



CASSIA

ADVANCED MODELS AQDD-XL-RSH SERIES

The new advanced models - XL - RSH series have the following additional features:

1. **Replaceable Silica Heater** - This eliminates frequent shut down of the equipment and is service free.
2. **Built - in Triple Safety:**
 - **Gate Valve** : Conserves cooling water wastage in case of power failure.
 - **Flow Switch** : Additional in-built safety for the equipment. Units shuts off if cooling water to condenser fails.
 - **Pressure Temperature Switch (PTS)**: The Boiler is equipped with PTS for safety of the boiler. If water level falls below the heater, the unit switches off.
3. **Quartz Teflon Stopcock** - For easy draining and cleaning of boiler.
4. **Quartz Threaded connection** - For easy assembly and maintenance.

Other Specifications for all the models Standard & XL - RSH Series

- Voltage A.C 50 Hz - 200/230V
- Quality of Distillate water - Pyrogen Free Reagent Grade I - Distillate must be Tested before use.
- Conductivity -0.1 - 0.5M S/cm
- Distillate Temperature - 60 - 70°C

Special Advantages of Quartz Distiller

- Ultra Pure Water
- Pyrogen Free
- Free of Heavy Metals
- Maximum Safety
- Compact Design
- Easy to operate
- Excellent for tissue culture work

MINI QUARTZ DISTILLER

Standard Panel Series

Improved Models

- Larger Boiling space resulting in more balanced boiling better quality of distillate.
- Better condensing area - Cooler distillate temperature
- Larger Quartz sheath, hence easy of replacement of heater element in case of burn out.
- Rust proof sturdy Aluminium stand as base.
- Ring Clamp with seating to house the Quartz Boiler.
- Condenser clamp facilitates telescopic adjustments and helps in perfect alignment of the system and installation of the equipment.

TECHNICAL SPECIFICATIONS

Technical Data	MQD-IP-B/Q	MQD-20-B/Q	MQD-3P-B/Q	MQD-4P-B/Q	MQD-5P-B/Q
Output Capacity	1 ltr/hr	2 ltrs/hr	3 ltrs/hr	4 ltrs/hr	5 ltrs/hr
Power Rating	1 KW	1.65 KW	2.4 KW	3 KW	4 KW
Cooling Water Consumption (approx.)	25 ltrs/hr	35 ltrs/hr	45 ltrs/hr	65 ltrs/hr	

B- Borosil Condenser
Q - Quartz Condenser



Cassia Siamia



ADVANCED MODEL MINI QUARTZ DISTILLER XL - RSH SERIES

The new advanced models-XL-RSH series have the following additional features:

- a) Replaceable Silica Heater - This eliminates frequent shut down of the equipment and is service free.
- b) Built - in Triple Safety:
 - **Gate Valve** : Conserves cooling water wastage in case of power failure
 - **Flow Switch** : Additional in-built safety for the equipment. Unit shuts off if cooling water to condenser fails.
 - **Pressure Temperature Switch (PTS)**: The boiler is equipped with PTS for safety of the boiler, if water level falls below the heater, the unit switches off.
- c) **Quartz Teflon Stopcock** - For easy draining and cleaning of boiler.
- d) **Quartz Threaded connection** - For easy assembly and maintenance.

The XL - RSH series do not require additional safety features and are available with Built-in Safety

TECHNICAL SPECIFICATIONS

Technical Data	MQD-1P-B/Q	MQD-2P-B/Q	MQD-3P-B/Q	MQD-4P-B/Q	MQD-5P-B/Q
Output Capacity	1 ltr/hr	2 ltrs/hr	3 ltrs/hr	4 ltrs/hr	5 ltrs/hr
Power Rating	1 KW	1.65 KW	2.4 KW	3 KW	4 KW
Cooling Water Consumption (approx.)	25 ltrs/hr	35 ltrs/hr	45 ltrs/hr	65 ltrs/hr	

B- Borosil Condenser

Q - Quartz Condenser





SUB-BOILING DISTILLATION ASSEMBLY

The Sub Boiling Distillation Assembly is made from electronic grade transparent fused quartz. Every possible contact of liquid has been avoided with the ground joining connections. The joints on the inlet pipe and the outlet vessel are so placed that impurities are removed via the outer wall. The method adopted for distillation is Surface Evaporation. The evaporation takes place without boiling by the action of infrared heaters. Evaporation is on the surface and the vapours are condensed by a cold finger. During this process of evaporation the liquid is perfectly calm. The filling of the vessel takes place by means of special inlet funnel. The distillation rate/purity could be controlled through a suitable Auto Transformer or Variage Transformer (optional at extra cost).

