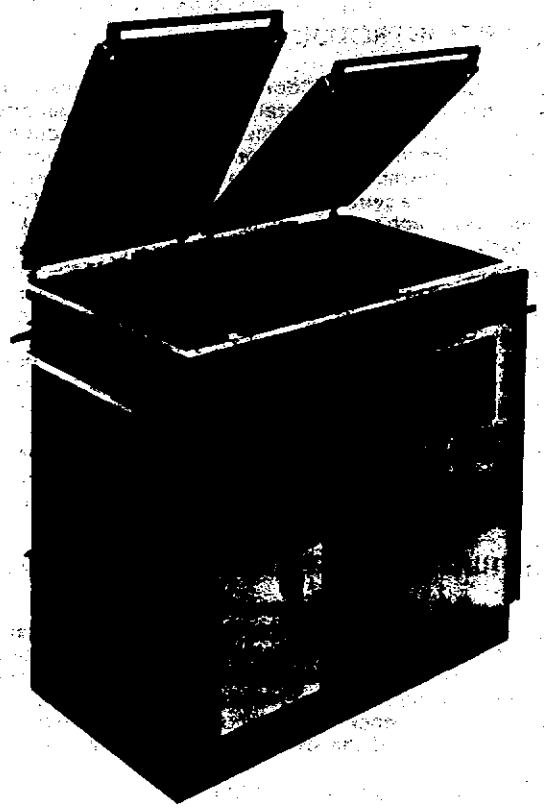
TIROLIA®
cooking & heating

TIROLIA-Werke Gesellschaft m. b. H.
POB 99, A-6130 SCHWAZ/Tyrol-Austria

Directions for Installation and Use of wood and coal burning

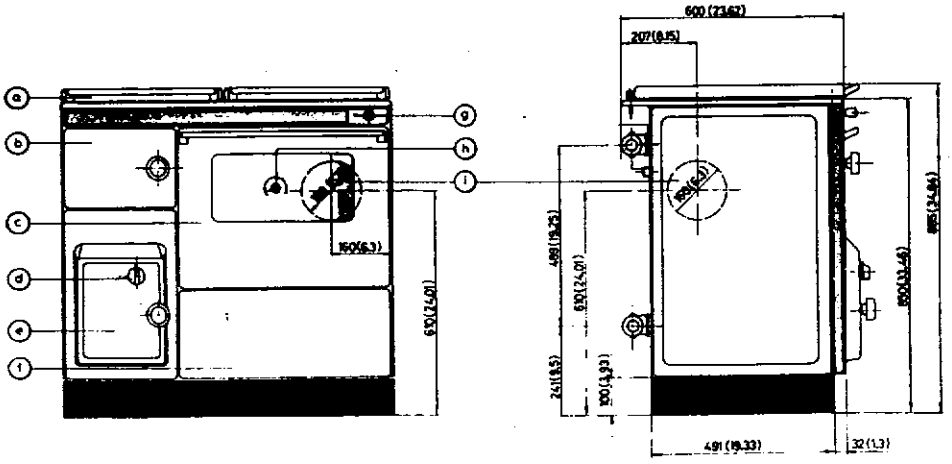
Central Heating Cookers



1 TECHNICAL DATA:

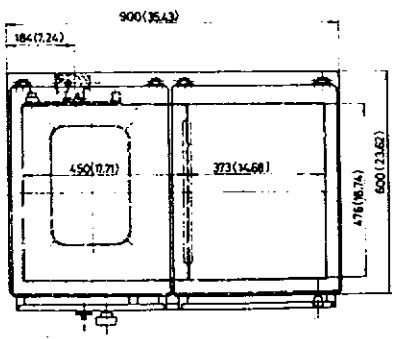
width of stove in.	35,4
depth of stove in.	23,6
hight of stove in.	34,8
service altitude in.	33,5
width of oven in.	15,7
depth of oven in.	16,9
hight of oven in.	13,8
oven thermometer	yes
cooking surface sq. in.	139,5
depth of firebox in.	16,5
width of firebox in.	8,3
hight of firebox continuously adjustable in.	7,5 - 16,9
size of firebox door width/hight in.	7,9 / 6,3
flue diameter in.	6,3
flue pipe connection	on two sides possible
approx. output of boiler with coke Btu/h	56.000

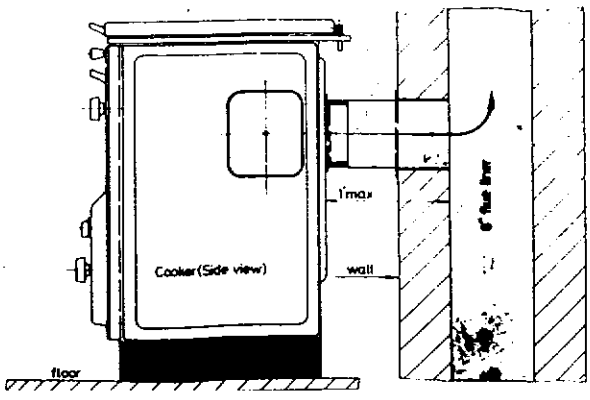
approx. output of boiler with wood (beech) Btu/h	56.000
radiating output coke:	
insulating cover open	9.600
insulating cover closed	3.600
radiating output wood:	
insulating cover open	12.000
insulating cover closed	8.000
necessary chimney draft mbar	0,15
test pressure bar	3,5
operating pressure	2,5
boiler connections, external thread in.	6/4
hot water connection, internal thread in.	1
domestic hot water connection, internal thread in.	5/4
volume of boiler imp. gallon	2,64
weight gross / net lbs.	661 / 573



(a) insulating lid
(b) fire door
(c) oven
(d) automatic air intake control
(e) ash door
(f) cleaning door and tool storage
(g) control for direct draft
(h) oven thermometer
(i) flue pipe connection

Measurements in mm(in inch)





GENERAL INTRODUCTION

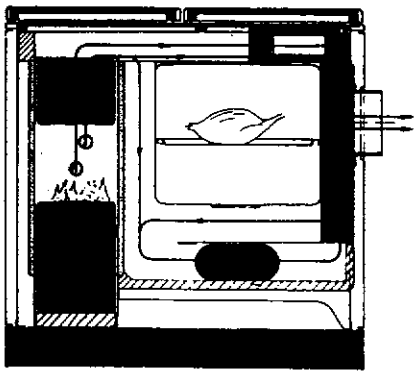
The Tirolia Central Heating Cooker for solid fuel is made of enamelled (porcelained) sheet metal, cast iron and schamotte firebricks. It employes the time honoured »BAVARIAN double draft system« assuring maximum efficiency in the combustion of fuel. The water jacket (6 mm steel) is around the fireplace for maximum heat transfer to the central heating system and boiler. The grate is adjustable in each position which enables you to vary the heat output to the water jacket or cook top (low grate position — more output for central heating system). The automatic thermostatic draft regulation is built-in to the ash door. This enables you to have absolute control of draft and of the cookers heat output. The thermostat is to adjust with the knob on the ash door (3 = 30°C, 9 = 90°C) and will reduce the air-income automatically if predetermined water temperature in the jacket is reached. By closing the insulated lid the radiant heat will be reduced by 40% which effects a reduction of fuel consumption also.
Every Tirolia central heating cooker includes a poker — designed for shifting fuels, shaking the grate, lifting of top fuel door as well as a brush, soot scraper, a rank for lifting the grate and two T-pieces.

