

Control Valve Products



**Honeywell Solutions for
Field Instruments**

Honeywell

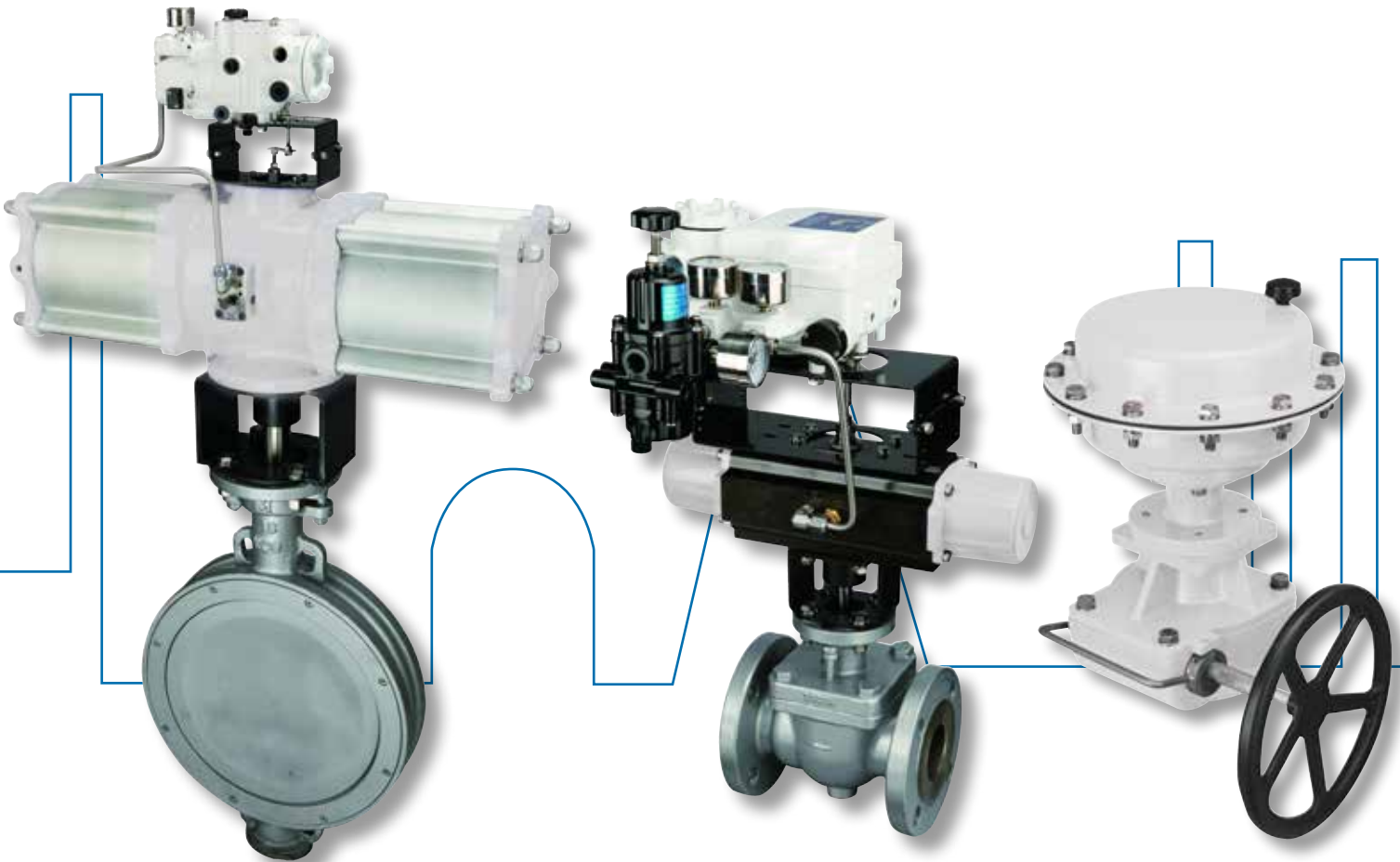
Perfect Performance
Easy Maintenance
Parts Interchangeability
Long Life, Short Delivery
Reasonable Price
Prompt Service

