

“Reliable Valves for the Petrochemical & Refining Industry”



Copeland Industries, Inc. has set the standard for valves used in petrochemical and refining processes. 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 petro chemical and refining companies including:

- [Chevron Phillips](#)
- [Shell](#)
- [Exxon Mobil](#)

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

- Atmospheric Distillation
- Vacuum Distillation
- Continuous Catalytic Reforming
- Fluidized Catalytic Cracking (FCCU or RFCCU)
- Fixed Bed Hydrotreating
- Fixed Bed Hydrocracking
- Ebullated Bed Hydrocracking
- Delayed Coking
- Visbreaking
- Deasphalting
- Gasification

[Complete List of Applications](#)

“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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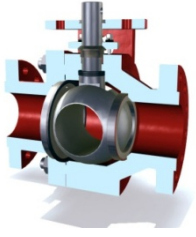
[Contact Us](#)

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



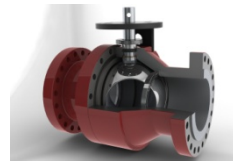
PV Series

- 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
- Torque-Reducing Design
- 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
BV	.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
Carbide BV	.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
BV3	.56" - 4"	1/2" - 4"	150#, 300#	3-PC Casted	CF8M, WCB	316ss
Trunnion BV	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
PV	.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
PV2	.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

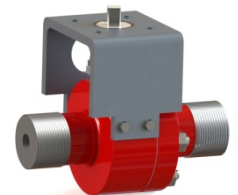
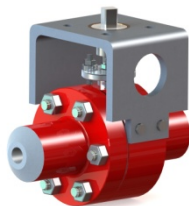
Socket Weld (SW)

Butt Weld (BW)

Raised-Face Flange (RFF)

Ring Type Joint (RTJ)

Threaded (NPT)

