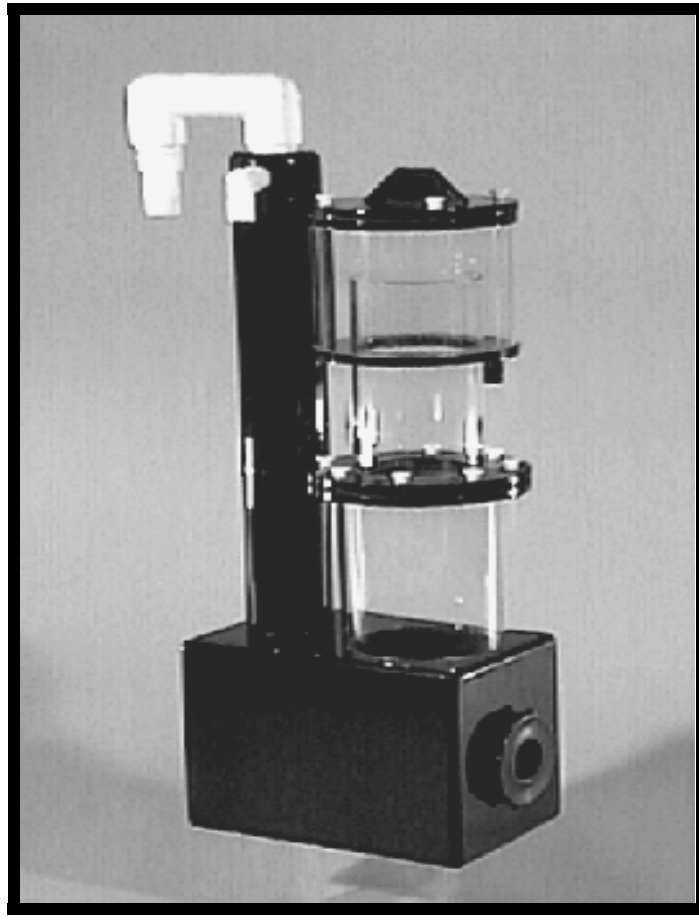


E.T.S.S.®

Environmental Tower Super Skimmer
by ***A. E. Tech Inc.***

User's Manual

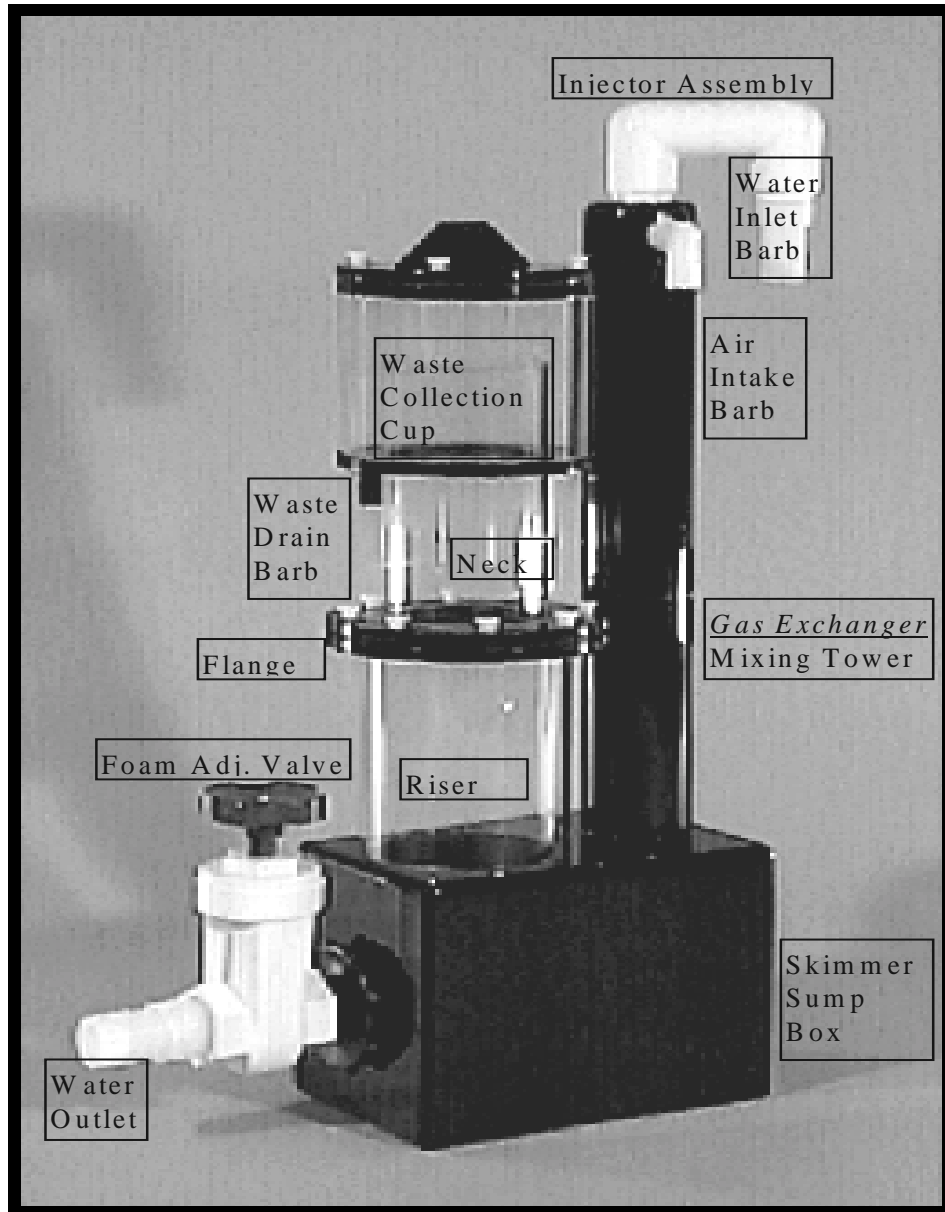


Super Skimmers U.S. Patent 5,554,280

Made in the U.S.A.

Table of Contents

Description:	Page 3
Recommended Pumps.....	Page 4
Parts & Material's List:.....	Page 5
Installation.....	Page 6&7
Operating Instructions.....	Page 8
Hints & Tips.....	Page 9
Accessories.....	Page 10
Technical Support.....	Page 11
Notes.....	Page 12



E.T.S.S.® Parts (Fig.1)

Please familiarize yourself with the parts of the skimmer, as we will be referring to them throughout the instructions.

- ◆ Check & rinse your new skimmer with fresh water.
- ◆ **Bio-Balls are factory installed in the downdraft tower's.**
- ◆ Be sure you have the correct water pump to power your E.T.S.S.® skimmer before starting the installation.
- ◆ Check Page 4 for appropriate pump suggestions, stronger pumps can be used to increase performance further.

Recommended Pumps:

Compact E.T.S.S.® Models

<u>Model</u>	<u>Iwaki</u>	<u>Other</u>
