

# HTV SERIES 1-PIECE BALL VALVE

Single Body metal seated ball valves for Power applications.



The Jarecki HTV Series ball valve is a quality choice for your high temperature and pressure valve needs. HTV Series valves are used for applications in the Power Industry.

#### Standard Applications:

Steam (Saturated/Superheated)  
 Attemperator Isolation Valves  
 Boiler Feedwater Pump Recirculation  
 Bottom Blowdown  
 Bypass Injector Isolation  
 Condensate Drain Lines Above/Below Turbine Throttle Valve  
 Feedwater Heater Isolation  
 Feedwater Heater Drain  
 Isolation Turbine Drain  
 Main Steam Drum Vents  
 Reheat Isolation  
 Steam Trap Isolation

## Design

#### Valve Size

- 1/2" to 4"

#### Pressure Rating

- 600# Available in Sizes 2" to 4"
- 900# Available in Sizes 2" to 4"
- 1500# Available in Sizes ½" to 4"
- 3200# Available in Sizes ½" to 4"
- 4500# Available in Sizes ½" to 4"

#### End Connections

- Socket Weld
- Butt Weld

#### Valve Construction

- 1 Piece Valve Design
- Forged Valve Bodies
- Floating Ball
- No Body Gasket
- Actuator Mounting Pad
- Live Loaded Stem Packing
- Designed to B16.34
- Blow Out Proof Stem
- Heavy Duty Oversized Stem For High Torque

#### Seat Designs

- Uni-Directional – Standard

#### Service Conditions

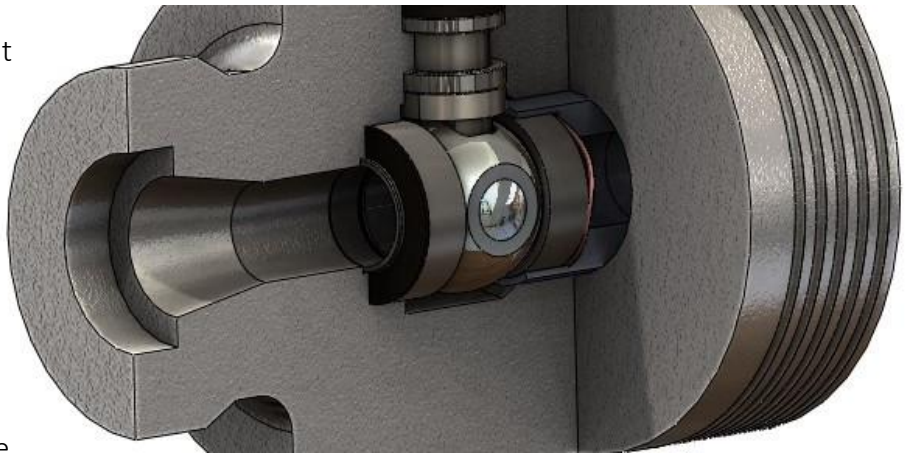
- Temperatures Up to 1200 deg F
- Pressures as High as 6500 psi
- For Clean and Abrasive Services

### Tight Shut-Off

- The HTV Series has zero leakage. Each ball is spherically ground before it is mated to the seats, providing a high precision seal. A wide seating surface rotating on a perfect sphere provides more seal area and lower contact stress. The lower contact stress reduces torque, improves valve sealing life, and has better shut-off.
- Jarecki Phantom Port means 75% less wear area during every stroke. That means drastically longer sealing life and performance. This allows for tight shut-off even on high cycle applications.

### Lower Torque

- Wide seating area reduces contact stress. This reduces the torque and improves valve life.
- A wave spring is used to load the upstream seat. This spring type is a superior choice in maintaining constant spring force during temperature fluctuations.



