

Precision Marine Systems

Advanced Filtration for Advanced Aquarists

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-1 **Instructions**

Basics.....

- 1)** Take some time to acquainte yourself with the diagram on Page 4.
- 2)** We have tested the Bullet-1 Protein Skimmer with the SEDRA 9000 water pump and found it to perform excellent. For even better performance, step up to the SEDRA12000.

While other pressure pumps may work fine with your skimmer, we know this model will perform well.

Installation.....

- 1)** If you choose to place your skimmer inside the sump, the water return line (from skimmer to sump) must not rise higher than the PVC elbow. If it does, it will impossible to maintain a low enough water level. Never reduce the size of this drain.
- 2)** If you choose to place your skimmer outside the sump, be sure to use the optional gate valve and follow the following rule.
- 3)** Water return line (from skimmer to sump) must not rise. It must drain straight out or down. If it doesn't, it will impossible to maintain a low enough water level. Never reduce the size of this drain.



Systems

Precision Marine Systems

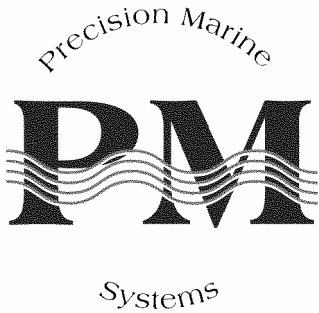
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Installation cont'd.....

- 4) Whether you choose to place your skimmer in or out of the sump, always return water (from skimmer) ABOVE running water level in the sump. It is recommended to run the drain over a sponge to remove any stray bubbles. After the initial break-in period (24-48hrs), less air will leave the skimmer's drain.
- 5) Attach a length of 3/4" flexible tubing from your water pump to the "Bullet" Injector.
- 6) Be sure gaskets and mating surfaces are clean prior to assembly to assure a good seal. Do not over-tighten thumbscrews holding down cup, hand tight is sufficient for a good seal.
- 7) Connect a length of 5/8" flexible tubing from the skimmers' 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.....

- 1) Before running your skimmer be sure positive connections are made between water source and skimmer inputs, return and sump, and cup drain and waste collector.
- 2) Lower elbow or if using a gate valve, open fully.
- 3) Close air valve on Bullet Injector.
- 4) Turn on water pump
- 5) Raise elbow or close gate valve to achieve desired water level in reaction chamber (See diagram).
- 6) 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 elbow/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.



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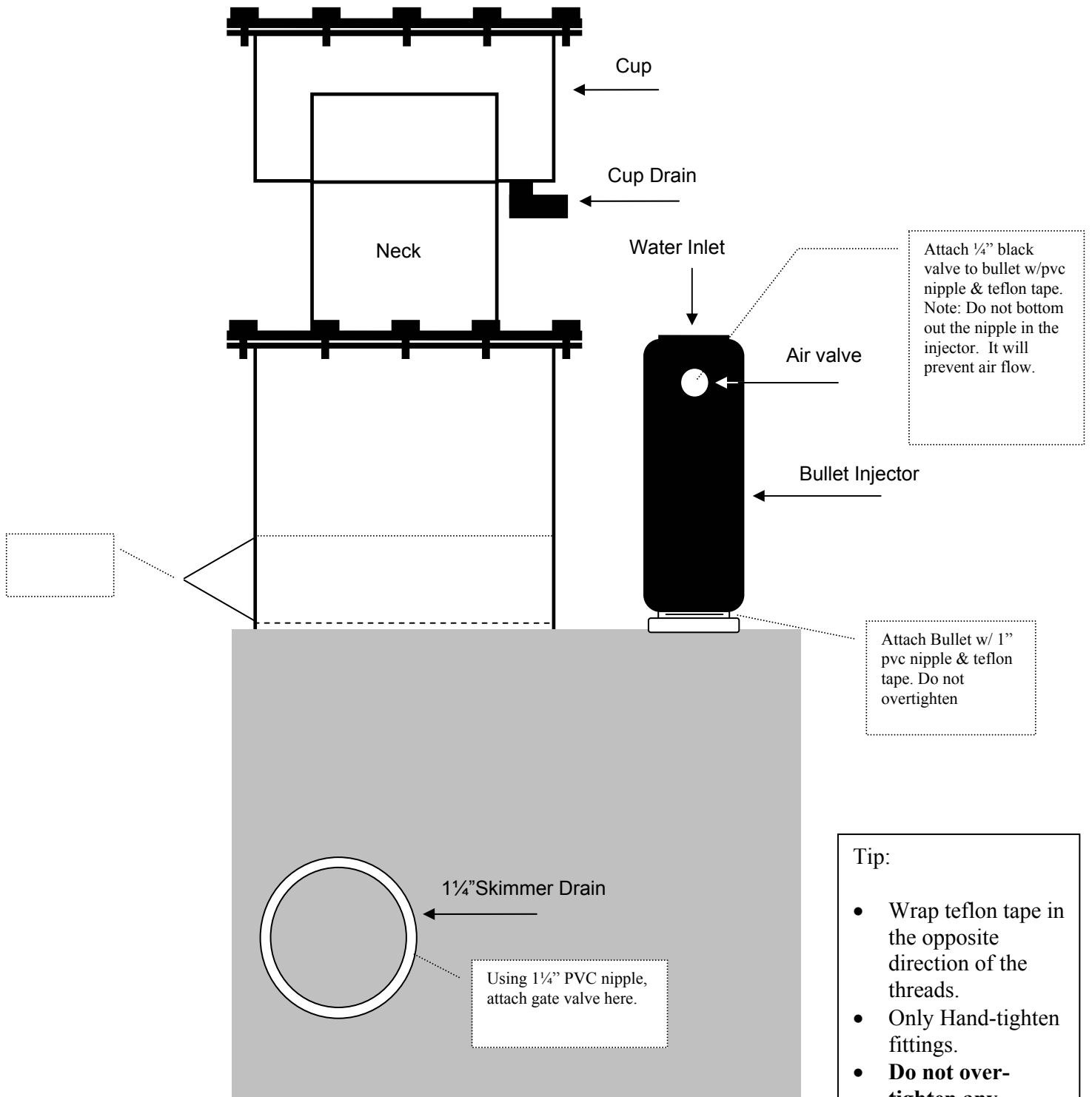
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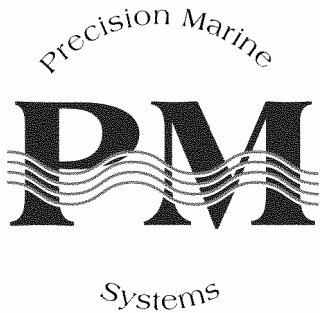
Operating Tips.....

