



## OWNER'S MANUAL



EFU-25 EFU-35 EFU-45

# REACTION CANISTER

TRANSWORLD AQUATIC ENTERPRISES INC.

# REACTION-4 STAGE

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## REACTION - L STAGE

# Important Safety Instructions

### WARNING

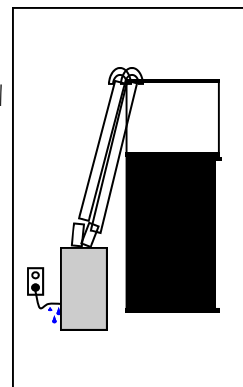
To guard against injury, basic safety precautions should be observed, including the following:

### READ ALL SAFETY INSTRUCTIONS BEFORE USE.

### DANGER

To avoid possible electric shock, special care should be taken since water is employed in the use of aquarium equipment. For each of the following situations, do not attempt to repair yourself: return the appliance to an authorized service facility for service or discard the appliance.

- A. If the appliance falls into water, DON'T reach for it! First unplug it and then retrieve it. If the electrical components of the appliance get wet, unplug the appliance immediately.
- B. Carefully examine the appliance after installation. It should not be plugged in if there is water on parts not intended to be wet.
- C. Do not operate any appliance if it has a damaged cord or plug, or if it is malfunctioning or if it is dropped or damaged in any manner.
- D. To avoid the possibility of the appliance plug or receptacle getting wet, position aquarium stand and tank to one side of a wall mounted receptacle to prevent water from dripping onto the receptacle or plug. A "drip loop", shown in the Figure at the right should be arranged by the user for each cord connecting an aquarium appliance to a receptacle. The "drip loop" is that part of the cord below the level of the receptacle or the connector if an extension cord is used, to prevent water travel along the cord and coming in contact with the receptacle. (Continued on pg 4)



## REACTION - 4 STAGE

### Important Safety Instructions

D. (Continued from pg 3)

If the plug or the receptacle do get wet, DON'T unplug the cord. Disconnect the fuse to the circuit breaker that supplies power to the appliance. Then unplug and examine for the presence of water in the receptacle.

E. Close supervision is necessary when any appliance is used by or near children.

F. To avoid injury, do not contact moving parts or hot parts such as heaters, reflectors, lamp bulbs, and etc.

G. Always unplug an appliance from the outlet when not in use, before putting on or taking off parts, and before cleaning. Never yank the cord to pull plug from the outlet. Grasp the plug and pull to disconnect

H. Do not use an appliance for other than intended use. The use of attachments not recommended or sold by the appliance manufacturer may cause an unsafe condition.

I. Do not install or store the appliance where it will be exposed to the weather or to temperatures below freezing.

J. Make sure an appliance mounted on a tank is securely installed before operating it.

K. Read and observe all the important notices on the appliance.

L. This Appliance has a polarized plug (one blade is wider than the other). As a safety feature, this plug will fit in a polarized outlet only one way. If the plug does not fit fully in the outlet, reverse the plug. If it still does not fit, contact a qualified electrician. Never use with an extension cord unless plug can be fully inserted. Do not attempt to defeat this safety feature.

**M. This appliance is intended FOR HOUSEHOLD USE ONLY.**

Do not use or mount this appliance in such a way that the top vents are restricted or blocked. These vents are necessary to avoid over-heating and insure safe operating temperature.

## REACTION - 4 STAGE

### **Important Safety Instructions**

O. Make sure that all hose connections are firmly secured before turning on this filter. Never look directly at the UV lamp, which may cause discomfort to eyes and skin.

Always turn the switch for the UV off and unplug entire canister filter before performing any maintenance.

#### **CLEANING**

It is important to keep this appliance clean. Always unplug the appliance before performing maintenance or cleaning of the exterior of this hood. Wipe exposed surfaces carefully with a damp terrycloth to remove any dust or mineral deposits which may collect over time. Make sure all surfaces are dry before re-plugging into an electrical outlet. To prevent scratching the appliance, use a damp terrycloth when cleaning.

