



Valves for Power Generation

Engineered Solutions for the Power Generation Industry

MOGAS[®]

Setting the Standard

Engineered Solutions to Maximize Performance and Safety

MOGAS is well known throughout the power industry because we solve issues that routinely plague power plants – leaking valves, seat erosion, blown packing, and the inability to isolate critical equipment – all of which contribute to significant heat rate loss and safety concerns.

Field Proven Experience

Through years of field experience, working with major power producers and a sophisticated performance analysis procedure, MOGAS has developed a product line dedicated to absolute isolation of critical equipment, dependable on/off operation for drains and vents, as well as longer valve life for increased run-time.

MOGAS provides its advanced technology to the power industry with severe service valves that handle high-temperatures, high-pressures, high-cycling, thermal shock and abrasive media.

In addition to our standard product line, custom requests are part of our legacy. Unique bore sizes, different end connections, custom face-to-face dimensions, and special body and trim materials are accomplished through our engineering group.

Certifications

MOGAS severe service ball valves are certified PED compliant for the European Union. When used as Power Operated Relief Valves, MOGAS PORV valves may be stamped with the ASME mark with “V” designator to ensure they have been designed, manufactured, inspected and tested to meet the requirements of ASME Code Section I.

Testing

- Leakage rates per MSS SP-61
- Shell tests performed at 1.5 x maximum cold working pressure
- Seat closure tests performed at 1.1 x maximum cold working pressure
- Customer-specified testing available, such as Category M for lethal service and ANSI

Service

When you select MOGAS products, service is a big part of what comes with them. The MOGAS commitment to service means more than basic repairs. It also means timely access to our knowledgeable and experienced team of experts—anytime, anywhere in the world. And when our team becomes part of your team, you can trust that we will do everything we can to come through for you.

Guaranteed Performance

Years of valve performance analysis, field reports and statistical service data from around the globe provide the information required to guarantee the performance of our valves for an application-specific time period. Every MOGAS valve comes with a PERFORMANCE GUARANTEE...plus a Lifetime Warranty on materials and workmanship.



This boiler feed pump recirculation isolation valve was manufactured with high pressure hub ends with clamps to enable the customer to easily remove the valve for repair. This eliminates having to cut two very thick welds, rewelding and post weld heat treating.



This combined-cycle natural gas plant will benefit from the efficiencies of MOGAS iRSVP valves in their HRSG drains and vents.



These four, 2-inch MOGAS ball valves are handling cold reheat isolation in a coal-fired plant.

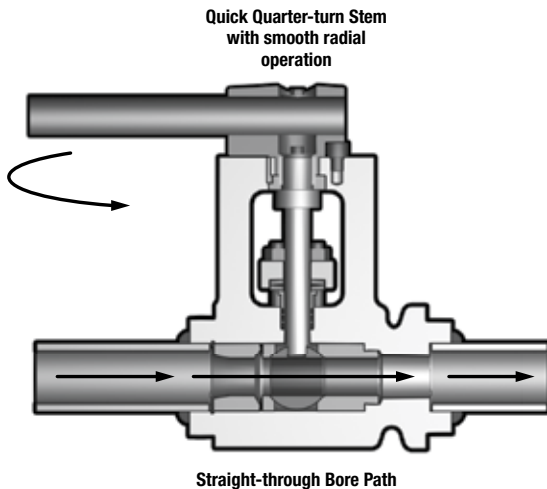
MOGAS Design

iRSVP: Solves Common Valve Concerns In Power Plants

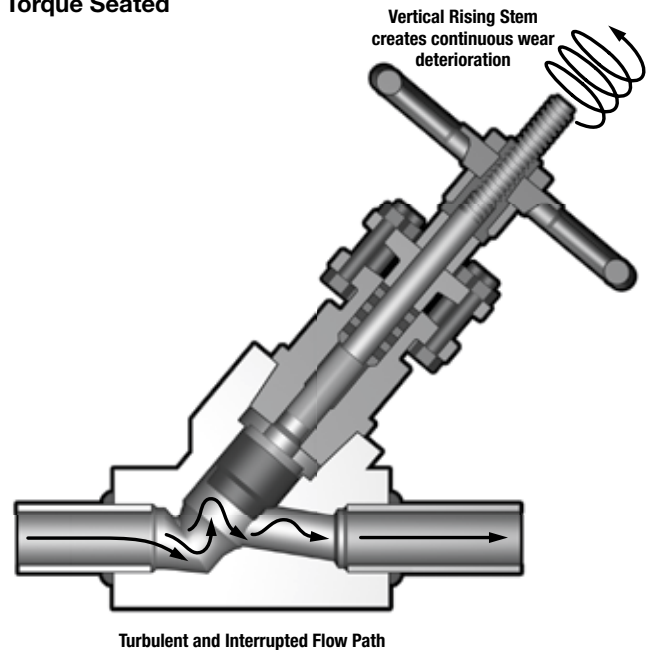
Ball Valves Outperform and Outlast the Alternatives

- Gate and globe valves are multi-turn, torque seated valves that must seal against line pressure.
The MOGAS iRSVP is a quarter-turn, position seated ball valve that utilizes pressure assisted sealing.
- Since drain valves remain open during start-up and shut-down, gate and globe valves can experience rapid erosion and wear. This is due to the primary sealing components being in the flow path of process media or high pressure steam.
The MOGAS iRSVP offers a straight-through bore path and protects the sealing components from the flow path.

iRSVP Pressure Assisted Sealing



Globe Torque Seated



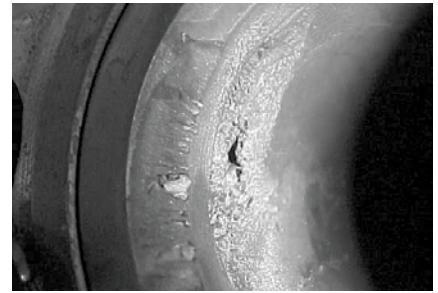
Continual stem leaks from globe valves decreases plant efficiency and causes maintenance costs to rise.

Prevents Leaks to Atmosphere

The quick quarter-turn, radial operation of the MOGAS ball valve greatly reduces wear and friction in the packing area. By contrast, the multi-turn rising stem of a globe valve often pulls destructive high pressure steam and pipe scale up through the packing interior diameter damaging the packing material. Additionally, the MOGAS iRSVP offers live loading as a standard. The five-ring packing set includes two anti-extrusion rings and three expanded graphite rings with an adjustable, two-piece packing gland.

