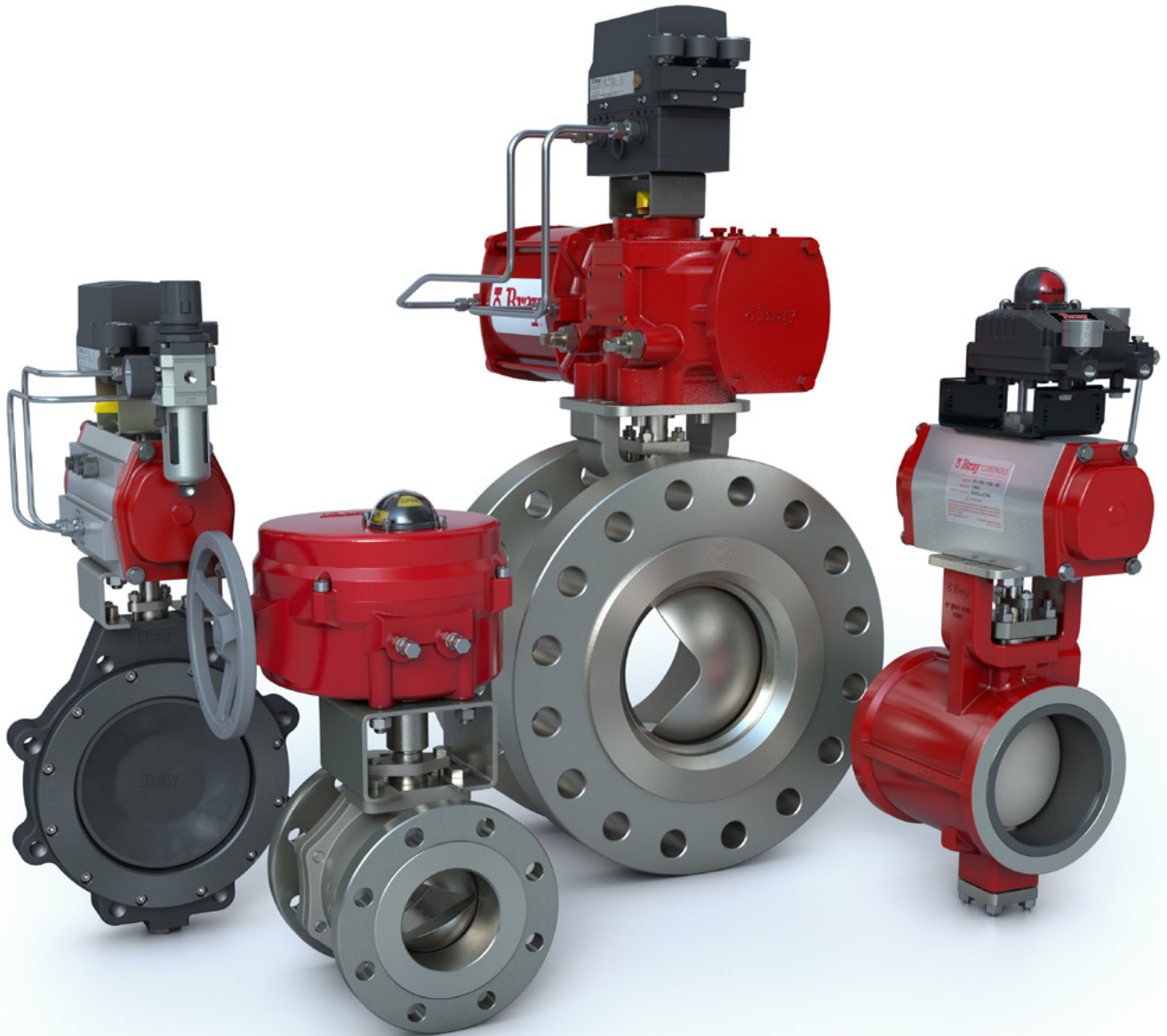

ROTARY CONTROL VALVES

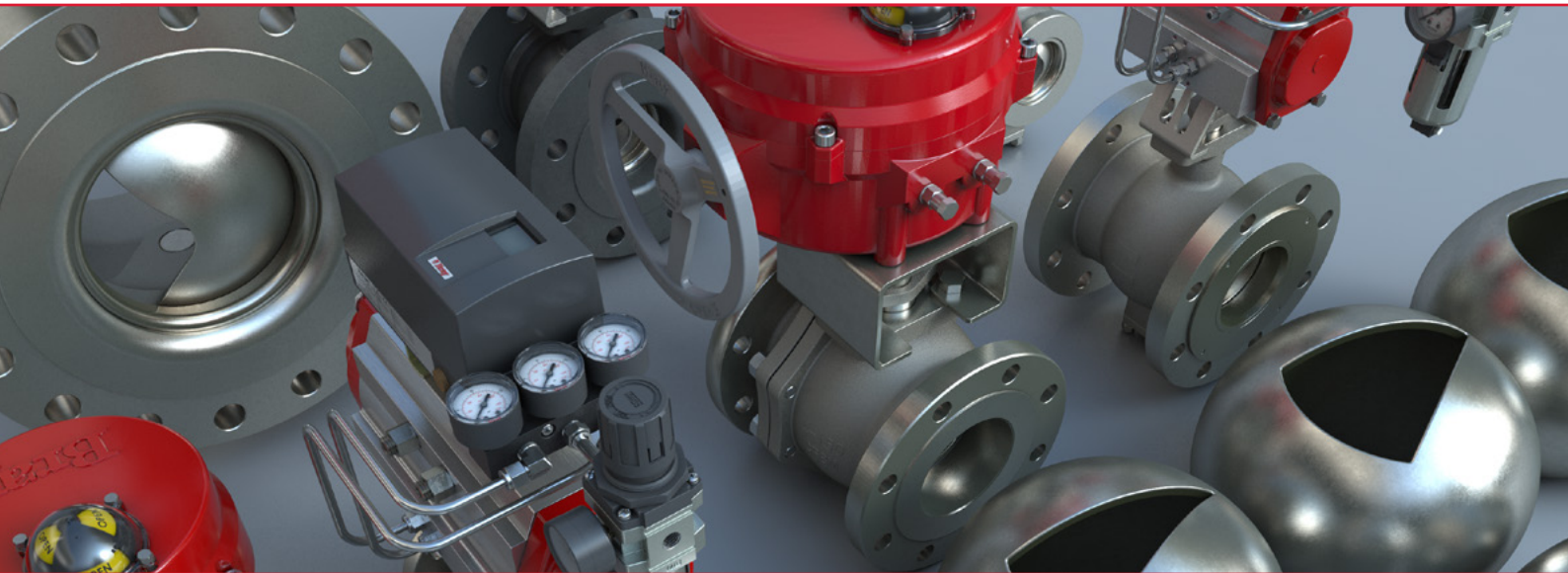
PRODUCTS & SOLUTIONS



 **Bray**[®]

BRAY.COM

THE HIGH PERFORMANCE COMPANY



**BRAY CONTROL VALVE SOLUTIONS ARE ENGINEERED TO DELIVER
THE RELIABILITY, DURABILITY, AND PRECISION REQUIRED IN
CRITICAL CONTROL APPLICATIONS FOR A VARIETY OF INDUSTRIES.**



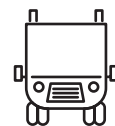
**ALTERNATIVE
FUELS**



**CHEMICAL &
PETROCHEMICAL**



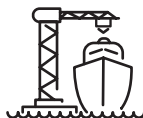
**FOOD &
BEVERAGE**



**GENERAL
INDUSTRY**



HVAC



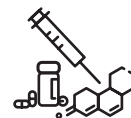
**MARINE &
SHIPBUILDING**



