

**Bray** COMMERCIAL

## PRODUCT PROFILE





## INTRODUCTION

At Bray International, Inc., our business is helping our customers with their flow control requirements. Our product line of butterfly valves, actuators and accessories offers the best compatibility, economy and quality performance in the flow control industry.

Through years of field application experience, research and development Bray has designed products that meet the stringent requirements of today's flow control industry. We have earned a reputation for excellence by creating products of superior value and quality, providing personalized customer service and emphasizing on-time deliveries. Our success has always been the direct result of our fully integrated range of valve, actuator and control products. Rugged and reliable, our products are engineered to provide years of trouble free service.

Bray manufacturing facilities are certified to ISO 9001 quality standards, assuring product quality, precision manufacturing and internal process integrity.

Bray is committed to customer support. Our extensively trained staff is knowledgeable of all Bray products and their applications and can provide personal attention to every customer. To serve you locally Bray maintains a factory certified sales and service network, for all Bray products, throughout the world.

## COMMITMENT TO QUALITY

Bray International recognizes that our customers make us successful and they have a choice of many manufacturers when selecting valves, actuators and accessories for their applications. Since many manufacturers have access to the same materials of construction for these products, Bray believes that a customer's purchase decision is heavily influenced by the following key factors:

- > Trust in the manufacturer
- > Confidence in the quality assurance and integrity of the manufacturer
- > Proven industry experience
- > Features and benefits of the product
- > Cost of ownership
- > Customer service
- > Delivery

*"Bray is focused on and committed to meeting the expectations and needs of our customers while continually improving the effectiveness of our quality management.*

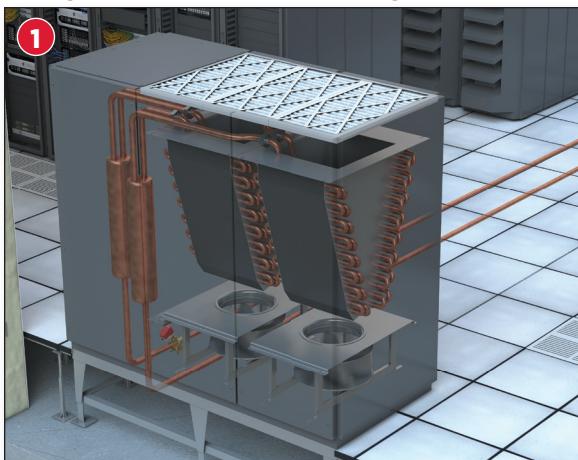
## **Bray COMMERCIAL**

Bray Commercial provides automated butterfly valves, ball valves and pressure independent valves to the commercial building HVAC market throughout the world. Wherever valve performance is required to maintain climate controlled environments, Bray can provide the required automated valves to meet the demanding flow applications of chiller/boiler isolation, air handlers and terminal units for new construction, retrofit and/or LEED certification applications in buildings such as:

- |  |  |
|--|--|
| <ul style="list-style-type: none"><li>&gt; Hospitals</li><li>&gt; Schools and Universities</li><li>&gt; Data Centers</li><li>&gt; Government and Municipal Buildings</li></ul> | <ul style="list-style-type: none"><li>&gt; Commercial Offices</li><li>&gt; Airports</li><li>&gt; Hotels</li><li>&gt; Sports/Entertainment and Convention Centers</li></ul> |
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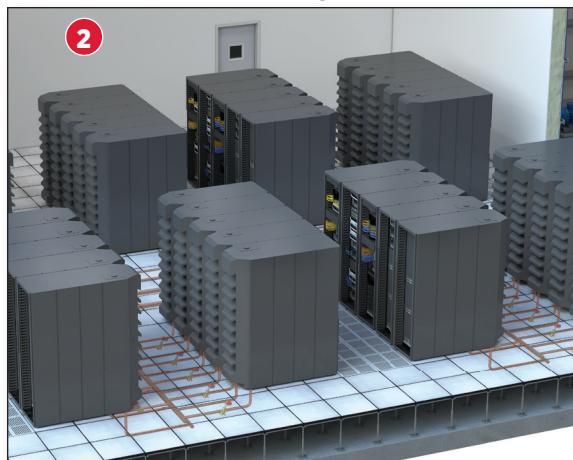
In addition to producing valves of unsurpassed quality, our core competency is servicing our BAS partners, OEM's and contractors to ensure you receive the most effective and economical valve solution package. Bray's extensively trained staff is knowledgeable in all aspects of Bray's products and their applications. To provide personal attention to every customer, each region maintains a factory certified sales and service network for all Bray products.

