The High Performance Company

Products for the Nuclear Industry

Bray International, Inc. is proud to announce its division Bray Contols USA has received a Certification of Authorization from the American Society of Mechanical Engineers (ASME) to use the N-stamp symbol. The N-stamp can be applied by Bray Controls USA to Class 2 & 3 valves constructed in its Houston, Texas facility, which meet requirements of the ASME Boiler and Pressure Vessel Code

For over 20 years, Bray has provided new and innovative design elements for flow control products and is one of the leading manufacturers of these products worldwide and the leader in the Power Industry.

With the potential growth in the Nuclear Power Industry in the years ahead, Bray is working to further develop and extend relationships with existing fleet as a replacement valve supplier and with owners, reactor manufacturers and EPC firms for new builds.

APPLICATIONS:

Condenser Cooling
Steam Extraction
Heat Exchanger Isolation
Potable Water
Circulating Water
Fire Protection
Raw Water/Seawater
Intake Isolation

For the Power Industry Bray designs and manufactures:

Double Offset High Performance Butterfly Valves

Body Style: Wafer or Lug
Size Range: 2 ½" – 60 "
(65 mm – 1500 mm)
Pressure Range:
To ASME Class 600
Largest installed base of critical valves in existing USA power plants

Resilient Seated Butterfly Valves

Body Style: Wafer , Lug or Double Flanged
Size Range: 1" – 120"
(25 mm – 3000 mm)
Pressure Range:
To 175 PSI (12 Bar)

Triple Offset High Performance Butterfly Valves

Body Style: Wafer, Lug or Double Flanged
Size Range: 3" – 60"
(80 mm – 1500 mm)
Pressure Range: To ASME Class 900

Wafer Style Swing Check Valves

Body Style: Wafer
Size Range: 1" – 60"
(25 mm – 1500 mm)
Pressure Range:
To ASME Class 600

Pneumatic Actuators

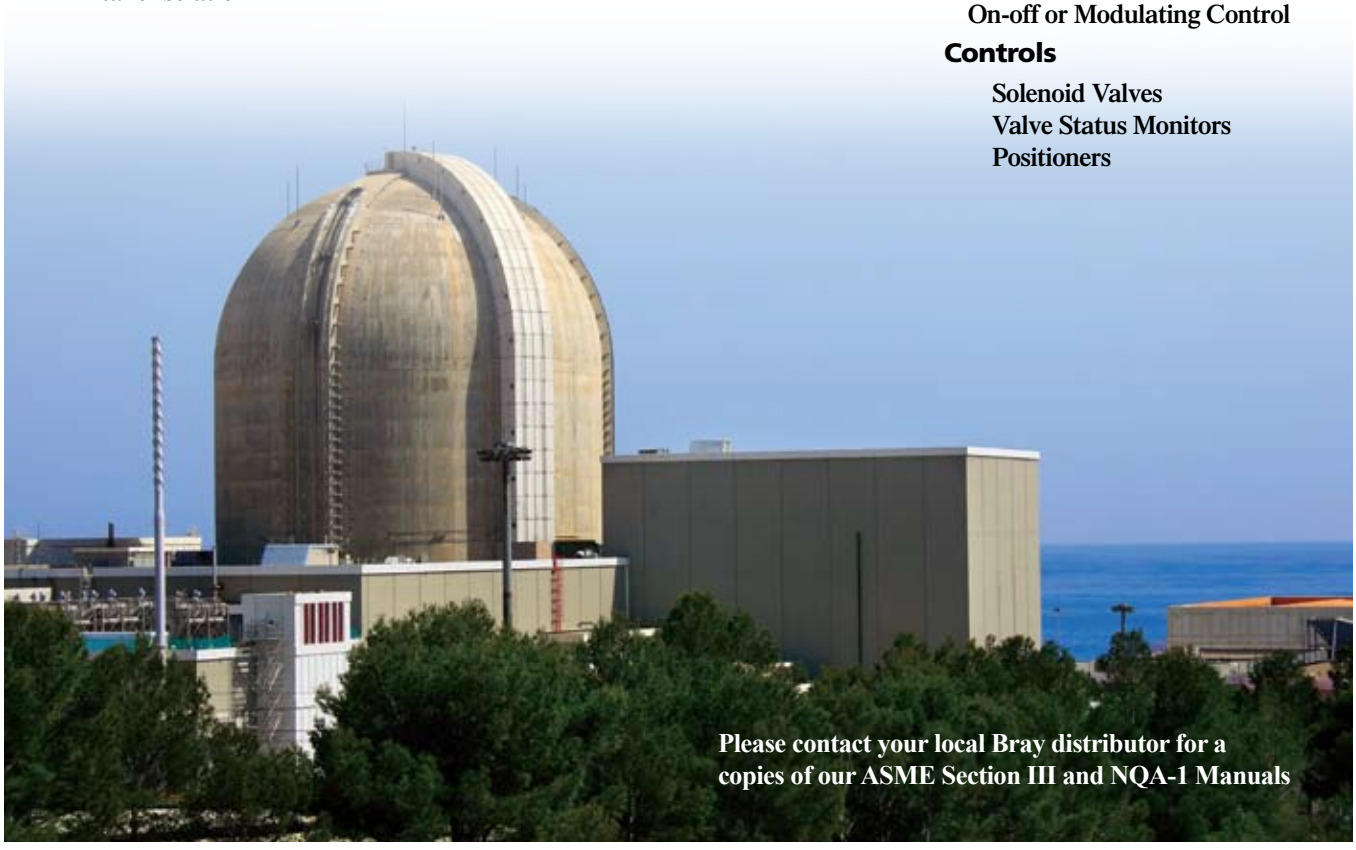
To 44,130 Lb-in (4986 Nm)
Double Acting & Spring Return

