

HYDRONIC VALVES AND STRAINERS

1. GENERAL

1.1 Scope

- .1 Gate valves
- .2 Ball valves
- .3 Check valves
- .4 Butterfly valves
- .5 Drain valves
- .6 Strainers
- .7 Triple Duty Valves
- .8 Suction Diffusers

1.2 Manufacturer

- .1 Provide valves of the same type by the same manufacturer throughout.
- .2 Provide valves with manufacturer's name and pressure rating clearly marked on outside of body.

1.3 Shop Drawings

- .1 Submit copies of valves "ordering schedule" for review before ordering valves.
- .2 Submit detailed Shop Drawings clearly indicating make, model, size, pressure rating, materials of construction and intended service.

2. PRODUCTS

2.1 Hot Water Heating, Glycol and Chilled Water and Condenser Water Systems

- .1 Ball Valves up to 50 mm: Brass body, chrome plated brass ball, threaded or solder ends, TFE seat and packing. 4134 kPa (600 psi) non-shock WOG rating. Threaded, Red-White Fig. 5044A. Solder joint, Red-White Fig. 5049A.
- .2 Butterfly Valves: Cast iron wafer full-lug body, 300 Series stainless steel shaft, bronze disc, replaceable EPDM seat, lever lock handle operator with multiple position lock plate for valve sizes to 100 mm, heavy duty gear handwheel operator with position indicator for valve sizes 150 mm and over. Minimum rating 1200 kPa (175 psi), 121°C (250°F). Keystone F1000, F1020.
- .3 Gate Valves up to 50 mm: Bronze body, inside screw, travelling stem, solid wedge, screw-in bonnet, threaded ends rating 860 kPa (125 psi) steam, solder ends rating 1380 kPa (200 psi) water. Threaded, Red-White Fig. 293. Solder ends, Red-White Fig. 299.

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Gate Valves 65 mm and over: Cast iron body, bronze trim, OS&Y, rising stem, solid wedge, flanged ends, rating 860 kPa (125 psi) steam. Red-White Fig. 421.

- .4 Check Valves up to 50 mm: Swing type, bronze body, screw-in cap, replaceable disc, 860 kPa (125 psi) steam rating. Threaded, Red-White Fig. 236. Solder ends, Red-White Fig. 237.

Check Valves 65 mm and over: Silent, wafer style, cast iron body, 316 SS seat, plug, spring and bushing. ANSI Class 125. Val Matic, Series 1400.

- .5 Drain Valves up to 50 mm: Brass 2 piece body ball valve, blowout proof stem, Teflon seats, forged brass chrome plated ball, hose end connection with cap and chain by male IP, 4200 kPa (600 psi) water, oil, gas rating, Red-White Fig. 5046.

2.2 Strainers

- .1 Size 50 mm and under: Screwed brass or iron body, Y pattern with 0.75 mm (24 ga) stainless steel perforated screen.
- .2 Size 65 mm to 100 mm: Flanged iron body, Y pattern with 1 mm (20 ga) stainless steel perforated screen.
- .3 Size 125 mm and larger: Flanged iron body, Y pattern with 3 mm (11 ga) stainless steel perforated screen.
- .4 Screen free area shall be minimum three times area of inlet pipe.

2.3 Triple Duty Valve

- .1 For base mounted or inline pump discharge application, performs the functions of a nonslam check valve, throttling valve, shut-off valve and calibrated balancing valve. Equip with brass readout valves (with integral check valves) to read differential pressure across valve.
- .2 Cast iron, bronze seat, replaceable bronze disc with EPDM insert.
- .3 Up to 50 mm: NPT connections, 1200 kPa (175 psi) working pressure, brass stem, chatter preventing SS spring.
- .4 Over 50 mm: Flanged connections, 1200 kPa (175 psi) working pressure, stainless steel stem and chatter preventing spring.

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.5 Schedule:

Tag	TDV-P-5	TDV-P-6	TDV-P-14
Function	P-5 Balancing	P-6 Balancing	P-14 Balancing
Connection Type	Flange	Flange	Flange
Body Pattern	Straight	Straight	Angled
Medium Handled	Water	Water	Water
Flow Rate Setpoint, L/s (USgpm)	5.58 (88.5)	5.58 (88.5)	3.15 (50)
Pipe Connection Size, mm (in)	75 (3.0)	75 (3.0)	65 (2.5)
Manufacturer	Armstrong	Armstrong	Armstrong
Model	FTV-SF	FTV-SF	FTV-SF

2.4 Suction Diffuser

- .1 For base mounted or floor mounted vertical inline pumps.
- .2 Up to 50 mm: Cast iron construction, NPT connections.
- .3 Over 50 mm: cast iron straightening fitting, stainless steel combination diffuser.

3. EXECUTION

3.1 Installation and Application

- .1 Install valves with stem upright or horizontal, not inverted.
- .2 Provide threaded lug type butterfly valves for equipment isolation service. Provide wafer or threaded lug type valves for zone shut-off service.
- .3 Provide drain valves at main shut-off valves, low points of piping and apparatus and terminal units.
- .4 Size drain lines and drain valves equal to size of apparatus drain connection.
- .5 For pipe sizes 20 mm and over, minimum drain size to be 20 mm.
- .6 Provide hose thread connection with cap and chain for 20 mm drain valves located in ceiling and public areas.
- .7 Provide male NPT nipples with threaded pipe cap for drain sizes over 20 mm where not piped directly to floor drains.
- .8 Provide valved drain and hose connections off the bottom of all strainers.

END OF SECTION