

# Gen2 SERIES

**CRITICAL SERVICE  
HIGH PERFORMANCE BALL VALVES**

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Ladish is a U.S. (Houston) based manufacturer of Ball, Gate, Globe and Check valves for Critical and Severe Service. Our specialty is low emission, carbon steel, stainless steel and high alloy valves for toxic/corrosive service. Our Low-E Ball valves are supplied with dual low emissions packing sets and seals that meet requirements of ISO-15848-1, API 641 and TA Luft (per VD12440), as well as being compliant with API 608 (Ball Valve Standard) and API 607 (Fire Safe). The valves are designed to ANSI/ASME B16.34 standards and meet ASME B16.10 Face-to-Face requirements, as well as all having integral ISO mounting pads for actuators or gearboxes when needed. ALL Ladish Ball Valves are manufactured and tested in our shops in Houston Texas under our ISO 9001:2008 Certification.

- Chlorine
- Anhydrous HCL
- Nitric Acid
- Phosgene
- Isocyanates
- ASME B31.3 Chapter VIII  
Category M Fluid Service



# GEN2 VALVE DESIGN FEATURES

ENGINEERED FOR PERFORMANCE & RELIABILITY IN THE MOST HAZARDOUS INDUSTRIAL PROCESSES

- Fully API 608 Compliant
- Fully Welded Extended Bonnets when required (NOT Bolted)
- Live Loaded Adjustable Packing
- Self-relieving seats
- All Wetted parts suitable for Chlorine Service when required
- Dual Gland Packing. Either with Primary PTFE and secondary Graphoil for fire safety, or dual PTFE. (Graphoil required for fire safe)
- Tested to API 598
- Fully Cleaned & Tagged for Chlorine Service to meet the requirements of Chlorine Institute Pamphlet 6 when required
- Sealed and Packaged to prevent moisture intrusion prior to shipping
- Valve Seating: Standard is our molecularly enhanced PTFE (TFM), with reinforced TFM, Carbon Graphite and Metal Seating available

**Ladish produces all valves in conformance with API Q1 Quality System. The Houston manufacturing facility maintains an ISO 9001 certified quality system and an internal database for traceability on all valves.**



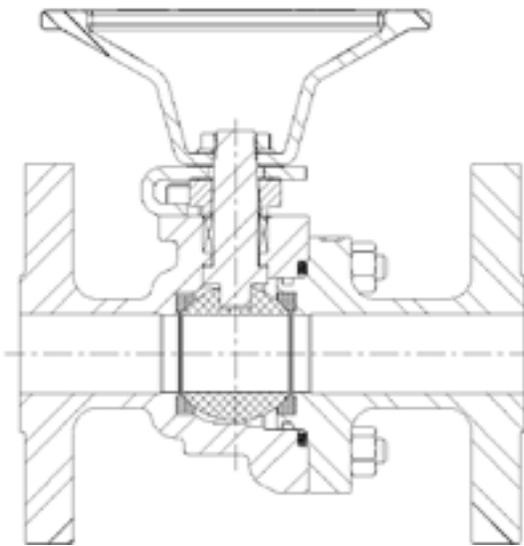
*Oxidizer / Acid Service Valves*



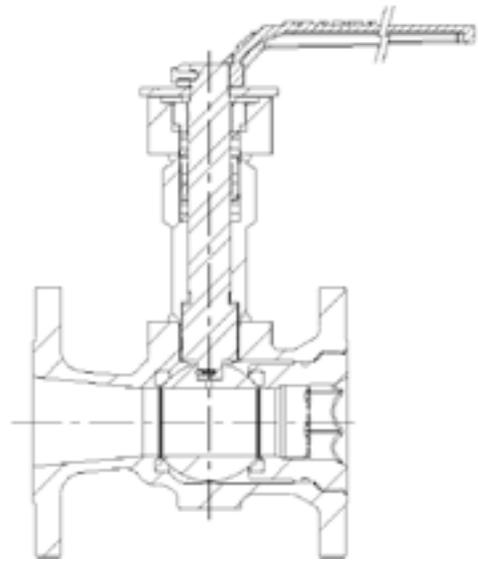
# bonnet types

Ladish offers both low-profile bonnets with Dual (PTFE / Graphite) Low Emission packing sets as well as Extended Bonnet. In the extended bonnet style, Ladish supplies these valves with internal Lantern Rings and “leak-off / bleed” ports on the bonnet as required.