Heating is performed by two electrical infrared radiators at 220 Volts. Full power is required for the evaporation of Sulphuric Acid but power levels of only 200 to 550 watts are necessary for water, Hydrochloric and Nitric acids. In these cases the Sub Boiling still is conveniently controlled with a voltage regulator. Ease of operation characterizes the Sub Boiling Distillation Assembly. For a through cleaning of apparatus, the infrared radiators can be easily removed by removing the connector springs.

The sub Boiling distillation assembly is a very useful and effective equipment for the production of very pure and spectroscopic grade acid distillates and solvents for use in Research & analytical work.



Specifications

The following distillation rates are obtained once steady evaporation has been achieved.

Distillation Rate (g/min)

W(watts)	H ₂ O	HNO ₃	HCL	H ₂ SO ₄
200	1.1	1.2	0.8	-
400	2.8	3.3	2.9	-
600	4.4	5.3	4.9	0.3
800	5.8	7.5	7.1	0.8

These results have been achieved using commercial grades of acid (with impurity concentrations of greater than 100mg/ml) together with desalinated water.

Impurity Concentration (ng/ml)

	H ₂ O	HNO ₃	HCL
Al	<0.05	<0.05	0.07
Cd	0.01	0.001	0.01
Cu	0.04	0.25	0.07
Fe	0.32	0.2	0.6
Mg			0.06
Pb	0.02	<0.05	<0.05
Zn			0.04

These values were achieved when the apparatus and all the ancillary vessels were treated prior to the distillation with concentrated HNO₃ and of course the usual operational procedures for achieving high purity levels were observed.



*Model BASIC/PH4

Water still - BASIC/PH4 & XL models are designed for reliable continuous operation incorporating a host of features unmatched by comparable stills. It is easy to use, safe to operate, thoroughly reliable and above all Low Cost.

Features

- Abundant Output. The still provides, 4 lines/hr of distilled water produced through a power input of 3 KW by a chromium plated heater housed in a horizontal Glass Boiler
- Distilled output is cool ensured by a high efficiency condenser. Temperature of distillate 25°C - 40°C tested for ambient room temperature 30°C
- All units carry CE Marking.

Distillate Quality

- Ideal for general Laboratory use-capable of producing pyrogen free water.

Water Still - BASIC/PH4 and XL model	
Output	4 lt/hr
Conductivity (using raw water)	3.0 - 4.0 M S/cm
Conductivity (using treated water)	1.5 - 2.0 M S/cm
PH	5.5 - 6.0
Distillate quality	Pyrogen free

Specifications

Water Still BASIC/PH4 & BASIC/PH4-XL	
Dimensions	(W x D x H)
PH4	50 cm x 15 cm x 45 cm
PH4-XL	50 cm x 20 cm x 55 cm
Weight	6 kg. Approx.
Power	220/240V, 50/60 Hz. Single phase, 3KW Heater
Water supply	Min. flow rate 1 litre / min.
Min. pressure	3 p.s.i. (0.2 x 10 ⁵ NM ⁻²)

PURE - HIT Q STILL

This new improved Bhanu Pure Hit Q Still is designed to meet International Safety Standards (complies with IEC 1010-1 norms). This is made from Borosilicate glass, capable of delivering 4 ltrs of pure distilled water per hour.

Features

- Abundant output
- Silica Sheated Heater
- Dual Safety - Two built-in Pressure Temperature Switches for extra safety. This protects equipment from loss of water to boiler and in the event of cooling water failure to the condenser.
- This unit fully complies with low voltage directives IEC1010-I/3N 61010:1993.

