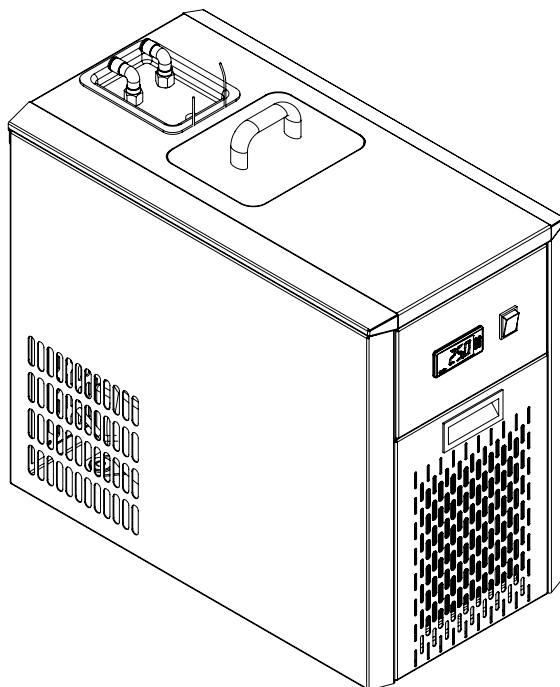


LABQUEST
BY BOROSIL®

CHILLER

OPERATING MANUAL



DEALER :

THANK YOU NOTE

We Borosil, one of India's most customer oriented brands truly appreciate your business and express our gratitude for the trust you have placed on us.

We hope your choice serves you well in your scientific endeavors and aspire to have the pleasure of doing business with you for years to come.

TABLE OF CONTENTS

Sr. No.	Particular	Page No.
1.	Packing List	6
2.	Product Specifications	7
3.	Safety and Warning	8
4.	Safety and Instructions	9
5.	Unboxing of the Chiller	10
6.	Product Identification	11
7.	Installation on Lab Bench	12
8.	First Time Operation	13
9.	General Operating Instructions	14
10.	Description of Buttons & Functions	16
11.	Operation of Chiller Series	17
12.	How to drain the pan manually	18
13.	Troubleshooting	19
14.	Warranty Registration	21
15.	Statement of Warranty	23
16.	Contact Information	24

PACKING LIST

1. CHL FG..... 1 No.
2. ID 8mm silicon tube x 1 meters 2 Nos.
3. Insulation tube..... 2 Nos.
4. Power cable 10 A..... 1 No.
5. Small Lid..... 1 No.

PRODUCT SPECIFICATIONS OF CHL250, CHL500, CHL010 & CHL020

PARAMETERS	CHL250	CHL500	CHL010	CHL020
Tank capacity (L)	4 to 5	5.5 to 6.5	8 to 9	20
Tank size (mm)	230x162x132	230x210x132	230x210x182	230x360x252
Cooling capacity (Watt)	250	500	1000	2000
Weight	33	42	52	85
Pump flow rate (LPM)	06	15	15	15
Display	LED	LED	LED	LED
Temperature stability	±1°C	±1°C	±1°C	±1°C
Temperature range	-20 to 25°C	-20 to 25°C	-20 to 25°C	-20 to 25°C
Overall size (LxWxH) mm	590x268x498	590x320x544	590x320x570	658x466x838

COOLING CAPACITY CHART

TEMP (°C)		20	10	0	-10	-20
COOLING CAPACITY (W)	CHL250	860	730	640	430	250
	CHL500	1015	850	700	540	230
	CHL010	1800	1500	1200	1050	500
	CHL020	2130	1800	1510	1230	1000

SAFETY AND WARNING



Important operating and maintenance instructions.
Read the accompanying text carefully.



Potential Electrical Hazards.

- Only qualified persons should perform procedures associated with this symbol.
- Equipment being maintained or serviced, must be turned off and locked off to prevent possible injury.
- Please make a note that the lowest set value (LSV) for temperature is -25°C .
- Do not operate the equipment unattended for long hours.
- Always follow good hygiene practices.
- Each individual is responsible for his / her own safety.
- Always use proper protective equipment. (Clothing, gloves, goggles, etc.)

SAFETY INSTRUCTIONS

- Do not run the unit without water.
- The unit should be plugged to standard 230V, 3 pin, power socket having proper earthing.
- Do not plug several appliances into the same sockets, this could cause overheating and the risk of fire.
- Do not bend the power cord excessively or place heavy articles on it, this constitutes a fire hazard. If the power cord is damaged, have it replaced immediately by the service engineer or a similarly qualified person.
- Never start up the unit showing any signs of damage. In doubt, consult the dealer/ service repairs.
- Improper Installation and repairs may put the user at considerable risk.