## LOW PROFILE BONNET

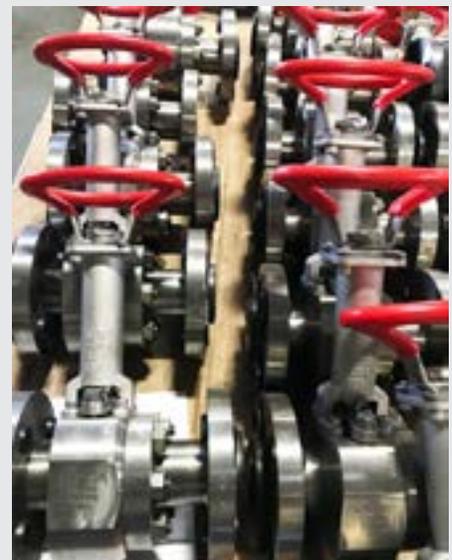


## EXTENDED BONNET



## OPTIONAL BOLT-ON STEM EXTENSION

An additional option on the Low Profile bonnets is a bolt-on stem extension should this be required for valves with insulation. All valves feature Live Loaded Dual (PTFE/ Graphite) Packing.



**SELF-RELIEVING SEATS STANDARD  
VENTED BALL OPTIONAL**

# chlorine service

Ladish Chlorine and Oxidizing Service Ball Valves are of a “Floating” type with two basic body configurations. The first is a Split-Body type in both Full and Reduced Port configurations (Class 150, 300 and 600), with the second being a one-piece “Unibody” style (Class 150 and 300 Standard Port only).

The part numbers denoting these models are:

- P8: Full Port, Split Body (.5” – 16” Class 150 and 300, .5” – 6” Class 600)
- P7: Standard Port, Split Body (2” – 8” Class 150, 300 and 600)
- P9: Standard Port, Unibody Style (.75” – 12”, Class 150 and 300)