**MINING &
METALS**



OIL & GAS



**PHARMA &
BIOTECH**



**POWER
GENERATION**



**PULP &
PAPER**

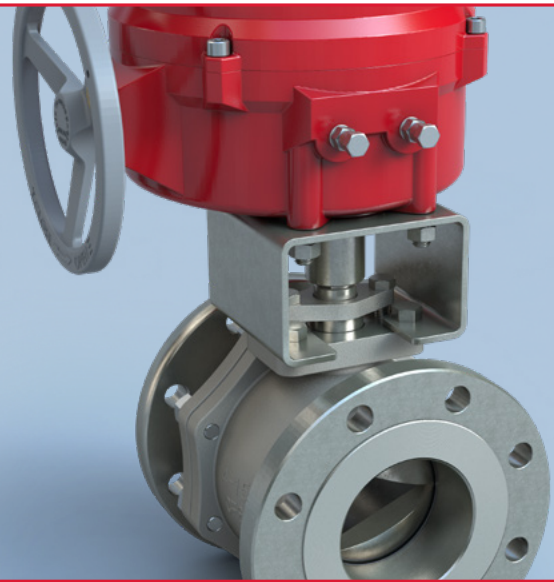


**SUGAR &
ETHANOL**



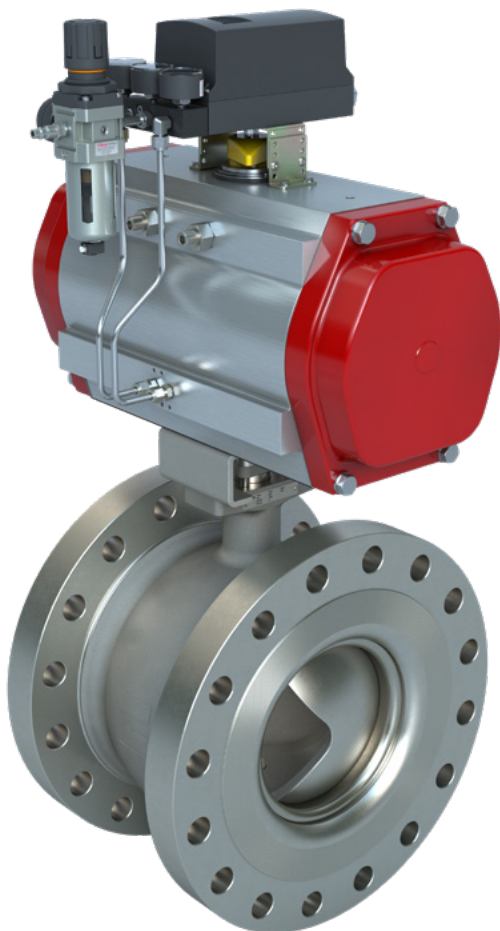
**WATER &
WASTEWATER**

Integrated Control Valve Solutions Process Performance



FOCUSED ON SOLUTIONS

Control valves are critical to maintaining process stability in any control loop. Yet, actuation and controls are equally as important to overall process stability. That's why Bray offers control valve packages — designed, engineered, and tested — to deliver consistent results for your unique process conditions.



