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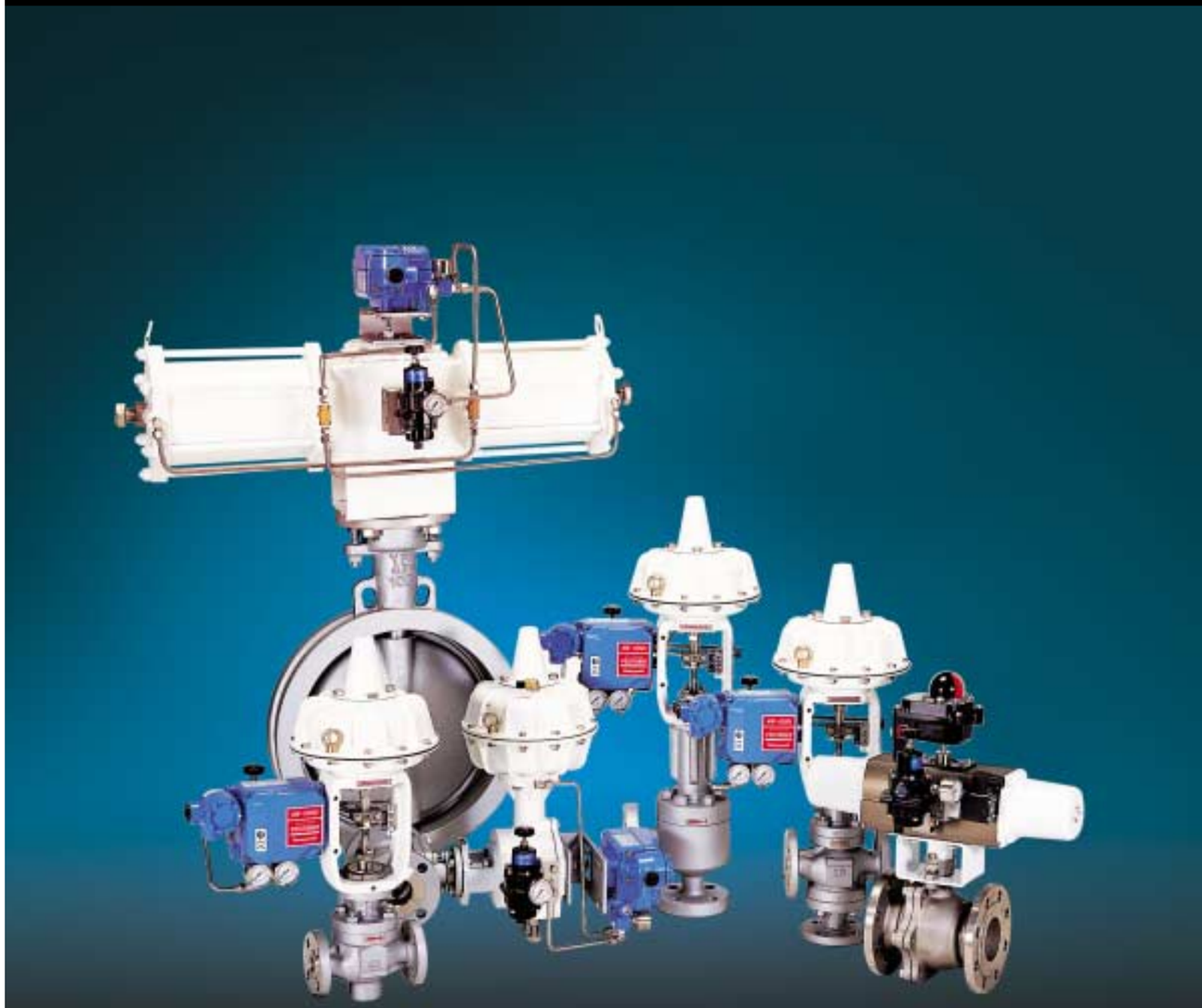
Control Valve Products



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 - 600 / JIS 10K-40K
DIN/BS 4504 PN10-PN40

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.

Series 9110 Valve incorporating Contoured Trim and complete with Series 6100 Actuator

Globe Valve Specifications

Valve Type	Diaphragm Operated Globe Control Valve													
Valve Model	Series 9110													
Body Type	Conventional, Teflon block, Small body, Double seat													
Trim Type	S-P, C-B, C-P, C-S, C-B-S, C-D, Optional Special Valve													
Valve Size (in)	1/2	3/4	1	1.1/2	2	2.1/2	3	4	5	6	8	10	12	14
(mm)	15	20	25	40	50	65	80	100	125	150	200	250	300	350
Pressure Rating	ANSI 150#~600# (JIS 10K~40K, PN 10~40)													
End Connection	RF, FF, SW, BW, Screw, RTJ													
Body Materials	A216WCB, A351CF8/CF8M, A351CF3/CF3M, H-C, H-B, and so on													
Bonnet Type	Plain(-17℃ to 230℃), Extension(-45℃ to -17℃, over 230℃), Cryogenic(-196℃ to -45℃)													
Packing	Graphite foil, Carbon fiber, Teflon fiber													
Gasket	Spiral Wound Metal gasket													
Guiding	Top/Cage													
Seat Type	Metal/Soft													
Valve Plug Shapes	Contoured/ Cage/ Pilot													
Plug Characteristic	Equal Percentage/Linear/Modified-Parabolic/Quick Opening													
Trim Materials	A351CF8/CF8M, A351CF3/CF3M, H-C, H-B, and so on													

