

Congratulations on the purchase of a state of the art protein skimmer manufactured by Precision Marine Systems. READ ALL INSTRUCTIONS and complete the warranty card and return within ten (10) days to benefit from the one (1) year limited warranty.

Bullet Series
 Models 2 & 3

Basics...

Take some time to acquaint yourself with the diagram on Page 3. Please see below for water pump selection.

	Bullet-2	Bullet-3
Mag 18	Works, but not recommended	👎
Mag 24	Works, but not recommended	👎
Mag36	👍	👍
Iwaki MD40RLT	👍 👍	👍 👍
PCX40	👍 👍 👍	👍 👍
Iwaki MD55RLT	👍 👍 👍 👍	👍 👍 👍
Iwaki MD70RLT	n/a	👍 👍 👍 👍

Assembly & Installation...

1. Locate the threaded speedfittings (beige colored) and black insert nipple (for optional ozone use). Using the supplied teflon tape, wrap each of the threads in the opposite direction of tightening. This will keep the teflon tape from unraveling when you thread them into the injector body.
2. Thread one speedfitting into the female threaded opening on the back side of the injector and tighten. See image to right.
3. Thread the black insert nipple into the other female threaded opening on the front side of the injector and tighten. Be sure to leave the red cap on unless you are using ozone.
4. Locate the black air valve and place it into the injector base as shown in picture to right. Thread the other speedfitting into the bottom of the black air valve. Thread the white muffler on top of the valve as shown. Teflon tape is not needed here.
5. Locate the red polyethylene tubing and push into the speedfitting on the injector. Connect the other end to the speedfitting attached to the valve as shown. To remove the tubing, simply push the collar in the speedfitting while pulling the tubing out. Your injector is now assembled.
6. Use the supplied 1" barbed elbow for flexible hose installation. Otherwise, you can hard plumb the injector using a 1" PVC male adapter. Never glue anything into the threads. Always use teflon tape.
7. Position your Bullet Protein skimmer so the drain line (from skimmer to sump) does not rise. It must drain straight out or down. If it doesn't, it will be impossible to maintain a low enough water level. In addition, if you plan to drain downward more than six inches, a vented drain is recommended. If you do not vent the drain, it will be very difficult to maintain a constant water level. See your dealer for vented drain details. Never reduce the size of this drain line. To raise your skimmer, consider using one of the Precision Marine Custom Skimmer Stands.



8. Whether you choose to place your skimmer in or out of the reservoir, always return water (from skimmer) ABOVE running water level in the sump. It is recommended to run the drain water over a sponge to break the fall of the water and remove any stray bubbles. After the initial break-in period (24-48 hrs.), less air will leave the skimmer's drain.
9. Either glue Slip 2" Clear PVC valve over white PVC pipe or use silicone for a non-permanent but leak free connection. If you are using the skimmer the reservoir, no gluing is necessary.
10. Be sure o-rings and mating surfaces are clean prior to assembly to assure a good seal. Do not over-tighten thumb- screws holding down cup, hand tight is sufficient.
11. Connect a length of 5/8" flexible tubing from the cup drain to a Precision Marine Systems' Waste Collector. The only vent is the cup drain. If you are not using a Precision Marine Systems' Waste Collector, DO NOT immerse drain hose in liquid.

Operation

12. Before running your skimmer be sure positive connections are made between water source and skimmer input, return and sump, and cup drain and waste collector.
13. Open gate valve fully.
14. Close air valve on Bullet Injector.
15. Turn on water pump.
16. Close gate valve to achieve desired water level in reaction chamber (See diagram on page 3).
17. Slowly open the air valve until it is at the 11 or 5 o'clock position (depending upon which way you are looking at it). Look for the air/ water interface and adjust the gate valve (skimmer drain) to maintain the water level where you started. After opening the air valve the water level will rise at first, then slowly drop. Tune the air valve for the finest bubble. Never run your skimmer with the air valve completely open.

Operating Tips

At first your skimmer will just "simmer" until it breaks in. You will probably find it hard to believe that the entire reaction chamber and neck will fill with foam, but it will. Please be patient, and remember...

- 🔗 Freshly mixed saltwater can cause excessive wet foaming action. Lower water level in reaction chamber after water changes and/or if the tank is newly set up for 24-48 hours.
- 🔗 Most foods, your skin, and some additives break surface tension in the water. For this reason your skimmer will run flat (simmer) after feeding, having your hands in the tank or using some additives. Don't worry, your skimmer will be back to work in no time.
- 🔗 This protein skimmer requires 24 - 48 hours to "break-in", depending upon dissolved organic load. Be patient. After "break-in", the driest foam possible is most desirable. Using the gate valve (drain), raise or lower water level in the reaction chamber to achieve this.
- 🔗 Be sure water level in reaction chamber is steady and consistent. Only small adjustments on the gate valve are necessary.
- 🔗 A rising water level overnight can mean a big mess in the morning. If you are unsure, run the cup drain line back to the reservoir temporarily.

Maintenance

Regular cup cleaning will keep your Bullet skimmer operating at peak efficiency. Simply loosen the thumbscrews, twist and remove the cup and clean with freshwater. The cleaner the neck of the cup is kept, the easier it is for foam to evacuate into the cup and to your waste collector.

