operators' manual for all models: TR5 TR10 TR15 TR20 TR30 TR60

SEACHILL®

TECO®

Purchased From	
Date Purchased	Date Installed

Model Number	Serial Number

Notes:

TECO®

SEACHILL®

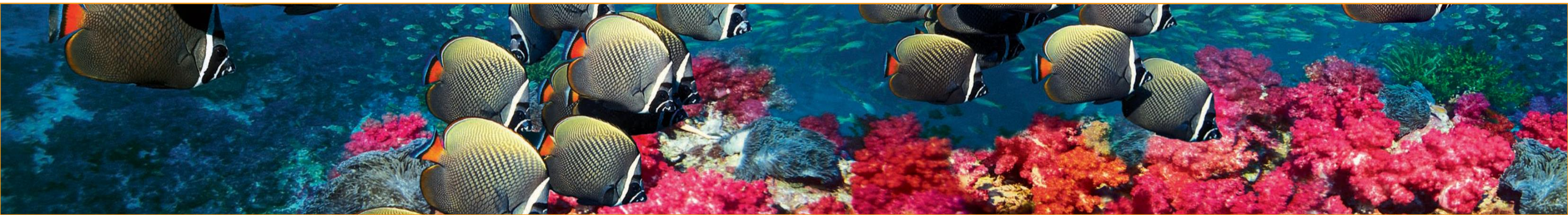
Table of Contents

About This Manual

This manual covers basic operation and maintenance for all current models of the Teco SeaChill under normal operating conditions. For more detailed information or uses not covered in this manual please contact us.

Contact Us

United Kingdom distributor:
TradeMark Aquatics Ltd
Tel: 01509 262330
info@trademarkaquatics.co.uk
www.trademarkaquatics.co.uk



Safety

Teco chillers are designed and built with safety as a prime consideration; industry-accepted safety factors have been used in the design. Each chiller is inspected at the factory for safety and operation. Any necessary adjustments are made before shipment. Follow the maintenance schedules outlined in this manual for optimum performance and safe operation. Any repairs should be done only by qualified personnel with proper training and tools. Carefully read all safety requirements before installation, operation or maintenance. The requirements are essential to ensure safe operation. Failure to follow these guidelines voids the warranty and may result in chiller damage or personal injury.

- Do not install or try to repair a chiller that has been damaged in shipment.
  See Receiving And Inspection for instructions.
- Turn off and unplug the chiller before preforming any work. Electricity has the potential to cause personal injury or equipment damage.
- Do not operate the chiller at temperatures above the maximum ambient temperature (95˚F/35˚C)
- Always supply electrical power that complies with the voltage shown on the data label.
- Work on the refrigeration system must be done only by a licensed refrigeration technician.
- Do not plug into wall socket without the housing in place.
- Configure the electrical cord to include a "drip loop" - a loop section of chord that hangs below the electrical outlet - this prevents water from reaching the outlet in the event of a leak.
- It is recommended that this product be used with an RCD (residual current device) outlet.
- Do not look directly at an illuminated UV light. (if installed)
- Do not operate chiller without water flowing through it.
- Never allow heater to be on without water flowing though the chiller.
- Do not run pressurized water through chiller. Chillers are designed to accept water flow from recirculating pumps. Pressure pumps or high-pressure water lines will damage the chiller. If in doubt about your pump, contact the pump manufacturer.