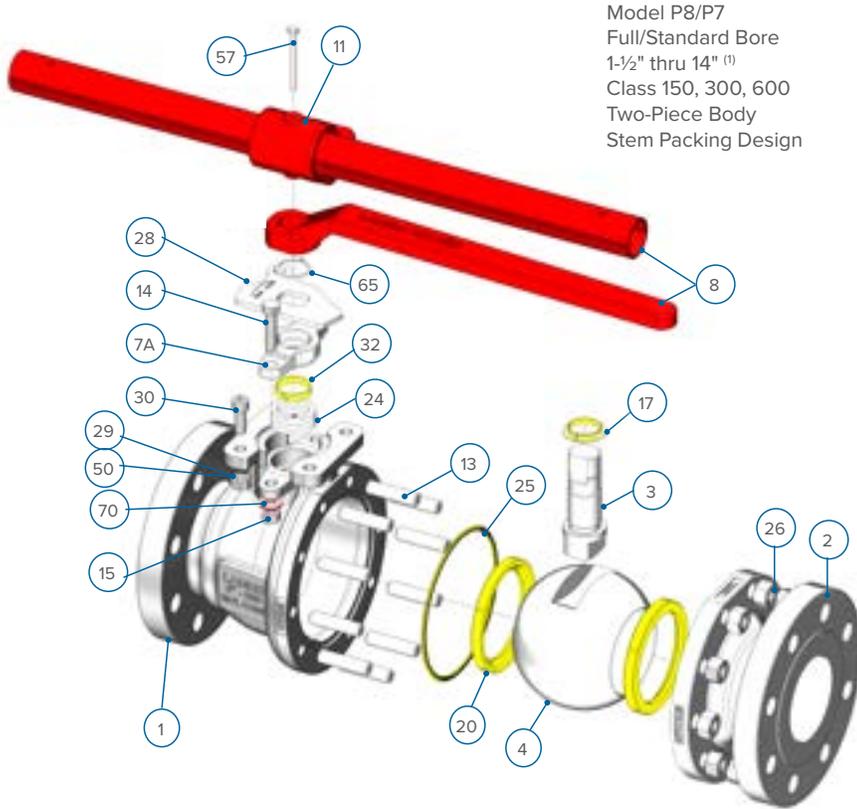
## PRODUCT RANGE: G2 SERIES HIGH PERFORMANCE BALL VALVES

|        | P8                                  |     |     | P7                                  |     |     | P9                                 |     |
|--------|-------------------------------------|-----|-----|-------------------------------------|-----|-----|------------------------------------|-----|
|        | DUAL SEAL<br>2-PC BODY<br>FULL PORT |     |     | DUAL SEAL<br>2-PC BODY<br>STD. PORT |     |     | DUAL SEAL<br>UNI-BODY<br>STD. PORT |     |
|        | 150                                 | 300 | 600 | 150                                 | 300 | 600 | 150                                | 300 |
| 1/2”   | ✓                                   | ✓   | ✓   | -                                   | -   | -   | -                                  | -   |
| 3/4”   | ✓                                   | ✓   | ✓   | -                                   | -   | -   | ✓                                  | ✓   |
| 1”     | ✓                                   | ✓   | ✓   | -                                   | -   | -   | ✓                                  | ✓   |
| 1 1/2” | ✓                                   | ✓   | ✓   | -                                   | -   | -   | ✓                                  | ✓   |
| 2”     | ✓                                   | ✓   | ✓   | ✓                                   | ✓   | ✓   | ✓                                  | ✓   |
| 3”     | ✓                                   | ✓   | ✓   | ✓                                   | ✓   | ✓   | ✓                                  | ✓   |
| 4”     | ✓                                   | ✓   | ✓   | ✓                                   | ✓   | ✓   | ✓                                  | ✓   |
| 6”     | ✓                                   | ✓   | ✓   | ✓                                   | ✓   | ✓   | ✓                                  | ✓   |
| 8”     | ✓                                   | ✓   | -   | ✓                                   | ✓   | ✓   | ✓                                  | ✓   |
| 10”    | ✓                                   | ✓   | -   | -                                   | -   | -   | ✓                                  | ✓   |
| 12”    | ✓                                   | ✓   | -   | -                                   | -   | -   | ✓                                  | ✓   |
| 14”    | ✓                                   | ✓   | -   | -                                   | -   | -   | -                                  | -   |
| 16”    | ✓                                   | ✓   | -   | -                                   | -   | -   | -                                  | -   |



