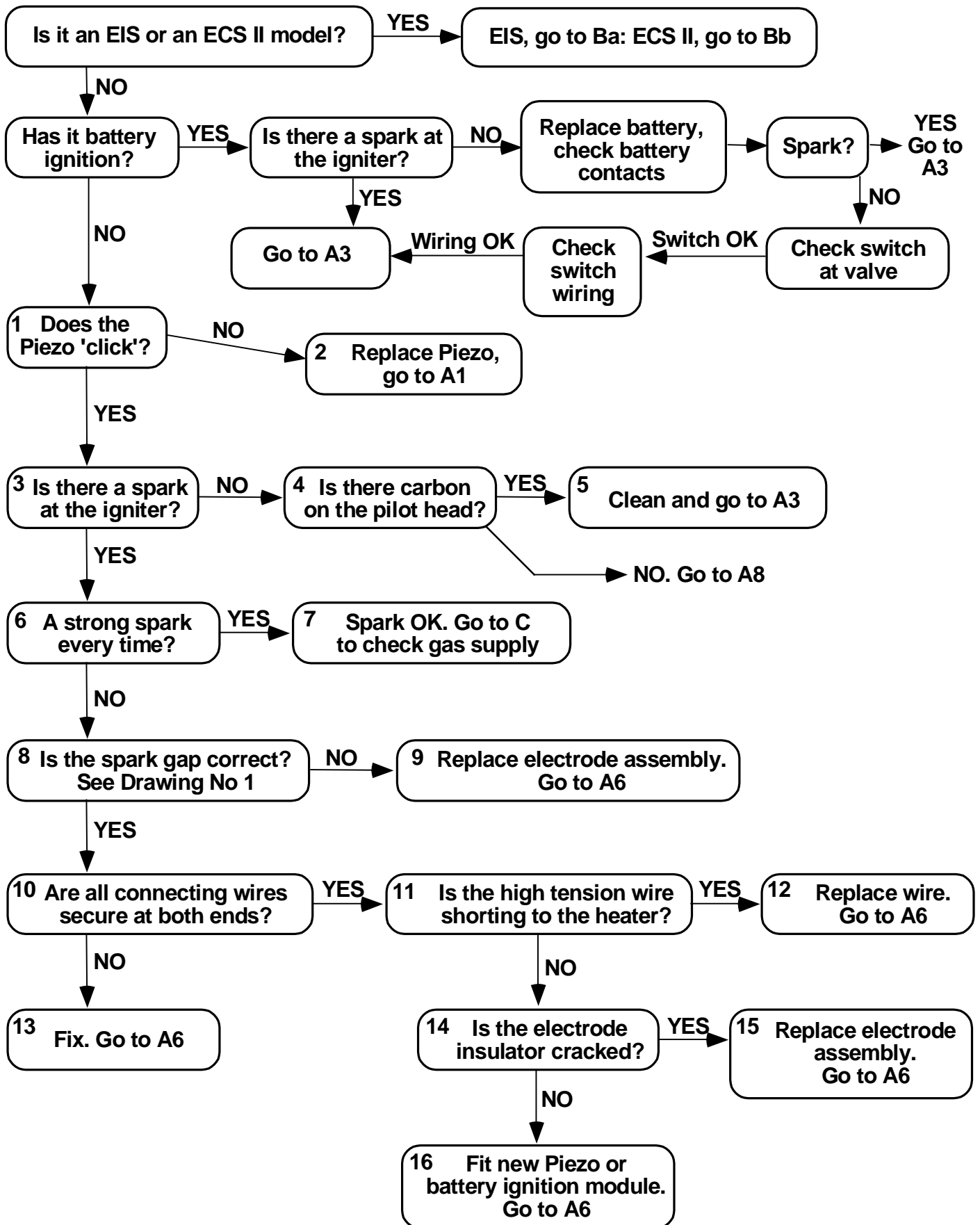
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A — PILOT WILL NOT LIGHT AFTER REPEATED ATTEMPTS



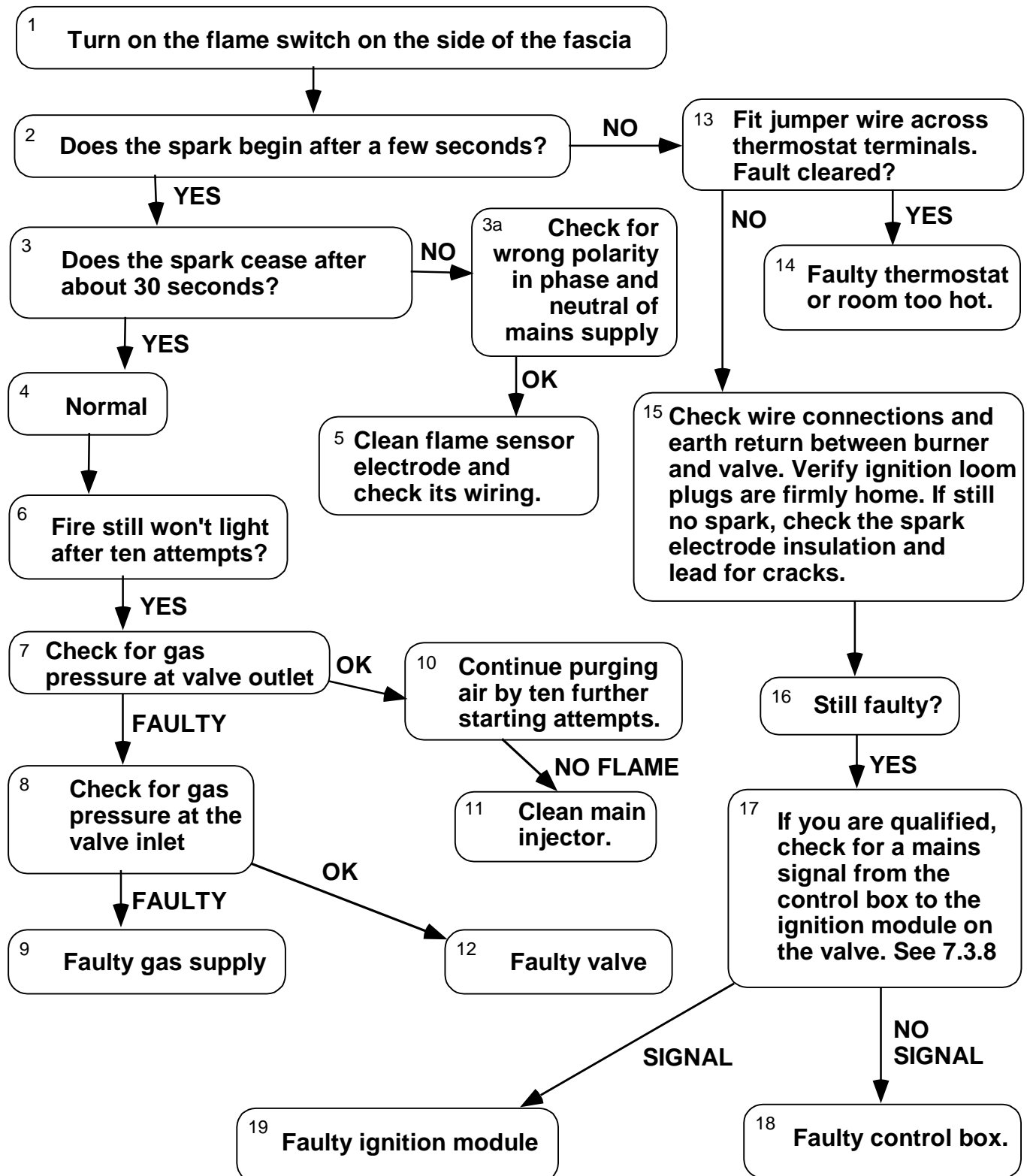
Ba — EIS FIRE WON'T LIGHT AFTER REPEATED ATTEMPTS

Note: These fires have no standing pilot. The burner lights each time the heat is called for.

When operating correctly, the spark ceases as soon as the main burner flame is established.

FIRST:-

Check that the mains power supply and the gas supply are valid and that any gas valves are open.



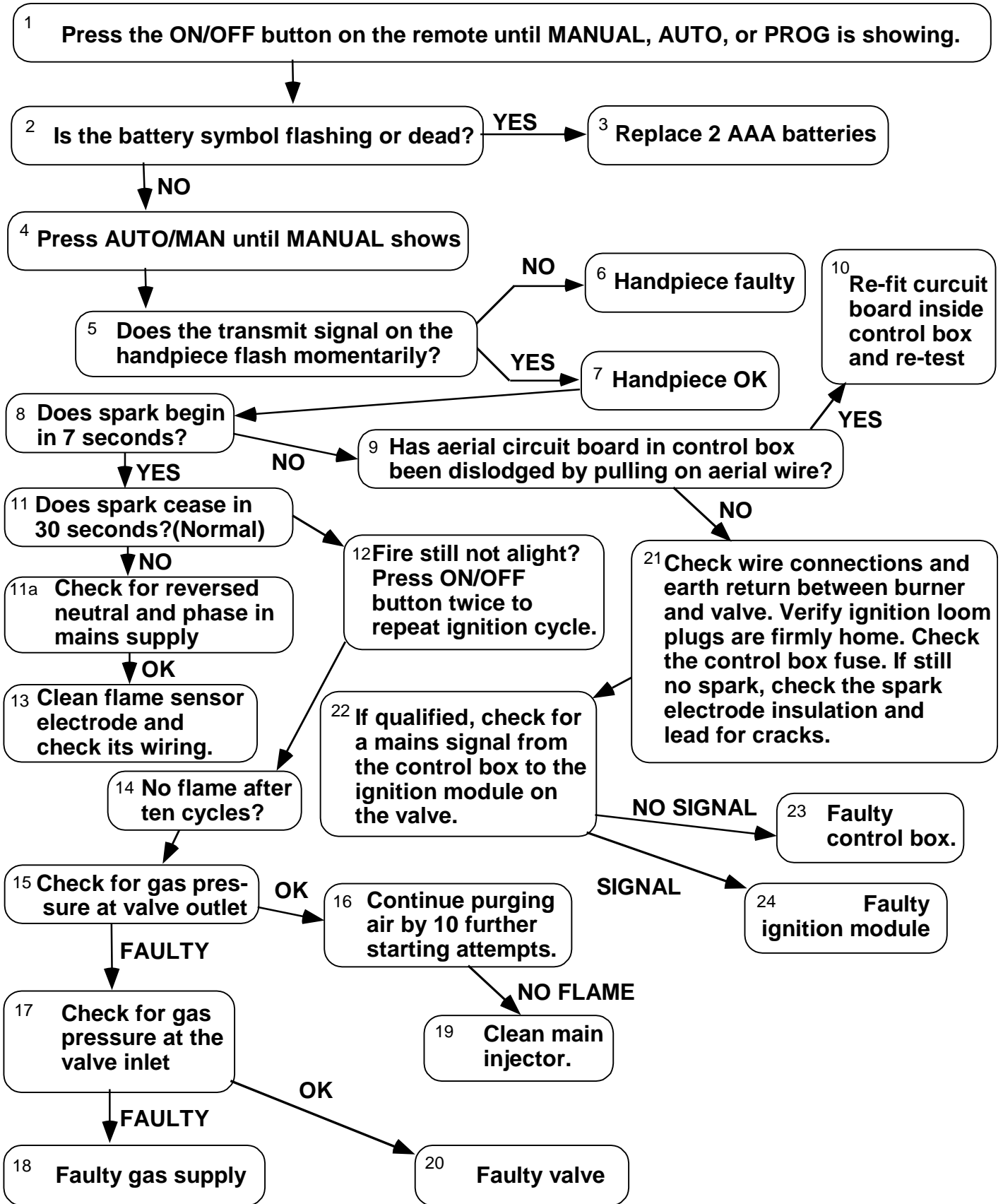
Bb — ECS II FIRE WON'T LIGHT AFTER REPEATED ATTEMPTS

Note: These fires have no standing pilot. The burner lights each time the heat is called for.

When operating correctly, the spark ceases as soon as the main burner flame is established.

FIRST:-

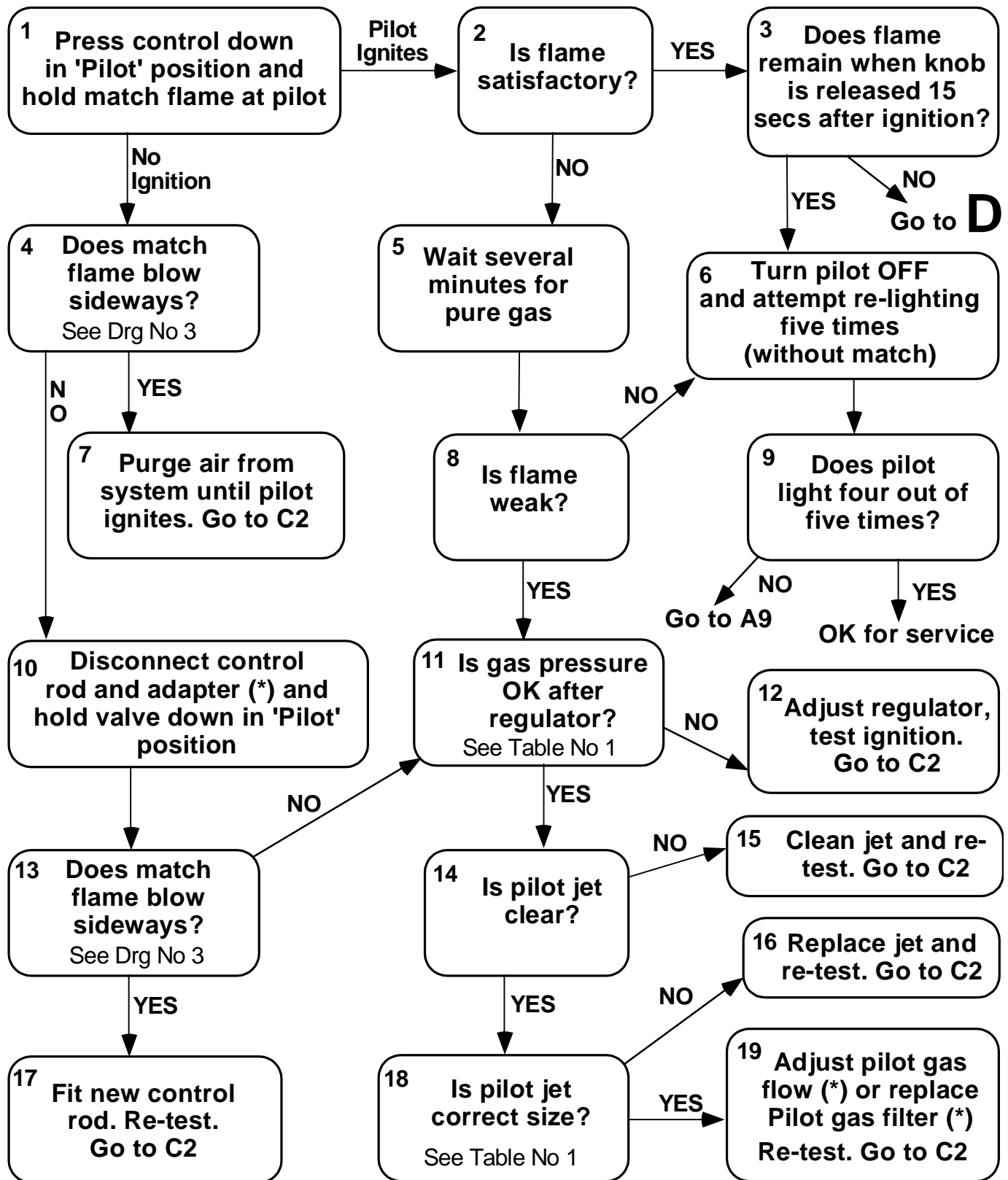
Check that the mains power supply and the gas supply are valid and that any gas valves are open.



C — SPARK OK BUT PILOT WON'T LIGHT (Not ECS II or EIS)

FIRST :-

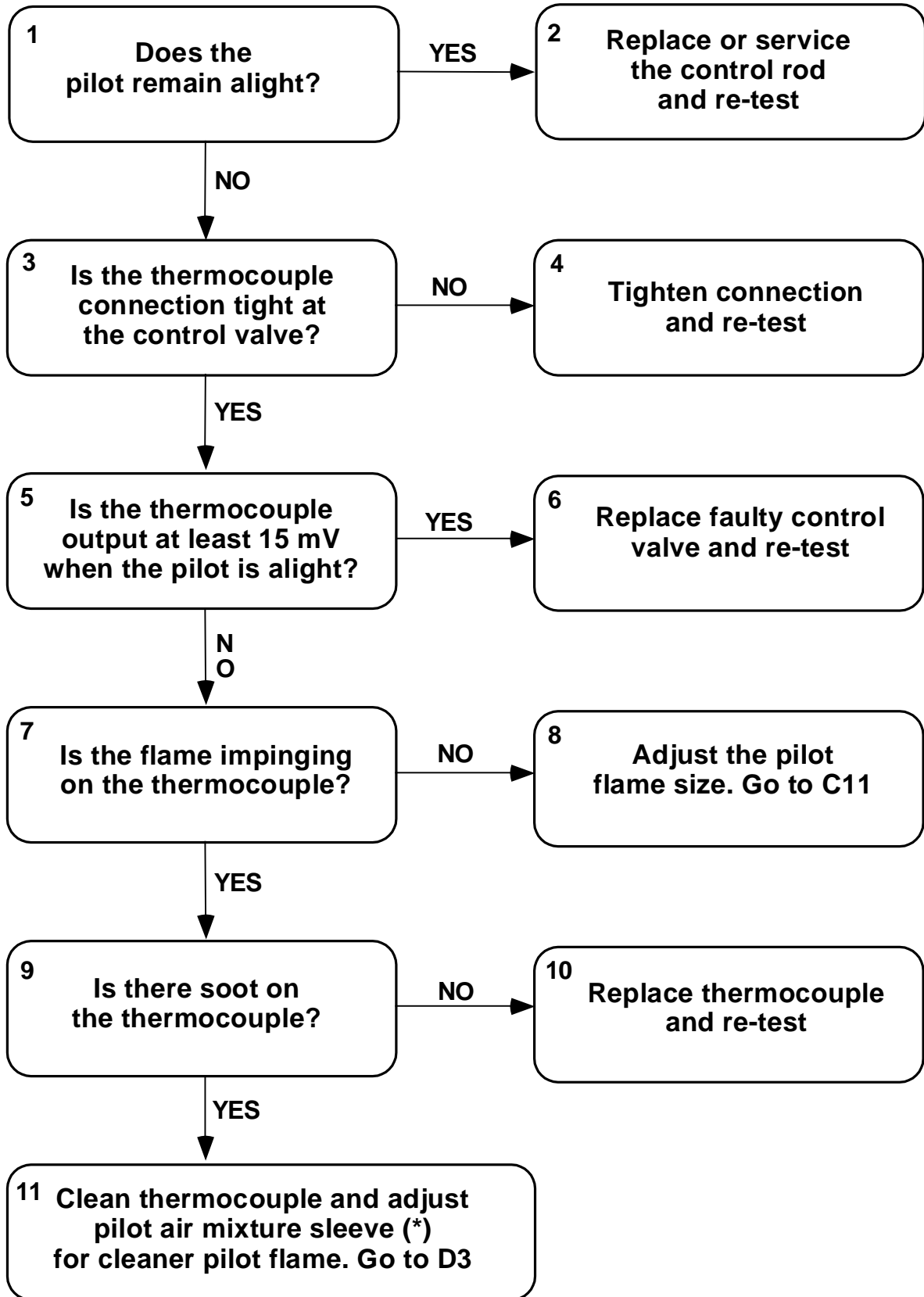
- Check that all shut-off valves in the gas supply are open.
- For LPG models, check for gas in the bottle and open the bottle valve.
- Check for a gas smell near the pilot, and wait for it to disperse before starting this procedure.