3 INSTRUCTION FOR DIRECT DRAFT CONTROL

The direct draft control has two operations:

a) As many cases in the practice have shown chimney and flue conditions are often disadvantegous which takes negative effects (formation of smoke) especially at the heating up period. In order to avoid this the direct draft control has been developed. It will be opened by pulling out the knob. The flue gases do not go around the oven any more but in the chimney directly. (1)
The necessary warming up of the chimney will be obtained very quickly.
After lighting the fire, close the draft control by pushing the knob and the flue gases will go around the oven and maximum utilization of the heat as well as heating up of the oven is guaranteed. (2)

b) For quick heating up of cook top plate.
Quick heating up of cook top plate can be obtained by opening the direct draft control when oven is not used.



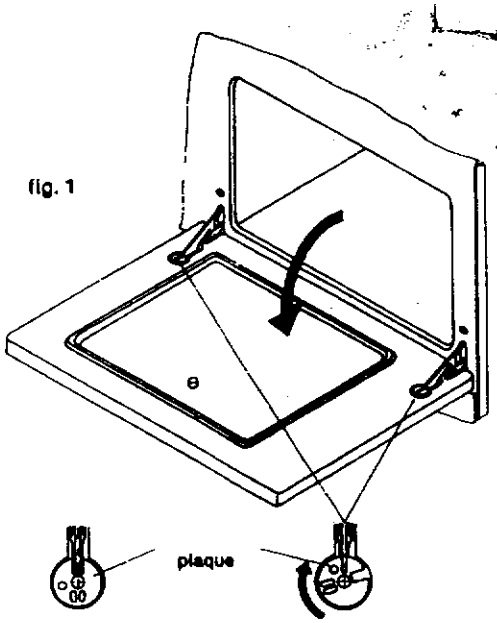


fig. 1

1a regular position 1b taking off position

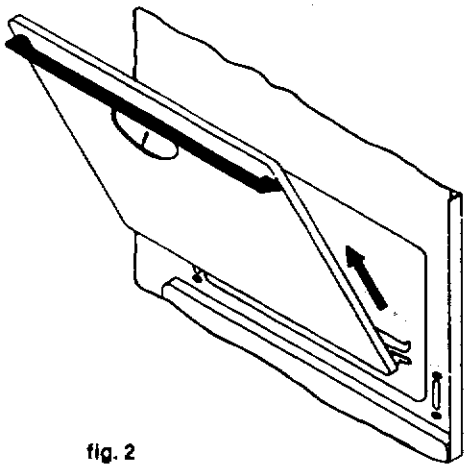


fig. 2

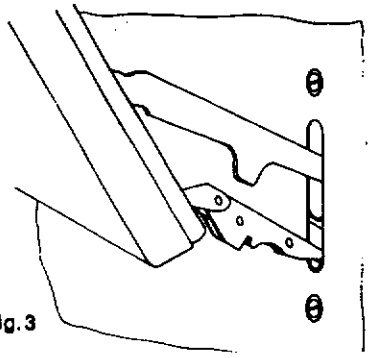


fig. 3

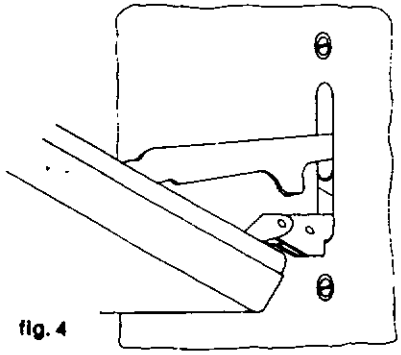


fig. 4

It is important to maintain a constant fire during baking and roasting. We recommend our TIROLIA-COOKBOOK for central heating cooker, including tips for handling, cooking, baking and recipes.

10 CLEANING AND MAINTAINING

The built-up of soot deposits will vary according to the condition and type of fuel used. If the appliance is used for burning wood we also advice you to burn coal occasionally to rise the temperature to burn off the tar which would otherwise collect on the water-jacket. For thorough cleaning the stove must be completely cold. Please follow these cleaning rules:

— empty ash container daily
— remove any unburnable remains from the grate daily
— it is important that all inside surfaces be cleaned of soot regularly. In order to accomplish this you must follow these steps:
  - o remove the top plate carefully
  - o then flip the solid steel stove top carefully over
  - o brush all soot from all metal surfaces and firing clay down into the space underneath the oven
  - o open clean-out door by removing the enemelled cover below the oven door and remove cleaning lid on oven bottom
  - o scrape all accumulated soot into a dust pan
  - o close clean-out door (and enamelled cover)
  - o replace the oven bottom cleaning lid airtight
— also clean the stove pipe regularly. It is easier and better if done frequently
— cleaning of the outer surface of the cooker is very simple due to the smooth modern design and high quality porcelain finish. It can be dusted with either a dry cloth or washed with a mild soapy solution. Do not wash a hot cooker, always wait until it is thoroughly cooled off. Otherwise it is possible to damage the enamel (porcelain). Dry off with a soft towel and the shine comes back.
  Wipe up spills immediately

We recommend at least an annual inspection of the cooker especially regarding fire bricks, thermostat-control, thightness of screws, doors and flue pipe connection. If chimney and flue pipe connection is not swept regularly a chimneyfire may be developt. If a failure is disclosed please contact your local dealer.

11 WARNINGS

— Do not use any other fuel than wood, paper, peat or coal. Use of synthetic products may effect poisoning. Use of solid or liquid explosive materials may effect explosions.
— Ensure an airtight flue pipe connection. Untight flue pipe connection may effect poisoning.
— During use do not touch top plate, top plate frame and side panel of the cooker where the flue pipe connection is as well as insulated lid. This may effect risk of burning.
— During use do not put clothes, plastics or other inflamable material or material sensitive to heat on top plate or insulated lid. This may effect risk of burning.
— Do not clean hot cooker with wet towal or paper. This may effect risk of burning by hot vapour.
— Do not clean hot oven with chemical materials. This may effect poisonous vapour which is harmful to your health.
— Do not mix chemical cleaning materials. This can effect chemical reactions which may cause harms.
— Open the oven door slowly so that hot air can escape before you take out dishes. Otherwise risk of burning.
— Maximum load of oven door, heating- and ash door is 20 kg for avoiding damages.
— Do not put things of childrens interest on top of cooker or above the cooker. Children may be hurt badly if they climb on the cooker.
— Do not use the oven for any other than heating of dishes. All things which are sensitive to heat should not be put in the oven as they would be destroyed and may effect risk of burning.
— Keep fire door closed during operation except when adding fuel.
— Keep ash door closed during operation to avoid overheating.
— Before operating the cooker, make sure the system is filled with water.
— The cooker shoud not be employed where children or old persons are left without a competent responsible person present, as otherwise there can be no guaranteed elimination of the danger of contact.