Specifications

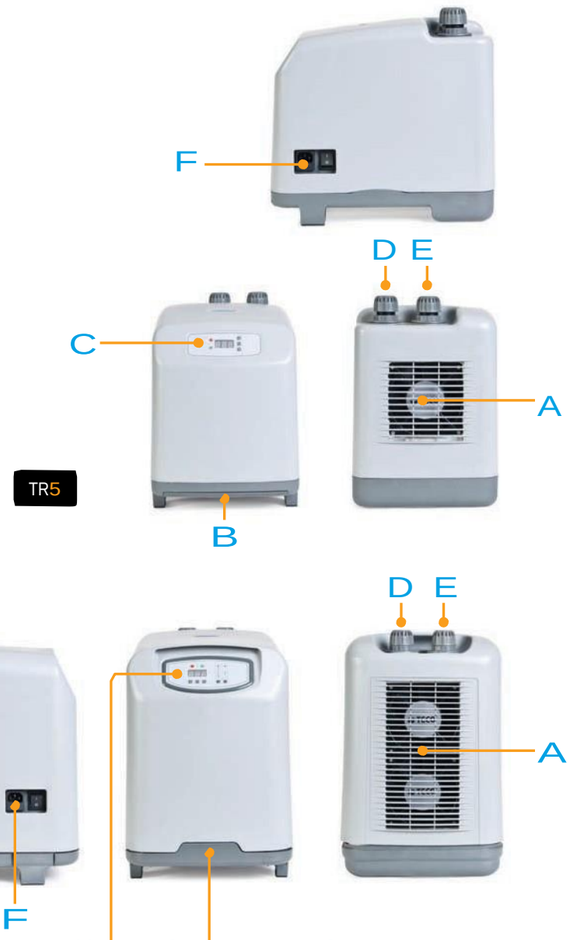
	TR5
HP	1/12
Amps	1.9
Watts	180
Volts/Hz	110/60
Weight	14 kg
Flow Rate	500 l/hr
Tank Size	up to 150 litres
Dimensions	12.5" x 9.5" x 13.5"
Connections	16mm or 20ml Quick Disconnect

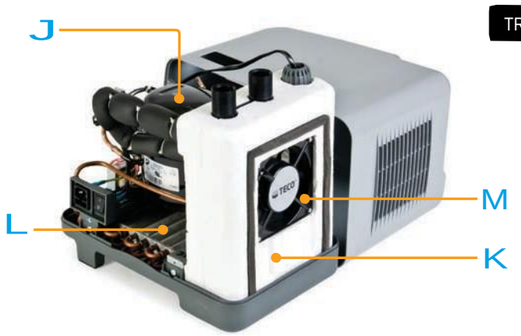
	TR10	TR15	TR20
HP	1/8	1/5	1/3
Amps	2.5	2.6	3.9
Watts	200	230	420
Volts/Hz	110/60		
dB / dB (silent Mode)	39 / 37	40 / 38	41/ 39
Weight	15 kg	39.5lb.	44 lb.
Flow Rate	180 - 600 gph		
Tank Size	300 litres	90 - 200 g	130 - 400 g
Dimensions	17" x 10 5/8" x 17 3/4"		
Connections	5/8" or 3/4" Quick Disconnect		

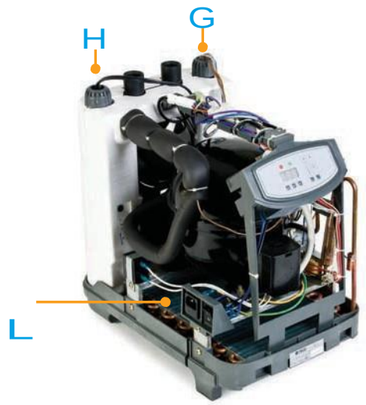
	TR30	TR60
HP	1/2	1
Amps	7.2	8.6
Watts	818	980
Volts/Hz	110/60	110/60
Weight	96 lb.	111 lb.
Flow Rate	270 - 810 gph	
Tank Size	up to 750 gallons	up to 1300 gallons
Dimensions	24" x 15" x 22"	
Connections	1"	

