

FRANCO
BELGE



Wood and Coal Burning

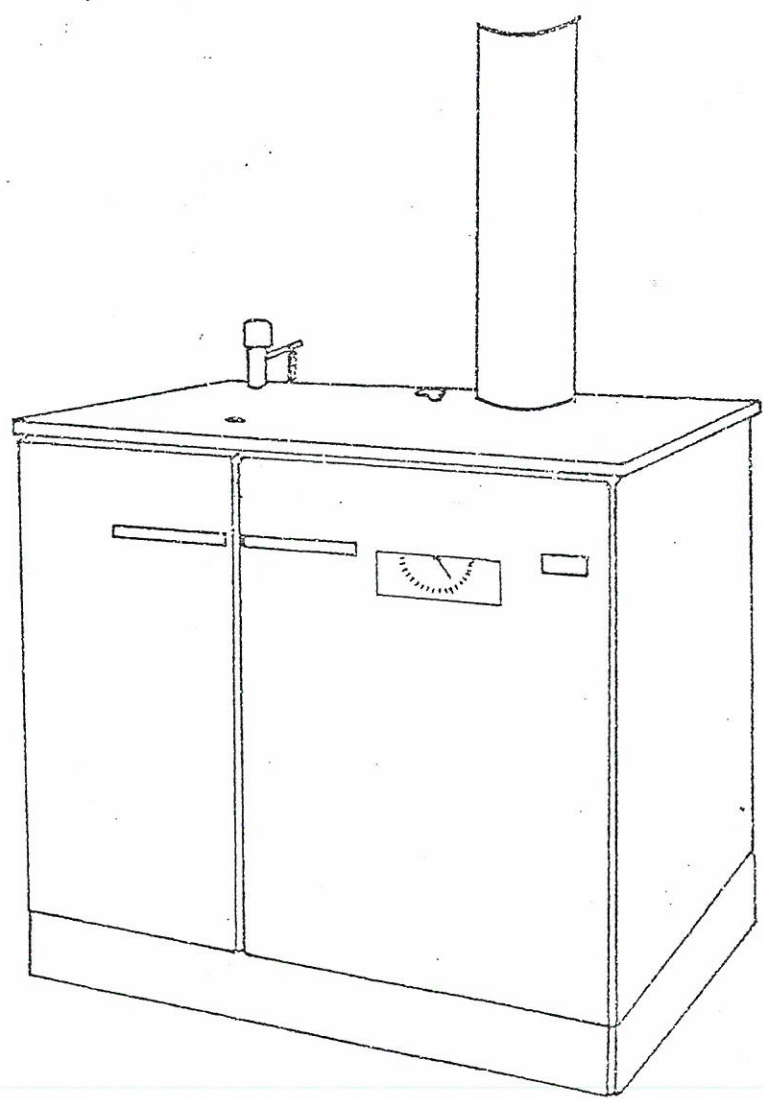
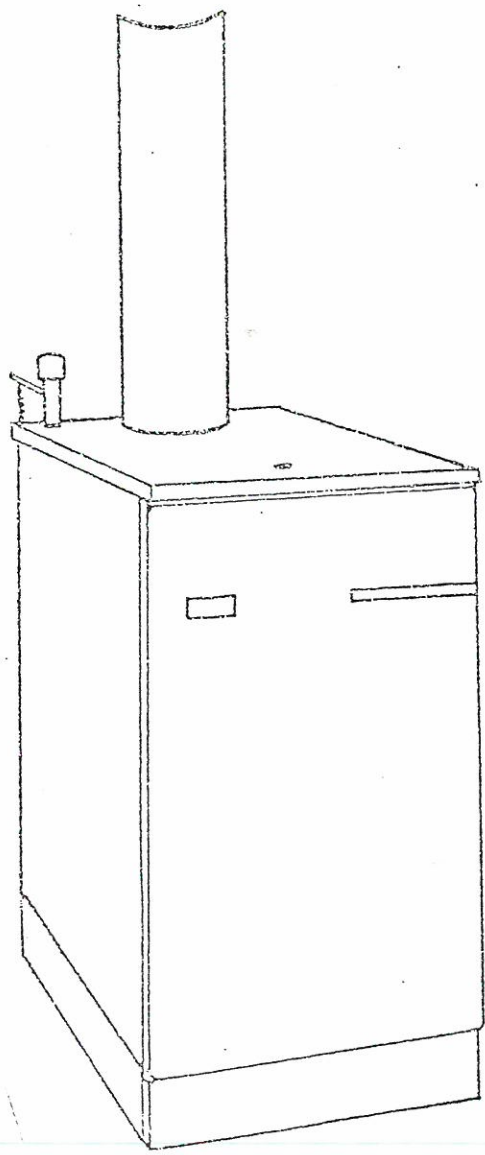
CENTRAL
HEATING
COOKER

2703 2705 2707

and

BOILER

92.13 92.19 92.25
(90.05) (90.09) (90.13)

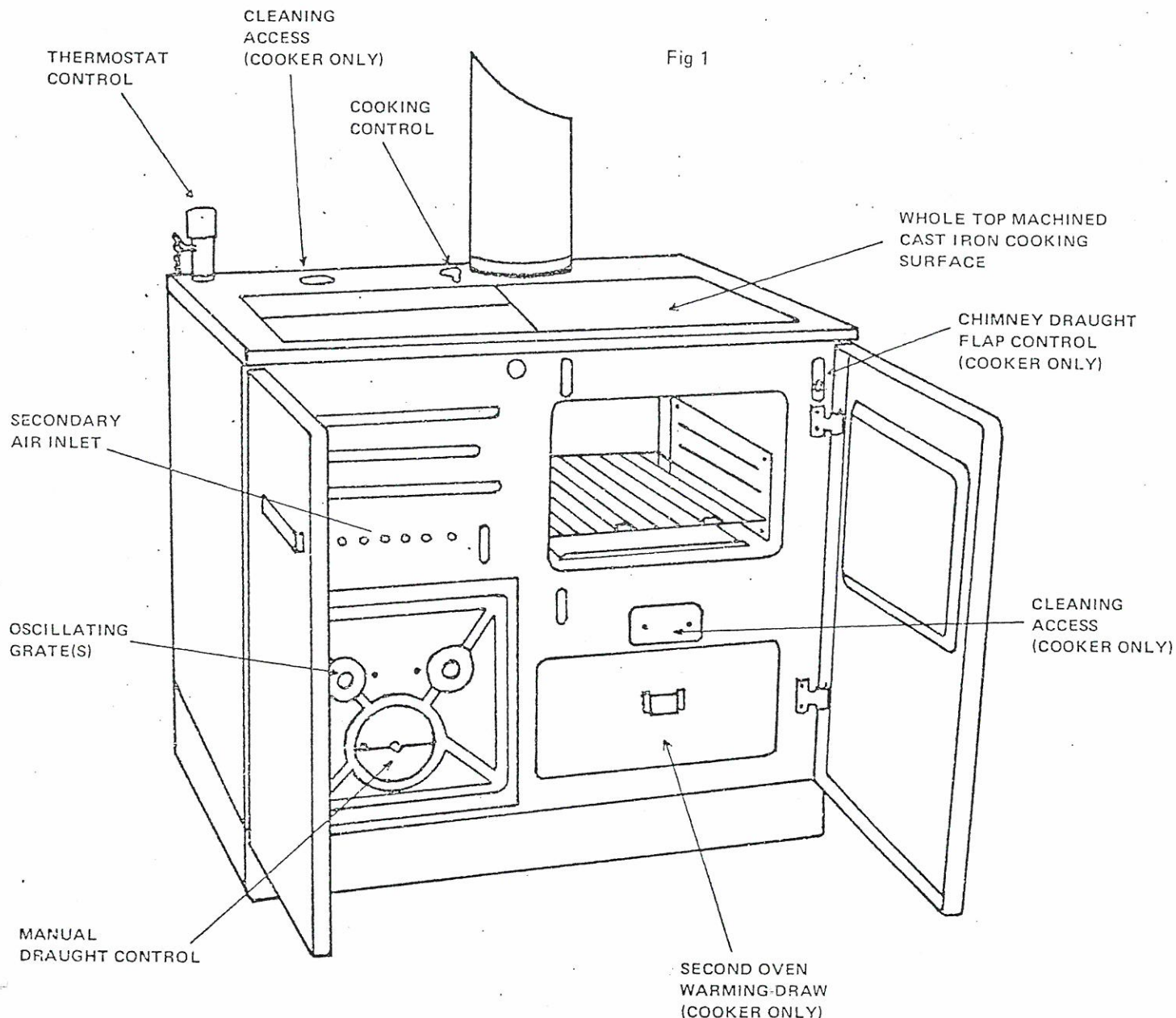


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THIS LEAFLET HAS BEEN WRITTEN SO AS TO APPLY TO BOTH THE COOKER AND BOILER MODELS, AS THE CENTRAL HEATING FUNCTIONS OF BOTH ARE IDENTICAL. ALL REFERENCES TO "COOKER", MAY ALSO BE READ FOR "BOILER", EXCEPT WHERE SPECIFICALLY INDICATED THAT THE REFERENCE IS ONLY FOR ONE OR OTHER MODEL.

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While every care has been taken to ensure accuracy, dimensions and performance specifications are approximate.



THE HEART OF THE FRANCO BELGE SYSTEM. A DOUBLE SKIN WATER JACKET ENTIRELY SURROUNDS THE FIRE, AND A DOUBLE PASS FLUE PASSAGE IS ALSO FULLY WATER JACK-ETED. THIS ORIGINAL DESIGN ALLOWS AS MUCH AS 95% OF THE AVAILABLE HEAT TO BE TRANSFERRED TO THE HOT WATER SYSTEMS.