Besides regular cup cleaning, your injector will need to be cleaned. Intervals are dependent upon pre-filtration before the water hits the injector, and the additives you add to your tank, especially calcium hydroxide. Follow the simple instructions below...

Servicing your injector...

18. Do not attempt to remove the injector body from the skimmer body.
19. Hold the injector body with one hand, and loosen the grey lid counter-clockwise and remove the injector lid.
20. Remove the lid. The black beckett injector will come out with the lid. Do not lose the o-ring on the end of the injector.
21. Remove the injector from the grey fitting and remove the o-ring.
22. The injector comes apart in 3 pieces. Note how the pieces fit together for reassembly.
23. Dissolve salt deposits with hot water. If necessary, soak in straight vinegar overnight and rinse well.
24. Stretch the o-ring back onto the larger end of the black beckett injector.
25. Push the smaller end of beckett injector half-way into the fitting in the lid. Do not bottom the injector out.
26. Replace the lid (with injector attached) and firmly push the injector into receiving fitting at the bottom. Twist collar -clockwise to seal and you're done!



Lastly, we at Precision Marine Systems would again like to thank you for purchasing one of our products.

Precision Marine Systems, Inc.

LIMITED ONE YEAR WARRANTY

IMPORTANT NOTICE: Read this entire Limited Warranty before purchasing, installing, or using this product. By purchasing, installing, or using this product, you are acknowledging that this Limited Warranty is part of the sale terms.

COVERED PRODUCTS. This Limited Warranty applies to the following PRECISION MARINE products: Bullet Series Series Protein Skimmers (hereinafter referred to as the "Covered Products"). PRECISION MARINE makes the following express limited warranties for the Covered Products purchased within the United States, subject to the conditions and limitations stated below. These limited warranties are the exclusive warranties for the Covered Products. PRECISION MARINE disclaims all warranties, express or implied, for other products.

LIMITED WARRANTIES. The Covered Product is warranted to be free from defects in material and workmanship under normal use for period of (1) year from the date of original purchase. This limited warranty is extended to the original buyer of the Covered Products (the "Buyer"). PRECISION MARINE disclaims all warranties, express or implied, to subsequent purchasers or users. If the Buyer gives PRECISION MARINE notice as required below of a defect in materials or workmanship, PRECISION MARINE shall, at its sole option: (1) repair or replace the defective products; or (2) refund the original purchase price. Replacement products may not exactly match replaced products. PRECISION MARINE will not be held liable for damage to any aquarium, aquarium life forms, dwellings, furniture, or other personal objects.

FAILURE TO COMPLY WITH THE INSTALLATION AND OPERATING INSTRUCTIONS STATED IN THE MANUAL VOIDS ALL WARRANTIES. This Limited Warranty does not extend to the use of the Covered Products under abnormal conditions, conditions that exceed the stated performance parameters of the products as provided on the product labeling and in the manual or instructions provided with the Covered Products, or under conditions not reasonably foreseeable to, or beyond the control of, PRECISION MARINE. Buyer assumes all risk of any such use. Any attempts at self repair shall void this limited warranty. Water and electricity are a deadly mix it is the sole responsibility of the owner to provide adequate protection for children, and other persons, including themselves from the dangers of electrocution.

WHAT THIS LIMITED WARRANTY DOES NOT COVER. PRECISION MARINE is not responsible for and makes no warranties as to the following: 1) product failures or damage due to normal wear and tear, exposure to excessive heat or moisture, corrosive chemicals or substances, improper installation, improper cabling or wired connections, defects or conditions of the existing structure, misuse, abuse, modifications, and alterations; and 2) minor imperfections that do not affect the Covered Product's structural integrity or use.

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NOTICE OF CLAIM. Buyer shall promptly notify PRECISION MARINE of any claim under this Limited Warranty. PRECISION MARINE reserves the right to deny any claims made by the Buyer more than one (1) year after any defect or other basis of a claim covered by this Limited Warranty is discovered by the Buyer or should have been discovered by the Buyer.

CLAIM PROCEDURE. You should make claims under this Limited Warranty in writing to PRECISION MARINE at sales@precisionmarine.com or by calling 830-626-2401. Claims to Precision Marine should include the following information: (1) the claimant's name, address, and telephone number; (2) the product description, purchase price, and the date and location of purchase; (3) copy of the sales invoice or receipt; (4) a description of your product concerns (you may include photos); and (5) a brief summary of the attempts you made to address the concerns. Buyer shall be responsible for shipment and insurance costs to send Covered Products to Precision Marine.

ENTIRE AGREEMENT. This Limited Warranty, and all of the terms and limitations contained herein, constitutes the entire agreement between PRECISION MARINE and the Buyer. By purchasing, installing, or using the Covered Products, Buyer is not relying on any oral statements made by anyone, including its authorized dealers, which are in any way different or contrary to the terms and limitations of this Limited Warranty. By purchasing, installing, or using any of the Covered Products, Buyer acknowledges that authorized dealerships are not agents of PRECISION MARINE and any statements or representations made by authorized dealerships and their employees are not attributable to PRECISION MARINE.

Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above exclusions may not apply to you. This warranty is governed by the laws of the State of Texas, excluding its conflict of laws principles. This warranty gives you specific legal rights, and you may also have other rights, which vary from state to state.