Resolves Seat Erosion

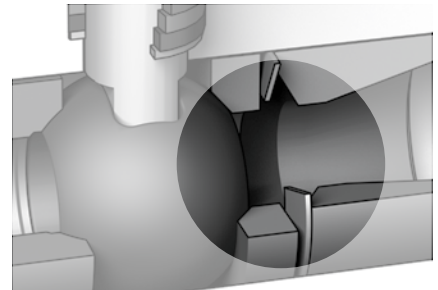
The MOGAS ball valve minimizes damage to the main sealing surface by keeping the seat out of the flow path when the valve is in the open and closed position. The only time the seats are exposed to flow is during cycling, which is brief due to the quick, quarter-turn operation of the valve. In contrast, Y-pattern globe valves have a turbulent flow path and place primary sealing components in the flow path leading to plug and seat erosion. By protecting your sealing surfaces, you maintain tighter shutoff and extend the service life of the valve.



As shown in this competitor's valve, if seats are not protected from constant exposure to high pressure steam, destructive erosion can occur.

Eliminates Valve Seizure

MOGAS ball valves withstand thermal shock even when subjected to sudden swings from minimum to maximum design temperatures or vice versa. The base materials are the same, ensuring the same rate of expansion due to sudden heat.



The seat pocket is designed to allow for thermal shocks while forming a tight seal. Zero leakage is maintained by the Belleville spring pushing the ball into the downstream seat.

Maintains Absolute Shutoff

The MOGAS ball valve is a floating ball design, which incorporates a Belleville spring behind the upstream seat that provides a mechanical force to push the ball into the downstream seat, thus creating a tight seal. In addition to this mechanical spring force, the floating design enables line pressure to assist in the sealing of the ball and seat, versus the needed torque required in globe valves. Furthermore, MOGAS balls and seats are precision lapped to achieve 100% sealing contact over the entire surface. As the ball transitions between the closed and full open position, this sustained contact eliminates areas for leaks to develop.



All MOGAS ball and seats are precision lapped to ensure the tightest seal possible. Both hand lapping and automated lapping processes are used.

Avoids Galled Seats

Our experience leads us to choose materials with higher hardness, producing less chance of galling while increasing wear resistance. The MOGAS seating surface has a hardness up to HRC 72 that ensures protection from scratches and particulate impregnation that can lead to galling and the development of dangerous leak paths. Through continual metallurgical R&D efforts, MOGAS has developed technology to overcome many galling problems.

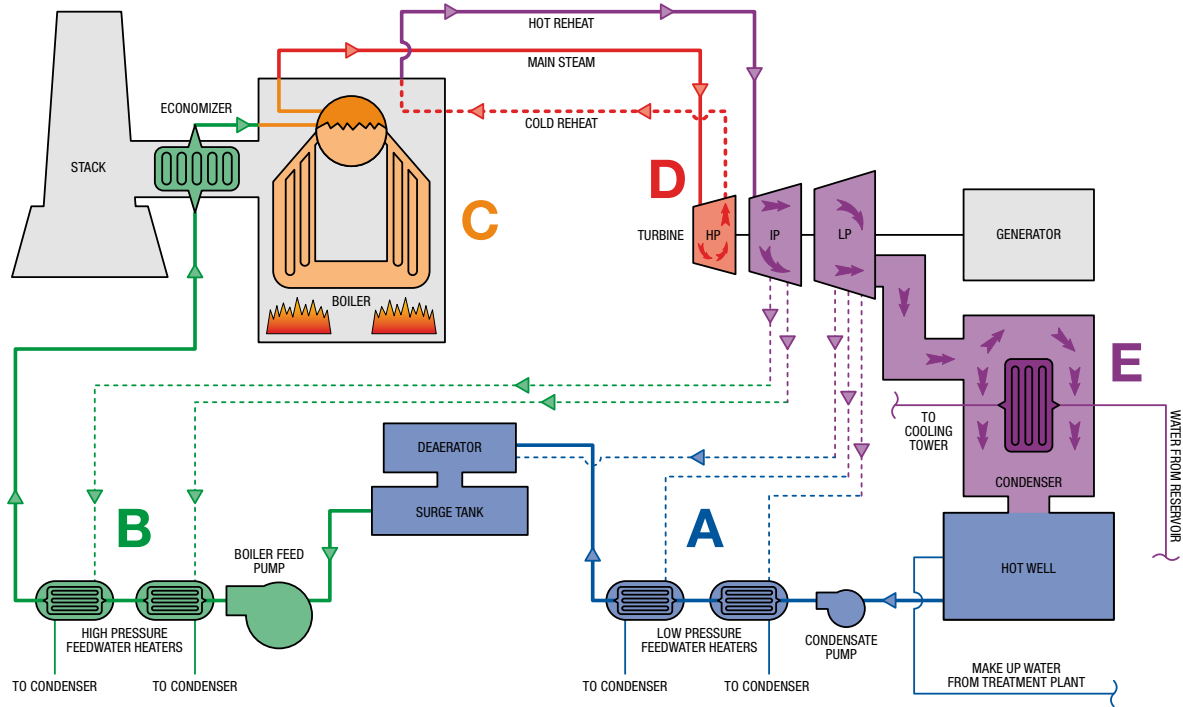


MOGAS' senior research scientist performs coating microstructure analysis. Coatings are specially chosen to handle the operating conditions of each application.

