

SECTION 22 05 30 - METERS AND GAUGES FOR PLUMBING SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This section includes Thermometers, Gauges and Test plugs.

PART 2 - PRODUCTS

2.1 METAL-CASE, LIQUID-IN-GLASS THERMOMETERS

- A. Manufacturers: Subject to compliance with requirements, provide fully adjustable angle thermometers by one of the following:
 - 1. Palmer - Wahl Instruments Inc.
 - 2. Trerice, H. O. Co.
 - 3. Weiss Instruments, Inc.
 - 4. Weksler Instruments Operating Unit; Dresser Industries; Instrument Div.
 - 5. Miljoco Corporation.
- B. Case: Cast aluminum with dark blue epoxy coating, 9 inches long.
- C. Window: Clear acrylic for temperatures up to 300 deg. F; glass for higher temperatures.
- D. Tube: blue reading, organic filled.
- E. Stem: brass for thermowell installation and of length to suit installation.
- F. Accuracy: Plus or minus 1 scale division.

2.2 THERMOWELLS

- A. Manufacturers: Same as manufacturer of thermometer being used.
- B. Description: Pressure-tight, brass construction, socket-type metal fitting made for insertion into piping and of type, diameter, and length required to hold thermometer.

2.3 PRESSURE GAUGES

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Palmer - Wahl Instruments Inc.

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2. Terice, H. O. Co.
3. Weiss Instruments, Inc.
4. Weksler Instruments Operating Unit; Dresser Industries; Instrument Div.
5. Miljoco Corporation.

B. Dial-Type Pressure Gauges: Indicating-dial type complying with ASME B40.100.

1. Case: Liquid-filled type, fiberglass reinforced polypropylene, 4-1/2-inch diameter, solid front, blow out back.
2. Pressure-Element Assembly: Bronze Bourdon tube.
3. Pressure Connection: Brass, NPS 1/4, bottom-outlet.
4. Movement: Stainless steel rotary type with stainless steel bushings.
5. Dial: Satin-faced, nonreflective aluminum with permanently etched scale markings.
6. Pointer: Red or other dark-color metal.
7. Window: Acrylic plastic.
8. Accuracy: Plus or minus .5 percent range.
9. Vacuum-Pressure Range: 30-in. Hg of vacuum to 150 psig of pressure.
10. Range for Fluids under Pressure: Two times operating pressure.

C. Pressure-Gauge Fittings:

1. Valves: NPS 1/4 brass or stainless-steel needle type valve.

2.4 TEST PLUGS

A. Manufacturers: Subject to compliance with requirements provide test plug (PT Plug) products by one of the following:

1. Flow Design, Inc.
2. Peterson Equipment Co., Inc.
3. Sisco Manufacturing Co.
4. Terice, H. O. Co.
5. Watts Industries, Inc.; Water Products Div.

B. Description: Ports are to be suitable to accept thermometer stem or pressure gauge adapter and shall have dual EPDM internal seals, threaded brass cap with metal retainer strap. Ports are to be adequate length and suitable for installation in insulated or non-insulated piping.

C. Construction: Brass body with dual EPDM seals.

D. Minimum Pressure and Temperature Rating: 1000 psig at 270 deg F.

E. Test Kit: Furnish one test kit containing one pressure gauge and adaptor, two thermometers, and carrying case. Pressure gauge, adapter probes, and thermometer sensing elements shall be of diameter to fit test plugs and of length to project into piping.

PART 3 - EXECUTION

3.1 THERMOMETER APPLICATIONS

A. Install thermometers where indicated on the drawings, see plans and detail drawings.

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- B. Provide the following temperature ranges for thermometers:
 - 1. Domestic Hot Water: 30 to 180 deg F, with 2-degree scale divisions.
 - 2. Domestic Cold Water: 0 to 100 deg F, with 2-degree scale divisions.

3.2 GAUGE APPLICATIONS

- A. Install pressure gauges at suction and discharge of each pump.

3.3 INSTALLATIONS

- A. Install direct-mounting thermometers and adjust vertical and tilted positions.
- B. Install thermowells with socket extending to center of pipe and in vertical position in piping tees where thermometers are indicated.
- C. Install direct-mounting pressure gauges in piping tees with pressure gauge located on pipe at most readable position.
- D. Install shut-off needle-valve and snubber fitting in piping for each pressure gauge and thermometer.
- E. Install test plugs in tees in piping.
- F. Install connection fittings for attachment to portable indicators in accessible locations.
- G. Adjust faces of thermometers and gauges to proper angle for best visibility.

END OF SECTION 22 05 30