* 1. MAIN VALVE BODY VALVE with CAVITATION CONTROL TRIM

1. Supply a *insert size* Singer Model *specify model as 106/S106/206/S206* -AC Control Valve with Cavitation Control Trim.
   1. The valve shall be equipped with the following available options:
      1. *specify*
      2. *specify*
      3. *specify*.
   2. Singer Valve schematic *specify*.
2. Function: The AC-Anti-Cavitation valve trim shall contain and dissipate the vapour bubbles resulting from cavitation to prevent valve damage and significantly reduce noise and vibration under high pressure drop conditions.
3. Operation: A custom engineered dual cage cavitation control trim assembly shall be supplied having machined orifices of designed size, quantity and position, optimized to the actual operating parameters of the control valve application, meeting the design pressure drop and flow rate requirements, warranted to prevent cavitation damage. Orifice plates or other non-engineered cavitation control devices shall not be required or used to prevent or minimize valve cavitation.
   1. Quality Assurance
4. The control valve shall be tested prior to shipment. The standard test shall include a functional stroke, pressure and leak test of valve body, seat, fitted pilots and accessories.
5. The control valve shall be covered by a minimum three (3) year warranty against defects in materials and workmanship. The AISI 316 stainless steel seat ring shall be covered by a lifetime guarantee.
6. 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
7. The main valve shall be a Singer *specify main valve model number (106/S106/)* –PG-AC single chamber, diaphragm actuated full port model.
8. 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.
9. The main valve, bonnet and removable stem cap shall be constructed of ASTM A536 (Grade 65/45/12) ductile iron.
10. Main valves of 2.5” (65mm) and larger shall have a removable stem cap for access to the main valve stem for alignment check, spring installation and ease of service and assembly.
11. 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.
12. The AC-Anti Cavitation trim cage set, comprising of a stationary inlet cage and sliding outlet cage shall be constructed of AISI 316 or ASTM A351 CF8M stainless steel.
13. The main valve stem shall be constructed of AISI 316 stainless steel. The valve stem shall have wrench flats for ease of maintenance.
14. 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 or ASTM A351 CF8M stainless steel seat ring as part of the inlet cavitation trim cage assembly.
15. The stationary AISI 316 or ASTM A351 CF8M stainless steel inlet cavitation trim cage of main valves 2.5” (65mm) and larger shall be held in place using Spiralock® self-locking screws and seat ring retainers.
16. 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.
17. The main valve elastomers: diaphragm, resilient disc and seals, shall be of EPDM or Buna-N.
18. 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.
19. 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*.
20. Due to the potential for noise, vibration and erosion damage from cavitation, the valve manufacturer shall provide, upon request, a computerized sizing and cavitation analysis, using independent third party software. Cavitation analysis shall provide the status of cavitation based on customer supplied parameters as to valve size, flow rate requirements and pressure conditions. The cavitation analysis shall also provide information as to Cv factor, percent of valve lift, cavitation index and noise level.
21. The valve manufacturer shall supply a cavitation control trim which shall be engineered to be optimized to the actual operating parameters of the control valve application and warranted to perform correctly and prevent main valve cavitation damage under the stated conditions. Orifice plates or other non-engineered cavitation control devices shall not be used to prevent or minimize valve cavitation.
    1. Control Valve Components – Available Options
22. specify.