MOGAS Valve Applications

Typical Fossil Fueled Power Plant

Water/Steam Flow Loop



A Condensate System

- Deaerator Vent / Instrument Isolation
- Isolation Valves on Bypass Lines
- Extraction Steam Drain / Orifice Isolation
- Feedwater Heater Drain / Vent
- Shell Side Instrument Isolation

B HP Feedwater

- BFP Discharge Isolation
- BFP Shell or Case Drain
- BFP Minimum Flow Isolation
- BFP Warming Line Isolation / Drain
- Reheat / Superheat Isolation
- Feedwater Heater Isolation / Bypass
- Bypass Valves
- Shell Side Vent / Instrument Isolation
- Tube Side Drain / Instrument Isolation
- Economizer Drain

C Boiler System

- Drum Blowdown Root Valve / Isolation Vents
- Drum Instrument Isolation
- Sight-Glass Isolation / Drain
- Water Wall Drain / Vent / Instrument Isolation
- Tandem Blowdown
- Mass Boiler Blowdown
- Primary Superheat Drain / Vent / Instrument Isolation
- Secondary Superheat Drain / Vent / Instrument Isolation
- Reheat Drain / Vent / Instrument Isolation
- Superheat Spray Isolation
- Superheater Spray Automated Blocking
- Reheater Spray Isolation Blocking

D HP Turbine Steam Supply and Extraction Systems

- Supply & Extraction Systems
- Main Steam Drain / Root Drain
- Main Steam Before & After Seat Drain / Root Drain
- Main Steam Lead Drain / Root Drains
- Turbine Bypass Isolation
- Bypass Valves

E IP & LP Turbine Steam Supply and Extraction Systems

- Supply Extraction Systems
- Hot Reheat Drain / Root Drain
- Hot Reheat at the CRV Drain / Root Drain
- Intermediate Pressure and Low Pressure Turbine Extraction Drain / Orifice Isolation

Auxiliary Systems

Sootblower Piping System

- Sootblowing Header Isolation / Blocking
- Sootblower Regulator Automated Isolation
- Blocking Valves after the Control Valves
- Sootblower System Crossover Header Isolation
- Sootblower Bank Isolation
- Individual Sootblower Isolation
- Air Heater Sootblower Steam Supply Line Shutoff
- Sootblower Thermal Drains / Bypass

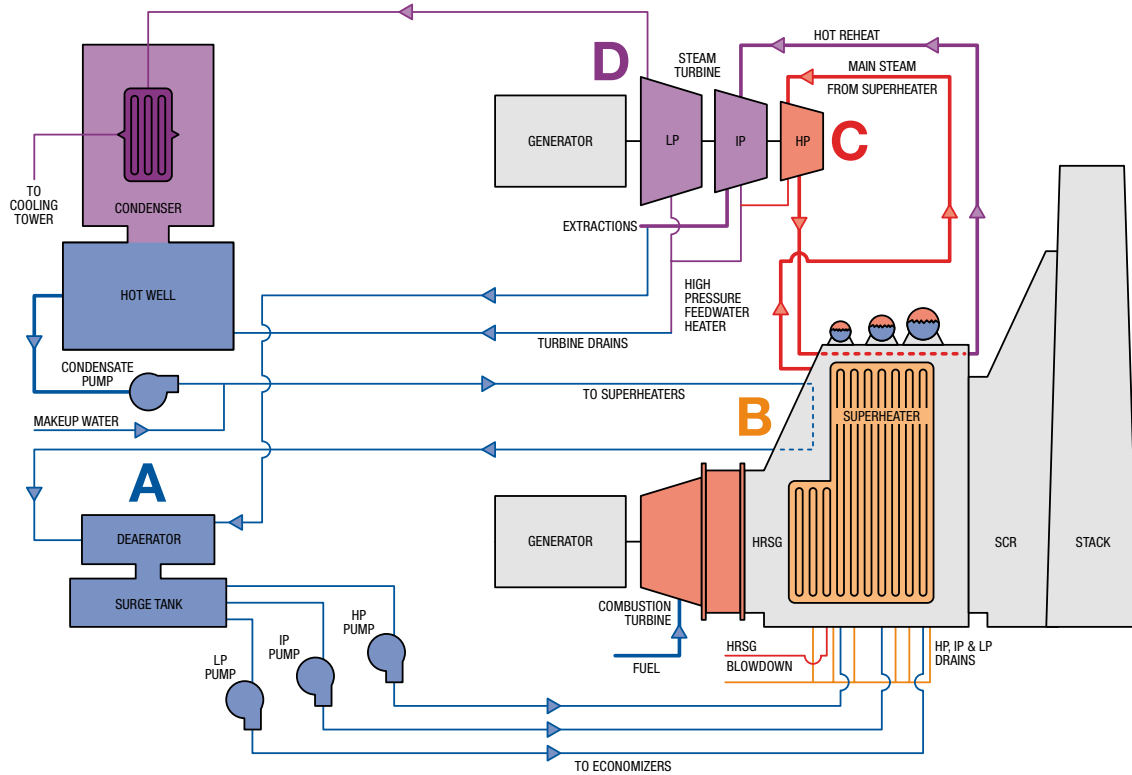
HP & LP Steam Supply System to the BFP Turbine

- Main Steam Supply Isolation Valve
- HP BFP Steam Supply Drain / Root Drain
- HP BFP Below & Above Seat Drain / Root Drain
- Isolation Valves on the Bypass Lines
- Extraction Steam Supply to Low Pressure BFP Turbine Drains
- Low Pressure BFP Below & Above Seat Drain

Inerting Steam System

- Inert Steam Inlet to Pulverizer Blocking / Automated Isolation
- Steam Supply to Inerting System Pressure Regulator Isolation
- Extraction Steam Supply Line to the Inerting Steam Header Drain
- Isolation Valves on the Bypass Lines
- Inerting System Steam Header Thermal Drain

Typical Combined Cycle Power Plant



A Feedwater System

- Deaerator Vent / Instrument Isolation
- Isolation Valves on Bypass Lines
- Extraction Steam Drain / Orifice Isolation

B HRSG

- BFP Discharge Isolation
- BFP Shell or Case Drain
- BFP Minimum Flow Isolation
- BFP Warming Line Isolation / Drain
- Reheat / Superheat Spray Root Isolation
- Feedwater Heater Isolation / Bypass
- Bypass Valves
- Shell Side Vent / Instrument Isolation
- Tube Side Drain / Instrument Isolation
- Drum Blowdown Root Valve / Isolation Vents
- Drum Instrument Isolation
- Sight-Glass Isolation / Drain
- Water Wall Drain / Vent / Instrument Isolation
- Tandem Blowdown
- Mass Boiler Blowdown
- Primary Superheat Drain / Vent / Instrument Isolation
- Secondary Superheat Drain / Vent / Instrument Isolation
- Reheat Drain / Vent / Instrument Isolation
- Superheat Spray Isolation
- Superheater Spray Automated Blocking
- Reheater 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

