

“Reliable Valves for the Power Industry”



Copeland Industries, Inc. has set the standard for valves used in the power generation industry. 65 years of experience, along with state-of-the-art [HVOF applied coatings](#), make Copeland valves the best choice for all applications especially in extreme conditions. This guide will help you find the best solution for your application.

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Copeland manufactures and repairs valves for power companies including:

- [Ameren](#)
- [Keyspan Energy](#)
- [Dominion](#)

Our Metal-Seated Ball Valves are made to perform in all power generation applications including:

- Attemperator Isolation
- Boiler Feedwater Pump Isolation
- Bottom Blowdown
- Bypass Injector Isolation
- Cogeneration (emergency shutdown)
- Condensate Drain Lines
- Feedwater Heater Isolation
- Feedwater Heater Drain
- Feedwater Heater Loop Drain
- Isolation Turbine Drains
- Low Pressure Turbine Drains
- Main Stream Drum Vents
- Main Stream Extraction Bleed Valves
- Nuclear
- Pressurized Fluidized Beds
- Reheat Isolation
- Seal Steam Isolation
- Steam (Saturated)
- Steam (Superheated)

[See Full List](#)

“When you work with us, you'll gain not only a world-class team but also a wealth of industry experience.”
-John Simmons (President/CEO)

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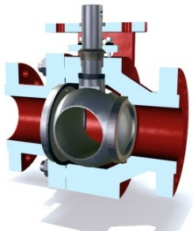
[Contact Us](#)

Power Plant Valve Selection

*All valves can be customized with materials and coatings to meet unique operating conditions

BV Series

- Custom made to wide range of applications
- Tested to API 598 Standards
- For Temperatures: 400°F +
- End Types: Socket Weld, NPT, Butt Weld, Flange
- Sizes: 1/2" - 20"
- ANSI Class: 150 - 4500
- Materials: 410ss, 17-4 ph, 316ss, Inconels, Ferralium 255 (autoclaves), Hastelloys, Monel, Alloy 20, Titanium, Zirconium



Carbide BV Series

- Wide range of applications
- Full Bore, High Cycle
- Tested to API 598 Standards
- End Types: Socket Weld, NPT, Butt- Weld , Flange
- Sizes: 1/2" - 8"
- ANSI Class: 150 - 4500
- Available in CF8M (316ss) and A216-WCB



PV Series

- Power Plants, Steam Generation
- For Temperatures:
- End Types: Socket Weld, NPT, Butt- Weld , Flange
- Sizes: 1/2" - 4"
- ANSI Class: 900, 1500, 3200, 4500
- Materials: F22, A105, F91 (Other materials available)



Trunnion BV Series

- Wide range of high cycle applications
- Reduced torque
- End Types: Socket Weld, NPT, Butt Weld , Flange
- Sizes: 2" – 12"
- ANSI Class: 300, 600, 900
- Materials: (All BV Series materials)



PV2 Series (2-piece)

- Power Plants, Steam Generation
- Available in a wide variety of sizes and materials
- End Types: Socket Weld, NPT, Butt- Weld , Flange
- Sizes: 1/2" - 4"
- ANSI Class: Up to 4500#
- Standard Materials: F22, A105, F91 (Other materials available)



BV3 Series

- For temperatures exceeding 500° F
- Carbide sealing areas
- End Types: Socket Weld, NPT, Butt Weld, Flange
- Sizes: 1/2" - 4"
- Available in CF8M (316ss) and A216-WCB



