NesLab Merlin M33

Serial Number 106227049

This chiller serves four different lasers on the ultrafast system. The cycle is chiller → millennia → tsunami → ps spitfire → fs spitfire → chiller.

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maintenance directions
1. Gather supplies
    a. One gallon Nalco 460-CCL2567 (the clear stuff)
    b. 4 gallons distilled water
    c. Filter - 5 micron Liquatec SDF-25-0505
    d. One gallon Nalco 460-PPCL104 (the pink stuff)
2. Drain system completely
    a. Turn off chiller
    b. Break tubing in convenient place

    c. Allow chiller to run until liquid stops flowing
    d. Use tube to syphon off remaining liquid from within chiller (with mouth)

3. Clean chiller internals
   a. Reconstruct tubing such that the lasers are not included in the cycle. <mark>Cleaning solution must not touch the crystals!</mark>
   b. Fill (from the top of chiller) system with Nalco 460-CCL2567 (the clear stuff). Should require about one gallon.

   c. Allow cleaning solution to circulate for a minimum of 30 minutes.
4. Disconnect tubing, plug return

5. Remove old filter from chiller, discard - replace filter holder

6. Drain system completely and flush with several gallons of ==distilled== water (should require 2), until no suds are formed as new water goes through the system. Cleaning solution comes out pink.
7. Fill system with one gallon ==distilled== water, circulate for at least 15 minutes, then drain completely.
8. Fill system with one gallon ==distilled== water, circulate for at least 5 minutes, then drain completely.
9. Place new filter into chiller.
10. Reconstruct tubing to include lasers in cycle. Ensure that cycle direction is correct
11. Fill system with one gallon Nalco 460-PCCL104 (the pink stuff)
12. Turn the chiller on and allow the system to get air bubbles out. Add distilled water until the chiller and the tubing is full.
13. Record maintenance, order new supplies for next time if necessary

Note: 2L / minute ideal flow rate. Dave checked 2016-03-15 and we were OK.

ordering new supplies
==TODO==