

Recycling & Filtration Systems

Model 993-2THUR90

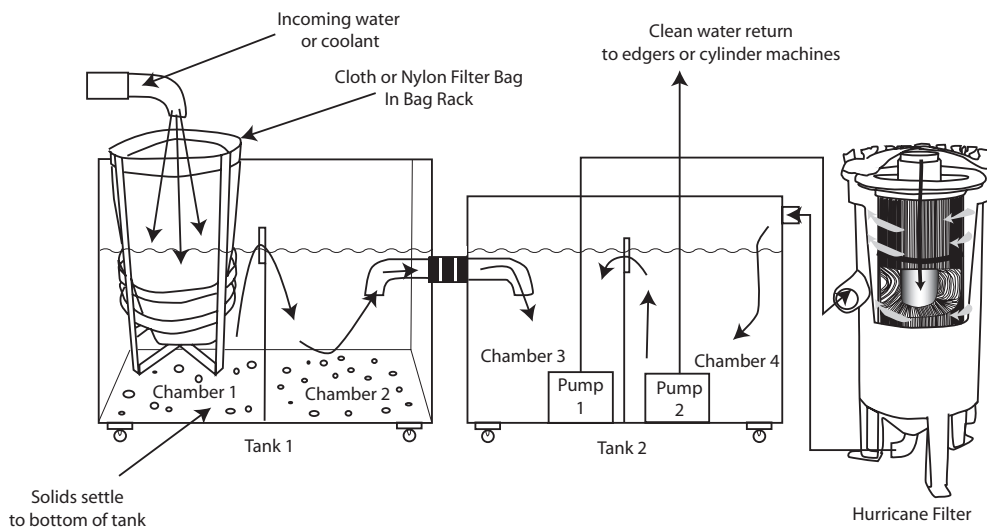
Installation and Operating Instructions



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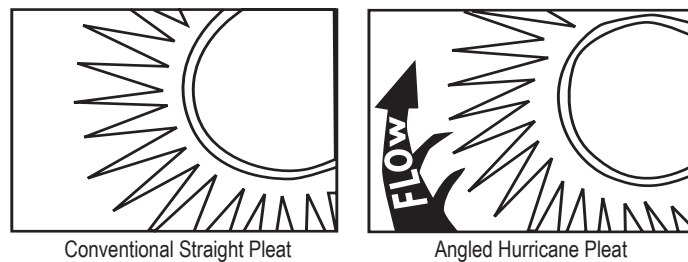
HOW THE RECYCLING & FILTRATION SYSTEM WORKS

993-2THUR90 – Water or coolant draining from the generator, cylinder machines or edgers is directed into Tank 1, Chamber 1. The first chamber is used to allow solids to settle in the bottom of the tank. The water (coolant) level will force the fluid into Chamber 2 where the settling of solids continues. The fluid is then forced into Tank 2, Chamber 3. In Chamber 3, a submersible pump pumps the fluid into the Harm-sco Filter Housing. The fluid is forced through the filter housing and back into Tank 2, Chamber 4. At this point, you have clean fluid in Tank 2, Chambers 3 and 4. When the cylinder machines or edgers are not running, the fluid will flow from Chamber 4 to Chamber 3 and recirculate through the filter housing. The efficiency of this system is achieved by allowing a large percentage of the suspended solids to settle in the tank before being forced through the filter. Each chamber in both tanks is equipped with a brass ball valve to facilitate draining.



Hurricane Filter – Hurricane filters provide unsurpassed performance because they separate dense solids prior to cartridge filtration for extended filter life, increasing dirt holding capacity and reducing maintenance costs. In many respects, Hurricane filters are two filters in one. Components include outer chamber for particle separation, inner chamber for cartridge filtration and built-in drain for purge, if required.

Unlike conventional designs, Hurricane's patented cartridges are made with deep, angled pleats to direct the flow into the pleated area for increased solids removal.



INSTALLATION AND OPERATING INSTRUCTIONS

993-2THUR90 RECYCLING & FILTRATION SYSTEMS

INSTALLATION

NOTE: The 993-2THUR90 should be connected to a 110V outlet equipped with GFI (ground fault interrupt) to prevent possible electrical shock.