# PARTS & MATERIALS P8/P7 DESIGN

## FULL/STANDARD PORT, SPLIT BODY



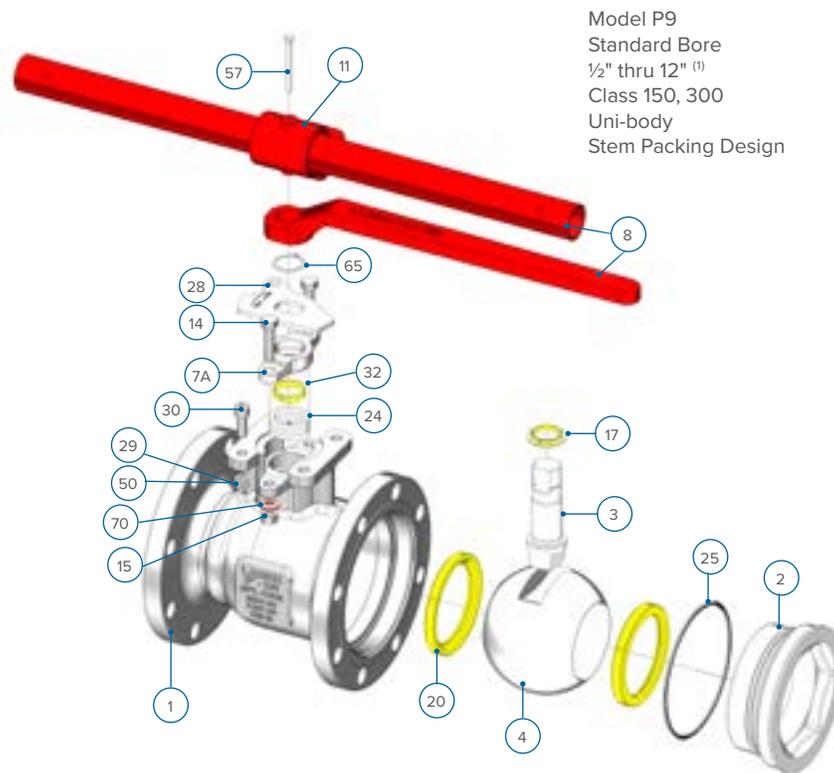
| Item No. | Description            | Material         |
|----------|------------------------|------------------|
| 1        | Body                   | LCC   LCB        |
| 2        | Cap                    | LCC   LCB        |
| 3        | Stem                   | C-276            |
| 4        | Ball                   | CW12-MW          |
| 7A       | Gland Flange           | WCB   LCB        |
| 8        | Handle                 | ASTM A47         |
| 8A       | Stem Nut Locknut       | STAINLESS STEEL  |
| 8B       | Stem Nut Lockwasher    | STAINLESS STEEL  |
| 11       | Handle Adapter         | ASTM A197        |
| 13       | Body Stud              | HASTELLOY C276   |
| 14       | Gland Flange Bolt      | HASTELLOY C276   |
| 15       | Gland Flange Nut       | HASTELLOY C276   |
| 17       | Thrust Bearing         | PTFE             |
| 20       | Seat                   | TFM              |
| 24       | Packing                | GRAPHOIL/TFE     |
| 25       | Gasket                 | SPW GRAPHOIL/TFE |
| 26       | Body Nut               | HASTELLOY C276   |
| 28       | Stop Plate             | STAINLESS STEEL  |
| 28A      | Stop Bracket           | STAINLESS STEEL  |
| 29       | Stop Nut               | ASTM A194 GR8    |
| 30       | Stop Bolt              | ASTM A194 GR8    |
| 30A      | Bracket Bolt           | STAINLESS STEEL  |
| 32       | Stem Bearing           | GRAPHOIL/TFE     |
| 40       | Name Plate (not shown) | STAINLESS STEEL  |
| 50       | Stop Lock Washer       | STAINLESS STEEL  |
| 57       | Adapter Bolt           | STEEL + ZINC     |
| 65       | Snap Ring (stop plate) | STAINLESS STEEL  |
| 70       | Spring Washer          | INCONEL X-750    |

## SPECIFICATIONS

| G2 SERIES VALUE               | STANDARD FEATURES  |
|-------------------------------|--|
| APPLICATION                   | RELIABLE ISOLATION & CONTROL OF EXTREMELY CORROSIVE LIQUIDS & GAS                |
| STANDARDS                     | B16.5, B16.10, B16.34, API 598, API 608, API 607, CHLORINE INSTITUTE PAMPHLET #6 |
| SIZE                          | 1/2" - 16"   |
| BODY MATERIAL                 | ASTM A352 LCB/LCC  |
| TRIM                          | C276 BALL & STEM   |
| TEMPERATURE RATING            | Elastomers (-75 to 450°F) / Metal & Graphite (to 800°F)                          |
| PRESSURE RATING               | PER ASME B16.34  |
| PROCESS SEALING               | BUBBLE TIGHT PER API 598, SELF RELIEVING SEATS, GAS TESTED                       |
| STEM SEALING                  | DUAL PACKING WITH LANTERN RING OPTION  |
| CONNECTION TYPE               | ASME 150#, 300#, 600# RAISED FACE FLANGE   |
| EXTENDED CORROSION PROTECTION | PHOSPHATE/ZINC TREATMENT STANDARD; EPOXY PAINT AVAILABLE UPON REQUEST            |
| FLOW DIRECTION                | BI-DIRECTIONAL, UNI-DIRECTIONAL (VENTED BALL)                                    |

