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.

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)

“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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Copeland Website

Request a Quotation

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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Application Guide: Power Generation Valves

Valve Details

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<th>End Size</th>
<th>ASME Class</th>
<th>Body Type</th>
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<td>BV</td>
<td>.56&quot; - 18.81&quot;</td>
<td>1/2&quot; - 20&quot;</td>
<td>150#, 300#, 600#, 900#, 1500#, 2500#, 3200#, 4500#</td>
<td>2-PC Forged</td>
<td>A105, 316ss, Inconels, Ferralium 255, Hastelloy, Monel, Alloy 20, Titanium, Zirconium</td>
<td>17-4 ph, 316ss, Inconels, Ferralium 255, Hastelloy, Monel, Alloy 20, Titanium, Zirconium</td>
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<tr>
<td>Carbide BV</td>
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<td>1/2&quot; - 8&quot;</td>
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<td>CF8M, WCB</td>
<td>17-4 ph, 316ss, Inconels, Ferralium 255, Hastelloy, Monel, Alloy 20, Titanium, Zirconium</td>
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<tr>
<td>BV3</td>
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<td>1/2&quot; - 4&quot;</td>
<td>150#, 300#</td>
<td>3-PC Casted</td>
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<td>1.5&quot; - 12&quot;</td>
<td>2&quot; - 12&quot;</td>
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<td>17-4 ph, 316ss, Inconels, Ferralium 255, Hastelloy, Monel, Alloy 20, Titanium, Zirconium</td>
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<td>PV</td>
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<td>900#, 1500#, 2500#, 3200#, 4500#</td>
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<td>316ss, F22, A105, F91</td>
<td>17-4 ph, 316ss, Inconels, Ferralium 255, Hastelloy, Monel, Alloy 20, Titanium, Zirconium</td>
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<td>PV2</td>
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<td>1/2&quot; - 4&quot;</td>
<td>900#, 1500#, 2500#, 3200#, 4500#</td>
<td>2-PC Forged</td>
<td>316ss, F22, A105, F91</td>
<td>17-4 ph, 316ss, Inconels, Ferralium 255, Hastelloy, Monel, Alloy 20, Titanium, Zirconium</td>
</tr>
</tbody>
</table>

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.
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.
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
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