

HYDRONIC SPECIALTIES

1. GENERAL

1.1 Scope

- .1 Expansion Tanks – Bladder Type.
- .2 Manual air vents.
- .3 Air separators.
- .4 Relief valves and fittings.
- .5 Combination Low Pressure Relief and Reducing Valve.
- .6 By-pass filter.
- .7 Chemical pot feeder.
- .8 Sight Flow Indicator.
- .9 Pipe Line Strainer.
- .10 Propylene Glycol Solution.

1.2 Action and Informational Submittals

- .1 Product Data:
 - .1 Provide manufacturer's printed product literature and datasheets for expansion tanks, air vents, separators, valves, and strainers and include product characteristics, performance criteria, physical size, finish and limitations.

1.3 Closeout Submittals

- .1 Submit maintenance and operation data for inclusion in the maintenance manual.

1.4 Delivery, Storage and Handling

- .1 Deliver materials to Site in original factory packaging, labelled with manufacturer's name, address.

2. PRODUCTS

2.1 Expansion Tanks – Bladder Type

- .1 Vertical steel pressurized bladder type expansion tank.
- .2 Capacity: as scheduled.
- .3 Bladder sealed in EPDM suitable for 115°C operating temperature.

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- .4 Working pressure: 860 kPa with ASME stamp and certification.
- .5 Air precharged to 84 kPa (initial fill pressure of system).
- .6 Base mount for vertical installation.
- .7 Removable bladder.

2.2 Manual Air Vents

- .1 Provide manual air vents with 25 mm or line diameter pipe whichever is greater to form air collection chamber. Collection chamber to be 150 mm high.

2.3 Air Separators

- .1 Acceptable Manufacturers:
 - .1 Armstrong
 - .2 Wessels
 - .3 Or approved equivalent
- .2 Centrifugal type with 861 kPa WSP steel tank, galvanized steel 5 mm perforated strainer, perforated stainless steel air collector tube and drain connection.
- .3 Inlet and outlet flanges line size.

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 Bypass Filter

- .1 Unit to consist of cartridge filter, flow indicator, flow control valves and filter cartridges. Cartridge filter; stainless steel shell of single centre bolt construction with cast nick-plated brass head, drain plug and air vent. Flow indicator - cast bronze body with two sight glasses of high temper, thermo shock-resistant glass and nylon rotor on stainless steel pin.
 - .1 Flow Control Valves: Cast Bronze Globe Valves, 25 mm Female NPT.
 - .2 Filter cartridges: 10 each of 10 micron retention, and 20 micron retention.
 - .3 Manufacturer: Guthrie Hydroniclean System.

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2.6 Chemical Pot Feeder

- .1 150 mm diameter x 550 mm long feeder, suitable for 861 kPa (125 psi) operating pressure complete with isolation valves on 20 mm inlet and outlet lines, 20 mm drain valve, 40 mm fill complete with filling funnel.

2.7 Sight Flow Indicator

- .1 Provide sight flow indicator with tempered glass viewing window, bronze body, ABS impeller, temperature rated to 93°C, pressure rated to 8.62 bar and threaded connection.
- .2 Manufacturer: W.E. Anderson Midwest SFI-100.

2.8 Pipe Line Strainer

- .1 NPS 13 to 50: bronze body to ASTM B 62, screwed connections, Y pattern.
- .2 NPS 65 to 300: cast steel body to ASTM A 278/A278M, flanged connections.
- .3 Blowdown connection: NPS 25.
- .4 Screen: stainless steel.
- .5 Working pressure: 860 kPa.

2.9 Glycol Solution

- .1 Provide propylene glycol/water solution suitable for the temperature range of heating system. Solution to be suitable for heating complete with appropriate corrosion inhibitors. Solutions must be factory premixed to a concentration of 50% by volume.

2.10 Glycol Feed Tank

- .1 Pre-mix solution in mixing tank and charge system using feed pump. After system has been filled, check specific gravity of solution in each system. Leave mixing tank filled with specified glycol solution. Secure cover lid.
- .2 Glycol Feed System: Automatic feed system, comprising the following:
 - .1 Pump: 3.8 L/min. at 345 kPa, 115/1/60 VAC, with thermal cut-out, plug, and cord, capable of running dry without damage.
 - .2 Tank: polyethylene tank with level gauge, cover, pump suction hose with strainer, low level pump cut-out, diverter valve for air purging and agitation, and all required connections. Mount on platform with casters.
 - .3 Pressure Regulating Valve: Glycol addition is to be controlled by an adjustable pressure reducing valve, range 35-380 kPa, complete with pressure gauge, strainer, check valve, union connection and 12 mm x 900 mm flexible outlet hose with check valve.
 - .4 Accumulator Tank: Pre-charged accumulator tank with EPDM diaphragm.

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- .5 Alarm Panel: Low level alarm panel, complete with remote monitoring contacts and selectable audio alarm, and dry contact for remote alarm monitoring.
- .3 Unit shall be completely pre-assembled and certified by a recognized testing agency to CSA standard C22.2 No.68.
- .4 Acceptable Manufactures:
 - .1 Axiom Industries Ltd.
 - .2 A&F Machine Products Co.
 - .3 Armstrong.
 - .4 Bell and Gossett.
 - .5 Wessels (Wilo).
 - .6 Or approved equivalent.

3. EXECUTION

3.1 Application

- .1 Manufacturer's Instructions: comply with manufacturer's written recommendations, including product technical bulletins, handling, storage and installation instructions, and datasheets.

3.2 General

- .1 Run drain lines and blow off connections to terminate in glycol makeup tank.
- .2 Maintain adequate clearance to permit service and maintenance.
- .3 Should deviations beyond allowable clearances arise, request and follow Contract Administrator's directive.
- .4 Check Shop Drawings for conformance of tappings for ancillaries and for equipment operating weights.

3.3 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.

3.4 Air Vents

- .1 Install at high points of systems.

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- .2 Install gate valve on automatic air vent inlet. Run discharge to glycol makeup tank.

3.5 Expansion Tanks

- .1 Adjust expansion tank pressure as indicated.
- .2 Install lockshield type valve at inlet to tank.

3.6 Pressure Safety Relief Valves

- .1 Run discharge pipe to terminate in glycol makeup tank.

3.7 Cleaning

- .1 Remove surplus materials, excess materials, rubbish, tools, and equipment.

END OF SECTION