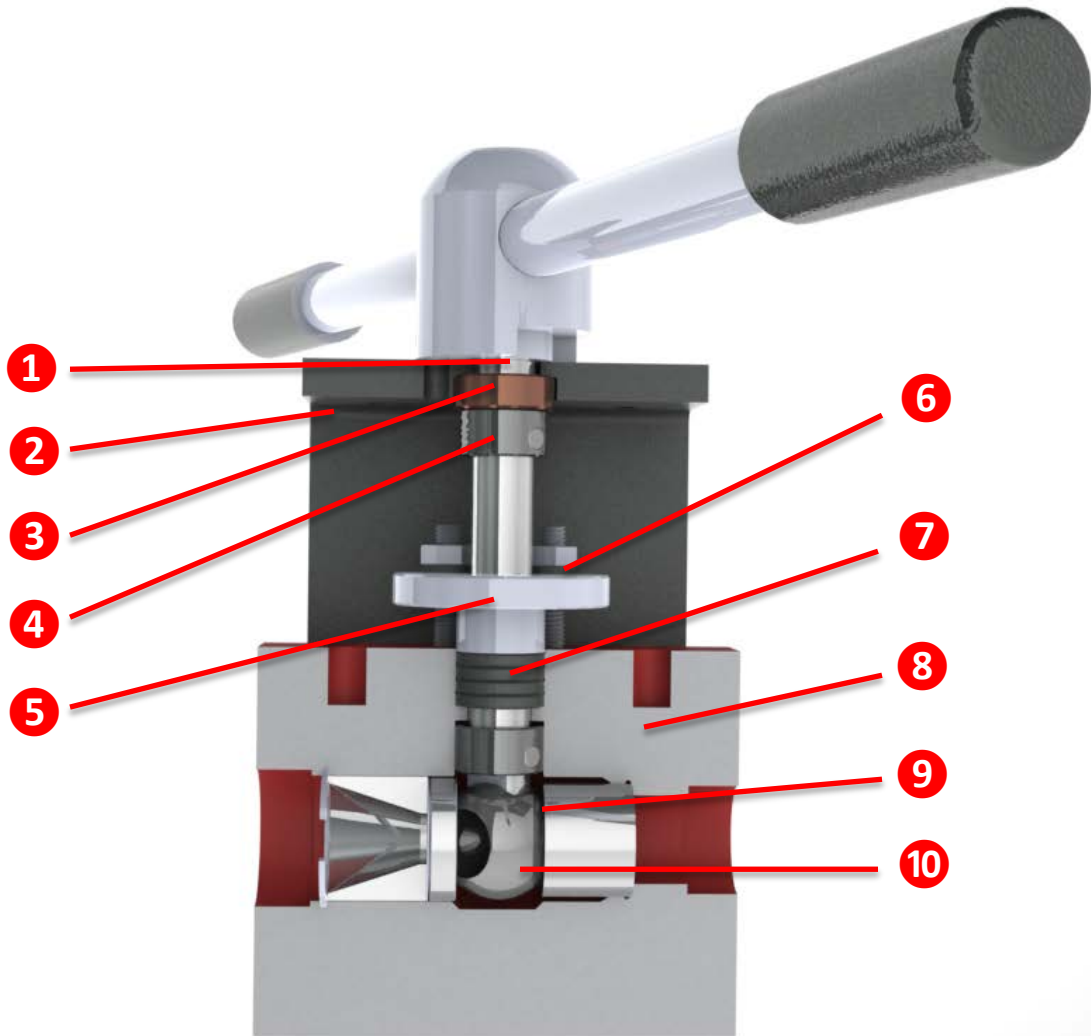


Available Actuation

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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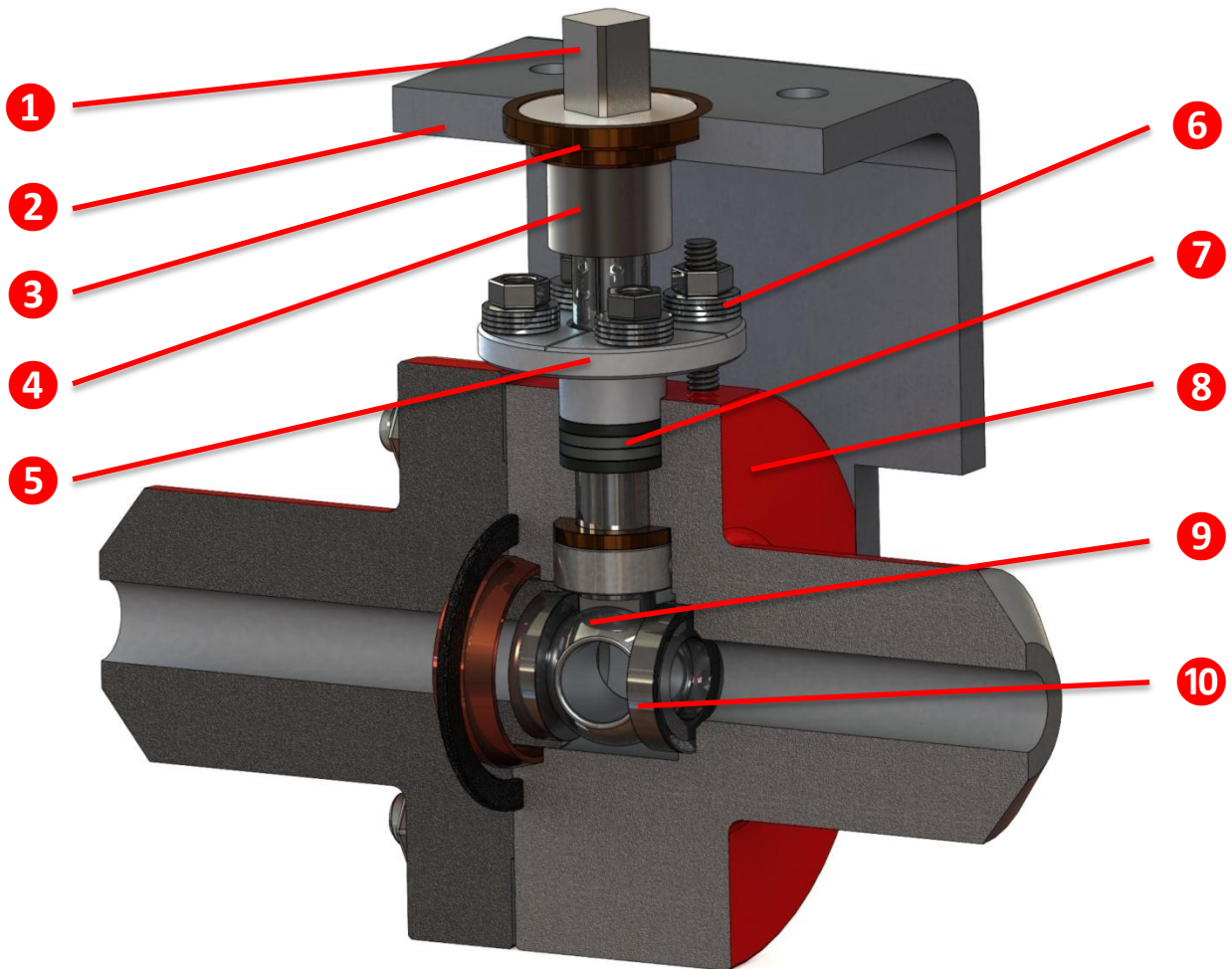
PV Series Design Features