#### **SERVICING**

In order to assure proper electrical connections and polarity, replacement parts and servicing should be performed only by a qualified electrician.

#### **OPERATION**

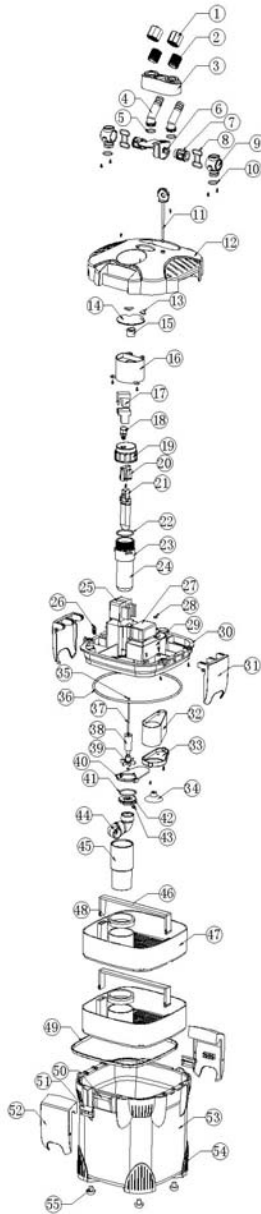
Please carefully read the entire "Owner's Manual" for proper operation procedures before proceeding with turning on this appliance and adding livestock such as fish, corals, and invertebrates.

***SAVE THESE INSTRUCTIONS***

# REACTION - 4 STAGE Parts

## PARTS EXPLODED VIEW & IDENTIFICATION

### Reaction Canisters



# REACTION - 4 STAGE Parts

## Reaction Canister 4-Stage Filter

PART	#	Name	PART	#	Name
EFU-	1	Female Hose Cap	EFU-	26	Capacitor
EFU-	2	Male Hose—Threaded	EFU-	27	Pump Motor
EFU-	3	Quick Disconnect Valve	EFU-	28	Main Power Supply
EFU-	4	Inlet Pipe	EFU-	29	Converter
EFU-	5	O-ring	EFU-	30	Underside Frame Cover
EFU-	6	Water Shut Off Lever	EFU-	31	Cover Handle Clamp
EFU-	7	Water Shut off Valve	EFU-	32	Priming LeverCompartment
EFU-	8	Sealer	EFU-	33	Priming Lever—Cover
EFU-	9	Filter Inlet Valve	EFU-	34	Priming Lever—Suction Cup
EFU-	10	O-ring	EFU-	35	Impeller cap
EFU-	11	Integrated Self - Priming Lever	EFU-	36	O-ring
EFU-	12	Filter Cover	EFU-	37	Impeller Ceramic Shaft
EFU-	13	Hinge for UV Cover	EFU-	38	Impeller Magnet
EFU-	14	UV Cover	EFU-	39	Impeller Fan Blades
EFU-	15	UV ON/OFF Switch	EFU-	40	Impeller Housing Cover
EFU-	16	UV Ballast	EFU-	41	Impeller Housing O-ring
EFU-	17	Male/female UV ConnectorPlug	EFU-	42	Impeller Housing Cap
EFU-	18	UV Compression Fitting Cap	EFU-	43	Imperller Cap Tab
EFU-	19	UV Compression Fitting	EFU-	44	Return Elbow
EFU-	20	UV Lamp—socket	EFU-	45	UV Exterior Housing
EFU-	21	UV Lamp	EFU-	46	Filter Basket Handle
EFU-	22	UV O-ring	EFU-	47	Filter Basket
EFU-	23	UV Compression Pipe	EFU-	48	Return Gasket
EFU-	24	Quartz Sleeve	EFU-	49	O-Ring
EFU-	25	Transformer	EFU-	50	Filter Body Hinge
			EFU-	51	Filter Body Clamp
			EFU-	52	Filter Body Handle Clamp
			EFU-	53	Filter Body
			EFU-	54	Filter Body Support Base
			EFU-	55	Rubber Feet