(*) = Some models only

D — PILOT LIGHTS BUT WILL NOT REMAIN ALIGHT (Not ECS)

Disconnect the valve control rod (and adaptor if fitted), and operate the valve directly.

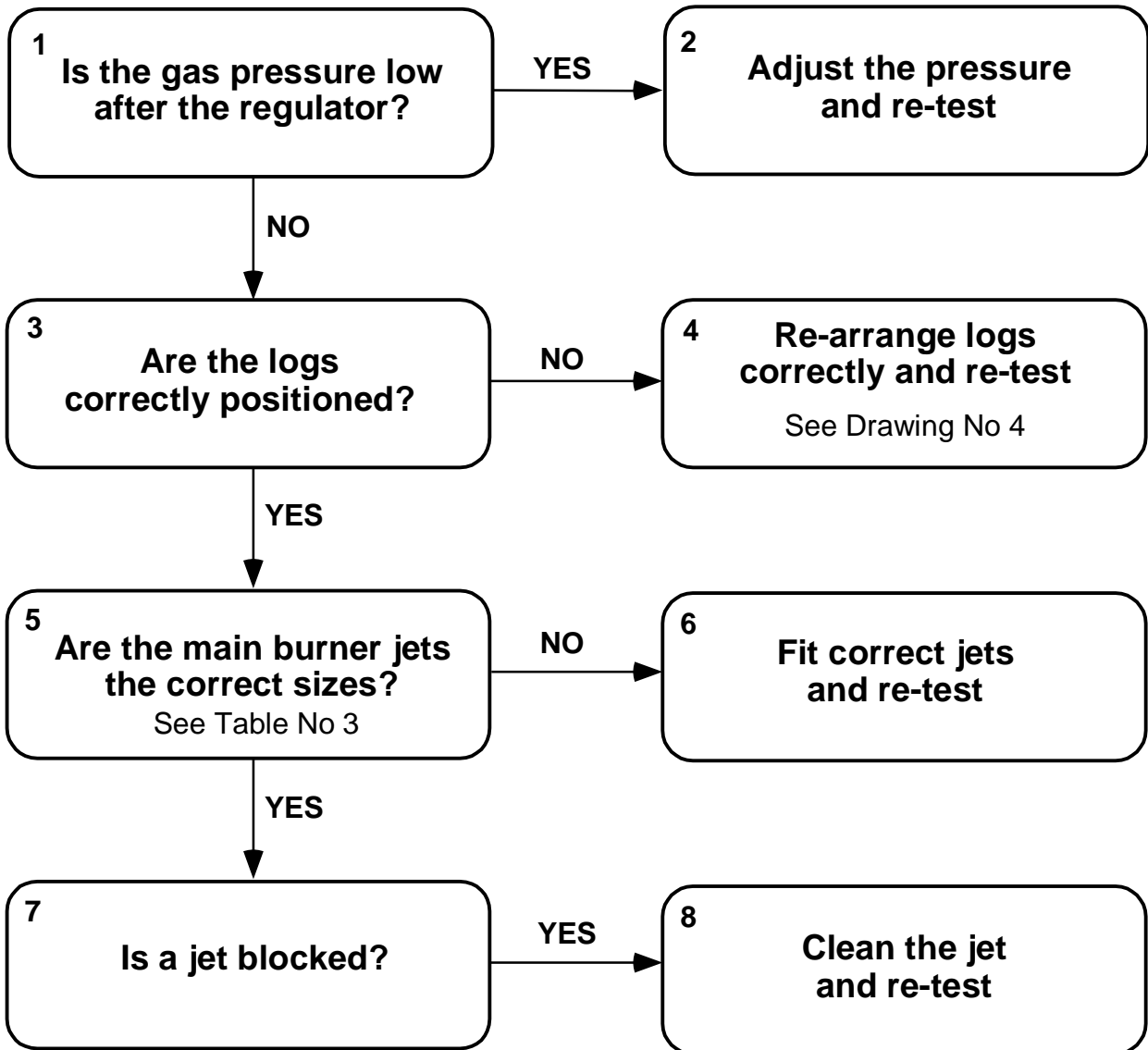


(*) = Some models only

E — STD HEATERS, PILOT ALIGHT BUT BURNER WILL NOT LIGHT WITHIN TEN SECONDS

FIRST :-

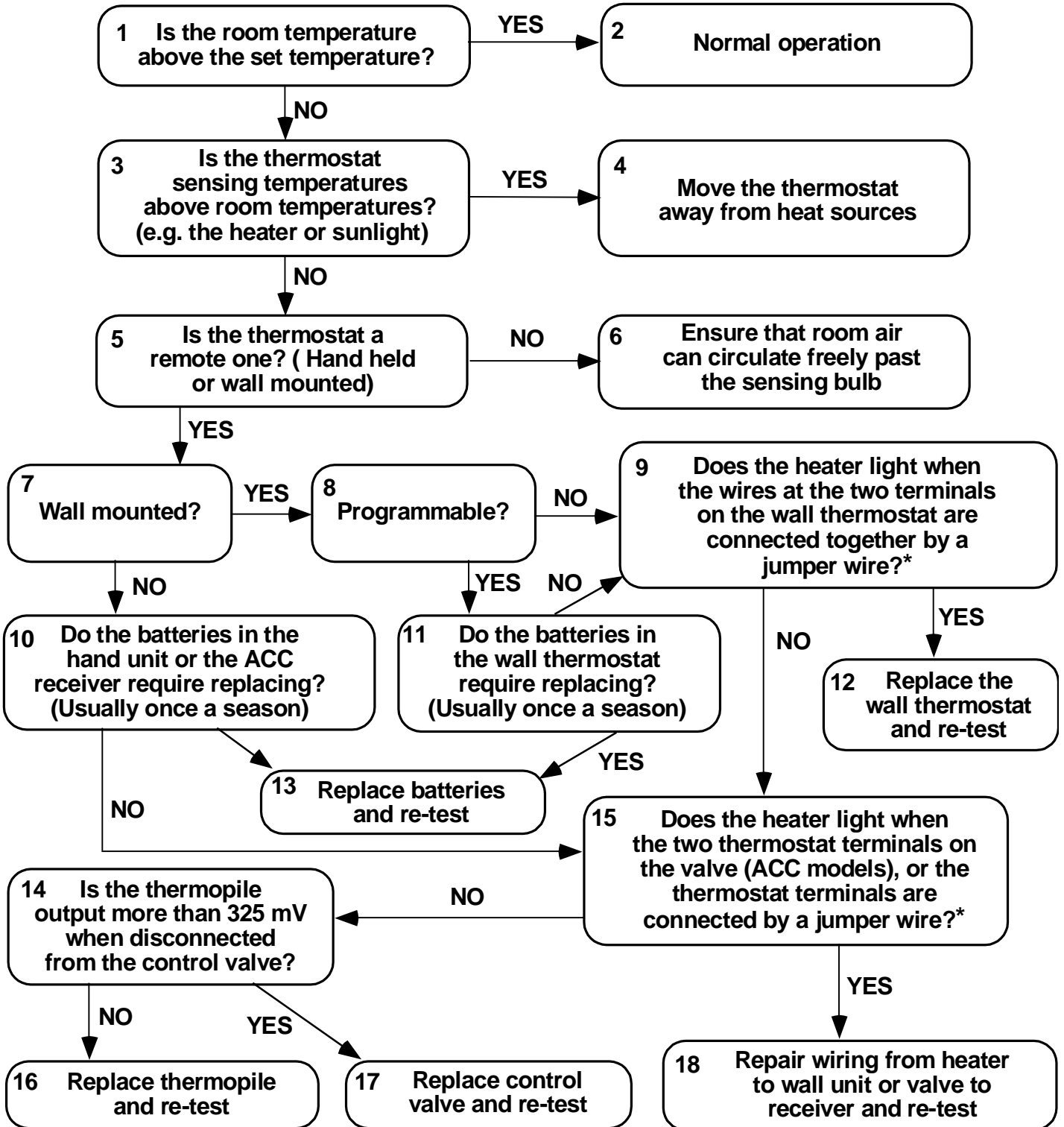
- For an LPG heater, check that there is ample gas in the bottle.
- For a Thermostat heater, verify that the sensor is not warmer than the temperature set-point.



F — THERMOSTAT HEATERS. MAIN BURNER WILL NOT LIGHT WITHIN 30 SECONDS.

ON HEATERS FITTED WITH PILOT LIGHTS, THE PILOT MUST BE ALIGHT BEFORE THE THERMOSTAT CAN TURN ON THE FIRE.

NOTE: When hand-held remote thermostats are set to MANUAL, they do not operate as thermostats but give direct control. In the AUTO setting they transmit a thermostat signal to the receiver from time to time, so there can be some delay, when in this setting, before the fire receives a signal to light or change flame height (modulate). In the MANUAL setting, there is no time delay for signals to the receiver.



(*) = Some models only

G — THERMOSTAT HEATERS. ERRATIC OPERATION

ROOM TEMPERATURE FLUCTUATES TOO WIDELY

Ensure that the wall thermostat or the temperature sensor in the hand unit is exposed to free-flowing room air but not in draughts or too close to windows.

HEATER CYCLES ON AND OFF TOO FREQUENTLY

Move the hand unit or the wall thermostat further away from the heater, ensuring that it is exposed to free-flowing room air but not in draughts or near windows. A powerful heater in a relatively small room will cycle frequently unless its heat output is reduced by turning down the flame height setting.

H — NO FLAME MODULATION ON ECS II MODELS.

These models are controlled by an RF hand-held remote. The remote control has the capability of modulating the flame (turning the flame height up and down).

ECS II MODELS:

The flame modulation is selected by the user when operating in the MANUAL mode, while it is automatically adjusted when in the AUTO and PROGRAM modes. To verify correct modulation, select the MANUAL mode and step the flame height through all of its six settings by pressing the '+' and '-' buttons as appropriate. The modulating voltage should be checked only while the modulating coil on the valve is connected to the control box. Ease the connectors at the top of the modulating coil part way off and measure the voltage at the exposed lower part of the terminals. The normal voltage range is approximately 3 volts to 11.5 volts dc. (These voltages apply to ECS I models also). If the measured voltages are correct and the flame is not modulating, then the valve is probably faulty. A faulty modulating coil winding will result in a false voltage reading at the coil.

I — SOOTING.

If you encounter sooting inside the glass, check the following

- Verify that the gas pressure is correct.
- Verify that the correct sizes of jets are fitted (see Tables 2,
- Increase the primary air intake, if necessary, by opening the rotary sleeve on the main burner (adjacent to the main jet).

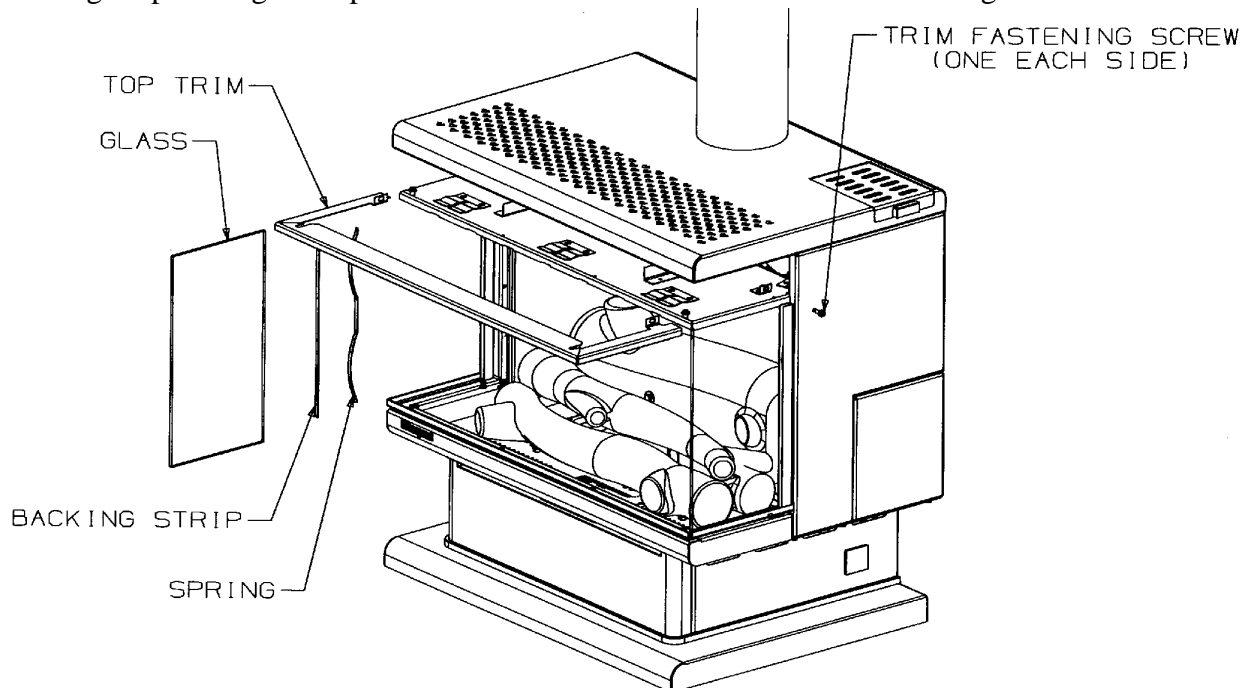
NOTE. Avoid making adjustments when burning the final dregs of gas in an LPG bottle as these can be very 'dirty'.

1. CARDRONA & MONACO S2 ASSY AND DIS-ASSEMBLY

1.1 REMOVING THE GLASS

Do this only while the heater is standing upright.

1. Remove the louvre assembly by lifting it up about 5mm and pulling it carefully toward you.
2. Remove the dress guard if fitted. For the Cardrona, first remove the front panel (below the glass). Do this by removing the two retaining plates underneath the front panel, and then lifting its rear corners off their support posts. Once the panel is clear, swing the bottom of the guard out from the heater and lift the guard off the two top retaining posts. For the Monaco, un-clip the guard from the glass retainers.
3. **Cardrona.** Before lifting the top trim clear, provide support for the three glass pieces to prevent them from falling and breaking. Adhesive tape will do this.
4. Remove the two top glass trim fastening screws (positioned horizontally, one at each end of the trim), slide the trim forward and lift it clear.
5. Lift the front glass clear first, followed by each side glass. As each side glass is removed, a spring, a backing strip and a glass rope will be released from behind its rear vertical edge.



6. **Monaco.** Remove two fastening screws securing the top glass trim.
7. Prise forward the top glass trim and lift it clear. Note. This will release the top edges of the left and right glass retainers.
8. Lift the glass retainers to remove them, keeping a hand on the glass to ensure that it does not fall forward.
9. Lift the glass clear.

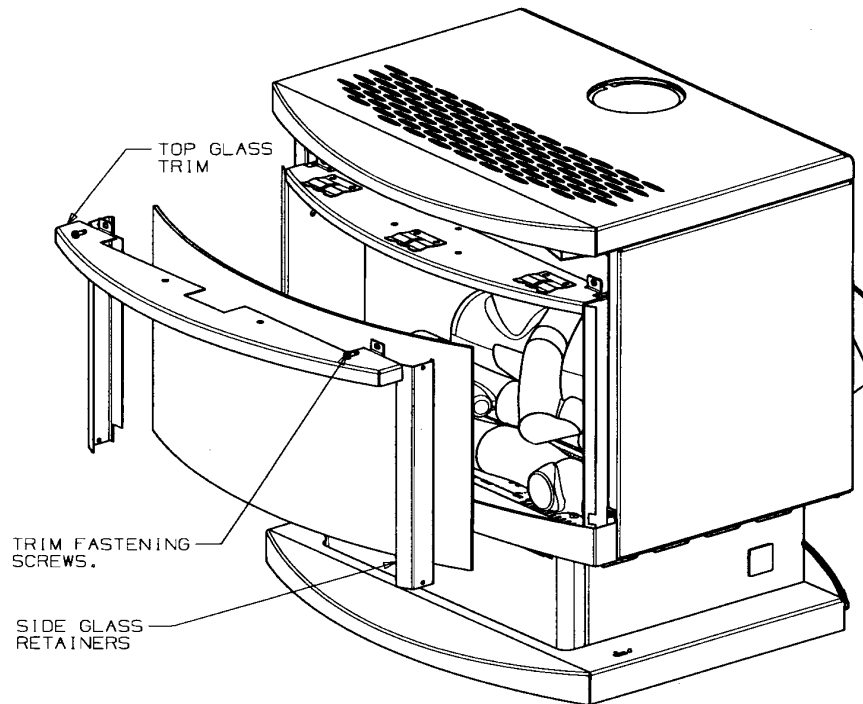
1.2 FITTING THE GLASS , THE LOUVRE ASSEMBLY, THE DRESS GUARD AND THE FRONT PANEL.