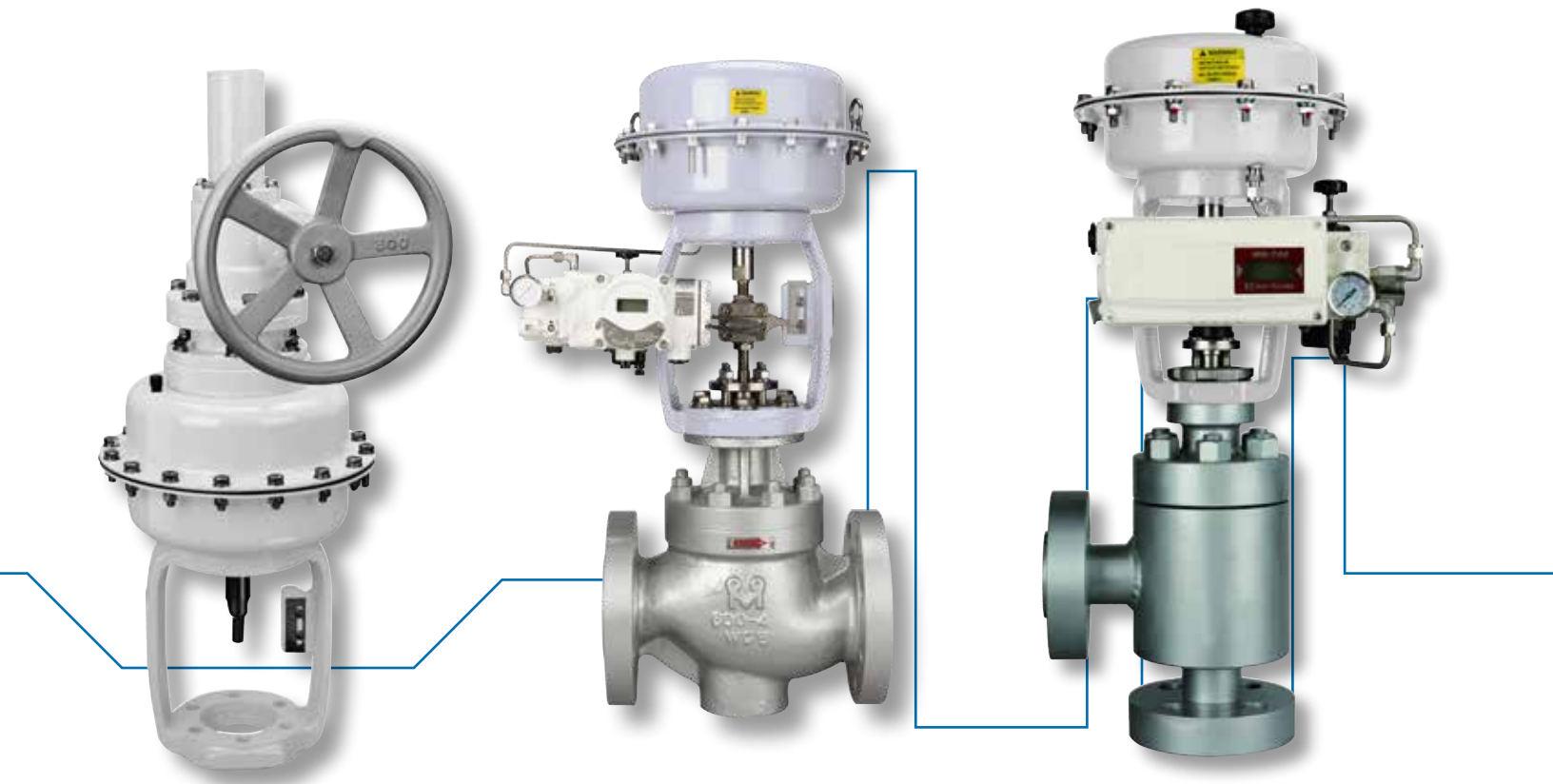
Honeywell combines these essential ingredients to manufacture the most excellent control valves in the world.

High technology and innovation are essential ingredients in Honeywell control solutions. Our standard models are perfectly suited for severe service conditions such as: cryogenic, super heated steam, volatile fluids, corrosive fluids, cavitation, flashing, vibration and high noise levels. These are typical of the challenges found in nuclear power plants, thermal power plants, oil refineries, iron and other industries.