# REACTION - 4 STAGE Parts

## REACTION 4-STAGE FILTRATION DESIGN

EFU-25



### Filter Media Set Up

- Basket 1
- 1) Layer white fine Filter Floss
  - 2) Activated Carbon - 500g
- Basket 2
- 1) Ceramic Rings - 500g.
  - 2) Layer white fine Filter Floss

EFU-35



### Filter Media Set Up

- Basket 1
- 1) Layer black coarse sponge.
  - 2) Layer white fine Filter Floss
- Basket 2
- 1) Activated carbon - 500g.
  - 2) Layer white fine Filter Floss
- Basket 3
- 1) Ceramic Rings - 500g.
  - 2) Layer white fine Filter Floss

EFU-45



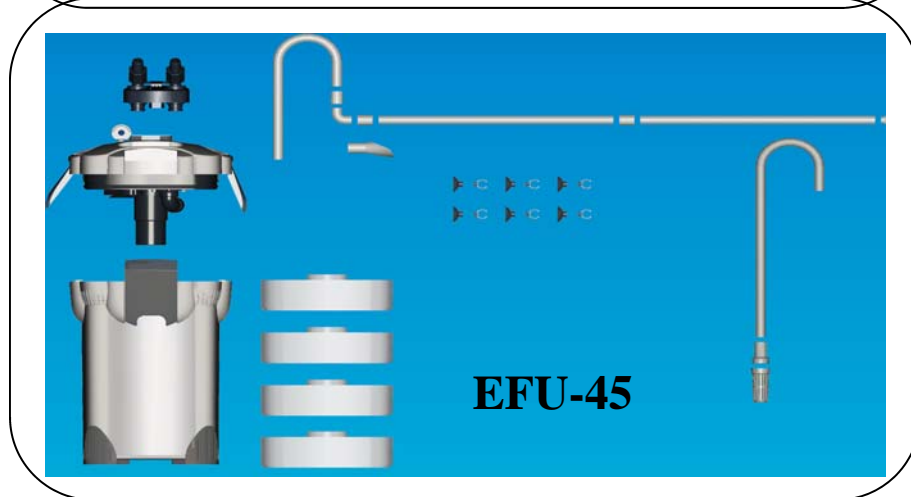
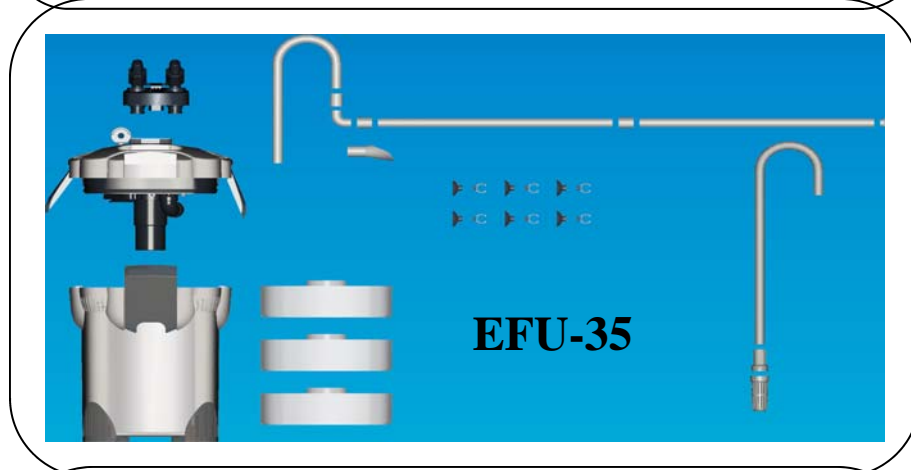
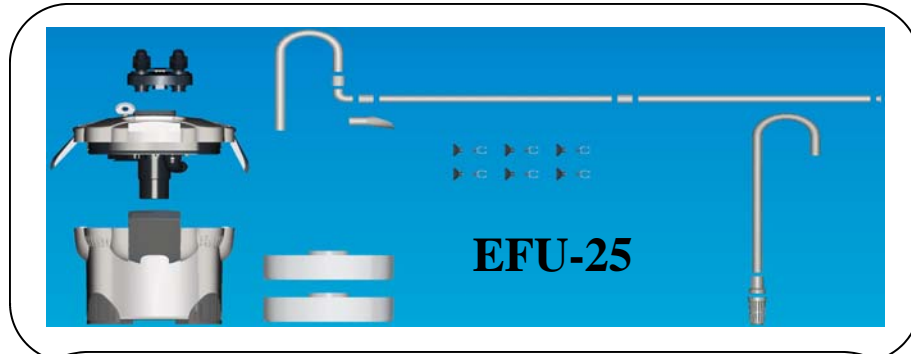
### Filter Media Set Up