YOUR SINGLE SOURCE SUPPLIER

As an industry leader with 30+ years of flow control experience, Bray is your single source for turnkey solutions tailored to fit your application.

Offering a single point of contact simplifies decisions — saving you time and money — while delivering a fully integrated, tested, and warrantied package.

With our applications experience, technical expertise, and comprehensive capabilities, we can offer you the necessary level of support required to ensure process performance.



RESEARCH & DEVELOPMENT

Extensive research & development is a key component in Bray's formula for providing optimized flow control solutions. Our advanced testing lab provides a real-world environment where the control valve engineering team performs a variety of ongoing activities that include:

- > Controls, automation, and actuation research.
- > Hydraulics, metallurgy, and advanced coatings research.
- > IIOT and electronics research.
- > 3D printing, prototyping, and manufacturing advancements.

COMBATTING COMMON CONTROL VALVE PROBLEMS



EROSION

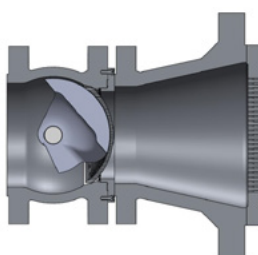
Hardened materials

Replaceable inner liners

Ultra-hard proprietary coatings

Ceramic coatings and liners

Fully sealed bearings

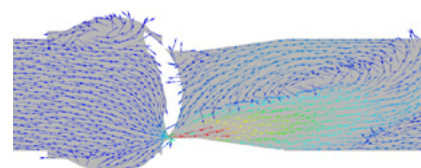


NOISE

Downstream noise plates

Integrated noise trim

Expanded outlets

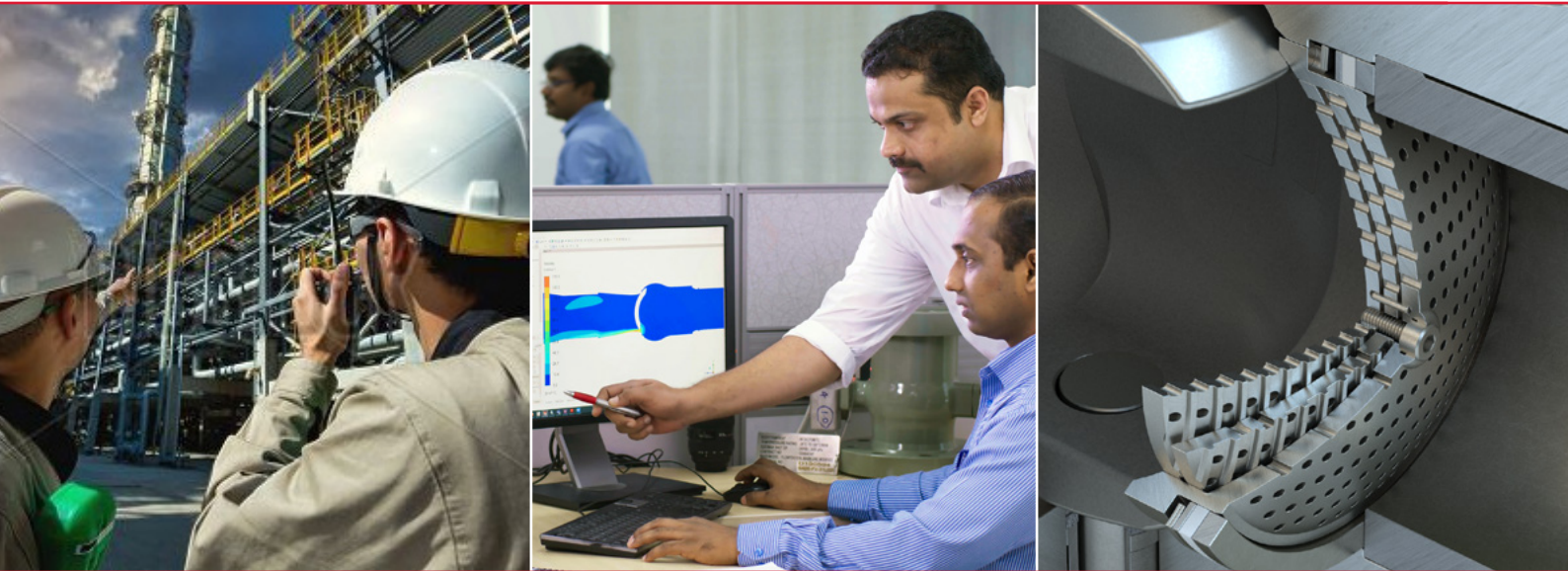


FLASHING & CAVITATION

Downstream orifice plates

Integrated multi-path trims

Hardened trims



OPTIMIZING YOUR FLOW CONTROL

Bray's group of experienced application engineers are always available to help customers throughout the process of identifying their challenges, exploring potential solutions, and designing the right control valve package to fit their needs.

DISCOVERY

Fully understanding our customers' unique challenges.