<u>Reef Devil & Deluxe , Sump Buddy 40</u>	<u>20RLT</u>	<u>Magdrive#7 or 9.5</u>
<u>Sump Buddy 60</u>	<u>40/55 RLT</u>	<u>Magdrive #9.5 or 12</u>
<u>600 XR, 650 Refugium</u>	<u>40/55 RLT</u>	<u>Mag Drive 18 or 24</u>
<u>Gemini 800</u>	<u>55 RLT</u>	<u>Blue Line 55</u>

Large E.T.S.S.®

<u>ETSS 1000 pro</u>	<u>70 RLT/ 100 RLT</u>	
<u>ETSS 1500 pro</u>	<u>100 RLT</u>	
<u>ETSS 1400 Dual pro</u>	<u>70 RLT/ 100 RLT</u>	
<u>ETSS 2000 Dual Commercial</u>	<u>100 RLT</u>	<u>1/3 HP Pool pump</u>
<u>ETSS Quad 1800</u>	<u>100 RLT</u>	<u>½ HP Pool pump</u>
<u>2500 Gemini</u>	<u>min. 1/2 HP Iwaki or Pool Pump</u>	
<u>Quad 3000</u>	<u>min. 3/4 HP Pool Pump</u>	
<u>Quad 5000</u>	<u>min. 1 HP Pool Pump</u>	

All E.T.S.S.® skimmers require a dedicated pump.

Note: Each E.T.S.S.® filter is designed for a particular pump, using a pump too small or too large will not allow the E.T.S.S.® to operate at its best.

All Pumps should be fitted with a pump outlet valve. Used to control the flow rate through the E.T.S.S.® filter, or reduce flow for filter cleanings, etc.

