

AMMONIA SERVICE

GEN2 SERIES BALL VALVES

Ladish Valves for Ammonia Service

Ladish Gen2 valves are engineered for performance and reliability in the most hazardous industrial processes such as severe ammonia applications. These valves are available in a “floating” type with two basic body configurations - **split body in full and standard port** and a **unibody in standard port only**.

Part Numbers Denoting Gen2 Models

- P8: Full Port, Split Body
(.5” - 16” Class 150 & 300, .5” - 6” Class 600)
- P7: Std. Port, Split Body
(2” - 8” Class 150, 300 & 600)
- P9: Std. Port, Unibody
(.5” - 12”, Class 150 & 300)

Ammonia Uses & Operating Conditions

Ammonia is a colorless gas that consists of nitrogen and hydrogen (NH₃). At atmospheric conditions, it is lighter than air with a pungent odor. It is a highly caustic irritant that is both toxic and flammable. Because of its low boiling point, as a liquid it must be stored under pressure or at a low temperature.

Industrial ammonia is sold either as **ammonia liquor** or as **pressurized or refrigerated anhydrous liquid ammonia** transported in tank cars or cylinders. Household ammonia or ammonium hydroxide is a solution of NH₃ in water. Most ammonia is consumed in the manufacturing of fertilizer. It is also a building block for the synthesis of many pharmaceutical products and is used in many commercial cleaning products.

Typical Operating Conditions:

- Low to high temperature: -50 – 1200° F (-45 – 660° C)
- High pressure: 100 – 3200 psig
- Complex flow scheme / massive recirculation
- High-pressure steam

Select Ladish Materials for Ammonia

Due to the toxic nature of ammonia, all valve components must be constructed with appropriate materials. **Carbon steel** is suitable for anhydrous ammonia applications, however if moisture is present, **stainless steel** should be the choice material.

Bill of Materials	Wet Ammonia (Select Materials)	Dry Ammonia (Select Materials)
Body, ends, ball, stem	Stainless steel 316/316L CF8M/CF3M	Carbon Steel WCB LCB LF2
Seats	Carbon Filled PTFE TFM PEEK Metal Glass Filled TFM Virgin PTFE Carbon Graphite	
Seals	PTFE	

Cleaning & Testing

All components used for ammonia service, in gaseous or liquid state, are specifically cleaned to remove any traces of oil, grease or hydrocarbon materials prior to valve assembly.

Valves for ammonia service are assembled in an oil-free restricted area by personnel who are specially equipped and trained to perform this task. The assembling area, work surfaces, equipment and tools are specially maintained to ensure cleanliness requirements are met.





Split Body Design w/ Extended Bonnet



Low Profile Bonnet w/ Acid Detecting Paint



Low Profile Bonnet w/ Stem Extension & Acid Detecting Paint



Unibody Design w/ Extended Bonnet, Lantern Ring & Gear Op

Design, Features & Benefits

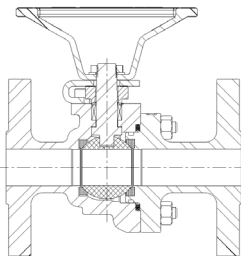
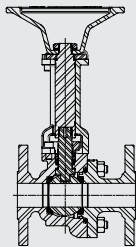
- Size Range: 1/2 - 16"
- Body Material: ASTM A352 LCB/LCC
- Trim: C276 Ball & Stem
- Pressure Rating: Per ASME B16.34
- Temperature Rating: -75 to 450°F
- Connection Type: 150#, 300#, 600# Raised Face Flange
- Flow Direction: Bi-Directional, Uni-Directional (Vented Ball)
- B16.5, B16.10, B16.34, API 598, API 608, API 607, Chlorine Institute Pamphlet 6
- Process Sealing: Bubble tight per API 598, Self Relieving Seats, Gas Tested
- Extended Corrosion Protection: Phosphate/Zinc Treatment standard, Epoxy paint available upon request

STANDARD: Self Relieving Seats

OPTIONAL: Vented Ball

Bonnet Types

All valves feature Low FE, live loaded dual PTFE / Graphite packing.

LOW PROFILE BONNET	
LOW PROFILE BONNET W/ BOLT ON STEM EXTENSION (Available should this be required for valves with insulation)	
EXTENDED BONNET (Welded) (Available with internal lantern ring and "leak-off / bleed off" ports)	