### Impressive Stem Design

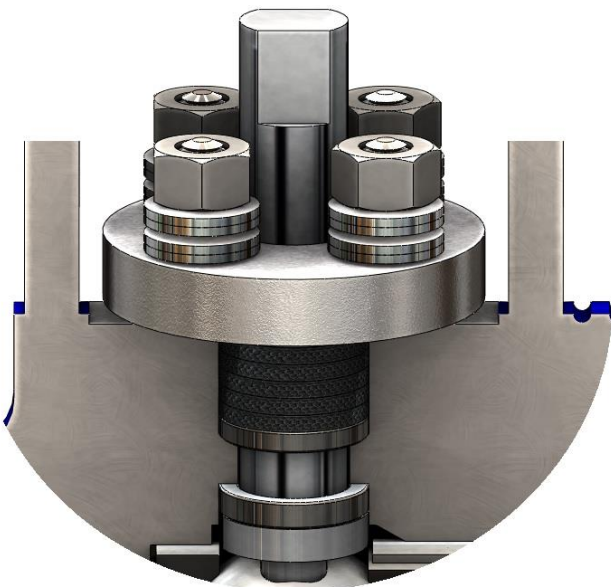
- Our oversized stems will withstand high torque in high pressure applications without twisting.
- Blow-Out proof design ensures workperson safety

### Zero Body Leakage

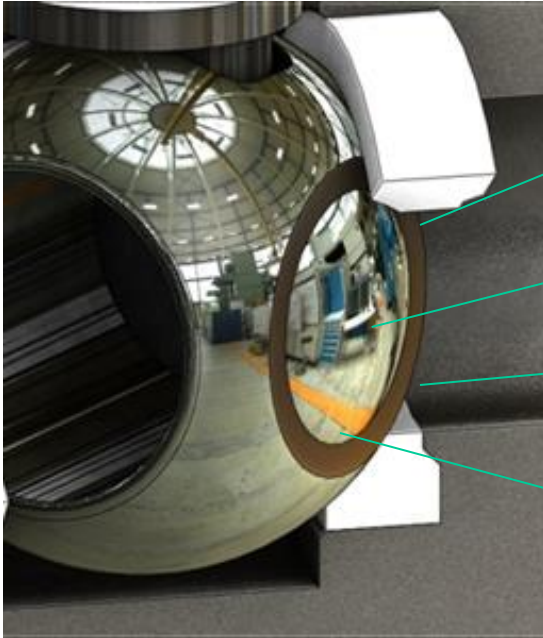
- Valve is a one piece body design. There are **no** body gaskets which can produce a possible leak path.

### Packing Design

- Live loaded packing system specially designed for high pressure applications
- Bearing guided coupler prevents any lateral movement when stroking.
- Plenty of adjustment.



## Phantom Port



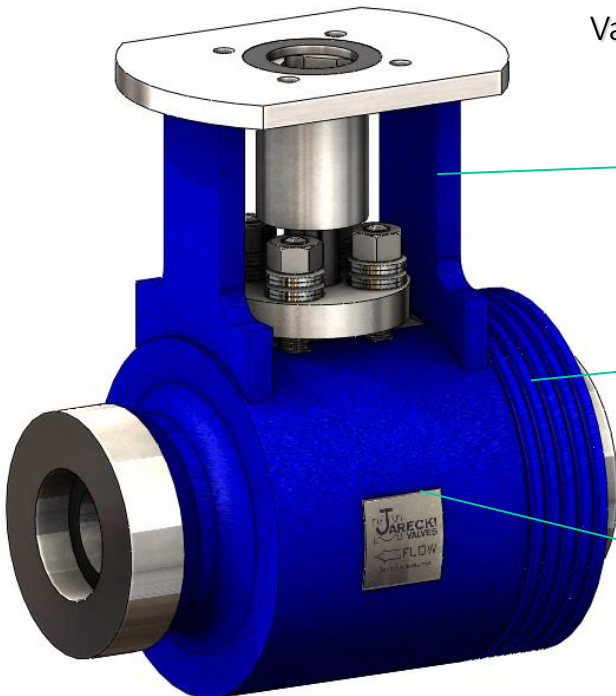
Recess machined into the ball

Dome configuration maintains ball strength

Allows flow around both sides of the ball while stroking. This reduces both wire draw and cavitation damage.

75% less surface area in contact with the seats

## Valve Body



Elevated mounting pad to clear insulation and protect actuation from the heat.

Baffles help cool the valve body during the post weld heat treatment. This protects the trim and stem packing from exposure.