Parts & Materials List

The following is a list of items required to install the E.T.S.S.® filter to your sump tank. Depending on the type of installation not all items will be necessary.

Compact E.T.S.S.®

Water inlet hose $\frac{3}{4}$ or 1 in. diameter to fit from pump to skimmer.

Water outlet hose 1 or 1 1/2 in diameter. Distance from the water outlet valve to the sump return (Ideally where the tank water drains into sump). – should be a MAXIMUM LENGTH of FOUR FEET, longer drains require a siphon break-tee fitting after the outlet valve.

A 1/2 in. hose of appropriate length attaches to the waste drain fitting to the optional Auto-Waste Container or other suitable container.

Large E.T.S.S.® (1000 series)

These models need 1 1/2 in. pump to injector hose size. and 1 1/2 - 2 in. water outlet drain hose.

Maximum drain hose length of 4 feet without a siphon break.

A 3/4 in. waste drain hose, of appropriate length.

Commercial E.T.S.S.® (2000-up)

These models need 1-1/2 in. pump to injector hose size.

A 2 in. or larger drain line should be fitted.

Dual Waste/Air drain lines of 3/4 in. is required.

PUMPS

If possible the E.T.S.S.® pump should be installed to draw water from the tank drain end of the sump. (Opposite end from the pump that returns the water to the tank).

Note: Teflon plumbing tape should be use on all threaded connections.

Hose clamps should be used to attach all hoses to their barbs.

Installation

Under tank installation Compact E.T.S.S.® models,

a) Install the skimmer in the sump tank at a water height not exceeding the foam adjustment knob, on the outlet valve. It may be necessary to raise the skimmer up slightly to obtain this level. This will submerge the skimmer outlet.

b) Skimmer placed outside the sump, connect the skimmer outlet pipe to a bulkhead fitting in the sump, like an external pump. The outlet valve may be connected to the bulkhead fitting “inside” the sump. This will save on space. Again the water level should be below the foam adjustment knob on the outlet valve. (See Fig.2)

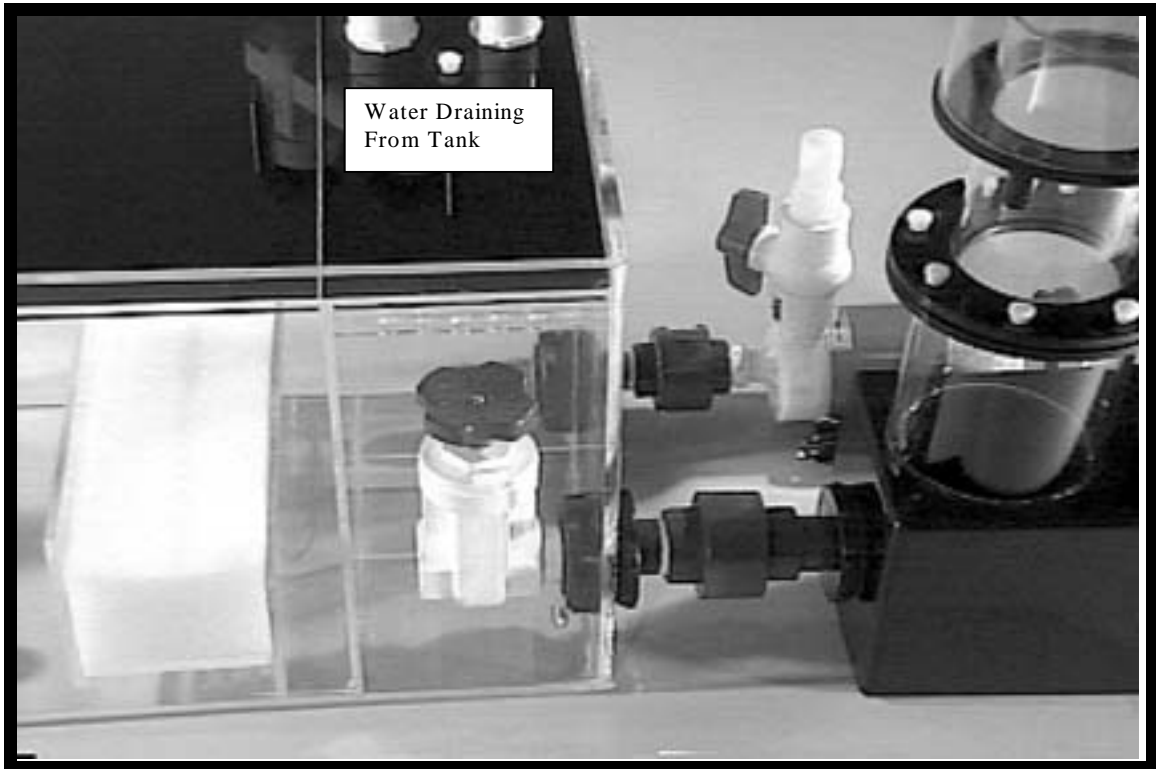
Note: All drain plumbing from skimmer outlet has to be on a downward flow, below the level of the outlet valve. Avoid sharp bends & elbows.