1.2.1 GLASS ASSEMBLY

1. **Cardrona.** Clean all inside glass surfaces carefully and keep fingerprints off them as they are assembled.
2. Assemble both side glasses. Fit the spring, the backing strip and the glass rope (in that order) into each retaining slot and then each glass, **MAKING SURE THAT THE SMOOTH EDGES WILL BE AGAINST THE FRONT GLASS.** Push them back against their springs until the front edges drop into the front slot.
3. The front glass can then be fitted, **TAKING CARE THAT THE BEVELLED EDGES FACE THE FRONT** (i.e. away from the side glasses). Offer the front glass into position with its lower edge just above the top of the bottom retaining channel.

Press the front glass back against the side glasses, compressing the springs until it the glass is directly above the channel. Maintaining the backward pressure, slide the front glass down into the channel.

4. For safety, strap the glasses together with a piece of adhesive tape at each top corner to prevent them from falling out while the top trim is being fitted.
5. Slide the top trim into position under its guides and replace the two horizontal retaining screws. Before tightening the screws, ensure that the three glass pieces are seated snugly against the top glass tape to prevent any leakage. Do not over-tighten the screws.
6. Remove the adhesive tape and clean the glass.



7. **Monaco.** Assembly is the reverse of the above removal procedure. Clean the inside surface of the glass and keep fingerprints off it as it is re-assembled.
8. Place the glass in position, noting that the bottom edge of the glass has no gasket.
9. Replace the left and right glass retainers, fitting their lower ends behind the bottom glass trim.
10. Slide the top glass trim into place, making sure the top ends of the side glass retainers are captured. Fit the two fastening screws.

1.2.2 LOUVRE ASSEMBLY

1. Fit the slot at each end of the louvre assembly over its retaining post. For the Monaco, ensure that the centre support plate engages its loop.
2. Press downward gently to engage the posts.
3. Confirm correct engagement by pulling forward on the louvre assembly.

1.2.3 DRESS GUARD (IF REQUIRED)

1. **Cardrona.** The front panel must be removed for fitting and removing the dress guard.
2. Angling the guard forward at the top, fit the two lugs at the top of the guard over the posts at each end of the top of the glass assembly.
3. Swing the lower edge of the guard under the front glass support.
4. The guard is retained in position by fitting the front panel. (See 1.2.4)
5. **Monaco.** The guard simply clips behind the top and bottom edges of the glass retainers.

1.2.4 FRONT PANEL (Cardrona only)

1. Fit the keyhole slot at each end of the front panel over its retaining post.
2. Press downward gently to engage the posts.
3. Confirm correct engagement by pulling gently forward on the front panel.
4. Swing the front panel up into position and fix it there using the two clamp plates and screws vertically from below.

1.3 DISCONNECTING THE FLUE

1. Shut off the gas supply at the valve behind the heater.
2. Remove the access panel on the rear of the cabinet.
3. Disconnect the gas line at the heater.
4. Lift the flue sleeve about 75mm and support it with a wooden block.
5. Slacken any flue clamp and lift the flue while moving the heater from beneath it.
6. Slide the heater away from the wall, supporting the flue and trim on a suitable spacer.
7. Keep the heater upright at all times to avoid displacing the logs.

1.4 REMOVING THE CABINET

1. Remove the front panel (Cardrona only), the dress guard (if fitted), the louvre assembly and the glass (in that order) as detailed in Section 1.1. For the Monaco, remove the bottom glass trim (one screw at each end and three into the firebox baseplate).
2. Remove all access panels (See Section 1.6.), the pedestal rear panel and the fan (if any).
3. Disconnect the gas supply.
4. Disconnect the flue, where applicable. See Section 1.3.
5. Remove the control knob (STD models) and disconnect the Piezo lead from the bottom of the Piezo (ACC models).
6. Remove the diverter hood from the rear of the cabinet.
7. Withdraw the screws holding the rear panel of the cabinet to the heat exchanger.
8. Extract all the screws under the bottom outer edge of the cabinet.
9. Remove the screws inside the front of the firebox which fix the firebox sides to the cabinet.
10. Remove any control rod(s).
11. The cabinet can now be lifted straight up. Take care not to lose the bush in the control panel (STD models).

1.5 REPLACING THE CABINET

1. Lower the cabinet carefully over the firebox until it reaches the firebox baseplate.
2. Re-connect the Piezo lead (if fitted).
3. Feed the control rod(s) up through the heat shield and the control panel (where applicable).
4. Attach the lower end of the rod(s) at the valve (as required).
5. Fit the bush on the control rod (STD models).
6. Replace all the cabinet retaining screws, taking care not to over-tighten.
7. Replace the screws holding the rear panel of the cabinet to the heat exchanger.
8. Replace the diverter hood at the rear of the cabinet.
9. Re-fit the control knob (STD models).
10. Replace the glass, the louvre assembly, the dress guard (if fitted) and the Cardrona front panel. See Section 1.2. Replace the Monaco front glass retainer, ensuring that the spacers are fitted on the end fastening screws between the glass retainer and the side panel to allow easy fitting of the side access panel.
11. Re-assemble the fan (if any), all access panels and the rear pedestal panel.
12. Re-install the flue and gas supply and check for gas leaks.

1.6 ACCESS PANELS

1.6.1 REMOVING THE REAR ACCESS PANEL

1. Remove two screws.
2. Lift the panel up and clear.

1.6.2 REPLACING THE REAR ACCESS PANEL

1. Offer the panel into position, hooking the lugs along the bottom over the upturned flange of the firebox baseplate, and re-fit the screws. Do not overtighten.

1.6.3 REMOVING THE SIDE ACCESS PANEL

1. Remove two screws below the panel. In the case of the Monaco, the whole of the right hand side of the cabinet is the access panel.
2. Pulling the lower edge outward.
3. Lower the panel until it is clear of the pins, and lift it clear.

1.6.4 REPLACING THE SIDE ACCESS PANEL

1. Fit the holes in the top flange of the panel over the top locating pins.
2. Pushing upward, swing the bottom of the panel in until the screw holes align.
3. Replace the two screws. Do not overtighten.

1.6.5 REMOVING THE PIEZO/FAN SWITCH ACCESS PANEL (Not ECS II)

1. Remove the screws securing the panel to the top rear of the cabinet.
2. Lift the panel clear.

1.6.6 REPLACING THE PIEZO/FAN SWITCH ACCESS PANEL (Not ECS II)

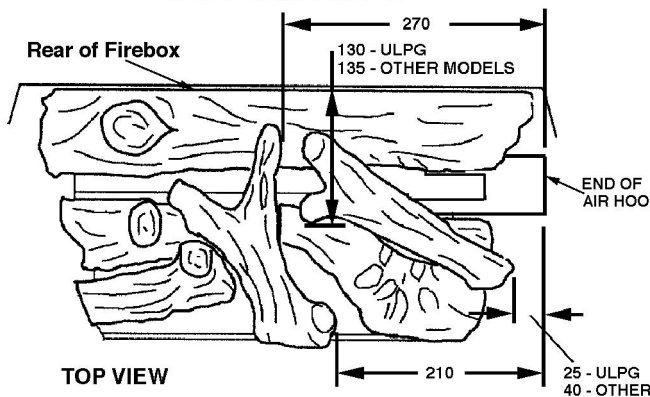
1. Offer the panel into position and re-fit the screws. Do not overtighten.

1.7 REMOVING AND REPLACING THE BURNER

1. Disconnect the gas and power supplies.
2. Remove any dress guard, the louvre assembly and glass . See Section 1.1.
3. Lift all the logs out carefully, remembering they are easily damaged. Before lifting each log, check that there are no wire 'skewers' fixing it to other logs. If there are skewers, withdraw them carefully, remembering where they are for replacement when re-assembling. The skewers are mainly for holding the logs during transit. It is normal for some to burn away during use.
4. Remove the embers from the burner top and store them in a plastic bag.
5. Inside the firebox, remove the air hood above the right rear of the burner (2 screws).
6. Remove the two front burner retaining screws, and lift out the burner by raising the end opposite the injector (the left hand end) first, and moving the burner about 10mm to the left to disengage it from the injector. Take care not to damage the igniter assembly.
7. Follow the above steps in reverse to replace the burner. When re-installing the embers, place them no further back than 50mm from the front of the burner, and do not block the ventilation slots.

NOTE: FOR QUICK IGNITION, IT IS IMPORTANT THAT THE SPARK GAP AND THE GAP BETWEEN THE EARTH TERMINAL AND THE FLAME SENSOR TERMINAL ARE DIRECTLY OVER THE GAS EMISSION HOLES IN THE BURNER. IF THEY ARE NOT, ADJUST THE BRACKET WHICH SUPPORTS THE TERMINAL ASSEMBLY ACCORDINGLY.

LOG POSITIONS



LOG IDENTIFICATION

Rear Log: Mounting centres 340mm
Left Centre Log: Mtg. crs. 115mm
Left Front Log: Mtg. crs 93mm
Right Lower Log: Mtg.crs 122mm
Right Upper Log length: 245mm
Centre Log length: 255mm

FITTING THE LOGS

Fit the first four logs on their mounting posts in the following order:-

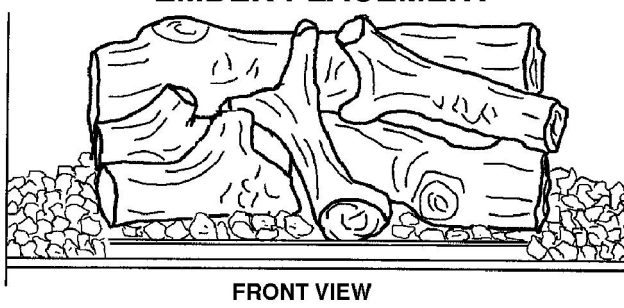
1. The Rear Log
2. The Left Centre Log
3. The Left Front Log.
4. The Right Lower Log

Then place the Right Upper Log on top of the hollow in the right lower log maintaining the dimensions as shown.

Place the Top Log with its butt end sitting against the raised front lip of the burner. Verify the correct distances to the end of the air hood.

Spread the embers as detailed above.
Re-fit the glass as described in 1.2.1.

EMBER PLACEMENT



1.8 REMOVING AND REPLACING THE PILOT ASSEMBLY

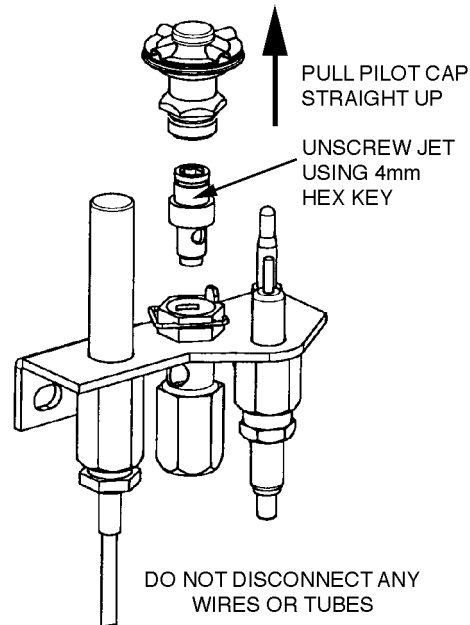
NOTE: EIS and ECS models have no pilot. The pilots fitted to the other models have top loading jets, so the jet can be removed without removing the pilot assembly. Pilot assembly removal should be rare.

1. Remove the burner, following steps 1 – 6 in Section 1.7.
2. Disconnect the Piezo wire, (the thermopile and thermocouple, if fitted) and the gas pipe to the pilot.
3. Withdraw the screws fixing the pilot assembly to the burner tray.
4. The pilot assembly can now be disconnected and lifted clear.
5. Follow the above order in reverse to replace the pilot assembly.

NOTE: Always smear ROCOL MOLYCOTE J166 on the pilot tube retaining nut threads when re-fitting the pilot tube.

1.9 ACCESSING THE PILOT JET

The pilot jet is reached for removal as illustrated, by pulling the cap upward and using a 4mm hex Allen key.



TOP LOADING PILOT
CORRECT SPARK GAP
4 - 5 mm.

1.10 ACCESSING THE MAIN INJECTOR

1. Remove the burner (See 1.7)
2. The injector can now be unscrewed from the gas pipe elbow.
3. When replacing an injector, it may be necessary to remove the pedestal front panel (simply lift it up, then toward you to lift it clear), so that the elbow can be aligned with the hole in the burner tray as the jet picks up the elbow thread. The jet should not be over-tightened, and a small amount of teflon thread sealant (not tape) should be applied to the thread to prevent gas leakage.

1.11 REMOVING CONTROL VALVES AND REGULATORS (Cardrona & Monaco)

1.11.1 STANDARD MODELS

1. Turn off the gas supply.
2. Remove the access panels. See Section 1.6.1 and 1.6.3.
3. Disconnect the gas pipe at the inlet to the regulator. See Drawing No 8.
4. Disconnect the pipe between the regulator and the control valve.
5. At the control valve, disconnect the pipes to the burner and the pilot.
6. Also disconnect the thermocouple connection to the control valve.
7. Disconnect the control rod.
8. After removing their mounting screws the pressure regulator and control valve can be lifted clear.
9. Re-assemble in the reverse order, taking care to check for gas leaks.

1.11.2 ACC MODELS

1. Turn off the gas supply.
2. Remove the access panels. See Section 1.6.1 and 1.6.3.
3. Disconnect the gas pipe at the inlet to the control valve. See Drawing No 9 & 10.
4. At the control valve, disconnect the pipes to the burner and the pilot.
5. Disconnect the thermocouple connection to the control valve.
6. Also disconnect the thermopile connection to the control valve.
7. Disconnect the thermostat wires (if any).
8. Disconnect the control rods.
9. After removing the mounting screws the control valve can be lifted clear.
10. Re-assemble in the reverse order, taking care to check for gas leaks. Correct wire connections are shown in the wiring diagram in 5.2.

1.11.3 ECS II Models

1. Turn off the gas supply.
2. Remove the side and rear access panels. See Section 1.6.1 and 1.6.3.
3. Remove the valve top heat shield.
4. Disconnect the thermodisc switch (on the rear of the firebox), the modulating coil (on the valve) and the earth terminal on the valve. Un-plug the ignition loom at the top of the control box.
5. Disconnect the spark wire, the flame sensing wire and the earth wire from the ignition module on the valve.
6. Leaving the ignition loom connected to the ignition module, carefully slide the ignition module vertically from its mounting on the gas control valve.
7. Disconnect the gas pipe at the inlet to the control valve. See Drawing No 11.
8. At the control valve, disconnect the pipes to the burner and the pilot.
9. Remove the two nuts holding the mounting cradle to the firebox baseplate and lift the valve and its cradle clear.
10. Re-assemble in the reverse order, taking care to check for gas leaks.

1.12 ACCESSING THE FAN ASSEMBLY

All CARDRONA and MONACO S2 Models

These have the fan assembly mounted inside the cabinet, above the firebox baseplate.

1. Un-plug the lead from the mains supply.
2. Remove the access panel on the rear of the cabinet.
3. There may be a shipping nut on one of the fan mounting posts. If so, remove it..
4. Carefully lift the fan assembly vertically, rotating the top of the assembly toward the firebox about 90 degrees, and then withdraw it from the cabinet.
5. If desired, separate the fan from the heater by disconnecting the loom at the connector plug and the earth terminal as necessary.
6. Reverse the extraction procedure when re-assembling. If the heater will not be tipped over in future, it is not necessary to replace the shipping nut on the fan mounting post.

1.13 REMOVING AND REPLACING THE PEDESTAL

1. Remove pedestal rear panel.
2. Remove the front panel, dress guard (if fitted), louvre assembly and glass . (See 1.1)
3. Remove the logs carefully. (See 1.7)
4. Remove the four screws retaining the pedestal to the baseplate.
5. Lift the firebox clear. Keep the firebox upright, or the fan may fall from its correct position.
6. Reverse the removal sequence when re-assembling the pedestal.

1.14 REMOVING AND REPLACING THE PEDESTAL FOOT

1. To remove the foot, carefully slide the foot and trim forward, keeping it in contact with the floor to avoid damaging the finish on the pedestal.
2. To replace the foot, make sure the decorative trim is correctly in place before sliding the foot and trim back around the pedestal, again keeping the foot in contact with the floor to avoid pedestal finish damage.

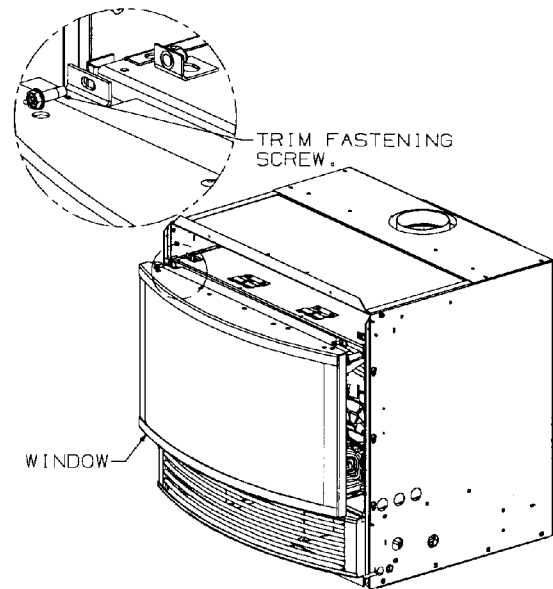
1.15 ACCESSING THE THERMODISC (Recent Cardronas & Monacos except Aust. STD)

1. Remove the cabinet rear access panel.
2. Remove the fan as detailed in 1.12. The Thermodisc is mounted on the rear of the firebox.