- 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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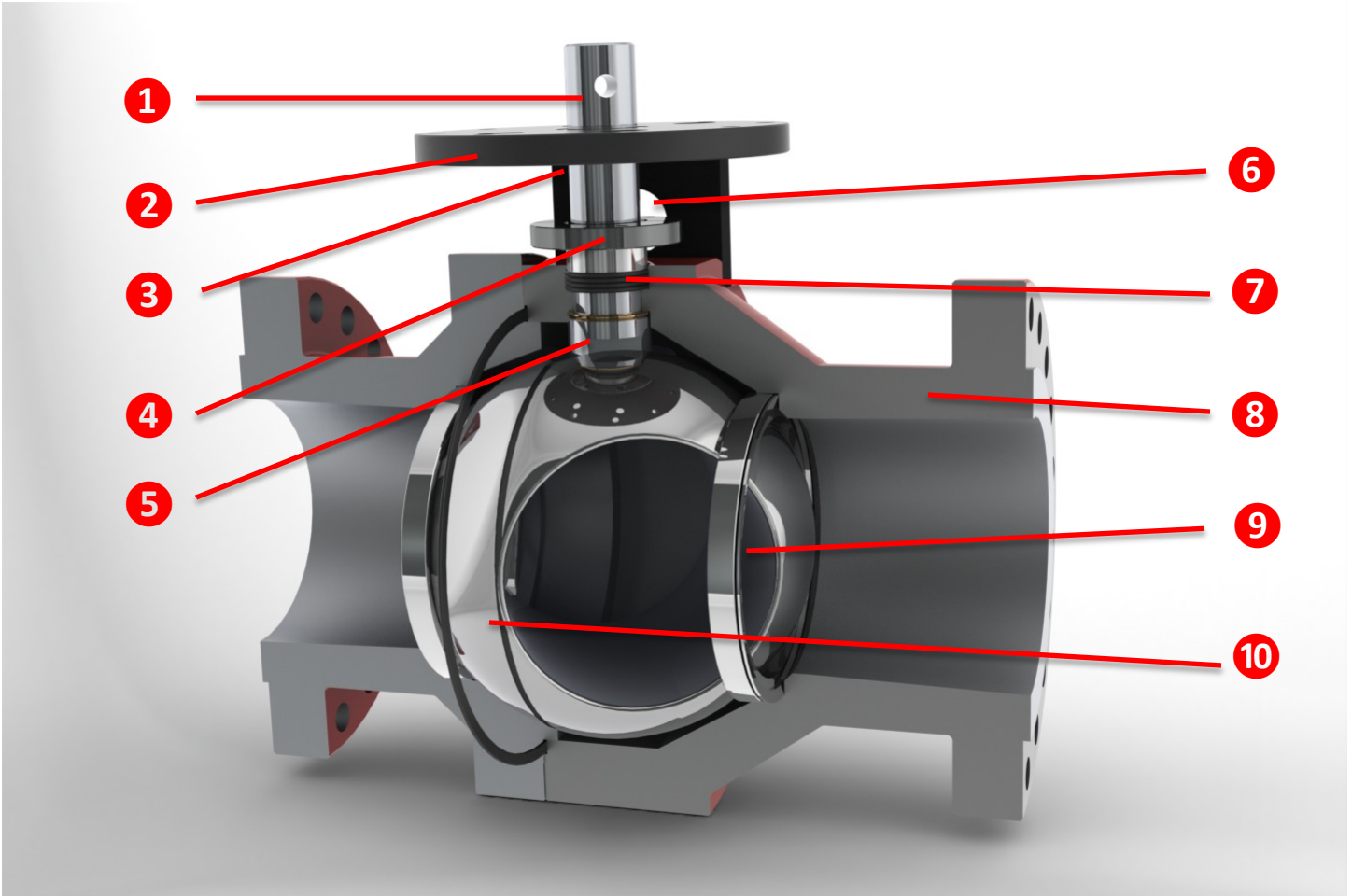
PV2 Series Design Features