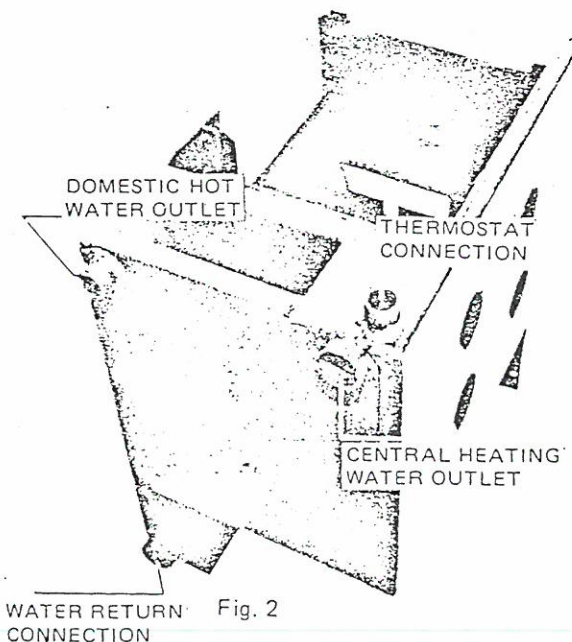
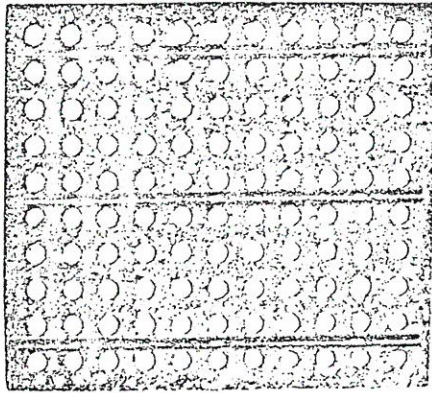


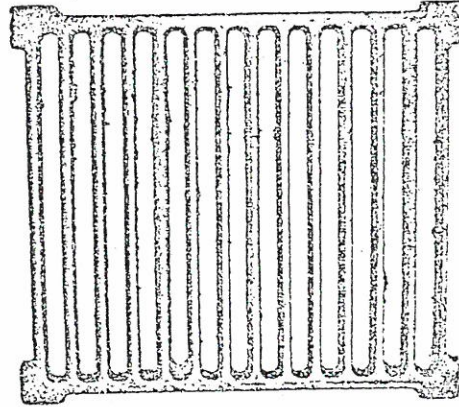
Fig. 2
WATER RETURN CONNECTION

Fig. 3

SUMMER GRATES



Summer Grate
Wood



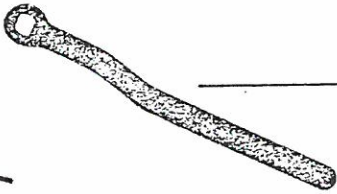
Summer Grate
Coal

Fig. 4

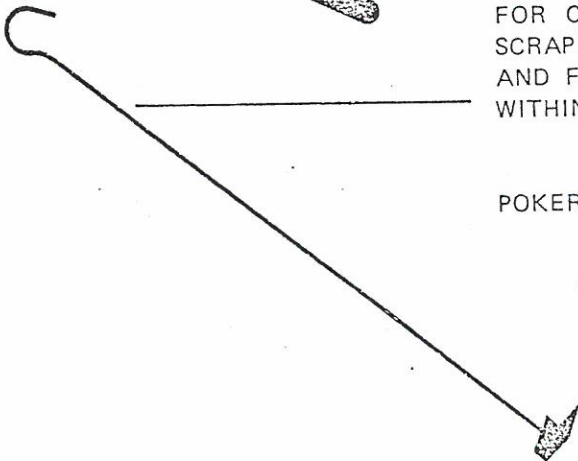
OPERATING TOOLS



FOR OPENING ASH PAN DOOR, HANDLING ASH PAN, MOVING CHAUFFAGE-CUISINE CONTROL. LIFTING PLATE ABOVE FIRE BOX TO LOAD STOVE, OPERATING CHIMNEY DRAFT FLAP AND OPENING WARMING DRAWER.

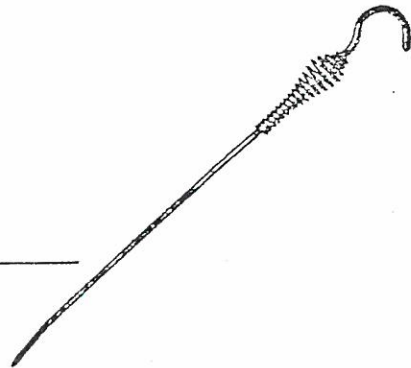


RIDDLING LEVER.



FOR CLEANING AND SCRAPING FIRE BOX AND FLUE PASSAGES WITHIN COOKER.

POKER

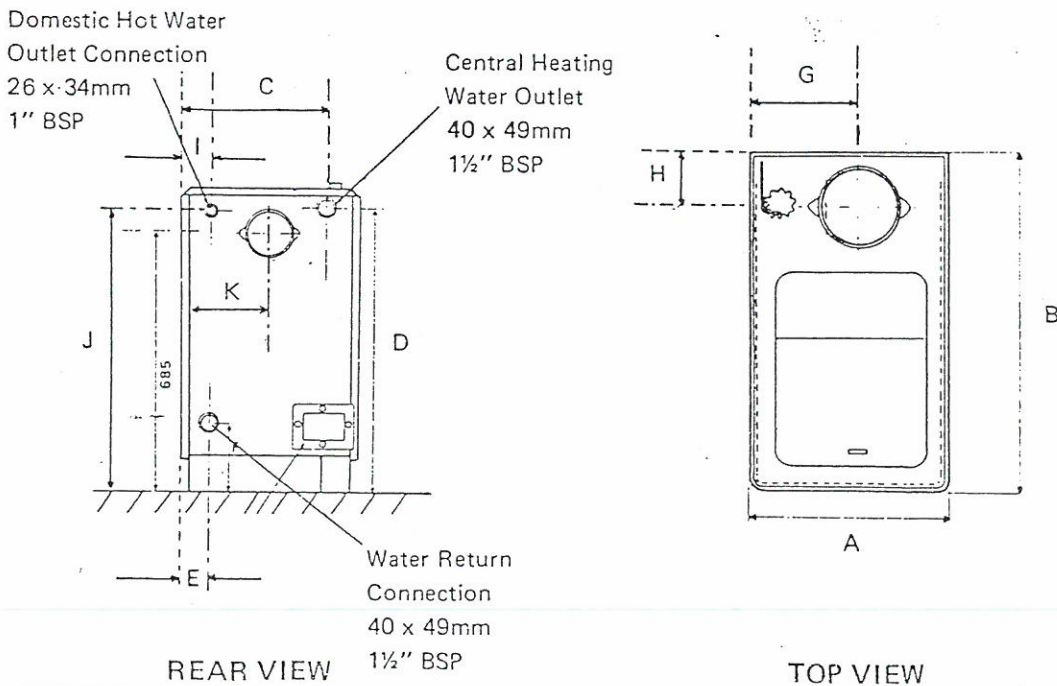


BOILER TECHNICAL DETAILS

	90.05 (92.13)		90.09 (92.19)		90.13 (92.35) <i>92.25</i>	
Output B.T.U./Hr.	39,000		57,000		77,000	
Dimensions of Boiler	ins.	mm	ins.	mm	ins.	mm
Width	13	330	17	450	19½	500
Depth	25	630	29½	750	32	810
Height	31½	800	31½	800	31½	800
Firebox Size						
Width	10	250	14	350	16½	425
Depth	10	250	12½	320	14	350
Height	17	430	17	430	17	430
Diameter of Chimney Outlet	6	153	6	153	6	153
Distance from Floor to Centre of Rear Chimney Outlet	27	685	27	685	27	685
Capacity of Water Jacket	4½ gals		5½ gals		6½ gals	
Weight Packed	320 lbs 145 kgs		410 lbs 186 kgs		500 lbs 227 kgs	

APPROXIMATE DIMENSION IN MM.

BOILER TYPE	A	B	C	D	E	F	G	H	I	J	K
90.05	330	630	247.5	745	47.5	182	210	115	47.5	735	165
90.09	450	750	367.5	745	70	182	225	125	70	735	225
90.13	500	810	417.5	745	52.5	182	250	135	52.5	735	250

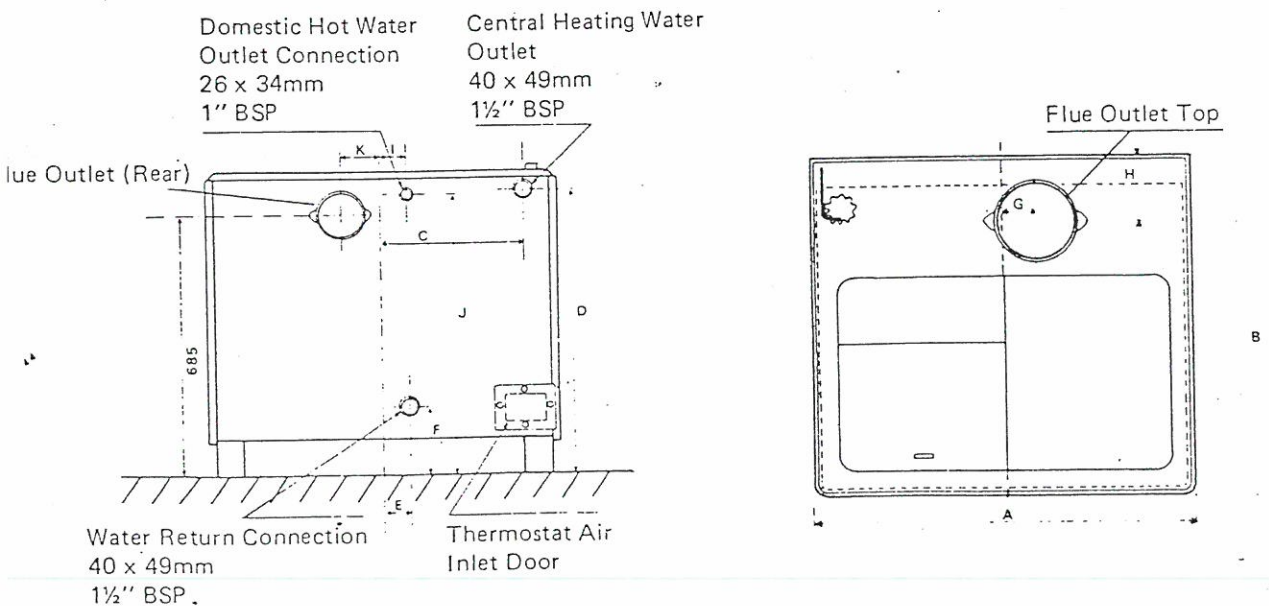


COOKER TECHNICAL DETAILS

B.T.U./Hr.	703 (82.13)		705 (82.18)		707 (82.24)	
	38,000		55,000		75,000	
Dimensions	ins.	mm	ins.	mm	ins.	mm
Width	31½	800	35½	900	39½	1000
Depth	25	630	29½	750	32	810
Height	31½	800	31½	800	31½	800
Firebox						
Width	10	250	14	350	16½	425
Depth	10	250	12½	320	14	350
Height	17	430	17	430	17	430
Oven						
Width	14	360	14	360	14	360
Depth	15½	390	19	485	21½	550
Height	9½	245	9½	245	9½	245
Diameter of Chimney Outlet	6	153	6	153	6	153
Distance from Floor to Centre of Rear Chimney Outlet	27	685	27	685	27	685
Capacity of Water Jacket	4½ gals		5½ gals		6½ gals	
Weight Packed	440 lbs 200 kgs		550 lbs 250 kgs		750 lbs 340 kgs	