External to stand, skimmer installation (all large E.T.S.S.® models)

Either behind or beside tank, is done by raising skimmer above sump height with an appropriate stand and running the drain line back to the sump tank. The drain is at the bottom of the E.T.S.S.® and its drain must flow down from the skimmer to the sump tank. The return water line from the skimmer can be connected to a bulkhead or returned directly into the sump. The water return from the E.T.S.S.® should be placed at the beginning of the sump (where tank drains to sump), so as to flow through all sump filtration media, before returning to the tank.

Commercial and Remote sump tank installation.

The E.T.S.S.® skimmer is placed on top or beside sump tank at a height equal to the top of the sump, and allowed to drain directly into it. The outlet may be slightly submerged to reduce splashing. Install the 5 gal. bucket waste collector with two drain lines from the E.T.S.S.® skimmer.



Under Tank installation (Fig 2)

Note pump for E.T.S.S.® on same end of sump, receiving tank drained water.



**INTAKE AIR FILTER, LARGE AUTO-WASTE, COMPACT AUTO-WASTE,
Optional E.T.S.S.® filters available.**

Operating Instructions

After the E.T.S.S.® is set up according to our instructions and you are sure that all the connections were made properly do the following:

- ◆ Open the outlet valve all the way, by turning the **Foam adjustment knob** fully open (counter-clockwise).
- ◆ Turn on the dedicated water pump. Open the water supply valve, from the pump slowly. **Note! With the drain valve opened all the way open, if the water in the E.T.S.S.® rises higher than the flange on top of the riser, first clear tube, shut down the water pump immediately.**

If the water rises in the E.T.S.S.®, the drain line is not of sufficient size or too restricted. **Solutions:** Use a larger diameter drain hose; eliminate elbows and other restrictive plumbing from the return line, use a flexible return line whenever possible. Raising the height of the skimmer relative to the sump; or cutting back on the output of the dedicated water pump. Cutting back on the dedicated water pump is the least desirable solution; it will lessen the efficiency of the skimmer.

- ◆ Next, assuming that the water drains properly the initial water level should be set approximately 1-2 in. above the black sump box. **This is not an ordinary skimmer,** it will foam completely the rest of the way once it is broken in. Setting the water level too high **REDUCES the air produced** causing less than optimum skimming.
- ◆ **Always** use the lowest possible water setting that will produce dry foam.
- ◆ It can take from one hour to a week for the E.T.S.S.® to” **kick in**”. This depends on a variety of circumstances: organic content of system, type of pump used, water-surface tension, new plumbing, etc.
- ◆ If you set the initial water level too high, when the E.T.S.S.® “**Kicks In**”, it could overflow and push water out the drain. When the E.T.S.S.® begins to skim, because it is so powerful, it can easily push out tremendous amount of wet foam to the top of the collection cup and out to the waste container. Some aquarists impatiently raise the initial water level too high, trying to make the E.T.S.S.® skim before its time, and wound up with gallons of wet foam in the waste container.

Note: If you use the optional auto-waste container this cannot happen, as it would stop the production of foam until emptied. If an auto waste container is not used a good substitute would be to attach the waste drain hose half way down a normal collection container (bucket, pail etc.), it will slow foam production as it becomes submerged. This is not as fool proof as the auto-waste container but may help if you do not have one. Normally the Waste drain hose should never be submerged normally as it will impede the E.T.S.S.® ‘s performance, and airflow.