C HP Turbine Steam Supply and Extraction Systems

- Supply & Extraction Systems
- Main Steam Drain / Root Drain
- Main Steam Before & After Seat Drain / Root Drain
- Main Steam Lead Drain / Root Drain
- Turbine Bypass Isolation
- Bypass Valves

D IP & LP Turbine Steam Supply and Extraction Systems

- Supply Extraction Systems
- Hot Reheat Drain / Root Drain
- Hot Reheat at the CRV Drain / Root Drain
- Intermediate Pressure and Low Pressure Turbine Extraction Drain / Orifice Isolation

MOGAS Valves for Power Applications

Solutions for Isolation and Control, ASME B16.34



iRSVP

Drain and vent for power applications

- ASME 150 – 4500 Limited Class
- 3/4 to 2-1/2 inch (15 to 65 DN)
- Uni-directional sealing
- Forged uni-body design
- Mechanical precision stop
- Diffusion seat available



C-Series

Customizable isolation valves for specific applications

- ASME 150 – 4500 Class
- 1/2 to 42 inch (15 to 1050 DN)
- Bi-directional sealing
- Cast or forged body; 2 or 3-piece



RSVP-UK

For small, critical power applications

- ASME 150 – 1500 Limited Class
- 1/2 to 3/4 inch (15 to 20 DN)
- Uni-directional sealing
- Compact



T-Series

Trunnion reduces operating torque

- ASME 150 – 2500 Class
- 3 to 60 inch (80 to 1500 DN)
- Bi-directional sealing
- Metal- or soft-seated
- Cast or forged body; 2 or 3-piece
- API 6D or ASME B16.34



ISOLATOR 2.0

Low pressure applications

- ASME 150 – 600 Class
- 1 to 4 inch (25 to 100 DN)
- Bi-directional, metal-seated sealing
- 2-piece forged body



G-Series

General service drain and vent

- ASME 150 – 600 Class
- 1 to 3 inch (25 to 75 dn)
- Uni-directional; metal/graphite laminated seats
- 3-piece forged body



SC-3 Piece

Flexibility of in-line repair

- ASME 1500 – 4500 Class
- 2 to 24 inch (50 to 600 DN)
- Uni-directional sealing
- In-line repairable
- 3-piece forged body



PORV

Power operated relief valve

- ASME 1500 / 2500 / 4500 Class
- 2-1/2 to 4 inch (65 to 100 DN)
- ASME mark with “V” designator available

MAX-Series

Customized Solutions

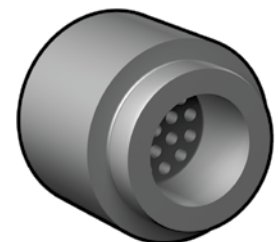
For unique operational requirements, MOGAS offers **MAX-Series** valves that involve strong collaboration between your engineering, operations and maintenance staff, along with MOGAS personnel. Site visits, technical discussions and/or specific testing are often required. These customized valves are special, one-of-a-kind solutions to satisfy your specific valve challenges.

To learn more, contact a MOGAS representative today.

Diffusion Seat (DS)

Manual Throttling Applications

Our DS trim allows for manual throttling in iRSVP valves to control flow velocity and reduce pressure. Available in a standard configuration or customizable to meet required pressure reduction.



C-Series

Customizable Isolation Valves for Specific Applications

1 Floating ball design

- Rotating ball does not displace volume or solids
- Straight-through bore path protects sealing surfaces

2 Pressure-energized sealing

- Seat springs maintain constant sealing contact between ball and seats
- Allows for thermal expansion of trim
- Metal seats wipe sealing surface of ball clean during operation

3 Wide seat sealing surface

- SphereSealSM lapping process on ball and seat set provides 100% sealing contact through the full transition between the open and closed position
- Greater sealing contact area withstands minor scratches or abrasions

4 Independent replaceable seats

- Minimizes maintenance and repair costs

5 Blowout-proof stem design

- One piece design meets industry safety standards
- Withstands severe service torques and maximum working pressures

6 Dual-guided stem design

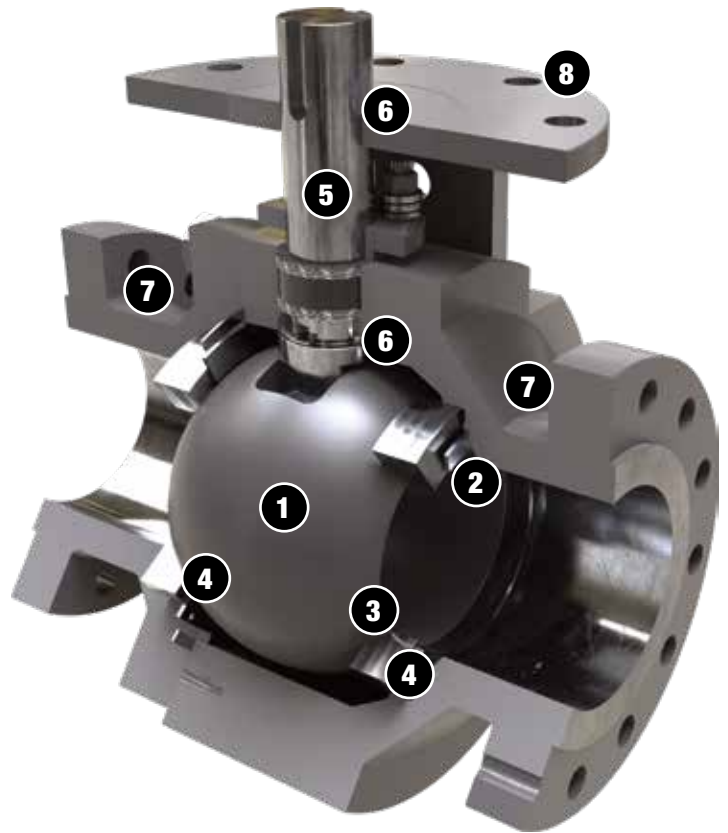
- Pressure-energized inner stem seals serve as thrust bearing and lower stem guide
- Valve stem bushing serves as upper stem guide
- Eliminates lateral movement of valve stem
- Prevents media migration
- Prevents stem packing leaks and risk of fugitive emissions

7 Forged body & end connections

- Greater wall thickness in critical areas provides longer valve life
- 2- or 3-piece designs