APPROXIMATE DIMENSION IN MM.

	A	B	C	D	E	F	G	H	I	J	K
703	800	630	317.5	745	117.5	182	109	115	117.5	735	134
705	900	750	370	745	70	182	105	90	70	735	102.5
707	1000	810	427.5	745	52.5	182	142	136	52.5	735	153



GENERAL INTRODUCTION

Franco-Belge wood-burning central heating cookers provide central heating, domestic hot water and cooking from only one kitchen unit. The boilers provide the same water heating functions but have no oven and a smaller top cooking surface.

The fire box is designed to use all solid fuel: wood, coal, peat or smokeless fuels. Complete combustion of all fuels is ensured by secondary air inlets positioned at the top of the fire box which introduce extra air to burn off all volatile gases.

A highly sensitive thermostatic control automatically regulates the air inlet and thus the burning rate.

The cooker can be riddled by means of one or more movable grates controlled from the outside by a special handle. When burning wood, an additional "wood grate" is placed above the movable grate.

The heat exchanger is made of special steel and provides a large surface area. This produces a highly efficient heating appliance.

The heat exchanger and the flue passages can all be easily cleaned through special access covers.

Because of its original design, the Franco-Belge central heating cooker meets the requirements of both a cooker and a central heating boiler. Its high efficiency makes it an especially economical appliance.

OPERATING PRINCIPLES

The thermostat regulates the burning rate and seeks to maintain a constant predetermined central heating water temperature. If the water temperature falls, the thermostat opens an air inlet which boosts the fire. Similarly, as the water temperature rises, the inlet closes to damp down the fire to maintain a roughly constant water temperature.

The draft slide in the fire box door introduces additional air for lighting the fire, boosting the output after slow night-burning and providing extra heat when using the oven and hot plates for cooking. Thus, it is possible to maintain the heat output into the central heating, as well as provide additional heat for cooking and baking.

COOKER

There is a control lever which can be positioned on either CHAUFFAGE (heating) or CUISINE (cooking). In the CHAUFFAGE position most of the heat is transmitted to the water, in the CUISINE position some of the heat is deflected to the hot plate and oven.

When the appliance is on CHAUFFAGE the heat is absorbed by the heat exchanger and transferred to the central heating circuit.

When the appliance is on CUISINE and has been stoked up, the hot plates and oven quickly heat up, without greatly altering the temperature in the central heating circuit.

INSTALLATION

The room in which the cooker is to be installed must satisfy all local regulations. These will stipulate an adequate fresh air inlet of at least 55 sq. ins. This must be installed in such a way, that in adverse wind conditions the air flow cannot be reversed as this may suck air out of the room in which the unit is installed.

POSITIONING OF THE COOKER / BOILER

The position of the cooker/boiler will be determined by the best position for the chimney, whilst ensuring that a safe distance is left between the cooker and combustible surfaces.

THE CHIMNEY

The chimney must be in good condition and must satisfy all local heating regulations. It is vital that it is well insulated to ensure that the flue gases do not become so cold as to stop them rising. In extreme circumstances, there is a risk of gases escaping into the room if the flue temperature becomes very cold.

The flue can be fitted either vertically from the top or horizontally from the back. If the connection to the chimney is such that access is difficult, then a cleaning door should be provided to aid sweeping. The use of the flue draught control box which is designed to work with 6" twin wall insulated flue, is ideal for vertical flues giving access to the bottom of the chimney as well as controlling the chimney draught. It has a movable damper to control the draught, and an air inlet to allow cool air into the flue which will slow the speed of the gases.

If the flue is connected to the back of the appliance, the cover plate which seals the top flue outlet position should be left unbolted. It can then easily be removed to clean the flue.

The efficient functioning of the flue is very important to ensure satisfactory performance of the unit. It should be at least 14 ft. high, must be air-tight and should not be shared with any other appliance. The optimum depression should be between .04 ins. and .07 ins. If this is not attained, the fire will either be sluggish and smoke when the top is opened, or burn too fiercely and not stay in overnight; depending on which side of optimum the depression is.

If there is no existing house chimney, a prefabricated twin walled, stainless steel insulated flue can be used. It is easy to install, is long lasting and provides excellent insulation to ensure a good draw and will minimize condensation and tar build up. The use of single wall stove pipe at any point is NOT RECOMMENDED. Attention must obviously be paid to the terminal point of the flue to guard against down draught.

When connecting into an existing masonry chimney, check that the chimney is sound and that there are no air leaks or blockages. If the chimney is very large at the bottom, continue the insulated pipe as far as possible up the chimney as in figure 8. Connecting from the back of the Franco-Belge into an existing chimney is acceptable providing that the insulated pipe doesn't enter into a very large area which would tend to cause the flue gas to stall and greatly reduce the draw. In general a lined flue is best, but never use flexible liners or asbestos, as these will quickly block-up when burning wood.

Nearly all apparent faults which have been reported to us on Franco Belge units have been due to faulty chimneys. It is vital, and cannot be overstressed that a good stable draught is required for any device burning wood and solid fuel. The chimney must be so well insulated that it remains warm under all conditions and that it holds heat to give a stable draught.

The efficient working of the flue cannot be over stressed, and a little time and effort will be well rewarded by the ease of operation that comes with a really good chimney.

INSTALLATION (cont)

CONNECTING THE CENTRAL HEATING CIRCUIT

In any installation relevant building codes and practices must be observed. The appliance is not designed as a pressure vessel, so the circuit must be left open to the atmosphere and must not be constructed to allow any pressure build-up to occur. A gravity circuit **MUST** be provided, as a fail safe heat loss in the event of a circulating pump failure or a power cut. To achieve this, ensure that large diameter pipes leading to upstairs radiators have a direct flow from the boiler, or install a big hot water tank with large diameter heat exchanging coil, situated above the cooker.

If the system is going to be left unattended during winter periods, anti freeze should be added. In the case of an installation coupled to an automatic boiler, this should not be necessary.

In order to reduce the possibility of condensation forming on the outside of the cooker heat exchanger and on the return water pipe, it may be necessary to ensure a continuously high temperature to the return water. This can often be done by fitting a pipe thermostat onto the return pipe from the domestic hot water cylinder and by connecting this into the electric circuit controlling the operation of the circulating pump on the central heating circuit. This circulating pump can also be controlled by a room thermostat and a time clock.

A pipe thermostat on the domestic hot water return has the additional advantage that it gives priority to this circuit and ensures rapid reheating of the domestic hot water. This thermostat can be set at a fairly low temperature, say 40°C, to give the best effect.

SEE CIRCUIT DIAGRAMS FOR INSTALLATION EXAMPLES.

Figures 9, 10, 11, 12.

