

# Bray®

R5 SERIES 73  
ELECTRIC ACTUATOR



## RUGGED, LOW COST ELECTRIC ACTUATORS FOR ROTARY VALVES

THREE ON-OFF MODELS WITH 100, 300 OR 600 LB-IN OUTPUT TORQUE

WATERPROOF (NEMA 4, 4X, IP 65)

Bray Controls' generations of innovative electric actuators have a proven record of success. Building on this record, Bray has combined engineering expertise and years of field experience to produce the R<sup>5</sup>. This red, rectangular electric actuator for rotary valves delivers highly reliable service at a reduced price. The R<sup>5</sup> meets the needs of 21st Century industrial applications at a price that is unmatched.

Bray has specifically engineered the R<sup>5</sup> for customer-friendly convenience. Designed to offer easy, interference-free access to terminal block wiring and cam adjustment, the R<sup>5</sup> greatly reduces the time required for field start-up. Installation and maintenance can be performed with assured ease and safety.

**MOTOR & CAPACITOR (A)** The R<sup>5</sup> has a 120 or 220 VAC single phase permanent split-capacitor reversible induction motor. 12 or 24 VDC motors are available upon request. The UL listed motor features a built-in thermal overload protector of a bi-metallic strip in the windings set at 230°F (110°C) with automatic reset.

**MOTOR BREAK (B)** All AC motors feature an internal break. When power to the actuator is cut off the break stops the motor and holds the valve in position until power is restored.

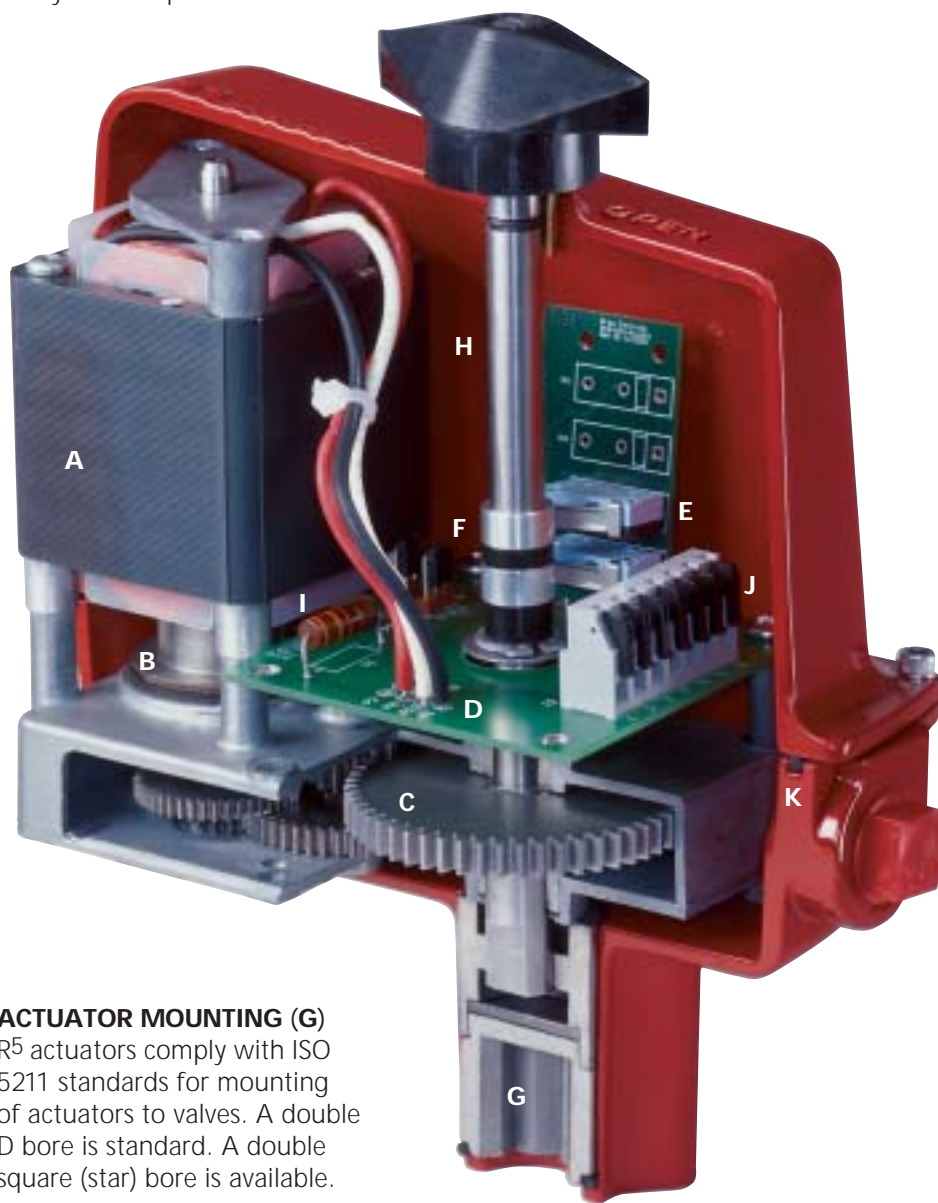
**SPUR GEAR SYSTEM (C)** The heavy-duty spur gear train is composed of precision cut, multi-staged gears and shafts. The gears and shafts are heat treated high alloy steel and will withstand locked rotor conditions. The spur gear system is permanently lubricated at the factory.