- 1) 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 elbow or gate valve, raise or lower water level in the reaction chamber to achieve this.
 - Be sure water level in reaction chamber is steady and consistent. Only minute adjustments on the elbow/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 sump temporarily.

- 2) Besides regular cup cleaning, your bullet injector will need to be cleaned every couple of months. Simply remove the injector by turning it counterclockwise. Soaking the entire injector overnight in freshwater will dissolve the salt deposits. If you are using calcium additives in your tank, it is likely you will need to use vinegar in lieu of freshwater. Be sure to rinse well before re-installing. Don't forget to wrap the teflon tape on the nipple just like you did when you assembled it.

Lastly, we at Precision Marine would again like to thank you for purchasing one of our products.
All Precision Marine components are Hand-built with pride in the U.S.A.





Precision Marine Systems

16840 Clay Rd. Suite 108
Houston, TX 77084

Limited Warranty

Precision Marine Systems, Inc. warrants this product against leakage due to defective sealant and workmanship defects as follows:

- 1) For a period of one (1) year from the date of purchase, **Precision Marine Systems, Inc.**, will at its option either replace or repair the defective product when used and installed within the guidelines of the instructions. After this one (1) year period, you must pay for all repair charges. All repairs must be performed by **Precision Marine Systems.**
- 2) Drilling holes anywhere in the filter or in any other way altering the filter after the original manufacture by **Precision Marine Systems, Inc.** at their home offices in Houston, Texas will **void all warranties.**
- 3) This warranty *does not* cover any damage due to accident, misuse, abuse, negligence, or your failure to follow FILTER INSTALLATION INSTRUCTIONS.

To be effective, warranty card must be signed by purchaser and dealer and mailed along with a copy of the original sales receipt to the address listed above within ten (10) days of purchase. We suggest that you retain the dealers dated bill of sale as evidence of the date of purchase.

THIS WARRANTY CARD MUST BE SIGNED BY BOTH PURCHASER AND DEALER AND MAILED ALONG WITH A COPY OF THE ORIGINAL SALES RECEIPT **WITHIN TEN (10) DAYS OF PURCHASE.**

BUYER'S NAME _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

STORE NAME: _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

FILTER TYPE/MODEL _____ DATE PURCHASED _____

I have thoroughly read and understand the above warranty and FILTER INSTALLATION INSTRUCTIONS.

CUSTOMER'S SIGNATURE: _____

DEALER'S SIGNATURE: _____

INJECTOR ASSEMBLY INSTRUCTIONS

1. Locate 1" threaded nipple.
2. Wrap threaded nipple with Teflon tape in the opposite direction of the threads on both sides (this is so the tape will not unravel when threaded).
3. Thread nipple into bottom of injector. Hand-tighten until fitting stops. *Do not over-tighten with a wrench as that may cause splitting.*
4. Thread the injector onto the white fitting at the top of the base of the skimmer. You may need to tilt the injector while slowly rotating it to get the threads to align. Note: Clearance between the thumbscrews and the flange is minimal. This is normal.
5. Hand-tighten only. **Over tightening can cause the fittings to crack. This is not covered under your warranty.**
6. Locate black threaded fitting with red cap (ozone fitting). Wrap with Teflon tape in the opposite direction of the threads. Thread into one of the two openings in the top of the injector until it stops. *Do not over-tighten.* Use this fitting when using *Ozone* with your Bullet Skimmer.
7. Locate grey 2" x 1/4" threaded nipple. Wrap with Teflon tape in the opposite direction of the threads.
8. Locate black air valve and thread grey nipple into one end.
9. Thread other end of grey nipple into the remaining opening on injector lid.

Tip – When wrapping threads with Teflon tape, hold fitting in right hand horizontally (parallel with the ground) and wrap the tape away from you.

INJECTOR MAINTENANCE INSTRUCTIONS

When you notice a reduction in the quantity of air being drawn into your injector, follow these instructions:

1. Do not remove injector assembly from skimmer.
2. Remove all thumbscrews.
3. You will have to rotate injector to remove thumbscrews under skimmer flange.
4. Simply remove the lid. The injector will come out with the lid. Do not lose the o-ring on the end of the injector.
5. Remove the injector from the grey fitting and remove o-ring.
6. The injector comes apart in 3 pieces. Note how pieces fit together for reassembly.
7. Dissolve salt deposits with hot water. If necessary, soak in straight vinegar overnight and rinse well.
8. Reassemble, taking care to keep the gasket free of dirt or debris.