- > On-site evaluations.
- > Valve performance tests.
- > Diagnostics & monitoring.
- > Deep-dive investigations.

ANALYSIS

Implementing established engineering technology and tools.

- > Computational Fluid Dynamics (CFD) analysis.
- > Advanced flow analysis with ANSYS.
- > IEC-based noise calculations.
- > Finite Element Analysis (FEA).
- > Robust control valve, actuator, and accessories sizing software.

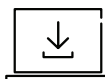
SOLUTIONS

Developing optimized valve, actuation, and controls solutions.

- > Customized flow characteristics.
- > Advanced materials and proprietary coating selections.
- > Noise reduction & cavitation control.
- > Advanced diagnostics for continuous monitoring.
- > Performance optimization.
- > Industrial Internet Of Things (IIOT).
- > Software solutions.

ON-DEMAND ENGINEERING CAPABILITIES

Our **Rapid Response Engineering Team** is ready and available to assist you with technical solutions and customization.



VISIT [BRAY.COM](https://bray.com) TO GET STARTED WITH OUR SIZING SOFTWARE.

CUSTOMER SUCCESS STORIES

Our control valve engineering team frequently works with customers to analyze their specific application challenges — providing them with customized solutions that deliver performance, profitability, and reliability.



SUGAR PROCESSING APPLICATION **SERIES 19L SEGMENTED BALL VALVE**

MEDIA

- > Highly abrasive sugar mud, containing fiber, sand, rocks, and minerals.

CHALLENGE

- > Severe erosion from the abrasive media was causing frequent valve leaks, costly shutdowns, and loss of production.

SOLUTION

- > Customized S19L segmented ball control valve included characterized segment, replaceable downstream liner, and proprietary internal surface coatings.
- > S93 rack & pinion actuator.
- > S6A positioner with advanced monitoring diagnostics.

RESULTS

- > **Reduced impacts of erosive media.**
- > **Eliminated leaks and shutdowns.**
- > **Improved control and rangeability.**
- > **Increased uptime & profits.**
- > **Extended expected service life greatly.**
- > **Provided significant annual savings per valve.**



MINING SLURRY APPLICATION **SERIES 39 BUTTERFLY VALVE**

MEDIA

- > Continuous polymetallic slurry process of lead, silver, and zinc concentrate with 35% solids.

CHALLENGE

- > The impacts and wear from the abrasive media was causing costly shutdowns for frequent valve component replacement.

SOLUTION

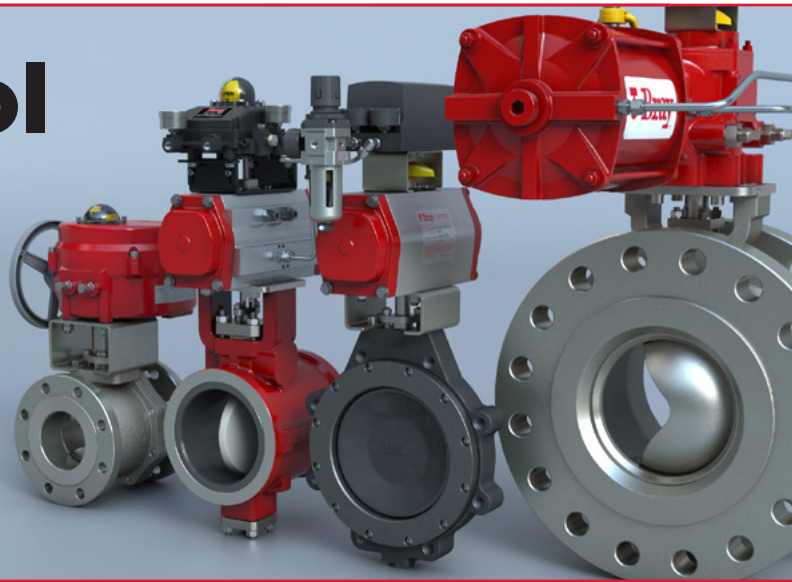
- > S39 butterfly valve with sintered silicon carbide (S-SiC) liner and ceramic disc, made of partially stabilized zirconia (PSZ).
- > S92 rack & pinion pneumatic actuator (double acting).
- > S6A positioner with advanced monitoring diagnostics.

RESULTS

- > **Greatly improved resistance to abrasive and corrosive media.**
- > **Prevented media sedimentation.**
- > **Reduced shutdowns required for frequent maintenance and valve component replacement.**
- > **Precise control led to increased efficiency and profitability.**

Rotary Control Valves

Application Specific



ROTARY CONTROL ADVANTAGES

Bray rotary control valves are engineered for precise control and reliable performance — often providing significant advantages over typical linear control valves.

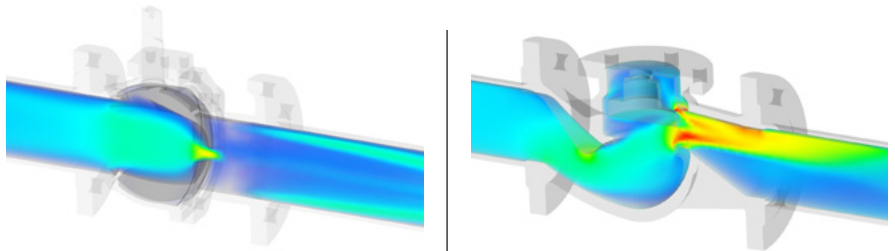
- > Compact design reduces weight, minimizes space, and lowers actuation costs.
- > Multiple face-to-face options offer direct replacement for a variety of existing control valves.
- > Simpler design uses fewer parts and requires less maintenance.
- > Easier to control emissions through stem packing.
- > Less prone to clogging in dirty service applications.