Valve body is oversized. The wall thickness is 20% more than that required in ANSI B16.34.

## Quality

● In Metal Seat Valves, .003 of an inch can make all the difference in torque, shut-off and overall valve performance. At Jarecki Valves, the internal assembly of the ball and seats is verified as a unit to ensure proper valve performance.

● The employees at Jarecki Valves are not just machinists and assemblers, but are experienced valve producers. Machinists are trained to understand the purpose and importance of the parts which they produce inside the function of the valve. Experience, Cross training and retention are key in having exceptional employees making an exceptional product.

● At Jarecki Valves, 95% of our business is metal seated ball valves. The employees understand and excel at producing the highest quality metal seated valve available.

● Production for every major component is done at our facility by experienced technicians. We do not risk the quality of our product to the lowest bidder or importer.

● The best materials are selected from ISO 9000 Certified vendors. Materials such as Inconel 718 are used on trim components because of its high temperature properties.

● Every component in the assembly is dimensionally inspected prior to assembly to ensure the valve will assemble and function to its highest capabilities.

● Tight shut-off is accomplished by grinding every ball to very tight tolerances and an excellent finish. Generating a true radius each individual seat to its mating ball, and then carefully lapping them together through our proven polishing process.

● Every valve that leaves the plant has both a hydrostatic, torque, cycle test, and seat leakage test performed on it. The customer is assured a good valve when it is put in service.



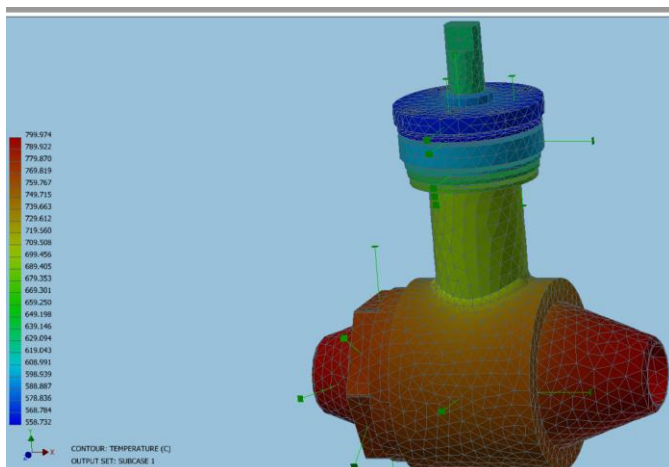
## Coatings

● Balls and Seats are HVOF coated for excellent bond strength. Jarecki works with the best thermal spray companies in the country to determine the best blends and materials to be used for our trim coatings. Balls and seats have different materials so that there is no chance of catching or galling. Materials utilized are proven in steam service.