Careful study of there instructions will make it easy for you to use and maintain your Tirolia central heating cooker.
We can not be respensible for problems and damages caused by improper installation, operation or modification by purchaser or damages resulting from non-observance of these directions.

12 RECOMMENDED INSTALLATIONS

Systems 1 – 4 closed systems
Systems 5 – 6 open systems
System 1 Residential heating application utilizing TIROLIA ZH domestic hot water generator with gravity feed storage tank
System 1.1 House heating and domestic hot water
System 1.2 Domestic hot water use only
System 1.3 House heating and domestic hot water in event of power failure
System 2 TIROLIA model ZH application for domestic hot water, hydronic heating
System 3 TIROLIA model ZH application for domestic hot water and forced warm air heating
System 4 TIROLIA ZH application for domestic hot water plus supplemental radiation
System 5 TIROLIA model ZH application for domestic hot water and central heating by gravity
System 6 Residential heating application utilizing TIROLIA model ZH for domestic hot water with gravity feed, forced circulation for central heating

It is important that the TIROLIA central heating cooker is never set in operation before system is filled with water and ventilated. The installations have to be done by qualified specialists only.

We recommend following installations:

I. CLOSED SYSTEMS

System 1:

Existing oil/gas-heating installation in connection with a TIROLIA central heating cooker. The cooker heats domestic water as well as radiators.

Installation instructions:

— The pressure reducing valve (F) has to be installed in order to receive a water pressure of 15 lbs and flowing in of cold water in case of loss of water.
— It is recommended to install the heat exchanger (H) in serie with the heat exchanger of the existing oil/gas boiler, in order to increase the capacity of heating of domestic water and to get a sufficient temperature in the existing boiler and to reduce the oil/gas consumption. Should be an individual gas/oil or electric water boiler existing, so it is important that a mixing valve will be installed at the domestic water outlet of heat exchanger (H), that is before connection of serie with the existing oil/gas, electric water boiler. The adjusted water temperature at the mixing valve should be not more than 160° F in order to avoid reduction of lifetime of the boiler.
— The thermostat L 4006 B (C) which is to be fixed at the heat exchanger has to be connected in such a way that in case of overheating the circulating pump will be switched directly by this thermostat. The necessary electrical energy is to be taken from the contacter of thermostat of the existing boiler.
— An installation of a TIROLIA Central Heating Cooker is not recommended as additional heating if the existing system is heating more than 450 ft2 (42 m²) radiator heating surface continuously.

System 1.1 Heating of radiators.

For the heating of the radiators the valves nos. 1, 4 and 6 have to be closed and the valves nos 2, 3 and 5 have to be open. When reaching a water temperature of 180° F, the aquastat (C) has to switch on the circulating pump (E). The thermostat of the existing oil/gas unit should be set to a maximum temperature of 165° F and to a working temperature of 150° F. That means, the existing oil/gas unit gives a continuous basic heat and by starting the central heating cooker the water reaches the required temperature. The adjustment of the thermostat of the existing oil/gas unit (working thermostat) can be changed by request of the customer whereby the maximum capacity of the central heating cooker has to be considered. In case fo overheating the thermosvalve (K), which opens at a water temperature of 210° F effects that hot domestic water flows off and new cold domestic water flows in which causes that the temperature of primary flow is reduced.

Important:

The domestic water supply of the system is to be guaranteed during operation of the central heating cooker. This is also valid in case of power failure. In this case it has to be switched over to system 1.3. The electrical and water installation has to be done by a qualified specialist. The safety devices of the existing system have to be retained.
The operation ability of all safety devices should be checked by a qualified specialist every year (preferable at the beginning of the heating period).

4 INSTRUCTIONS FOR TAKING OFF AND PUTTING IN OF OVEN DOOR

A) Taking off:

1. Open the oven door with slight pressure downwards until stop (Fig. 1).
2. Turn the two fixing plates (left and right) shown on Fig. 1 with a coin to the right in the marked taking off position (Fig. 1b)
3. Close the oven door until 20 cm (8 in.) and remove it upwards in direction of the arrow (Fig. 2).

B) Putting in:

The putting in of oven door has to be done in reversed sequence.

1. Before putting in the oven door make sure that the fixing plates are in position (Fig. 1b).
2. Put in the hook-shaped bracket into the upper slit in the same door position as taking off (approx. 20 cm opened). The lower bracket must be put into the lower slit at the same time (Fig. 3). Put attention to the exact catching of the lower bracket in the lower support (Fig. 4).
3. Open the door downwards with slight pressure until stop Fig. 1).
4. Turn the fixing plates (left and right) back to the regular position (Fig. 1a) — the oven door is fixed again.

Never take off or put in the oven door by force, in order to avoid damaging of hinges. If you have problems with putting in or taking off the oven door, get in contact with your dealer. He will explain the right handling to you.

(This instruction is not for the model »TARA«)

5 CHIMNEY AND LINKING UP

a) CHIMNEY

The chimney as a part of the system is producing the draft and is therefore most important to ensure satisfactory performance of the cooker. Before installation check that the chimney is clear of all obstructions and that all air leaks and bad joints are rectified. If it is old it should be swept even if this has been done recently. It is vital that it is well insulated to ensure that flue gases don't 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 chimney should not be shared with any other appliances as air will be drawn from this and the cooker draft will be diminished. The cooker should never be fitted to an unlined chimney or to a chimney of a large dimension as there is not sufficient heat loss from the cooker to warm up a big chimney and poor draft is likely. The chimney diameter should be about 8 inch. The required chimney draft for this Tirolia central heating cooker is min. 0,15 mbar (1,5 mm wat) (0,06 in/wg) and max. 2 mm WS. Higher draft will effect heat transfer efficiency and reduced heat output to water jacket and cook top and fire will not stay overnight. Lower draft will reduce combustion and creosate will be built up within the cooker and the fire will smoke. In order to produce this draft adequate length of chimney and roof clearance is necessary. The minimum height of chimney is 4 meter (13,5 ft.). The flue connections should be at least same diameter as that of the stove outlet. The flue connection must be airtight. Regularly cleaning of chimney is required. If the chimney is subject to downdraft the height of chimney may need to be encreased or an anti-down draft cowl fitted, or both.

b) LINKING UP

The connection to the chimney can either be from the rear or side of the cooker. A connection piece is enclosed in each appliance. In the case of side outlet please remove the blanking plate from the side opening and fit it to the rear opening tightly.
Ensure an airtight seal is made between the connection piece and the chimney. This is very important as any entry of air other than through the access apertures provided in the cooker will reduce the draft and impair the efficiency of the cooker. Untight chimney connections may effect poisoning. The connection pipe must fit flush with the inner lining.
Any change of size should be gradual and always from smaller to larger. Where bends are to be installed always use obtuse and wherever possible the bends should be complete with an airtight cleaning door.
If there is no existing house chimney a prefabricated twin walled, stainless steil, insulated flue can be used. The use and installation of these twin walled flues has to be in accordance with legal regulations. The use of single wall stove pipe at any point is not recommended.

c) INSTALLATION AND CLEARANCES

Installation and clearances to combustibles must comply with all fire prevention regulations and building regulations. Please contact your local building office to see the legal demand and how to reduce clearances.