TWIN WALL INSULATED FLUE INSTALLATION EXAMPLES

FIG. 5

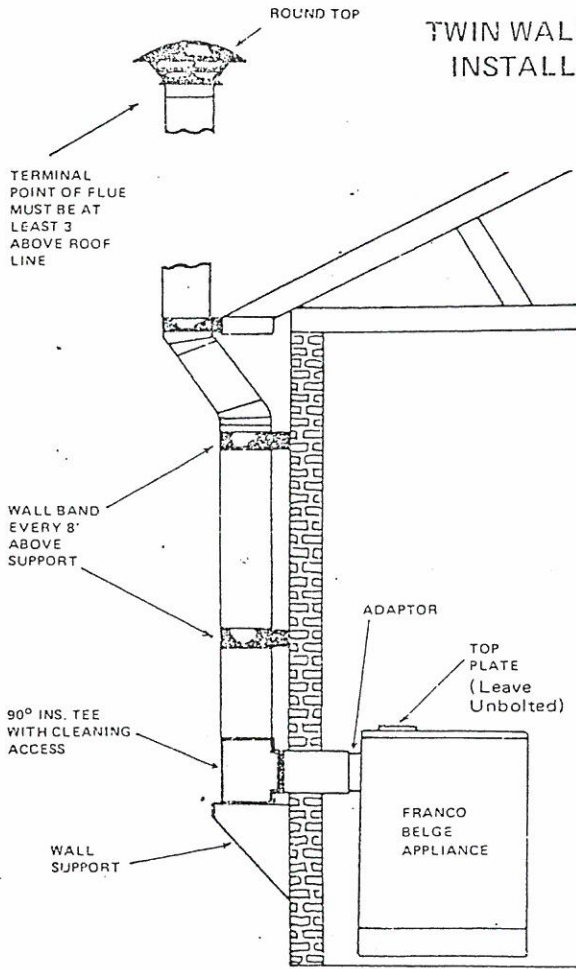


FIG. 6

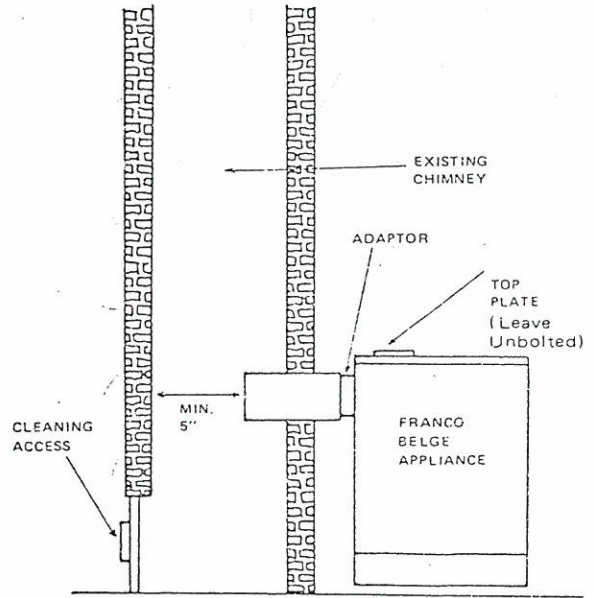


FIG. 7

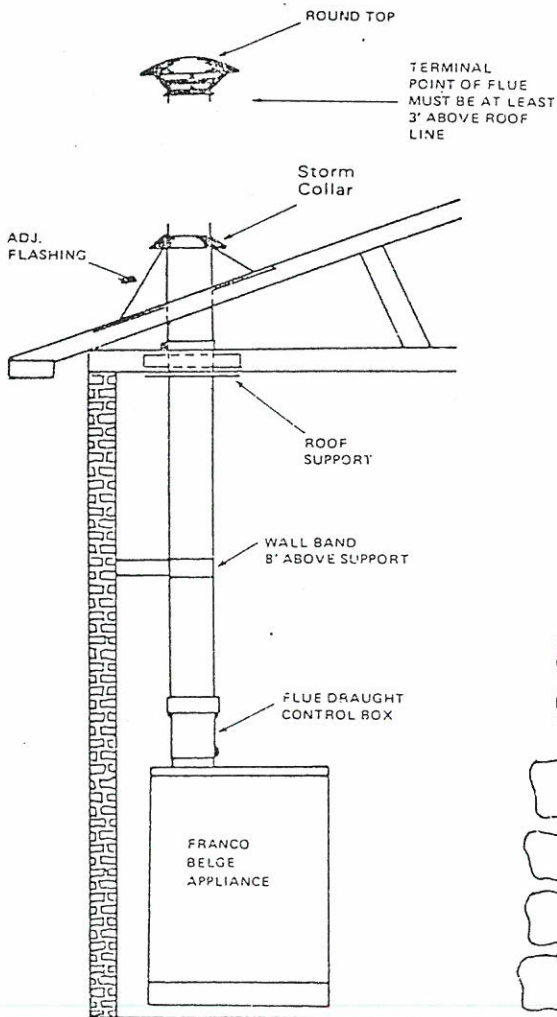
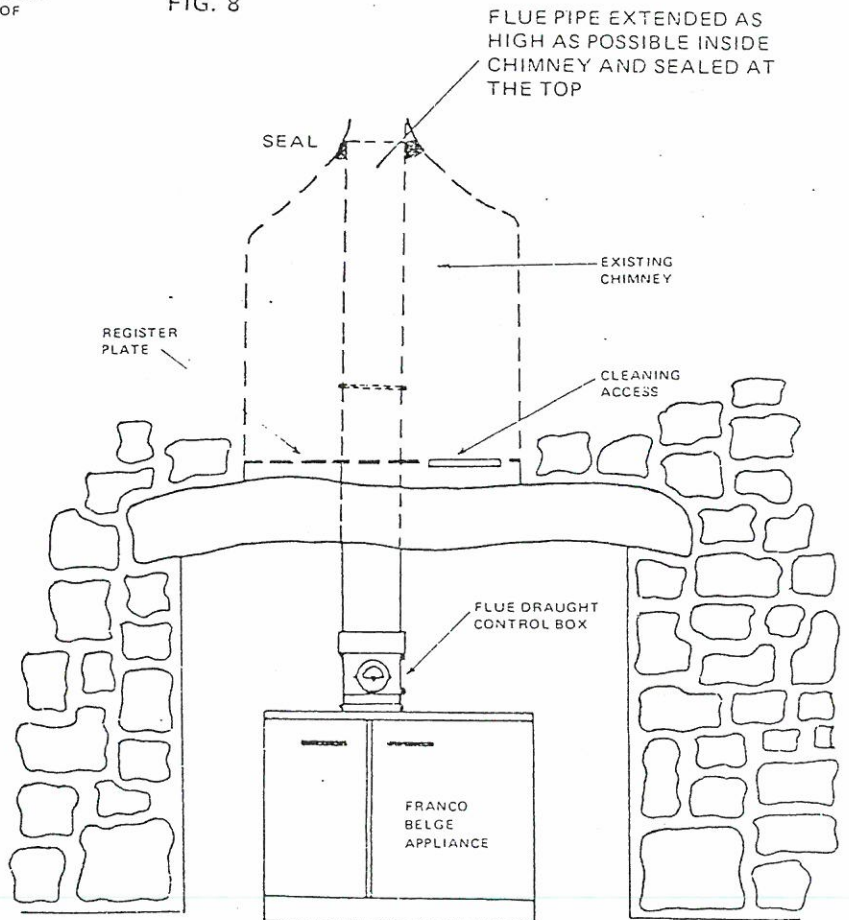


FIG. 8



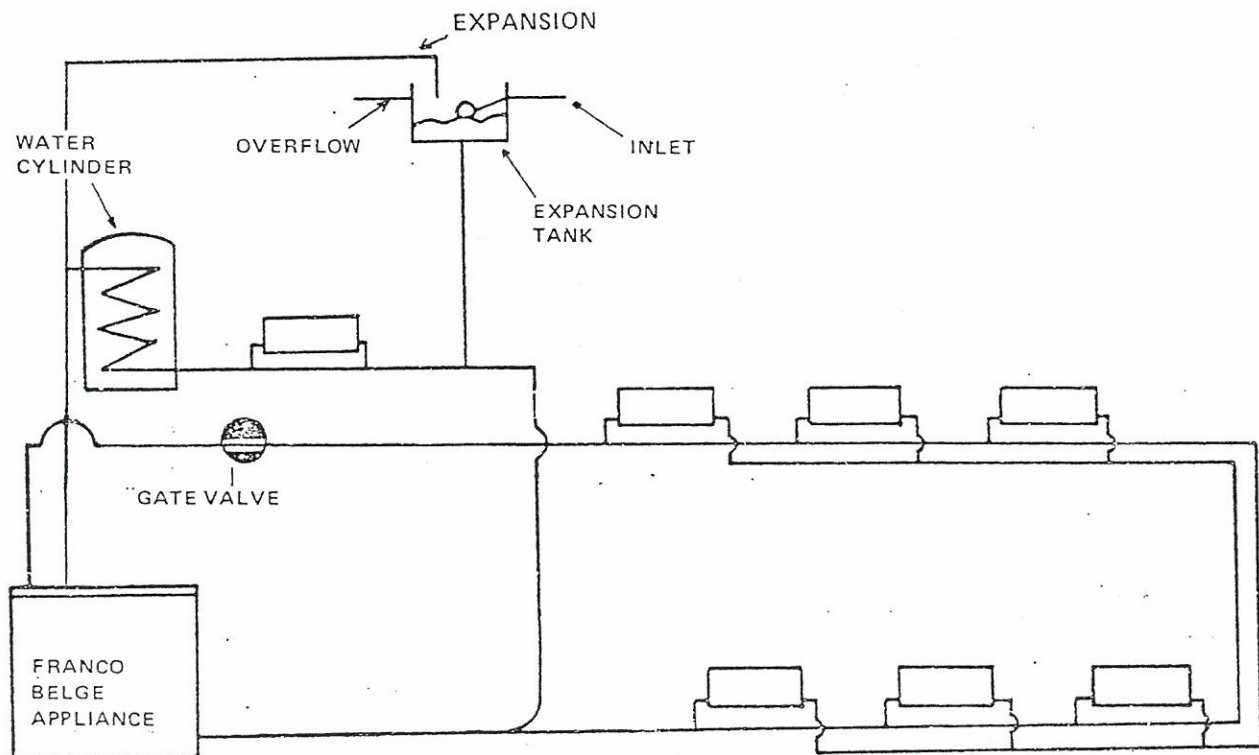
GRAVITY HOT WATER TANK, GRAVITY CENTRAL HEATING.

To ensure that a gravity circuit works efficiently, it is important to provide large diameter pipes, all of which rise above the boiler, and to ensure that the return circuit has a fall back into the boiler.

The hot water tank must have min. $\frac{3}{4}$ inch I.D. coil wound from top to bottom, and the pipe size connected to the tank should be 1 inch I.D. The flow pipe from the boiler to the junction of the two circuits should be $1\frac{1}{2}$ inch I.D., then 1 inch for the heating circuit. Similarly the return pipe must be $1\frac{1}{2}$ inch I.D. from the junction of the two circuits. It is therefore most economical and efficient to install the water tank very close to the boiler, ensuring a minimum rise of 24 inches to the inlet of the tank, and a minimum fall of 18 inches from the outlet of the tank. The central heating circuit must go directly to upstairs areas first, and make its return via downstairs areas.

An open expansion tank must be provided to ensure that no pressure build-up can occur in the system. This tank should be connected to the highest point of the installation.

FIG. 10



GRAVITY HOT WATER TANK, PUMPED CENTRAL HEATING.