### Computer Room Air Handling Units



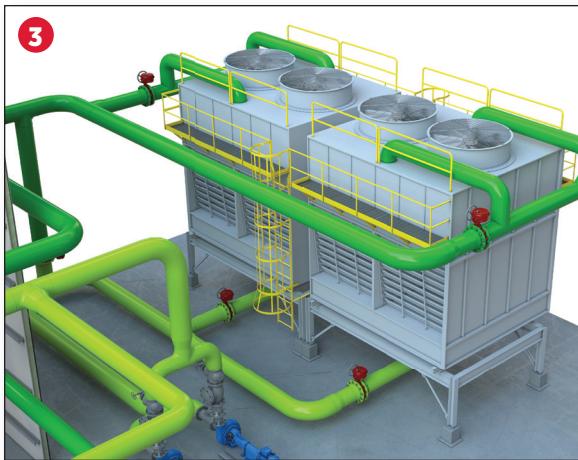
- > Simple Set Pressure Independent Control Valves
- > EBV and STM Ball Valves

### On-Rack Server Cooling



- > Simple Set Pressure Independent Control Valves
- > EBV and STM Ball Valves

### Cooling Towers



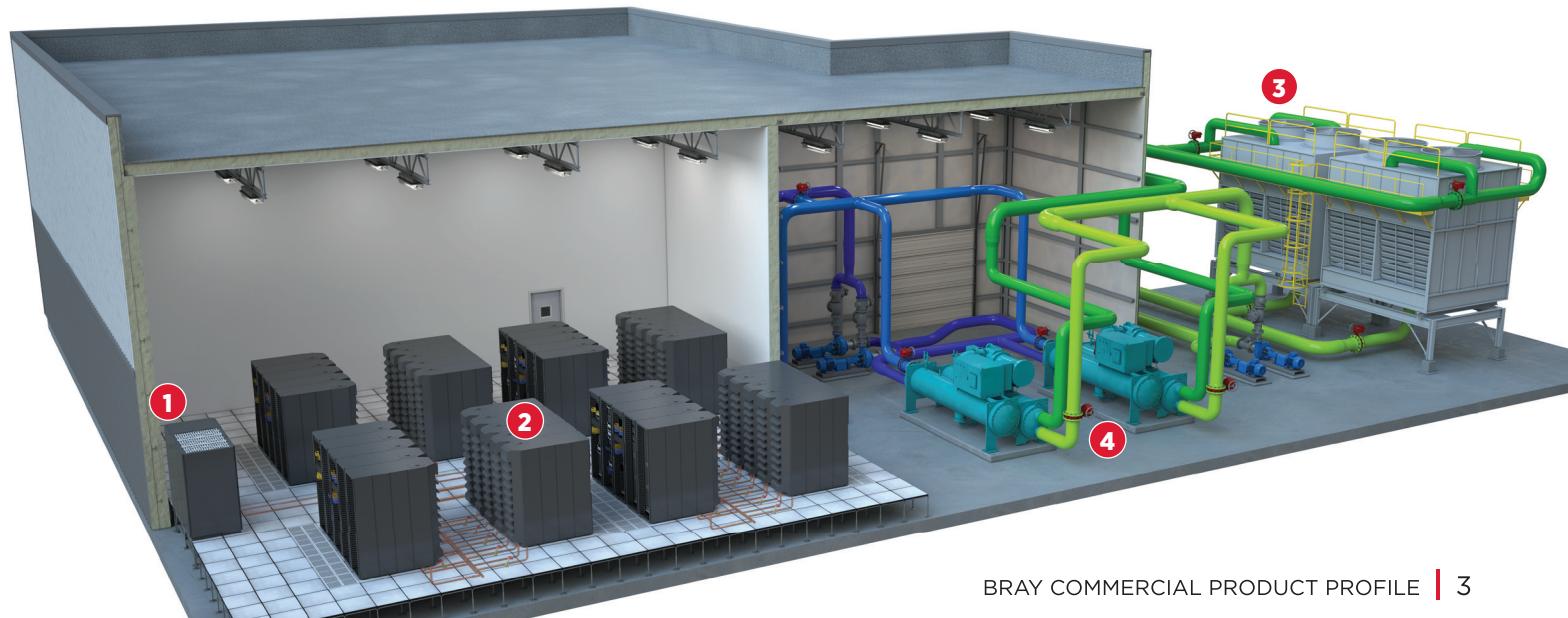
- > 3L Series Butterfly Valves
- > MKL Series Butterfly Valves

