

1 General

1.1 RELATED SECTIONS

- .1 Section 23 05 15 - Common Installation Requirements for HVAC Pipework.
- .2 Section 23 08 16 - Cleaning and Start-up of HVAC Piping Systems.

1.2 REFERENCES

- .1 American Society of Mechanical Engineers (ASME).
 - .1 ASME, Boiler and Pressure Vessel Code.
- .2 American Society for Testing and Materials, (ASTM).
 - .1 ASTM A47/A47M, Specification for Ferritic Malleable Iron Castings.
 - .2 ASTM A278M, Specification for Gray Iron Castings for Pressure-Containing Parts for Temperatures up to 650 degrees F (345 degrees C).
 - .3 ASTM A516/A516M, Specification for Pressure Vessel Plates, Carbon Steel, for Moderate - and Lower - Temperature Service.
 - .4 ASTM A536, Specification for Ductile Iron Castings.
 - .5 ASTM B62, Specification for Composition Bronze or Ounce Metal Castings.
- .3 Canadian Standards Association (CSA International).
 - .1 CSA B51, Boiler, Pressure Vessel, and Pressure Piping Code.

1.3 SUBMITTALS

- .1 Submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data: submit WHMIS MSDS - Material Safety Data Sheets.
 - .1 Submit shop drawings and product data in accordance with Section 01 33 00 - Submittal Procedures.
 - .2 Indicate on product data expansion tanks, air vents, separators, valves and strainers.
- .3 Closeout Submittals:
 - .1 Submit maintenance data in accordance with Section 01 78 00 - Closeout Submittals.

1.4 QUALITY ASSURANCE

- .1 Health and Safety:
 - .1 Do construction occupational health and safety in accordance with Section 01 35 29.06 - Health and Safety Requirements.

1.5 DELIVERY STORAGE AND DISPOSAL

- .1 Waste Management and Disposal:
 - .1 Separate waste materials for reuse in accordance with Section 01 74 00 - Cleaning.
 - .2 Collect and separate for disposal paper packaging material in appropriate on-site bins for recycling in accordance with Waste Management Plan.

2 Products

2.1 CANADIAN REGISTRATION NUMBER (CRN)

- .1 Required on all products as per Provincial Regulations and CSA B51.

2.2 DIAPHRAGM TYPE EXPANSION TANK

- .1 Horizontal or vertical as indicated, steel pressurized diaphragm type expansion tank.
 - .2 Capacity: as indicated.
 - .3 Size and acceptance volume: as indicated.
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- .4 Diaphragm sealed in elastomer or EPDM (always use EPDM for glycol systems) suitable for 115 degrees C operating temperature.
- .5 Maximum allowable working pressure: 860 kPa with ASME stamp and certification, where required.
- .6 Air precharged to 84 kPa (initial fill pressure of system) or as indicated.
- .7 Saddles for horizontal installation, base mount for vertical installation.
- .8 Supports: provide supports with hold down bolts and installation templates.

2.3 AUTOMATIC AIR VENT

- .1 Standard float vent: brass body and NPS 1/8 connection and rated at 1000 kPa working pressure.
- .2 Industrial float vent: ASTM A48 Class 30, cast iron body and NPS 1/2 connection and rated at 860 kPa working pressure.
- .3 Float: solid material suitable for 115 degrees C working temperature.

2.4 COMBINATION LOW PRESSURE RELIEF AND REDUCING VALVE

- .1 Adjustable pressure setting: 206 kPa relief, 55 to 172 kPa reducing.
- .2 Low inlet pressure check valve.
- .3 Removable strainer.

2.5 PIPE LINE STRAINER

- .1 NPS 1/2 to 2: bronze body to ASTM B62, solder or screwed end connections, Y pattern.
- .2 Blowdown connection: NPS 1.
- .3 Screen: stainless steel with 1.19 mm perforations.
- .4 Working pressure: 860 kPa.

3 Execution

3.1 GENERAL

- .1 Install as indicated and to manufacturer's recommendations.
- .2 Run drain lines and blow off connections to terminate above nearest drain.
- .3 Maintain proper clearance to permit service and maintenance.
- .4 Should deviations beyond allowable clearances arise, request and follow the Departmental Representative's directive.
- .5 Check shop drawings for conformance of all tappings for ancillaries and for equipment operating weights.

3.2 STRAINERS

- .1 Install in horizontal or down flow lines.
- .2 Ensure clearance for removal of basket.
- .3 Install ahead of each pump.
- .4 Install ahead of each automatic control valve larger than NPS 1 and as indicated.

3.3 AIR VENTS

- .1 Install at high points of systems in piping mains. The Contractor shall provide automatic air eliminators in order to avoid air pockets in the system. Air vents are to be installed at an accessible place with the aid of necessary piping in order to facilitate maintenance.
- .2 Install gate valve on automatic air vent inlet. Run discharge to nearest drain or service sink.

3.4 EXPANSION TANKS

- .1 Adjust expansion tank pressure to suit design criteria.

.2 Install lockshield type valve at inlet to tank.

3.5 PRESSURE SAFETY RELIEF VALVES

.1 Run discharge pipe to terminate above nearest drain.

3.6 PERFORMANCE VERIFICATION

.1 In accordance with Section 23 08 16 - Cleaning and Start-up of HVAC Piping Systems, supplemented as specified herein.

END OF SECTION
