DO'S & DONT'S FOR WATER DISTILLATION

ELECTRICAL INSTALLTION

THIS EQUIPMENT MUST BE EARTHED!

A qualified electrician should only carry out the electrical installation. Connection to the mains electrical supply should be a double pole isolation switch with a continuous current carrying capacity of 15A at 250 volts and overcurrent protection should be provided by either an approved fuse rated at 15A, 250volt in each pole or a double pole approved circuit breaker of similar rating.

WARNING!
Do not use this equipment to distil any liquid other than water.

SAFETY CUT—OUTS

DUAL AUTO CUT OFF SYSTEM TECHNOLOGY:

The Safety Cut-Out is merged along with the Water Distillation unit to protect the distiller during water supply failure. It cuts off power supply in two cases.

In case of water failure, to condenser, the power supply to the unit is cut-off automatically, by means of a Flow Switch

In case of water failure, to the Boiler, the power supply to the unit is cut off automatically, by means of Thermostat (Sensor Probe)

Case: 1
A. The distiller unit will get automatically switched off through inbuilt water Pressure Control switch, in the event of cooling water for condenser inlet Stops. Subsequently the Failure Buzzer will start buzzing continuously. The Unit is OFF.

Remedy:
Water supply must be continuously provided to the condenser inlet and press RESET Button once and release it. The Unit is ON.

Case: 2
B. When water level in the boiler reduces simultaneously the heater temperature inside the Boiler increases; this rise in temperature is detected by the Pt-100 Sensor through Inbuilt Temperature controller. Since the temperature controller is factory Set and if water supply stops or the level of water decreases at certain Stage, heater temperature inside the boiler increases above set temperature, suddenly the Failure buzzer will start buzzing continuously. The Unit is OFF.

Remedy:
Due to rise in Set temperature inside the boiler, the failure indication and alarm will continue, so to put the system back into operation feed the water through boiler inlet and maintain the level up to 20 mm above Silica heater. Now for continuing the cycle press RESET button once and release it. The Unit is ON.

CARE AND MAINTENANCE

CLEANING:
Over the period of operation, scale deposits will build up inside the boiler. To obtain optimum performance from the still, the scale should be removed on a regular basis. The time span between cleaning depends greatly on the hardness of the water supply and the amount of use. Frequently used stills in hard water areas may need descaling.

Heavy scaling will reduce distilled water quality and can shorten the life of the heating element.

It is possible to descale the distiller water still without dismantling the glassware by following these instructions:

1. Switch OFF the electricity supply to the still and allow it to cool completely.
2. Turn off the cooling water supply.
3. Open the stopcock on the constant level control and allow the boiler to fill to approximately half way to its normal operating level. Turn off the water supply.
4. Open the stopcock of the constant level control and allow the boiler to drain completely. Close stopcock.
5. Into the open funnel of the constant level control carefully add about 1 litre of 10% formic acid solution. Do not use strong acids such as hydrochloric. This can cause severe corrosion of the metal heating element.

WARNING:

ALWAYS HANDLE ACIDS WITH GREAT CARE. PROTECTIVE CLOTHING, GLOVES AND FACEMASKS SHOULD BE WORN DURING THE DESCALING OPERATION. REMOVE ANY ACIDS SPILLS IMMEDIATELY.

Turn ON the water supply and fill the boiler to the normal operating level. The water will flush the acid into the boiler. The water supply should be turned off when the level in the boiler is slightly below the overflow.

6. Leave the acid in the boiler to dissolve the scale. This may take some time depending on the severity of the build-up.

7. Open the stopcock and allow the boiler to drain.

   Note: If the acid in the boiler has not been completely neutralized the liquid flowing to drain may be highly acidic.

8. Close the stopcock, turn on the water and allow the boiler to fill with cold water. Turn off the water, reopen the stopcock and allow the boiler to drain. Repeat this procedure Four to Five times.

9. The distiller water still may now be restarted by referring to the instructions given under "OPERATION" in this manual.

Note: The stand and outer surfaces of the glassware should be cleaned using a damp cloth and a mild detergent solution.

TROUBLE SHOOTING

SYMPTOMS	CAUSE	REMEDY
Distillate output is less	• Mains electrical voltage below 220-240 volts • Flow of cooling water to condenser not applicable	• Ensure sufficient power supply • Increase cooling water to condenser to 60/Ltrs/Hr.
Distillate temperature high	• Flow of cooling water to condenser not adequate	• Increase cooling water to condenser to approx. 60/Ltrs/Hr
Distillate quality poor	• Boiler scale deposition is high	• Change or use treated water as boiler feed. • Clean the boiler as per "cleaning" in the manual.
Water jumps out of boiler	• Pressure vent hole located at distillate outlet of the condenser is blocked • Distillate delivery tubing is constricted. • Boiler feed is less.	• Remove blockage • Ensure tube flows without any kinks or bends. • Increase flow rate to approx. 60/Ltrs/Hr
Distiller repeatedly turns on and off	• Water level in the boiler reduced • Condenser inlet flow is reduced	• Maintain the water in the boiler • Maintain the condenser inlet flow
Metal heater not working	• Burnt out heater. • Mains electrical fuse blown. • Faulty thermostat	• Replace heater • Replace mains fuse. • Replace thermostat
Scaling is more	• Input feed water is very hard.	• Use treated water as boiler feed.
Water level in glass boiler is too low. **e.g. Metal heater exposed.**	• Stopcock of constant water level inadvertently left open. • Supply of feed/cooling water is insufficient	• Close stopcock of constant water level. • Increase cooling water to condenser to approx 60/Ltr/Hr
Water level in glass Boiler is too high. **e.g. Boiler water surging in glass condenser**	• Flow of drain water is constricted. • Supply of feed/cooling water is excessive	• Ensure PVC drain pipe falls freely without any kinks or bends. • Reduce cooling water to condenser to approx. 60Ltrs/Hr