### Chillers



- Isolation, Thermostatic Expansion Valves, Hot Gas Bypass, Free Cooling Control

- > 3L Series Butterfly Valves
- > MK Series Butterfly Valves

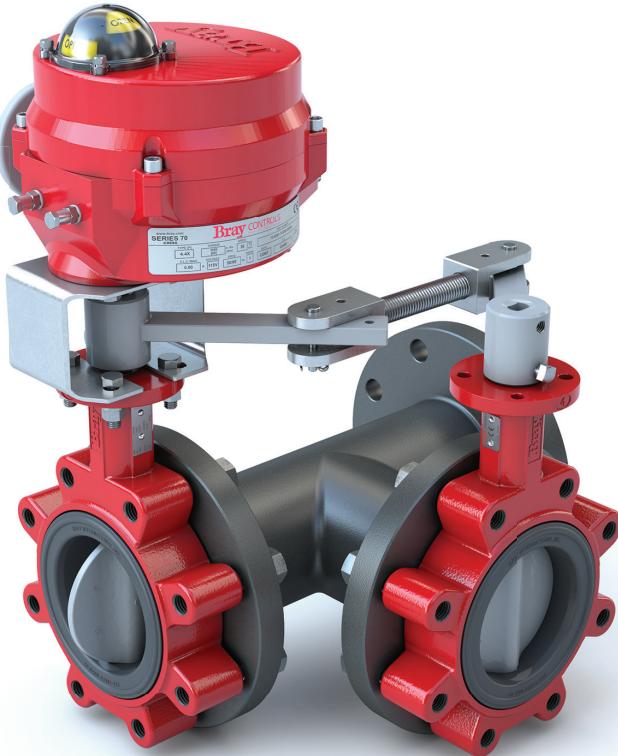


## RESILIENT SEATED

### 3L SERIES BUTTERFLY VALVES

Bray's 3L Series resilient seated butterfly valves have emerged as the design standard in the commercial building market worldwide. Our new 3L series is optimized for low torque and added reliability. Both are available with a wide range of electric and pneumatic actuators and accessories to satisfy any application.

- > Low Torque
- > High Cycle Life
- > ANSI and DIN
- > High and Low Close-off Ratings



### 3L SERIES BUTTERFLY VALVES

<b>Size Range</b>	2" - 24" (50mm - 600mm)
<b>Configurations</b>	2-Way and 3-Way
<b>End Connections</b>	Lug for ANSI 125 and ANSI 150 Flanges
<b>Fluid Temperature Range</b>	-20 to 250°F (-28 to 121°C)
<b>Maximum Close-off Pressure</b>	175 psi (12 bar)
<b>Flow Characteristic</b>	Modified Equal Percentage
<b>Body Material</b>	A536 Gr. 65-45-12 Ductile Iron
<b>Disc Materials</b>	3LNE Series - Ductile Iron, Nylon 11 Coated 3LSE Series - 316 Stainless Steel
<b>Available Actuators</b>	On/Off, Floating, Modulating, Spring & Non-Spring Return Commercial and Industrial Electric and Pneumatic
<b>Applications</b>	HVAC- Chillers, Cooling Towers, Boilers, Heat Exchangers

## HIGH PERFORMANCE

### MK SERIES BUTTERFLY VALVES

Ideal for high pressure, high temperature and high cycle mission critical HVAC applications. The Bray MK Series innovative double offset design results in higher close-off and lower torque. Bidirectional, Class VI shut off, in both low pressure and maximum ANSI Class ratings.