COMPACT SIZE



This example compares the size of a typical globe valve (left) and the size of a comparable V-Control valve (right).

SUPERIOR FLOW CHARACTERISTICS



This example shows the reduced turbulence and uniform flow of a typical rotary control valve (left) compared to a typical linear control valve (right).

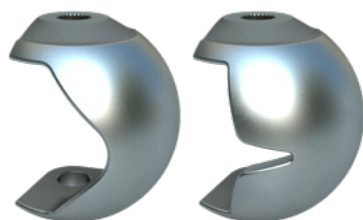
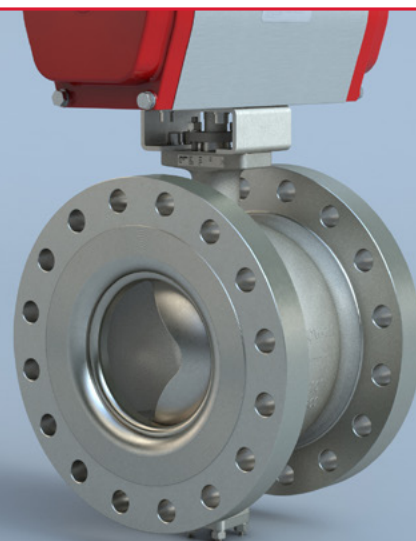
APPLICATION SPECIFIC CONTROL

Contact Bray today for assistance in selecting your optimized control valve package.

SEVERE MEDIA HANDLING

- > Slurries, sludges, or viscous fluids
- > Suspended solids or fibers
- > Corrosive or abrasive media
- > High pressure fluids and gases
- > High temperature fluids and gases
- > Steam applications

Segmented Ball Control Valve Series 19/19L



**DESIGNED FOR MODULATING CONTROL AND ON-OFF APPLICATIONS
IN GAS, LIQUID, AND SLURRY SERVICES.**

Versatile 3-in-1 Valve Performance

- > Precise, customizable control — comparable to a globe valve.
- > Uninterrupted flow path — comparable to a ball valve.
- > Shearing action through viscous media — comparable to a knife gate valve.



Flow-Tek Series 19/19L

BALL VALVE | SEGMENTED

- > Splined stem-to-segment connection provides precise control with low hysteresis and reduced deadband.
- > Energized seat design provides constant sealing force, even at low differential pressures.
- > Optional trim materials, replaceable liners, and customizable hard surface coatings for highly abrasive applications.
- > Seat options include soft seat, metal seat, and severe service designs.

Size Range	NPS 1 to 16 DN 25 to 400
Pressure Rating	ASME Class 150, 300, 600 PN 10, 16, 25, 40
Temperature Range	-50°F to 500°F -46°C to 260°C
Body Style	1-piece
End Connection	Flanged Flangeless (Wafer)
Flange Drilling	ASME B16.5 EN 1092-1
Leakage Rate	Resilient Seat¹: Class VI per ANSI/FCI 70-2; IEC 60534-4
	Metal Seat: Class IV per ANSI/FCI 70-2; IEC 60534-4
Certifications	ATEX CRN PED TSG TR CU

NOTE:

1 Resilient seats recommended only for clean liquid applications.

Characterized Ball Control Valve V-Control



DESIGNED FOR BIDIRECTIONAL, BUBBLE-TIGHT SHUTOFF AND MODULATING CONTROL IN A SINGLE PACKAGE.

- > Direct replacement drop-in for globe valve requires no piping modifications.
- > Higher flow rate and increased linear response over same-sized globe valves.
- > Reduced turbulence and faster consolidation than globe valves.



Flow-Tek V-Control

V-Control technology is available in these Bray products:

3-Piece Ball Valves
Triad Series
Series 7000/8000

Flanged Ball Valves
Series F15/F30
Series RF15/RF30

BALL VALVE | V-PORT

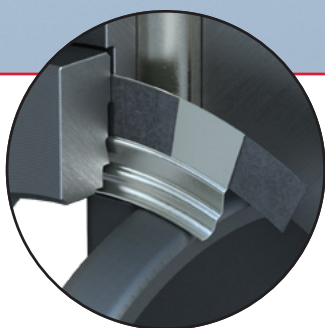
- > Standard and custom characterized ports allow for precise control over a wide flow range.
- > Non-turbulent flow path offers higher flow coefficient, with rangeability in excess of 800:1.
- > Wide range of seat materials to meet application needs, including high pressures and temperatures.
- > Adjustable live-loaded stem sealing system with certified low emission packing.