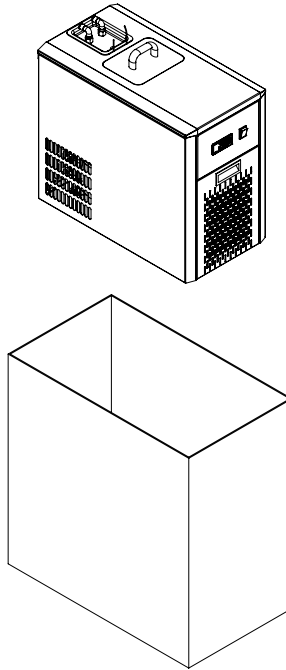
WARNING:

Inadequate earthing at the installation facility can lead to hazardous electrical shocks. The manufacturer is not liable for any injury or death resulting from electrical hazards due to faulty earthing in the lab.

Technical Instructions

- Always keep the chiller unit vertical and never upset it during transportation while avoiding any vibration and shock.
- The compressor must not be restarted unless at an interval of more than 5 minutes.

UNBOXING OF CHILLER



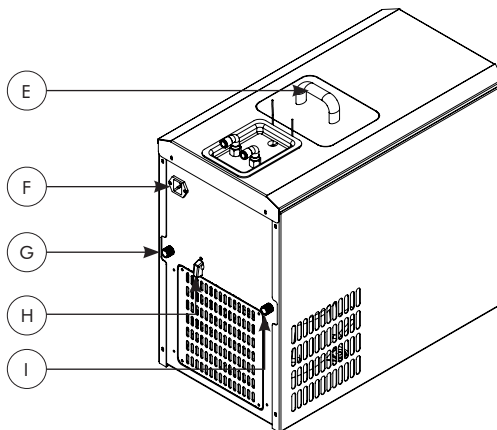
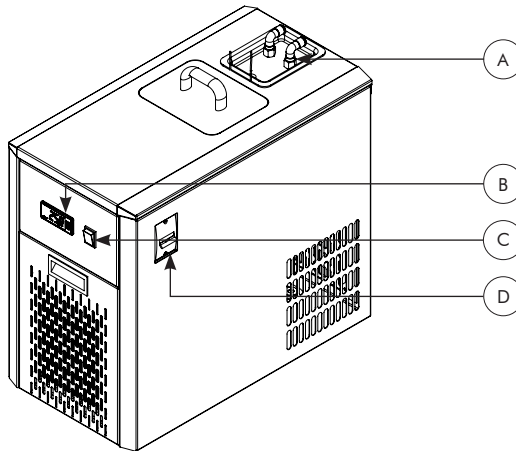
UNBOXING INSTRUCTION:

1. Remove the power cable, small lid, lobed knob, tubing
2. Remove the CHL unit safely.
3. Post unpacking the unit, if any damage is found, please report to the dealer / delivery agent.
4. Ensure the tiltwatch sticker reads green.
5. Do not immediately turn on the unit ,provide a day for the refrigerant to settle down.

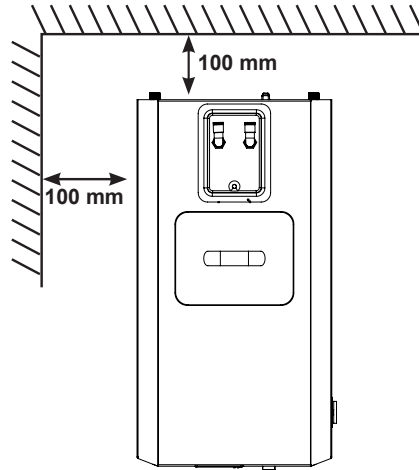
(Read manual before installation on the lab bench.)