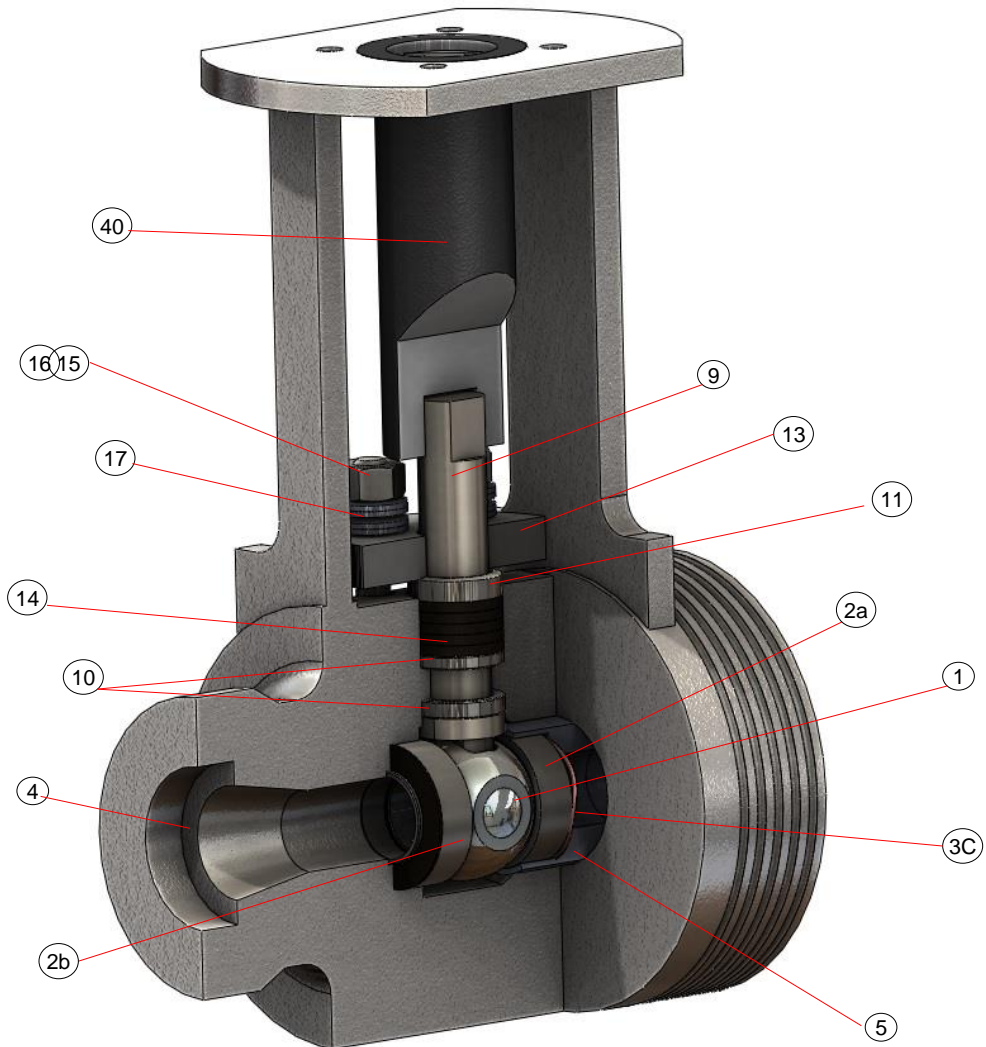
## Technology

● Jarecki's Engineering Design and Applications Group has extensive experience in critical applications across a broad range of industries. Using computational fluid dynamics and 3D modeling, the team at Jarecki is able to be confident in their design. Thermal expansion of components and bracket heights to protect actuation are just some of the variables considered.

● Jarecki manufactures its components in the USA. To do that Jarecki uses the latest technology in turning and milling. Automation is the key to success for quick deliveries and quality.



