

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 CLOSED EXPANSION TANK

- .1 Expansion tank with threaded pipe connections.
- .2 Capacity: as indicated.
- .3 Size: as indicated.
- .4 Construction:
 - .1 ASME code rated welded tank to 860 kPa test pressure of ASTM A516/A516M, pressure vessel carbon steel plate with dished heads galvanized after manufacture.
 - .2 Conform to: ASME BPVC, Section VII and CSA B51, and provincial regulations.
 - .3 Submit certificate of registration as required by provincial authorities.
- .5 Accessories:
 - .1 Expansion pipe connection at bottom.
 - .2 NPS 1 drain connection at bottom with drain valve c/w isolation valve and cap.
 - .3 Vent connection, NPS 3/4
 - .4 Relief valve and connection at top, to manufacturer's recommendations and Code requirements.
 - .5 12 mm sight glass connections at 1/8 and 7/8 points of height, complete with sight glass, shut-off valves with blowdown and protective guards. As tank construction permits.
 - .6 Two - 62 mm inspection tappings on centre line of sides, one near each end.
 - .7 Include Schraeder fitting for charging with air. Provide air chuck for charging with compressed air.
- .6 Supports: provide supports with hold down bolts and installation templates incorporating seismic restraint systems as required.

- .7 Extend drain lines and vent line down so that drain and vent valves are accessible from floor. Provide air charge line with quick coupling fitting to suit hose coupler.
- .8 Acceptable manufacturers: B&G, Armstrong, Taco.

2.2 AUTOMATIC AIR VENT

- .1 Standard float vent: brass body and NPS 1/8 connection and rated at 690 kPa working pressure.
 - .1 For use at expansion tanks.
- .2 High capacity vent: cast iron body and bonnet, 3/4FNPT system connection, 3/8FNPT outlet 1034kPa working pressure. All whetted internal components shall be brass, stainless steel and EPDM.
 - .1 For use at system air separator.
- .3 Float: solid material suitable for 115 degrees C working temperature.
- .4 Provide isolation valve at all automatic air vents.

2.3 AIR SEPARATOR - EXPANSION TANK FITTING

- .1 Complete with adjustable vent tube and built-in manual vent valve.
- .2 Working pressure: 860 kPa.
- .3 Acceptable manufacturer: B&G, Taco, Spirotherm, Caleffi, Calefactio.

2.4 AIR SEPARATOR - TANGENTIAL

- .1 Working pressure: 860 kPa.
- .2 Size: as indicated.
- .3 Type: Coalescing media
- .4 Acceptable manufacturer: B&G, Taco, Spirotherm, Caleffi, Calefactio.

2.5 PIPE LINE STRAINER

- .1 NPS 1/2 to 2: bronze body to ASTM B62, screwed connections, Y pattern.
- .2 NPS 2 1/2 to 12: cast iron body to ASTM A278/A278M, Class 30, flanged connections.
- .3 Blowdown connection: NPS 1, c/w isolation valve and cap.
- .4 Screen: stainless steel with 1.143 mm perforations.
- .5 Working pressure: 860 kPa.
- .6 Acceptable manufacturer: Armstrong, Colton, Spirax Sarco.

2.6 SUCTION DIFFUSER

- .1 Body: cast iron with connections to suit piping and pump system.
- .2 Strainer: with built-in, disposable 1.19 mm mesh, low pressure drop screen and NPS 1 blowdown connection.
- .3 Permanent magnet particle trap.

- .4 Full length straightening vanes.
- .5 Acceptable manufacturers: B&G, Victaulic, Taco.

2.7 FLEXIBLE CONNECTIONS

- .1 To be updated

2.8 FLOW CONTROL VALVES

- .1 TBC

2.9 CIRCUIT BALANCING VALVES

- .1 TBC

2.10 PRESSURE INDEPENDENT BALANCING VALVES

- .1 TBC

Part 3 Execution

END OF SECTION