

COMPRESSOR REPLACEMENT PROCEDURE (R-12)

- If possible operate the compressor with proper charge for 5 minutes with warm plates to return oil to the compressor.
- Recover the refrigerant in the system.
- Remove the compressor and drain the oil into a cup.
- Note the amount of oil removed.
- Remove the valve control unit and back flush it (see data sheet)
- Remove the receiver filter dryer. (RFD)

If the v/cu is plugged or shows evidence of black oil the system must be flushed with a solvent to remove the old oil and contamination. Use paint thinner (mineral spirits) then use compressed air from a dive tank or an air compressor fitted with a good water trap to blow out the plates and the lines. Work with each part individually. Attach a hose to the discharge side of each part to vent into a container.

- Be sure that the oil and solvent has been cleared from the system. A compressor can be damaged by excessive amounts of oil.

After being sure as much oil as possible is removed:

- Refit the v/cu.
- Install a new RFD and a new compressor.

Do not add oil to this compressor. The oil quantity has been adjusted to account for a new RFD and no standing oil in the system. (Maximum oil in the system should be 6 oz.)

- Evacuate to the best vacuum.
- Close gauge valves and let the system stand.
- If the low side gauge holds, proceed to add r-12. **Do not use any refrigerant other than r-12. Refrigerant blends will cause compressor seals to leak.** If pressure rises check all connections. Add a minimum amount of refrigerant to determine the leak location. Recover / reclaim the refrigerant and re-evacuate the system to best vacuum.
- Add charge to bring the system pressure to bottle pressure.
- Carefully leak check all the connections in the system.
- Turn the compressor drive disk by hand 5 times to displace any oil that might be in the cylinders.
- Start the engine and operate the compressor at 1200 rpms while adding 14 oz. of r-12 as vapor. Observe the sight glass as the line returning to the compressor becomes frosted.
- Slowly add charge at a pressure under 20 psi until the glass shows mostly clear. (Refer to the SeaFrost Engine Drive manual.) Total (maximum) charge for this system will be about 18 oz. The sight glass must clear or the unit will not operate properly. The low side pressure should drop slowly as the unit cools until after about 30 minutes it is in a slight vacuum. A

rapid drop into a vacuum indicates that the valve is plugged or frozen. See attached pressure charts. The high side will drop after the plates become frosted.

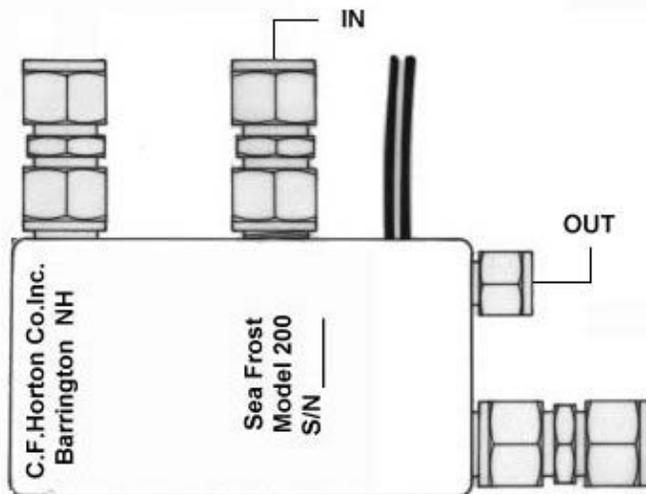
The high-pressure switch will disconnect the clutch and the lamp if the pressure exceeds 220 psi. If the unit cycles in the beginning of the cooling process it is over charged or operating with low cooling water flow (check engine water pump and strainer). The compressor cycling may stop after a few minutes but cycling is an indication that the unit is operating at a higher than normal pressure which will wear out the compressor. Do not allow the system to be operated in this overcharged state.

The system is fitted with a temperature switch that will switch the compressor off and on when the plates become very cold.

- Warm water pressures will be 140 to 170 on the high side.
- Cold water pressures will be under 100 on the high side.
- Charging in cold water can overcharge the system causing the high pressure cut out to cycle as the water warms up later in the season or as the boat sails to southern waters.
- Engine rpm's, engine water pump size, and water temperature are all factors in the operating pressures of this system. Please call if you have questions or problems.

Cleaning the valve control unit (v/u)

With the v/u in the position pictured below, add thinner (mineral spirits) to the fitting labeled "in". Make an adapter from rubber hose to pressurize this fitting with compressed air. Use low air pressure (10 psi). High pressure will shut the valve.



Sludge, dirt, and contaminants will blow out. Collect the contaminants in a clean cloth. Repeat this process several times until the thinner comes out clean and there is air flow through the valve. note: the valve is a restrictive device that will not pass the full volume of input air.