Electric Actuators

To 18,000 Lb-in (2034 Nm)
On-off or Modulating Control

Controls

Solenoid Valves
Valve Status Monitors
Positioners



Please contact your local Bray distributor for a copies of our ASME Section III and NQA-1 Manuals

Bray/McCannalok

Double Offset High Performance Butterfly Valves

OVERVIEW

Body Style:
Wafer, Lug or Double Flanged

Size Range:
2 1/2" – 60"
(65 mm - 1500 mm)

Pressure Rating:
ASME Class 150, 300 and 600

Temperature Range:
-20°F to 500°F
(-29°C to 260°C)

Available with Pneumatic or Electric Motor Actuators, Positioners, and other accessories.

APPLICATIONS

Water Vacuum
Steam Dead End Service

DESIGN

BODY

One-piece wafer, lug or double flanged style for bi-directional sealing at full pressure. Available in ASME Class 150, 300 and 600. Extended neck allows easy access to stem packing. Available in Carbon Steel, Stainless Steel, Duplex Stainless Steel or other materials.

STEM

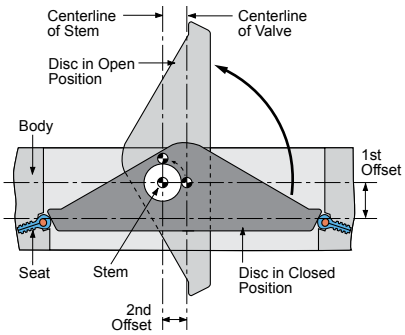
High-strength, one-piece 17-4PH Stainless Steel stem.

ADJUSTABLE STEM PACKING

Easy access to adjusting hex head nuts without removing actuator.

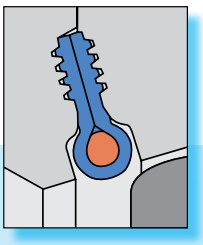
DISC

Designed for maximum flow and high Cv.The Double Offset design assures reduced seat wear and bi-directional, zero leakage, shutoff throughout the full pressure range. At initial point of opening, the offset disc produces a cam-like action, pulling the disc from the seat. This reduces seat wear and eliminates seat deformation when the disc is in the open position. As the valve closes, the cam-like action converts the rotary motion of the disc to a linear type motion to effectively push the disc onto the seat. Available in Carbon Steel, Stainless Steel, Duplex Stainless Steel or other materials.

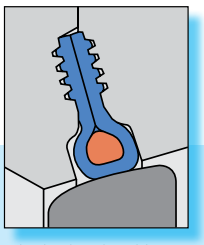


SEAT DESIGN

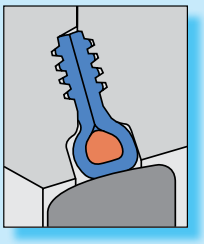
A unique, two-part self-adjusting seat assembly consisting of a resilient energizer, which is totally encapsulated by a polymer seat material suitable for nuclear applications. The assembly is locked in the body recess by a full-faced seat retainer. The seat is energized by the disc and line pressure. As pressure increases the seal becomes tighter. Line media is sealed to zero leakage in both directions. Seat is field replaceable.



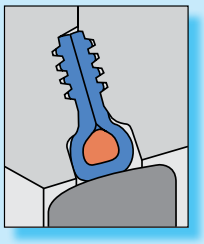
Seat non-compressed as disc approaches.