6 BEFORE LIGHTENING AND LIGHTENING

Before starting the first fire it is necessary in order to protect the raw enamel finish that all dust and specks are wiped off with a soft towel wet with mild detergent. This is only necessary for the first break-in fire. Make sure that the system is completely filled with water, vented and the circuit has been tested by your installer.
Start a small fire with a bit of paper and small bits of dry kindling. Open the draft control in the ashbox door to full open. As soon as the fire is burning well slowly add coal or larger pieces of wood. Wait until the larger pieces of fuel are burning well, then adjust thermostatic draft control to requested temperature. By careful regulating of this draft control you will achieve the smooth long combustion that these stoves are famouse for. Never throw the draft control wide open all at once rather adjust position slowly as needed for a safe operation. When adding fresh fuel best results are obtained by applying an even layer. Ideally add the fuel more frequently in smaller amounts during the daytime use.
Caution: Do not heat the solid steel cooktop to a glowing red hot. This wastes heat and can cause a reducted lifeexpectancy of the cooker.
Do not overload the fire-box so that fuel can not drop out of the loading door.

7 KEEPING THE FIRE BURNING OVERNIGHT (BANKING)

If you wish to keep the fire going overnight it is the best to add coal on top of remaining embers making sure that the fuel is burning slowly (reduce airintake). The water temperature should not be less than 70° C. It is good to keep the remaining ashes on the grate before adding the coal. Therefore do not shake the grate at this time. Shake it gently in the morning, taking care not to lose remaining embers, empty ash pan, open the draft control an add new fuel for your morning fire.

8 FUELS

a) WOOD

The cooker will satisfactory burn wood logs, blocks, peat briquettes and paper. Wood should always be perfectly dry in order to obtain the best cooker performances, response and minimise creosote deposits. In addition wet logs may provide overnight banking problems. If possible burn dry soft woods in daytime and dry hard woods overnight. The ratio of satisfaction is directly proportioned to the age and dryness of the wood.

b) 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. Fuel smaller than one inch does not give satisfactory results.
Do not use any other fuel. Use of synthetic products (plastics) may effect poisoning. Use of solid or liquid explosive materials may effect explosions (for instance: oil, gasoline, alcohol).

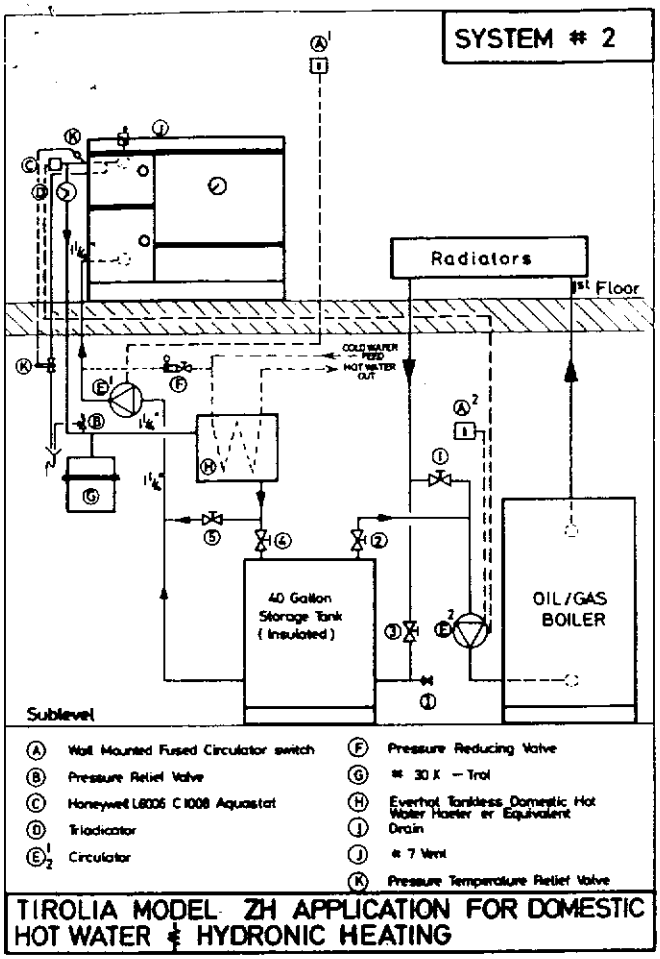
9 COOKING AND BAKING

a) COOKING

The top of the cooker should never be glowing-red. When using the cooktop use pots with flat even bottoms. The hottest part of the full size plate is immediately over the fire. For quick cooking you need a hot fire and if the oven is not in use at the same time the fire grate can be raised to its highest position for maximum fuel economy. Do not overfill the fire box so that no fuel can fall out of it. Also if you only wish to cook but not to heat up the kitchen very much crank the grate to its highest position.

b) BAKING

For baking and roasting the oven should be preheated. To bring your oven to the required temperature you need a quick, bright fire and your thermostat on a high number. Once you have achieved the required temperature you should lower the thermostat number according to the size of dish to be cooked and the cooking time necessary. For a moderate temperature the grate can be in a higher position. For quick oven cooking at a high temperature the grate will need to be at the lowest level.



TIROLIA MODEL ZH APPLICATION FOR DOMESTIC HOT WATER & HYDRONIC HEATING

Installation notes:

1. A pressure reducing valve must be installed so that the Tirolia system maintains a pressure of 12 lbs. assuring a make-up water supply in event of system water loss. It is important this valve be installed at a level below the lowest part of Tirolia boiler shell. The diaphram type expansion tank (such as an Extrol = 30) is to be installed on the supply line prior to the hot water generator so as to allow for heated water expansion factor in even of Tirolia system isolation from existing heating system.
2. It is **NOT** recommended that the model Tirol ZH be installed to supplement a residential hot water heating system if the existing system exceeds a capacity of 450 square feet of standing radiation. (Equivalent of 116 lineal feet of single tier standard hydronic baseboard.)
3. It is recommended that an A540 watts 125 = 210° pressure/temperature relief valve (K) be installed next to 30 = relief valve (J) at outlet of Tirolia to insure against overheat situations which could cause possible damage to built / in thermostat control on Tirolia unit.

System 2.1 Heating up of radiators and domestic water.