Honeywell's investment in research and development provides assurance to our customers that valves purchased today will not be obsolete tomorrow.

Count on Honeywell to deliver control valve solutions that meet and exceed your expectations.





Series 9110 Single/Double Seated Globe Valves

ANSI 150-2500 / JIS 10K-63K

DIN PN10-420



General

The Series 9110 control valves has been developed to provide a cost effective solution to the “final control element” used in modern plants. The valve design combines the successful high integrity features of the series 9110 with a high capacity, economic design philosophy as well as excellent control.

Performance :

- High Cv to body size ratio.
- Streamlined flow passages to optimize capacity.
- High Cv to valve weight ratio.
- Excellent flow control rangeability.

Design Flexibility :

- Modular construction design available with a range of different connections and styles.
- All trim components removable from the top for easy of maintenance.
- Wide range of supplementary noise control options.
- Inherently characterized trim offered in equal percentage, linear, quick opening and modified-parabolic (options).
- Multi trim sizes available.
- Full range of body and trim material options.
- Fully rationalized and interchangeable features.
- Full range of bonnet and packing designs to suit various temperatures and fluids.

Globe Valve Specifications

Valve Type	Globe Valve															
Valve Model	Series 9110															
Valve Size	(in)	1/2	3/4	1	1.1/2	2	2.1/2	3	4	5	6	8	10	12	14	up to 36
	(mm)	15	20	25	40	50	65	80	100	125	150	200	250	300	350	up to 900
Pressure Rating	ANSI Class 150~2500 , JIS 10K~63K, DIN PN10~420															
End Connection	RF, FF, SW, BW, RTJ, etc															
Body Materials	Carbon steel, Stainless steel, Special alloys(Hastelloy-B/C, Monel, Inconel, Duplex, etc)															
Bonnet Type	Plain, Extension, Cryogenic, Bellows Seal															
Trim Type	Balanced, Un-balanced, Anti-cavitation, Low-noise, Optional special trim															
Trim Materials	Stainless Steel, Special Alloys(Hastelloy-B/C, Monel, Inconel, Duplex, etc)															
Plug Shapes	Contoured, Cage, Pilot															
Seat Type	Metal, Soft															
Characteristic	Equal Percentage, Linear, Modified, Quick Opening															
Rangeability	30:1, 50:1, 80:1, 100:1, 150:1															
Packing	Graphite, PTFE, VOC, etc															
Gasket	Spiral wounded metal gasket (Teflon, Graphite, Inconel, etc)															

Series 9120 Seated Angle Valves

ANSI 150-2500 / JIS 10K-63K

DIN PN10-420



General

The Series 9120 Angle-type control valve is indispensable to control fluid of high differential pressure, slurry, high viscosity, or adhesive. They are provided with a number of features such as low resistance of passage, antiwear quality within the valve, and easy maintenance and inspection.

Performance :

- High Cv to body size ratio
- Streamlined flow passages to optimize capacity
- High Cv to valve weight ratio
- Excellent flow control rangeability

Design Flexibility :

- Modular construction design available with a range of different connections and styles
- All trim components removable from the top for easy of maintenance
- Wide range of supplementary noise control options
- Inherently characterized trim offered in equal percentage, linear, quick opening and modified-parabolic (options)
- Multi trim sizes available
- Full range of body and trim material options
- Fully rationalized and interchangeable features
- Full range of bonnet and packing designs to suit various temperatures and fluids

Angle Valve Specifications

Valve Type	Angle Control Valve											
Valve Model	Series 9120											
Valve Size	(in)	1/2	3/4	1	1.1/2	2	2.1/2	3	4	5	6	up to 24
	(mm)	15	20	25	40	50	65	80	100	125	150	up to 600
Pressure Rating	ANSI Class 150~2500 , JIS 10K~63K, DIN PN10~420											
End Connection	RF, FF, SW, BW, RTJ, etc											
Body Materials	Carbon steel, Stainless steel, Special alloys(Hastelloy-B/C, Monel, Inconel, Duplex, etc)											
Bonnet Type	Plain, Extension, Cryogenic, Bellows Seal											
Trim Type	Balanced, Un-balanced, Anti-cavitation, Low-noise, Optional special trim											
Trim Materials	Stainless Steel, Special Alloys(Hastelloy-B/C, Monel, Inconel, Duplex, etc)											
Plug Shapes	Contoured, Cage, Pilot											
Seat Type	Metal, Soft											
Characteristic	Equal Percentage, Linear, Modified, Quick Opening											
Packing	Graphite, PTFE, VOC, etc											
Gasket	Spiral wounded metal gasket (Teflon, Graphite, Inconel, etc)											

Series 9130 Mixing / Diverting 3-Way Valves

ANSI 150 - 600 / JIS 10K-40K

DIN PN10-PN40



General

Three-way type control valves are used for controlling the fluids mutually to three directional pipings, i.e., mixing service and diverting service.