## BILL OF MATERIAL



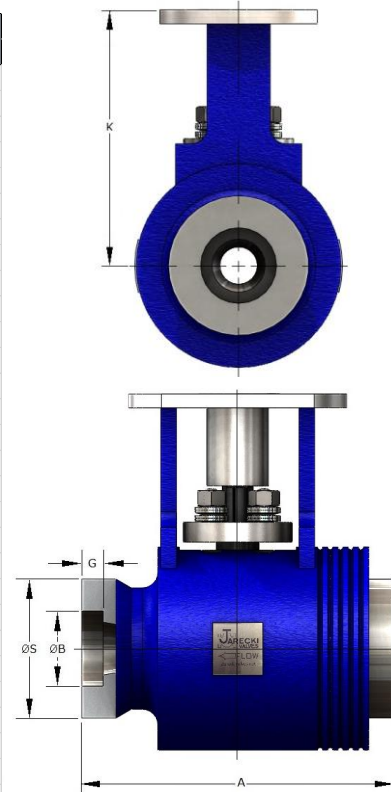
| ITEM NO. | NAME              | LOW TEMP TRIM 700 DEG MAX   | HIGH TEMP TRIM              | HIGH TEMP / PRESSURE TRIM     |
|----------|-------------------|-----------------------------|-----------------------------|-------------------------------|
| 1        | BALL              | 17-4SST W/ HCP              | 410 SST W/ CHROME CARBIDE   | 718 INCONEL W/ CHROME CARBIDE |
| 2A       | GUIDE SEAT        | COLMONOY                    | 410SSST W/ CHROME CARBIDE   | 718 INCONEL W/ CHROME CARBIDE |
| 2B       | SEAL SEAT         | COLMONOY                    | 410 SST W/ CHROME CARBIDE   | 718 INCONEL W/ CHROME CARBIDE |
| 3A       | SEAT SEAL         | GRAPHITE                    | GRAPHITE                    | GRAPHITE                      |
| 3C       | SEAT SPRING       | 17-7 SST                    | A-286                       | A-286                         |
| 4        | BODY              | A105                        | F22 / F11/ F91              | F22 / F11/ F91                |
| 5        | SEAT GUIDE        | 410 SST                     | 410 SST                     | 410 SST                       |
| 9        | STEM              | 17-4SST                     | A286                        | INCONEL 718                   |
| 10       | THRUST WASHER     | NITRONIC 60                 | STELLITE                    | STELLITE                      |
| 11       | COMPRESSION RING  | 316 SST                     | 316 SST                     | 316 SST                       |
| 13       | COMPRESSION PLATE | A105                        | F-22                        | F-22                          |
| 14       | STEM PACKING      | INCONEL REINFORCED GRAPHITE | INCONEL REINFORCED GRAPHITE | INCONEL REINFORCED GRAPHITE   |
| 15       | GLAND STUD        | ASTM A193 Gr. B8M           | ASTM A193 Gr. B8M           | ASTM A193 Gr. B8M             |
| 16       | GLAND NUT         | ASTM A194 Gr. 8M            | ASTM A194 Gr. 8M            | ASTM A194 Gr. 8M              |
| 17       | BELLEVILLE WASHER | 17-7SST                     | INCONEL 718                 | INCONEL 718                   |
| 40       | COUPLER           | STEEL                       | STEEL                       | STEEL                         |