2. PICCOLO, SOFIA & MADRID ASSY & DIS-ASSEMBLY

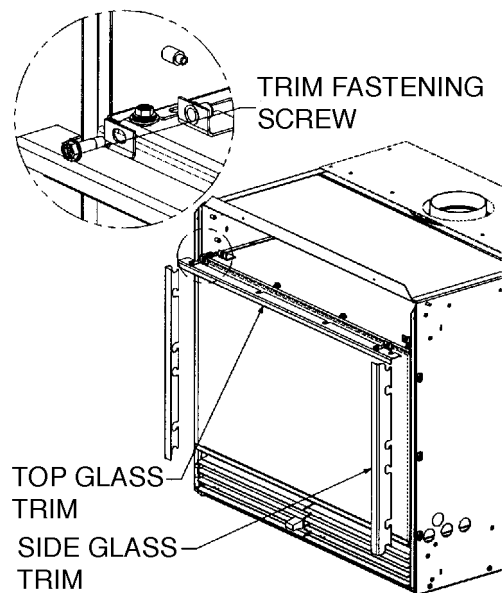
2.1 REMOVING AND REPLACING THE MADRID GLASS

1. Remove the top louvre assembly by lifting upward, then outward to clear the mounting pins.
2. Release the bottom grille retaining screw by turning it one quarter of a turn anticlockwise. Swing the bottom of the grille out slightly, then lift it up off its mounting pins.
3. If a dress guard is fitted, release it by springing out the clips which hook behind the vertical sides of the glass frame.
4. While supporting the glass bay window assembly, remove the two horizontal fastening screws (at the ends of the top of the assembly).
5. Pull the glass assembly outwards at the top until it is about 15° from vertical, then lift it up out of the bottom retaining channel in the base of the firebox.
6. To replace the glass assembly, follow the above steps in the reverse order, taking care to clean the inside surfaces of the glass assembly beforehand, and making sure that the glass sealing strips are correctly positioned when swinging the assembly into position.



2.2 REMOVING AND REPLACING THE PICCOLO & SOFIA GLASS

1. Remove the top louvre assembly by lifting upward then outward.
2. If a dress guard is fitted, remove the lower louvre assembly by releasing its retainer screw (one quarter turn anticlockwise), pulling the bottom slightly forward, and lifting it up clear of its mounting pins. Spring the bottom dress guard retaining clips downwards and swing the bottom of the guard out from the heater. Lift the guard off the two top retaining lugs.
3. Remove the two top glass trim fastening screws (positioned horizontally, one at each end of the trim), slide the trim toward you and lift it clear.
4. Remove the two black cover trims, one at either end of the glass, by prising them upwards with a small screwdriver. Then lift them out. Pull the top of the trim forward before the bottom. While doing this, support the glass to prevent it falling forward.
5. Lift the glass clear and place it where it will not be damaged.
6. To replace the glass assembly, follow the above steps in the reverse order, taking care to clean the inside surface of the glass assembly beforehand, and making sure that the glass sealing strips are correctly positioned when fitting the glass.



2.3 FITTING THE LOUVRE ASSEMBLIES AND DRESS GUARDS

2.3.1 LOUVRE ASSEMBLIES (All models)

All louvre assemblies hang on two mounting pins at the top.

1. To fit top a louvre assembly, engage the hooks at the top of the assembly on its mounting posts and swing the bottom back into position. Press downward gently to ensure the hooks are fully engaged.

2. Confirm correct engagement by pulling forward gently on the top of the louvre assembly.
3. To fit a bottom louvre assembly, fit it as for a top assembly, but make sure the retainers screw at the bottom engages with its clip and then push in on the head of the screw until it 'clicks'.

2.3.2 DRESS GUARDS (IF REQUIRED)

Madrid:

1. The guard is retained simply by clipping its retaining lugs between the glass and the steel frame at each side of the curved glass.

Piccolo and Sofia:

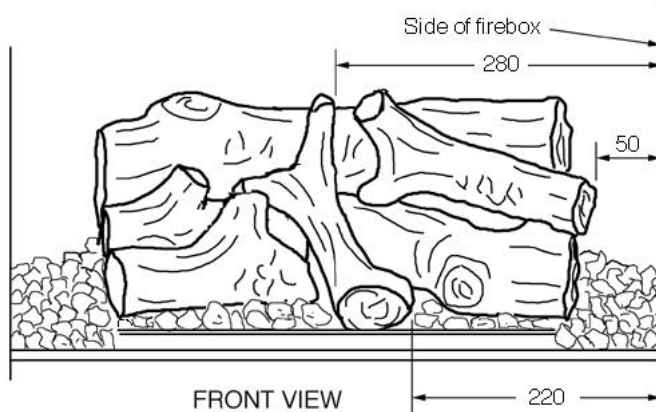
1. The louvre assemblies must be removed for fitting and removing the dress guard.
2. Angling the guard forward at the top, fit the two lugs at the top of the guard over the lugs at each end of the top glass trim.
3. Swing the lower edge of the guard inwards to engage the bottom lugs under the firebox base..
4. Replace the louvre assemblies.

2.4 REMOVING AND REPLACING THE BURNER

1. Turn off the gas and disconnect any power supply.
2. Remove any dress guard, the louvre assemblies and the glass . See above.
3. Lift all the logs out carefully, remembering they are easily damaged. Before lifting each log, check that there are no wire 'skewers' fixing it to other logs. If there are skewers, withdraw them carefully, remembering where they are for replacement when re-assembling. The skewers are mainly for holding the logs during transit. It is normal for some to burn away during use.
4. Remove the embers from the burner top and store them in a plastic bag.
5. Inside the firebox, remove the air hood above the right rear of the burner (2 screws).
6. Remove the two front burner retaining screws, and lift out the burner by raising the end opposite the injector (the left hand end) first, and moving the burner about 10mm to the left to disengage it from the injector. Take care not to damage the igniter assembly.
7. Follow the above steps in reverse to replace the burner.

NOTE: FOR QUICK IGNITION IT IS IMPORTANT THAT THE SPARK GAP AND THE GAP BETWEEN THE EARTH TERMINAL AND THE FLAME SENSOR TERMINAL ARE DIRECTLY OVER THE GAS EMISSION HOLES IN THE BURNER. IF THEY ARE NOT, ADJUST THE BRACKET WHICH SUPPORTS THE TERMINAL ASSEMBLY ACCORDINGLY.

LOG POSITIONS



LOG IDENTIFICATION

Rear log mtg. centres - 340 mm
 Left Centre log mtg. centres - 115 mm
 Left Front log mtg centres - 93 mm
 Right Lower log mtg. centres - 122 mm
 Right Upper log length - 245 mm
 Centre log length - 255 mm

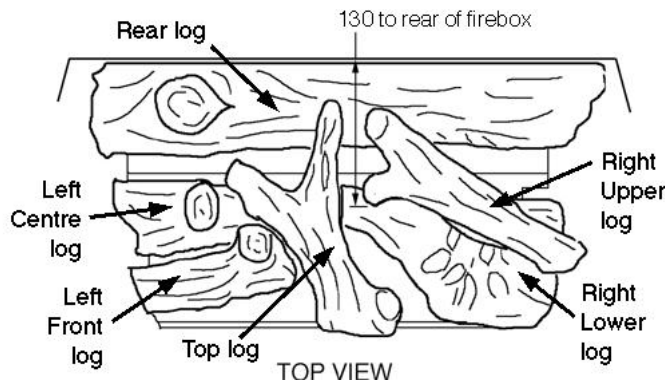
Fit the first four logs on their mounting posts in the following order:-

1. The Rear log
2. The Left Centre log
3. The Left Front log
4. The Right Lower log

Place the right Upper log on top of the hollow in the right Lower log as illustrated, maintaining the 130 dimension shown.

Place the Top log, positioned as shown with its butt end sitting against the raised front lip of the burner. Verify the correct distances to the right side of the firebox.

5. Spread embers between and under the logs to 50 mm back from front lip of burner, and also on the floor of the firebox at each side of the burner. Do not block the ventilation slots in the burner.



2.5 REMOVING AND REPLACING THE PILOT ASSEMBLY

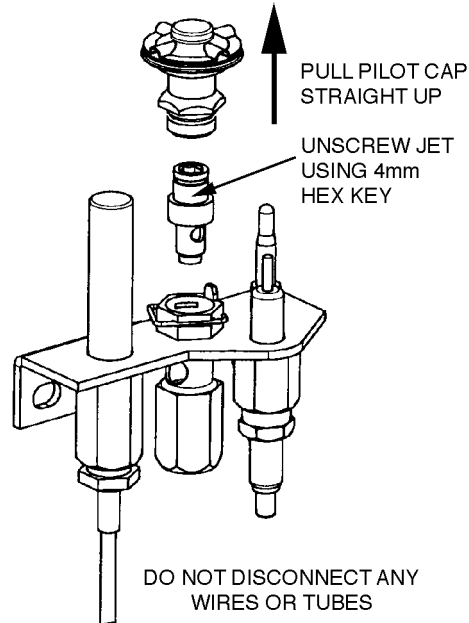
NOTE: EIS models have no pilot. The pilots fitted to the Piccolo have top loading jets, so the jet can be removed without removing the pilot assembly. Pilot assembly removal should be rare.

1. Remove the burner, following steps 1 – 6 in Section 2.4.
2. Disconnect the Piezo wire, (the thermopile and thermocouple, if fitted) and the gas pipe to the pilot.
3. Withdraw the screws fixing the pilot assembly to the burner tray.
4. The pilot assembly can now be disconnected and lifted clear.
5. Follow the above order in reverse to replace the pilot assembly.

NOTE: Always smear ROCOL MOLYCOTE J166 on the pilot tube retaining nut threads when re-fitting the pilot tube.

2.6 ACCESSING THE PILOT JET

The pilot jet is reached for removal as illustrated below.



TOP LOADING PILOT CORRECT SPARK GAP — 4 - 5 mm.

2.6 ACCESSING THE MAIN INJECTOR

1. Remove the burner. See 2.4.
2. The injector can now be unscrewed from the gas pipe elbow.
3. When replacing an injector, it will be necessary to align the elbow to enable the injector to pick up the thread in the elbow. The injector should not be over-tightened, and a small amount of teflon thread sealant (not tape) should be applied to the thread to prevent gas leakage.

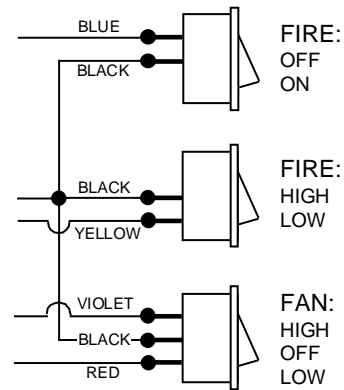
2.7 ACCESSING THE CONTROL VALVE

1. Remove the glass or glass assembly. See 2.1 or 2.2.
2. Turn off the gas and un-plug the lead from the mains power supply.
3. Disconnect the gas supply pipe at the inlet to the control valve.
4. Remove the logs and embers. See 2.4, steps 2 – 4.
5. Extract the screws holding the burner tray to the firebox base.
6. Lift the burner tray clear. The control valve and pilot assembly lift clear as a complete assembly and these parts can be removed and serviced as required.
7. Reassemble in the reverse order, taking care to check for gas leaks.

2.8 REMOVING AND REPLACING THE FASCIA

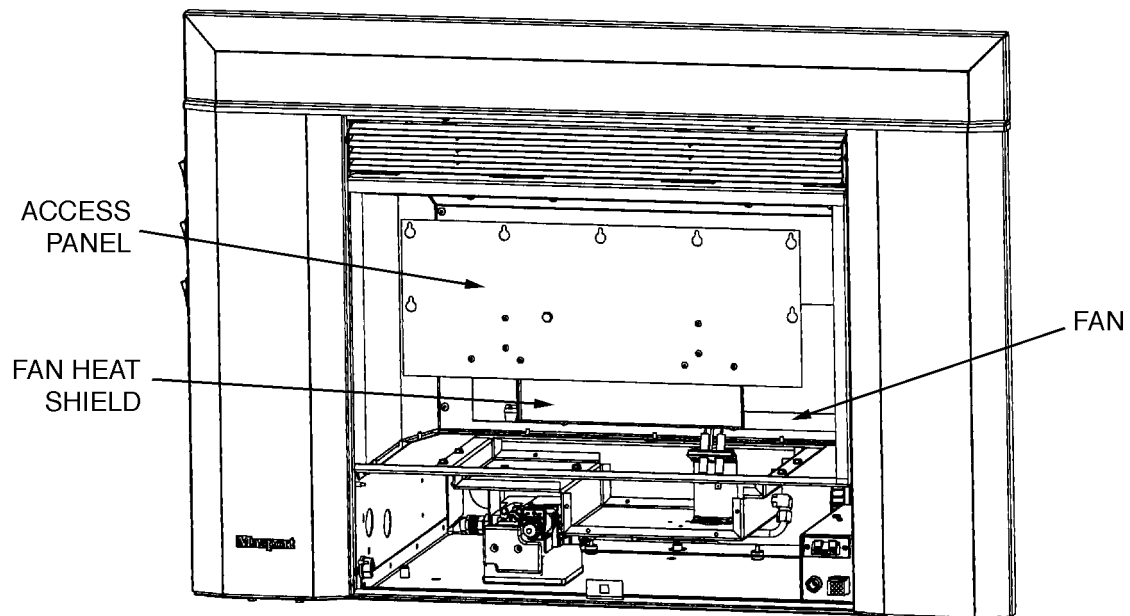
1. Un-plug the lead from the mains supply.
2. Extract the six screws, two each side and two at the top, which hold the fascia to the firebox cabinet.
3. Taking care not to strain the wiring looms, ease the fascia away from the firebox. The looms can be disconnected at the switches, if necessary, by carefully prising the connectors from the spade terminals.

4. Before re-fitting the fascia, make sure the looms are connected to the switches correctly.



2.9 ACCESSING THE FAN

1. Un-plug the lead from the mains supply.
2. Remove the glass. See 2.1 and 2.2.
3. Remove the logs and embers.
4. Remove the screws holding the rear access panel to the inside of the back of the firebox. Later models have keyholes for the screws, so they do not need to be removed completely.
5. The fan heatshield is an integral part of the access panel, and it comes clear as the panel is removed by lifting upwardly.



6. Lift the fan assembly from its locating posts. It may be necessary first to remove a shipping nut from one of the threaded locating posts. There is usually no need to replace this shipping nut.
7. Lift the fan up and angle it out through the access hole in the rear of the firebox. To remove it completely, disconnect the electrical connections.
8. Assembly is a reversal of the extraction procedure. Take care to engage the fan assembly on the locating posts without dislodging the four rubber mounting bushes.

2.10 ACCESSING THE THERMODISC (If fitted)

The function of the thermodisc is to automatically start the fan after the heater has reached a sufficiently high temperature, and to stop the fan when the heater has cooled after being shut down.

1. Thermodiscs may be in one of two positions. Early models had them fitted behind the firebox, and they could be reached by removing the fan access panel as detailed above.
2. Later models have the Thermodisc mounted under the burner tray. These can be reached by removing the lower grille.

3. SERVICE ADJUSTMENTS

3.1 GAS PRESSURE ADJUSTMENT — CARDRONA and MONACO S2

All pressure adjustments must be made while the heater is operating.

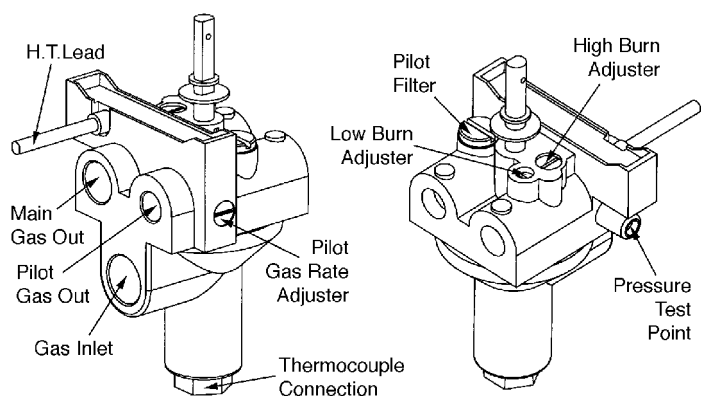
Part or all of the right hand side panel of the cabinet may be removed to gain access to the gas valve. See ACCESS POINTS on page 11.

GAS PRESSURES kPa	ECS II			ACC			STD		
	NG	ULPG	PROP	NG	ULPG	PROP	NG	ULPG	PROP
High Pressure	0.9	2.0	2.0	0.85	2.2	2.2	0.85	2.2	2.2
Turndown Pressure	0.35	0.5	0.5	0.43	1.36	1.36	0.23	0.7	0.7

3.1.1 STD MODELS. These have a pressure regulator separate from the control valve. Set the pressure to the figures in the Table. The pressure test point is on the side of the **regulator** and the adjusting screw is on the top.

1. Slacken the lock-nut and rotate the screw by hand, screwing in to increase the pressure.
2. After adjusting, tighten the lock nut and confirm the correct pressure.

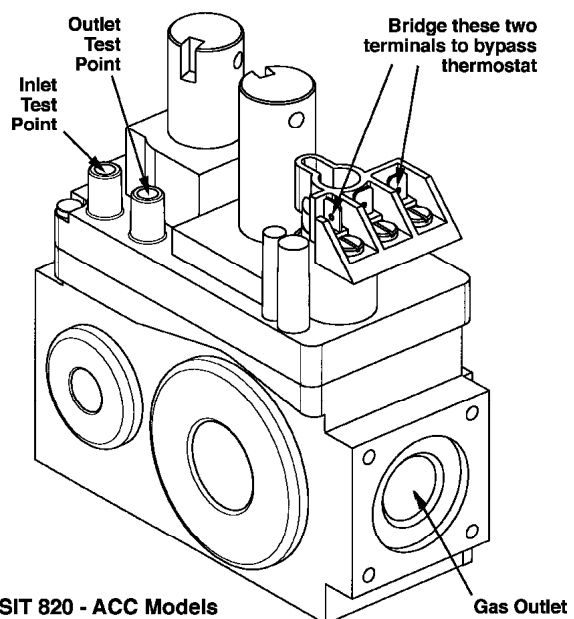
3. Use the pressure test point on the **valve** to check the turndown pressure. It is adjusted by turning the small screw on the valve.



BM 733 VALVE — STD Models

3.1.2 ACC MODELS. These have a pressure regulator inside the control valve. There are two test points side by side on top of the control valve – the outlet pressure test point is the one closer to the flame size control.