Disc in closed position; with no line pressure.



Disc in closed position; line pressure applied from the left.



Disc in closed position; line pressure applied from the right.

Consult the factory or your local Bray distributor for dimensions, materials of construction, Cv's and torque values.

Resilient Seated Butterfly Valves

OVERVIEW

Body Style:
Wafer, Lug or Double Flanged

Size Range:
2" – 120"
(50 mm - 3000 mm)

Pressure Rating:
Up to 175 psi (12 Bar)

Temperature Range:
-40°F to 250°F
(-40°C to 121°C)

Available with Pneumatic or Electric Motor Actuators, Positioners, and other accessories.

APPLICATIONS

- Water

DESIGN

BODY: One-piece wafer, lug or double flange style cast iron for bi-directional sealing at full rating when mounted between flanges.

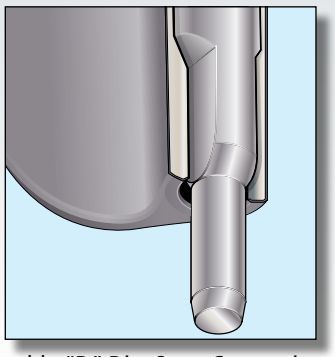
DISC: Spherically machined, Nylon 11 coated and hand polished to provide bubble-tight shut off, minimum torque and longer seat life. Nylon 11 coating provides superior corrosion protection and performance.

SEAT DESIGN
A unique design fully isolates the body from the line media and reduces torque required to open and close valve. Available in EPDM (standard) and Buna N. This design eliminates the requirement for flange gaskets.

Consult the factory or your local Bray distributor for dimensions, materials of construction, Cv's and torque values.

STEM: These valves are furnished with internal connections which eliminate exposure of stem retention components to line media. Bray's precision machining of the disc and the stem connection ensures hysteresis is eliminated and all stem connection designs produce maximum strength engagements.

2" - 20" - A through-stem direct drive double "D" design. Available in 416 Stainless Steel, 304 Stainless Steel, 316 Stainless Steel and other materials.



Double "D" Disc-Stem Connection

24" and Above - Two disc-to-stem connections are furnished; Splined and Double Keyed. Available in 416 Stainless Steel, 316 Stainless Steel, Duplex Stainless Steel, Austenitic Stainless Steel and other materials.

Splined Disc-Stem Connection

Double Keyed Disc-Stem Connection

Metal Seated Triple Offset Butterfly Valves

OVERVIEW

Body Style:
Wafer, Lug or Double Flanged

Size Range:
3" – 60"
(80 mm - 1500 mm)

Pressure Rating:
ASME Class
150, 300, 600 and 900

Temperature Range:
-425ºF to 1,200ºF
(-254°C to 650ºC)

APPLICATIONS

Water Steam

DESIGN

BODY

One-piece wafer, lug or double flange style, with unique hub and bearing design to support stem while preventing media ingress. Available in Carbon Steel, Stainless Steel or other materials.

DISC

Using proprietary software, the disc profile has been optimized to provide the highest strength while maximizing the valve Cv's.

STEM

Unique splined disc-stem connection facilitates self-alignment of the disc seal and eliminates internal pins. This design allows axial movement of the disc independently of the stem. Therefore, the disc seal and body seat remain in position, unaffected by temperature fluctuations and pressure effects on the bottom of the stem. Close tolerance engagement between the disc and stem eliminates hysteresis. Standard stem materials are 17-4PH, 410 Stainless Steel and Nitronic 50. Other materials are available.

SEAT / SEAL SYSTEM

Our frictionless, non-interference resilient metal-to-metal seal provides zero leakage with minimum torque. The Disc Seal is a laminated 321 Stainless Steel/Graphite ring, locked in position by a full-faced retainer bolted to the disc. The elasticity of the laminated ring ensures uniform peripheral sealing with the seat, achieving full shutoff regardless of flow direction.

BODY HUB & BEARING SYSTEM

Our unique bearing system features Inboard Body Hubs which protrude into the flow path, allowing the bearings to extend fully to the disc. This configuration produces the least amount of unsupported stem length possible. Stem deflection and strain during operation under high pressure drops are greatly reduced – substantially enhancing performance and increasing valve service life.

Consult the factory or your local Bray distributor for dimensions, materials of construction, Cv's and torque values.