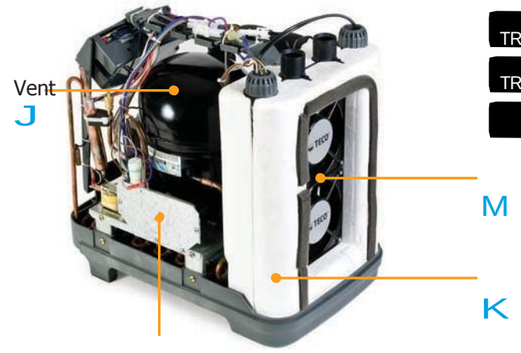
Features

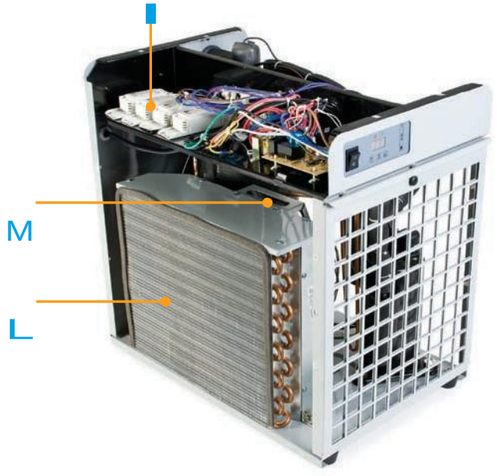
- A Ventilation Grate
- B Air Filter
- C Control Panel
- D In Port
- E Out Port
- F Power Socket
- G UV Port(s) *(Optional Accessory)*
- H Heater Port(s) *(Optional Accessory)*
- I UV Ballast(s)
- J Compressor
- K Heat Exchanger
- L Condenser
- M Fan(s)

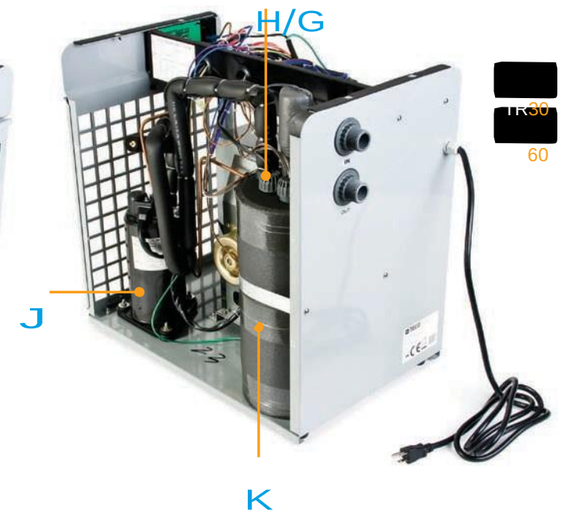












Receiving and Inspection

1 **Inspect the chiller closely upon receipt.**
Record any indication of damage and contact seller immediately.

2 **Save the box and packing materials**
If your chiller ever needs to be repaired or serviced, you will need to ship it in the original box.

3 **Record your Model and Serial Number for easy reference**
There is a space on the first page of this manual to record this information. You may be asked for the serial number when calling for support.

NOTE: Our Quality Control procedure includes running water through the chiller to test the cooling capacity. There may be residual water in the unit due to this method of testing, this is normal.

WARNING: When the chillers are inverted during maintenance or shipping, you must let the unit sit for at least 30 minutes upright to allow the coolant to settle: failure to do this before turning on the chiller may result in damage to the compressor.

Serial and Model Number Location

Bottom

TR10 TR15 TR20

Front, Underneath the Air Filter
Air filter must be removed to access the serial and model number

TR30 TR60

Back

Included Parts List

TR5 TR10 TR15 TR20

In / Out Plugs
Located in the in/out ports of the chiller (2) Attached to chiller

Shutoff Valve
(2)

Ring Nut
Attached to chiller (2)

O Ring
Attached to chiller (2)

Housing Ring Nut
Attached to chiller (2)

Housing Gasket
Attached to chiller (2)

Power Cord
TR30/60 - Power Cord is attached to chiller

Fuse
1 installed, 1 spare

TR30 TR60

Elbow
chiller (2) Attached to chiller

Ring Nut
Located in the in/out ports of the chiller (2) Attached to chiller

Washer
Located in the in/out ports of the chiller (2) Attached to chiller

Air Filters
1 installed, washable / reusable

Note: Color and appearance of actual parts may vary slightly

Optional Parts

Flow Indicator

15 W Replacement UV Lamp

400 W Heater Kit

15 W UV Sterilizer Kit

400 W Heater Kit - TR5 Only

Required Parts and Tools (not Included)

