To be inserted into Section 15700 – Hydronic Coil Piping Packages

PART 1 – GENERAL

1.01 DESCRIPTION

A. Provide Hydronic Coil Piping Packages as shown on drawings and as specified herein.

B. Type, size, and rating compatible with intended service.

C. Suitable for use in Chilled Water and Hot Water Systems, up to 50% Glycol.

1.02 SUBMITTALS

A. Submittals shall include the following:

- Drawing of coil package showing product arrangement with end connection type and size listed. Components shall be clearly labeled.
- Written description of all components provided in package.
- Manufacturers system component specifications
- Computer generated, job specific, package schedule indicating package part number, end connection size and types, control valve Cv, flow cartridge spring range, design flowrate, and location tag for each coil package.

1.03 DELIVERY, STORAGE, AND HANDLING

A. All equipment provided under this specification shall be shipped to job site, clearly labeled for intended use, and in shrink-wrapped plastic, per coil assembly. Manufacturer shall factory mount actuators (supplied by others) to Actuated Ball Valve prior to shrink-wrap and shipment.

B. Manufacturer's representative shall coordinate with valve actuator supplier to develop common schedule of actuator type, size, and location. This schedule will be used by Coil Piping Package factory to mount actuators prior to shrink-wrap and shipping.

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1.04 WARRANTY

A. Manufacturer shall warrant all components for 18 months from date of purchase (1 year from date of installation). The flow limiting cartridge shall be warranted by manufacturer for no less than five years from date of purchase.

B. Manufacturer shall provide replacement flow limiting cartridges (installation by others), at No Charge, for up to 10% of total quantity of purchased packages, in the event that flow conditions (GPM) are modified by engineer, after packages have shipped to job site.

1.05 ACCEPTABLE MANUFACTURER

- Griswold "Automizer" CPP-2A (Basis of Design)
- Delta Controls "Auto Touch"
- Belimo "PICCV"

PART 2 – PRODUCTS

2.01 COMBINATION VALVES (RETURN SIDE)

A. Combination valve shall include a Flow Limiting Cartridge, Actuated Ball Valve, and Manual Isolation Ball in a single valve housing, to prevent opportunity for leakage, with union end connection. Separate assembled components shall not be acceptable.

B. Valve housing shall consist of forged brass, rated at no less than 360 psi at 250°F.

C. Valve shall have a union end connection that includes a factory installed manual air vent to allow for venting of the coil or heat pump.

D. Automatic Flow Limiting Cartridge (FLC)

1. FLC shall automatically control flow rates with ±5% accuracy over an operating pressure differential range of at least 14 times the minimum required for control. Three operating pressure ranges shall be available with the minimum range requiring no more than 2 PSID to actuate the mechanism.
2. Valve internal control mechanism shall consist of a stainless steel one-piece cartridge with segmented port design and full travel linear coil spring. Plated steel cartridges shall not be acceptable.
3. Dual pressure/temperature test valves for verifying the pressure differential across the cartridge and system shall be standard.
4. Manufacturer shall be able to provide certified independent laboratory tests verifying accuracy of performance.

E. Actuated Ball Valve

1. Valve ball shall consist of chemically plated nickel brass.
2. Actuator stem shall be removable/replaceable without removing valve from line.
3. Manufacturer shall be able to provide ball insert to make flow control equal percentage. Insert shall be constructed of a Glass-Filled Polymer.

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4. Valve shall have EPDM O-Rings behind Reinforced Teflon (PTFE) ball seals to allow for a minimum close-off pressure of 100 psi with 35 in-lbs of torque for 1/2" to 2" sizes.
5. Actuator shall provide minimum torque required for full valve shutoff position.

F. Isolation Ball Valve

1. Valve shall include a 600 WOG manual isolation ball valve.

2.02 COMBINATION VALVE (SUPPLY SIDE)

A. Combination valve shall include a Manual Isolation Ball and Integrated Strainer, including drain valve with ¾" hose connection with cap, in a single valve housing to prevent opportunity for leakage. Separate assembled components shall not be acceptable. Dual pressure/temperature test valve shall be standard.

B. Valve housing shall consist of forged brass, rated at no less than 360 psi at 250°F.

C. Valve shall have one fixed end and one union end connection.

D. Integrated Strainer

1. Shall be 20 Mesh stainless steel and can be removed from housing without disturbing pipe connections for inspection or replacement.
2. Drain valve shall consist of nickel-plated ball in a brass housing rated for 275 PSI / 250°F.

E. Isolation Ball Valve

1. Valve shall include a 600 WOG manual isolation ball valve.

2.03 SUPPLY/RETURN HOSES (AS REQUIRED)

A. All hoses shall be equipped with swivel end connections at terminal unit. All end connections shall be crimped to meet standard pressure ratings. Serrated/Slip fit connections shall not be acceptable.

B. Flame Retardant Hoses

1. Hose material shall be stainless steel braided over a synthetic polymer liner.
2. Hoses shall meet or exceed the ASTM-D380-83 standard.
3. Hoses shall meet or exceed flame retardant testing per standards UL #723, NEPA #225, ANSI 2.5, UBC 42-1, and ASTM-E84A after ten minutes.

C. Insulated Hoses

1. Hose materials shall be high quality polyethylene pipe insulation over a stainless steel braided inner core.

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PART 3 - EXECUTION

3.01 INSTALLATION

A. Install per manufacturer's recommendations and instructions.

To be inserted into Section 15970 – Energy Management & Controls or Section 17000 – Building Automation

1. Provide Actuators only, for all control valves used on individual hydronic coils and equipment. All valves for individual coil controls shall be provided by others as part of Hydronic Coil Piping / Hose Kit Packages as specified in section 15700.
2. Actuators shall be shipped to Coil Piping Package manufacturer for factory mounting.
3. Coordinate with Coil Piping Package Manufacturer's representative to develop a common schedule of actuator type, size, and location. This schedule will be used by Coil Piping Package factory to mount actuators prior to shrink-wrap and shipping.

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