

Start Up Report

Constant Speed IronHeart

Bulletin:	29-701
Effective:	12/8/2008

Location _____ Started By _____
Job Site Contact _____ Representing _____
Telephone # _____ Telephone _____

Before proceeding with this checklist, confirm with a voltmeter that all power is off and be sure that water pressure can be isolated from the pumping system. Safety is of the utmost importance! If you have any concerns, STOP and call the SyncroFlo Technical Service Department at 770-447-4443.

- () 1. Check for overall proper installation. Is system anchored? Is voltage correct?
- () 2. Check overload settings against motor dataplate.
- () 3. Confirm the installation of pump drain plugs, typically found in a plastic bag inside the control panel.
- () 4. Check the HydroCumulator for the proper pre-charge as listed on the system data sheet. If a "Type A" system, close the tank feed line gate valve until later in the start up.
- () 5. Check inside the control panel. Ensure that all components are present and firmly installed. Re-tighten all control wires.
- () 6. Close the pump discharge isolation valves. With the pump suction valves open, slowly open the suction manifold isolation valve (if supplied). Without valves, there should already be pressure on the suction manifold. Record this pressure before running any pumps. _____ psi. Check the system for any leaks and correct now.
- () 7. Check the incoming voltage with a voltmeter. L1-L2____, L1-L3____, L2-L3____.
- () 8. Confirm that all pump switches are in the "OFF" position. Turn on the panel power. The control power light should come on indicating 120VAC control power is present.
- () 9. "Bump" all motors individually and confirm rotation as indicated on the pumps. Close coupled pumps should rotate clockwise when viewed from the "top" of the motor.
- () 10. Check the amperage on all three legs with each pump running individually. The discharge valves should still be closed and the amperage quite low but balanced.
- () 11. Vent each PRV until water runs clear and there is no air in the valve cover.
- () 12. Check with the contractor or building engineer to be sure that they are ready to charge the building riser. All open pipes must be capped. Drain valves must be shut, etc. If the system is not equipped with automatic air vents, a fixture at the top of the building should be opened to allow air to escape.
- () 13. With one pump in the "Hand" position, slowly open its discharge isolation valve partially until the riser is full and pressurized. Check again for leaks on the system and building piping.
- () 14. Check that the system pressure gauge reads correctly. A small amount of flow is required to properly confirm that the PRV is working correctly.
- () 15. With a low flow, cycle through each pump and confirm proper PRV operation. Record system pressure. _____ psi. If incorrect, call SyncroFlo before proceeding!
- () 16. With one pump still running, open the individual pump HydroCumulator feed line isolation gate valves and the tank PRV isolation valve and allow the tank to pressurize. If the tank is roof mounted ("Type B" system), do not add water to the tank until all air in the building riser has been allowed to bleed off.
- () 17. If all is correct, place all of the pump switches in "Auto".

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AUTOMATIC OPERATION TESTS:

- () 1. Low Suction Shutdown. Isolate the suction sensing line ball valve at the connection to the suction header. Loosen (but do not remove) the compression nut on the tube fitting to reduce the pressure trapped in the sensing line to below the “Low Suction” setpoint listed on the Control Panel data sheet. After an 8-10 second delay the Alarm will sound and the system will shut down requiring a manual reset. Retighten the compression nut and open the isolation valve. The suction pressure will have to return to approximately 5 psi above its setpoint before the alarm can be reset. Press the reset once to silence the alarm. Wait 5 seconds and press reset again to clear the alarm.
- () 2. Lead Pump Shutdown. (“Type A” and Type B systems). Stop all flow in the building, if possible. If not, a discharge manifold isolation valve (if provided) can be closed to simulate a “no flow” condition. If lag pumps are running, once their minimum run timers (MRTS) expire and there is not a “Low System” condition, they will turn off. With no flow and only the one remaining pump running, the system pressure should rise above normal and close the “Lead Pump” switch. After a brief delay (15 seconds), and a continuous input from the “Lead Pump” switch, the remaining pump will shut down. “Type C” systems are not normally supplied with a lead pump shut down feature. The lead pump runs continuously unless the system is fitted with an “energy saving device”.
- () 3. Motor Amp Draw. Create flow demand equal to the rated capacity of each pump individually. Check the amperage draw of each leg of each motor while running at its rated capacity. Record the Amperage for future reference
- P#1 L1 _____ A, L2 _____ A, L3 _____ A
P#2 L1 _____ A, L2 _____ A, L3 _____ A
P#3 L1 _____ A, L2 _____ A, L3 _____ A
- () 4. System Voltage. At full rated flow, record the incoming voltage and compare it to the voltage recorded with all pumps off. L1-L2 _____ VAC, L1-L3 _____ VAC, L2-L3 _____ VAC

OPTIONAL EQUIPMENT

- () 1. Flow Meter. Confirm the proper connection of the flow sensor to the control panel. An electrical drawing is supplied with the system when it is shipped. With the line full and flow established, the flow indicator will read USGPM once a velocity of .5 ft per second is reached.
- () 2. High Suction Switch. This switch is set 10-15 psi above the normal system pressure. If the suction pressure is sufficiently high, this switch will keep all pumps from running unless the suction pressure falls below its setting.
- () 3. High System Switch. This switch is typically set 15-20 psi above the normal system pressure. When made, it will turn off the system after 10 seconds and requires a manual reset once the “High System Pressure” condition has cleared.
- () 4. Maxistore Flow Switch. If equipped, the Maxistore switch indicatges to the PLC when there is virtually no flow through the system. In conjunction with the “Lead Pump” pressure switch, the Maxistore will input the PLC and turn off the last pump running once its MRT is satisfied.

Mail or fax this completed form to:

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