The valves No. 2, 3 and 4 are opened, valves No. 1 and 5 are closed. The pump (E1) has to be switched on by switch (A1) before operation the central heating cooker. The pump (E2) has to be set in operation by the aquastat (C) when a temperature of 180° F is reached, in order to avoid overheating of the system. Independent thereof it must be possible to set pump (E2) by switch (A2) in operation when heating through existing oil/gas boiler. The 160 l water boiler is considered as heat storage for domestic water supply. In case of overheating thermovalve (K) opens, hot domestic water flows off and cold domestic water flows by pressure reducing valve (F) in.

Important:

The domestic water supply of the system has to be guaranteed during operation of the central heating cooker. Also in case of power failure. If this cannot be guaranteed, so the fuel has to be taken out of the firebox of the cooker immediately and to be emptied in an fireproof container. The safety facilities of the existing system should be retained. The operating ability of all safety devices have to be checked by a qualified specialist every year (preferable at the beginning of the heating period).

System 2.2 Heating of domestic water.

Valve No. 4 is 2/3 open in order to ensure the heating of the 160 l water tank. Valves No. 1, 2, 3 and 5 are opened. The pump (E 1) is to be set in operation by switch (A 1) before operating the cooke The pump (E 2) has to be set in operation by aquastat (C) when water temperature of 180° F is reached in order to avoid overhea ing.
The safety devices of the existing system have to be retained.

Important:

The domestic water supply of the system is to be guaranteed during operation of the central heating cooker. This is also valid in case of power failure. If this cannot be guaranteed, so the fuel has to be taken out of the firebox of the cooker immediately and to be emptied in a fireproof container.
The operating ability of all safety devices should be checked by a qualified specialist every year (preferable at the beginning of the heating period).

System 3:

Hot-air heating and domestic water preparation by TIROLIA central heating cooker.

Installation notes:

1. A pressure reducing valve must be installed so that the Tirolia system maintains a pressure of 12 lbs. assuring a make-up water supply in event of system water loss. It is important this valve be installed at a level below the lowest part of Tirolia (Tirol ZH) boiler shell. The diaphram type expansion tank (such as an Extrol = 15) is to be installed on the supply line prior to the Solar hot water tank so as to allow for heated water expansion factor.
2. It is not recommended that the Tirolia model (Tirol ZH) be installed to supplement an existing forced warm air system if the known heat loss of the structure exceeds 80.000 BTU's. It is suggested that the netoutput rating on the existing oil or gas fired furnace be determined and if this rating does not exceed 112.000 BTU's, it is normally assumed a Tirolia installation could be made and a definite savings in energy money be realized. The above in only an estimate for unit sizing and is not to be construed as an exact guide. Consult your local heating specialist for exact details.
3. Heat exchanger coil and blower application. System = 3 drawing indicates a heat exchanger coil capacity of 85.000 BTU's. Due to the many intangables involved in heating coil application, such as air flow, water temperature entering air temperature, water flow etc., a quailfied heating contractor is required to determine exact heat exchanger coil application so as to be assured of a relatively quiet and comfortable operating system.
4. It is recommended that a watts A-540 pressure/temperature relief valve (K) be installed next to 30 = relief valve (J) at outlet of Tirolia to insure against overheat situations which could cause possible damage to built/in thermostat control on Tirolia unit.

5. **Electrical installation:**

Aquastat (C) should be tight in in such a way that the ventilation of the existing system will be switched on when the temperature is exceeding 200° F independent of the room thermostat and burner control.
The aquastat should be tight in in such a way that when the temperature is exceeding 150° F, the oil/gas — burner will be released resp. at a temperature more than 150° F the oil/gas — burner will be switched off.
Thereby it will be obtained that the oil/gas — burner comes to operation only, when the cooker is producing not enough heat.

System 3. 1. Hot-air heating and domestic water preparation.

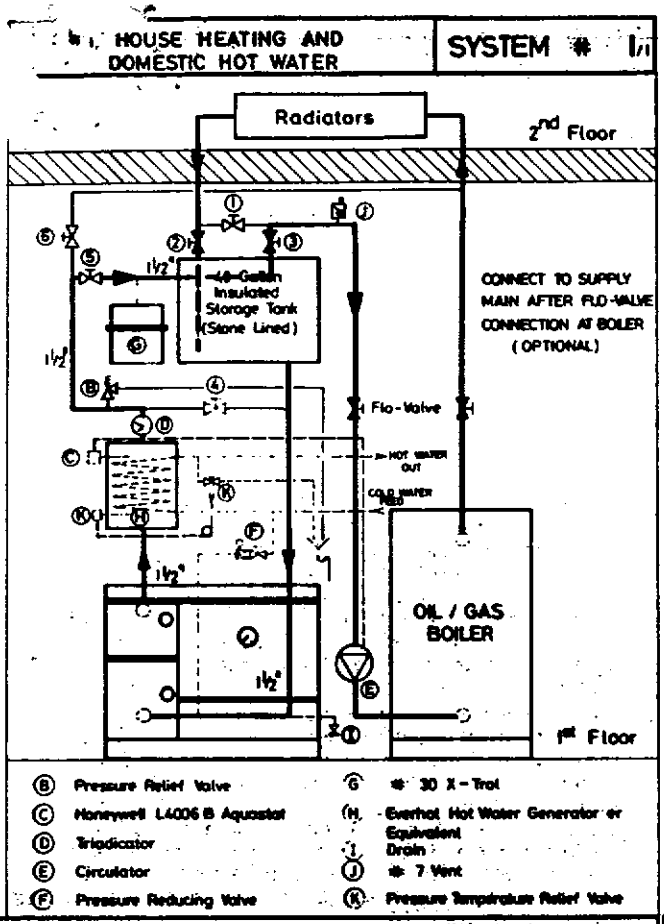
The valves No. 1, 2, 3 and 4 are opened. The pump (E) **must be** switched on by switch (A) **before** operating of cooker. Switch (A) should be installed nearby the cooker.
It is imperative that circulator be switched on **before** any attempt is made to ignite fuel in the Tirolia and subsequent maintenance of fire thereafter. Neglect to place circulator in a continous operating mode may result in damage to the Tirolia heat exchanger.