**CIRCUIT BOARD (D)** The R<sup>5</sup> has a heavy duty printed circuit board that replaces cumbersome internal component wiring. To withstand line vibration and shock, Bray manufactures the R<sup>5</sup> PCB at double the thickness of commonly used PCBs.

**TRAVEL LIMIT SWITCHES (E)** Bray has provided two SPDT switches as standard. The 10A, 220 VAC switches are used for AC motor control. Two optional auxiliary switches are available to signal a low wattage AC lamp or a DC controller input. Switches are easily accessible without interference from other components.

**CAMS / CAM ADJUSTMENT (F)** Cams are infinitely adjustable by a Hex key with no special tools needed. Standard factory setting allows 90° reversible rotation between open and closed positions. Extended rotation units such as 180°, 270° or beyond are optional.

**TERMINAL BLOCK (J)** The actuator switches are connected to a terminal block. The block has been designed for ease of customer wiring without interference from other components and features clearly marked terminal numbers. The lever-operated block simplifies wiring connection. Connection is just a matter of inserting the wire and pushing down the lever – no tools are needed. The block has been placed near the two conduit entries with ample room for running wire leads. A wiring diagram is included inside the cover for easy reference.



**ACTUATOR MOUNTING (G)** R<sup>5</sup> actuators comply with ISO 5211 standards for mounting of actuators to valves. A double D bore is standard. A double square (star) bore is available.

**INDICATOR SHAFT (H)** The shaft is Stainless Steel.

**HEATER (I)** A heater can be added to the R<sup>5</sup> to prevent possible damage to electrical components due to condensation build-up inside the actuator.

**HOUSING SEAL (K)** The large O-ring seal between the cover and base provides a waterproof enclosure and prevents ingress of moisture. This seal is far superior to commonly used gaskets.

**ENCLOSURE (L)** Die-cast aluminum cover and base are waterproof and designed to meet NEMA 4, 4X and IP 65 specifications. The enclosure features a high-quality polyester powder coating offering exceptional corrosion, wear, impact and ultraviolet resistance.

**VALVE POSITION INDICATION**

The R<sup>5</sup> features a highly visible valve position indication system. Made of ABS, a Pointer (M) on top of the unit indicates valve position through the full range of travel. Open and Close lettering and a direction of travel arrow are molded into the housing for easy reference and permanent position indication.

**MANUAL OVERRIDE** Bray's manual override with double D flats is easily accessible by removing the position indicator. By pushing the indicator shaft down, the spring loaded output shaft disengages from the output gear. The Manual Override allows manual rotation of valve position when electrical power is off. To reengage, pull the indicator shaft back up.

**CONDUIT ENTRIES (N)** The R<sup>5</sup> features two conduit connections with inherent stops. Entries are available in either 1/2" NPT or metric threads. One entry is for power, one for control wiring.

**COMPACT, LOW PROFILE ECONOMICAL DESIGN**

The R<sup>5</sup> delivers high torque in a compact, low profile design at a reduced cost. This design offers the advantages of smaller space requirements, lighter weight and ease of installation/maintenance when compared to other electric actuators.



**DIRECT MOUNTING OF THE R<sup>5</sup> SERIES 73 ON BRAY VALVES**

Bray actuators mount directly to Bray valves without using external linkage. Field installation is simple and misalignment is minimized. For sanitary processing and outdoor applications, the Bray direct mounting system reduces the possibility of contamination buildup or corrosion between the valve and actuator.

The mounting pattern complies with ISO 5211 and NAMUR recommendations (VDI/VDE 3845). The R<sup>5</sup> can be mounted and operated in any position. Bray can provide linkages for mounting the R<sup>5</sup> to other devices requiring 90° rotation. Please consult the Bray factory for further information.



Two LEDs, one for open and one for closed, are located on the unit side. The LEDs light up either red or green when the valve reaches the open and closed positions. Beside each LED, graphic icons indicating open and closed have been molded into the housing.

**ELECTRICAL CABLE CONNECTIONS**

**(Optional)** A multi-pin, watertight cable receptacle offers full compatibility with today's industrial wiring systems. Factory pre-wiring prevents errors and provides quick-connect field installation. Cordsets with flying leads or extension cords with connections on both ends can be plugged directly into the receptacle.