Performance :

- High Cv to body size ratio
- Streamlined flow passages to optimize capacity
- High Cv to valve weight ratio
- Excellent flow control rangeability

Design Flexibility :

- Modular construction design available with a range of different connections and styles.
- All trim components removable from the top for easy of maintenance.
- Wide range of supplementary noise control options.
- Inherently characterized trim offered in equal percentage, linear, quick opening and modified-parabolic (options).
- Multi trim sizes available.
- Full range of body and trim material options.
- Fully rationalized and interchangeable features.
- Full range of bonnet and packing designs to suit various temperatures and fluids.

3-way Valve Specifications

Valve Type	Diaphragm Operated 3-way Control Valve															
Valve Model	Series 9130															
Valve Size	(in)	1/2	3/4	1	1.1/2	2	2.1/2	3	4	5	6	8	10	12	14	16
	(mm)	15	20	25	40	50	65	80	100	125	150	200	250	300	350	400
Pressure Rating	ANSI Class 150~600, JIS 10K~40K, DIN PN 10~100															
End Connection	RF, FF, SW, BW, RTJ, etc															
Body Materials	Carbon steel, Stainless steel, Special alloys(Hastelloy-B/C, Monel, Inconel, Duplex, etc)															
Bonnet Type	Plain, Extension, Cryogenic, Bellows Seal															
Trim Materials	Stainless Steel, Special Alloys(Hastelloy-B/C, Monel, Inconel, Duplex, etc)															
Plug Shapes	Contoured															
Seat Type	Metal, Soft															
Characteristic	Linear															
Packing	Graphite, PTFE, VOC, etc.															
Gasket	Spiral wounded metal gasket (Teflon, Graphite, Inconel, etc)															

Series 9210 High Performance Butterfly Valves

ANSI 150-300 / JIS 10K-20K

DIN PN10-50



General

The series 9210 butterfly valves has been developed for a large number of applications throughout process industries triple eccentric. The series 9210 high performance butterfly valves is mainly used for the control of fluids flowing in large valve at low differential pressure. It offers additional advantages such as simple structure and low cost.

Performance :

- High Cv to valve weight ratio compared to conventional control valves.
- Throttling controls 60° rotation, on-off controls 90° rotation.
- Excellent control range ability.

Design Flexibility :

- Swing through and tight shut-off seated trim design.
- Flange connection versions available.
- Full range of bonnet and packing design to suit various temperatures and fluids.
- Provides fire safe sealing, which combines a soft seal ring and metal seal ring.
- Full range of body and vane material options, with availability of hard factings.

Design Integrity :

- Wafer type as standard.
- Double eccentric mechanism.
- Actuator mounting flange dimensions in accordance with ISO 5211/1-1977

Quality Manufacturing :

- Rigorously tested to ensure specified performance on site.
- Quality assurance systems in accordance with API609.

Butterfly Valve Specifications

Valve Type	Butterfly Valve													
Valve Model	Series 9210													
Valve Size	(in)	3	4	5	6	8	10	12	14	16	18	20	24	up to 64
	(mm)	80	100	125	150	200	250	300	350	400	450	500	600	up to 1600
Pressure Rating	ANSI Class 150~300, JIS 10K~20K, DIN PN 10~50													
End Connection	WF, RF, FF, etc													
Body Materials	Carbon steel, Stainless steel, Special alloys(Hastelloy-B/C, Monel, Inconel, Duplex, etc)													
Bonnet Type	Plain, Extension, Cryogenic													
Disc Shape	VANE													
Trim Materials	Stainless Steel, Special Alloys(Hastelloy-B/C, Monel, Inconel, Duplex, etc)													
Seat Type	Metal, Laminated, Soft													
Characteristic	Inherent													
Packing	Graphite, PTFE, VOC, etc.													
Gasket	Graphite, PTFE													