1. Select a location for the unit that is convenient to the machines and easily accessible for servicing and cleaning.
2. Connect Tank 1 and Tank 2 using the rubber coupling and hose clamps provided.
3. Direct drain lines from machines to the 993-2THUR90 and into Tank 1, Chamber 1. For best results, connect an elbow at the end of the drain line so the returning water drains straight down into the tank. Make sure that there is adequate slope in the line running to the unit, so that build up or blockage in the lines does not occur.
4. Connect 3/4" vinyl hose to Pump 1 and to the inlet of the Hurricane Filter Housing. (See arrows on the filter housing indicating inlet and outlet).
5. Connect 3/4" vinyl hose to the outlet of the Hurricane Filter Housing and to the barbed fitting on the end of Tank 2, Chamber 4.
6. Connect 3/4" vinyl hose to Pump 2 and to the existing feed line for your machines or install a new line using PVC or other suitable material. The feed line should be at least 3/4" in diameter. See figure 2 for a sample manifold setup.

OPERATION

1. Fill Tank 1 with tap water or coolant until both tanks are full and leveled off. The correct level for Tank 1 is 4 inches from the top edge. For best results, add 1 ounce of PSI's Fining Water Additive (1110G) (4 oz. sample provided) to each 5-gallons of water. This enhances the surface quality of the lens during the fining and eliminates pads loading up with plastic and polycarbonate. We also recommend using one of PSI's coolants for edging and generating.
2. After all connections are made and the tanks are full, turn on Pump 1 in Chamber 3 to prime the Hurricane Filter Housing. The water will return to Chamber 4 and recirculate. Check all connections for leaks.
3. Turn on Pump 2 in Chamber 4 to pressurize the feed line or manifold to the machines. Check each machine to ensure adequate flow. If there is inadequate flow, there may be too many machines connected or you may need to open valves at individual machines.
4. We recommend that you change the Hurricane filter cartridge **at the end of each 8 hour shift, (extremely high production labs may require filter change at 4 hour intervals)**. Make sure that all pumps are off before changing the cartridge. To remove the cartridge, unscrew the brass wing nuts on the top of the filter housing and pull the filter straight up by the handle. Replace with a clean filter cartridge. With proper care, the cartridge can be expected to last for 1 year. We also recommend the purchase of an additional cartridge (part #HC-90-100). This allows you to make a quick change of the filter cartridges and reduce downtime. Each lab's situation will vary. You may find that you can run longer than 8 hours between changes.

In labs which operate 8 hours / day, the water in Tank 1 should be changed at least twice per week, (more often in labs which operate with extended production shifts).

In labs which operate 8 hours / day, the water in Tank 2 should be changed at least once per week. If you run the water longer than 1 week, we recommend that you use an antifungal or antibacterial agent to prevent growth of algae.
5. To clean the system, we have installed brass ball valves on each of the tanks, one in each chamber. Drain the tanks or pump the tanks out. Turn the PVC elbows so they point up and remove the rubber coupling. Each tank has castors and may be moved independently.

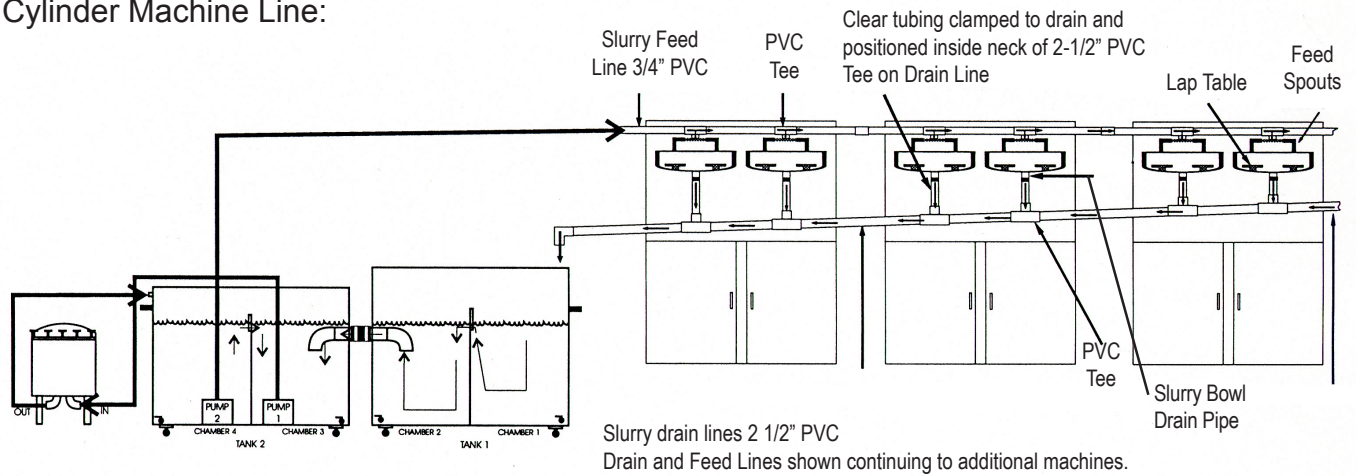
NOTE: Always keep the water level 4" from the top of Tank 1.