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Valve Details

| Series | Bore Size ¹ | End Size | ASME Class | Body Type | Body Mat'l. ² | Trim Mat'l. ³ |
|-------------------------------|------------------------|------------|--|-------------|---|--|
| <i>BV</i> | .56" - 18.81" | 1/2" - 20" | 150#, 300#, 600#, 900#, 1500#, 2500#, 3200#, 4500# | 2-PC Forged | A105, 316ss, Inconels, Ferralium 255, Hastelloys, Monel, Alloy 20, Titanium, Zirconium | 17-4 ph, 316ss, Inconels, Ferralium 255, Hastelloys, Monel, Alloy 20, Titanium, Zirconium |
| <i>Carbide BV</i> | .56" - 8" | 1/2" - 8" | 150#, 300#, 600# | 2-PC Casted | CF8M, WCB | 17-4 ph, 316ss, Inconels, Ferralium 255, Hastelloys, Monel, Alloy 20, Titanium, Zirconium |
| <i>BV3</i> | .56" - 4" | 1/2" - 4" | 150#, 300# | 3-PC Casted | CF8M, WCB | 316ss |
| <i>Trunnion BV</i> | 1.5" - 12" | 2" - 12" | 300#, 600#, 900# | 2-PC Forged | A105, 316ss, Inconels, Ferralium 255, Hastelloys, Monel, Alloy 20, Titanium, Zirconium | 17-4 ph, 316ss, Inconels, Ferralium 255, Hastelloys, Monel, Alloy 20, Titanium, Zirconium |
| <i>PV</i> | .56" - 4" | 1/2" - 4" | 900# , 1500#, 2500#, 3200#, 4500# | 1-PC Forged | 316ss, F22, A105, F91 | 17-4 ph, 316ss, Inconels, Ferralium 255, Hastelloys, Monel, Alloy 20, Titanium, Zirconium |
| <i>PV2</i> | .56" - 4" | 1/2" - 4" | 900# , 1500#, 2500#, 3200#, 4500# | 2-PC Forged | 316ss, F22, A105, F91 | 17-4 ph, 316ss, Inconels, Ferralium 255, Hastelloys, Monel, Alloy 20, Titanium, Zirconium |

Note:

- ¹ Bore size range limited to corresponding end size
- ² Special body materials available
- ³ Special trim materials and HVOF applied coatings available

Available End Connections

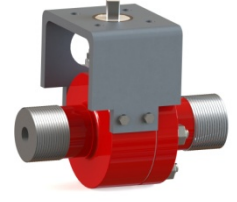
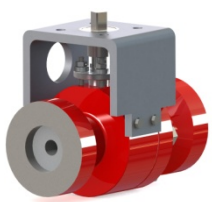
Socket Weld (SW)

Butt Weld (BW)

Raised-Face Flange (RFF)

Ring Type Joint (RTJ)

Threaded (NPT)

