SECTION 230525 - HYDRONIC HVAC FLOW CONTROL

PART 1-GENERAL

1.1 SECTION INCLUDES

A. Calibrated plug valves for manual system flow balancing.

B. Automatic flow balancing valves.

1.2 SUBMITTALS

A. Submit shop drawings and product data per applicable Division I Specification.

B. Shop drawing shall include product data noting materials, sizes, and dimensions.

PART 2-PRODUCTS

2.1 MANUFACTURERS

A. IMI-FDI.

B. Tour and Anderson

C. Griswold

D. Nexus Valve (Coil packages)

E. Red White Valve Corporation

2.2 CALIBRATED PLUG VALVES

A. 125 psig maximum working pressure 250 degrees F maximum operating temperature, bronze construction with calibrated orifice. Provide with pressure temperature taps. Two inches diameter and smaller shall have threaded connections. Two and one-half inches diameter and larger shall be flanged connections.

2.3 AUTOMATIC FLOW BALANCING VALVES

A. 150 psig maximum working pressure, 250 degrees F maximum operating temperature. Brass or bronze housing for one and one-half inches diameter piping size and smaller and cast iron for two inches diameter and larger piping size with all stainless- steel operating parts. Flow shall be controlled to plus or minus 5 percent of the required flow. Provide with threaded connections for two inches diameter and smaller. Provide flanged or grooved connections for two inches diameter and larger. Provide with pressure temperature taps on each side of the flow control cartridge. Provide the proper pressure control range for the system.

B. Pressure-compensating flow control valves in a union-ball-valve/flow-control-device one- piece configuration. Valve are to be installed on hot water heating, chilled water piping, downstream lines, as shown on drawings. Balancing valve on supply side is

unacceptable. Ball valve shall have screwdriver slot. These valves shall have range ability in flow requirements:

1. All valves are to be pre-set to control the flow rate within 5% of the tagged rating over an operating pressure differential of at least ten times the minimum required for full flow conditions.

2. The valves shall be all metal with thread or sweat connections and shall be all brass and stainless steel.

3. Performance certification of valves by an independent laboratory shall be available.

4. All valves shall have access capability to allow field-exchange of internal components without removing valve body from pipeline.

5. All valves shall be permanently marked to show direction of flow, flow rate, and pressure range.

C. Provide an IMI-FDI. Tour & Anderson or Griswold, in-line strainer for each automatic flow control valve furnished. Strainer to be in a union-ball-valve/strainer one-piece configuration. These strainers shall have screening capacities and meet the following requirements:

1. All strainers shall be able to limit passage of particulate matter more than 510 microns, shall be all brass and stainless steel with threaded or sweat connection, and shall have blow- down valve attached to allow purging, directly through accessory valving.

2. All strainers shall be permanently marked to show direction for flow.

D. Pressure and Temperature Test Stations

1. Furnish as a part of each flow control valve and strainer valve by IMI-FDI. or Griswold, a Pete's Plug Model #110XL ¼" MPT fitting to receive either temperature or pressure probe. Fitting shall be solid brass with two valve cores of Nordel. Single valve core unit Unacceptable.

2. In addition, this Contractor shall present to the Owner upon completion of testing a Model 1500XL – test kit consisting of a 0-100 PSIG (0-230' water pressure gauge with 500 XL adaptor and two pocket testing thermostats.

3. Pressure and temperature test stations

PART 3-EXECUTION

3.1 INSTALLATION

A. Provide automatic flow control valves at each Air Handling Unit Coil, VAV box coil, fan powered VAV box coil, chiller, each boiler of a multiple boiler installation, cabinet unit heaters, unit heaters and anywhere else indicated on drawings or details, to properly balance the flow to each device.

END OF SECTION 230525

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