- Superior Cycle Life
- Ideal for high pressure steam and hot water
- ANSI and DIN



### MK SERIES BUTTERFLY VALVES

<b>Size Range</b>	2 1/2" - 20" (65mm - 500mm)
<b>Configurations</b>	2-Way and 3-Way
<b>End Connections</b>	Lug, 2-Way for ANSI 150 and ANSI 300 Flanges; 3-Way for ANSI 150 flanges only
<b>Fluid Temperature Range</b>	-40 to 500°F (-40 to 250°C)
<b>Maximum Close-off Pressure</b>	ANSI 150: 285 psi (20 bar) ANSI 300: 740 psi (50 bar)
<b>Flow Characteristic</b>	Modified Equal Percentage
<b>Body Material</b>	Carbon Steel
<b>Disc Material</b>	316 Stainless Steel
<b>Available Actuators</b>	On/Off, Floating, Modulating, Spring and Non-Spring Return Commercial and Industrial Electric and Pneumatic
<b>Applications</b>	HVAC - Chillers, Boilers, Heat Exchangers, High cycle requirement closed loop systems



## PRESSURE INDEPENDENT CONTROL VALVES

### SIMPLE SET AND SIMPLE SET MAX SERIES

The purpose of a Pressure Independent Control (PIC) valve is to maintain a set flow to the coil regardless of pressure changes in the system. Bray's complete line of PIC valves combine a control valve and dynamic balancing valve in a single cost effective housing. These valves eliminate overflow at less than design conditions to provide accurate control at all levels of demand. The use of PIC valves

eliminates the need for balancing valves and significantly reduces installation costs. Pumping, heating and cooling costs are also reduced minimizing overall operating costs. The valve will always use full stroke of the control element offering maximum controllability. Pressure/Temperature measurement ports are standard.

SIMPLE SET	
<b>Size Range</b>	1/2" - 2" (15mm - 50mm)
<b>End Connections</b>	NPT Threaded
<b>Fluid Temperature Range</b>	32 to 248°F (0 to 120°C)
<b>Maximum Close-off Pressure</b>	58 psi (400 kPa)
<b>Recommended Operating Pressure Drop</b>	2.3 to 58 psid (36 to 400 kPa)
<b>Flow Rates</b>	0.33 to 65 GPM ( 329 to 14,740 L/H)
<b>Body Materials</b>	DZR Forged Brass
<b>Available Actuators</b>	Floating and Modulating with and without Failsafe
<b>Applications</b>	HVAC - Fan Coils VAV - Reheat Coils Chilled Beams and Air Handling Units



SIMPLE SET MAX	
<b>Size Range</b>	2½" - 12" (65mm - 300mm)
<b>End Connections</b>	ANSI 125/150 or DIN
<b>Fluid Temperature Range</b>	32 to 248°F (0 to 120°C)
<b>Maximum Close-off Pressure</b>	116 psi (800 kPa)
<b>Recommended Operating Pressure Drop</b>	2.18 to 116 psid (15 to 800 kPa)
<b>Flow Rates</b>	19.3 to 2,641 GPM (4.4 to 600 M3/h)
<b>Body Material</b>	Cast/Ductile Iron
<b>Available Actuators</b>	Floating and Modulating with and without Failsafe
<b>Applications</b>	HVAC - Air handling units, heat exchangers



## THREADED GLOBE VALVES



### CG/DG SERIES

Bray Commercial's CG/DG Series threaded globe valves provide stable and accurate control of both water and steam heat exchangers on a wide range of HVAC applications. These brass bodied valves are available in both brass and Stainless-Steel trim in 2-Way and 3-Way configurations for cost effective solutions to your applications.