- Basket 1
- 1) Layer black coarse sponge
- Basket 2
- 1) Layer white fine Filter Floss
- Basket 3
- 1) Activated carbon - 500g.
  - 2) Layer white fine Filter Floss
- Basket 4
- 1) Ceramic Rings - 500g.
  - 2) Layer white fine Filter Floss



# REACTION - 4 STAGE Parts

## What's Included in the Box



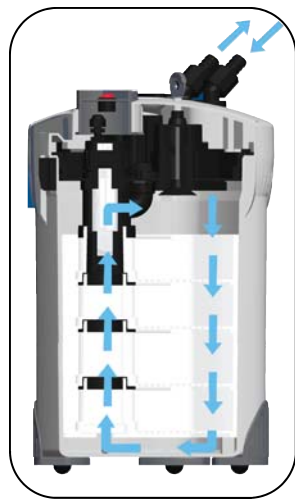
# REACTION 4-STAGE Introduction



## COMPREHENSIVE 4-STAGE FILTRATION

Thank you for purchasing the Reaction 4-Stage high capacity filtration system. This revolutionary canister filter incorporates high media storing capacity with an innovative UV sterilizer that polishes water to crystal clarity while keeping pathogens at bay.

## Mechanical - Chemical - Biological - UV Sterilization



Reaction 4-Stage Canister filters utilize mechanical, chemical, biological filtration, and UV sterilization for a balanced aquarium.

Water first enters the canister via the intake strainer and is guided through a large sponge to trap particulate matter.

The water then reaches 500g of activated carbon to remove harmful dissolved organic compounds.

Water is directed over the ceramic rings that offers a tremendous amount of surface area internally and externally to grow beneficial aerobic bacteria that breaks down harmful ammonia and nitrite to less harmful nitrate.

All filtered water then passes through our powerful UV-C lamp for pathogen and green water elimination.

# REACTION - 4 STAGE Introduction

## ADVANCED FEATURES

Reaction 4 - Stage Canister Filters are equipped with the most advanced features to make routine maintenance easy with high performance.

- Integrated Self-Priming Lever
- Quick - Disconnect Shut-Off Valve
- On/Off Switch for UV-C Germicidal Lamp
- High Capacity Media Storage

## INTEGRATED SELF-PRIMING LEVER

Our innovative self-priming lever eliminates the need for manual siphoning. Once canister is filled with water, pump the lever up and down vigorously until water enters the inlet and the remaining air bubbles leave the outlet.



## QUICK-DISCONNECT SHUT-OFF VALVE

Instantly creates a watertight seal that stops water from entering or exiting the filter. Simply lift up the **SHUT-OFF VALVE HANDLE** to the vertical position to stop water flow. Grab the handle and detach and take the canister for convenient media replacement.



# REACTION 4-STAGE Introduction

## ON/OFF SWITCH FOR UV-C GERMICIDAL LAMP

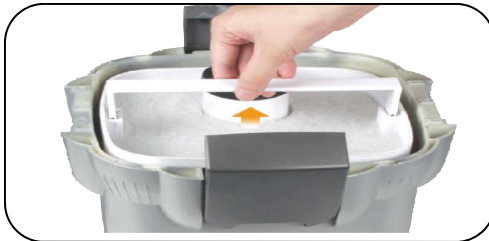
This new revolutionary concept integrates a special UV-C lamp to destroy green water and polish water to crystal clarity. The convenient ON/OFF switch allows for complete user control.