1. If adjustment is necessary, uncouple the control rod from the top of the flame size control knob on the valve, extract the screw down the centre of this knob and pull the knob off vertically.
2. The high pressure is then set by rotating the knurled plastic wheel exposed by removing the knob.
3. Once the pressure is correct (see Table), care must be taken not to turn the plastic wheel when the knob is re-fitted in its maximum anti-clockwise position. This position is set when the skirt of the knob contacts the adjacent metal up-stand.
4. After re-fitting, rotate the knob clockwise and then fully anti-clockwise to verify that the pressure is correct before replacing the retaining screw and re-coupling the control rod.

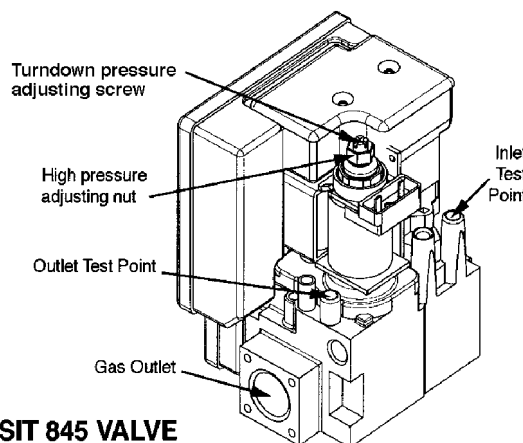


SIT 820 - ACC Models

5. The turndown pressure is not independently adjustable. It should approximate the values shown in the Table.

3.1.3 ECS II MODELS. These also have a pressure regulator in the control valve. The outlet pressure test point is on the top of the control valve and is the one furthest from the gas inlet connection. There are two pressure settings to adjust, high and turndown.

1. Access to the adjusters is gained by first removing the heat shield above the valve and then removing the protective transparent cap at the top of the control valve modulating coil. This will expose the central screw (turndown pressure adjuster) and a 10mm hexagonal nut surrounding it (high pressure adjuster). Note that the modulating coil may be rotated through 90° if necessary to provide easier access for pressure adjustments. Before adjusting the high pressure, the fire must be alight and burning at the 'HIGH' setting.
2. Set the high pressure first to the figure in the Table. Adjust, if necessary, by rotating the 10mm nut, screwing down to increase the pressure.
3. To set the turndown pressure, select the lowest heat setting on the remote control. Adjust the turndown pressure to the figure in the Table by rotating the central Phillips head screw, taking care not to shift the position of the already adjusted 10mm hex. nut. Screw down to increase the pressure. Be careful to use the correct screwdriver when making this adjustment as the head of the turndown pressure adjusting screw is easily damaged. Before finishing the job, move the screwdriver clear of the adjuster and verify that the pressure is still correct. Sometimes the proximity of a steel screwdriver can upset the turndown pressure setting.
4. Replace the protective plastic cap above the adjusters, and re-fit the heat shield above the valve.



3.2 GAS PRESSURE ADJUSTMENT – PICCOLO, SOFIA and MADRID

All pressure adjustments must be made while the heater is operating.

Access for pressure adjusting is gained by removing the lower louvre assembly.

GAS PRESSURES kPa	PICCOLO			SOFIA			MADRID		
	NG	ULPG	PROP	NG	ULPG	PROP	NG	ULPG	PROP
High Pressure	0.75	2.1	2.1	0.82	2.3	2.3	0.82	2.3	2.3
Turndown Pressure	0.30	0.9	0.9	0.35	1.0	1.0	0.35	1.0	1.0

3.2.1 PICCOLO MODELS. The injector pressure is controlled by a separate regulator. Follow the instructions in 3.1.1 to make the adjustments, setting the pressures to the values shown in the table above. (In this case, the adjusting screw is under the regulator).

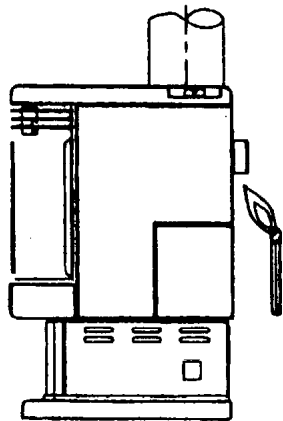
3.2.2 SOFIA and MADRID (EIS) MODELS . The pressure regulator for these models is built into the gas valve. As the valve is mounted on its side, the 'top' of the valve is facing directly forward from under the burner tray.

1. Remove the protective transparent cap on the control valve modulating coil. (See illustration in 3.1.3.1). This will expose the central screw (turndown pressure adjuster) and a 10mm hexagonal nut surrounding it (high pressure adjuster). Note that the modulating coil may be rotated through 90° if necessary to provide easier access for pressure adjustments. Before adjusting the high pressure, the fire must be alight and burning at the 'HIGH' setting.
2. Set the high pressure first to the figure in the Table. Adjust, if necessary, by rotating the 10mm nut, screwing in to increase the pressure.

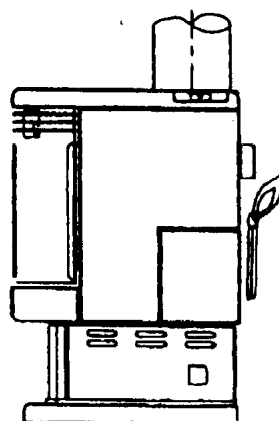
3. To set the turndown pressure, set the switch on the side of the fascia to LOW, and adjust the turndown pressure to the figure in the Table by rotating the central Phillips head screw, taking care not to shift the position of the already adjusted 10mm hex. nut. Screw in to increase the pressure. Be careful to use the correct screwdriver when making this adjustment as the head of the turndown pressure adjusting screw is easily damaged. Before finishing the job, move the screwdriver clear of the adjuster and verify that the pressure is still correct. Sometimes the proximity of a steel screwdriver can upset the turndown pressure setting.
4. Replace the protective plastic cap around the adjusters, and re-fit the lower louvre assembly.

3.3 CHECKING THE FLUE DRAUGHT – CARDRONA and MONACO

After the fire has been alight on ‘HIGH’ for five minutes, hold a smoking taper or match at the inlet to the draught hood (behind the heater) to verify that the flue is drawing correctly and that flue gases are not spilling into the room.



Drawn in: No spillage

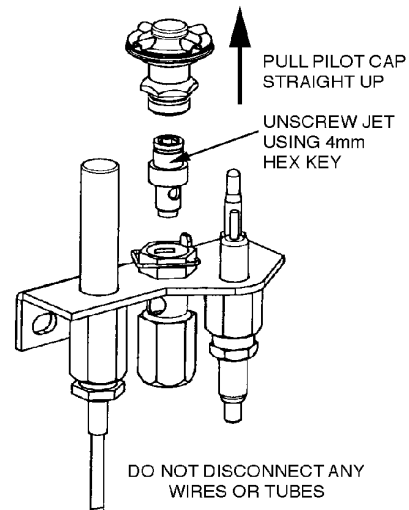


Blown out: Spillage/Backdraughting

4 CONVERSION

4.1 CONVERTING CARDRONA STD and ACC FIRES

1. Remove the glass, logs, embers and burner. See section 1.



2. Remove the pilot jet (See 1.9) and fit the new pilot jet. (0.51 for NG, or 0.35 for ULPG and PROP).

3. Remove main jet (injector) from the elbow at the right end of the burner tray, and fit the new jet in its place. (2.96 for NG, or 1.8 for ULPG and PROP).
Note. When replacing an injector, it should not be over-tightened, and a small amount of teflon thread sealant (not tape) should be applied to the thread to prevent gas leakage.
4. Replace the burner and re-install the logs, embers and glass etc. as previously detailed. See section 1.
5. Remove the side and rear access panels to expose the control valve. See 1.6.
6. For ACC models only, disconnect the HI/LO control rod at the top of the SIT 820 valve, remove the knob and change the pressure regulator directly under the knob for the new one supplied with the conversion kit. (It may be necessary to remove the valve from the heater if you do not have a special short screwdriver for the regulator retaining screws). Re-assemble the valve, using the new knob supplied with the kit, and refit the control rod, ensuring that the knob at the top of the rod aligns correctly with the wording on the heater.
7. Connect the gas supply and check all new joints for gas leaks.
8. Adjust the high and turndown gas pressures as detailed in section 3. The pressures are:-

GAS PRESSURES kPa	ECS II			ACC			STD		
	NG	ULPG	PROP	NG	ULPG	PROP	NG	ULPG	PROP
High Pressure	0.9	2.0	2.0	0.85	2.2	2.2	0.85	2.2	2.2
Turndown Pressure	0.35	0.5	0.5	0.43	1.36	1.36	0.23	0.7	0.7

9. Replace the side and rear access panels.
10. Carry out a full test firing procedure as described in the installing and operating manual.

4.2 CONVERTING MONACO S2 ACC FIRES

1. Remove the glass, logs, embers and burner. See section 1.
2. Remove the pilot jet (See 1.9) and fit the new pilot jet. See 4.1. (0.51 for NG, or 0.35 for ULPG and PROP). See 4.1.2 for illustration.
3. Remove main jet (injector) from the elbow at the right end of the burner tray, and fit the new jet in its place. (2.96 for NG, or 1.8 for ULPG and PROP).
Note. When replacing an injector, it should not be over-tightened, and a small amount of teflon thread sealant (not tape) should be applied to the thread to prevent gas leakage.
4. Replace the burner and re-install the logs, embers and glass etc. as previously detailed. See section 1.
5. Remove the side and rear access panels to expose the control valve. See 1.6.

6. Connect the gas supply and check all new joints for gas leaks.
7. Adjust the high and turndown gas pressures as detailed in section 3. The pressures are:-

GAS PRESSURES - kPa	NG	ULPG	PROP
High Pressure	0.85	2.2	2.2
Turndown Pressure	0.43	1.36	1.36

8. Replace the side and rear access panels.
9. Carry out a full test firing procedure as described in the installing and operating manual.

4.3 **CONVERTING MONACO S2 ECS II FIRES**

1. Remove the glass, logs, embers and burner. See section 1.
2. Remove main jet (injector) from the elbow at the right end of the burner tray, and fit the new jet in its place. (2.96 for NG, or 1.8 for ULPG and PROP).
Note. When replacing an injector, it should not be over-tightened, and a small amount of teflon thread sealant (not tape) should be applied to the thread to prevent gas leakage.
3. Replace the burner and re-install the logs, embers and glass etc. as previously detailed. See section 1.
4. Remove the side and rear access panels to expose the control valve. See 1.6.
5. Connect the gas supply and check all new joints for gas leaks.
6. Adjust the high and turndown gas pressures as detailed in section 3. The correct pressures are:-

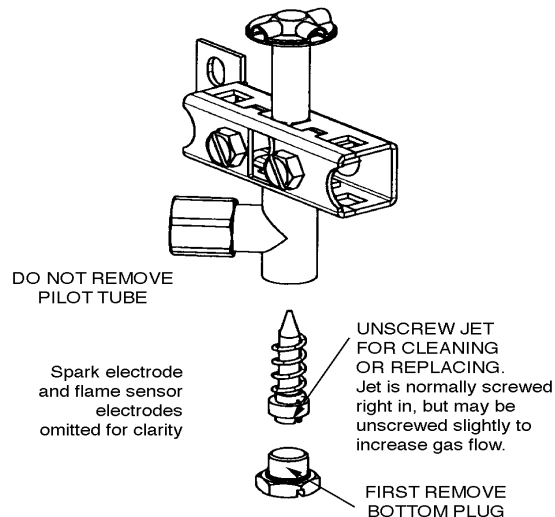
GAS PRESSURES - kPa	NG	ULPG	PROP
High Pressure	0.9	2.0	2.0
Turndown Pressure	0.35	0.5	0.5

7. Replace the side and rear access panels.
8. Carry out a full test firing procedure as described in the installing and operating manual.

4.4 **CONVERTING PICCOLO FIRES**

1. Remove the glass, logs, embers and burner. See section 2.
2. Remove the pilot jet (See 2.6) and fit the new pilot jet. See 4.1. (0.51 for NG, or 0.35 for ULPG and PROP). See 4.1.2 for illustration. These sizes are for the 'pull off' type of pilot fitting similar to the one shown in 4.1.2 (but with no thermopile). Early models with the side entry pilot fitting take 0.35 for NG, or 0.2 for ULPG and PROP.

EARLY SIDE ENTRY PICCOLO PILOT ARRANGEMENT



3. Remove main jet (injector) from the elbow at the right end of the burner tray, and fit the new jet in its place. (2.96 for NG, or 1.7 for ULPG and PROP).
Note. When replacing an injector, it should not be over-tightened, and a small amount of teflon thread sealant (not tape) should be applied to the thread to prevent gas leakage.
4. Replace the burner and re-install the logs, embers and glass etc. as previously detailed. See section 2.

5. Connect the gas supply and check all new joints for gas leaks.
6. Adjust the high and turndown gas pressures as detailed in section 3.2.1. The correct pressures are:-

GAS PRESSURES - kPa	NG	ULPG	PROP
High Pressure	0.75	2.1	2.1
Turndown Pressure	0.30	0.9	0.9

7. Replace the louvre assemblies.
8. Carry out a full test firing procedure as described in the installing and operating manual.

4.4 CONVERTING SOFIA and MADRID EIS FIRES

1. Remove the glass, logs, embers and burner. See section 2.
2. Remove main jet (injector) from the elbow at the right end of the burner tray, and fit the new jet in its place. (2.96 for NG, or 1.7 for ULPG and PROP).

Note. When replacing an injector, it should not be over-tightened, and a small amount of teflon thread sealant (not tape) should be applied to the thread to prevent gas leakage.

3. Replace the burner and re-install the logs, embers and glass etc. as previously detailed. See section 2.
4. Connect the gas supply and check all new joints for gas leaks.
5. Adjust the high and turndown gas pressures as detailed in section 3.2.2. The correct pressures are:-

GAS PRESSURES - kPa	NG	ULPG	PROP
High Pressure	0.82	2.3	2.3
Turndown Pressure	0.35	1.0	1.0

6. Replace the louvre assemblies.
7. Carry out a full test firing procedure as described in the installing and operating manual.

5 REMOTE CONTROL INSTALLATION

5.1 ACC and EIS models only

This RF system has a remote handpiece containing a thermostat which starts and stops the heater as the room temperature requires. It can be programmed (like the ECS II remote control), but the remote does not control fan speeds or moderate the flame height.

1. **MOUNTING THE RECEIVER.**
The RF system does not require line-of-sight between the handpiece and the receiver. For freestanding fires, mount the receiver at the rear of the pedestal, using two of the screws which hold the pedestal rear panel in place. If you will be using the mains adaptor, choose the side of the pedestal more conveniently placed for the power point. For in-built fires, mount the receiver on the wall adjacent to the fire.
2. The receiver can operate either on batteries contained within it, or it can be powered by an optional plug-in mains adaptor.
3. Fit a 2 core lead between the terminals on the receiver and the thermostat terminals of the heater. On freestanding fires they are mounted on the back of the cabinet, while on in-built models they are on the front of the control box just inside the lower grille assembly.
4. Instructions for programming the system and operating it are detailed in a separate publication.

6. ECS II INFORMATION

6.1 BASIC DESCRIPTION – MONACO S2 ECS II

The main components are:-

The HANDPIECE. This is a battery powered radio frequency hand held remote control which gives complete control over all the functions of the heater. It can operate in three modes — MANUAL, AUTO and PROGRAM.

In the MANUAL mode there is no thermostatic operation as the flame height and fan speed are selected as desired by the operator.

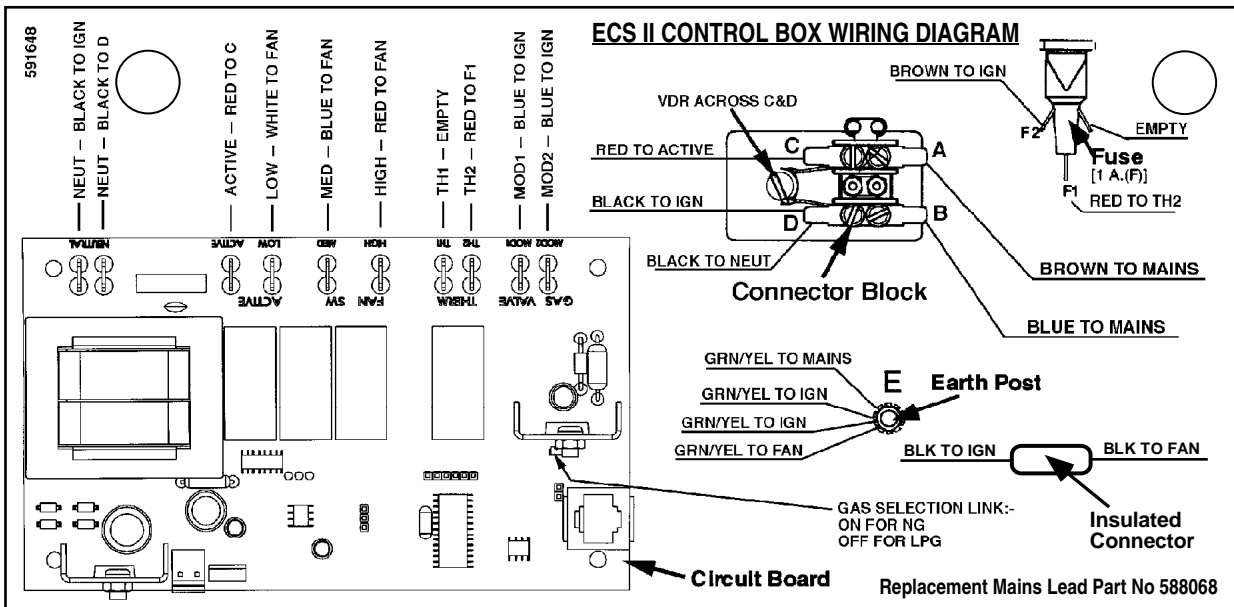
In the AUTO mode, pre-selected temperatures are maintained by the thermostat in the handpiece, and the fan turns on as the fire lights.

IN the PROG mode, there can be two selected time periods for each day of the week, and for each period a different room temperature may be selected. The fire modulates depending on the difference between the room temperature and the desired room temperature, as does the fan speed.