### CG/DG SERIES GLOBE VALVES

<b>Size Range</b>	1/2" - 2" (15mm - 50mm)
<b>Configurations</b>	2-Way and 3-Way
<b>End Connections</b>	Female NPT
<b>Fluid Temperature Range</b>	Up to 250°F Water; 337°F Steam
<b>Flow Characteristics</b>	2-Way Valves - Modified Equal Percentage for DG Series 3-Way Valves - Linear
<b>Body Materials</b>	Brass - 1/2" & 3/4" Bronze - 1" to 2"
<b>Trim Materials</b>	Water - Brass Steam - Stainless Steel
<b>Available Actuators</b>	On/Off, Floating, Modulating, Spring and Non-Spring Return
<b>Applications</b>	HVAC- Water/Steam Air Handling Units Heat Exchanger Control Terminal Units

## FLANGED GLOBE VALVES



### DG SERIES

The DG Series globe valves provide stable and accurate control of both water and steam in HVAC applications. These valves feature a cartridge style packing, which is easily replaceable while the valve is in line. Constant plug guiding and precision-machined metal to metal seating assures ANSI Class IV shut off (.01%) which provides low leakage and energy conservation.

### DG SERIES GLOBE VALVES

<b>Size Range</b>	2-1/2" - 6" (65mm - 150mm)
<b>Configurations</b>	2-Way and 3-Way
<b>End Connections</b>	ANSI 125 Flanged
<b>Fluid Temperature Range</b>	-20 to 250°F (-29 to 121°C) @175 psi (1,206 kPa)
<b>Flow Characteristics</b>	2-Way with standard trim - Equal Percentage 3-Way and 2-Way with SS Trim - Linear
<b>Body Materials</b>	Cast Iron
<b>Trim Materials</b>	Bronze, Stainless Steel Optional
<b>Available Actuators</b>	On/Off, Floating, Modulating, Spring and Non-Spring Return
<b>Applications</b>	HVAC- Water/Steam Air Handling Units Heat Exchanger Control Terminal Units

## CHARACTERIZED BALL VALVES

### EBV SERIES

The Bray Commercial EBV Series characterized control ball valves are industry leading solutions for energy efficient, economical and effective control of a wide range of equipment in HVAC applications. The Amodel® flow characterizing disk maintains equal percentage flow characteristics for optimum temperature control. A less expensive, longer lasting and better performing alternative to globe valves.

- > Low Torque
- > Direct Mount Actuators
- > Multiple Cv ratings in each size
- > High Rangeability

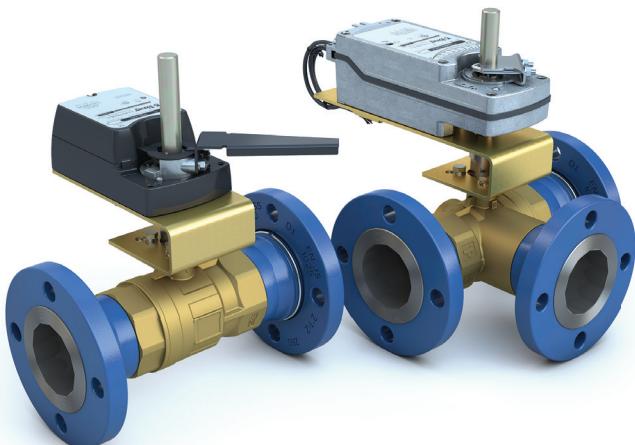


## CHARACTERIZED FLANGED BALL VALVES

### SOFT TOUCH MAX SERIES

The STM Series flanged ball valves are designed to regulate the flow of hot water, chilled water and 50% glycol solutions to the demand of a controller in HVAC systems. Its unique free spinning lap flange allows easy positioning and alignment with mating flanges.

The STM has a stainless steel ball and stem making it dimensionally stable at high temperatures so it works in low pressure steam applications. The low torque design allows for smaller actuators. Multiple Cv's in each size.



### EBV SERIES BALL VALVES

<b>Size Range</b>	1/2" - 2" (15mm - 50mm)	
<b>Configurations</b>	2-Way and 3-Way	
<b>End Connections</b>	NPT, BSP, Sweat, and Press	
<b>Fluid Temperature Range</b>	<b>Water</b>	-20° to 203°F (-29° to 95°C)
	<b>Water</b>	-20° to 284°F (-29° to 140°C) with High Temperature Mounting
	<b>Steam</b>	15 psig (103 kPa) at 250°F (121°C) with High Temperature Mounting
<b>Maximum Close-off Pressure</b>	Class VI @ 200 psi (13.8 bar)	
<b>Maximum Recommended Operating Pressure Drop</b>	50 psi Maximum Differential 30 psi for Quiet Service	
<b>Body Materials</b>	Forged Brass	
<b>Trim Materials</b>	300 Series Stainless Steel	
<b>Available Actuators</b>	On/Off, Floating, Modulating, Spring and Non-Spring Return, etc.	
<b>Applications</b>	HVAC- Air Handling Units Heat Exchanger Control Terminal Units	

