* 1. PRESSURE RELIEF VALVE - SEWAGE

A. Supply a *insert size* Singer Model A106-DL-AIR Dynamic Lifter – Air Operated Sewage Pressure Relief 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 valve shall be a piston operated air loaded direct acting pressure relief valve for use with sewage or waste water. The angle body relief valve shall open quickly and fully when the inlet pressure meets or exceeds a predetermined pilot pressure setting, to relieve damaging overpressure and close smoothly at an adjustable speed. The valve shall close drip tight when pressure is below the relief setpoint.
2. Operation: The Dynamic Lifter shall be a normally closed angle body relief valve that remains closed when the inlet system pressure is below the adjustable spring setting of the normally closed Singer Model 81-RP Pressure Relief Pilot. The valve shall be maintained in a closed position when an adjustable remote air supply pressure, applied to the main valve piston area, exceeds the inlet system pressure applying pressure to the inner valve area. The valve opening shall be operated by system pressure against the inner valve and by relieving or releasing air supply pressure from the main valve piston. The valve shall open fully when inlet system pressure, transmitted to and isolated from the sewage using a mineral oil filled Diaphragm Isolator, exceeds the pilot setting of the 81-RP pilot, which opens and relieves the applied piston air supply pressure to atmosphere. When inlet system pressure recovers below the relief pilot setting, allowing the pilot to close, the continuous supply of regulated air pressure refills and pressurizes the valve piston chamber, closing the main valve. A fixed restriction shall regulate the air supply closing speed of the valve. The valve shall have a provision to cycle the relief valve for clean out and test purposes and to field set the relief pressure. The maintenance test shall be clean and sanitary to the operator. The Dynamic Lifter shall be provided with valve body ports of adequate size to provide inspection and clean out.
   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 *insert size* Singer model A106-DL single chamber, air piston loaded direct acting control valve.
7. The main valve with removable adapter shall be constructed of ASTM A536 (Grade 65/45/12) ductile iron.
8. The main valve trim, consisting of seat ring and stem shall be constructed of AISI 316 stainless steel. The valve stem shall have anti-scaling oxy-nitrite coating to reduce mineral or debris build-up.
9. 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.
10. The stationary AISI 316 stainless steel seat ring shall be held in place using Spiralock® self-locking screws and seat ring retainers.
11. 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.
12. The main valve and diaphragm isolator elastomer seals shall be of EPDM or Buna-N.
13. All main valve fasteners (bolts, nuts, studs, cap screws) shall be supplied as AISI 18-8 or 304 stainless steel.
14. Valve shall have flanged end connections. Flanged connections shall be *specify ANSI/ASME B16.42 Class 150# or ISO 7005-2 PN10/16* flange drilled, faced and rated.
    1. Pilot Controls
15. The Diaphragm Isolator shall be constructed of ASTM A536 (Grade 65/45/12) ductile iron with fusion bonded epoxy coating to a minimum of 10 mils DFT-Dry Film Thickness.
16. The pressure relief pilot shall be a Singer Model 81-RP normally closed pilot with a spring to adjust the pressure setting.
17. The pilot trim, consisting of a seat ring, stem and inner valve, shall be constructed of AISI 316 stainless steel.
18. The pilot elastomer: diaphragm, inner valve and seals, shall be of EPDM or Buna-N.
19. The adjustable pilot spring range shall be supplied with a spring range of *specify range (20 to 200psi, 5-50psi, 10-80psi or 100-300psi)*. The pilot shall be factory preset at *specify setpoint* psi.
20. The pilot body and spring casing shall be constructed of *specify material (ASTM B62 bronze or ASTM A351 CF8M stainless steel*
21. A fixed restriction closing speed control shall be supplied as AISI 303 stainless steel with an orifice bore selected by the manufacturer based on the valve size and operation.
22. An adjustable needle bleed valve shall be supplied as *specify material ASTM B16 brass or AISI 316 stainless steel*.
23. A 2.5” (65mm) glycerine filled pressure gauge with gauge isolation shall be provided.
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 PTFE lined flexible braided stainless steel.
26. Pilot isolation and test ball valves shall be constructed of *specify material B16 brass or 316 stainless steel* with stainless steel handle operator.
    1. Control Valve Components – Available Options

A. *specify.*