Flexible Tubing

Pump *with the recommended flow rate (see flow-rate specs on page 5)*

Teflon Plumbers Tape (for PVC plumbing) or pipe thread sealant with Teflon

Tools you may need:
(for maintenance) Tongue & Groove Pliers, flat-head screwdriver, Phillips-head screwdriver, pliers

Installation and Assembly

ALL MODELS

Teco SeaChill Chillers are intended for indoor operation. Do not expose chiller to outside elements or direct sources of heat. Maximum allowed ambient temperature is 95°F/35°C. Do not operate chiller in temperatures over 95°F/35°C.

If the chiller is placed in an enclosed space (a cabinet or aquarium stand) it must have an air inlet as well as a ventilation outlet. The air inlet should be at least the same size and dimensions as the air outlet and can be placed to face the sides or front of the chiller.

Chiller must have a space of at least 8 in/20 cm between the ventilation grate and the wall for proper ventilation to take place. If the chiller is inside of an enclosed aquarium stand the chiller will need to be 8 in/20cm from the walls of the stand. If ventilation grate or fans must be placed closer than 8 in/20 cm to the wall, it is necessary to create a ventilation outlet the same size and shape as the chiller ventilation grate or fans in the wall.

WARNING: The SeaChill will produce excessive heat and not work properly if not placed in a well ventilated area. Compressor damage may occour.

WARNING: Before cutting a ventilation hole or grate in an aquarium stand, contact the stand manufacturer to insure that you will not compromise the structural integrity of the stand.

Valve Assembly

TR5 TR10 TR15 TR20


1 Unscrew the Ring Nuts for the shut off valves from the chiller inlet and outlet. Remove the In/Out plugs from the In/Out ports of the chiller. Remove the O-rings from In/Out plugs. *(do not discard In/Out plugs– store for use should you ever need to transport or ship the chiller to another location).*


2 Slide the Ring Nuts onto the Shut Off Valves past the two small clips of plastic projecting from the side of the Shut Off Valves.

Note: *Once Ring Nuts have been pushed past the plastic clips on the Shut Off Valves, do not remove Ring Nut from Shut Off Valves, this will break the plastic clips, causing the valve to leak.*

3 Roll the O Rings onto the Shut Off Valve below the Ring Nut. Do not push O Ring past plastic clips on Shut Off Valves.

4 Place the Shut Off Valve into the Outlet of the chiller, do not use much force. Hand tighten the Ring Nuts to seat the O-Ring and attach the Shut Off Valve Securely to the chiller.

Above photos are of a TR5 model

WARNING: **Do Not Overtighten The Shutoff Valves or Ring Nuts**
The shut-off valves should be able to rotate easily after tightening; overtightening may cause water leaks or permanently damage your chiller.

Plumbing

ALL MODELS



Note: *the first nipple on the Shut Off Valves will take 5/8" id tubing. The second, larger nipple will accept 3/4" id tubing. Remove compresssion fitting for 5/8" tubing before using 3/4" tubing. Use the tubing size you prefer.*

WARNING: Do Not Overtighten Threaded Components to Chiller:
Tighten firmly but do not use excessive force. Use tools and materials appropriate for use with plastic components.

SeaChill Chillers can be plumbed using flexible plastic tubing or hard plumbed using PVC.

Flexible Tubing

1 Attach flexible plastic tubing from the pump to the chiller by sliding tubing over nipple on Shut Off Valves. Tighten Compression Fitting over the end of the flexible plastic tubing by turning fitting counter-clockwise until tubing is secure.

PVC

Note: *If the chiller should ever need maintenance, it will be necessary to remove the chiller cover. Do not hard plumb PVC to the chiller. Plan ahead and use ball valves or gate valves to allow water flow to be shut off. Install unions to allow for the removal of the chiller cover.*

Recommended PVC parts
(may be either schedule 40 or schedule 80 PVC)
For installation using PVC solvent socket type fittings:

- 1" FPT x Slip adapters (2)
- 1" PVC pipe, 1" Slip x Slip Ball Valves (2)
- 1" Slip X Slip Unions (2)
- Teflon tape or pipe thread sealant with Teflon

1 Unscrew the Ring Nuts for the shut off valves from the chiller inlet and outlet. Remove the In/Out Plugs from the In/Out ports of the chiller (do not discard In/Out plugs – store for use should you ever need to transport or ship the chiller to another location).