### STM SERIES FLANGED BALL VALVES

<b>Size Range</b>	2-½" - 4" (65mm - 100mm)	
<b>Configurations</b>	2-Way and 3-Way	
<b>End Connections</b>	ANSI 125/150 Flange	
<b>Fluid Temperature Range</b>	<b>Water</b>	0 to 284°F (-18 to 140°C)
	<b>Steam</b>	25 psig (172 kPa)
<b>Maximum Close-off Pressure</b>	2-Way: 100 psi (6.9 bar) 3-Way: 50 psi (3.5 bar)	
<b>Maximum Recommended Operating Pressure Drop</b>	30 psi for Quiet Service	
<b>Body Material</b>	Forged Brass	
<b>Trim Material</b>	300 Series Stainless Steel	
<b>Available Actuators</b>	On/Off, Floating, Modulating, Spring and Non-Spring Return	
<b>Applications</b>	HVAC- Air Handling Units and Heat Exchanger Control	

## INDUSTRIAL THREADED BALL VALVES

### BV SERIES

The BV Series Threaded Industrial Ball Valve product line is ideally suited to high temperature and high pressure water or steam as well as a wide range of heavy commercial HVAC control applications. These valves provide exceptional characterized control, high rangeability, flow capacity and pressure drop; all with bidirectional bubble tight shut off.

These valves are available with characterized V-Balls and full port versions that provide multiple Cv values in each size.



### BV SERIES THREADED BALL VALVES

<b>Size Range</b>		1/2" - 4" (15mm - 100mm)
<b>Configurations</b>		2-Way
<b>End Connections</b>		Threaded NPT
<b>Fluid Temperature Limits</b>	<b>Water</b>	-20 to 500°F at 300 psi (-28 to 260°C at 2,068 kPa)
	<b>Steam</b>	100 psi (689 kPa)
<b>Close-off Pressure</b>	<b>Water</b>	300 psi (2,068 kPa)
	<b>Steam</b>	100 psi (689 kPa)
<b>Flow Characteristic</b>	<b>V15 Port</b>	Linear
	<b>V30 Port</b>	Modified Equal Percentage
	<b>V60 &amp; 90 Port</b>	Equal Percentage
<b>Body Materials</b>		Carbon or Stainless Steel
<b>Ball and Stem Material</b>		316 Stainless Steel
<b>Available Actuators</b>		On/Off, Floating, Modulating, Spring & Non-Spring Return Commercial and Industrial Electric and Pneumatic
<b>Applications</b>		HVAC- High Rise Towers, Boilers and Heat Exchangers

## INDUSTRIAL FLANGED SEGMENTED BALL VALVES

### BVMS SERIES

The BVMS Series Industrial Ball valves are flanged, segmented valves designed for control and on/off applications where high temperature and high pressure water or steam are used. The valves feature a characterized ball segment for high rangeability with a splined stem connection for precise control, as well as a low friction shaft and thrust bearings for longer life and smaller actuators.

These valves provide ample flow capacity, equal percentage flow characteristics and Class VI leakage. Valve bodies are one-piece carbon steel with cast stainless steel balls and ANSI 150 flanges.