Important:

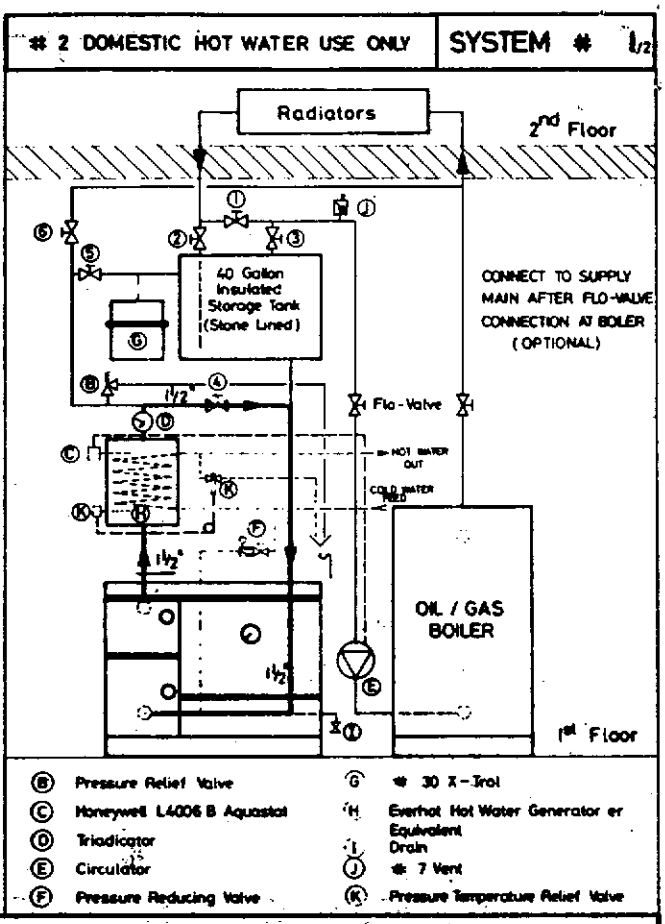
The domestic water supply has to be guaranteed during operation of the central heating cooker. Also in case of power failure. If this cannot be guaranteed so the fuel has to be taken out immediately and to be emptied in a fireproof container. The safety facilities of the existing system have to be retained.
The operating ability of all safety facilities should be checked by a qualified specialist every year (preferable at the beginning of the heating period).

System 3.2 Heating of domestic water.

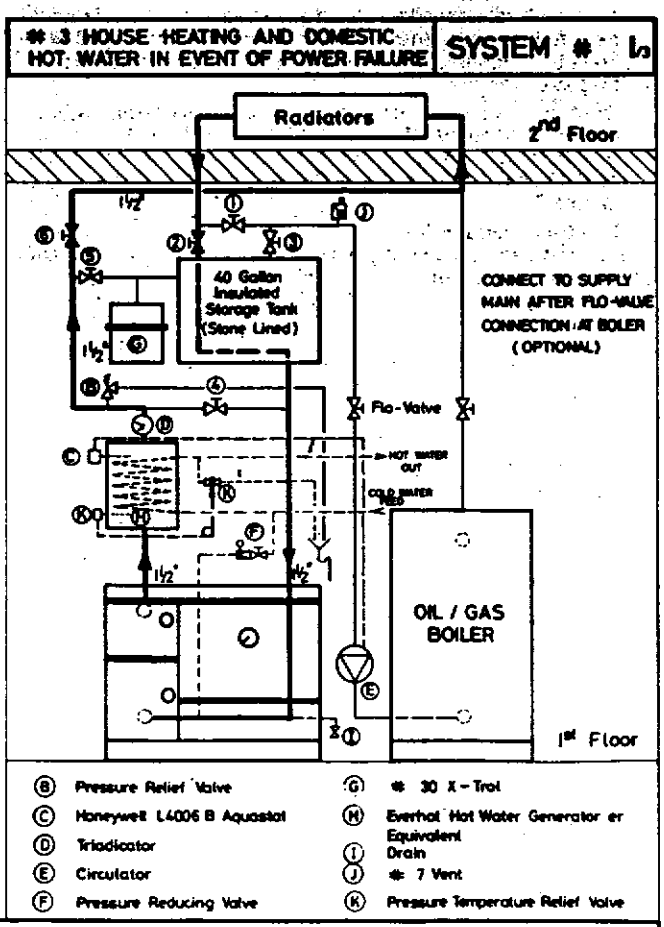
The valves 1 and 2 are closed, the valves 3 and 4 opened. The pump (E) has to be switched on by switch (A) before operation of the central heating cooker.
It is imperative the circulator be switched on **before** any attempt



RESIDENTIAL HEATING APPLICATION UTILIZING TIROLIA ZH DOMESTIC HOT WATER GENERATOR WITH GRAVITY FEED STORAGE TANK



RESIDENTIAL HEATING APPLICATION UTILIZING TIROLIA ZH DOMESTIC HOT WATER GENERATOR WITH GRAVITY FEED STORAGE TANK



RESIDENTIAL HEATING APPLICATION UTILIZING TIROLIA ZH DOMESTIC HOT WATER GENERATOR WITH GRAVITY FEED STORAGE TANK

System 1.2 Heating of domestic water.

The heating of the central heating system is effected by the existing oil/gas boiler. The central heating cooker heats the domestic water only. For that purpose are the valves No. 1 and 6 closed, the valves No. 2, 3 and 4 opened. Open valve No. 5 obout 2/3, so that the insulated water boiler is heating along with.
In case of overheating, the thermovalve (K), which opens at a water temperature of 210° F effects that hot domestic water flows off and new cold domestic water flows in which causes that the temperature of primary flow is reduced.

Important:

The domestic water supply of the system is to be guaranteed during operation of the central heating cooker. This is also valid in case of power failure. The electrical and water installation has to be done by a qualified specialist. The safety devices of the existing system have to be retained. The operating ability of all safety devices should be checked by a qualified specialist every year (preferable at the beginning of the heating period).

System 1.3 Heating of radiators and domestic water in event of power failure.

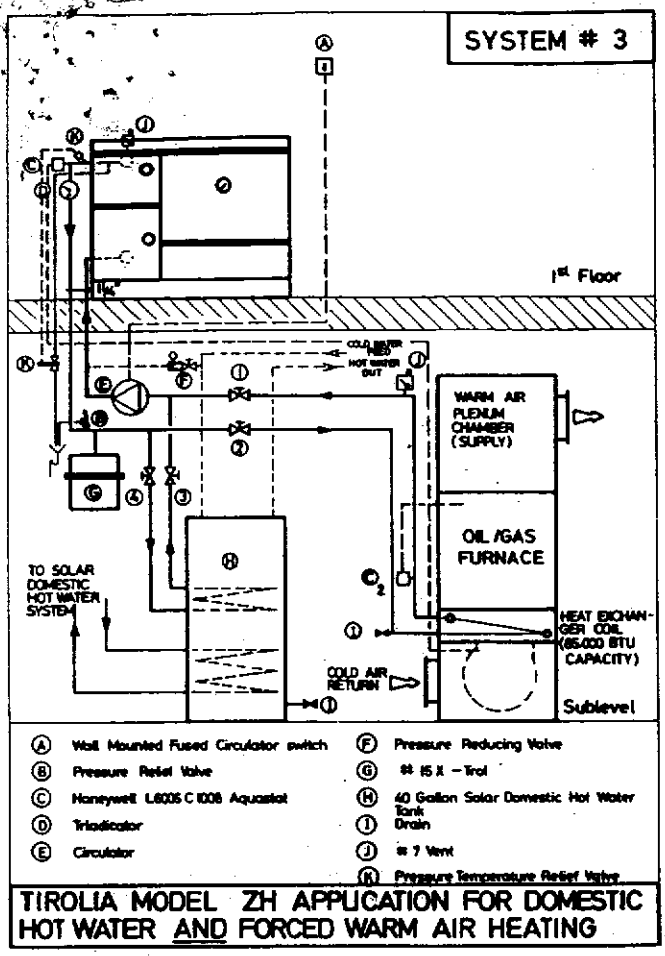
Close the valves No. 1, 3, 4 and 5 and open the valves No. 2 and 6. Therewith the system changes over to gravity flow operation. When overheating, (a water temperature of 210° F is reached), the thermovalve (K) opens and hot domestic water flows off and cold domestic water flows in, whereby a cooling down of primary flow is atained.