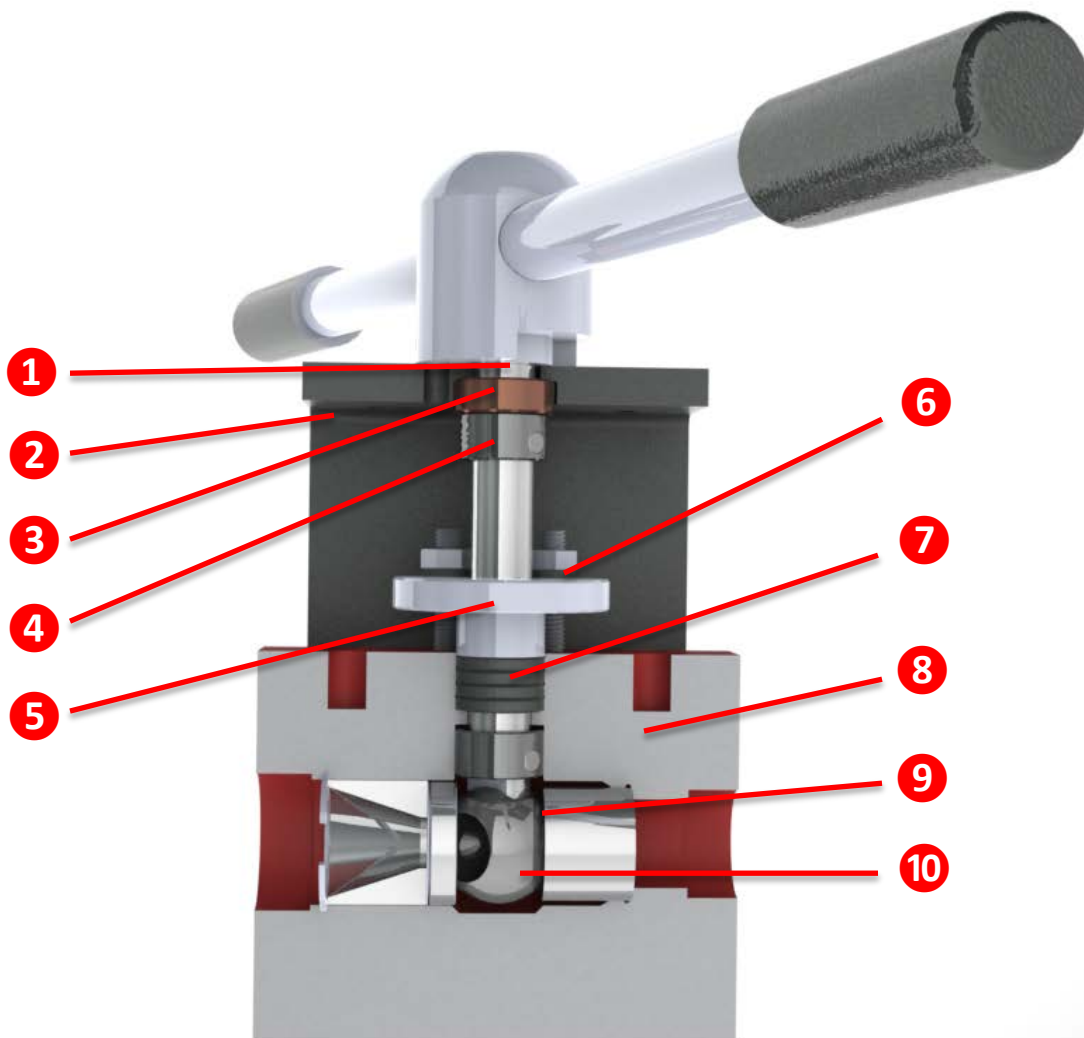


Available Actuation

All Copeland valves can easily be equipped with actuators to meet user specifications. [Contact us](#) for information regarding different actuator options. Common actuation types include: Lever, Hand-wheel, Bevel Gear, Pneumatic, Hydraulic, and Electric.

