

USask Master Specification Directions: The master specifications are intended to be incorporated into the Consultant's final, project specific specification package. The project specific specifications are expected to include any and all sections or portions of sections (Part 1, Part 2, Part 3) that are required to create a fully executable project specification. USask Master Specs only provide information that USask **requires** be a part of the final specification package. Components or sections not included in the Master USask Specifications may still be required for a complete, well-designed project. **It is the consultant's responsibility to ensure all specifications match USask requirements. Any deviations or revisions to any section included in the master specifications requires written consent from the USask Engineering department. The consultant is liable for any omissions, errors, or incorrect equipment or components supplied to site.**

The Master Specifications shall be used in conjunction with USask's Design Guidelines. Any conflicts shall be brought to the attention of USask Engineering staff for clarification.

Part 1 General
Part 2 Products

2.1 PACKAGED CONDENSATE UNIT, BASE MOUNTED PUMPS

- .1 Suitable for service up to 98.9 degrees C.
- .2 General: duplex unit mounted on common base piped to horizontal tank.
- .3 Base: fabricated cast iron with drip sump and drain tapping, anchor bolt holes. Hold down bolts with sleeves seismic restraint system complete with installation template.
- .4 Pump:
 - .1 Volute: cast iron radially split, flanged suction and discharge connections, tappings for vent, drain, pressure gauge on suction and discharge.
 - .2 Impeller: cast bronze, securely keyed to shaft, replaceable wear rings.
 - .3 Shaft: alloy steel with bronze sleeves on packed pumps.
 - .4 Seals: mechanical.
 - .5 Bearings: in-board and out-board single race ball bearings grease lubricated.
 - .6 Coupling: flexible self-aligning.
- .5 Tank: welded steel or cast iron construction to 125 psi rating return connections both ends, pump suction, overflow, vent and drain connections. Openings for external float control. Steel support legs. Valved gauge glass with guard.
- .6 Piping valves and fittings: to Section 23 22 13- Steam and Condensate Heating Piping.
- .7 Controls:
 - .1 Duplex automatic: supplied as package by pump manufacturer complete with:
 - .1 Level operated controls.
 - .2 Automatic electrical alternator.
 - .3 High water alarm.
 - .4 Controller in NEMA II enclosure complete with:
 - .1 2 circuit breakers.
 - .2 Through-door operating handles.
 - .3 Two across-line magnetic starters.

- .4 Ambient compensated quick-trip overloads on each line.
- .5 Door mounted hand-off-auto selector switches for each pump.
- .5 Type and quality of electrical components as per Division 26.
- .2 Float switches: quick double break type with silver contacts. Seamless copper float with bronze rod and packed stuffing box.
- .3 Wiring between pumps and controls by unit manufacturer.
- .8 Acceptable manufacturer: ShipCo, B&G

Part 3 Execution

3.1 INSTALLATION

- .1 Place level, shim unit and grout.
- .2 Pipe up to system as indicated.
- .3 Run tank vent separately to exterior of building as indicated.
- .4 Run drain line and overflow to terminate over floor drain.
- .5 Check rotation prior to start-up.
- .6 Check bearings for oil level and lubrication.

3.2 SYSTEM START-UP AND PERFORMANCE VERIFICATION (PV)

- .1 General:
 - .1 In accordance with Section 01 91 13- General Commissioning Requirements, supplemented as specified herein.
- .2 Start-up:
 - .1 Check strainers and clean as often as necessary until system is clean.
 - .2 Tighten as necessary glands of valves, pumps.
 - .3 Check lubrication and add as necessary.
 - .4 Determine source of loss and rectify deficiencies.
- .3 Performance Verification (PV):
 - .1 Test unit for capacity, NPSH at design temperatures.
 - .2 Discharge condensate to sewer until system is clean.
- .4 Reports:
 - .1 In accordance with Section 01 91 13- General Commissioning Requirements: reports supplemented as specified herein.
 - .2 Include:
 - .1 Report forms as specified Section 01 91 13- General Commissioning Requirements: report forms and schematics.

END OF SECTION