* 1. EXCESS FLOW VALVE

A. Supply a *insert size* Singer Model *specify model as 106/S106/206/S206*  – EF Excess Flow (Downstream Burst) Control Valve.

* 1. The valve shall be equipped with the following available options:
     1. *specify*
     2. *specify*
     3. *specify*.
  2. Singer Valve schematic *specify*.

1. Function: The non-modulating normally open valve shall be a pilot operated pressure differential control valve which will close when differential pressure across the main valve exceeds a preset maximum as a result of downstream flow rate exceeding a predetermined allowable maximum.
2. Operation: The pilot shall be a Singer Model 625-RPD normally closed Pressure Differential Pilot that remains closed when the differential pressure across the main valve is below the pilot setting. When this differential pressure exceeds the 625-RPD pilot setting the pilot opens to direct inlet pressure into the bonnet, above the diaphragm, which closes the main valve. The differential pressure created across the main valve is a function of flow rate and valve position. The required differential pressure to close the pilot and the main valve, at the predetermined flow rate, is achieved by limiting the valve open position using an adjustable X102 mechanical valve stroke limiter. When maximum allowable flow rate is reached and the valve is hydraulically closed, the main valve will remain closed provided that a minimum of 10psi is maintained at the inlet to the main valve. The main valve is reopened, or automatically reset, when pressure is equalized across the main valve.
   1. Quality Assurance
3. The control valve shall be tested prior to shipment. The standard test shall include a functional stroke test and pressure and leak test of valve body, seat, fitted pilots and accessories.
4. The control valve shall be covered by a minimum three (3) year warranty against defects in materials and workmanship. The 316 stainless steel seat ring shall be covered by a lifetime guarantee.
5. All control valve maintenance and repairs shall be possible without removing the main valve body from the line, when installed in accordance with manufacturer’s recommendations.
   1. Main Valve
6. The main valve shall be a Singer *insert main valve model number (106/S106/206/S206)* –PT-EF dual chamber, diaphragm actuated *specify (full/reduced)* port model complete with X102 mechanical stroke limiting device. The dual operating chambers are separated from the flowing media by an adapter plate.
7. Main valves, 6” (150mm) and larger, shall provide smooth frictionless motion to ensure a low flow stability to *specify minimum USGPM or L/s*, achieved using SRD-Single Rolling Diaphragm technology.
8. The main valve, bonnet and removable stem cap shall be constructed of ASTM A536 (Grade 65/45/12) ductile iron.
9. The main valve bonnet shall be located using two or more locating guide pins to maintain the inner valve assembly alignment and for ease of maintenance.
10. The main valve trim, consisting of seat ring and stem shall be constructed of AISI 316 stainless steel. The valve stem shall have wrench flats for ease of maintenance.
11. The main valve shall provide a drip-tight seal using a mechanically retained resilient disc, having a rectangular cross section, against the stationary AISI 316 stainless steel seat ring.
12. The stationary AISI 316 stainless steel seat ring of main valves 2.5” (65mm) and larger shall be held in place using Spiralock® self-locking screws and seat ring retainers.
13. All internal and external ferrous components, including all mating surfaces, shall be coated with an NSF-61 approved fusion bonded epoxy to a minimum of 10 mils DFT-Dry Film Thickness.
14. The main valve elastomers: diaphragm, resilient disc and seals, shall be of EPDM or Buna-N.
15. All main valve fasteners (bolts, nuts, studs, cap screws) shall be supplied as AISI 18-8 or 304 stainless steel. All bonnet bolts shall be fitted with stainless steel washers to prevent damage to the bonnet coating.
16. Valve shall have flanged, threaded or grooved end connections. Flanged connections shall be *specify ANSI/ASME B16.42 Class 150#/300# or ISO 7005-2 PN10/16/25/40* flange drilled, faced and rated. Threaded connections shall be *specify NPT or BSPT*.
    1. Pilot Controls
17. The pressure differential control pilot shall be a Singer Model 625-RPD with a spring to adjust the pressure setting.
18. The pilot trim, consisting of a seat ring, stem and inner valve, shall be constructed of AISI 316 stainless steel.
19. The pilot elastomer: diaphragm, inner valve and seals, shall be of EPDM or Buna-N.
20. The adjustable pilot spring range shall be supplied with a spring range of *specify range [2.2-6.5 psi (0.55-0.45 bar) or 5.2-13 psi (0.36-0.90 bar)]* differential. The pilot shall be factory preset at *specify setpoint* psid / bar for a maximum allowable flow rate of *specify setpoint* USGPM / L/s.
21. The pilot body shall be constructed of *specify material (ASTM B62 bronze or ASTM A351 CF8M stainless steel*, with spring casing constructed of fusion bonded epoxy coated ductile iron.
22. Fixed restrictions shall be supplied as AISI 303 stainless steel with an orifice bore selected by the manufacturer based on the valve size and operation.
23. A spring loaded pilot check valve shall be supplied as *specify material ASTM B16 brass or AISI 316 stainless steel*.
24. The pilot fittings shall be supplied as *specify material ASTM B16 brass or AISI 316 stainless steel*.
25. The pilot tubing shall be supplied as *specify material ASTM B280 seamless copper or AISI 316 stainless steel or PTFE lined flexible braided stainless steel*.
26. A pilot strainer shall be supplied as standard. Strainer material to be ASTM A351 CF8M stainless steel with a 40-mesh or 80-mesh 316 stainless steel screen. The external pilot strainer shall have a removable plug for easy maintenance access to the pilot screen and have provision for installation of a ball valve for pilot screen flushing.
    1. Control Valve Components – Available Options

A. *specify.*