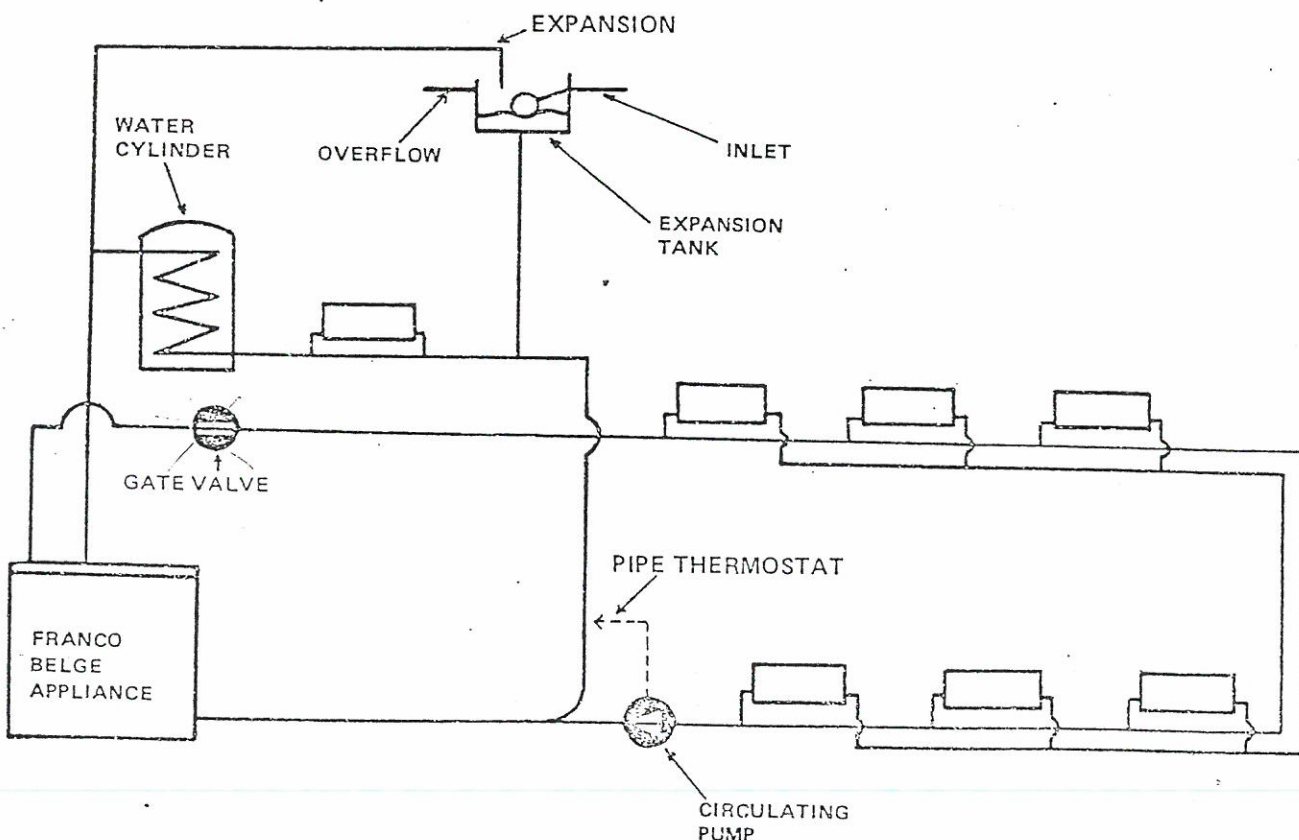
The advantage of a pumped central heating circuit is that a more even heat can be obtained more quickly throughout the house, but the disadvantage is that in times of power failure a good circulation will not necessarily occur, especially in the case of a single storey building. If the heat is not required for the central heating, or there has been a power cut and the circulating pump is out of action the boiler output will be absorbed by the gravity circulation part of the circuit.

The pump must be fitted in such a way as to encourage the gravity feed hot water flow. When the fire is low or the heat absorbed by the radiators is very large, the temperature of the return water may fall to a low value. If this temperature is too low, condensation will begin to form on the outside of the water jacket and the pipes and this will drip from the bottom of the cooker. To stop this the return water temperature should be raised. This can be done either by turning off the circulating pump, or some of the radiators.

It is essential in all Franco-Belge installations to have a gravity circuit of some kind, in order to provide a heat sink in times of power failure.

The layout of the heating circuit can be designed in any fashion that suits the house, as the pump will ensure circulation of hot water to all points, but the hot water tank or a small heating circuit must be engineered to work by gravity. Use 1 inch I.D. pipe to the tank, ensure that the tank has a $\frac{3}{4}$ inch min. I.D. coil wound from top to bottom, and that the inlet is at least 24 inches above the boiler and the outlet is at least 18 inches above the return tapping of the boiler. An expansion tank open to the atmosphere must be provided to ensure that no pressure build-up can occur, and this should be connected to the highest point of the circuit.

FIG. 9



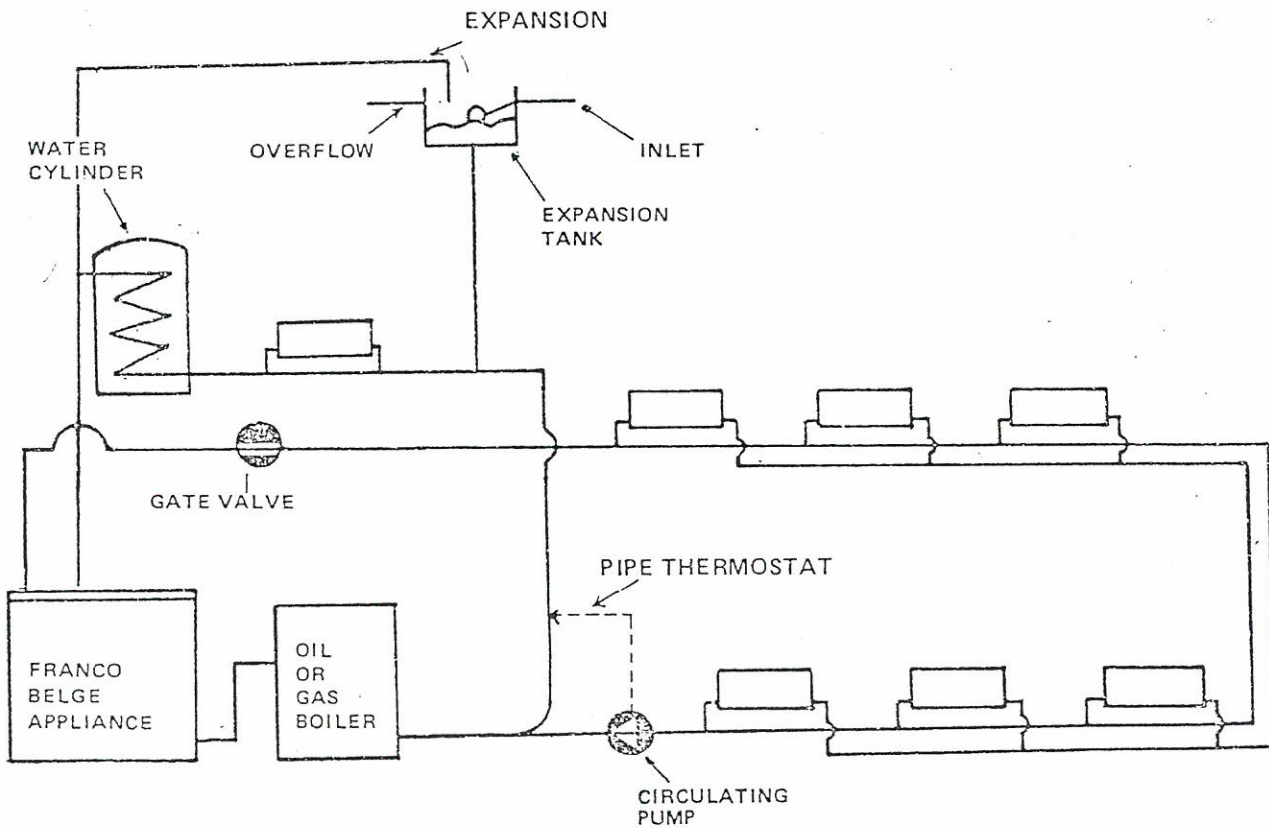
GRAVITY HOT WATER TANK, PUMPED CENTRAL HEATING LINKED TO EXISTING OIL OR GAS BOILER.

The provision of a gravity circuit through the hot water tank is essential, if no other gravity circuit exists in the systems to which the Franco-Belge is being added.

The Franco Belge can be fitted either in series or in parallel with an existing boiler. However if it is fitted in parallel ensure that it is not possible for the water to short circuit the heating circuit and to flow from one boiler to the other. The thermostat on the oil or gas boiler should be set to a lower setting than the Franco Belge to ensure that, as the water temperature falls, heat is first called for from the Franco Belge and only if it is not capable of producing enough should the other boiler switch in. This will ensure the most economical use of fuel.

An open expansion tank must be provided, connected to the highest point of the installation.