### BVMS SERIES FLANGED BALL VALVES

<b>Size Range</b>		2" - 12" (50mm - 300mm)
<b>Configurations</b>		2-Way
<b>End Connections</b>		ANSI Class 150
<b>Fluid Temperature Limits</b>	<b>Water</b>	-20 to 380°F at 200 psi (-28 to 193°C at 1,378 kPa)
	<b>Steam</b>	100 psi (689 kPa)
<b>Close-off Pressure</b>	<b>Water</b>	285 psi (1,965 kPa)
	<b>Steam</b>	100 psi (689 kPa)
<b>Flow Characteristic</b>		Equal Percentage
<b>Body Materials</b>		Carbon or Stainless Steel
<b>Ball and Stem Material</b>		316 Stainless Steel
<b>Available Actuators</b>		On/Off and Modulating NEMA 4 Industrial Electric
<b>Applications</b>		HVAC- Computer Room Air Handling Units, Boilers and Heat Exchangers

## ELECTRIC ACTUATORS

### SERIES 70

Bray's Series 70 electric actuator's compact design offers by far the easiest access to terminal block wiring, end switch adjustments and servo calibrations in the industry. Bray's Series 70 electric actuator has many advantages over other actuators including:

- > Voltages: 120, 220, 24VAC 50/60 Hz, 1-phase, 24VDC
- > Output torque 800 lb-in (90 N-m) to 18,000 lb-in (2,034 N-m)
- > UL, CSA and CE certification on most units
- > Low profile, light weight
- > High visibility position indicator
- > Manual declutchable override handwheel
- > On-off or modulating control
- > Terminal strip for cable terminations
- > Hand or screw driver adjustment of travel limit cams
- > ISO 5211 for direct mounting
- > Optional hazardous location model available
- > Optional Battery Back-up module available

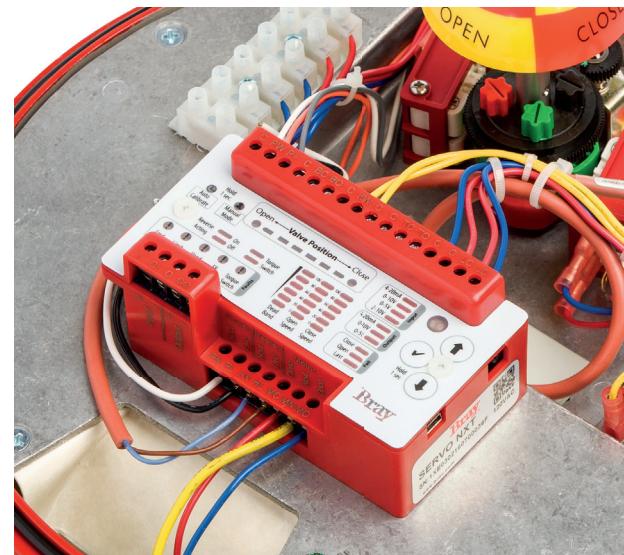


### SERIES 70 ELECTRIC ACTUATORS

<b>Torque</b>	800 to 18,000 lb-ins (90 to 2,034 N-m)
<b>Voltage</b>	VAC: 24, 120, 240, 24VDC
<b>Operating Mode</b>	On/Off, Modulating
<b>Enclosure</b>	NEMA 4

### SERVO NXT

<b>Actuator Voltage</b>	120, 220, 24 VAC 50/60 Hz, 1 phase 24 VDC
<b>Input Signal</b>	Configurable 4-20 mA, 0-10, 2-10, 0-5 VDC
<b>Feedback Signal</b>	Configurable 4-20 mA, 0-10, 0-5 VDC
<b>Independent Isolation</b>	Control signal input and output Control signals and power
<b>Display</b>	Menu driven auto dimming LED
<b>Menu Navigation</b>	Up/Down arrows with select (✓) buttons
<b>Configuration</b>	Menu selectable to non-volatile memory
<b>Calibration</b>	Auto calibration sequence for travel limits
<b>Deadband</b>	Configurable 1% - 6%
<b>Reverse Acting</b>	Configurable for inverted input signal
<b>Speed Control</b>	Independently adjustable for open and closed
<b>Fail Position (loss of input signal)</b>	Configurable close, open, last
<b>Manual Mode</b>	Built-in signal generator
<b>Fault Indications</b>	Loss of command signal Limit switch Handwheel engaged Feedback pot Torque switch Jammed valve / motor stalled
<b>Health Monitor</b>	Heartbeat - Backlit blinking Bray logo



The Servo NXT offers precise modulating service for accurate position control.

- > One touch automatic calibration
- > User-friendly interface
- > Advanced control of proportional band and deadband
- > Automatic pulsing mode for precise positioning
- > Self diagnostics
- > Action on loss of command signal
- > Go to position commands

Servo is available for modulating service, continuous duty S70 actuators only.