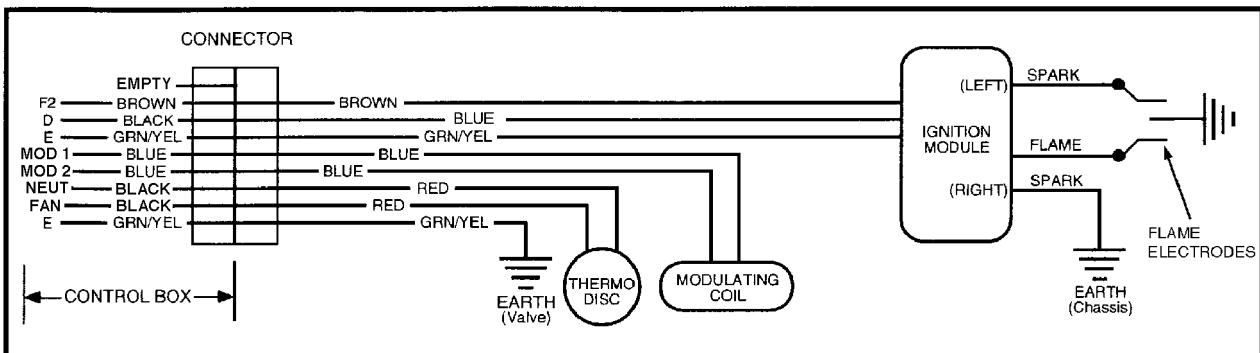
Full details of the operation and programming of the ECS II control system are provided in a separate publication.

As this is an RF system, there is a wire aerial to receive the signal at the back of the pedestal.

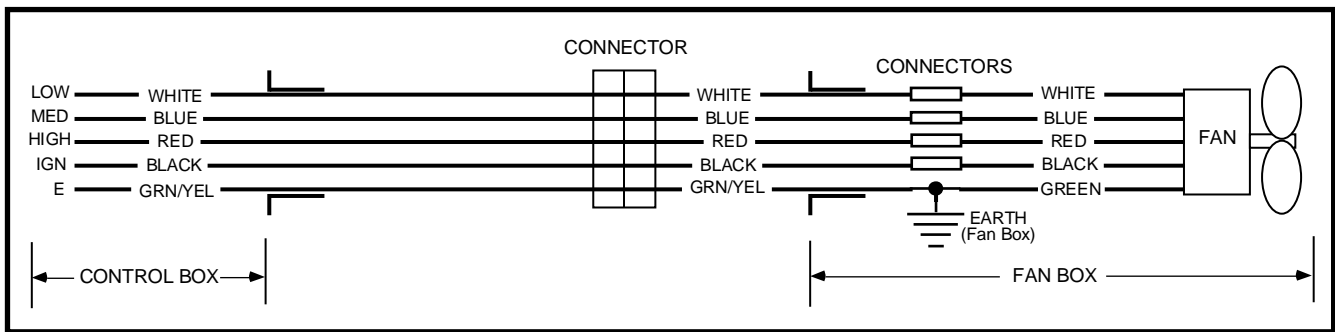
The handpiece is supplied with a cradle for wall mounting if this is preferred.



NOTE: If the supply cord is damaged it must be replaced by the manufacturer or its service agent or a similarly qualified person in order to avoid a hazard.



ECS II IGNITION LOOM WIRING

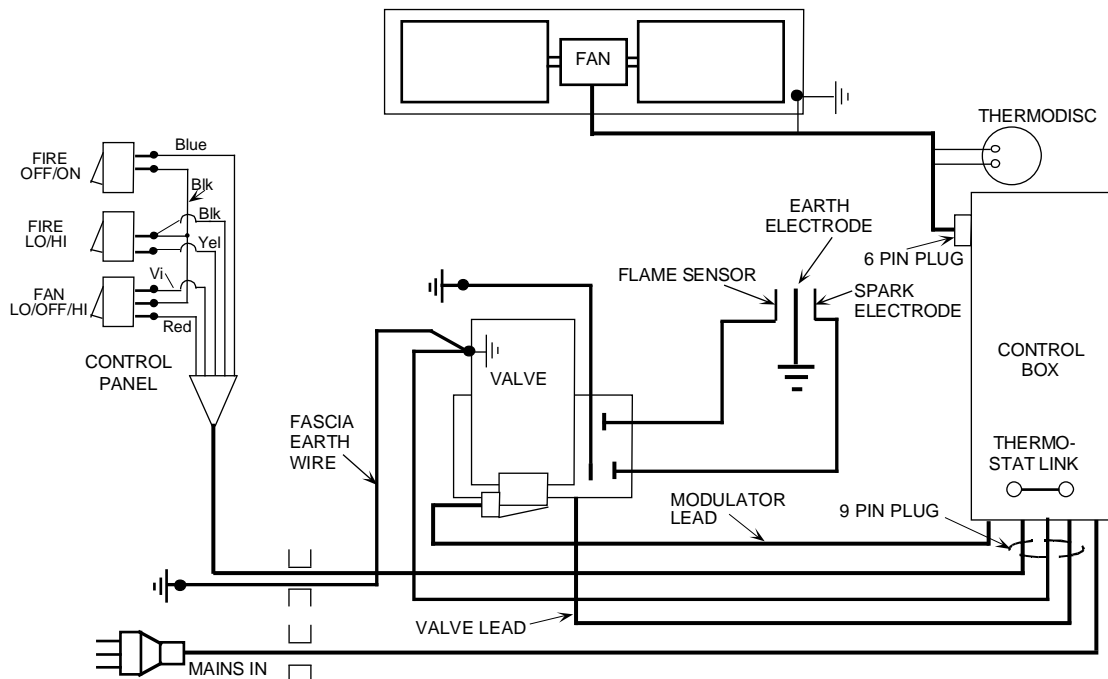


ECS II FAN LOOM WIRING

7. EIS INFORMATION

7.1 BASIC DESCRIPTION

The EIS system is an Electronic Ignition System which lights the fire each time heat is required. There is no pilot light, so economies in gas consumption can be significant. The basic system is illustrated below.



EIS SCHEMATIC ELECTRICAL LAYOUT

This system has no remote control, but it can utilise a wall mounted thermostat to maintain the required room temperature.

The CONTROL BOX is mounted in the bottom right hand corner of the cabinet surrounding the firebox. It contains a transformer which feeds the 24 volt thermostat circuit. This circuit, through a relay, switches the mains supply to the valve to initiate the flame starting sequence.

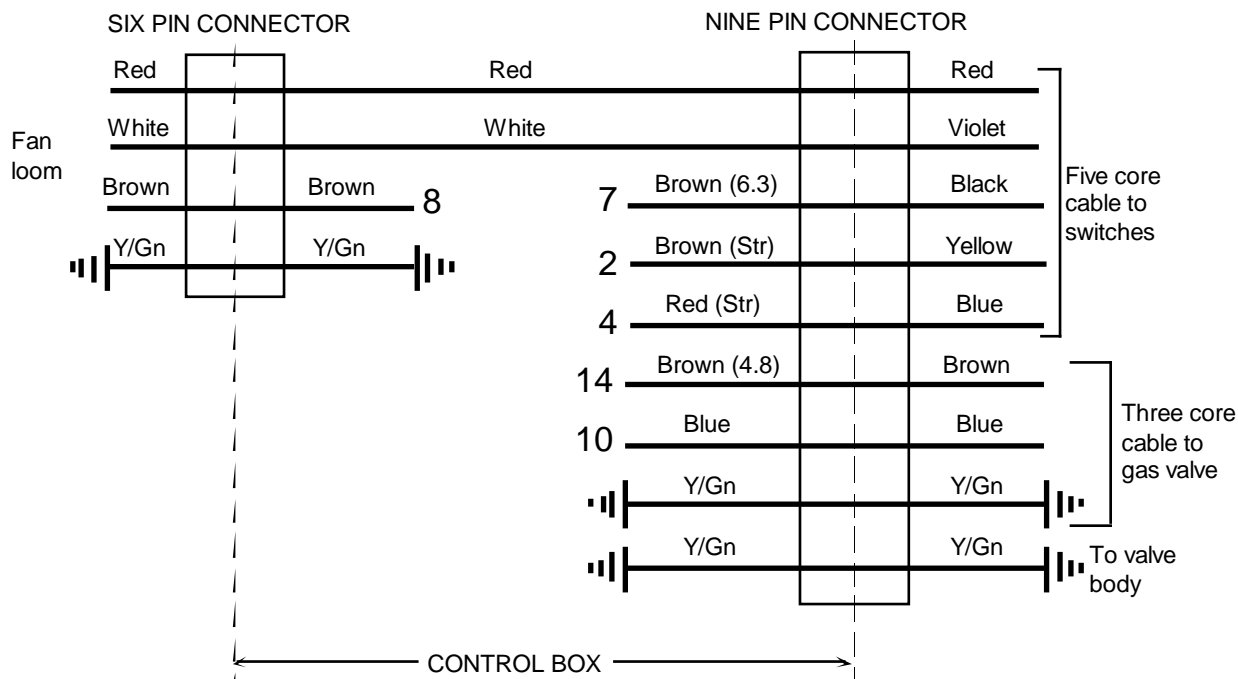
The THERMOSTAT TERMINALS are on the front of the control box. If a thermostat is not fitted, these terminals must be shorted by a jumper wire.

The VALVE initiates a spark at the igniter terminals after a deliberate delay of a few seconds. If the flame does not light within about 30 seconds, the FLAME SENSOR detects this, and the spark ceases. To reset the system for a further ignition attempt, it is necessary to switch off the mains supply to the control box.

The SWITCH CLUSTER, mounted on the left side of the fascia, signals the control box to initiate ignition (if the thermostat will allow it), as well as providing a HIGH/LOW control for the flame height, and OFF/LOW/HIGH control of the fan speed.

The THERMODISC controls the fan in the usual way, delaying the fan start until the firebox has heated, and allowing the fan to continue running after the fire is extinguished until the firebox has cooled. Some Thermodiscs are mounted at the rear of the firebox (accessible through the fan access panel), while others are mounted under the right front floor of the burner tray.

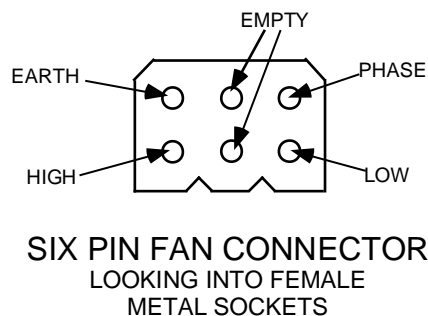
- Switch the HI / LO switch on the fascia to HI. Check for 230 volts across 2 & 3 (or 5 & 6) in the control box. If dead, check the 5 - core loom and its connections between the control box and the switch cluster. If the voltage at 2 & 3 is OK, and the modulator coil resistance is correct, the modulator lead from the control box to the modulator coil is faulty.



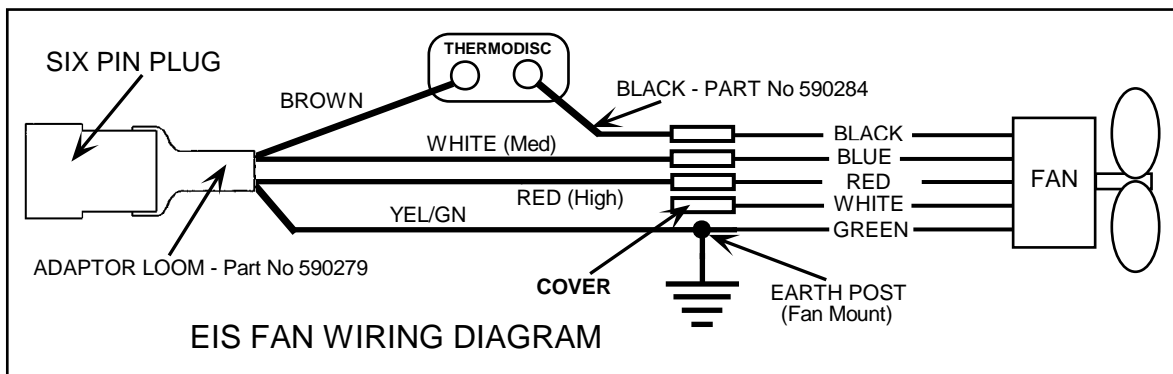
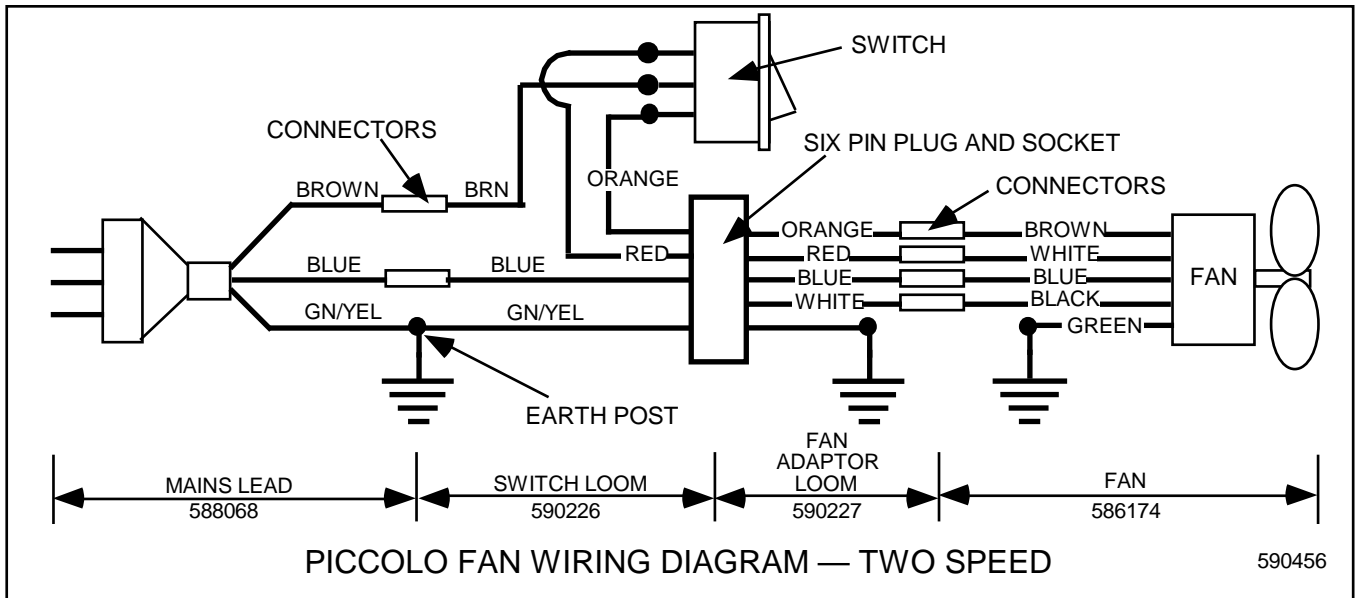
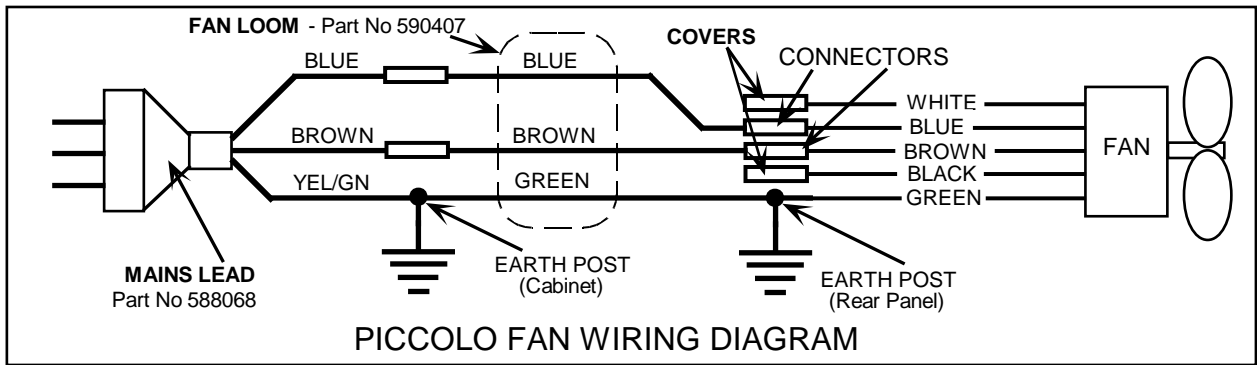
EIS CONNECTOR DIAGRAM

7.4 FAN WILL NOT RUN. Remember, if a Thermodisc is fitted to the heater, the fan will not start until the heater has been running for at least ten minutes.

- Check for mains voltage at the six-pin connector with the fascia fan switch at its various positions. If correct, go to step 3.
- If faulty, check the 5-core lead between the control box and the switches on the fascia. Particularly check the connections to the fan switch, and check the action of the switch to eliminate a faulty switch.
- If a Thermodisc is fitted, disconnect the leads at the terminals of the Thermodisc and fit a jumper wire between the leads. If this clears the fault, the Thermodisc is faulty, but remember the warm-up period for the Thermodisc mentioned above.
- With the jumper wire across the Thermodisc leads still in place, check for continuity in the fan wiring from phase to LOW and from phase to HIGH at the male pins of the six pin connector. Discontinuity could be in the fan loom, or failing that, in the windings of the fan motor itself.