Series 9310 V-Notch Ball Valves

ANSI 150-600 / JIS 10K-40K

DIN PN10-100



General

Series 9310 Valve is Top Entry, Full Bore, Trunnion, and stem ball type v-notched ball valve, which is exclusively designed for excellent proportional control as much as globe type control valves and manual valves. Series 9310 have special shape of disc which is suitable for accurate throttling control and on-off service not only general fluids but also critical condition in powders, slurry, gummy, fibrous material and other fluids having special characteristics.

Performance :

- High Cv body size ratio (Full bore)
- Controls through 90° rotation
- Excellent flow control rangeability
- Easy maintenance
- ISO standard Mounting Hole

Design Flexibility :

- Direct Mounting Actuator Design Flexibility
- Control any fluids
- Flow push seat design
- Full range of body and trim material options with available of hard facings
- Seat changeability
- Dual characteristics (Equal or Linear)
- Self-cleaning and tight seating
- Double-eccentric disc options

V-notch Ball Valve Specifications

Valve Type	V-notch ball valve															
Valve Model	Series 9310															
Valve Size	(in)	1/2	3/4	1	1.1/2	2	2.1/2	3	4	5	6	8	10	12	14	16
	(mm)	15	20	25	40	50	65	80	100	125	150	200	250	300	350	400
Pressure Rating	ANSI Class 150~600 , JIS 10K~40K, DIN PN 10~100															
End Connection	RF, FF, SW, BW, RTJ, etc															
Body Materials	Carbon steel, Stainless steel, Special alloys(Hastelloy-B/C, Monel, Inconel, Duplex, etc)															
Bonnet Type	Plain, Extension, Cryogenic, etc.															
Trim Materials	Stainless Steel, Special Alloys(Hastelloy-B/C, Monel, Inconel, Duplex, etc)															
Seat Type	Metal, Soft															
Valve Plug Shapes	V-port															
Plug Characteristic	Equal Percentage/Linear															

Series 9410 Full Bore Seated Ball Valves

ANSI 150 - 600 / JIS 10K-40K

DIN PN10 - 100



General

Series 9410 ball valves are off-the-shelf standard valves that incorporate many special features. This series of valves is designed for both pressure and vacuum service. The valves have multiple fire safe guards : a secondary metal seat; a blowout-proof stem ; and a static electric grounding device. The Valves are available with a full bore and reduced bore.

Standard Specifications :

Flanged end, 2-pcs split body construction, Floating ball design, Full bore or reduced bore, Fields serviceable, wrench/gear/actuator mounted.

Valve Class : ANSI 150-600

Test Pressure : As per API 6D Std.

- Shell -

(Hydrostatic)

Class 150 ; 425 psi (30 kg/cm²)

Class 300 ; 1100 psi (77 kg/cm²)

- Seat -

(Air)

Class 150 ; 80 psi (6 kgf/cm²)

Class 300 ; 80 psi (6 kgf/cm²)

Face to Face Dimension :

Per Apl 6D Std.(refer to dimension tables)

End Connections :

Flanged, conforming to ANSI B 16.5 The ball valves comply with one or more of the following standard specifications as to pressure, temperature ratings and dimensions: ANSI, API, BS, DIN, MSS.

Ball Valve Specifications

Valve Type	Cylinder Operated Ball Valve																	
Valve Model	Series 9410																	
Body Type	2-way, 3-way, 4-way																	
Valve Size	(in)	1/2	3/4	1	1.1/2	2	3	4	5	6	8	10	12	14	16	18	20	24
	(mm)	15	20	25	40	50	80	100	125	150	200	250	300	350	400	450	500	600
Pressure Rating	ANSI Class 150~600, JIS 10K~40K, DIN PN 10~100																	
End Connection	RF, FF, SW, BW, RTJ, etc																	
Body Materials	Carbon steel, Stainless steel, Special alloys(Hastelloy-B/C, Monel, Inconel, Duplex, etc)																	
Bonnet Type	Plain, Extension, Cryogenic, etc.																	
Trim Materials	Stainless Steel, Special Alloys(Hastelloy-B/C, Monel, Inconel, Duplex, etc)																	
Seat Type	Metal, Soft																	
Valve Plug Shapes	Ball																	
Plug Characteristic	On-off, Inherent																	