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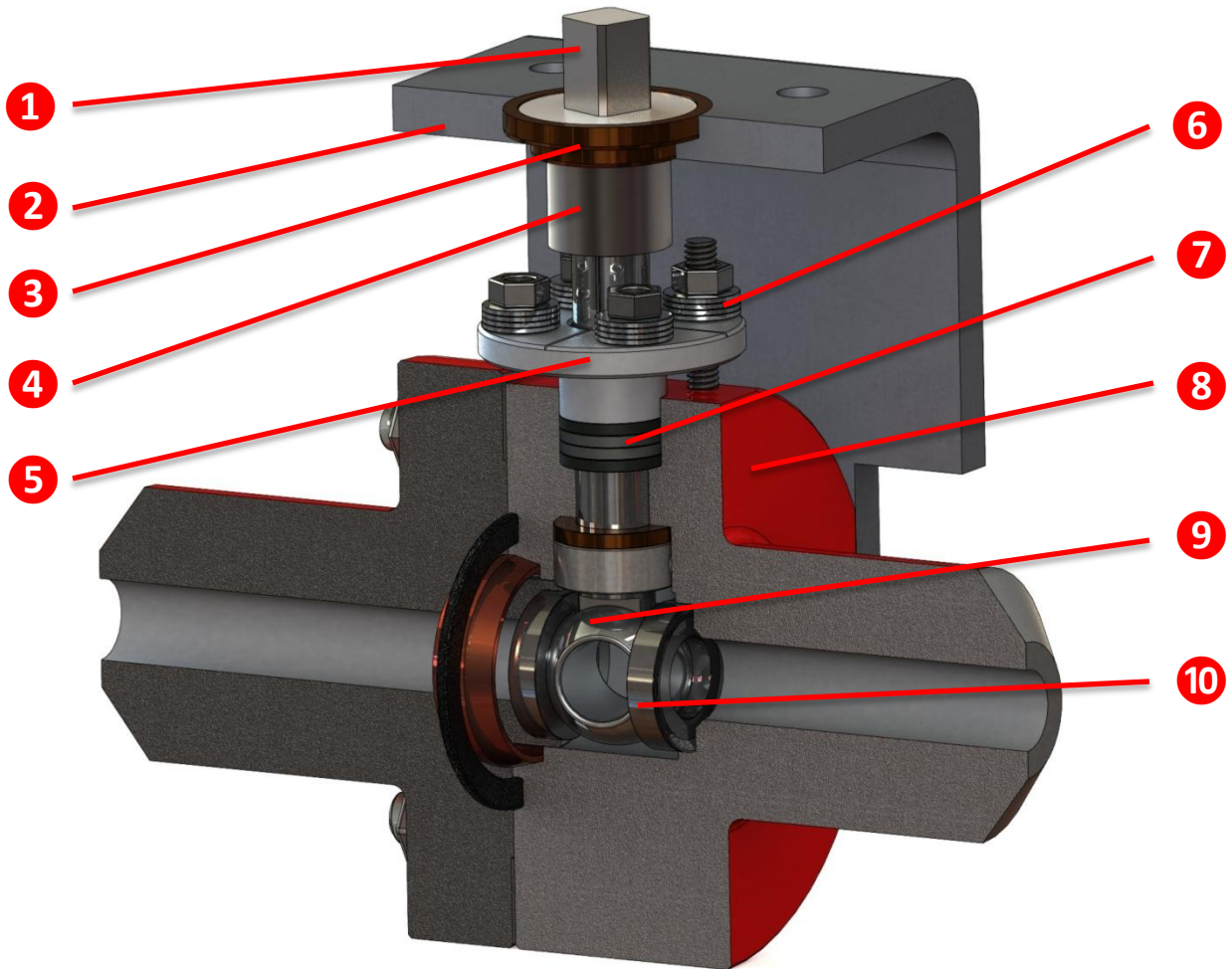
PV Series Design Features



- ① **Stem** for convenient adaptation of manual, geared, pneumatic, hydraulic, and other motor actuators.
- ② **Mounting Bracket** customized to various actuator specifications for easy installation.
- ③ **Guide Bearing** for smooth, quarter-turn opening and closing.
- ④ **Thrust Collars** for blowout-proof operation.
- ⑤ **Adjustable Packing Follower** to ensure continued seal throughout valve life.
- ⑥ **Live-loaded Springs** apply continuous pressure on Packing Follower.
- ⑦ **Durable Packing** for leak-proof performance. (Available in Graphoil and Inconel)
- ⑧ **One-Piece Forged Body** (PV Series only) most readily available and cost effective forged valve on the market.
- ⑨ **Mate-Lapped Ball & Seats** for precise sealing during isolation.
- ⑩ **HVOF Applied Coatings** for wear resistance in extreme corrosive and abrasive conditions.

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PV2 Series Design Features



- 1 Stem Adapter** for convenient installation of manual, geared, pneumatic, hydraulic, and other motor actuators.
- 2 Mounting Bracket** customized to unique actuator sizes for easy mounting.
- 3 Guide Bearing** for smooth, quarter-turn opening and closing.
- 4 Thrust Collars** for blowout-proof operation.
- 5 Adjustable Packing Follower** to ensure stem alignment and continued seal throughout valve life.
- 6 Live-loaded Springs** apply continuous pressure on Packing Follower so packing remains tight after thousands of cycles.
- 7 Durable Packing** for leak-proof performance. (Available in Graphoil and Inconel Material)
- 8 2-Piece Forged Body** For custom end connections and easy maintenance.
- 9 Mate-Lapped Ball & Seats** for perfect seal.
- 10 HVOF Applied Coatings** for wear resistance in extreme corrosive and abrasive conditions.