**NOTE:** The UV-C switch should be turned off during the cycling period to encourage the population of beneficial bacteria. Never look directly at an exposed UV-C lamp as it may cause irritation to eyes and skin.

## HIGH CAPACITY MEDIA STORAGE

The new trend in canister filters is to increase the filter storing capacity for larger amounts of chemical and biological medias. This allows for higher water quality due to more media contact through the initial pass. All filter baskets have convenient handles for removing and loading up all types of medias that can be easily customized.



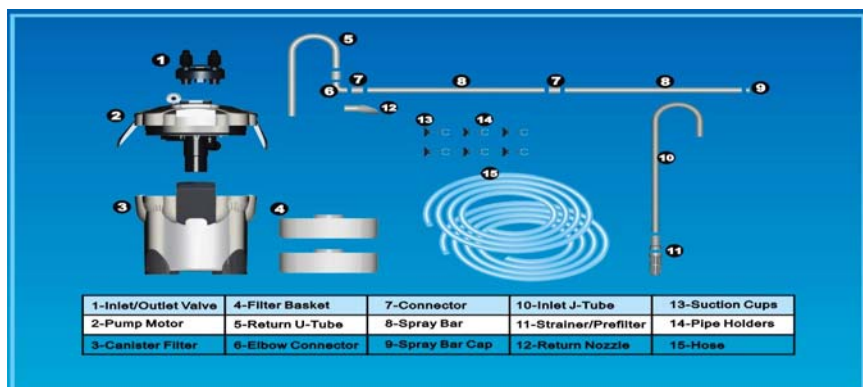
Reaction Canister filters come installed with all necessary media right out of the box for quick and easy start-up

# REACTION 4-STAGE **Getting Started**

## UNPACKING THE BOX

Carefully unpack your new Reaction Canister Filter and verify that you have all the parts below.

NOTE: Picture below represents model EFU-25 with (2) media baskets. Please refer to page 8 & 9 for models EFU-35 & EFU-45.



## CHOOSING A LOCATION

Reaction Canister are gravity-fed filter systems. They must be placed below the water level in order to function properly.

- Attach INLET J-TUBE (10) to STRAINER/PREFILTER (11) and hang inside of aquarium.
- Attach RETURN U-TUBE (5) to CONNECTOR (7) and ELBOW CONNECTOR (6) and RETURN NOZZLE (12) and hang inside of aquarium.

NOTE: Spray Bar can be attached instead of Return Nozzle as another return option.

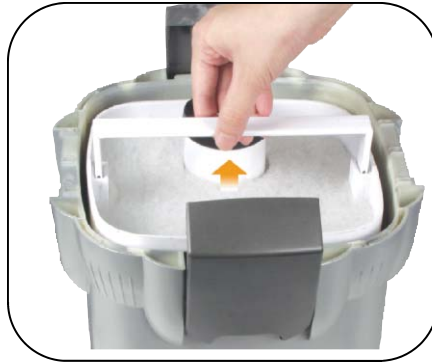
- Insert the INLET J-TUBE (10) and RETURN U-TUBE (5) into the two pre-cut HOSES (15). Align the other open ends of the hose to the INLET/OUTLET VALVE (1) and cut hoses if necessary so there are no kinks or bends.
- Once cutting of the hoses are completed, , measure the distance from the tank to the canister to ensure the hoses are the right length.

# REACTION 4-STAGE GETTING STARTED

## REMOVING THE COVER



### PREPARING THE MEDIA BASKETS



Your filter is factory installed with the correct sponges, carbon, and ceramic rings to show proper placement. It is necessary to remove the baskets and rinse the activated carbon bag under the sink for 30 seconds or until the water runs clear before starting the filter.

### FILLING THE CANISTER FILTER

Once the activated carbon bag has been rinsed, place back into the filter basket and fill up with aquarium water to 95% of the capacity of the filter.

Clamp on the cover back to the filter body by repeating the steps in opposite order.