8 Heavy-duty mounting flange

- Machined after attaching to ensure precise stem alignment
- Provides structural support for operator mounting
- Provides visual inspection for confirmation of ball position



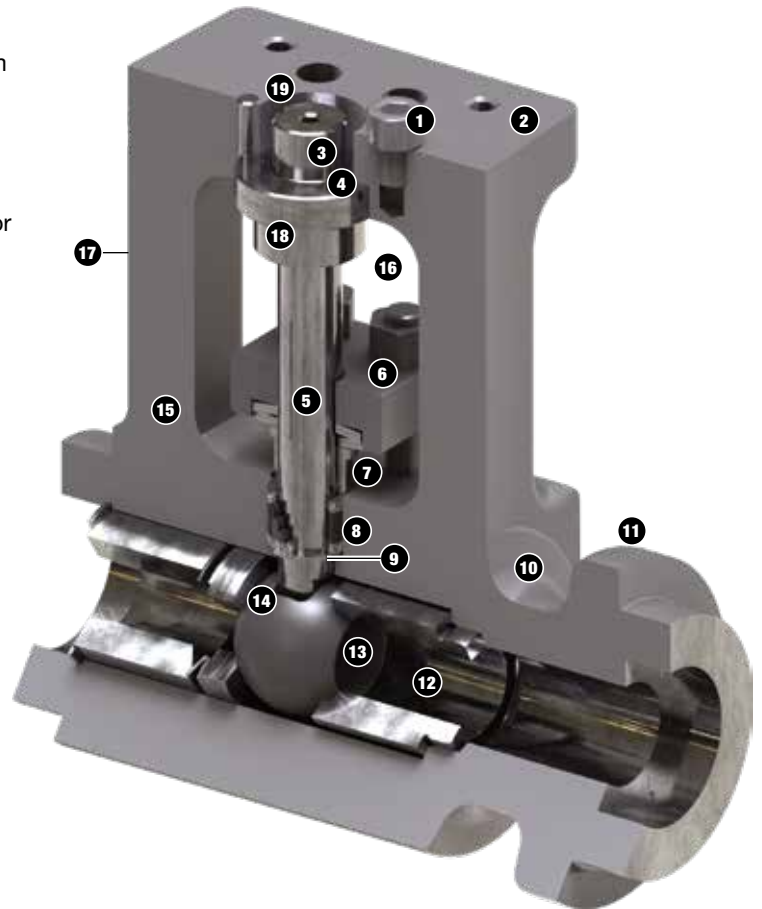
Application Specific Options

Seat designs	Engineered for maximum performance in application-specific conditions
Live-loaded packing	Ensures constant packing energization Prevents stem packing leaks and risk of fugitive emissions
Body Gaskets	Pressure energized body gasket available to meet industry codes
Materials	Application-specific materials available, including exotics Extends valve life
Coatings	Application-specific coatings provide enhanced erosion and corrosion resistance
Liners and inlays	Liners and inlays can be applied to the through-bore or wetted surfaces
Purge ports	Purge ports are available
End connections	Available end connections include flanged, welded, hub/clamp or RTJ

iRSVP

Vent and Drain Valves

- 1 Mechanical precision stop** prevents misalignment. Actuator torque is transmitted directly through the stem adaptor to the stop and relieves over torquing.
- 2 Integral mounting flange** provides rigid mounting of actuation with no loosening or shifting between bracket and body. True lockout tagout through handle lever adaptor and integral mounting flange.
- 3 Double-keyed stem** for reliable and more convenient adaptation of gears, pneumatics, hydraulics and motor operators.
- 4 Stem bushing** prevents stem blowout and aligns stem radially. **Coated** for wear resistance.
- 5 Single scribe line** on gland aligns with open or closed scribe line on stem to indicate proper ball and seat alignment and correct ball direction.
- 6 Gland flange** with concentric live loading has ample allowance for adjustments while maintaining sealing integrity. The gland flange, studs and nuts are 316SS for corrosion resistance. Live load springs are Inconel.
- The **gland thruster** is machined and coated for wear resistance for a continuous tight connection with the stem and packing box to prevent packing extrusion.
- 8 Deep stuffing box** with proven 0.125-inch cross-section Chesterton® packing and dual anti-extrusion rings that provide reliable sealing and longevity.
- 9 Metal anti-extrusion ring** minimizes packing extrusion.
- Integral **vented body design** protects the valve seat during Post Weld Heat Treatment (PWHT.)
- 11 Stop** on downstream end indicates limit for heat ribbons used for stress relief.
- Proven **press-fit seat design**.
 - ASME 1500 = 410SS / Chromium Carbide
 - ASME 3100 / 4500 = Inconel 718 / Chromium Carbide
- 13 Oversized bore** at seat face allows for rapid thermal expansion without exposing seat face to process flow. **Wider seat faces** increase seal longevity.
- 14 Mate-lapped ball and seat** for 100% sealing contact to ensure absolute shut-off.



- 15 Forged body** for reliable pressure containment.
- 16 Increased clearance** and visibility around packing nuts provides easier access for adjustment. Gland components can be raised for installation of skive-cut packing rings. **Greater length** between stem bushing and packing box bearing surfaces for more precise stem alignment.
- 17 Nameplate** is color coded to identify standard materials, and are permanently attached to mounting flange leg, visible above insulation. Nameplate location indicates high-pressure end in the closed position.
- Stem with **integrated thrust bearing** supports greater axial load. Reliable wear life. **Coated** stem for wear and gall resistance. Marked with open and close to clearly show operating position.
- 19 Bore of mounting flange** accommodates adaptor and protects recessed stem from damage and unseating ball. Adaptor blanks provided by MOGAS.

iRSVP ASME 600 / 900 / 1500

Applications

Boiler drains
Feedwater drains
Steam drum vents
Isolation valve for bypass lines
Economizer header drains

Sizes

3/4 to 2-1/2 inch



RSVP-UK ASME 600 / 900 / 1500

Applications

Boiler drains
Feedwater drains
Steam drum vents
Isolation valve for bypass lines
Economizer header drains
Water testing

Sizes

1/2 to 3/4 inch



iRSVP ASME 3100

Applications

Boiler drains
Turbine drains
Feedwater drains
Steam drum vents
HRSG vents and drains
Sootblower isolation
Isolation valve for bypass lines
Attemperator spray blocks