Other materials and coatings available upon request



## Standard Dimensions

| Size  | Class    | A     |       | Ball Bore Diameter | G    | K    | ØB   | ØS   | Cv     | lbs    |
|-------|----------|-------|-------|--------------------|------|------|------|------|--------|--------|
|       |          | SW    | BW    |                    |      |      |      |      |        |        |
| 1/2   | 3200     | 5.50  | -     | 0.38               | 0.38 | 4.75 | 0.87 | 2.60 | 9.00   | 15.00  |
| 1/2   | 4500     | 7.50  | -     | 0.38               | 0.38 | 4.75 | 0.87 | 2.60 | 9.00   | 15.00  |
| 3/4   | 3200     | 5.50  | -     | 0.38               | 0.50 | 4.75 | 1.08 | 2.60 | 9.00   | 15.00  |
| 3/4   | 4500     | 7.50  | -     | 0.38               | 0.50 | 4.75 | 1.08 | 2.60 | 9.00   | 15.00  |
| 1     | 1500     | 6.50  | -     | 0.63               | 0.50 | 4.90 | 1.34 | 2.25 | 18.00  | 15.00  |
| 1     | 3200     | 6.50  | -     | 0.63               | 0.50 | 4.90 | 1.34 | 2.65 | 38.00  | 24.00  |
| 1     | 4500     | 8.00  | -     | 0.63               | 0.50 | 5.50 | 1.34 | 2.75 | 38.00  | 32.00  |
| 1 1/2 | 1500     | 7.00  | 7.50  | 0.63               | 0.50 | 4.90 | 1.93 | 3.00 | 11.00  | 15.00  |
|       |          | 7.00  | 7.50  | 0.88               | 0.50 | 6.50 | 1.93 | 3.00 | 35.00  | 34.00  |
| 1 1/2 | 3200     | 7.00  | 7.50  | 0.63               | 0.50 | 5.50 | 1.93 | 3.50 | 10.00  | 24.00  |
|       |          | 7.50  | 8.00  | 0.88               | 0.50 | 6.50 | 1.93 | 3.50 | 55.00  | 45.00  |
| 1 1/2 | 4500     | 8.00  | -     | 0.63               | 0.50 | 5.50 | 1.93 | 3.75 | 10.00  | 32.00  |
|       |          | 7.50  | 8.00  | 0.88               | 0.50 | 6.50 | 1.93 | 3.75 | 55.00  | 75.00  |
| 2     | 900      | 7.00  | 7.50  | 0.88               | 0.62 | 6.50 | 2.42 | 3.75 | 20.00  | 33.00  |
|       |          | 7.50  | 8.00  | 1.20               | 0.62 | 7.00 | 2.42 | 3.75 | 70.00  | 56.00  |
| 2     | 1500     | 7.00  | 7.50  | 0.88               | 0.62 | 6.50 | 2.42 | 3.75 | 20.00  | 33.00  |
|       |          | 7.50  | 8.00  | 1.20               | 0.62 | 7.00 | 2.42 | 3.75 | 70.00  | 56.00  |
| 2     | 2500     | 7.00  | 7.50  | 0.88               | 0.62 | 6.50 | 2.42 | 3.75 | 20.00  | 43.00  |
|       |          | 7.50  | 8.00  | 1.20               | 0.62 | 7.00 | 2.42 | 3.75 | 70.00  | 55.00  |
| 2     | 3200     | 9.25  | 9.75  | 0.88               | 0.62 | 7.00 | 2.42 | 4.00 | 30.00  | 48.00  |
| 2     | 4500     | 9.50  | 10.00 | 0.88               | 0.62 | 7.50 | 2.42 | 4.55 | 30.00  | 75.00  |
| 2     | 4500     | 10.00 | 10.50 | 1.20               | 0.62 | 7.50 | 2.42 | 4.55 | 30.00  | 85.00  |
| 2 1/2 | 900      | 8.00  | 8.50  | 1.50               | 0.62 | 6.50 | 2.92 | 3.75 | 144.00 | 55.00  |
| 2 1/2 | 1500     | 8.00  | 8.50  | 1.50               | 0.62 | 6.50 | 2.92 | 4.00 | 144.00 | 58.00  |
| 2 1/2 | 2500     | 10.00 | 10.50 | 1.50               | 0.62 | 7.00 | 2.92 | 4.38 | 144.00 | 62.00  |
| 2 1/2 | 3200     | 10.00 | 10.50 | 1.20               | 0.62 | 7.50 | 2.92 | 4.50 | 88.00  | 68.00  |
| 2 1/2 | 4500     | 10.00 | 10.50 | 1.00               | 0.62 | 7.50 | 2.92 | 5.38 | 37.00  | 85.00  |
| 3     | 900-3200 | -     | 10.50 | 1.50               | -    | 7.00 | -    | -    | 84.00  | 165.00 |
| 3     | 4500     | -     | 12.00 | 1.50               | -    | 7.50 | -    | -    | 84.00  | 165.00 |
| 4     | 1690     | -     | 12.00 | 1.50               | -    | 6.50 | -    | -    | 95.00  | 75.00  |
| 4     | 2680     | -     | 12.00 | 1.50               | -    | 7.50 | -    | -    | 95.00  | 125.00 |
| 4     | 4500     | -     | 12.00 | 1.50               | -    | 8.00 | -    | -    | 95.00  | 175.00 |



### FORGED CARBON STEEL A 182 A105

#### STANDARD CLASS

| Temp | 1500 | 3200 | 4500  |
|------|------|------|-------|
| 100  | 3705 | 7899 | 11110 |
| 200  | 3395 | 7241 | 10185 |
| 300  | 3270 | 6978 | 9815  |
| 400  | 3170 | 6759 | 9505  |
| 500  | 3015 | 6430 | 9040  |
| 600  | 2840 | 6055 | 8515  |
| 650  | 2745 | 5858 | 8240  |
| 700  | 2665 | 5662 | 7960  |
| 750  | 2535 | 5413 | 7610  |
| 800  | 2055 | 4389 | 6170  |
| 850  | 1595 | 3401 | 4785  |
| 900  | *    | *    | *     |
| 950  | *    | *    | *     |
| 1000 | *    | *    | *     |
| 1050 | *    | *    | *     |
| 1100 | *    | *    | *     |
| 1150 | *    | *    | *     |
| 1200 | *    | *    | *     |