- 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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BV Series Design Features



- ① **Stem** 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 **Adjustable Packing Follower** to ensure stem alignment and continued seal throughout valve life.
- ⑤ **Thrust Collars** For blowout-proof performance.
- 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 petrochemical and refining applications:

-Distillation-

Atmospheric Distillation:

- Feed Isolation
- Atmospheric Bottoms Emergency Block (EBV)
- Atmospheric Bottoms Pump Isolation
- Atmospheric Gas Oil Stripper EBV
- Atmospheric Bottoms Exchanger Isolation

Vacuum Distillation:

- Feed Isolation
- Heavy Vacuum Gas Oil Pump EBV
- Vacuum Tower Bottoms EBV
- Vacuum Bottoms Pump Isolation
- Vacuum Bottoms Exchange Isolation

-Reforming-

Continuous Catalytic Reforming:

- Reactor Overhead Purge
- Reactor Overhead Regeneration
- Standby Reduction Zone Purge
- Reactor Bottoms Unloading Valve
- Hydrogen Loading
- Hydrogen Vent

- Nitrogen Purge
- Catalyst to Lift
- Air Valve to Regeneration Cooler
- Air Valve to Surge Hopper
- Fresh Catalyst Addition
- Regenerated Catalyst Unloading
- Pressure Balancing

-Fluidized Catalytic Cracking-

- Flue Gas Control
- Hopper Isolation
- Separator Isolation
- Feed Drum EBV
- Spent Catalyst Withdrawal

- Slurry Feed Isolation
- Fractionator Bottom EBV
- Exchanger Isolation
- Filter Isolation
- Wet Gas Compressor Surge Control

[More Applications](#)



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-Hydroprocessing-

Fixed Bed Hydrotreating:

- Chopper Valve
- Guard Reactor Isolation
- Recycle Gas Compressor Surge
- Rich Amine Isolation
- Sour Water Isolation
- Level Control Valve (LCV) Isolation
- LCV Separation
- Stripper Bottoms EBV
- Stripper Bottoms Pump Isolation
- Unit Depressurization

Fixed Bed Hydrocracking:

- Chopper Valve
- Recycle Gas Compressor Surge
- Rich Amine Isolation
- Sour Water Isolation
- LCV Isolation
- LCV Separation
- Fractionator Bottoms Isolation
- Fractionator Bottoms Pump Isolation
- Unit Depressurization

Ebullated Bed Hydrocracking:

- Chopper Valve
- Hydrogen Heater Inlet EBV
- Feed heater Outlet EBV
- Hydrogen Heater Outlet EBV
- Reactor Catalyst Addition
- Reactor Catalyst Withdrawal
- High Pressure Separator LCV
- High Pressure Overhead Vapor Isolation
- Intermediate Pressure Separator LCV
- Unit Depressurization

-Thermal Cracking-

Delayed Coking:

- Overhead Vapor
- Steam Blowdown Control
- Cutting Water Pump Isolation
- Quench Extraction
- Coke Drum Feed Isolation
- Coke Drum Switching Valve
- Light Coker Gas Oil Pump EBV
- Heavy Coker Gas Oil Pump EBV
- Coke Filter Isolation
- Fractionator Bottoms EBV
- Furnace Feed

Visbreaking:

- Feed Isolation
- Visbreaker Furnace Isolation
- Soaker Drum Isolation
- Fractionator Tower Bottoms EBV
- Fractionator Bottoms Pump Isolation
- Fractionator Bottoms Pump Isolation
- Heavy Vacuum Gas Oil Stripper EBV
- Fractionator Tower Bottoms Heat Exchanger Isolation

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[More Applications](#)



-Deasphalting-

Feed Isolation
Solvent Circulating Pump Isolation
Asphaltine Separator EBV
Solvent Surge Drum EBV
Deasphalted Oil Separator EBV
Asphaltine Stripper Isolation
Deasphalted Oil Stripper Isolation

-Gasification-

Slurry Tank EBV
Feed Slurry Pump Isolation
Gasifier Isolation
Oxygen Feed Isolation
Lockhopper Isolation
Lockhopper Drum Inlet
Lockhopper Drum Outlet
Letdown Isolation LCV
Blackwater Flash Drum Isolation
Oxygen Depressurizing Valve
Oxygen Depressurixing Isolation

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