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Applications

Copeland Industries specializes in solutions for the following power applications:

-TYPICAL FOSSIL FUEL POWER PLANT-

Condensate System

- ✓ Deaerator- Vent/Isolation
- ✓ Bypass Line- Isolation
- ✓ Extraction Steam- Drain/Isolation
- ✓ Feedwater Heater- Drain/Vent

High Pressure Feedwater

- ✓ BFP (*Boiler Feedwater Pump*) Discharge- Isolation
- ✓ BFP Shell or Case- Drain
- ✓ BFP Minimum Flow- Isolation
- ✓ BFP Warming Line- Isolation/Drain
- ✓ Reheat & Superheat- Isolation
- ✓ Feedwater Heater- Isolation/Bypass
- ✓ Economizer- Drain

Boiler System

- ✓ Drum Instrument- Isolation
- ✓ Sight Glass- Isolation/Drain
- ✓ Water Wall- Drain/Vent/Isolation
- ✓ Tandem Blowdown
- ✓ Mass Boiler Blowdown
- ✓ Primary Superheat- Drain/Vent/Isolation
- ✓ Secondary Superheat- Drain/Vent/Isolation
- ✓ Reheat- Drain/Vent/Isolation
- ✓ Superheat Spray- Isolation
- ✓ Superheat Spray- Automated Blocking
- ✓ Reheat Spray- Isolation Blocking

High-Pressure Turbine Steam Supply/Extraction

- ✓ Main Steam- Drain/Root Drain
- ✓ Main Steam Before & After- Seat Drain/Root Drain
- ✓ Main Steam- Lead Drain/Root Drain
- ✓ Turbine Bypass- Isolation
- ✓ Bypass Valves

Intermediate & Low Pressure Turbine

Steam Supply/Extraction

- ✓ Hot Reheat- Drain/Root Drain
- ✓ Hot Reheat at CRV- Drain/Root Drain
- ✓ Turbine Extraction- Drain/Orifice Isolation

-COMBINED CYCLE POWER PLANT-

Feed Water System

- ✓ DEaerator- Vent/Instrument Isolation
- ✓ Bypass Lines- Isolation
- ✓ Extraction Steam- Drain/Orifice Isolation

Heat Recovery Steam Generator (HRSG)

- ✓ BFP Discharge- Isolation
- ✓ BFP Shell or Case- Drain
- ✓ BFP Minimum Flow- Isolation
- ✓ BFP Warming Line- Isolation/Drain
- ✓ Feedwater Heater- Isolation/Bypass
- ✓ Bypass Valves
- ✓ Shell Side- Vent/Isolation
- ✓ Tube Side- Drain/Isolation
- ✓ Drum Blowdown- Root Valve/Isolation Vents
- ✓ Drum- Isolation
- ✓ Sight Glass- Isolation/Drain
- ✓ Water Wall- Drain/Vent/Isolation
- ✓ Tandem Blowdown
- ✓ Mass Boiler Blowdown
- ✓ Primary Superheat- Drain/Vent/Isolation
- ✓ Secondary Superheat- Drain/Vent/Isolation
- ✓ Reheat- Drain/Vent/Isolation
- ✓ Superheat Spray- Isolation/Automated Blocking
- ✓ Reheat Spray- Isolation Blocking
- ✓ Low Pressure Section HRSG Tube- Drains
- ✓ Intermediate Pressure Section HRSG Tube- Drains
- ✓ High Pressure Section HRSG Tube- Drains
- ✓ Automated Bottom Blowdown
- ✓ SCR Steam Induction- Isolation

High-Pressure Turbine Steam Supply/Extraction

- ✓ Main Steam- Drain/Root Drain
- ✓ Main Steam Before & After- Seat Drain/Root Drain
- ✓ Main Steam- Lead Drain/Root Drain
- ✓ Turbine Bypass- Isolation
- ✓ Bypass Valves

Intermediate & Low Pressure Turbine

Steam Supply/Extraction

- ✓ Hot Reheat- Drain/Root Drain
- ✓ Hot Reheat at CRV- Drain/Root Drain
- ✓ Turbine Extraction- Drain/Orifice Isolation

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