Sizes

3/4 to 2-1/2 inch



iRSVP and RSVP-UK Features

Ball and Seats

- Mate-lapped for 100% contact
- Ensures absolute shutoff
- Corrosion resistant
- Seats are protected from flow in open / closed position

Coating

- Withstands thermal shock
- Handles high cycling applications
- High strain to fracture
- Maintains strength of base metal
- Erosion resistant

Rigid Mounting Bracket

- Designed to support actuator in any position

Stem & Packing Arrangement

- Live loading
- Quarter-turn non-rising stem does not deteriorate packing
- Extensive stuffing box
- Dual anti-extrusion rings keep packing in place

Mechanical Precision Stop

- Prevents turning ball 180°
- Eliminates misalignment

Seat Spring

- Assisted by line pressure, provides a constant mechanical force on ball against seat to maintain seal

End Connections

Socketweld
Buttweld
Flanged

iRSVP ASME 4500

Applications

Boiler drains
Turbine drains
Above and below seat drains
Feedwater drains
Steam drum vents
Superheater vents and drains
Sootblower isolation
Isolation valve for bypass lines
Economizer header drains

Sizes

3/4 to 2-1/2 inch



T-Series

Metal-seated or Soft-seated Trunnion Valves

1 Independent actuator mounting pad attached to body

- Precision machined to ensure precise stem alignment
- Body absorbs torsional load from actuator operation transmitted through brackets

2 Simple disc spring design

- Durable design compared to multiple coil springs
- Particle tolerant
- Consistent support around seat circumference

3 Plug / stem lower trunnion design

- Enhances serviceability
- Eliminates complexity and leakage associated with typical plate supported trunnions

4 Blowout-proof anti-static stem

- Unique upper bonnet design minimizes fugitive emissions

5 Independent upper and lower stem sleeve bearings

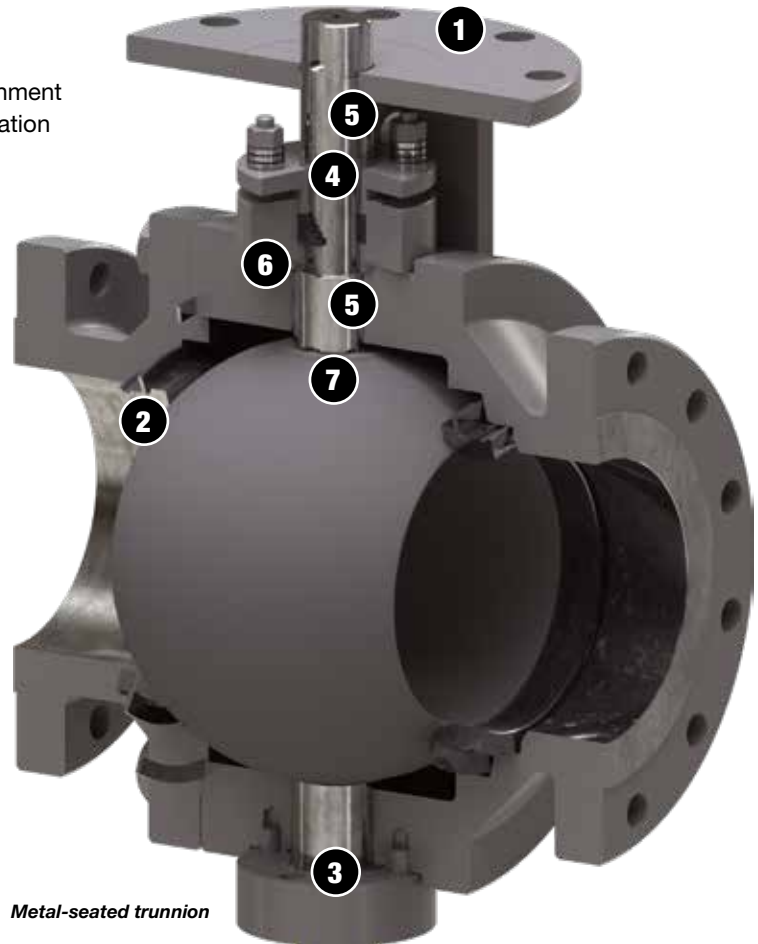
- Provides full stem support
- Reduces lateral load
- Prevents galling
- Extends packing life

6 Inner stem seal technology

- Reduces friction between anti-blowout shoulder and upper bonnet
- Prevents solids from migrating to soft stem packing, extending packing life

7 Low-hysteresis drive design

- Precision tolerances ensure accurate positional control
- Handles rapid cycling



Design

- 3 to 60 inch (80 to 1500 DN)
- Bi-directional
- API 6D or ASME B16.34
- Suitable temperature range: -50 to 400° F (-46 to 204° C)
- Suitable for high-cycle services

Options

- ASME 150 to 2500 Class (not all size / pressure class combinations available)
- Metal seated or soft seated
- Fire safe design
- Cast or forged body; 2 or 3-piece
- Process and customer-specific body and trim materials
- Process and customer-specific coatings
- Adjustable or non-adjustable stem packing
- Spiral-wound body gasket or O-ring body joint seals



ISOLATOR 2.0

Low Pressure Isolation Valves

1 Floating ball design

- Rotating ball does not cause turbulent redirection or displacement of process fluid in the flowstream, resulting in less valve stress
- Straight-through full bore path protects sealing surfaces and packing area from particulate erosion
- Metal seats wipe sealing surface of ball clean during operation preventing solids build-up and clogging

2 Pressure-energized sealing

- Belleville spring in upstream provides constant contact between ball and seat for absolute shut-off and lower operating torque
- Allows resilience during thermal expansion of trim; no graphite seat gaskets