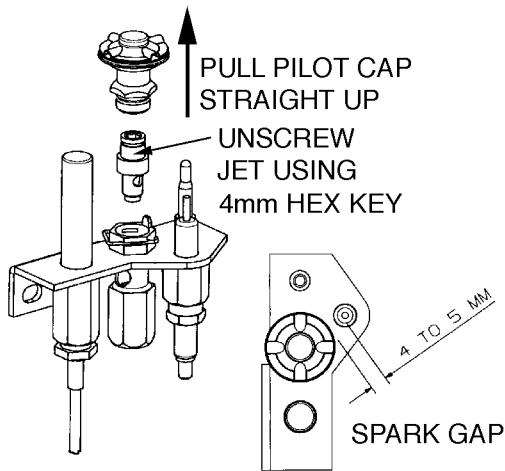


FURTHER WIRING DIAGRAMS

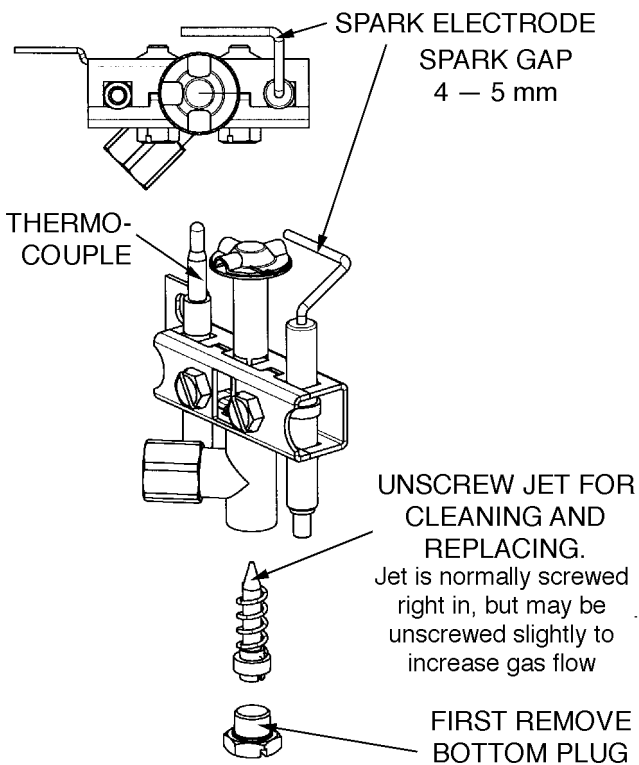


DRAWING 1

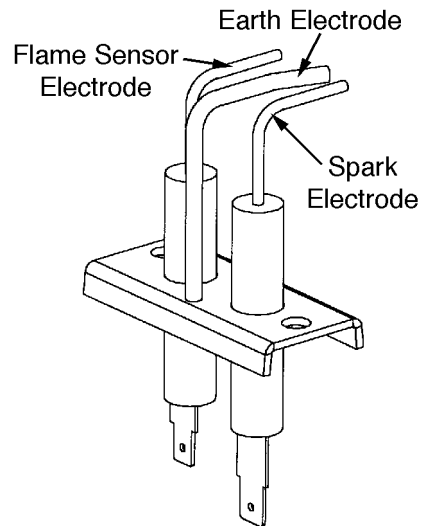
IGNITER ASSEMBLIES



USED ON:
 CARDRONA STD, ACC
 MONACO S2 ACC
 PICCOLO from March 2004,
 with no Thermopile bulb.



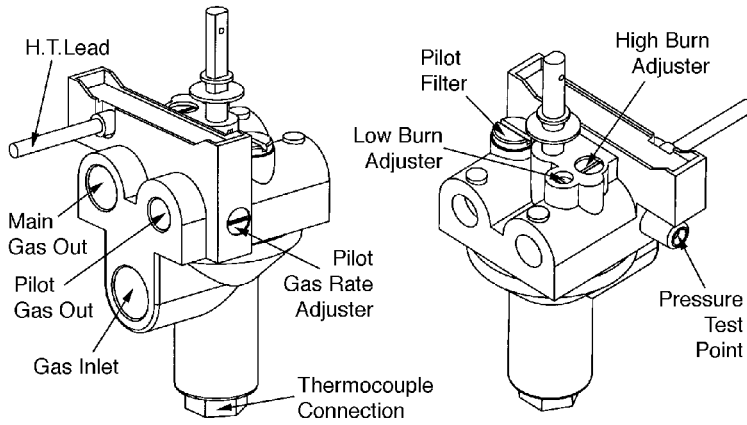
USED ON EARLY PICCOLOS



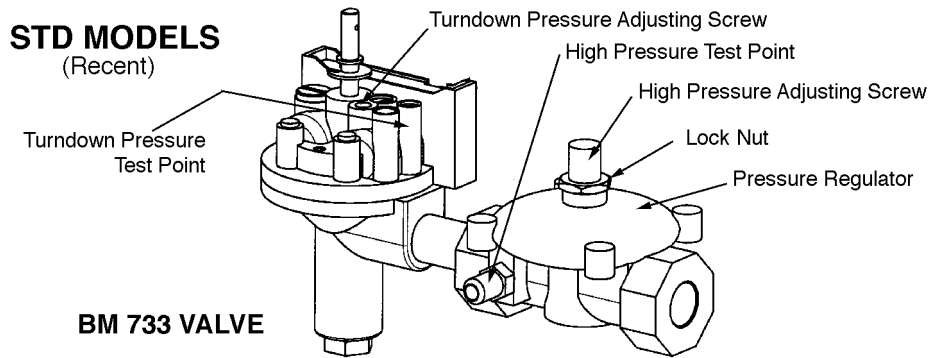
EIS and ECS II IGNITER ASSEMBLY

DRAWING 2

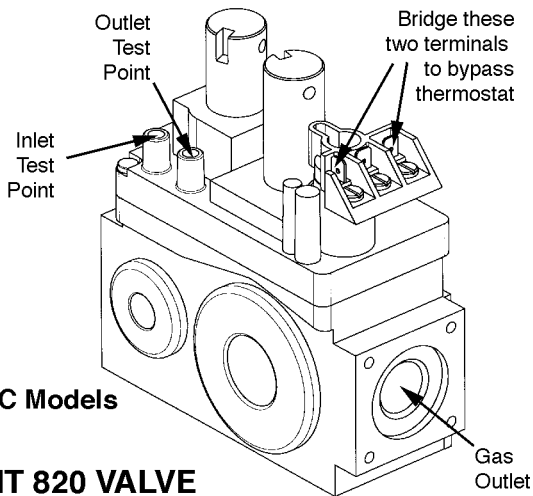
GAS VALVES



BM 733 VALVE — STD Models (Early)



BM 733 VALVE

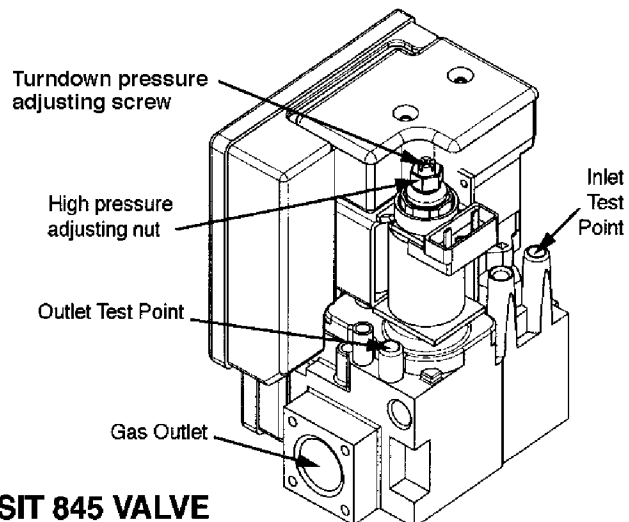


ACC Models

SIT 820 VALVE

USED ON CARDRONA ACC

EIS MODELS USE A SIT 843 VALVE, SIMILAR IN APPEARANCE TO SIT 845 (Black Modulating coil — approx. 18.5kΩ)



SIT 845 VALVE

(Blue Modulating coil — approx. 80Ω)

**THE SIT 845 VALVE FITTED WITH MODULE 0537402 IS USED ON PILOTLESS FIRES.
THE SIT 845 VALVE FITTED WITH MODULE 0537201 IS USED ON FIRES WITH PILOTS**

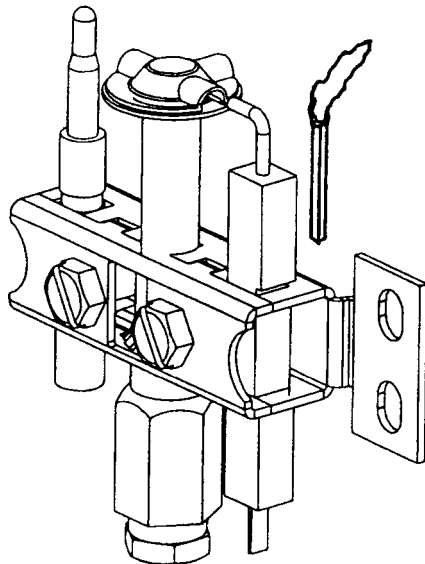
DRAWING 3

TESTING FOR PILOT GAS FLOW

LIGHT A MATCH AND ALLOW GAS TO FLOW TO PILOT

DO NOT LIGHT A MATCH IF YOU SMELL GAS

MATCH 'BLOWS' BUT PILOT DOES NOT LIGHT

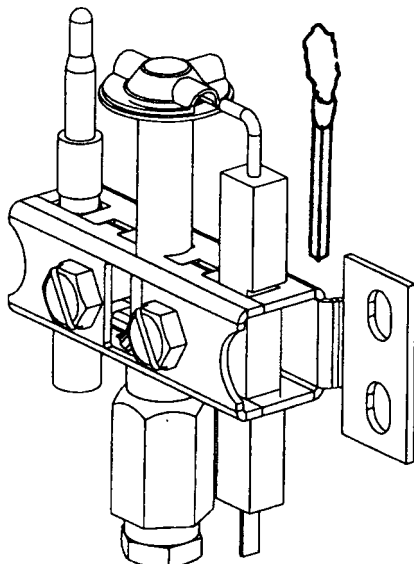


REASON: AIR IN PIPE(S)

ACTION: PURGE



MATCH 'STANDS TALL'



REASON : NO GAS FLOW

ACTION : TEST FOR —

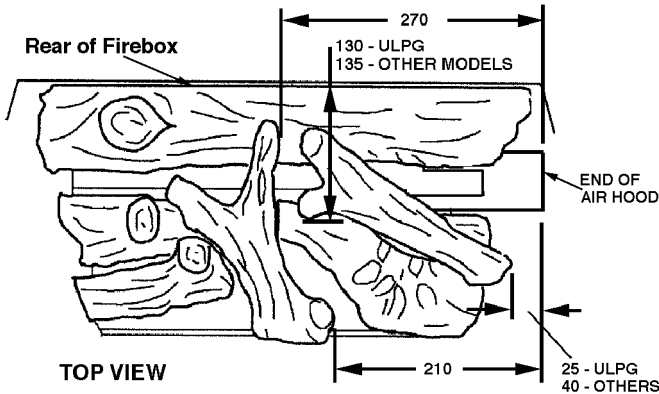
- **GAS SUPPLY VALVE(S) 'OFF'**
- **PILOT JET BLOCKAGE**
- **PILOT LINE BLOCKAGE**

DRAWING 4

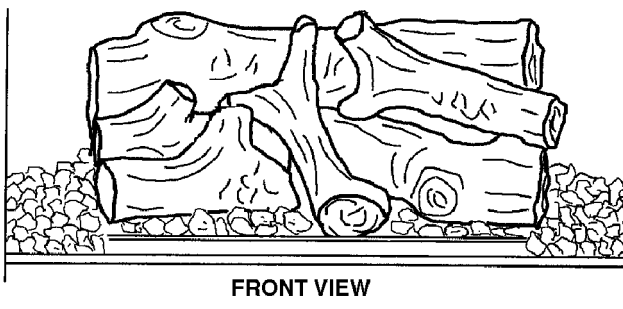
LOG POSITIONING & EMBER PLACEMENT

LOG IDENTIFICATION: Rear Log: Mounting centres 340mm
 Left Centre Log: Mtg. crs. 115mm
 Left Front Log: Mtg. crs 93mm
 Right Lower Log: Mtg.crs 122mm
 Right Upper Log length: 245mm
 Centre Log length: 255mm

LOG POSITIONS



EMBER PLACEMENT



CARDRONA & MONACO

FITTING THE LOGS

Fit the first four logs on their mounting posts in the following order:-

1. The Rear Log
2. The Left Centre Log
3. The Left Front Log.
4. The Right Lower Log

Then place the Right Upper Log on top of the hollow in the right lower log maintaining the dimensions as shown.

Place the Top Log with its butt end sitting against the raised front lip of the burner. Verify the correct distances to the **end of the air hood**.

Spread embers between and under the logs to 50 mm back from front lip of burner, and also on the floor of the firebox at each side of the burner. Do not block the ventilation slots in the burner.

PICCOLO, SOFIA & MADRID

FITTING THE LOGS

Fit the first four logs on their mounting posts in the following order:-

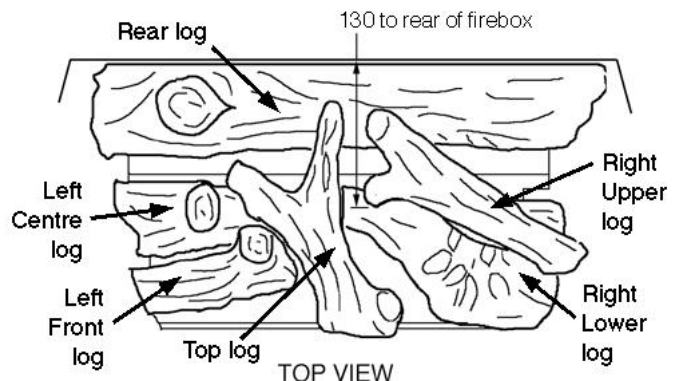
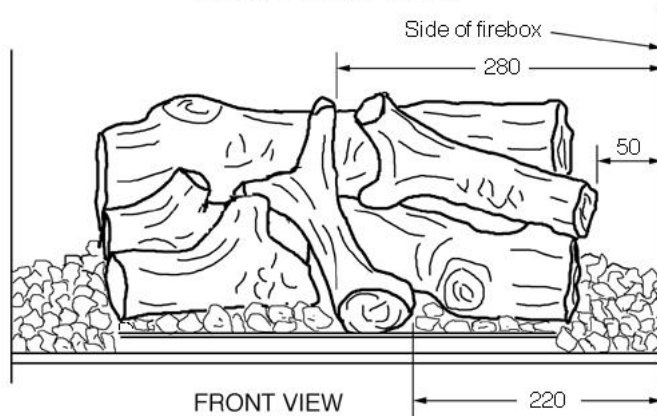
1. The Rear log
2. The Left Centre log
3. The Left Front log
4. The Right Lower log

Place the right Upper log on top of the hollow in the right Lower log as illustrated, maintaining the 130 dimension shown.

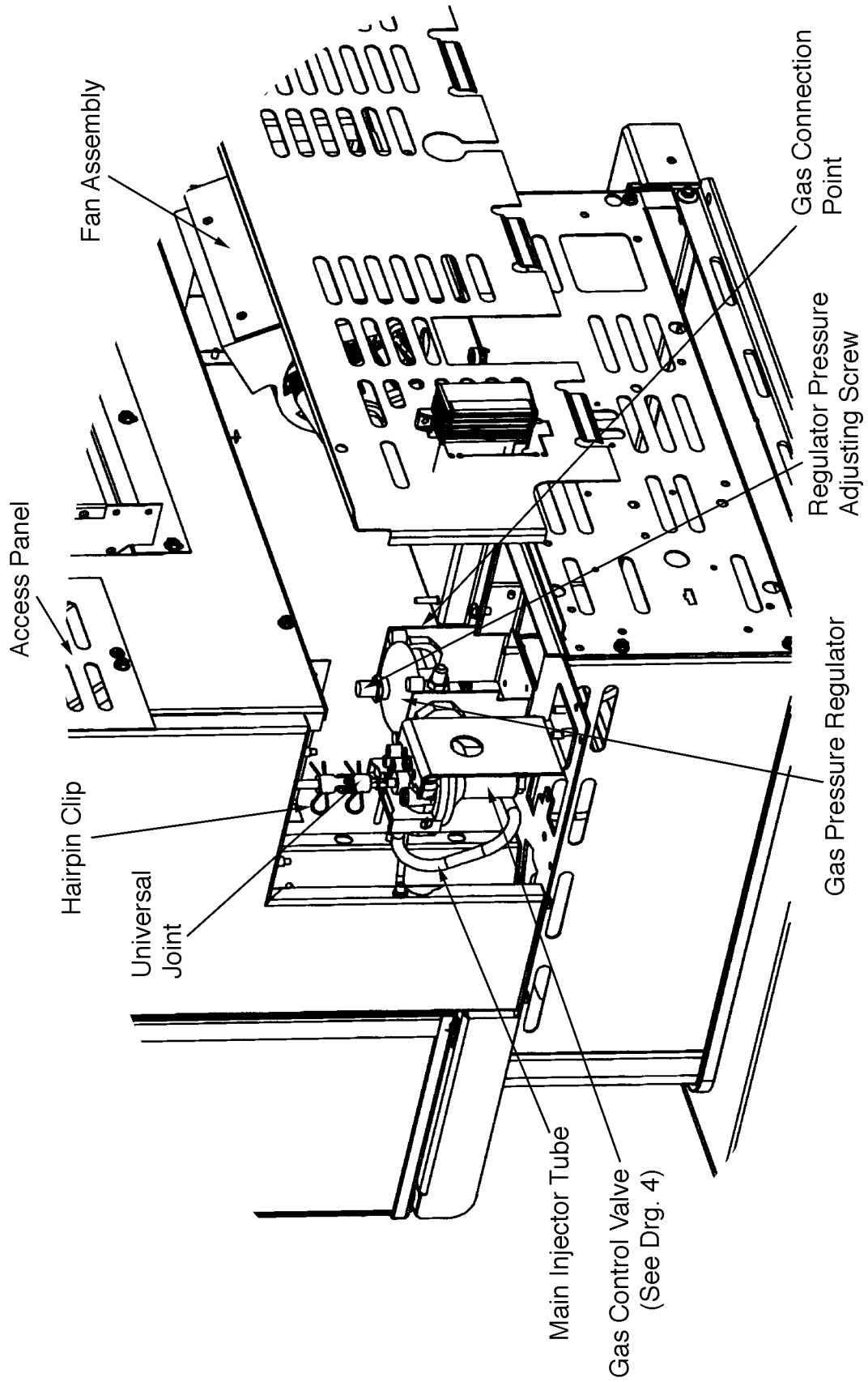
Place the Top log, positioned as shown with its butt end sitting against the raised front lip of the burner. Verify the correct distances to the **right side of the firebox**.

Spread embers between and under the logs to 50 mm back from front lip of burner, and also on the floor of the firebox at each side of the burner. Do not block the ventilation slots in the burner.