All units carry CE Marking

Technical Data

Water Still - BASIC/PHQ4	
Output	4 lit/hr
Conductivity	1.0 - 2.0 M S/cm
Resistivity	0.5 - 1.0 Megohm-cm
pH	Not specified for high purity water
Distillate quality	Pyrogen-free (we advise checking before use)
Temperature	25 - 35°C





BORMAX - WSQ-4

Water Distillation Unit

Features

- Silica Heater
- Gate Valve to prevent water wastage
- Flow switch for boiler safety
- Teflon drain cock for easy maintenance
- High quality distillate
- Power coated stand.
- Safety Built - in

Specifications

Bormax WSQ-4 & WSQ-4-XL	
Output	4 ltrs/hr
Distilled Water Quality	
PH	5.5 - 6.0
Conductivity	1.0 - 2.9 M S/cm.
Distillate quality	Pyrogen free
Electrical Power	220/240V, 50/60 Hz Single Phase, 3 KW silica Heater
Cooling water requirement	1.5 ltrs / min
Minimum pressure	3 p.s.i.
Dimensions (W x D x L)	600 x 185 x 480 (mm)
Weight	8 kgs (app.)

Note: Distilled water conductivity and PH will be greatly affected by the temperature and the presence of absorbed carbon-di-oxide.

XL MODEL FEATURES

With over Heat protection: Pressure Temperature Switch (PTS): Shuts off the unit when water level in the boiler falls below the heater.





EASY STILL MARK - 2000 SDQ/DDQ & XL PTS

The all new Easy-still Mark 2000 distillation units give high quality distilled water with an output of 2.0 lit/hr, having a power input of 1500 watts for single distillation.

Easy-Still's unique features are, a highly efficient borosilicate condenser, a well designed boiler fitted with a silica heater and screw thread connectors, making it an ideal, efficient and economical equipment to obtain pure distilled water for use in general laboratories and in numerous other end uses.

Specifications

Easy-Still Mark-2000 SDQ/DDQ

Easy Still	SDQ	DDQ
Output	2.0 lit/hr	2.0 lit/hr
Distilled water quality:		
Conductivity	1.00 - 1.5M S/cm	0.8-1.00M S/cm
pH	5.5 - 6.0	6.0 - 7.0
Distillate quality	Pyrogen free	Pyrogen free
Electrical Power	220/240V, 50/60 Hz Single Phase, 1500W Silica Heater	220/240V, 50/60 Hz Single Phase 2x1500W Silica Heater
Cooling water req.	1-3 lit/min	2-4 lit/min
Minimum Pressure	3 p.s.i.	3 p.s.i.
Dimensions lxbxh	250x180x450 mm	2x (250x180x450) mm

Note: The results mentioned in the specifications are obtained by using Bhanu water treatment cartridge for raw water.

Unique Features

Note: The XL model has an additional Pressure Temperature Switch (PTS) for safety of the boiler. The unit switches off if water level in the boiler falls below the heater.

Compact Design to Accommodate Both the Units on A single Panel

EASY-STILL MARK - 4

The Easy-Still Mark-4 has an elegant design, is economical and efficient. It is available in attractive colours. The yield is 4 ltr/hr with a power input of 3KW by a chromium-plated heater, which is thermostatically protected against, overheat.

Features:

- Abundant output: The still provides 4 litres/hr of distilled water produced through a power input of 3KW by a chromium plated heater housed in a horizontal Glass boiler
- Distilled output is cool ensured by a high efficiency borosilicate oil condenser. Temperature of distillate 25°C - 40°C tested for an ambient room temperature of 30°C

Distillate Quality

- Ideal for general laboratory use - capable of producing pyrogen free water.