Size Range	NPS ½ to 12 DN 15 to 300
Pressure Rating	ASME Class 150, 300, 600 PN 10, 16, 25, 40 Pressures up 2200 psi WOG
Temperature Range	-50°F to 650°F -46°C to 343°C
Body Style	2-piece 3-piece
End Connection	Threaded Socket Weld Butt Weld Flanged
Flange Drilling	ASME B16.5 EN 1092-1
Leakage Rate	Resilient Seat¹: Class VI per ANSI/FCI 70-2; IEC 60534-4 Metal Seat: Class IV Std Class V optional per ANSI/FCI 70-2; IEC 60534-4
Certifications	ATEX ISO 15848 PED SIL 3 Capable TR CU

NOTE:

¹ Resilient seats recommended only for clean liquid applications.

High Performance Butterfly Valve McCannalok Metal Seated



DESIGNED FOR HIGH PRESSURE, HIGH TEMPERATURE, AND CRITICAL SERVICE APPLICATIONS.

- > Control, strength, and flexibility from contoured seat design and materials.
- > Full-faced retaining ring protects seat in abrasive applications.
- > Extensively performance tested.



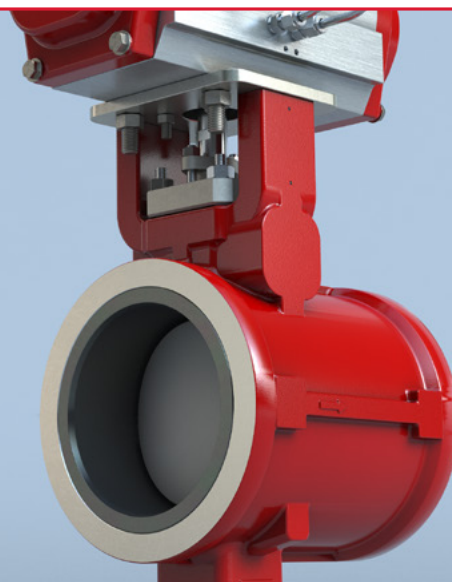
McCannalok Metal Seated

BUTTERFLY VALVE | HIGH PERFORMANCE METAL SEATED

- > Double offset geometry reduces seat wear and extends valve service life.
- > Wear-resistant Inconel® 718 metal seat provides industry leading low torque
- > Fully adjustable stem sealing system with certified low-emission packing.
- > High strength, anti-blowout one piece stem.
- > Abrasion resistance provided by nitrided disc.

Size Range	NPS 2½ to 30 DN 65 to 750
Pressure Rating	ASME Class 150, 300, 600 PN 10, 16, 25, 40, 63, 100
Temperature Range	up to 900°F up to 482°C
Body Style	1-piece
End Connection	Wafer Lug Double Flanged
Flange Drilling	ASME B16.5 EN 1092
Leakage Rate	Class IV per ANSI/FCI 70-2 IEC 60534-4
Certifications	ATEX CRN ISO 15848 PED SIL 3 Capable TR CU

Lined Butterfly Valve Series 39



DESIGNED FOR EROSION, CORROSIVE, AND SCALING APPLICATIONS.

- > Enhanced reliability through advanced material and coatings technology.
- > Easy to maintain, fully repairable and replaceable components.
- > Actuator torque requirements are lower than comparable size ball valves.



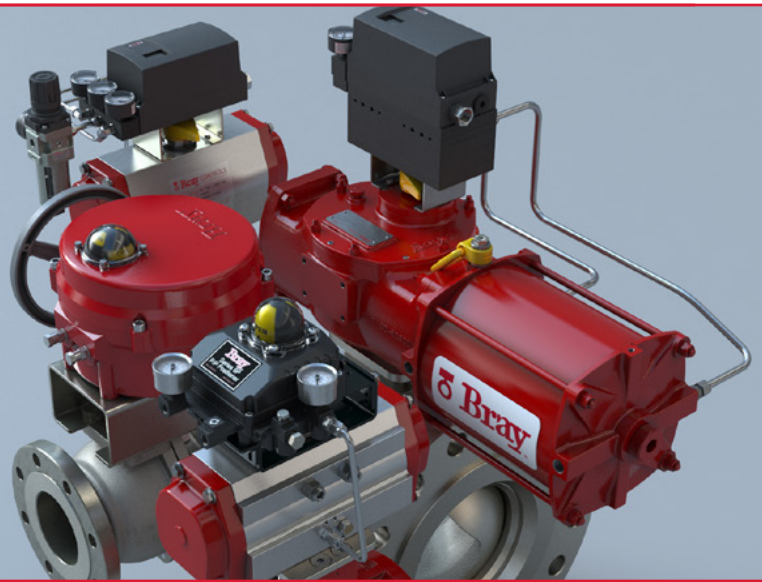
Bray Series 39

BUTTERFLY VALVE | LINED

- > Robust construction with blowout proof stem and sealed bearings.
- > Offset disc profile for optimum control and wear resistance.
- > Engineered trim solutions to suit specific applications.
- > Fully lined cylindrical flow bore, with material options including:
Ceramic (Sintered Silicone Carbide), Metallic Carbide Rich, Chrome Iron Alloy.
- > Disc material options include:
Chrome-Moly Iron (Hardened), PSZ Ceramic (Partially Stabilized Zirconia).