Replacement Parts

HC-90-100 100 Micron Filter Cartridge

Figure 1 - Feed & Drain Lines

Cylinder Machine Line:



Edger Line:

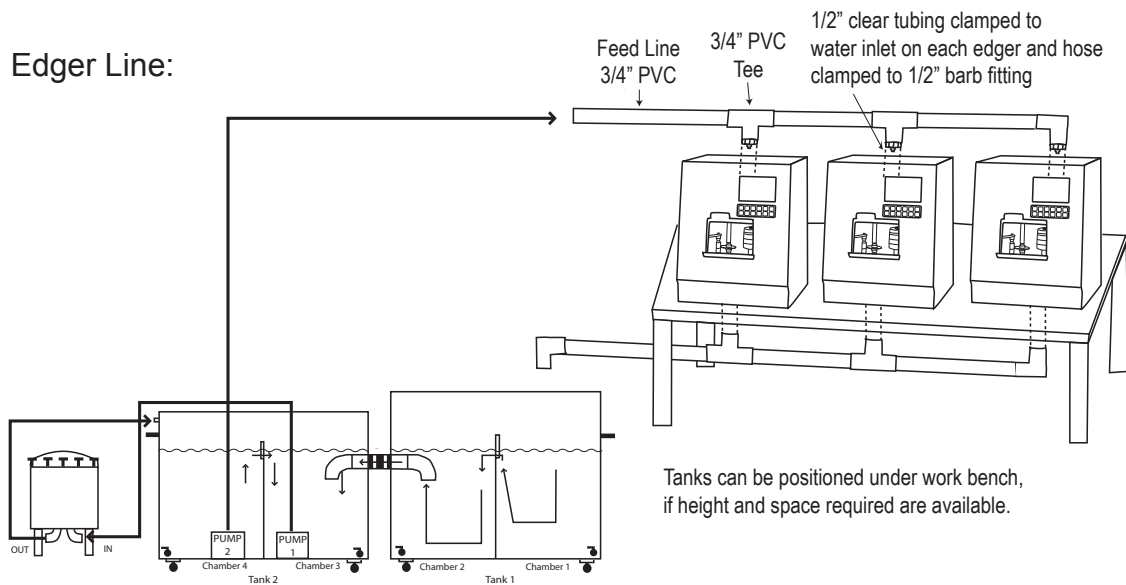
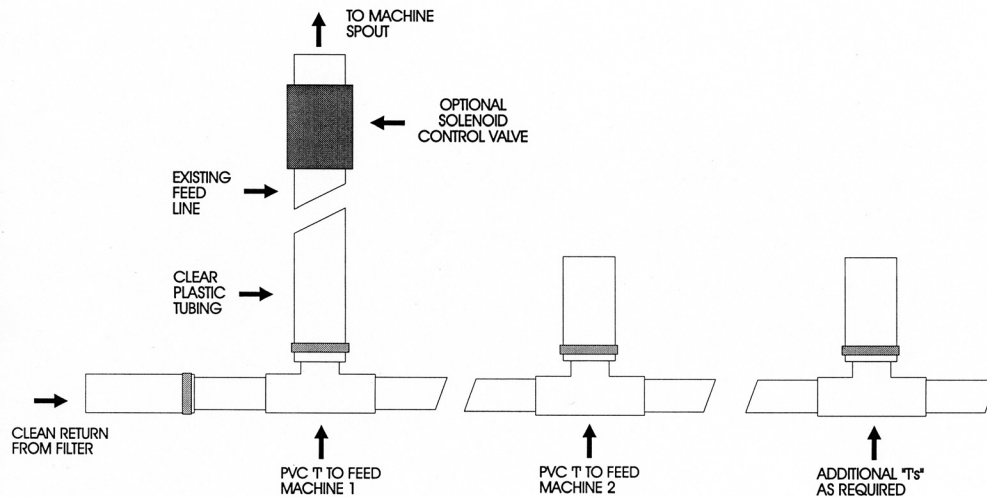