Power Actuators and Accessories for Bray Butterfly Valves

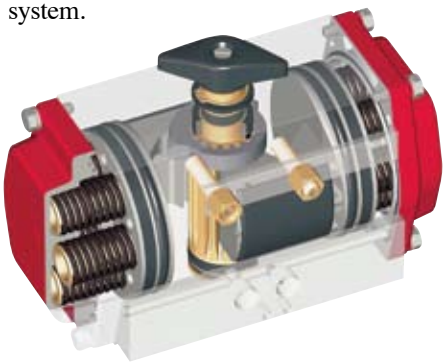
Series 92/93 Pneumatic Actuators

TO 44,130 LB-IN (4,986 Nm) OUTPUT TORQUE

Bray's Series 92/93 line of high performance and high quality pneumatic actuators combines styling, strength, compactness and simplicity of design to produce the best rotary actuator in the market today.

Engineering excellence and precision manufacturing have produced a modular product line with reduced overall size requirements and economic savings. In addition all Brayline Accessories are fully modular and directly mount to the actuator – providing flexibility and efficiency at reduced cost.

SPRING RETURN Bray's Series 93 spring return models employ a unique cartridge system.



SERIES 63 3-WAY AND 4-WAY SOLENOID VALVE

SERIES 6A ELECTRO-PNEUMATIC POSITIONERS

SERIES 52 VALVE STATUS MONITOR

SERIES 50 VALVE STATUS MONITOR

Series 70 Electric Actuators

RUGGED ELECTRIC ACTUATOR FOR ROTARY VALVES - TO 18,000 LB-IN (2,034 Nm) OUTPUT TORQUE

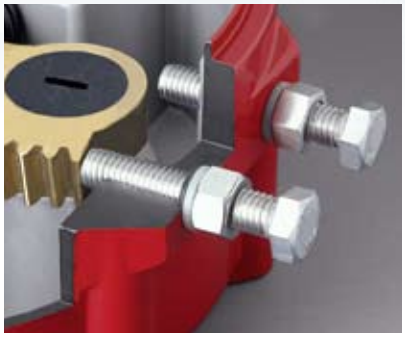
Bray Controls' years of proven success in electric actuation, combined with innovative engineering, has produced the Series 70. The Series 70 features on-off or modulating control. This electric actuator for rotary valves delivers highly reliable service.

Bray's unique Control Center has many advantages over present industry standards including:

- **UL, CSA and CE certification of most units**
- **Ease of customer field wiring directly to the terminal strip without interference from other components**
- **Simple and unique manual override handwheel system**
- **Lowest profile and lightest weight actuator on the market**
- **Simple finger or screw driver adjustment of travel limit cams without interference from other components**
- **Highly visible valve status display**
- **Externally adjustable mechanical travel stops**
- **Captive housing bolts**

Additionally, components not requiring customer access are protected underneath the Power Center cover plate.

Wafer Style Check Valves

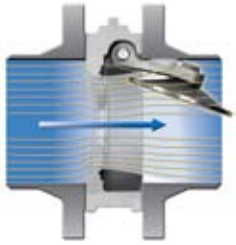


STAINLESS STEEL MECHANICAL TRAVEL STOPS

INFINITELY ADJUSTABLE CAMS

OPTIONAL TORQUE LIMITING SWITCH SYSTEM

SERVO PRO OPERATION CAN BE CONFIGURED TO ACCEPT SEVERAL TYPES OF INPUT SIGNALS



OVERVIEW

Body Style: Wafer
Size Range:
1" – 60"
(25 mm - 1500 mm)
Pressure Rating:
ASME Class 150, 300, and 600
Temperature Rating:
1000ºF (538ºC)

APPLICATIONS

Water
Steam
Vacuum

DESIGN

BODY

Compact wafer design minimizes the distance between faces and allows easy to installation between ANSI or other standard flanges. Only one set of flange bolts, which span the valve, are required. The installed valve is more rigid than the length of pipe it replaces; therefore there is no requirement for expensive supports. Available in carbon steel and stainless steel.

DISC

The spring actuated disc assembly operates in either a horizontal or a vertical position, simplifying pipe layout. The closing action is designed to minimize the destructive effect of a sudden reversal of flow or line hammer, which is more evident in conventional check valves. Operation is automatic and silent when properly applied. Available in stainless steel

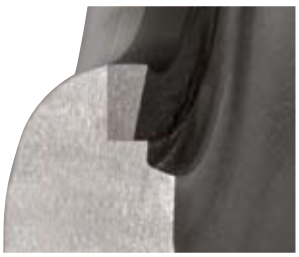
SEAT

Available in metal-to metal or resilient seat design, all zero leakage.

Resilient Seat

Metal-To-Metal Seat

Metal Seat Insert



Consult the factory or your local Bray distributor for dimensions, materials of construction, Cv's and external accessories.

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Bray Canada

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Flow-Tek China

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