Conductivity : M S/cm (Resistivity Megohm-cm)	Output	Pyrogen Content
3.0 - 4.0 (0.25 - 0.30)	4 ltr/hr	Capable of producing pyrogen free water

Specifications

Dimensions	(W x D x H) 48cm x 17.5cm x 61cm approx.
Weight	4.850 kg approx.
Power	220/240V, 50/60 Hz, Single phase, 3KW Heater
Water Supply	Min. Flow rate 1 litre/min
Min. Pressure	3 p.s.i. (0.2 x 10 ⁵ NM ⁻²)





EASY-STILL MARK - 4 XL

The New "Bhanu Easy-Still Mark 4 XL" provides high quality distilled water and incorporates several new and advanced safety features with additional wall mounting brackets.

Features:

- Built-in Safety Controls: The unit has built-in safety incorporating the latest features, such as:
 - Gate Valve-which shuts off in case of power supply failure, thus preventing water wastage
 - Flow switch-which is provided for boiler safety. It shuts off power supply to the heater, in case of water supply failure.
 - Thermostat-the heater is provided with thermostat for overheat protection
 - Fuse-is provided for safety in case of voltage fluctuations and short circuit
 - Additional on/off switch with water failure indicator lamp.

Specifications

EASY-STILL MARK 4 XL	
Output	4 Lit/hr
Distilled Water Quality	Reagent Grade III
Conductivity (using raw water)	3.0 - 4.0 M S/cm
Conductivity (using treated water)	*1.5 - 2.0 M S/cm
PH	5.5 - 6.0
Distillate Quality	Pyrogen free
Electrical Power	220/240 V, 50/60 Hz Single phase 3 KW Heater
Cooling Water required	3 p.s.i.
Dimensions w x d x l	500 x 200 x 600 (mm)
Nett. Weight	6 kg (app.)



Domestic Water Softener

Infusil introduces its new domestic water softener that provides good quality soft water for domestic and household use.

Features

- Highly efficient resin
- Fully automatic multiport valve for ease of operation
- Color tubing
- Highly softened water with less than 5 ppm of hardness as CaCO_3
- Light weight vessel for easy set up

Available in various capacities to meet individual needs





Aqua Demineralizers

The New "Bhanu Aqua DM-XL Series" have several User-friendly features and are available in three standard models. De-Mineralisers / De-ionisers (DM Plants) are based on Ion Exchange Technology and removes all the dissolved ions present in raw water and gives high purity DM water having low conductivity. (<10M S/cm at 25°C), suitable for various lab applications.

Note: When the exchanger (resin is exhausted, it has to be regenerated with diluted HCl and caustic soda for cation and anion exchanger respectively.

New ! User-friendly features:

- **Safety Feature**
The entire unit works on low voltage. Hence, danger of electrical shock to the operator is eliminated
- **Light indicator:**
The new XL model has light indicators that indicate the quality of DM water.
 - Green Light indicates good quality water (<30M S/cm)
 - Red Light indicates that the unit requires regeneration owing to the high conductivity of water (>30M S/cm)
- **Color Tubin**
 - Green Tube indicates Untreated Water
 - Blue Tube indicates DM / Treated water
 - Red Tube indicates Effluent / Waste water
- **Easy to use**
Regeneration procedures have been incorporated on the vessel for easy reference during regeneration and maintenance. The unit can be independently maintained by the laboratory technician.

Specifications

Model No.	Min. Flow rate ltrs / hr	Max. Flow rate ltrs / hr	Output between generation (ltr.)	Min. Pressure kg/cm ²
Aqua DM XL 600/100 A/D	10	100	600	0.5
Aqua DM XL 2000/200 A/D	20	200	2000	1.5
Aqua DM XL 3500/600 A/D	60	600	3500	2.0

Applications

DM plants can be used where good quality water of low conductivity is required. In general the DM water can be used for the following

- As feed water to Distillers: For longer life of the equipment and to obtain high purity distillate, demineralised water can be used as feed water to distillers.
- In Laboratories & Research Institutes
- In Food & Dairy Industries
- In Breweries & Textile Units
- In Chemical Industries
- In Pharmaceutical Industries
- In Electronic Industries
- In Storage Battery Industry & many more

Note

- Output is based on 250 ppm TDS
- Raw water should be free from turbidity, free chlorine, heavy metals, organic matter, oil and should be at ambient temperature.
- The treated water is not bacteria / pyrogen free.
- A=Analogue model, D=Digital model (with respect to conductivity meter for DM plant)
- Customised DM plant are also made. Suitable plants can be recommended based on the raw water analysis.