PRODUCT IDENTIFICATION

- | | |
|-----------------------------------|--|
| A. Swivel Connector | F. Female 230v Ac Power Socket For Main Unit |
| B. Temperature Controller | G. Drain Valve |
| C. Red Power Switch For Pump | H. Flow Control Valve |
| D. Miniature Circuit Breaker(MCB) | I. Outlet For Overflow |
| E. Tank Lid | |



INSTALLATION ON LAB BENCH

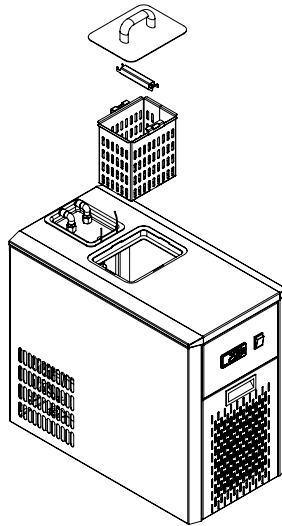


1. Please keep at least 100 mm gap from the wall to the back side of the unit for the sufficient circulation of air.
2. Ensure that the power switch is in OFF position.
3. Please make sure there is a 5A fuse in the fuse holder of the main unit.
4. Connect the male end of the power cable to the wall socket.
5. Ensure there is sufficient fluid in the unit.
6. The unit is ready to operate for first usage.

FIRST TIME OPERATION

- Fix the male side power cable in the main power socket & female side to the unit.
- Fill the distilled water(+5°C to +25°C)/ Ethylene Glycol+distilled water (-20°C to +25°C)/ Propylene Glycol+distilled water (-20°C to +25°C) till the coils are submerged.
- Switch ON the wall power socket. To turn on the cooling switch on the MCB.
- To turn off cooling, set the temperature above room temp (25°C).
- Do not switch ON the pump unit without connecting the Silicone tubes to its inlet and outlet ports, connect the tubings to the condenser of the apparatus.
- Set the temperature as per requirement, ranging from -20°C to +25°C.

GENERAL OPERATING INSTRUCTIONS

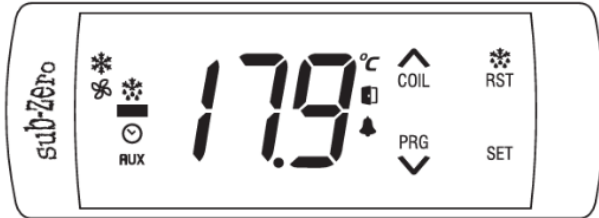




1. Fill the distilled water / Ethylene Glycol+distilled water / Propylene Glycol+distilled water till the coils are submerged from the fill port provided on the top cover.
2. Suggested proportion is 50% Ethylene Glycol/ Propylene Glycol+distilled water for sub 0°C cooling applications.
3. Place the lid on the fill port.
4. Connect the Silicone tubes provided with the unit to the inlet & outlet of the pump.
5. Connect the inlet & outlet of the pump with the silicone tube to Lab apparatus (condenser) Switch ON the MCB to turn on cooling .
6. Set the desired temperature by using the controller (Min -20°C, Max 25°C).
7. Switch ON the pump switch on the front panel of the unit, if water circulation is required. Let the temperature of the fluid in the pan reach the set temperature.
8. Once the required temperature is achieved, start the apparatus for the best results.
9. For proportion of the Ethylene Glycol+distilled water / Propylene Glycol+distilled water, refer below tables.

Propylene Glycol (By Volume)	0%	10%	20%	30%	40%	50%	60%
Temperature (°C)	0	-3	-8	-14	-22	-34	-48

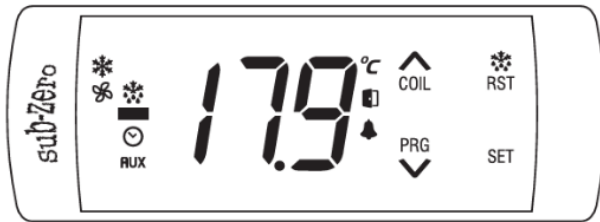
Ethylene Glycol (By Volume)	0%	10%	20%	30%	40%	50%	60%
Temperature (°C)	0	-3	-8	-14	-24	-37	-53

DESCRIPTION OF BUTTONS & FUNCTIONS



1. UP: 
COIL
 - In Set mode: Increases parameter value.
2. PRG Down/ Program: 
 - Set mode: Decreases parameter value.
3. SET: SET
 - Touch and hold for 2sec to SET temperature.