# PARTS & MATERIALS P9 DESIGN

## SHORT PATTERN, UNIBODY



Model P9  
Standard Bore  
1/2" thru 12" <sup>(1)</sup>  
Class 150, 300  
Uni-body  
Stem Packing Design

| Item No. | Description            | Material         |     |
|----------|------------------------|------------------|-----|
| 1        | Body                   | LCC              | LCB |
| 2        | Cap                    | LCC              | LCB |
| 3        | Stem                   | HASTELLOY C276   |     |
| 4        | Ball                   | CW-12MW          |     |
| 7A       | Gland Flange           | LCC/ LCB         |     |
| 8        | Handle                 | ASTM A47         |     |
| 11       | Handle Adapter         | ASTM A197        |     |
| 14       | Gland Flange Bolt      | HASTELLOY C276   |     |
| 15       | Gland Flange Nut       | HASTELLOY C276   |     |
| 17       | Thrust Bearing         | TFM              |     |
| 20       | Seat                   | TFM              |     |
| 24       | Packing                | GRAPHOIL/TFE     |     |
| 25       | Gasket                 | SPW GRAPHOIL/TFE |     |
| 28       | Stop Plate             | STAINLESS STEEL  |     |
| 29       | Stop Nut               | ASTM A194 GR8    |     |
| 30       | Stop Bolt              | ASTM A193 B8 CL1 |     |
| 32       | Stem Bearing           | GRAPHOIL/TFE     |     |
| 40       | Name Plate (not shown) | STAINLESS STEEL  |     |
| 50       | Stop Lock Washer       | STAINLESS STEEL  |     |
| 57       | Adapter Bolt           | STEEL + ZINC     |     |
| 65       | Snap Ring (stop plate) | STAINLESS STEEL  |     |
| 70       | Spring Washer          | INCONEL X-750    |     |

### NOTES:

1. Standard materials for chlorine service shown. Other materials readily available. See "How-to-Order" on pages 8-9 for listing of available options.
2. Handle adapter used for class 150 & 300, 6" and above.



# HOW TO ORDER

The Ladish Valves figure number is comprised of 20 alpha numeric digits defining the required product in detail. If you need assistance, give our knowledgeable sales staff a call at 281.880.8560 with the leading 4 digits and we can guide you through the rest. Our aim is to provide you with precisely what you need.

## EXAMPLE:

**P935L72H-T** 6", LCC/LCB, CF8M Ball Valve with C-276 Trim, Dual Packing, Fire Safe

| VALVE STYLE | CONSTRUCT & VALVE TYPE   | ANSI CLASS                            | END CONNECT                         | OPER.   | BODY/CAP MATERIAL  | TRIM   | PACKING & GASKET   |
|-------------|--|---------------------------------------|-------------------------------------|---|--|--|--|
| <b>P</b>    | <b>9</b>   | <b>3</b>                              | <b>5</b>                            | <b>L</b>  | <b>72</b>  | <b>H</b>   | <b>T</b>   |
| P - Packing | 8 - Cast Two Piece Full Bore<br><br>7 - Cast Two Piece Standard Bore<br><br>9 - Cast Unibody Standard Bore<br><br>1 - Bar Stock Two-Piece Standard Bore<br><br>2 - Bar Stock Two-Piece Full Bore | 1 - 150<br><br>3 - 300<br><br>6 - 600 | 5 - RF<br><br>F - FF<br><br>J - RTJ | A - Actuator<br><br>B - Bare Stem<br><br>G - Gear<br><br>L - Lever<br><br>V - Oval Handle | 72 - Low Temp Carbon Steel<br><br>20 - Hast. C<br><br>30 - Monel<br><br>60 - Titanium<br><br> | 0 - Same as Body<br><br>3 - 316SS<br><br>A - Alloy 20<br><br>C - Inc 600<br><br>M - Monel<br><br>H - Hast C<br><br><b>OTHER MATERIALS AVAILABLE UPON REQUEST</b> | D - Dual PTFE Graphoil<br><br>G - Graphoil<br><br>T - PTFE<br><br>V - PTFE Vacuum Service<br><br>W - Viton® B<br><br><b>OTHER MATERIALS AVAILABLE UPON REQUEST</b> |