Additional Specifications

Conductivity of DM water is < 10M S/cm at 25°C PH of DM water is 8.5-9.5

Max Pressure 2.5 kg/cm²





LAB DM 200

The new Lab DM 200 is a two bed portable De-ioniser, which produces demineralised water that is substantially free from, dissolved solids at flow rate up to 10 ltrs/hr. This particular model can be wall mounted / Table top design.

The design of DM 200 is such that the service and regeneration is very simple. This is an ideal model to all laboratories where the usage of DM water is minimal or it can be used as feed to distillers.

MIXED BED

Bhanu Mixed Bed is used to obtain high purity, low conductivity water (<1M S/cm)

It is used as a polisher unit in series with the De-Mineraliser plant / Reverse Osmosis System.

The charged resin in the Mixed Bed removes all the minerals present in feed water and gives an output having electrical conductivity lesser than 1M S/cm. The low conductivity water thus obtained can be used for various laboratory and industrial applications where water of high purity is required.

Features

- Low conductivity water (<1M S/cm)
- Highly efficient resins
- Low Maintenance, No installation costs
- Available in three different models

Note

When resin is exhausted, it has to be regenerated with caustic soda solution and dilute hydrochloric acid solution respectively.

Specifications

Model No.	Min. Flow rate ltrs / hr	Max. Flow rate ltrs hr	Output between generation (ltr.)	Min. Pressure kg/cm ²	Max. Pressure kg/cm ²
Bhanu MB 1500	10	60	1500	0.5	2.5
Bhanu MB 3000	25	250	3000	1.5	2.5
Bhanu MB 8000	60	600	8000	0.5	3.5

Additional Specifications

Conductivity of Mixed Bed water is <1M S/cm PH of DM water is 6.8-7.2

Reverse Osmosis Plants

Infusil Reverse Osmosis Plants (RO Plants) incorporates the latest R.O. Membrane technology to remove and reject a wide spectrum of impurities from water. It improves the quality and taste of drinking water.

The raw water from tap first flows into a 5-micron filter to remove dirt, dust, etc., then to a carbon cartridge filter which takes out chlorine and organic chemicals then to an antiscalant cartridge. The filtered water is finally forced through a semi permeable membrane having a pore size of 0.0001-micron size, which rejects bacteria and harmful dissolved impurities.

Additional

Suitable for domestic purposes.





Pure Water Systems

In pure water system

First Stage: Spun poly propylene cartridge is used to remove suspended micron particles.

Second Stage: Granular Activated carbon cartridges to take care of colors, smell, organic matter and free chlorine.

Third Stage: Antiscalant consumable cartridges used to remove Calcium and Magnesium Hardness which are guards the life of R.O. Membrane

Fourth Stage: Semi permeable R.O. Membrane having micron of 0.0001 to give you treated R.O. Water safe for drinking.

Bhanu Pure Water incorporates the latest R.O. Membrane technology for purification.

Technical Data

Specification	Media	TI	Life
Sediment Cartridge	Spun Polypropylene	10 micron	3 to 6 months
Activated carbon	Granular Activated carbon	10" long	Depends on raw water quality
Antiscalant Cartridge	AS Cartridge	5" long water quality	Depends on raw
R.O. Membrane	Filmtec / csm	Thin film Composite (TFC)	2-3 years
Booster Pump	GOLDMYER/ KEMFLO	GOLDMYER/ KEMFLO	1 year

Specifications

Power Required : 230V AC
Salt Rejection : 90 - 95%
Recover : 10 - 60%
Pressure : 6 - 10 kg/cm²

Applications

Pure water system is suitable for:

- As feed to distillers
- As pretreatment to DM Plant / Mixed Plant
- General Laboratory Applications

Range

Capacity: 10 ltrs/hr and 2 ltrs/hr