### FORGED CHROME MOLY STEEL A 182 F-22

#### STANDARD CLASS

| Temp | 1500 | 3200 | 4500  |
|------|------|------|-------|
| 100  | 3750 | 8000 | 11250 |
| 200  | 3750 | 8000 | 11250 |
| 300  | 3640 | 7769 | 10925 |
| 400  | 3530 | 7527 | 10585 |
| 500  | 3325 | 7088 | 9965  |
| 600  | 3025 | 6450 | 9070  |
| 650  | 2940 | 6277 | 8825  |
| 700  | 2840 | 6055 | 8515  |
| 750  | 2660 | 5669 | 7970  |
| 800  | 2540 | 5413 | 7610  |
| 850  | 2435 | 5195 | 7305  |
| 900  | 2245 | 4793 | 6740  |
| 950  | 1930 | 4121 | 5795  |
| 1000 | 1335 | 2853 | 4010  |
| 1050 | 875  | 1865 | 2625  |
| 1100 | 550  | 1170 | 1645  |
| 1150 | *    | *    | *     |
| 1200 | *    | *    | *     |

### FORGED CHROME MOLY STEEL A 182 F-91

#### STANDARD CLASS

| Temp | 1500 | 3200 | 4500  |
|------|------|------|-------|
| 100  | 3750 | 8000 | 11250 |
| 200  | 3750 | 8000 | 11250 |
| 300  | 3640 | 7769 | 10925 |
| 400  | 3530 | 7527 | 10585 |
| 500  | 3325 | 7088 | 9965  |
| 600  | 3025 | 6450 | 9070  |
| 650  | 2940 | 6277 | 8825  |
| 700  | 2840 | 6055 | 8515  |
| 750  | 2660 | 5669 | 7970  |
| 800  | 2540 | 5413 | 7610  |
| 850  | 2435 | 5195 | 7305  |
| 900  | 2245 | 4793 | 6740  |
| 950  | 1930 | 4121 | 5795  |
| 1000 | 1820 | 3877 | 5450  |
| 1050 | 1800 | 3840 | 5400  |
| 1100 | 1510 | 3218 | 4525  |
| 1150 | 1115 | 2377 | 3345  |
| 1200 | 720  | 1536 | 2160  |



# ORDERING INFORMATION

**SIZE**

|     |                 |     |                   |   |               |   |               |
|-----|-----------------|-----|-------------------|---|---------------|---|---------------|
| .5  | 1/2" Valve Size | 1   | 1" Valve Size     | 2 | 2" Valve Size | 4 | 4" Valve Size |
| .75 | 3/4" Valve Size | 1.5 | 1 1/2" Valve Size | 3 | 3" Valve Size |   |               |

**VALVE SERIES**

HTV One Piece High Temperature Ball Valve

**VALVE BODY MATERIAL**

|   |                                       |   |                               |
|---|---------------------------------------|---|-------------------------------|
| B | A105 Carbon Steel                     | R | F-91 Chrome Moly Forged Steel |
| C | F-22 Chrome Moly Forged Steel         | 1 | F-11 Chrome Moly Forged Steel |
| J | 316H High Temperature Stainless Steel |   |                               |

**VALVE TRIM**

|   |   |
|---|---|
| C | 410 Stainless Steel Ball and Seats with Chrome Carbide Coat, 410 sst Stem             |
| P | 17-4 SST Ball Hard Chrome Plated, 17-4 SST Chrome Carbide Coated Seats, 17-4 SST Stem |
| R | Inconel Ball and Seats with Chrome Carbide Coat, Inconel Stem                         |

**BALL SIZE**

|      |                |      |                |      |                |      |                |
|------|----------------|------|----------------|------|----------------|------|----------------|
| 0.50 | .50" Ball Bore | 0.88 | .88" Ball Bore | 1.20 | 1.2" Ball Bore | 1.50 | 1.5" Ball Bore |
| 0.63 | .63" Ball Bore | 1.00 | 1" Ball Bore   | 1.30 | 1.30 Ball Bore |      |                |
| 1.50 | 1.50 Ball Bore |      |                |      |                |      |                |