2 Keep the Housing Ring Nuts in place, wrap the male threaded inlet and outlet from the chiller in Teflon tape or pipe thread sealant with teflon to prevent leaks. Wrap Teflon tape at least twice around threads. Check carefully for leaks. Slow leaks may occur.

3 Screw the 1" FPT x Slip adapters over inlet and outlet to chiller. Tighten firmly but do not use excessive force.

4 Assemble the remaining PVC as you wish making sure you can easily unscrew the 1" FPT x Slip adapters to maintenance the chiller if necessary.

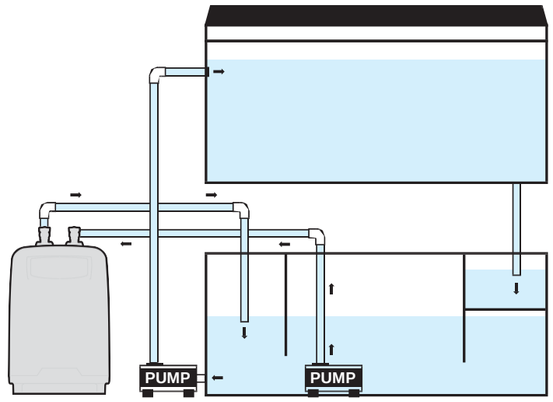
Typical Installations

ALL MODELS

Submersible Pump Installation

Closed Loop

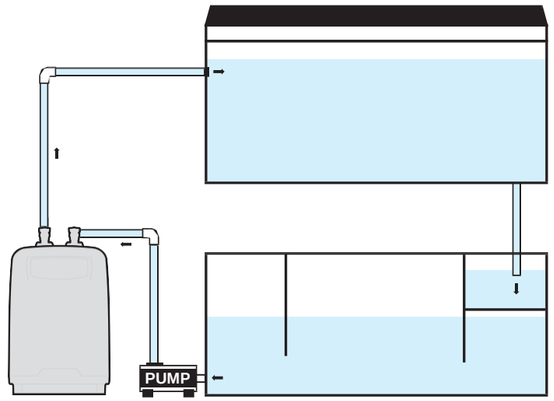
Water is being run through the chiller by a separate pump and returned back to the sump.



External Pump Installation

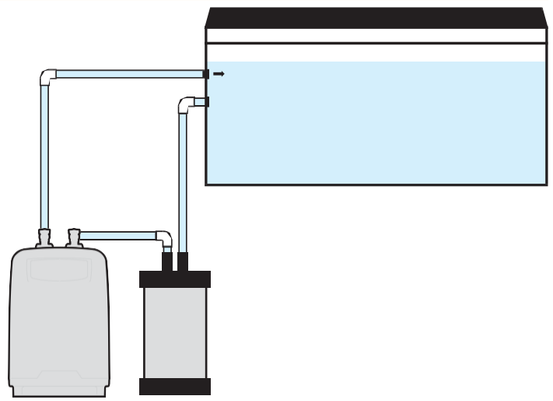
Inline

In this installation the chiller is plumbed between the main return pump and the tank. Be sure that the flow rate is not too high in this situation. If it is, use a ball valve off of the main line into the chiller to slow the water flow.



Canister Filter

In this installation water travels through the canister filter into the chiller where it is returned into the aquarium. With this type of installation filter the aquarium water before it passes through the chiller to reduce build up in the chiller.



