



A-T Controls, Inc.

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Engineer: CMB No.: DI00005
Date Created: 12/17/2014
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Chlorine Service

Chlorine is highly reactive and toxic in all concentrations. Due to these facts, knowing more about the system that the chlorine will be present in is vital. Chlorine service can be divided into two categories: wet systems (greater than 150 ppm of water) and dry systems (less than 150 ppm of water). Knowing whether the Chlorine system is wet or dry determines what materials of construction will be selected to best perform in the system.

Vented Ball

Chlorine has a high coefficient of thermal expansion. If the Chlorine is trapped in a closed space, large pressures can develop that can be destructive. The vapor pressure of Chlorine transitioning into gas is shown below. A-T Controls provides a means of relieving this pressure by venting the ball in the upstream direction. This limits the valve to one direction flow and an arrow on the valve shows which direction the valve should be installed. **A vented, upstream ball is required for floating ball valves in Chlorine service.**

Cleaning and Lubrication

The reactivity of Chlorine makes removal of materials that can react with Chlorine such as hydrocarbon residue, alcohols, and other substances imperative. Compatible substances such as an inert polychlorotrifluoroethylene (PCTFE) grease is required for the construction of the valves. **A-T Controls thoroughly cleans all valve parts and lubricates the O-ring with a compatible lubricant. The valves are vacuum packed with desiccant and marked as cleaned for Chlorine Service.**

Standard Material

Please consult A-T Controls for material selection for your application. These parameters are guidelines, and customers are responsible for materials of construction and lubricants being compatible with their Chlorine application:

Auxiliary Stem Seal: Viton®, Grafoil®

Body:

Dry Service: ASTM A216 Grade WCB, Hastelloy® C-276

Wet Service: Hastelloy® C-276

Seats: TFM-1600®, RTFE, PTFE, 50/50 STFE

Trim:

Dry Service: Monel

Wet Service: Hastelloy® C-276

(Note: Carbon Steel bolting must be used).

Valve Packages (Others Available)

Series D9Q (ASTM A216 Grade WCB Body/End Cap, Monel Ball/Stem for Dry Service) or Series 90T (ASTM A494 Grade CW-12MW Body/End Cap, Hastelloy Hastelloy® C-276 Ball/Stem for Wet Service) - Sizes 1/2"-6", Class 150 and Class 300 ANSI (D9 Series only), Full Port Design, ISO 5211 Actuator Mounting Pad, Anti-Static Device, Traceable Valve.

Literature Download D9Q (Class 150 and Class 300):
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Literature Download 90T (Class 150 only)
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Series 88Q (ASTM A216 Grade WCB Body/End Cap, Monel Ball/Stem for Dry Service) or Series 88T (ASTM A494 Grade CW-12MW Body/End Cap, Hastelloy Hastelloy® C-276 Ball/Stem for Wet Service)- Sizes 1/4"-4", Direct Mounting Pad, Threaded, Socket Weld or Butt Weld.

Literature Download for 88Q/88T:
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Series AS/ASC- Sizes 2" – 24" (2" – 12" Series ASC in stock), 150# Flange or Wafer Style PFA lined butterfly valve, ISO 5211 Actuator Mounting Pad, -20°F – 355°F temperature rating, 150 psig pressure rating.

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Vapor Pressure of Liquid Chlorine