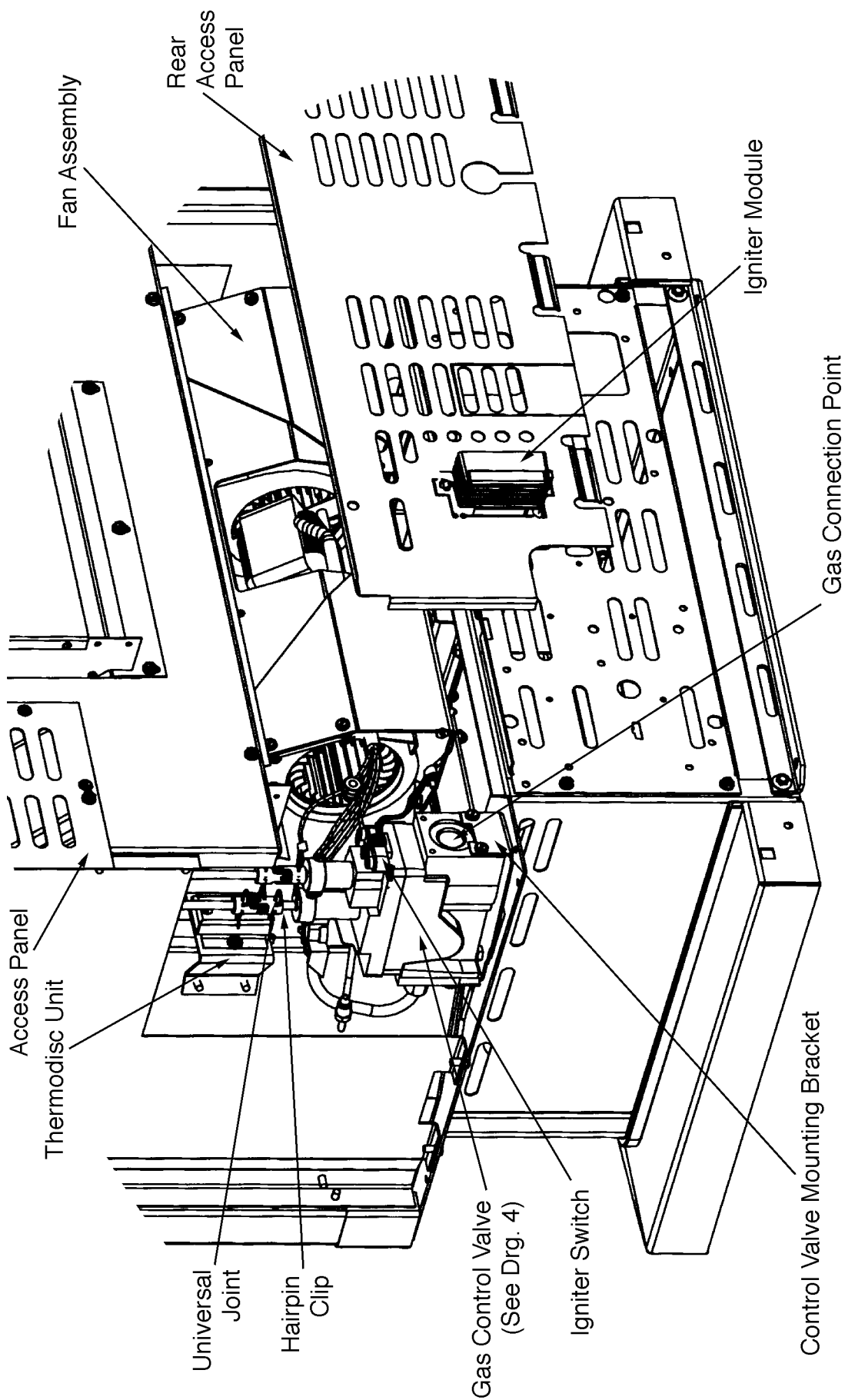
LOG POSITIONS



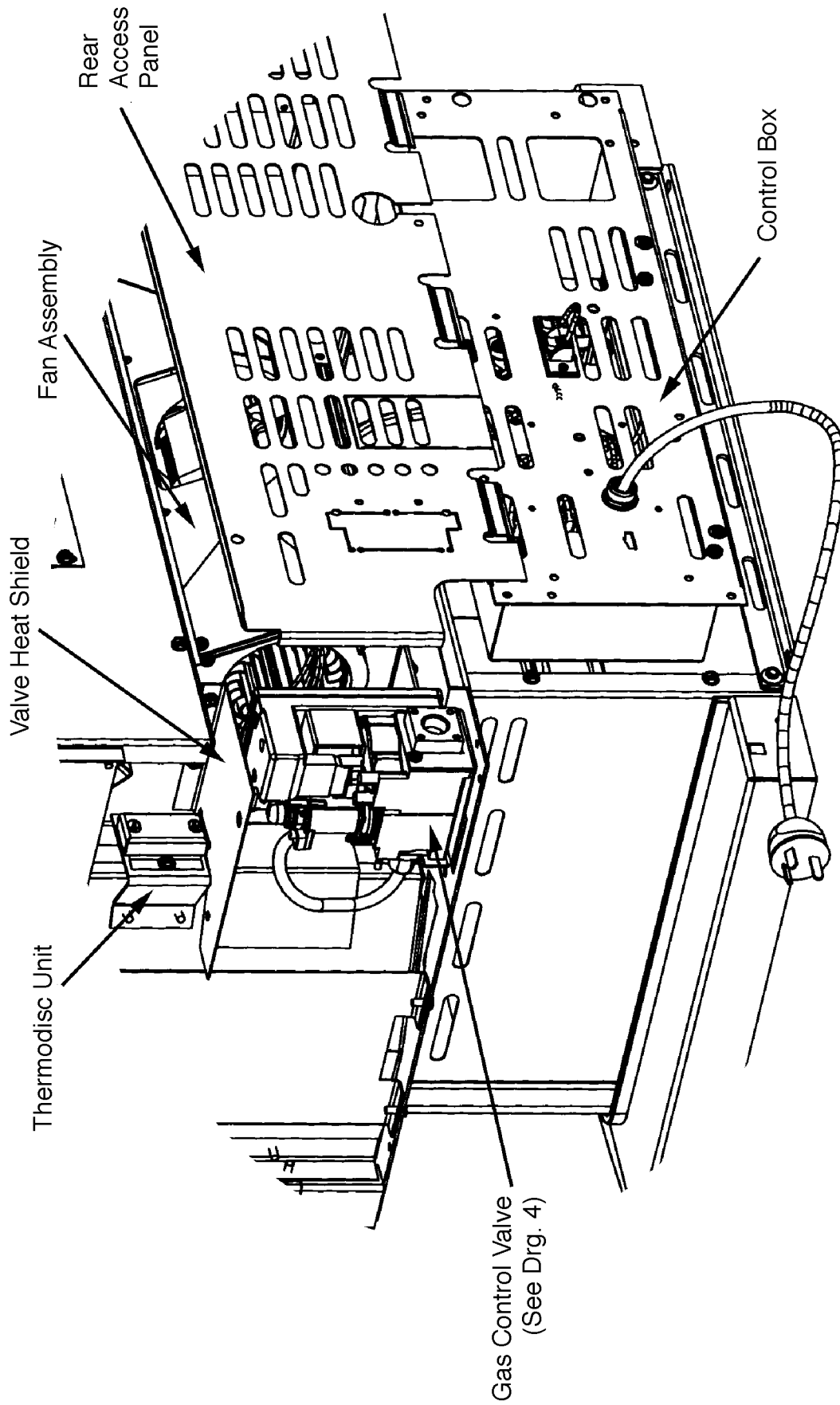
REAR VIEW — CARDRONA STANDARD



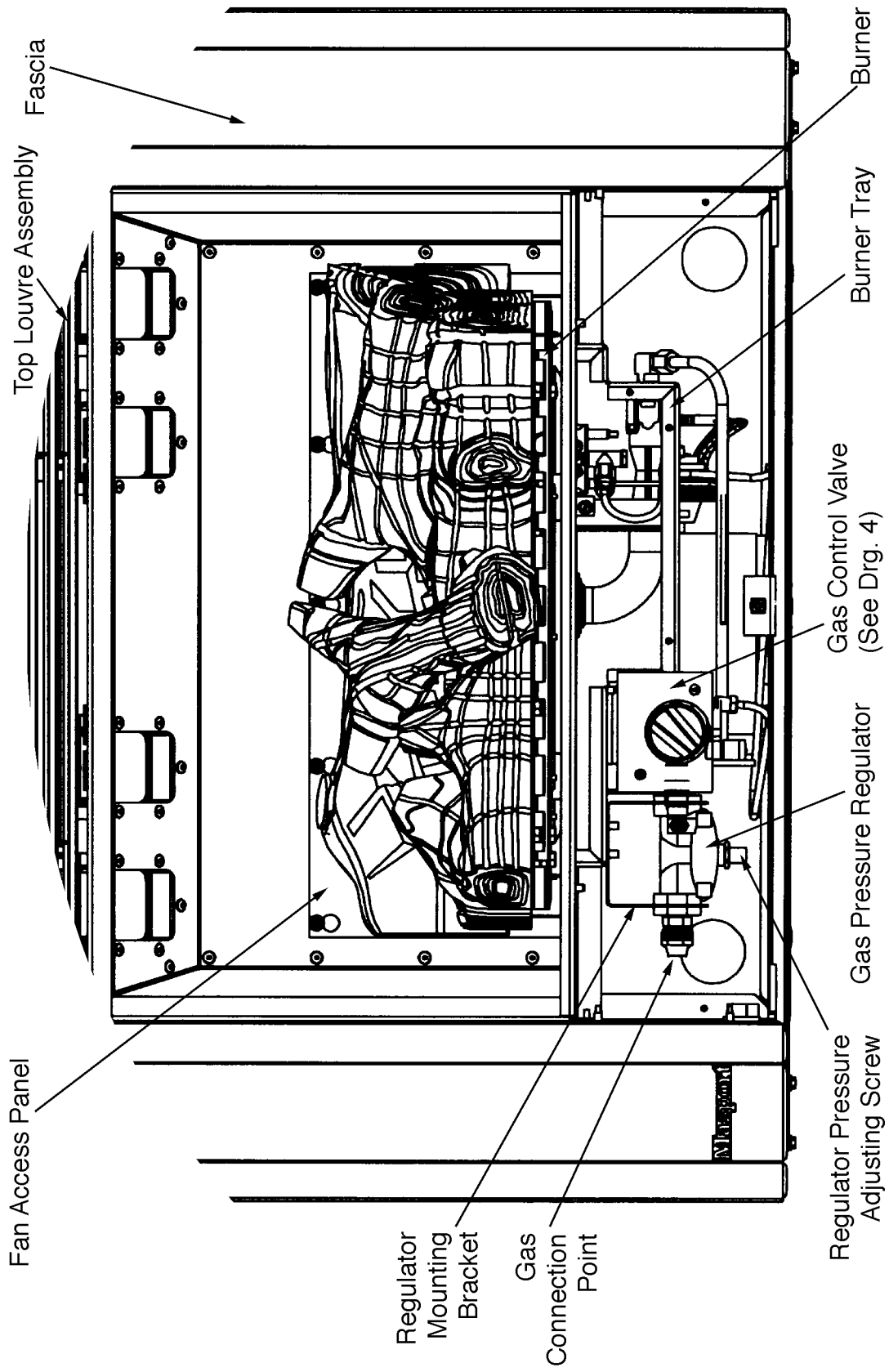
DRAWING 6
REAR VIEW — ACC MODELS



DRAWING 7
REAR VIEW — MONACO ECS II



DRAWING 8
FRONT VIEW — PICCOLO



DRAWING 9
FRONT VIEW — EIS IN-BUILTS

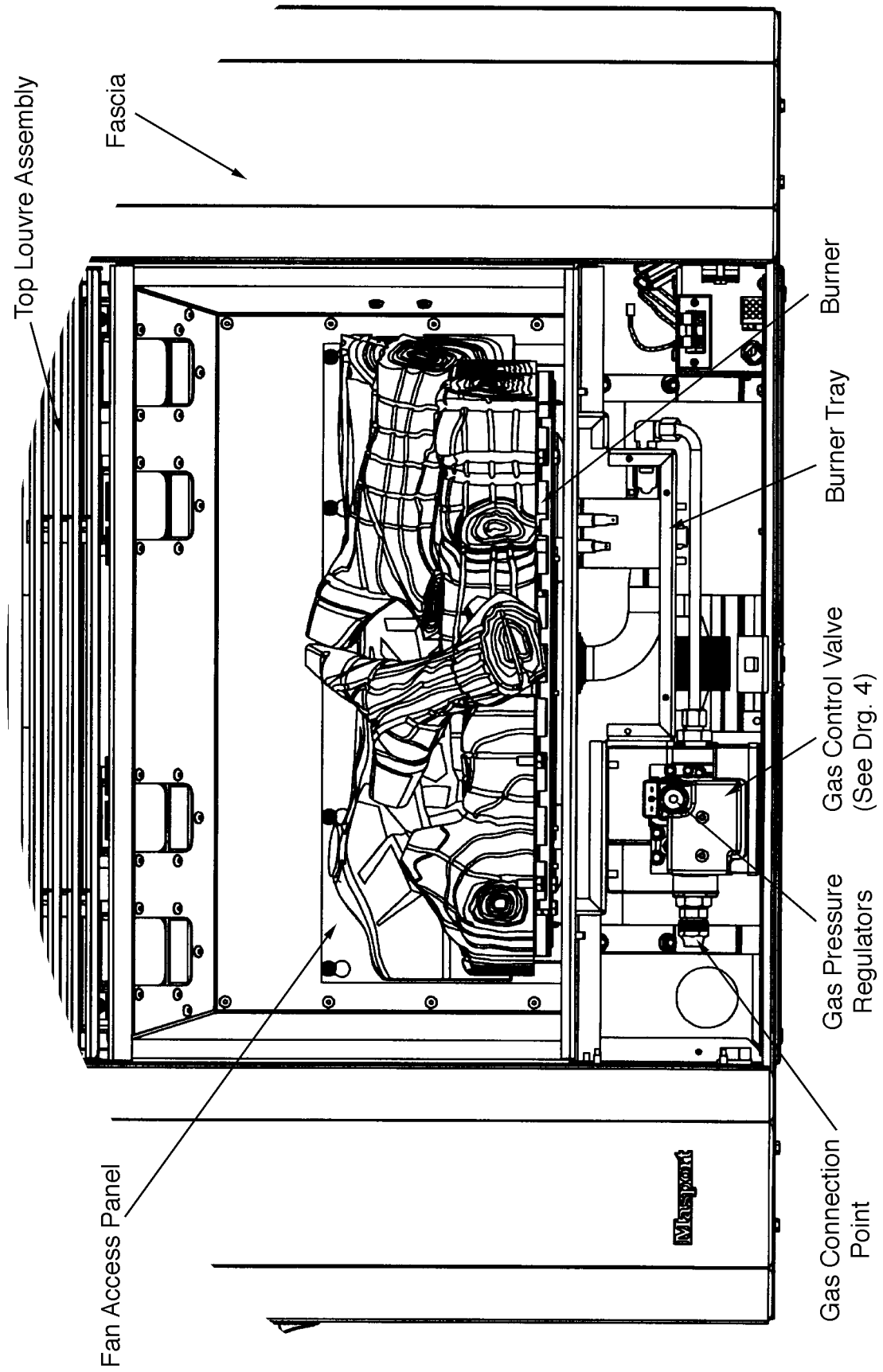


TABLE 1
GAS PRESSURES AND JET SIZES

MODEL	GAS TYPE	HIGH PRESSURE	TURNDOWN PRESS.	PILOT JET SIZE	INJECTOR SIZE
Cardrona STD NG	Natural Gas	0.85 kPa at regul.	0.23 kPa at valve	0.51	2.96
Cardrona STD ULPG	Universal L P G	2.2 kPa at regul.	0.7 kPa at valve	0.35	1.8
Cardrona STD PROP	Liquid Propane Gas	2.2 kPa at regul.	0.7 kPa at valve	0.35	1.8
Cardrona ACC NG	Natural Gas	0.85 kPa	0.43 kPa	0.51	2.96
Cardrona ACC ULPG	Universal L P G	2.2 kPa	1.36 kPa	0.35	1.8
Cardrona ACC PROP	Liquid Propane Gas	2.2 kPa	1.36 kPa	0.35	1.8
Monaco S2 ACC NG	Natural Gas	0.85 kPa	0.43 kPa	0.51	2.96
Monaco S2 ACC ULPG	Universal L P G	2.2 kPa	1.36 kPa	0.35	1.8
Monaco S2 ACC PROP	Liquid Propane Gas	2.2 kPa	1.36 kPa	0.35	1.8
Monaco S2 ECS II NG	Natural Gas	0.9 kPa	0.35 kPa	—	2.96
Monaco S2 ECS II ULPG	Universal L P G	2.0 kPa	0.5 kPa	—	1.8
Monaco S2 ECS II PROP	Liquid Propane Gas	2.0 kPa	0.5 kPa	—	1.8
Piccolo STD NG	Natural Gas	0.75 kPa at regul.	0.3 kPa at valve	0.51 (0.35*)	2.96
Piccolo STD ULPG	Universal L P G	2.1 kPa at regul.	0.9 kPa at valve	0.35 (0.2*)	1.7
Piccolo STD PROP	Liquid Propane Gas	2.1 kPa at regul.	0.9 kPa at valve	0.35 (0.2*)	1.7
Sofia EIS NG	Natural Gas	0.82 kPa	0.35 kPa	—	2.96
Sofia EIS ULPG	Universal L P G	2.3 kPa	1.0 kPa	—	1.7
Sofia EIS PROP	Liquid Propane Gas	2.3 kPa	1.0 kPa	—	1.7
Madrid EIS NG	Natural Gas	0.82 kPa	0.35 kPa	—	2.96
Madrid EIS ULPG	Universal L P G	2.3 kPa	1.0 kPa	—	1.7
Madrid EIS PROP	Liquid Propane Gas	2.3 kPa	1.0 kPa	—	1.7

* for side entry pilots