Note: *These setup diagrams are intended to provide general examples of common plumbing arrangements, this does not cover all possible situations. Pump, tubing, plumbing accessories are not included.*

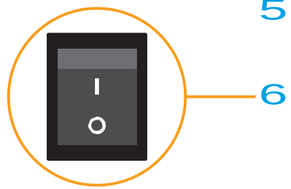
Operating Your Chiller

ALL MODELS

Starting Your Chiller

1. Open the Shut Off Valves by rotating the valve counterclockwise.
2. Turn on the pump from the aquarium to the chiller.
3. Check for leaks and adjust as needed.
4. Make sure water is circulating through the chiller at an appropriate rate. (see chart)

TR5	150gph - 270gph
TR10, TR15, TR20	180gph - 600gph
TR30, TR60	270gph - 810gph



5. Plug the chiller Power Supply Cable into the chiller and the other end into an appropriate compatible source of electricity.
6. Turn power switch on.

Relocation after Installation

1. Rotate the Shut Off Valves to the closed position.
2. Loosen the ring nuts for shut off valves.
3. Remove shut off valves from chiller inlet and outlet.
4. You may then move the chiller to another location

Note: *If you are moving the chiller a long distance, it may be necessary to place the in/out plugs in the in/out ports of the chiller. Be sure to put o-rings on in/out plugs before you put them in the in/out ports.*

TR5

TR10
TR15
TR20

TR30
TR60

Control Panel

All Teco Seachill models share the same control functionality. The following directions apply to all models, with exceptions for Silent Mode, UV Sterilizer, and Heater for models that do not have those functions.

Setting Temperature

ALL MODELS

The unit has been factory set at 77˚F, to change this setting follow the steps outlined below.

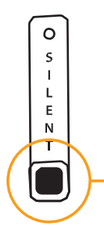
1 **Turn on the chiller.** The power switch is located on the side of the chiller near the power cord, the TR30 and TR60's switch is located on the control panel. Once power has been turned on the chiller will begin to operate after approximately five seconds. The display will show the current temperature of the aquarium water passing through the chiller.

2 **Push "SET"** The display will change from the current temperature to the set temperature.

3 **Push up or down arrow to change temperature.** Using the up and down arrows, set the controller to the desired water temperature. The temperature will be set automatically five seconds after you release the button.

4 Once the chiller reaches the set temperature the unit will enter stand-by mode; both the lights above the temperature display will be off. When the temperature changes the chiller or heater will cycle on as appropriate.

Note: *Illuminated green LED indicates chiller is operational, illuminated red LED indicates heater is operational. (For units with installed heaters).*

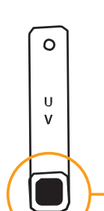


Silent Mode

TR10 TR15 TR20

1 **Press "SILENT"** when the chiller is on. Silent mode slows the ventilation fan, causing the chiller to become quieter. Press "SILENT" again to turn silent mode off.

Note: *We strongly suggest using the silent function sparingly because it reduces the cooling capability of the chiller considerably.*



UV Sterilizer

TR10 TR15 TR20 TR30 TR60

1 **Press "UV"** If the optional UV sterilizer is installed, pressing the UV button will activate the sterilizer. The green led light on the UV will illuminate to indicate the UV light is on.

Note: *If the optional UV kit is not installed the light will flash on and off UV Sterilizer is not availble on the TR5.*

Switching from Fahrenheit to Centigrade

ALL MODELS

1 **Press and hold both up *and* down arrows simultaneously for 10 seconds.** The display will automatically change from degrees Fahrenheit to degrees Centigrade. To change back, repeat process.

Changing Temperature Display

ALL MODELS

The chiller reads the temperature from the water passing through it, a thermometer reading directly from the tank may be reading a different temperature depending on your specific setup. Use this function if you would like to match the chiller's thermometer to a separate thermometer.

1 **Press and hold "SET" for 10 seconds.**
The display will show a value of 1 or 1.5 (do not change this setting)

2 **Press "SET" again**
The water temperature (not the set point) will be displayed.

3 **Push up or down arrow to change temperature.**
After five seconds, the setting is entered into memory and the display will return to full brightness. The unit will now function normally with the new calibrated temperature.

Cleaning the Air Filter

TR5 TR10 TR15 TR20

Remove the filter from the bottom of the chiller.