## SERIES 73 TECHNICAL DATA

Actuator Series		S73-1	S73-3	S73-6
Torque Output	lb/in [Nm]	100 [11]	300 [34]	600 [68]
	VAC	120 / 220	120 / 220	120 / 220
Motor Current Rating	Hz	50-60	50-60	50-60
	Amps	0.4 / 0.2	0.9 / 0.4	1.1 / 0.6
Speed In Seconds 90° Operation		2/5/10	5/10/15	10/15/30/60
Butterfly Valve Sizes*		1" - 1 1/2"	2" - 3"	4" - 6"
Ball Valve Sizes**		1/4" - 1"	1" - 2"	2" - 3"
Weights	lbs [kgs]	4.5 [2.04]	5.8 [2.63]	6.1 [2.77]

**Note:** All motors are single phase and Current Rating is at all speeds. The duty cycle for intermittent on-off operation is 25%.

12 & 24 VDC motors are available as an option, please consult your Bray representative.

\*Depending on service conditions.

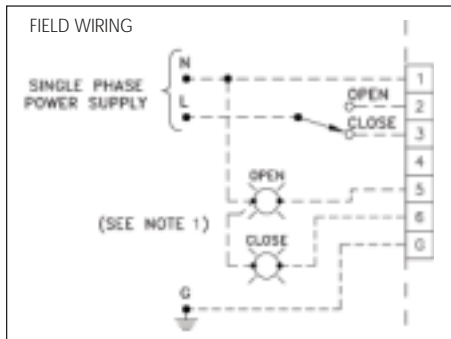
\*\*Depending on service conditions and restricted port or full port valves.

## TEMPERATURE RANGE

-40°F (-40°C) to +150°F (+65°C)

## CUSTOMER WIRING DIAGRAM

STANDARD ON-OFF Service



### Notes:

- 1) Remote position indicator devices must be rated at the same supply potential as the motor supply.
- 2) Optional max. 2 switches - voltage free travel limit switches are available for remote indication if required.

Limit Switch Rating: 250 VAC, 10A, 1/2 HP

Terminal Strip Wiring: 14-28 AWG, 105°C, 300V minimum rated wire.

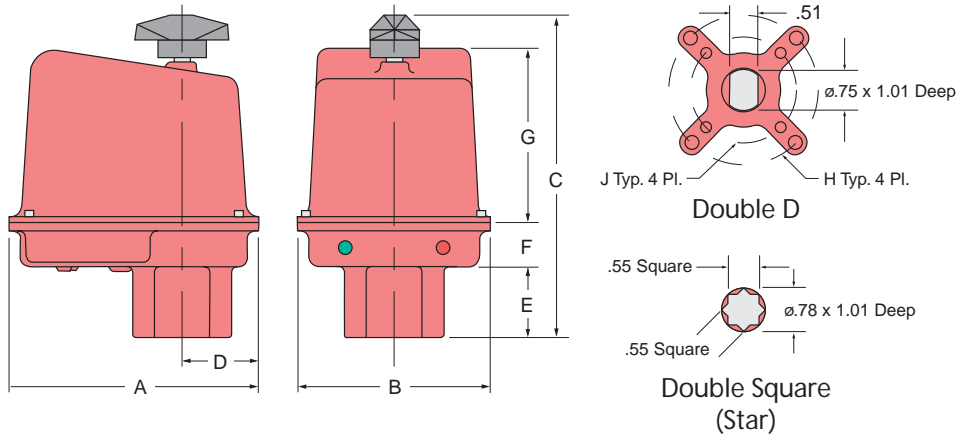


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Patents applied for worldwide.

## SERIES 73 DIMENSIONS

Actuator Series	A	B	C	D	E	F	G	H (UNC) x B.C.	J (UNC) x B.C.
S73-1	5.93 [151]	3.29 [84]	7.52 [191]	2.10 [53]	1.63 [41]	1.49 [38]	3.50 [89]	1/4-20 x ø1.97 [F05]	#10-32 x ø1.42 [F03]
S73-3	6.76 [172]	3.79 [96]	8.25 [210]	2.45 [62]	1.89 [48]	1.57 [40]	3.79 [96]	1/4-20 x ø1.97 [F05]	#10-32 x ø1.42 [F03]
S73-6	5.99 [152]	4.64 [118]	7.82 [199]	1.84 [47]	1.73 [44]	1.06 [27]	4.23 [107]	5/16-18 x ø2.76 [F07]	1/4-20 x ø1.97 [F05]



The Bray R5™ Electric Actuator – Series 73-6 on Flow-Tek flanged ball valve, Series 73-3 and -1 on Bray Series 20 butterfly valves.

DISTRIBUTOR

# Bray CONTROLS

A Division of BRAY INTERNATIONAL, Inc.  
13333 Westland East Blvd. Houston, Texas 77041  
281.894.5454 FAX 281.894.9499 www.bray.com

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