Operating Instructions Continued

◆ ADJUSTMENTS:

Once the E.T.S.S.® has “KICKED IN “ adjust the outflow valve so that the collection cup collects a dark smelly liquid the color of tea. Note: The optional auto-waste container will prevent the smell from filling the room. Because the E.T.S.S.® mixes an unusual amount of air into the water the air leaving the skimmer is sufficient to blow out a match and can fill the area with a smell. This is why the optional Auto-Waste Container utilizes a carbon container that is specially designed to remove odor without retarding the E.T.S.S.® air exhaust. If you retard the air exhaust the skimmer will not operate efficiently.

◆ Adjustment tips:

- ◆ Do not attempt adjustment until the skimmer has” kicked in. “

After the first few “MUD” (Dry Foam) cleanings from the neck, the skimmer will have stabilized and final adjustment can be made. This may take a few days to a week. 1) Cleaning should be done only with a soft sponge and some fresh water to lightly remove build up on the neck and skimmer riser. A harsh cleaning will cause the skimmer to have a mini -break in again. Avoid this if possible.

2) The neck needs to be cleaned often as the “ MUD “ buildup reduces the effectiveness of the skimmer. **If the foam in the neck no longer looks white, clean it.**

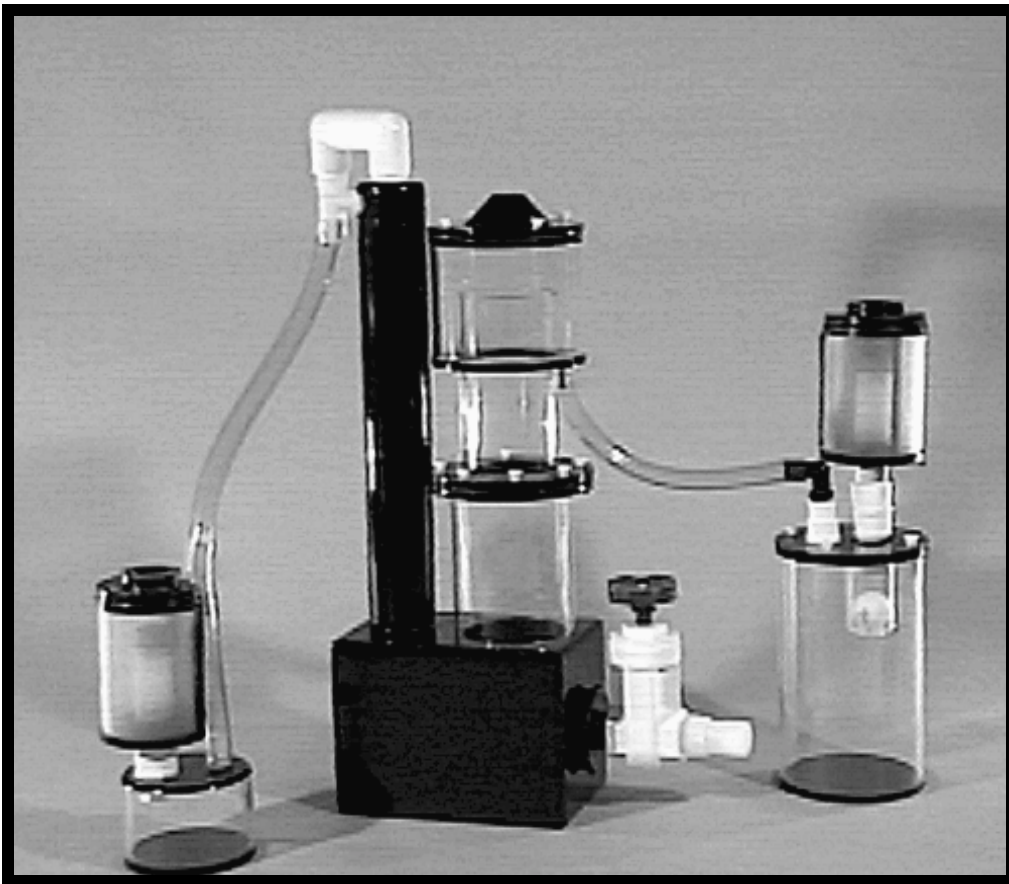
- ◆ A 1/4 turn on the foam adjustment valve has a significant effect.
- ◆ Do not adjust skimmer by the look of the foam-water level in the skimmer, instead judge the adjustment by the waste collected over a 24 hr. period.