FIG. 11



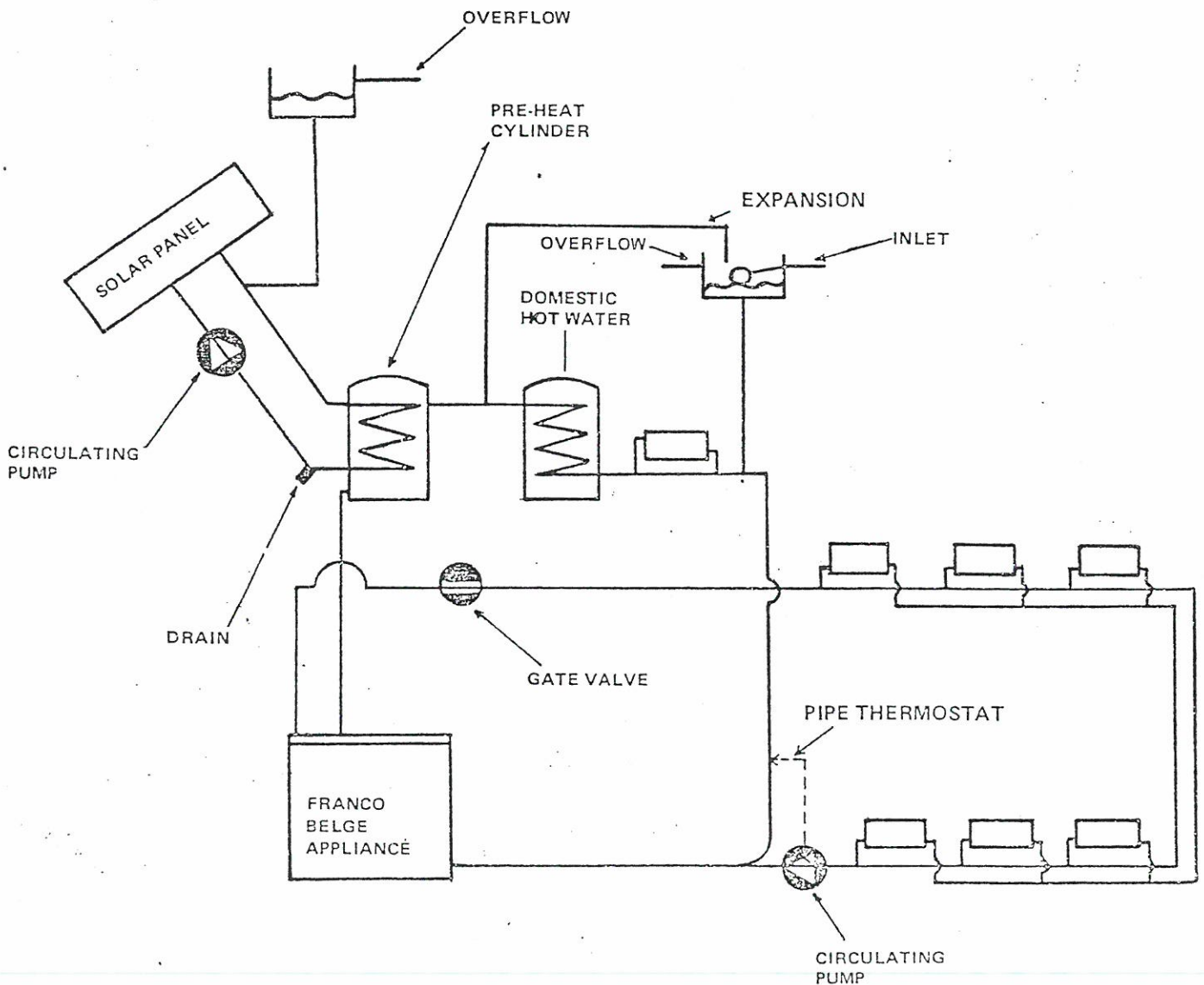
GRAVITY HOT WATER TANK LINKED TO SOLAR PANEL, PUMPED CENTRAL HEATING.

During times of high availability of solar energy, the solar panel can provide heat for your domestic hot water, but during winter months you would normally have to rely on expensive electricity to heat this water. By coupling the Franco-Belge and the solar panel together as in the diagram, either or both can provide the most economical heat.

The solar panel can either be coupled to a pre heat circuit on the domestic hot water or to a second tank on the gravity feed circuit of the Franco Belge. Controls should be fitted on the solar circuit to allow flow only when solar heat is being added and to stop flow when the solar panel radiates more heat than it receives. The gravity circuit of the Franco Belge must always be allowed to flow.

It is important to select a solar panel which is compatible with the pre-heat tank to be used. The solar panel should be installed using all sensors and valves as recommended by the panel manufacturer.

FIG. 12



POSITIONING OF THE GRATES

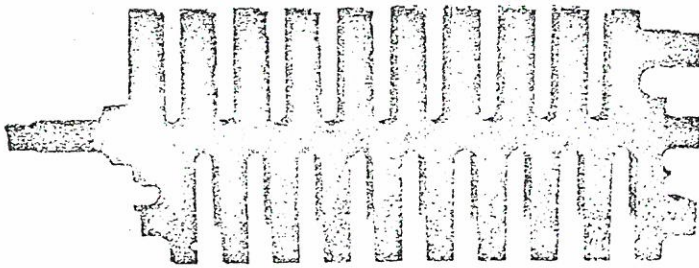
The oscillating grate or grates (Fig. 13 (1)) must be positioned in the fittings provided at the base of the fire box, a socket at the back and a slot at the front. They must be placed the correct way up with the narrowest gaps at the top and the fire bars tapering toward the bottom. If the cooker is to be used mainly with wood, the grate provided should be laid on top of the oscillating grates. (Fig. 13 (2))

The comb shaped grate (Fig. 13 (3)) must be placed between the two supports at the top forming the back face of the fire box.

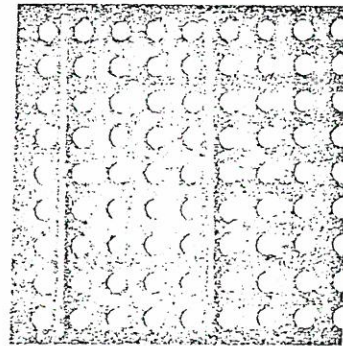
The cast face plate (Fig. 13 (4)) should be positioned in the fire box by opening the fire box door and placing it in position from inside.

The inclined grate (Fig. 13 (5)) for use when burning mainly coal, should be positioned on the supports which form a 'U' at the sides and bottom of the fire box. This grate should not be used when burning wood.

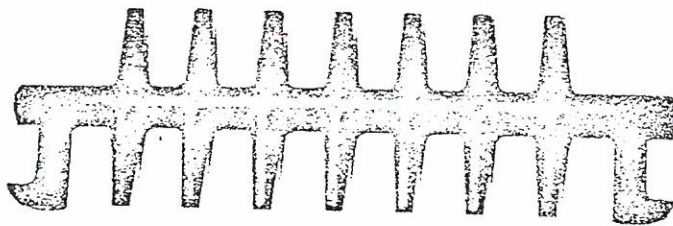
FIG. 13



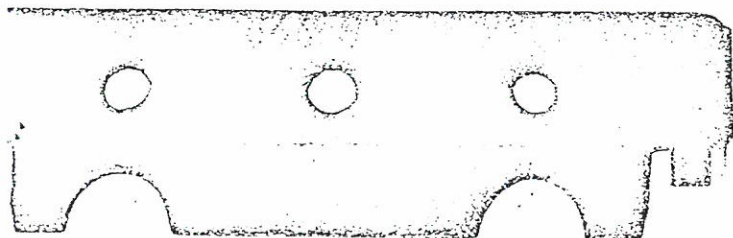
(1)



(2)



(3)



(4)



(5)

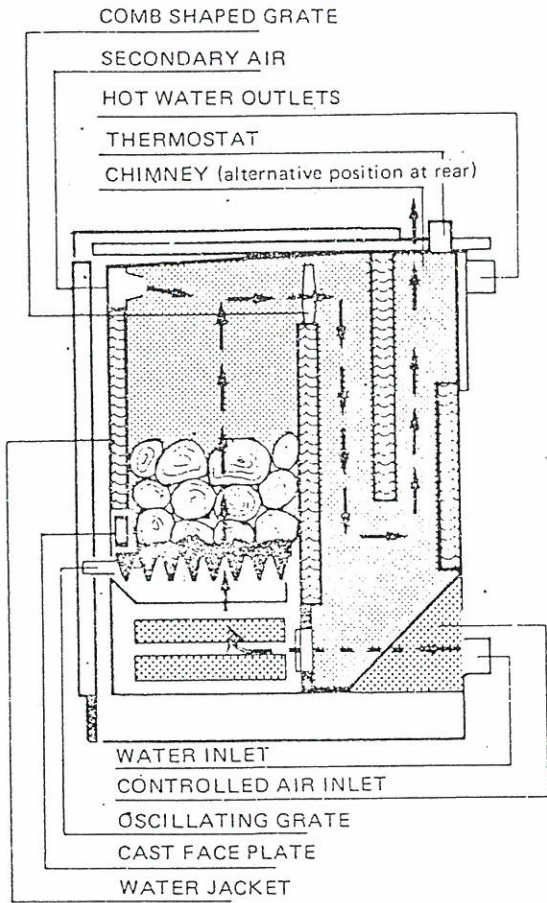


FIG. 14 – CROSS SECTION OF FIREBOX
 (FOR WOOD BURNING)

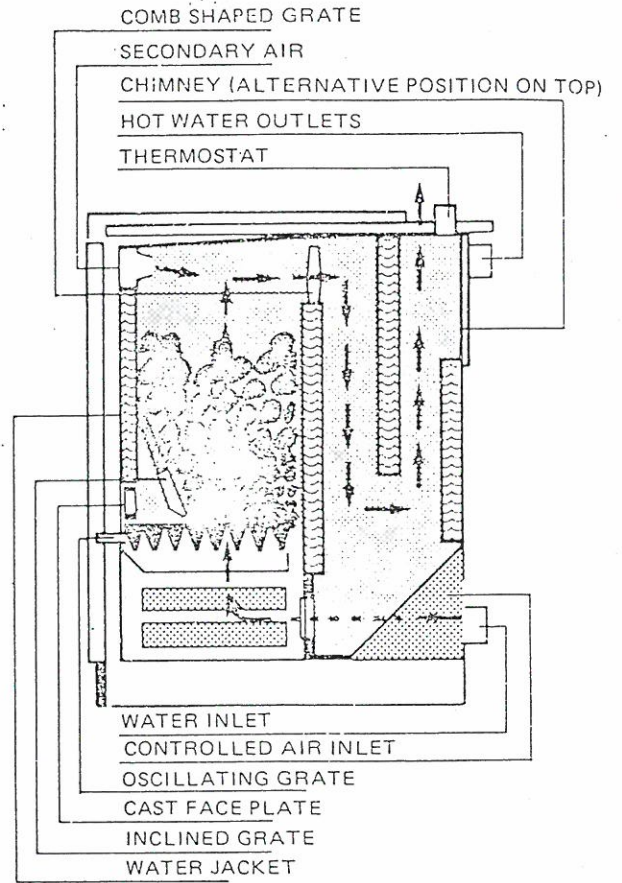


FIG. 15 – CROSS SECTION OF FIREBOX
 (FOR COAL BURNING)

BEFORE LIGHTING

Before lighting the cooker the following points should be checked:

Be sure that your installer has tested the water circuit.

