

Material Specification – 10

PRESSURE REGULATING VALVES

1. GENERAL

Pressure regulating valves shall be designed and manufactured in accordance with AWWA C530 with the following additional requirements or exceptions.

2. SERVICE

The function of the pressure regulating valve is to reduce an upstream high pressure to a preadjusted lower downstream pressure to vary the rates of flow without causing shock or water hammer on the system. Components shall be suitable for exposure to chloraminated water.

3. SIZES

This Specification covers 150 pound class pressure regulating valves in 4-inch through 20-inch nominal diameters.

4. VALVE DESCRIPTION

Pressure regulating valves shall be hydraulically operated and pilot controlled with a diaphragm activated globe or angle valve. A stainless steel indicator rod shall be furnished as an integral part of the valve to show the valve position. The valve shall be designed to provide an access opening in the body for the removal of internal parts without the removal of the main valve body from the service line.

5. INSTALLATION

Pressure regulating valves shall be installed in a horizontal position in an underground concrete manhole or concrete vault as applicable.

6. BODY MATERIAL

Valve body, flanges, and covers shall be CI in accordance with ASTM A 126, Class B, or ASTM A 48, Class 35B; DI in accordance with ASTM A 536, grade 65-45-12.

7. INTERNAL TRIM MATERIALS

Stem, nut, and spring shall be stainless steel. Bronze or brass alloys used for the internal trim or bushings shall comply with ANSI/NSF 61.

8. DIAPHRAGM MATERIAL

Flat or rolling diaphragm shall be nylon reinforced and bonded EPDM or Buna-N synthetic rubber.

9. DISC AND SEATS MATERIAL

Resilient disc materials shall be Buna-N or EPDM to provide a drip-tight seal with a stainless steel seat.

10. VALVE ENDS

Valves shall be furnished with flanged ends sized and drilled in accordance with ANSI B16.1, Class 125. Flanges shall be machined to a flat surface with a serrated finish in accordance with AWWA C207 and coated with a rust-preventive compound.

11. PILOT SYSTEM

The pilot valve for controlling the operation of the main valve shall be a single seated stainless steel construction, EPDM diaphragm operated, and spring-loaded type. The pilot valve shall be attached to the main valve with stainless steel piping and isolation

ball valves and threaded nipple extending inside the valve body covering all port threads at all port connections. Provide stainless steel strainer with minimum 40 mesh screen and blow down port upstream of the pilot valve. Provide 2 1/2-inch stainless steel, bourbon tube pressure gauge integral to the pilot system to show system pressure downstream of the pilot valve. Pilot piping shall be arranged for easy access for adjustments and with isolation valves for removal from the main valve while it is under pressure.

12. NEEDLE VALVE

The needle valve shall be stainless steel and included with the main valve to control the speed of valve travel.

13. WORKING PRESSURE

The working pressure shall be 150 psi.

14. TESTING

The body shall be hydrostatic tested to 150% of the working pressure specified herein. A seat leakage test shall be made at the working pressure.

15. COATINGS

Ferrous surfaces, except machined or bearing surfaces, shall be prepared in accordance with SSPC SP10. These surfaces shall then be coated with liquid epoxy in two or more uniform coats or with fusion-bonded epoxy to a minimum DFT of 10-mils in accordance with AWWA C550. Machined flange faces shall be shop-coated with a rust-preventive compound; they shall not be painted or coated with the same coating as the body.

16. QUALITY CONTROL

The Manufacturer shall submit a written statement that the inspection and all specified tests have been completed and that results comply with the requirements of these Standards. Components in contact with potable water shall be certified to comply with NSF/ANSI 61, and a copy of the NSF/ANSI 61 certification shall be provided to Denver Water, if requested.

17. APPROVED MANUFACTURERS

CITY AND COUNTY OF DENVER AND TOTAL SERVICE CONTRACT AREAS	
Manufacturers	Size (Inch)
Bermad 700 Series Control Valve	4 to 20
Cla-Val	4 to 20
Singer	4 to 20
DISTRIBUTOR CONTRACT AREAS	
Manufacturers	Size (Inch)
Ames	4 to 16
Bermad 700 Series Control Valve	4 to 20
Cla-Val	4 to 20
GA Industries	4 to 16
OCV	4 to 16
Ross	4 to 20
Singer	4 to 20