Important:

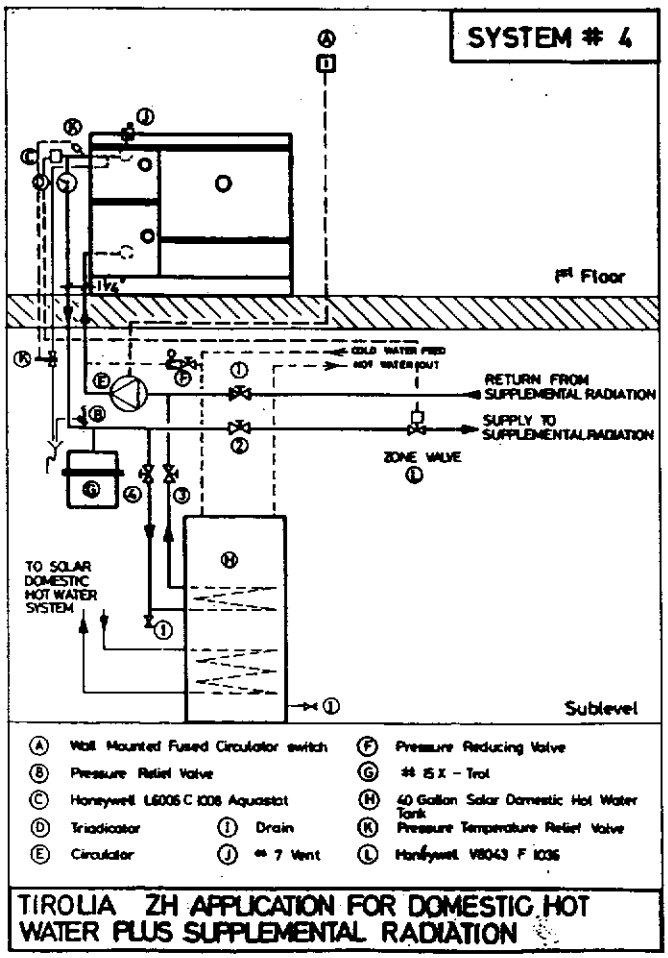
The water supply is to be guaranteed during operation of the central heating cooker. This is also valid in case of power failure, because otherwise danger of damaging of the system by overheating is existing. The operating ability of all safety devices should be checked by a qualified specialist every year (preferabele at the beginning of the heating period).

System 2:

In addition to the oil/gas boiler in the sub level a TIROLIA central heating cooker is to be installed on the first floor for heating up radiators and domestic water. Operation by force of gravity is not possible.



TIROLIA MODEL ZH APPLICATION FOR DOMESTIC HOT WATER AND FORCED WARM AIR HEATING



TIROLIA ZH APPLICATION FOR DOMESTIC HOT WATER PLUS SUPPLEMENTAL RADIATION

is made to ignite fuel in the Tirolia and sub sequent maintenance of fire thereafter. Neglect to place circulator in a continuous operating mode may result in demage to the Tirolia heat exchanger.

Important:

The domestic water supply has to be guaranteed during operation of the central heating cooker. Also in case of power failure. If this cannot be guaranteed so the fuel has to be taken out immediately and to be emptied in a fireproof container. The safety facilities of the existing system should be retained.
The operating ability of all safety facilities have to be checked by a qualified specialist every year (preferable at the beginning of the heating period).

System 4:

Installation notes:

1. The pressure reducing valve (F) has to be installed in a way that a pressure of 15 lbs exists in the system and that cold water will flow in in case of water loss. It is important that this valve is underneath of the cooker. The expansion chamber should be installed at the primary flow before the hot water tank (H), in order to make the expansion of the heated up water possible.
2. The aquastat (C) which is fixed just behind the cooker at the primary flow has to be connected in an way that a direct control of the zone valve (L) for the additional heat supply in possible in case of a situation of overheating. The setting of the limit is variable, but a setting of 200° F will be recommended.

System 4.1 Heating of the radiators and domestic water.

The valves No. 1, 2, 3 and 4 are opened. The pump (E) has to be set in operation by switch (A) before operating the central heating cooker.
If an additional heat supply is not possible (valve 1 and 2 are closed) and a situation of overheating arises, so the thermal safety outlet (K) opens and hot water flows off and cold water flows in by pressure reducing valve (F).
It is absolute necessary that the pump (E) is to be switched on before the central heating cooker is set in operation resp. fuel is filled. The cooker can be brought to damage if it will not be taken notice of this regulation.

Important:

The domestic water supply of the system is to be guaranteed during operation of the central heating cooker. This is also valid in case of power failure. If this cannot be guaranteed, so the fuel has to be taken out of the firebox of the cooker immediately and to be emptied in a fireproof container.
The operating ability of all safety devices should be checked by a qualified specialist every year (preferable at the beginning of the heating period).

System 4.2 Heating of domestic water.

The valves 1 and 2 are closed, the valves 3 and 4 are opened. The pump (E) has to be switched on by switch (A) before operation of cooker.
If an additional heat supply is not possible (valve 1 and 2 are closed) and a situation of overheating arises, so the thermal safety outlet (K) opens and hot water flows off and cold water flows in by pressure reducing valve (F).
It is absolute necessary that the pump (E) is to be switched on before the central heating cooker is set in operation resp. fuel is refilled. The cooker can be brought to damage if it will not be taken notice of this regulation.

Important:

The domestic water supply of the system is to be guaranteed during operation of the central heating cooker. This is also valid in case of power failure. If this cannot be guaranteed, so the fuel has to be taken out of the firebox of the cooker immediately and to be emptied in a fireproof container.
The operating ability of all safety devices should be checked by a qualified specialist every year (preferable at the beginning of the heating period).