Size Range	NPS 2 to 20 DN 50 to 500
Pressure Rating	232 psi 16 bar
Temperature Range	-20°F to 300°F -29°C to 150°C
Body Style	1-piece
End Connections	Wafer (Short & Long Body) Flanged (Long Body)
Flange Drilling	ASME B16.5 Class 150
Certifications	TR CU Ukraine TR

Actuators & Controls Intelligent Precision



INNOVATIVE AUTOMATION SOLUTIONS

Bray is a leader in valve automation, providing innovative products and state-of-the-art technical solutions for your needs. Through years of working closely with customers, our robust technology organization is able to develop an evolving portfolio of Bray products that include actuators, positioners, switches, sensors, and accessories for various applications in multiple industries.

From smart, intelligent positioners and IIoT enabled sensors/switchboxes, to Ethernet plug & play electric actuation and solar powered electro-hydraulic actuators, Bray offers a wide range of high performing products to maximize customer uptime, safety, and efficiency. That's why customers around the world rely on Bray products to keep their processes running smoothly.

ACTUATORS

Our modular designs and customizable configurations provide best in class performance and reliability.

SCOTCH YOKE (PNEUMATIC OR HYDRAULIC)
RACK & PINION (PNEUMATIC)
ELECTRIC
ELECTRO-HYDRAULIC

CONTROL ACCESSORIES

Smart communication and control are at the heart of Bray's product designs.

POSITIONERS
PROXIMITY SENSORS
STATUS MONITORS
SOLENOIDS
ETHERNET/IP CONTROLLERS

OPTIMIZE YOUR PERFORMANCE

Bray stands ready for the opportunity to help optimize your plant's performance through our innovative automation solutions.



**Encompass™
Product Partner**

A ROCKWELL AUTOMATION PARTNER
Global



Bray Series 98

ACTUATOR | PNEUMATIC SCOTCH YOKE

- > Designed for reliable, high-cycle operation with simplified maintenance.
- > Modular design allows for a wide range of configurations, for both single and double acting applications.
- > Compact design offers a high torque-to-weight ratio, with easy field configuration.
- > Symmetrical or canted yokes provide optimized torque output.
- > Robust quad-ring seal ensures reliable sealing (as high as 1 million cycles).
- > High strength slider block provides excellent load carrying ability.
- > Self-lubricated bearings ensure maximum torque transfer from actuator to control valve.
- > High quality alloy steel spring is designed for high cycle life and rapid cycling.

Torque Output Range	2,744 to 885,100 in-lb 310 to 100,000 Nm
Temperature Range	-50°F to 300°F -46°C to 149°C
Pressure Rating	40 to 150 psi 2.8 to 10.3 bar
Enclosure Rating	IP66/IP67M per IEC 60529
Testing Standard	EN 15714-3:2009
Certifications	ABS ATEX PED SIL 3 TR CU



Bray Series 98H

ACTUATOR | HYDRAULIC SCOTCH YOKE

- > Designed for reliable, high-cycle operation with simplified maintenance.
- > Modular design allows for a wide range of configurations, for both single and double acting applications.
- > Compact design offers a high torque-to-weight ratio, with easy field configuration.
- > Symmetrical or canted yokes provide optimized torque output.
- > Robust quad-ring seal ensures reliable sealing (as high as 1 million cycles).
- > High strength slider block provides excellent load carrying ability.
- > Self-lubricated bearings ensure maximum torque transfer from actuator to control valve.
- > High quality alloy steel spring is designed for high cycle life and rapid cycling.

Torque Output Range	1,629 to 885,100 lb-in 187 to 100,000 Nm
Temperature Range	-20°F to 212°F -29°C to 100°C
Pressure Rating	500 to 3000 psi 35 to 207 bar
Enclosure Rating	IP66/IP67M per IEC 60529
Testing Standard	EN 15714-4:2009
Certifications	ATEX PED SIL 3



Bray Series 92/93

ACTUATOR | PNEUMATIC RACK & PINION

- > Modular design available for single or double acting applications.
- > Enclosed and self-contained construction with internal air porting.
- > Permanently lubricated, with independently adjustable travel stops.
- > Anodized aluminum body with polyester coated end caps; special materials and coatings available for added corrosion resistance.
- > Direct mount capability minimizes hysteresis and stem backlash.
- > Multiple bore options to direct fit various control valve types (star, double-d and key).
- > Accurate controllability through low friction bearings and precise drive train machining.

Torque Output Range	Up to 44,130 in-lb Up to 4,986 Nm
Temperature Range	-40°F to 350°F -40°C to 149°C
Pressure Rating	Up to 140 psi Up to 10 bar
Enclosure Rating	IP66/IP67M per IEC 60529
Testing Standard	EN 15714-3:2009
Certifications	ABS ATEX Bureau Veritas PED SIL 3 TR CU



Bray Series 70

ACTUATOR | ELECTRIC

- > Industry leading low profile and lightweight electric actuator.
- > Heavy duty motor and high strength gears are designed to handle constant control valve repositioning requests.
- > Precise machining of drive train allows high resolution and minimal dead time.
- > High-efficiency gearing allows for accurate, repeatable positioning of control valves.
- > High position accuracy of NXT controls (up to 1%).
- > Optional models for hazardous locations or harsh environments.
- > Ethernet connectivity available.

