Problem:

Ultra Whisper DX system losing prime and pre-mature failure of RO Boost, Vane Pump and Membrane performance.

Conclusion:

Air is being introduced into the system due to the sea strainer installed above the water line.

Current thru hull location is the contributing factor to air entering system at accelerated rate while at sea. Therefore, the system will repeatedly shutdown at low pressure due to cavitation. This is a direct contribution to the premature failure to the Vane pump and the RO boost and membrane performance.

When the sea strainer was moved to a location below the waterline, the system performed within satisfactory performance guidelines of the equipment and produced less than 500 ppm tds product water (This test was conducted while the boat was at the dock and not moving). Further tests were conducted while the boat was underway (at sea). It was observed that while underway at sea, the system was subjected to large amounts of air entering the system due to cavitation. The cavitation is being caused by the thru-hull location (at the most aft portion of the boat and very shallow).

For Lagoon 42 boats that have an Ultra Whisper DX system installed, the sea strainer must be relocated below the waterline for the system to operate. Lowering the sea strainer as suggested in "Option A" will allow the system to be operated while tied at the dock only. Moving the strainer below the waterline and adding a booster pump will allow the system to operate while the boat is tied at the dock and when the boat is underway at sea.

Moving the sea strainer below the waterline and relocating the thru-hull location to a deeper location on the boat (Option B) will also require a booster pump to be installed due to the distance between the thru-hull and the watermaker location. This option assures the most efficient performance of the watermaker and is the preferred solution.

Recommendation:

Option A: (This option is a short-term fix as air is likely to still enter the system while the boat is underway due to thru-hull location.

a. Lower sea strainer below water line.

b. Add booster pump to current thru hull. **(Part # B016380001) for 12VDC systems**

Option B: (Preferred permanent solution).

a. Lower sea strainer below water line.

b. Move the thru hull location to a deeper location forward of Keel.

c. Add booster pump to the thru hull. **(Part # B016380001) for 12VDC systems**

****Please note that existing damage to Part # 1218301DS, RO Boost or Part # B007380023, Feed Pump Assembly will require factory repair for either Option A or Option B to be effective. ****

Sincerely,

Parker