*"Configurable" means the customer, or the factory, can modify the Servo NXT.*

## COMMERCIAL ACTUATORS

Bray's wide variety of commercial electric actuator choices increases flexibility when choosing peripheral products for Building Automation Systems. We offer many different torque outputs and optional features to ensure you have the best actuator for the application. Jumper or DIP switch selectable features allow versatility in the field. In addition, our actuators are manufactured to ISO 9001 and Six Sigma Standards making them the highest quality on the market today.



### COMMERCIAL ELECTRIC ACTUATORS

<b>Torque</b>	27 to 310 lb-ins (3 to 35 N-m)
<b>Voltage</b>	VAC: 24, 120, 240, 24VDC
<b>Operating Mode</b>	On/Off, Floating & Modulating

## PA(M) SERIES

### PRESSURE INDEPENDENT CONTROL VALVE ACTUATORS

The PA(M) series is a line of linear motor actuators to be used primarily on Bray PIC valves utilized in building automation systems. These actuators are available with a multitude of options for on/off/floating or modulating with or without electronic fail safe. These actuators automatically calibrate to the stroke of the valve as soon as power is applied and are field selectable direct or reverse acting. These actuators operate on 24V AC or DC, and all input signals- 0-10V or 4-20mA modulating output, or on/off (2-point) or floating (3-point) control.



### PA(M) SERIES ELECTRIC ACTUATORS

<b>Torque</b>	27 to 310 lb-ins (3 to 35 N-m)
<b>Voltage</b>	VAC: 24, 120, 240, 24VDC
<b>Operating Mode</b>	On/Off, Floating & Modulating

## GA(S) SERIES

### PIC AND GLOBE VALVE ACTUATORS

The GA(S) Series is a direct mount line of linear motor actuators to be used primarily on PIC & globe valves. The patented drive-valve coupling allows the drive to be connected to the valve automatically as soon as the power is applied to the actuator. An external crank handle enables the desired position to be set manually as well. Microprocessor technology enables the actuator to identify the functions required and to adapt itself automatically to the control valve properties.



These actuators operate on 24V AC or DC, and all input signals- 0-10V or 4-20mA modulating output, or on/off (2-point) or floating (3-point) control, direct or reverse acting. The actuator automatically detects the control signal applied via a 2 LED display.

## LINEAR ELECTRIC ACTUATORS

<b>Torque</b>	450 & 562 lb-ins (2,000 & 2,500 N-m)
<b>Voltage</b>	24 VAC/DC
<b>Operating Mode</b>	On/Off, Floating & Modulating

## PNEUMATIC ACTUATORS

### SERIES 92/93

Bray Series 92/93 actuators are rack and pinion, opposed-piston actuators available in two versions: double acting and spring return. The Series 92/93 is completely enclosed and self-contained. The many features minimize maintenance and provide safe, simple disassembly and assembly.



### SERIES 92/93 PNEUMATIC ACTUATORS

<b>Torque</b>	Up to 44,130 lb-in (4,986 N-m)
<b>Pressure Rating</b>	Max Pressure: 140 psig (10 bar)
<b>Temperature Range</b>	-20°F to 200°F (-29°C to 95°C)

# Bray COMMERCIAL

**Bray Commercial** provides automated Butterfly, Ball, Globe and Pressure Independent Control Valves to the commercial building HVAC market throughout the world. Wherever valve performance is required to maintain climate controlled environments, Bray can provide the required automated valves to meet the demanding flow applications of chiller/boiler isolation, air handlers and terminal units for new construction, retrofit and/or LEED certification applications in buildings.

- Healthcare
- Data Centers
- Government and Municipal
- Sports/Entertainment/Convention Centers
- K-12 and University Education
- Transportation
- Hotels
- Office Buildings
- Retail

## Building Types

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

VISIT [BRAYCOMMERCIALDIVISION.COM](http://BRAYCOMMERCIALDIVISION.COM) TO LEARN MORE ABOUT  
BRAY PRODUCTS AND LOCATIONS NEAR YOU

### CORPORATE HEADQUARTERS

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### DIVISION HEADQUARTERS

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