Torque Output Range	300 to 18,000 in-lb 34 to 2034 Nm
Temperature Range	-20°F to 150°F -29°C to 65°C
Voltages	120, 230 VAC 50/60 Hz, 1-Phase 24V: AC/DC
Enclosure Rating	NEMA 4, 4X IP65, IP67
Certifications	Most models: UL, CSA, CE, and TR CU/EAC approved 70-24V: CSA, CE, and TR CU/EAC approved



Bray Series 6A



Bray Series 6A Explosion Proof

CONTROL ACCESSORIES | ELECTRO-PNEUMATIC POSITIONER

Precision digital control with proven reliability, Series 6A positioners are designed with ease of installation, simple calibration, efficiency, and economy in mind.

- > LCD display, auto calibration, and control valve diagnostics standard.
- > Zero bleed positioner allows precise controllability (up to 1%).
- > Run control valve performance tests to identify changes over time.
- > Monitor response time, overshoot, dead band, change in directions, friction, cycle count.
- > Intelligent features include partial stroke test, fail in place, fail safe, and valve performance test.
- > Standard 4-20 mA input. Optional Hart, Profibus PA, or Fieldbus communications protocols available.
- > Available polycarbonate, aluminum, or stainless steel enclosure.
- > Intrinsically safe (Ex ia, ib) or explosion proof (Ex d) available on request. SIL 2 capable.



Bray Series 6P

CONTROL ACCESSORIES | PNEUMATIC POSITIONER

Outstanding control and split-range capability for a wide range of quarter-turn valves with double acting or single acting/spring return actuators.

- > Built tough to handle high vibration/shock applications without compromising controllability.
- > Low bleed air design provides excellent dynamic and accurate response.
- > 2-stage pilot relay design provides precise response characteristics using a 3 to 15 psi (0.2 to 1.0 bar) pneumatic control signal.
- > High visibility dome position indicator with 3 gauges as standard.
- > Anodized and powder-coated aluminum construction for corrosion resistance.
- > Quick setup through simple calibration, with independent zero and span adjustments.
- > 4-20mA position feedback transmitter and/or limit switches available.



Bray Series 54

CONTROL ACCESSORIES | INDUCTIVE PROXIMITY SENSOR

Series 54 Inductive Proximity Sensors provide non-contact valve position monitoring solutions for reliable plant operation. Compact design mounts easily to **VDI/VDE 3845 compliant** quarter-turn actuators.

- > Two independent sensors for open and close valve position indication.
- > Rugged design is resistant to shock, vibration, UV, and corrosion.
- > IP66/67/69K enclosures with hermetically sealed sensors protect against environmental ingress.
- > Non-contact sensing eliminates the effects of mechanical wear, switch welding, arcing, and sparking.
- > LED indication for sensor power, switch, and solenoid status.
- > Available AS-i sensor for digital networks solutions.



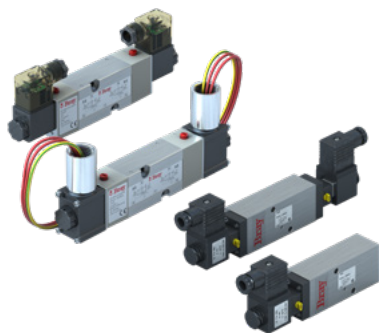
Bray Series 5A, 5B, 5C

+ Optional Resin Housing

CONTROL ACCESSORIES | VALVE STATUS MONITOR

Series 5A, 5B, and 5C Valve Status Monitors (VSM) provide reliable visual and electrical position indication on all **VDI/VDE 3845 compliant** quarter-turn rotary actuators. Suitable for general purpose environments (5A and 5B), intrinsically safe areas (5A and 5B), or hazardous locations (5C).

- > Shatterproof and UV-resistant dome indicators are double sealed to prevent water ingress.
- > IP66/67/68 rated enclosures provide ensure reliable operation in all operating environments.
- > Intrinsically safe (Ex ia) or explosion proof (Ex db, tb) available on request.
- > Spring loaded splined cams facilitate easy and accurate switch setting.
- > CommPro (AS-i), Device Net, and Profibus DP network protocols are available for digital network solutions.
- > Multiple switch options with imperial or metric conduit connections and easy access terminal strips.



Bray Series 60, 63

CONTROL ACCESSORIES | SOLENOID

Suitable for use with single or double acting actuators, these Series 60/63 solenoid valves are available with ½ NPT conduit connections or DIN connectors with PG9 cable gland.

- > Compact modular construction.
- > Pilot operated spool control design, with single or dual coil.
- > Low power, intrinsically safe, and hazardous location options available.
- > NEMA 4, 4X, IP65 rated.



Bray Series 55

CONTROL ACCESSORIES | FILTER REGULATOR

Designed to provide nominal filtration removal of solids and liquids from compressed air, with accurate control to any pneumatic control device. Recommended for use with the Bray Series 6A and 6P positioners.

- > Provides 5 micron filtration.
- > Locking knob allows for downstream pressure adjustment, and locks the pressure setting in place.
- > Threaded collar permits easy attachment of bracket for panel mounting.
- > Bowl quick-release allows easy access to filter element without special tools.

SINCE 1986, BRAY HAS PROVIDED FLOW CONTROL SOLUTIONS
FOR A VARIETY OF INDUSTRIES AROUND THE WORLD.

VISIT **BRAY.COM** TO LEARN MORE ABOUT
BRAY PRODUCTS AND LOCATIONS NEAR YOU.

HEADQUARTERS

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Houston, Texas 77041

Tel: +1.281.894.5454

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