Series 6110 Multispring Diaphragm Actuators



General

The Series 6110 Diaphragm actuators has been designed to control accurately the flow and pressure of fluid in response to demand of fine process control as well as various plant systems. These actuators have been developed for powerful and high performance pneumatic actuating of linear motion valves as well as rotating valves. It consist of four spring which are produced for high stiffness that is defined as the ability of the actuator to with stand suddenly changing dynamic force of fluids acting on the valve stem. The action of valves can be changed by removing of the cap and four mounting bolts, turning the actuator over, and replacing the cap.

- Simple cost effective design
- Long stroke and wide application
- Strong seating force
- Compact and light weight

Performance :

- Reliability
- High Power
- Full response
- Low Hysteresis
- Field Reversible

Design Flexibility :

- Reversible fail action without extra parts in the field
- Wide selection of optional accessories available
- Compact and simple design
- Inviolate rolling diaphragm simplifies actuator design
- Variable stroke up to 5"

Design Integrity :

- Multi spring construction
- One piece spindle on top and bottom dry bushing guide
- Low stressed alloy steel springs

Quality Manufacturing :

- High quality material with trace ability throughout manufacture.
- Quality Assurance system in accordance with ISO 9001.
- Comprehensively tested to ensure specified preference on site.

Diaphragm Actuator Specifications

Actuator Type	Multispring Diaphragm Actuator							
Actuator Model	Series 6110							
Actuator Size (Model)	T-1	T-2	T-3	T-3	T-4	T-4	T-5	T-5
Stroke (mm)	20	25	38	50	50	100	100	130
Min. Air supply Pressure	Standard : 4.0 kgf/cm ² G, Optional: 3.0kgf/cm ² G							
Spring Range	1.0~3.0 kgf/cm ² G, Optional: 0.4~2.0kgf/cm ² G							
Body Materials	Steel Plate							
Diaphragm Materials	EPDM							
Movement	Reciprocate / Rotary (with rotary box)							
Handwheel	Top side (Optional declutchable side handwheel)							

Series 6200 Rotary Piston Actuators



General

The Series 6200 Rotary piston actuator is designed to operate rotating valves, such as Ball valves, Butterfly valves and V-Notch valves for throttling or on-off service. This actuators are unique linkage type which converts linear motion torque at beginning which usually corresponds to the closed position of valves, and another peak of torque is produced at 60 degree of valves which correspond to the dynamic torque.

Performance :

- Ideal high torque
- Reliability
- Low hysteresis
- Light weight
- Easy maintenance

Design Flexibility :

- Double acting and spring return acting
- Single piston and double piston
- Wide selection of optional accessories available
- Wide adjustable range (maximum rotating angle - 110°)

Design Integrity :

- Maximum torque at beginning and another peak torque is produced at 60 - 80 degree in respond to torque of rotating valves
- Mounting flange dimensions in accordance with ISO 5211

Kind of Actuators :

- Scotch Yoke Type
- S(Spring Return Single Cylinder)
- D(Double Acting Single Cylinder)
- Linkage Type
- SD(Spring Return Double Cylinder)
- DD(Double Acting Double Cylinder)

Cylinder Actuator Specifications

Actuator Type	Rotary Cylinder Actuator (Double acting / Spring return)										
Actuator Model	Series 6200										
Actuator Size (Model)	AC05	AC06	AC08	AC10	AC12	AC14	AC15	AC16	AC17	AC18	AC20
	AC21	up to AC80									
Min. Air supply Pressure	Standard : 5.0kgf/cm ² G										
Spring Range	2.0~3.0 kgf/cm ² G										
Body Materials	Ductile Iron / Carbon Steel / Anodizing Aluminum										
Movement	Rotary (Canted Scotch yoke)										

Positioners

Available specifications

- Type: E/P, P/P, Smart
- Actuator type: Linear, Rotary
- Communication: 4-20mA, Hart, Fieldbus, Profibus
- Enclosure: IP66
- Explosion proof type: ExIICT6, ExdIICT6/T5, etc.
- Material: Aluminum die-casting, Stainless steel



MH-750



MH-740



MH-700

For more information:

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