II. OPEN SYSTEMS

General installation notes for open systems:

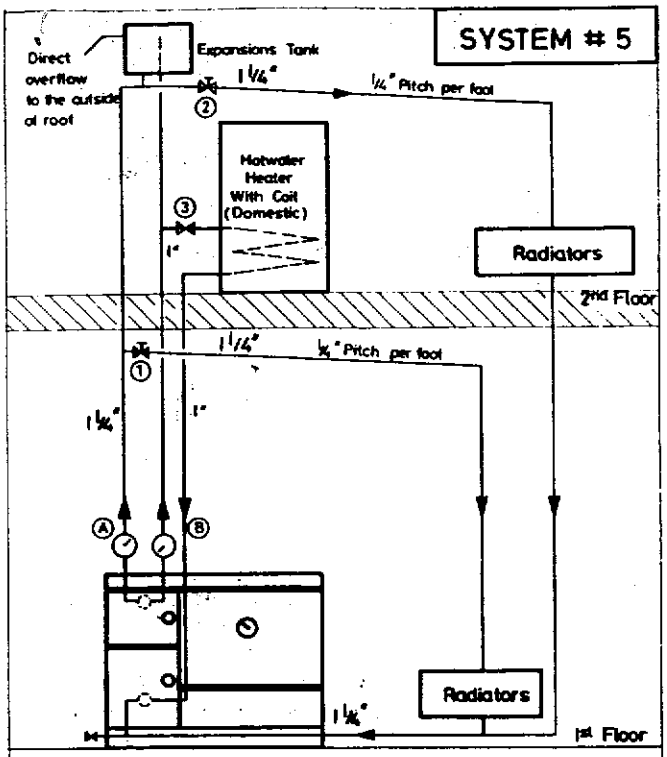
- It is important for troublefree operation that the sizing of pipes and pitch are adequate (see diagram).
- Radiators and heat exchanger should always be located at the same or higher level than the central heating cooker.

System 5.1 Heating of the radiators and domestic water with central heating cooker by force of gravity.

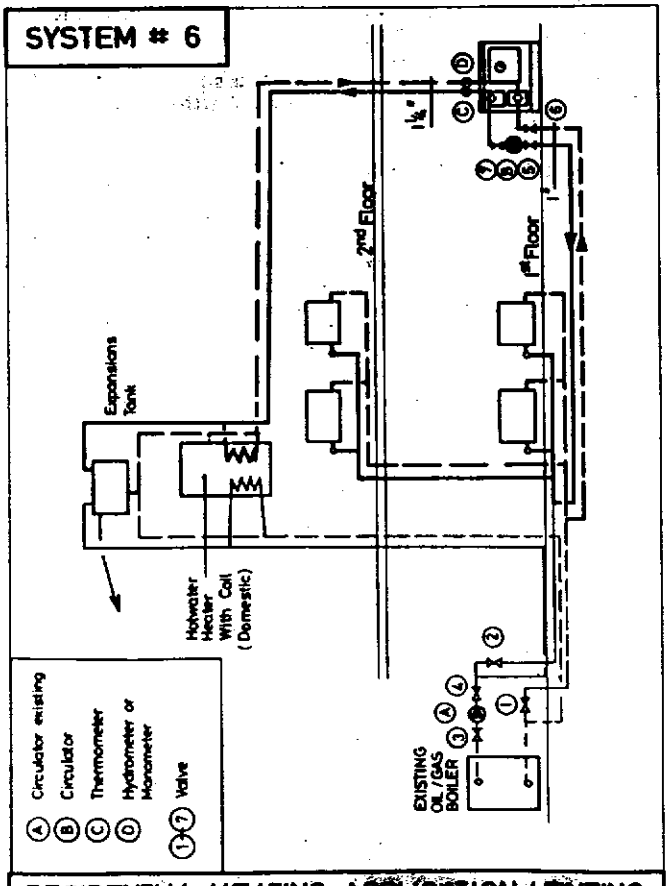
The valves No. 1, 2 and 3 are opened.

Important.

Make sure when taking the system in operation especially after



TIROLIA MODEL ZH APPLICATION FOR DOMESTIC HOT WATER AND CENTRAL HEATING BY GRAVITY



RESIDENTIAL HEATING APPLICATION UTILIZING TIROLIA MODEL ZH FOR DOMESTIC HOT WATER WITH GRAVITY FEED FORCED CIRCULATION FOR CENTRAL HEATING

a large period of shut down, expansion tank and over flow pipe is not blocked (frozen).

System 5.2 Heating of the domestic water only.

Close the valves No. 1 and 2. The valve No. 3 is opened. In case of overheating (summer operation) open the valves No. 1 and 2 in order that additional heat will be supplied through the radiators until the necessary drop in temperature is reached.

Important.

Make sure when taking the system in operation especially after a large period of shut down, expansion tank and over flow pipe is not blocked (frozen).

System 6:

An existing oil/gas — boiler will be combined with the Tirolia central heating cooker. The radiators will be heated by the circulation pumps (A) and (B) and the domestic water will be heated by force of gravity. This is an open system, i. e. that the safety primary flow and secondary flow have to be connected to the existing expansion chamber.

System 6.1 Heating of the radiators and the domestic water with the existing oil/gas — boiler only.

The valves No. 5 and 6 are closed, in order to avoid unnecessary heat loss and to guarantee the heating of the radiators.
The valves 1, 2, 3 and 4 are opened. The pump (A) is to be switched on before operation of the oil/gas — boiler.

Important.

1. Make sure when taking the system in operation especially after a large period of shut down, expansion tank and over flow pipe is not blocked (frozen).
2. The valves No. 3, 4 and 7 have to be kept open all the time and are to be closed for exchange of pump or repairs only.

System 6.2 Heating of the radiators and domestic water by TIROLIA Central Heating Cooker only.

The valves No. 1 and 2 are closed and the valves No. 5 and 6 are opened. The pump (B) is to be set in operation before operation of cooker.

Important.

1. Make sure when taking the system in operation especially after a large period of shut down, expansion tank and over flow pipe is not blocked (frozen).
2. The valves No. 3, 4 and 7 have to be kept open all the time and are to be closed for exchange of pump or repairs only.

System 6.3 Heating of domestic water only by existing oil/gas — boiler.

The valves No. 1 and 2 are to be closed and the valves No. 3 and 4 are opened. The circulating pump (A) has to be switched on before operation of the oil/gas burner.

Important.

1. Make sure when taking the system in operation especially after a large period of shut down, expansion tank and over flow pipe is not blocked (frozen).
2. The valves No. 3, 4 and 7 have to be kept open all the time and are to be closed for exchange of pump or repairs only.

System 6.4 Heating of domestic water only with TIROLIA Central Heating Cooker.

The valves No. 5 and 6 are to be closed and valve No. 7 is open. The circulating pump (B) remains out of action.

Important:

1. On normal conditions there exists no danger of overheating. But should a temperature (more than 195° F) which is too high be produced in the water circuit due to inappropriate manipulation, so the valves No. 5 and 6 are to be opened, so that heat can be supplied through the radiators. Besides, the pump (3) is to be set in operation. After cooling down less than 175° F, the valves No. 5 and 6 are to be closed again and the pump (B) is to be set out of action again.
2. Make sure when taking the system in operation especially after a large period of shut down, expansion tank and over flow pipe is not blocked (frozen).
3. The valves No. 3, 4 and 7 have to be kept open all the time and are to be closed for exchange of pump or repairs only.

We wish you much joy and success with your new Tirolia kitchen range.

TIROLIA®