3 Matched ball and seats

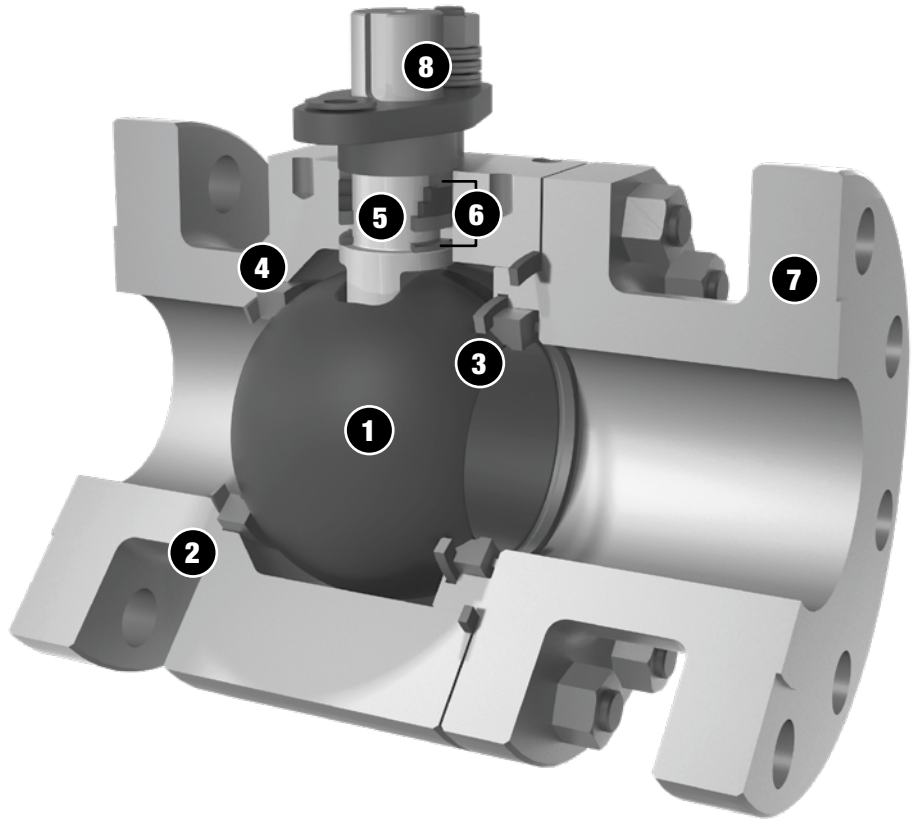
- SphereSealSM lapping process on ball and seat set provides 100% sealing contact through the full transition between the open and closed position
- Mate lapping behind seat provides tight sealing
- Optimum seat face diameter allows for lower torque without sealing compromise

4 Independent replaceable seats

- Minimizes maintenance and repair costs

5 Blowout-proof stem design

- One piece design meets industry safety standards
- High strength alloy construction
- Thicker, more robust stem tang eliminates failure inside valve



6 Packing box

- Hardened inner stem seal and graphite rings prevent stem packing leaks and risk of fugitive emissions

7 Forged body / end connections

- Greater wall thickness in critical areas provides longer valve life
- Available as raised face flanged, socketweld and buttweld

8 Live-loaded springs

- Belleville washers and gland flange leaf-spring action provide constant pressure on packing

Features Not Shown

- Designed to standards: B16:34, MSS SP-61 and API 598
- Stop plate on hand lever models (1–2 inch) indicates open/close position

Options

- Mounting bracket and stem adaptor accommodates all types of actuators and accessories, such as electric and pneumatic actuators, and positioners and solenoids.

Sizes

1, 1.5, 2, 3 and 4 inch
(for 1/2, 6 and 8 inch, consult MOGAS)

G-Series

ASME 600 Class. General Service Vent and Drain Valves

Applications

Extraction steam drains
Low pressure HRSG tube drains
Isolation valve for bypass lines cold reheat drains
Drip leg drains

Specifications

Size: 1 to 3 inch (25 to 80 dn)
Temperature*: 900° F (482° C)

Features

Ball and seat

- Alternating layers of stainless and laminated composite graphite seat with electro-plated stainless ball provide tight shut-off
- Rotating ball does not displace volume or solids
- Full bore protects sealing surfaces and meets TDP-1 2013 with no restrictions to flow

Blowout-proof stem

- One-piece design meets industry safety standards

Low torque

- Self-lubricating composite seat leads to smaller actuator packages with lower initial investment and operating costs

Operator

- Standard with hand lever and actuator mounting bracket with lock-out
- Easily adapts to manual or automated actuation



End Connections

Standard configurations include:
Socketweld (1 to 2 inch) and
Buttweld (3 inch Schedule 80)

* A105 limited to 800° F (426° C)

PORV

Prevent Excessive Pressure Build-up

Applications

Overpressure relief of boiler / superheater header

End Connections

Per customer specification

Sizes

2-1/2 to 4 inch

Standard Components

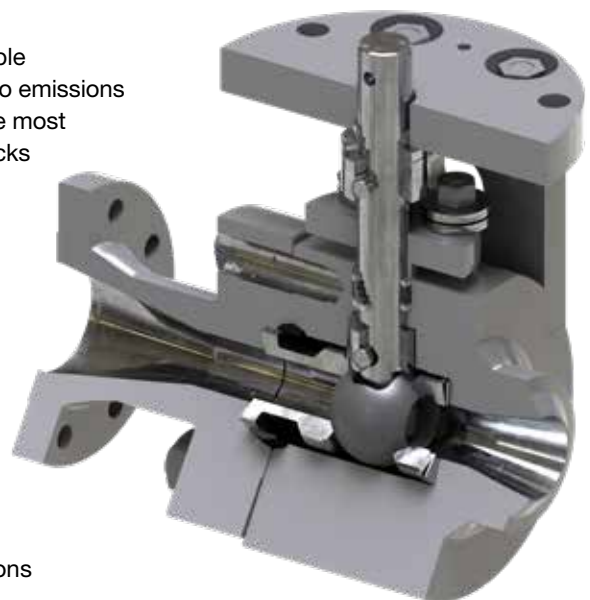
MOGAS ball valve • Actuator • Four-way electrically operated solenoid valve • Control box • Limit switch

Optional Components

Pressure switch • Siphon tube • Air reservoir kit

Features

- ASME "V" stamp available
- Live loading ensures zero emissions from stem packing in the most severe temperature shocks
- High nickel alloy base ball and seat with a proprietary coating ensures superior wear resistance
- Quick operating pneumatic actuator decreases wear on sealing surfaces
- Field repairable
- PORV and isolation package tailored to fit exact pipe gap dimensions