Check that the cleaning access doors are closed. They are located behind the ash pan (Fig. 18), on the front face below the oven (Fig. 19) and behind the warming drawer (Fig. 20). To lift out the warming drawer, close the drawer and push the drawer panel down so that the back section lifts up. The drawer will then slide out.

Check that all the grates are in their correct positions.

Check that the shutters which control the smoke flow, operated by the knob on top of the cooker, can move freely, and that all the moving parts work normally. (Cooker only)

Check the working of the air inlet flap at the back of the cooker.

Before the cooker left the factory, the hot plates were covered with a thin protective film to prevent rusting. This must be peeled off before the appliance is lit.

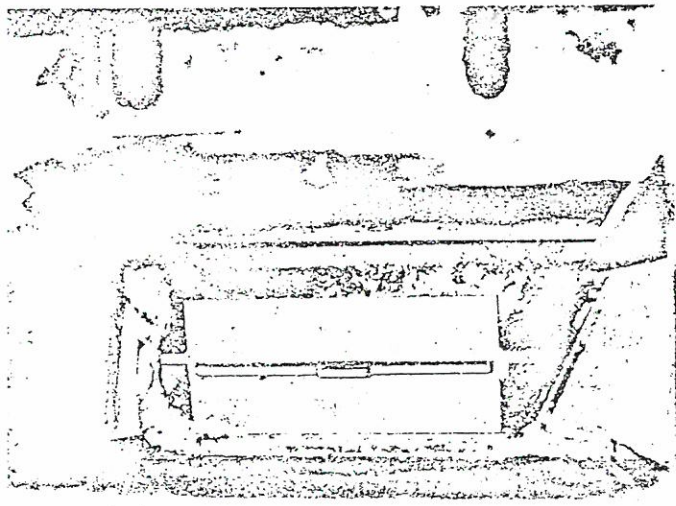


FIG. 18 — Flue Access Door Behind the Ash Pan
(on Boiler and Cooker)

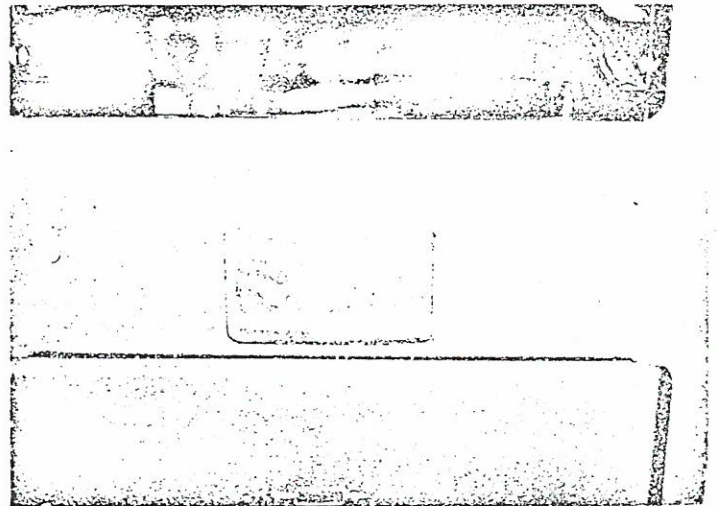


FIG. 19 — Flue Access Door Below the Oven

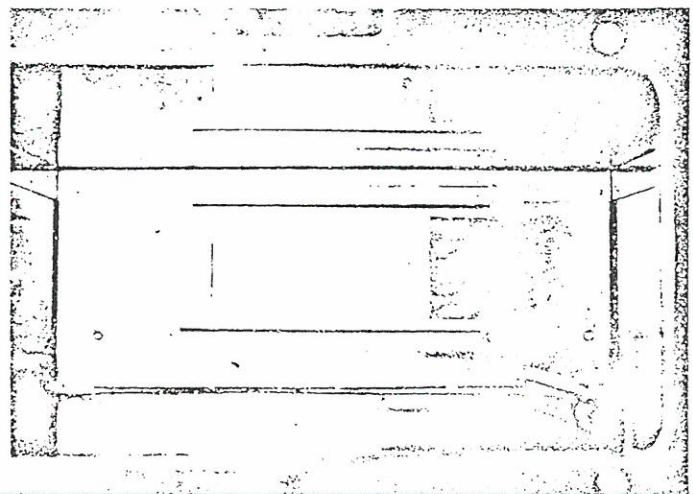


FIG. 20 —
Flue access Door behind the Warming Drawer

LIGHTING

When the cooker is lit and set in operation, some condensation may collect in the heat exchanger. Therefore, it is advisable not to operate the central heating circulating pump until the appliance has warmed up. It is normal for a quantity of black water to leak from the unit as a result of condensation when the fire is first lit. Do not be concerned about this, but do take precautions to ensure that none of this liquid damages any furnishings. If this condensation persists, it is most likely that the return water is too cold and some radiators should be turned off to allow the heat to build-up in the heating circuit. The radiators can be turned on again gradually. The water jacket is tested in the factory, and there is no chance of a leak occurring. If condensation persists after a 48 hour period, consult your installer.

The cooker is lit exactly like an ordinary fire, with paper, and kindling. Open the ash pan door air control to get a good draught. Also open the chimney draught flap with the chrome ring in the top right-hand corner of the oven and accessible only with the oven door open. (Cooker only). Once the fire is burning well, the cooker can be stoked up with fuel.

When the cooker is well alight and the flue is warm, close the chimney draught flap. This flap will normally be kept shut except when a lot of cooking is to be done on the hotplate and none in the oven.

When the cooker is working satisfactorily and the circulating water is at a suitable temperature, say 60°, adjust the thermostat. Fix the pipe thermometer onto the outlet water pipe and observe the temperature. Adjust the thermostat so that the white figure which corresponds to the temperature is directly above the white line. Cut the chain connecting the thermostat arm to the air inlet flap and connect it up so that the air inlet flap is just closed. When the temperature falls, the thermostat arm will rise and open the air inlet flap to increase the air flow. When the required temperature is reached, the thermostat will close the air inlet and damp down the fire. A fine adjustment is provided using the threaded rod and lock nuts to open or close the draught flap by small amounts.

When the thermostat has been adjusted and the desired water temperature reached, the manual draught can be closed. Set the thermostat to the desired temperature and allow it to control the fire.

MAINTENANCE

The appliance is most efficient when all the surfaces of the heat exchanger are perfectly clean. If soot and ashes are allowed to build up, they can pit the walls of the hearth and shorten the life of the boiler. Therefore the boiler should be cleaned whenever the heat output deteriorates. When the appliance is used for burning wood, burn coal before cleaning the flue passages. This raises the temperature of combustion and burns off the tar which otherwise collects on the water jacket.

Use the scraper to clean the sides of the heat exchanger and the walls of the oven and to remove soot from below the oven. Also open the access door behind the ash pan and clean out inside the heat exchanger at frequent intervals.

When the appliance is used for burning wood, clean the flue passage frequently. We would also advise that you burn coal occasionally, maybe once a week, or have a roaring fire for a short period to burn off the tar which will otherwise collect on the water jacket. It is important to do this in order to preserve the life of the water jacket.

ASSEMBLING AND INSTALLING THE THERMOSTAT

The thermostat is mounted into the threaded tapping in the left-hand back corner of the appliance. Screw in the thermostat using a sealant to make the joint water-tight. Be careful not to damage the thread by over tightening.

The chain provided with the thermostat, should be attached to the thermostat arm and the arm fitted into the thermostat and held in place with the hexagonal screw. The other end of the chain can then be connected to the draught flap positioned at the bottom rear corner of the cooker. It will be necessary to adjust the length of the chain in order that the automatic draught operation functions correctly. However, this can only be done when the appliance is lit and is described in the LIGHTING section.

It is important that the thermostat be positioned as shown in the diagram below, with the small hexagonal nut facing the front of the appliance.

NOTE: On all models except the 1705, a hole is provided for the thermostat chain to pass through. On the 1705 model the lever arm extends beyond the edge of the top plate.

FIG. 17

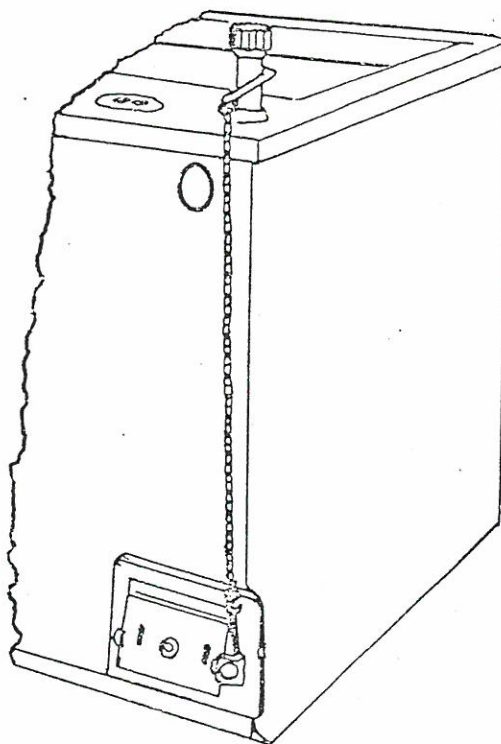
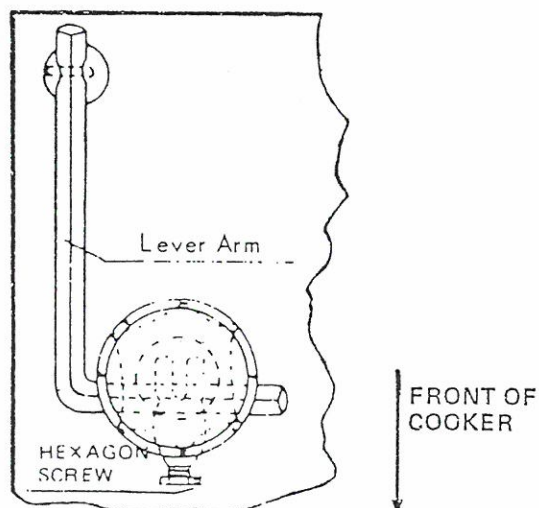


FIG. 16



Position of Thermostat

FUELS

WELL SEASONED and DRY WOOD is of paramount importance. By WELL SEASONED, we mean at least one (1) year old and preferably more than two (2) years old. By DRY, we mean wood that has been cut and allowed to dry in stacks and then kept under cover for at least six months before using. The ratio of satisfaction and heat output is directly proportional to the age and dryness of the wood.