**PRESSURE CLASS**

|    |                           |   |                           |   |                          |
|----|---------------------------|---|---------------------------|---|--------------------------|
| 06 | ANSI 600# Pressure Class  | 2 | ANSI 2500# Pressure Class | D | Add After Pressure Class |
| 09 | ANSI 900# Pressure Class  | 3 | ANSI 3200# Pressure Class |   | For Butt Weld End        |
| 1  | ANSI 1500# Pressure Class | 4 | ANSI 4500# Pressure Class |   |                          |

**OPTIONS**

|    |                 |
|----|-----------------|
| 0  | No Options      |
| 29 | Extended Bonnet |

**OPTIONS**

|   |            |
|---|------------|
| 0 | No Options |
|---|------------|

**ACTUATION**

|       |   |
|-------|---|
| L     | Lever   |
| DT8   | Dynatorque DT8 Manual Gear Operator With Handwheel, 8,000 in.lbs rating                 |
| DT12  | Dynatorque DT12 Manual Gear Operator With Handwheel, 12,000 in.lbs rating               |
| DT21  | Dynatorque DT21 Manual Gear Operator With Handwheel, 21,000 in.lbs rating               |
| 125FC | V-Tork 125 Pneumatic Actuator Fail Closed, High Temperature Seals, 1,083 in.lbs rating  |
| 140FC | V-Tork 140 Pneumatic Actuator Fail Closed, High Temperature Seals, 1,747 in.lbs rating  |
| 160FC | V-Tork 160 Pneumatic Actuator Fail Closed, High Temperature Seals, 2,337 in.lbs rating  |
| 190FC | V-Tork 190 Pneumatic Actuator Fail Closed, High Temperature Seals, 3,866 in.lbs rating  |
| 210FC | V-Tork 210 Pneumatic Actuator Fail Closed, High Temperature Seals, 5,213 in.lbs rating  |
| 240FC | V-Tork 240 Pneumatic Actuator Fail Closed, High Temperature Seals 8,720 in.lbs rating   |
| 270FC | V-Tork 270 Pneumatic Actuator Fail Closed, High Temperature Seals, 11,885 in.lbs rating |

**SOLENOID**

|      |  |
|------|--|
| 0    | No Options   |
| S7AC | VERSA CGS-3232-NB2-XXL4-A120 Solenoid, Nema 7 Explosion Proof, 120 VAC |
| S7DC | VERSA CGS-3232-NB2-XXL4-24 Solenoid, Nema 7 Explosion Proof, 24VDC     |

**LIMIT SWITCH**

|    |  |
|----|--|
| 0  | No Options   |
| L1 | Moniteur Limit Switch, AMYB-E120, explosion proof limit switch dual spdt for open and closed |
| SA | Stonel Axiom Model AN35S1NC02RA. The Axiom is a Combined Limit Switch and Solenoid           |

**EXAMPLE**

1 — HTV C C 0.63 — 1 0 0 125FC 0 SA

Model No. 1-HTVCC0.63-100125FC0SA 1" HTV Series Ball Valve, F-22 Body with 410 Chrome Carbide Coated Trim, .063 Bore, V-Tork 125 Pneumatic Actuation Fail Closed, Stonel Axiom Limit Switch with Solenoid Valve



## *THE COMPANY*

Jarecki Valves has been an American valve manufacturer and rebuilder for more than 40 years, providing customers with high quality metal and soft seated ball, control, and check valves. Jarecki Valves got its start engineering and manufacturing valves for the Navy Nuclear Industry, which involved working with exotic materials and manufacturing valves for critical service. Jarecki is now using the experience in providing quality valves for today's industries.

Jarecki Valves supplies valves to a variety of industries, including Pulp and Paper, Chemical, Petrochemical, Power, Oil and Gas, Mining, and Municipal.

Not only do we support a standard product line, but we also provide services for designing valves for specific applications. Our experienced engineering staff will work one on one with customers to ensure they get the right product. We also provide high alloy valves, valves with hardened surfaces, valves for high temperatures and pressures, and metal seated valves with are bubble tight. For these reasons, Jarecki Valves are trusted in some of the harshest environments.



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