Figure 2 - Sample Manifold Diagram



OPERATION & MAINTENANCE FOR 993-2THUR90 RECYCLING & FILTRATION SYSTEM

DAILY START-UP PROCEDURE:

- Verify that all valves which could allow fining water to be pumped down the drain are closed.
- Verify that water levels of each tank chamber are filled to the appropriate levels.
- Verify that pumps are properly located in each chamber and that the protective grate covers are in place around the inlet side of each pump.
- Verify that PSI's Fining Water Additive has been added. (Note: Foaming may occur if too much is added. **DO NOT** add more than 1 Oz / 5 Gallons of water.)
- Verify that a clean filter cartridge is installed in the hurricane filter canister and that the lid is properly secured.
- Verify that the nylon mesh net filter is clean and installed in chamber #1.
- Plug in or switch on the feed-line pump, (which sends water to the finers), and the re-circulation pump, (which sends water to the hurricane filter canister). If a sump pump is installed to return water to the 993 from a separate line of finers, verify that the sump pump is turned on and functional.
- Turn on the chiller and verify its functionality.
- Test water flow, at the fining machines for proper flow and drainage back into chamber #1, which contains the nylon mesh netting.

DAILY SHUT-DOWN PROCEDURE:

Note: Always wear protective eye wear when performing these procedures.

- After fining machines have been turned off, switch off electrical power or unplug pressure pump and re-circulating pump of the PSI 993 Recycling & Filtration System.
- Remove the dirty nylon mesh net filter, from chamber #1, and replace it with a new or clean filter.
- Remove the top lid of the hurricane filter canister and remove the dirty filter cartridge and replace it with a new or cleaned filter cartridge. (Clean dirty cartridge with water and allow it to dry if possible before re-using it.)
- Secure the lid of the hurricane filter canister and turn the re-circulating pump to purge air from system and add water to tank #2 as required to achieve proper water levels.

OPERATION & MAINTENANCE FOR 993-2THUR90 RECYCLING & FILTRATION SYSTEM

WEEKLY MAINTENANCE PROCEDURE:

(The frequency of this procedure may be required more often in labs which operate extended production shifts)

Note: Always wear protective eye wear when performing these procedures.

- With all pumps turned off, drain the water and thoroughly clean the inner walls and bottom of tank #1 and re-fill to within 4 inches of the top with clean water. (Add 1 oz of PSI Fining Water Additive / 5 gallons of water; approximately 2 oz for this tank.)
- Remove the lid and filter cartridge from the hurricane filter canister. Clean and loosen all debris from between the inner liner and the outer casing with a long and narrow bristled brush (similar to one which would be used for a dryer vent).
- Pour 2 cups of bleach into this area, add 2 gallons of water to the canister and re-install the lid onto the canister, with the filter cartridge out of the canister.
- Turn on the re-circulating pump to allow bleach water to circulate between tank #2 and the hurricane filter canister for approximately 10 minutes.
- With all pumps turned off, drain tank #2 and the hurricane filter canister and thoroughly clean the inner walls and bottom of both.
- Re-fill tank #2 with water, to the appropriate level. (Add 1 oz of PSI Fining Water Additive / 5 gallons of water; approximately 2 oz for this tank.)
- Pour 2 gallons of clean water into the hurricane filter canister and insert a new or clean filter cartridge. Secure the lid onto the canister with the brass wing nuts.
- Turn on the re-circulating pump to prime and purge air out of the canister and re-fill tank #2 with water, to the appropriate level, as required.
- Verify system flow, at fining machines for proper pressure and water levels and replenish as required.



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