COAL:

Use coal or the larger diameter smokeless fuels. Coals which disintegrate in heat are not recommended nor are those producing a large amount of ash.

OPERATING

The amount of ashes in the fire is a very important factor in the performance of the Franco-Belge.

When burning wood, a good base of ashes is advantageous for slow controlled burning, but should be reduced by riddling before cooking, or whenever they accumulate too much and reduce the fire box capacity. Well seasoned dry wood is essential for satisfactory performance of the Franco-Belge.

When burning coal or smokeless fuels, the ashes must be riddled more frequently to allow a good airflow to the fire. Coal and especially smokeless fuel requires much more air to burn than wood. Obviously you will have to experiment with the type of fuel available in your area. Cooking with coal does require a long flaming fuel, and you will need to select the fuel carefully.

During the time when heating only is required, the control lever on top of the cooker should be positioned on CHAUFFAGE and the automatic thermostat control should be set to the water temperature required. Provided that the fire is stoked and the ash pan door manual air draught shutter is closed, the thermostat will control the burning rate of the fire to produce the required temperature.

When cooking is required, riddle the ashes, build up the fire, move the control lever to CUISINE and open the manual draught on the ash pan door. You will appreciate that the water jacketing is so efficient that a long flaming fuel should be used in order to heat up the top plates and oven. The cooking temperatures are controlled by adjusting the manual draught as necessary.

During the summer when the domestic hot water supply and cooking, but not the central heating, are required, the appliance should be used with the 'Summer Grate'. This grate rests on four lugs situated in the fire box and reduces the size of fire by approximately half. Close the gate valve in the central heating circuit, until you next need heating.

The summer hearth may be used with cooker models only, when very small amounts of heat are required. This shields the water jacket and therefore allows the unit to be used for cooking with little heat going to the water. However, for most applications the summer grate is adequate.

Your Franco Belge will take a bit of getting used to. Initially you may find it hard to control and difficult to acclimatize your cooking techniques to the performance of your cooker. Many people take one or two months before they feel completely happy with the cooker and often during the first week or two wonder whether they will ever get it right. But do not worry, a well installed Franco Belge is a joy to cook on and we now have thousands of experienced and enthusiastic Franco Belge cookers.

You would however be wise to postpone asking your boss, or your mother-in-law, to dinner until a few weeks after the arrival of your cooker.

TROUBLE SHOOTING

An inadequate chimney is almost invariably the cause of faulty operation. If the unit smokes when the top is opened, try allowing the fire two or three minutes on full draught before opening. If this doesn't help, check the chimney draught with a meter, and if it is below the recommended level (see page 8) check for air leaks, blockages or a constantly cold flue. In most cases a twin walled insulated system will provide the necessary draught. If however this type of flue fails to provide the required draw, because of its location relative to other buildings, hills or trees, consult your dealer about electric draught inducers.

The major possible flue faults and their symptoms are listed below:—

Flue Fault.	Symptoms.
Inadequate Draught	<ol style="list-style-type: none">1. Difficulty in maintaining the fire.2. Difficulty in obtaining high oven temperatures.3. Hot plate temperature too low.4. Fire unresponsive to changes in draught.5. Smoke and smell in the kitchen.6. Puffs of smoke emitted when loading.7. Condensation from base of cooker.8. Rapid sooting up of flue ways and chimney.
Draught too strong	<ol style="list-style-type: none">1. Uncontrollable burning.2. Overnight burning not possible.
Draught too variable	<ol style="list-style-type: none">1. Difficulty in controlling temperature.2. Burning rate variable.3. Good overnight burning only sometimes possible and seems to depend on wind conditions.
Not enough air entering kitchen	<ol style="list-style-type: none">1. Burning rate variable.2. Smoke in the kitchen.3. Puffs of smoke from cooker top when kitchen door is slammed.

If the fire burns too fast and won't stay in overnight, ask your dealer about the flue draught control box, which has a manual damper and air inlet control. This can be used to slow down the flue gases and if necessary allow some cold air into the chimney to cool it and reduce the draw. This box is designed specifically for use with 6" twin wall insulated flue and splits vertically to allow easy access to both the cooker and the flue. It is only available for top connections.

Condensation is often mistaken for a leaking water jacket, and can be very persistent. Each water jacket is rigorously tested before leaving the factory, and there is no chance of a leak occurring under normal circumstances.

To minimise the possibility of condensation, always allow your Franco-Belge to warm up slowly, and never operate the circulating pump until the gravity circuit is heated, with the return pipe temperature no more than 20°F below the outlet. If condensation appears after the pump is turned on, this is because the radiator circuit is cooling the water too much, so turn off the pump again and allow the return pipe to heat up fully. Turn off 50% of the radiators, then start the pump again. Turn on the radiators again one by one, allowing plenty of time for the return water to heat up to its proper temperature.

If condensation still persists, turn off the circulating pump, and allow the fire to burn slowly just heating the domestic hot water for a full 24 hour period. Then try the pump again. If the return water is always more than 20°F below the outlet with the pump on, then a three way mixer valve and by-pass pipe will have to be fitted. This will take the hot flow water and bleed some of it back into the return and pre-heat it, thus avoiding the temperature differential which causes condensation.

Condensation normally only appears when the system is first used, and sometimes at the beginning of the winter when the heating is first put on. In both cases, always allow the heat to build up very slowly, and condensation will be kept to a minimum, or not experienced at all.

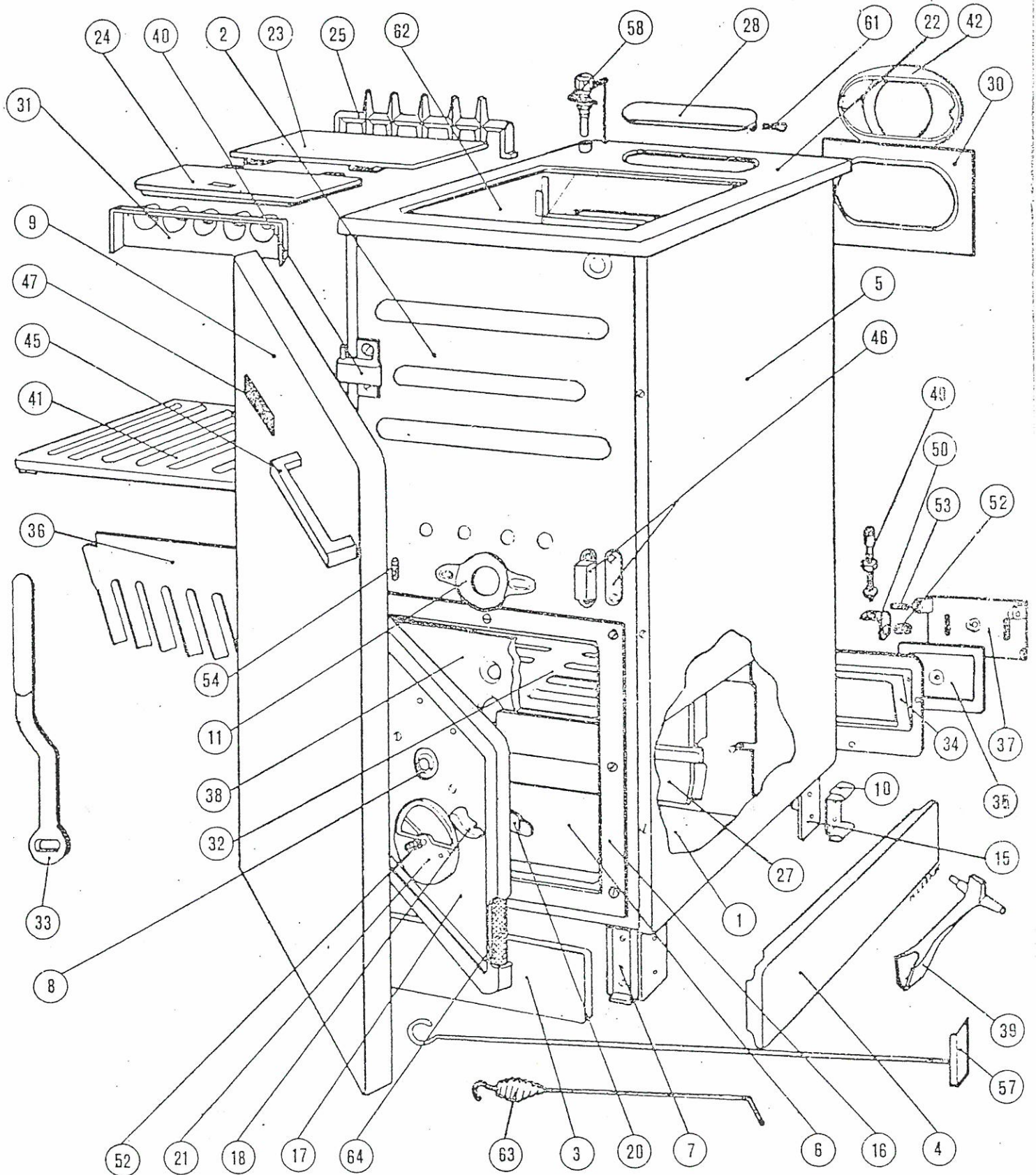


FIG. 21