TR30 TR60

Use a screwdriver to turn the plastic bolt 90° clockwise. (so the slot is vertical to the ground) This unlocks the ventilation grate and allows you to remove the air filter.

It is essential to keep the air filter on the SeaChill clean. A clean air filter will ensure the unit is running at maximum efficiency. All units have a sensor that will alert you if the air filter is being blocked. If the digital display reads "AL1" this means the air filter is dirty or obstructed, and should be cleaned immediately.

1 **For proper operation, clean the filter once per month.**

2 **Use a vacuum cleaner or rinse the filter under a sink until filter is clean.** Do not use soap or other cleaning chemicals. Do not allow chiller to run for extended periods of time without an air filter.

Removing Housing

TR5





1 **Turn off and unplug the chiller.** 2 **Remove shut off valves by unscrewing ring nuts. Remove housing ring nuts and gaskets.** You may need to use a wrench or pliers to loosen the ring nuts, we recommend placing a cloth over the ring nut to prevent damage to the plastic. 3 **Pull out the air filter. Unscrew and remove screws on the bottom.** Use a phillips head screwdriver. You may have to move the chiller to the edge of a table to do this.
4 **Remove the housing.** Housing will remain attached to chiller via electric cables. Grasp the bottom of the chiller and the edge of the power socket, pull up and turn housing over and to the side. Do not operate the chiller until housing is replaced.

TR10 TR15 TR20




1 **Turn off and unplug the chiller.** 2 **Remove shut off valves by unscrewing ring nuts Remove housing ring nuts and gaskets.** You may need to use a wrench or pliers to loosen the ring nuts, we recommend placing a cloth over the ring nut to prevent damage to the plastic 3 **Pull out the air filter. Remove the housing.** First pull up on the case at the bottom, then pull up by gripping the back and the front control panel recess. Do not operate the chiller until housing is replaced.

TR30 TR60




1 **Turn off and unplug the chiller.** 2 **Remove screws from housing. Slide housing about 8" (20cm back. Unplug green ground wire from housing. Slide the housing off.** Keep the plastic washers that come with the housing screws, these prevent chipping of the housing powder coat. 3 **Slide Housing completely off.** Do not operate the chiller until housing is replaced.

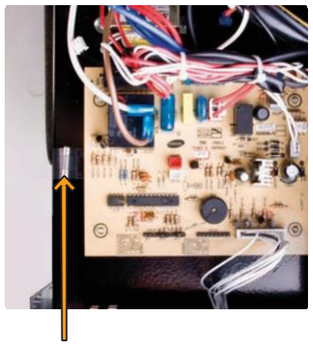
Changing the Fuse

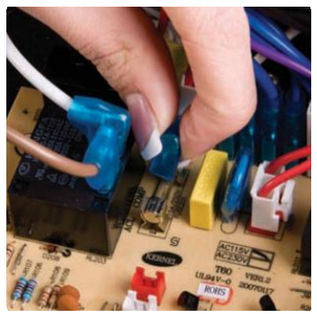
TR5 TR10 TR15 TR20

1. **Turn off and unplug the chiller before changing the fuse.**
2. **Remove the fuse holder from socket using a flathead screwdriver.**
3. **Remove blown fuse from clip and discard.**
4. **Push out the spare fuse (contained in the fuse holder), place new fuse in the clip, replace fuse holder.**

Changing the Fuse

TR30 TR60



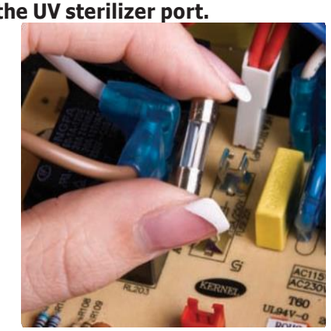


Changing UV Bulb

TR10 TR15 TR20

It is time to replace the UV Lamp when the AL2 code flashes on the control panel

1. **Turn off chiller and unplug the chiller, Remove the housing** (see directions on p.19)
2. **Unscrew the ring nut for the UV sterilizer port.**



Spare Fuse
Note: Some wires were removed for these photos

3 **Remove rubber stopper from the quartz sleeve**

4 **Unplug the old UV lamp from the 4-pin socket., remove and discard lamp.**

5 **Slide new UV lamp into quartz sleeve, plug into 4-pin socket, return rubber stopper into sleeve**
Do not touch the glass of the UV bulb with your bare hands.