- ◆ To increase the density of the waste collected, open the foam adjustment valve (counter-clock wise) 1/4 turn Max. and wait 24 hrs. to check the waste collected.

- ◆ To decrease the density of the waste collected, close the foam adjustment valve (clockwise) 1/4 turn Max. and wait 24 hrs. to check the consistency waste collected.

- ◆ Initially this will require some adjusting, but once the proper pump to skimmer setting is found it will not vary, and can be left there indefinitely.
- ◆ To adjust for temporary excessive foaming, caused by additives or other conditions, use the pump valve to reduce the flow rate through the skimmer. This can be easily reset to its wide-open adjustment leaving the skimmer properly adjusted. This is also convenient when reducing the flow rate temporarily to clean the skimmer, as the pump does not need to be disconnected.

Air & Auto Waste Hookup



E.T.S.S.® 600 with Air filter and Auto waste container.

Both air and waste containers hook up to the E.T.S.S.® with 3/4 in tubing to their respective hose barbs.

The waste container must be placed below the drain fitting on the skimmer to allow water and Air to drain freely into it. The air inlet hose can be run to any convenient spot. Including running it to a remote location (such as to draw air from outside a window etc.) if desired. Up to 30 ft. of 3/4 in hose can be used for the air intake.

Note: Three feet of 3/4 in tubing attached to the air intake totally silences it, without any loss in performance. This applies to all ETSS filters.

The E.T.S.S. skimmer should not be used with Ozone due to the relative short contact time in the skimmer, it's effectiveness is limited.

Technical Support & Warranty

Before calling for technical support read this manual carefully!

If you purchased your E.T.S.S.® from a dealer first ask that party for support.

If you reached an answering machine and want a call-back be sure to leave your name, time zone ,day and evening phone number.

A .E. Technology I nc. (845) 227-2812 Phone

(845) 227-3799 Fax

Manufacturer's Limited Warranty

Aquatic Environmental Technology Inc. warrants that if the accompanying product (see Exclusions below) proves to be defective in material or workmanship within 90 days from the date of original purchase Aquatic Environmental Technology Inc. will, at the company's option, either repair or replace product without charge .

This limited warranty may be enforced only by the first consumer; all subsequent purchasers acquire the product "as is" without benefit of limited warranty. This warranty does not apply to sales outside of the United States of America.

EXCLUSIONS

This limited warranty covers all defects in materials and workmanship in the product, EXCEPT:

I. Damage resulting from modification, accident, misuse, abuse, neglect or from other than normal and ordinary use of product.

II. All fittings , valves, gaskets and hoses, are excluded from the warranty.

III. Damage resulting from failure to maintain or use product in accordance to manufacture's instructions.

Damage resulting from repair or attempted repair by anyone other than the A.E. Technology Inc. or an Authorized repair facility.

What you must do to Enforce Warranty

I. You must, at your expense deliver, mail or ship the product together with original bill of sale or invoice to A. E. Technology Inc. 15 Short Court, Poughquag, NY 12570 (This limited warranty is not enforceable outside of the United States of America).

II. Please do not return product without our prior authorization and issuance of a Return Authorization Number. To obtain Authorization call A. E. Technology Inc. (914) 838-9044

III. Please have your product ID and model number available (on sump box below the mixer tower).

IV. You must pay any postage, shipping charges, insurance costs and other expenses to return the product to A.E. Technology Inc. However, if necessary repairs are covered by the warranty, we will pay the return shipping charges to any destination within the United States of America.

Limitation of Implied Warranties

And Exclusion of Certain Damages

We disclaim liability for incidental and consequential damages, for breach of any express or implied Warranty, including any implied warranty of merchantability, with respect to this product. This writing constitutes the entire agreement of the parties with respect to the subject matter hereof; No waiver or amendment shall be valid unless in writing signed by the company.

Some States do not allow the exclusion or limitation of consequential damages, if so the above limitations do not apply to you.

E.T.S.S.®

Environmental Tower Super Skimmer

Available Accessories

- Installation Kit-all PVC schedule 40 fittings, hoses and valve necessary for a complete installation.
- One foot Riser extenders for Commercial E.T.S.S.® skimmers.
- Compact automatic shut-off waste collector with carbon filter.
- Large automatic shut-off waste collector with carbon filter.
- E.T.S.S.® replacement parts, gaskets, screws etc.

For parts or information call
A.E. Technology Inc (845) 227-2812