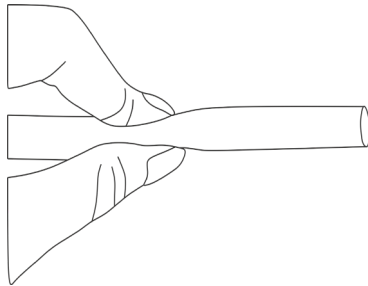
OPERATION OF CHILLER SERIES



1. Turn on the Chiller by turning on the MCB.
2. A temperature controller will show the current liquid temperature and 🕒 symbol will start blinking, It is due the set delay time to start the compressor.
3. Once the compressor is ON, ❄️ symbol of will be visible on the temperature controller.
4. Default power ON state, will show current liquid temperature in the pan.
5. To set the required temperature, hold the SET button, the display will start blinking, then press the up or down key to set the temperature & press the SET button once to confirm the SET temperature.
6. Once the liquid temperature reaches the SET temperature, the compressor will switch off till the liquid temperature increases and the 🕒 symbol will start blinking.
7. The compressor will restart automatically once the liquid temperature rises 1 degree more than the set value.

HOW TO DRAIN THE PAN MANUALLY

1. Switch of the pump unit and main chiller unit by switching off the red switches.
2. Hold the silicon tube on its mouth at the external condenser end (bottom connection) and remove it from the external condenser, take care of water spillage.



3. Pour the water coming from the tube in a container.
4. Let the water to drain due to the head (height) difference.

TROUBLESHOOTING

1. The unit is not turning ON:

- Check the power supply in AC mains.
- Make sure the power cable is inserted to the socket properly.
- Check whether the main switch is ON or OFF.
- Check if the MCB is ON.
- Check if the liquid is cooling or the pump circulation is ON. If the switch is not illuminating, the switch needs to be replaced.
- If the liquid is not cooling or the pump circulation is not ON, please check the fuse.

2. If the fuse is blown:

- Switch OFF the MCB
- Switch OFF the unit and remove power cable from AC mains.
- Remove the black cap on the fuse holder.
- Remove the glass tube fuse.
- Check if the fuse is blown.
- If the fuse is blown, replace it with a 5A glass tube fuse.

3. Insufficient cooling:

- Clogged air filter of condenser- remove the cover of the unit, clean the condenser with a soft brush.
- Refrigerant leak- Call a Borosil service engineer.
- High ambient temperature.
- Evaporator iced up- Keep the unit off for a few minutes or remove the top stainless steel cover and remove the ice clogged on the evaporator coil.



WARRANTY REGISTRATION

Please handover this registration form to the distributor from where you have purchased this product. The warranty is valid only when this warranty registration form is received by us within 30 days from the date of purchase.

Product: CHL250 CHL500 CHL010 CHL020 Product Sr. No.: _____
 Date of Invoice : _____ Invoice No.: _____

Customer Name & Address

Name : _____

Address: _____

Telephone: _____

E-mail: _____

Customer Sign & Seal

Dealer Name & Address

Name : _____

Address: _____

Telephone: _____

E-mail: _____

Dealer Sign & Seal

BOROSIL® Scientific

STATEMENT OF WARRANTY

Borosil confirms that this product has been manufactured in accordance with our technical specifications and quality requirements.

- Borosil warrants the product from manufacturing and workmanship defects for a period of 12 months from the date of invoice.
- Warranty is void, if apparatus is not operated as prescribed in the operating manual supplied along with the unit.
- To be covered under warranty.
 - » Units have to be connected to standard 230V 50Hz, 15A wall sockets with proper earthing for CHL250, CHL500, CHL010 and CHL020 series.
 - » Corrosion damage to the tank due to spillage of chemical will not be covered under warranty.
 - » Warranty does not cover rust and physical damage to metal parts due to corrosive environment in the lab.

Terms:

- » In the event of malfunction due to defect, the buyer will have to follow the Borosil’s service process.
- » Certain units can not be serviced / rectified at the buyer’s place and the units may have to be brought to Borosil’s service center as advised by Borosil’s representatives.
- » In no event shall Borosil be liable for consequential or incidental damages.

INVOICE DATE	BUYER	AFFIX SERIAL NUMBER
INVOICE#		
Dealer name & address		Dealer sign & seal

BOROSIL SCIENTIFIC LIMITED

Corporate Office : 1101, Crescenzo G-Block, Opp. MCA Club, Bandra Kurla Complex, Bandra (E), Mumbai-400051, India



: MANUFACTURED BY :

Borosil Scientific Limited

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Hinjewadi Phase 1, Pune - 411057

Write to us on above address.

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BKC, Bandra East, Mumbai - 51

Maharashtra, India

: CUSTOMER CARE CONTACT :

Phone : 1800 22 4551 | Email : lab.support@borosil.com

Website : www.borosilscientific.com