1 **Turn off chiller and unplug the chiller, Remove the housing**
(see directions on previous page)

2 **Remove the blue plastic cover from fuse, remove old fuse from clips**

3 **Install new fuse, replace blue plastic cover, replace chiller housing.**

6 **Tighten ring nut over quartz sleeve**

7 **Replace housing and air filter. Replace ring nuts and valves.**

8 **Open shut off valves, restart pump and check for leaks. Turn UV on by pressing UV button.**

9 **Hold down UV button for 10 seconds to reset AL2 code.**

WARNING: **Do not touch the glass of the UV bulb with your bare hands.**
Oils on your hands will dramatically decrease the lifespan of the UV lamp. Use a clean cloth to handle the lamp during installation.

Changing UV Bulb

TR30 TR60




It is time to replace the UV Lamp when the AL2 code flashes on the control panel

1. **Turn off chiller and unplug the chiller, Remove the housing** (see directions on p.18)
2. **Unscrew the ring nut for the UV sterilizer port.**
3. **Remove rubber stopper from the quartz sleeve**
4. **Unplug the old UV lamp from the 4-pin socket., remove and discard lamp.**
5. **Slide new UV lamp into quartz sleeve, plug into 4-pin socket, return rubber stopper into sleeve**
   Do not touch the glass of the UV bulb with your bare hands.
6. **Tighten ring nut over quartz sleeve**
7. **Replace housing and screws**
8. **Open shut off valves, restart pump and check for leaks. Turn UV on by pressing UV button.**
9. **Hold down UV button for 10 seconds to reset AL2 code.**

WARNING: **Do not touch the glass of the UV bulb with your bare hands.**
Oils on your hands will dramatically decrease the lifespan of the UV lamp. Use a clean cloth to handle the lamp during installation.

Troubleshooting

Problem	Cause	Solution
Display does not light up	No Electricity	Check that the power supply cable is correctly connected to both the chiller and outlet. Check that the power switch is ON. Check that the fuse is intact.
	Dirty Air Filter	Clean Air Filter as described on page 18.
	Ambient Temperature is too high	Lower the ambient temperature to below 95° F/35° C
	Obstructed Ventilation Grate	Remove the obstruction or create a ventilation hole.
	Broken Fan	Contact *info@trademarkaquatics.co.uk*
	UV lamp	Replace the UV lamp with an appropriate TECO UV replacement, available at *www.tecous.com*
	Water temperature probe has been damaged	Contact *info@trademarkaquatics.co.uk*
	Compressor overload probe is damaged	Check air filter, check that ventilation fans are running. Contact *info@trademarkaquatics.co.uk*
Temperature displayed is not correct	Water is losing or gaining heat through long and/or un-insulated tubing	Reduce length of tubing, insulate the tubing.
		Check for obstructions in tubing
		Check that the pump is working
		Water may not be circulating through chiller correctly
Chiller does not come on until aquarium temperature is several degrees higher than set point	Temperature offset is incorrect	Reset temp differential - see instructions below
Water flow through chiller has slowed	Calcium Buildup	Disconnect chiller from aquarium. Run a 50% solution of vinegar and water through chiller for 24 hours to dissolve buildup. Thoroughly flush chiller with Ro/DI before connecting to aquarium.

1 **Press and hold "SET" for 10 seconds.**
The display will show a value of 1 to 20 - this is the current set differential

2 **Use the arrow Keys to change the set differential**
The set differential reflects the number of degrees variance upward from the set temperature you wish to allow. For example, if you have the set temperature at 25° C, but do not want the chiller to turn on until it reaches 27° C, set the differential value to 2. The default setting allows a variance of 1° C from the set temperature before the chiller turns on. This value is intended to protect the compressor from excessive wear.


TECO®