## CAST MATERIALS OF CONSTRUCTION

|                 |                 |                       |                       |
|-----------------|-----------------|-----------------------|-----------------------|
| 71 A216 WCB/WCC | 16 A351 CK3MCUN | 26 A494 N7M           | 55 A995 CD3MN-GR4A    |
| 72 A352 LCC/LCB | 17 A351 CN3MN   | 30 A494 M35-1         | 56 A995 CE3MN-GR5A    |
| 05 A351 CF8M    | 20 A494 CW12MW  | 33 A494 CY40          | 57 A995 CD3MWCUN-GR6A |
| 10 A351 CG8M    | 21 A494 CW6M    | 34 A494 CW6MC         | 60 B367 GRC2          |
| 11 A351 CG3M    | 22 A494 CW2M    | 35 A351 CT15C         | 61 B367 GRC3          |
| 12 A351 CF8C    | 23 A494 CX2MW   | 36 A494 CU5MCuC       | 62 B367 GRC7          |
| 15 A351 CN7M    | 24 A494 CX2M    | 37 A494 CZ100         | 63 B752 GR702C        |
|                 | 25 A494 N12MV   | 52 A995 CD4M-CUN-GR1B |                       |



| SEAT MATERIAL  | BOLTING & NUTS  | MISC. OPTION   | SIZE  | DESIGN FIRE-SAFE NACE  | OPTION CODES   |
|--|---|--|---|--|--|
| <b>F</b>   | <b>12</b>   | <b>G</b>   | <b>10</b>   | <b>Q</b>   | <b>BNPO</b>  |
| C - Carbon Filled TFMC<br>F - TFM<br>G - Carbon Graphite<br>K - Kel-F(PCTFE)<br>N - Nylon Devlon®<br>P - PEEK®<br>R - Glass Filled TFM<br>T - Virgin PTFE<br>V - Vespel®<br>X - HF Chrome Carbide<br>Y - HF Chrome Oxide<br>Z - HF Nickel Chrome | 01 - B8CL1/8<br>02 - B8CL2/8<br>03 - B8MCL1/8M<br>04 - B8MCL2/8M<br>05 - B7/2H<br>06 - B7M/2HM<br>07 - ALLOY 20<br>08 - MONEL 400<br>09 - GR660<br>10 - L7/7<br>11 - INC 800<br>12 - HAST C<br>13 - B6/6<br>14 - B16/16<br>15 - K500<br>16 - A320 B8CL2/8<br>17 - B8CL2/8A<br>18 - B16/7<br>20 - L7M/7M | A - No Added Option<br>B - Cleaned<br>C - Cryogenic Bonnet, Vented Ball, Unidirectional<br>D - Cryogenic Bonnet, Bi-Directional<br>E - Extended Stem<br>G - Cleaned/Packaged per Chlorine Institute Pamphlet 6. No "300 Series" Fasteners for body/gland. Dye Penetrant on Machined Surfaces<br>M - Acid Shield<br>N - Cavity Filler<br>V - Unidirectional (Vented Ball - Standard Bonnet) | 05 - 1/2"<br>07 - 3/4"<br>10 - 1"<br>15 - 1-1/2"<br>20 - 2"<br>30 - 3"<br>40 - 4"<br>60 - 6"<br>80 - 8"<br>81 - 10"<br>82 - 12" | <b>M</b> - API 608 Fire Safe NACE<br><b>N</b> - API 608 Fire Safe Non-NACE<br><b>P</b> - API 608 Non-Fire Safe NACE<br><b>Q</b> - API 608 Non-Fire Safe Non-NACE | <b>BWPO</b> - FE BONNET, LANTERN RING WITH MONITORING PORT<br><b>BNPO</b> : FE BONNET, LANTERN RING WITHOUT MONITORING PORT<br><b>BWPV</b> - FE BONNET, LANTERN RING MONITORING PORT, VENTED BALL<br><b>V000</b> : UNI-DIRECTIONAL<br><b>N000</b> : CAVITY FILLED<br><b>S000</b> : SQUARE STEM |





# LADISH VALVES



TO MARK PROGRESS

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