SC-3 Piece

ASME 2500 Class. Flexibility of Inline Repair

Applications

- High-pressure drip leg drain
- Sootblower header
- Hot reheat spray
- Superheater spray
- Main turbine drain valve
- Boiler feed pump
- Main steam supply
- Main boiler drain
- Booster pump isolation

Sizes

2 to 24 inch

Features

In-line Repairability

- Three-piece valve assembly
- Valve body can be easily removed while end connections remain in-line
- Allows valve body to be tested after repair, prior to insertion back in-line

Ball & Seats

- Mate-lapped for 100% sealing contact
- Ensures absolute shutoff
- Corrosion resistant
- Seats are protected from flow in open / closed position
- Seats are field replaceable

Seat Spring

- Assisted by line pressure, provides a constant mechanical force on ball against seat to maintain seal

Body Gaskets

- Two proprietary body joint seals of Inconel 718
- Gold plating of gaskets creates a metallic permatext to assist in sealing
- Lowers contact stresses
- Ensures zero body leaks

Quarter-turn, Non-rising Stem

- Live loading
- Quick open / close operation
- Extends the packing life

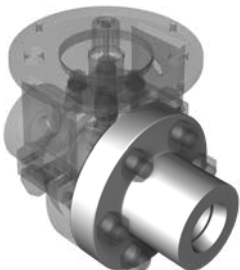


End Connections

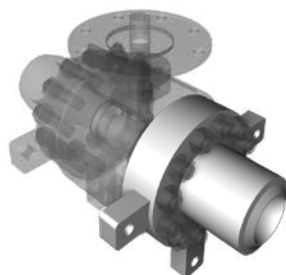
- Buttweld
- Socketweld
- Flanged
- Clamped

Available End Connections for MOGAS Valves

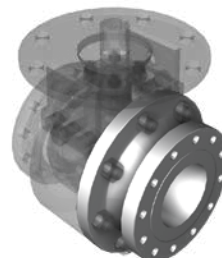
Socket Weld (SW)



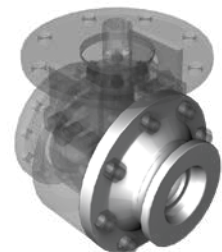
Butt Weld (BW)



Raised-Face Flange (RFF)



Clamped (CL)



Service

Global Capabilities



We provide exceptional service for unique locations—everyday, everywhere.



MOGAS' proven process includes industry experts, innovative engineers, tenured manufacturing personnel and a support team whose motto is 'Anytime. Anywhere'.

Service Excellence in Action

When you select MOGAS products, service is a big part of what comes with them. The MOGAS commitment to service means more than basic repairs. It also means timely access to our knowledgeable and experienced team of experts—anytime, anywhere in the world. And when our team becomes part of your team, you can trust that we will do everything we can to come through for you.

When you have a problem, our technical advisors get to the root of it. They will look at your entire application to accurately identify and solve the issue. Using a comprehensive approach helps you improve equipment reliability and operational efficiency, as well as reduce costs. Our core services include:

Project Support

- Installation, startup and commissioning
- Shutdown planning and implementation
- Procurement and contract management

Preventive Maintenance

- Complete system inspection
- Routine maintenance, valve repacking
- Valve asset management

Repair, Refurbish & Customization

- 24-hour emergency response
- Troubleshooting
- Valve performance analysis
- 3D finite analysis
- High pressure testing
- Online repair documentation

Predictive Maintenance Inspection

Power Walkdown



- Reduce Operation and Maintenance Costs
- Increase Reliability and Efficiency
- Assure Safety
- Validate Valve Replacement

A MOGAS power walkdown identifies valve leakage issues and their severity. Our report provides data so you can prioritize critical issues immediately, while budgeting and scheduling potential problems for a more appropriate time.

Severe service valves, and the equipment they protect, represent significant capital investments in your plant. To protect those investments and to improve performance of your facility, we offer the MOGAS power walkdown — an inspection of your critical valves using contemporary technology and technical experience.

Reducing Costs through Increased Efficiencies

Reduced operation and maintenance costs can increase process **reliability**, resulting in greater **efficiency** and **profits**. Plants using high-volume steam should routinely check their valves for leaks, and repair or replace inefficient ones. Adoption of a MOGAS power walkdown can result in substantial cost **savings**, higher system reliability and increased personnel **safety**.

When performing a MOGAS power walkdown, our experienced inspectors will use a proven process:

Capture

valve performance data, such as temperatures along the bore path.

Analyze

the information gathered from the valve performance data and visual inspection.

Report

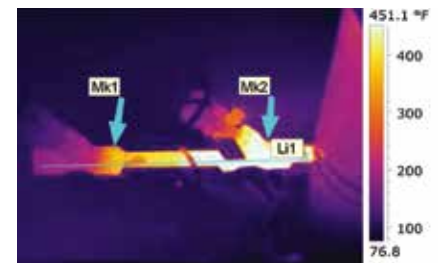
findings on our Unit Walkdown Report and, upon request, our Power Walkdown Thermography Inspection Report.

Recommend

action to repair or replace underperforming valves.

Contact your MOGAS representative today to learn more about how your plant can benefit from a Power Walkdown.

Leak-by is Proven in Thermal Imagery



The above thermal image is of two traditional, globe drain valves in the closed position. Line 1 (Li1) is used to develop a histogram and heat profile. As can be seen from the image, the upstream valve (MK2) is experiencing complete leak-by. The downstream valve (MK1) is holding better than the upstream valve, but is also experiencing extreme leak-by.

This leak-by was evidenced by the temperature and visible steam at the outlet of the downstream valve.

Confidence for Tomorrow

A Warranty is Not a Performance Guarantee



CONFIDENCE

PREDICTABILITY

RISK FREE DECISIONS

IMPROVED SAFETY

ENHANCED RELIABILITY

LESS DOWNTIME

ANTICIPATED BUDGETS

Only from MOGAS

Continuous years of research and development, design innovation, advanced manufacturing techniques and field experience allow us to offer an application-specific PERFORMANCE GUARANTEE on our metal seated isolation and control valves...plus a lifetime warranty on materials and workmanship.

Severe Service

The MOGAS Definition

- Extreme temperatures
- High pressures
- Abrasive particulates
- Acidic products
- Heavy solids build-up
- Critical plant safety
- Large pressure differentials
- Velocity control
- Noise control

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www.mogas.com**