Always check to ensure you have an air-tight seal and that each handle clamp is locked in place before turning on the filter.



Note: The QUICK-DISCONNECT VALVE handle must be in the horizontal position in order to lock properly.

### TURNING ON THE FILTER



Plug the receptacle of the filter into a grounded 110V outlet. At this time you should be able to hear the motor running.

Pump the Integrated Priming Lever up and down vigorously until the air inside the canister filter escapes out the return hose. Once the filter is running, return the lever to the down position.

## REACTION 4-STAGE GETTING STARTED

### **ADJUSTING THE WATER FLOW**

Reaction Canister Filter's unique QUICK DISCONNECT-VALVE offers the option to regulate water flow for your aquarium.

While the filter is running you can slowly raise the handle to reduce the flow rate.

**NOTE:** It is very important NOT to raise the handle more than halfway. Raising more than halfway may stop the flow of water and cause malfunction to the motor and associated parts.

### **ADJUSTING THE WATER RETURN**

Adjust the height or angle of the return hose back into your aquarium to your specific needs.

If you have chosen to use the RETURN NOZZLE, you can turn the nozzle to face upwards for more surface tension or downwards for more movement at the bottom of the aquarium.

If you have chosen to use the SPRAY BAR, adjust it so the small openings in the spray bar are angled at a 45 degrees angle so it breaks the surface of the water for more gas exchange.

### **WATER CHANGES**

Regular maintenance is the key to a successful thriving aquarium. Maintaining an aquarium can be very easy with a regular cleaning schedule.

Water changes should be carried out on monthly to bi-monthly schedule depending on how much bio-load is kept.

25% water changes with gravel vacuuming is essential to keep dissolved organic carbons to a minimum.



**ROUTINE MAINTENANCE**

Periodic filter media replacement is crucial for the well being of your livestock. As most mechanical and chemical medias are exhausted, they slowly lose performance and no longer filter the water efficiently.

We recommend changing the media located inside the baskets on a monthly basis.

**MAINTENANCE PREPARATIONS**

Close the **QUICK DISCONNECT VALVE** by lifting up on the handle. The handle should be in the vertical position to stop the flow of water in and out of the filter.

Unplug the filter power cord.

Lift up on the handle of the **QUICK DISCONNECT VALVE** and disconnect from the filter body. The water inside the hose tubes will not leak.

Lift the Reaction Canister Filter from the main body and not the cover to a sink or drain to perform cleaning and maintenance husbandry.

Unlock the **HANDLE CLAMPS** and remove cover carefully.

Drain as much water out of the filter and remove baskets individually.

**REPLACING THE FINE WHITE FILTER FLOSS**

- A. White Filter Floss should be changed on a monthly basis to remove small trapped debris and free floating particulate matter.

**REPLACING THE COARSE BLACK SPONGE**

- A. Black Coarse Sponge should be changed on a monthly basis to remove medium to large trapped debris and free floating particulate matter.

**REPLACING THE ACTIVATED CARBON BAG**

- A. Activated Carbon adsorbs dissolved pollutants and removes the yellow discoloration of water and associated odors.
- B. Replace Activated Carbon Bag on a monthly basis.

**CLEANING THE CERAMIC RINGS**

- A. The Ceramic Rings are the primary biological support for keeping toxic ammonia and nitrite at acceptable levels. Generally, the biological media should not be replaced unless detritus and waste is prohibiting the amount of exposed surface area available for the beneficial bacteria. Clean ceramic rings with the aquarium water and NEVER use tap water that can destroy the bacteria.
- B. Replace Ceramic Rings as needed or add extra for higher volume aquariums with large bio-loads.

**CLEANING/REPLACING IMPELLER****STEP: 1**

Remove cover off filter and place upside down.

You will need a flat head screwdriver.

**STEP 2:**

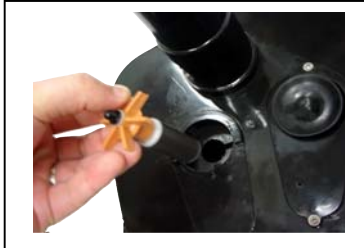
Wedge the flat head screwdriver under the impeller cap tab and lift up.

