



# MRC

# Building Success

## + Series Commercial Protein Skimmer

Congratulations on your purchase of a +Series MRC Commercial Protein Skimmer; the finest filtration in the world.

Please read the instructions in its entirety before starting to assemble your skimmer in order to assure proper assembly and operation.

The skimmer comes disassembled for shipping. Refer to these instructions and assembly diagram for set up. Failure to follow the assembly instructions could cause skimmer to malfunction

### **Section A: Assembly**

- 🌀 Install the provided O-ring seal in the groove on the top flange of the skimmer body.
- 🌀 Partially screw the nylon thumbscrews in place (approx ¼ inches).
- 🌀 Place the upper riser/collection cup on the lower body and turn to lock the upper riser to the body using the nylon screws.
- 🌀 Hand-tighten the nylon screws. Do not over tighten. The upper tube should now be secured to the lower body.
- 🌀 Screw the injector assemblies (4) into the 1 inch bulkheads located next to the riser body on the top of the box. Teflon tape is needed for all threaded fittings.
- 🌀 Screw the air valves into the injector assemblies. Teflon tape is not needed for the air valves.
- 🌀 Attach the manifold piping and ball valves connecting the tops of all 4 injector assemblies.
- 🌀 Insert the threaded nipple into the gate valve. Install the gate valve & nipple onto the skimmer box & hand tighten. Do not over tighten. Open gate valve fully.
- 🌀 Connect the skimmer pump to the top of the injector assembly manifold.

### **Section B: Skimmer Installation and Operation**

The protein skimmer can be used either inside or outside of a sump. Due to the large footprint of the +Series Commercial skimmers, we recommend out of sump installation. Do not raise the water level of the skimmer above the height of the air valves. This will cause water to exit via the air valve. Note: the recommended pump is an EXTERNAL pump, DO NOT use this pump inside the sump.

#### **In-Sump Installation**

Install the pump externally for in-sump applications. Submersible pumps are not recommended.

- 🌀 Connect the gate valve to the skimmer. The gate valve is shipped in the closed position. Open gate valve.
- 🌀 Place the skimmer inside the sump.
- 🌀 Connect the skimmer pump to the top of the injector assembly.
- 🌀 Make sure all flange screws are tight and that the gate valve and collection cup drain are completely open. We recommend using an MRC waste collector. Do not cap off or block the cup drain. Close the air valves.
- 🌀 Turn on the pump and adjust the water level of the skimmer to 2 inches above the skimmer box by slowly closing the gate valve. Slowly being to open each air valve until you get a good bubble density and size (1/4 – 1/3 open in most cases).
- 🌀 Allow a 24 hour break-in period at this level before adjusting the air valves. After this period the air valves may be adjusted down to decrease bubble size.

## **Out Of Sump Installation**

This is the preferred installation method. Refer to the website for recommended pumps for out of sump applications.

- ☞ Connect a drain line from the skimmer to the sump. The gate valve may be connected along any part of the drain line. PVC Cement should be used to connect the parts of the drain line and allowed at least two hours to cure before use. For best results, install the return water line from the skimmer above the water level of the sump. This will eliminate back pressure and make adjusting the skimmer much easier. The skimmer can only drain level or downwards.
- ☞ Connect the skimmer pump to the top of the injector assembly.
- ☞ Make sure all flange screws are tight and that the gate valve and collection cup drain are completely open. We recommend using an MRC waste collector. Do not cap off or block the cup drain. Close the air valves.
- ☞ Turn on the pump and adjust the water level of the skimmer to 2 inches above the skimmer box by slowly closing the gate valve. Slowly bring to open each air valve until you get a good bubble density and size (1/4 – 1/3 open in most cases).
- ☞ Allow a 24 hour break-in period at this level before adjusting the air valve. After this period the air valve may be adjusted down to decrease bubble size.

## **Adjusting the Skimming Rate**

- ☞ Raising the water level of the skimmer or increasing the air flow will cause the skimmer to skim wetter.
- ☞ Lowering the water level or air flow will cause the skimmer to skim drier. A combination of the two will allow for the desired skim rate.

## **Section C: Cleaning the Skimmer**

- ☞ If the reaction chambers have collected a dark film or sludge, it is time to clean the skimmer. The skimmer will still function while it is dirty, though less efficiently.

### **Cleaning the Skimmer Body**

- ☞ Turn off the skimmer pump.
- ☞ Loosen the nylon screws that connect the reaction chambers and remove the riser. It is not necessary to remove the screws.
- ☞ Loosen the nylon screw and remove the lid for the collection cup.
- ☞ Using an acrylic safe pad wipe down the reaction chambers and collection cup and rinse with clean water, removing all waste from the cylinders and cup.
- ☞ Reassemble in the reverse order making sure the O-Rings are seated properly.

### **Cleaning the Injector and Beckett**

The injector assembly can easily be disassembled for cleaning and maintenance. This should be done at least monthly or if there is a noticeable decline in bubble output.

- ☞ Turn off and disconnect the skimmer pump from the top of the injector assembly.
- ☞ Loosen the nylon thumb screws.
- ☞ Turn the top of the injector to unlock the Beckett and lift to remove the injector top and Beckett.
- ☞ Remove the two O-Rings found on the Beckett (these only serve to hold the Beckett together).
- ☞ Open the Beckett housing and clean to remove any buildup.
- ☞ Reassemble in the reverse order (see diagram below).