**STEP 3:**

Remove impeller cap tab.

**STEP 4:**

Disconnect the return elbow from the UV housing by pulling in a counter clockwise motion.

**STEP 5:**

Pull out impeller for cleaning or replacement. It may be necessary to also clean out the impeller housing with a cotton swab for slime and detritus accumulation.

**REPLACING UV-C LAMP**

The UV-C lamp within the Reaction Canister Filter requires replacement after 9-12 months use. Always disconnect the power supply and NEVER look directly at the lamp.

Tools Required: Phillips Screwdriver, scissors, pliers



**STEP 1:**  
Unscrew the (6) Phillips screws from the underside of the cover.



**STEP 2:**  
Unscrew the (2) Phillips screws from the topside of the cover.



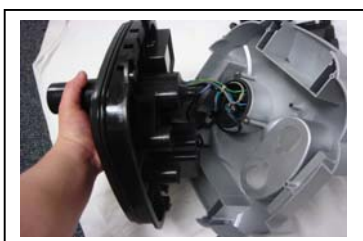
**STEP 3:**  
Pull off the Suction Cup from the underside of the Priming Lever.



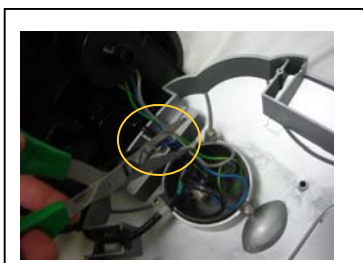
**STEP 4:**  
Unscrew the nut off the Priming Lever and Pull out the Lever from the top of cover.

**REPLACING UV-C LAMP (continued)**

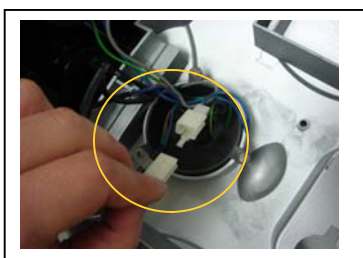
**STEP: 5**  
Picture of screw and Priming Lever.



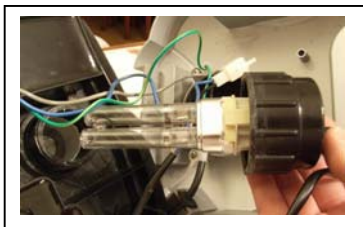
**STEP 6:**  
Pull apart the internal black plastic frame from the top frame.



**STEP 7:**  
Cut the clear zip tie with your scissors to allow more slack to remove the UV-C lamp. The wires should be re-attached with wire or another zip tie for organization.



**STEP 8:**  
Disconnect the male/female plug that is connected to the UV-C lamp.



**STEP 9:**  
Loosen the compression fitting with pliers and unscrew by hand. Unsnap UV-C lamp from the lamp holder and replace.

# REACTION 4-STAGE SPECIFICATIONS

Item #	GPH	Rated Gallons	Filter Height	Canister Diameter	Media Capacity	Inlet Hose Size	Outlet Hose Size	Watts	Watts/UV
EF-10	159	25 gal	13.93	8.17x8.17	1.92liters	5/8"	5/8"	11	N/A
EF-15	185	50 gal	15.91	8.17x8.17	2.88liters	5/8"	5/8"	13	N/A
EF-20	211	75 gal	17.87	8.17x8.17	3.84liters	5/8"	5/8"	15	N/A
EFU-25	198	100 gal	15.24	11.41 X 11.41	4 liters	5/8"	5/8"	23	5 Watt
EFU-35	250	150 gal	17.52	11.41 X 11.41	6 liters	5/8"	5/8"	27	6 Watt
EFU-45	290	175 gal	19.8	11.41 X 11.41	8 liters	5/8"	5/8"	32	7 Watt

**Customer Service Information**

For additional information or technical assistance please call us at (310) 672-4099, M-F from 9AM-5PM (Pacific Standard Time).



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