Series 9120 Seated Angle Valves
ANSI 150 - 600 / JIS 10K-40K
DIN/BS 4504 PN10-PN40

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

Series 9120 Valve incorporating Contoured Trim and complete with Series 6100 Actuator

Angle Valve Specifications

Valve Type	Diaphragm Operated Angle Control Valve									
Valve Model	Series 9210									
Trim Type	S-P, C-B, C-P, C-S, C-B-S, C-D, Optional Special Valve									
Valve Size (in)	1/2	3/4	1	1.1/2	2	2.1/2	3	4	5	6
(mm)	15	20	25	40	50	65	80	100	125	150
Pressure Rating	ANSI 150#~600# (JIS 10K~40K, PN 10~40)									
End Connection	RF, FF, SW, BW, Screw, RTJ									
Body Materials	A216WCB, A351CF8/CF8M, A351CF3/CF3M, H-C, H-B, and so on									
Bonnet Type	Plain(-17°c to 230°c), Extension(-45°c to -17°c over 230°c), Cryogenic(-196°c to -45°c)									
Packing	Graphite foil, Carbon fiber, Teflon fiber									
Gasket	Spiral Wound Metal gasket									
Guiding	Top/Cage									
Seat Type	Metal/Soft									
Valve Plug Shapes	Contoured/ Cage/ Pilot									
Plug Characteristic	Equal Percentage/Linear/Modified-Parabolic/Quick Opening									
Trim Materials	A351CF8/CF8M, A351CF3/CF3M, H-C, H-B, and so on									

Series 9130 Mixing / Diverting Seated 3-Way Valves
ANSI 150 - 600 / JIS 10K-40K
DIN/BS 4504 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.

Series 9130 Valve incorporating Contoured Trim and complete with Series 6100 Actuator

3-way Valve Specifications

Valve Type	Diaphragm Operated 3-way Control Valve												
Valve Model	Series 9130												
Body Type	Mixing/Diverting												
Valve Size (in)	3/4	1	1.1/2	2	2.1/2	3	4	5	6	8	10	12	
(mm)	20	25	40	50	65	80	100	125	150	200	250	300	
Pressure Rating	ANSI 150#~600# (JIS 10K~40K, PN 10~40)												
End Connection	RF, FF, SW, BW, Screw, RTJ												
Body Materials	A216WCB, A351CF8/CF8M, A351CF3/CF3M, H-C, H-B, and so on												
Bonnet Type	Plain(-17℃to 230℃), Extension(-45℃to -17℃, over 230℃), Cryogenic(-196℃to -45℃)												
Packing	Graphite foil, Carbon fiber, Teflon fiber												
Gasket	Spiral Wound Metal gasket												
Guiding	Top/Cage												
Seat Type	Metal/Soft												
Valve Plug Shapes	Contoured/ Cage												
Plug Characteristic	Linear												
Trim Materials	A351CF8/CF8M, A351CF3/CF3M, H-C, H-B, and so on												

Series 9210 High Performance Butterfly Valves
ANSI 150-300 / JIS 10K-20K
DIN/BS 4504 PN10-PN25

General

The series 9210 butterfly valves has been developed for a large number of applications throughout process industries.
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 :

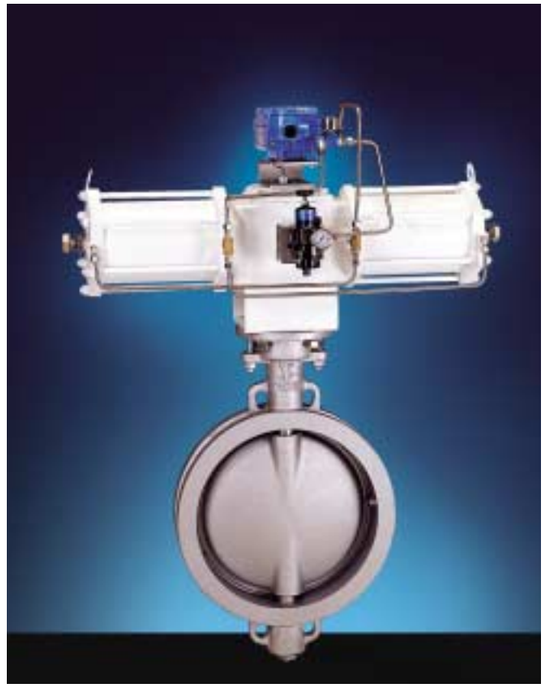
- Swing through and tight shut-off seated trim design.
- Flange connection versions available.
- Full range of bonnet and packing design to suit various temperatures and fluids.
- Provides fire safe sealing, which combines a soft seal ring and metal seal ring.
- Full range of body and vane material options, 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 ISO 9001.



Series 9210 Butterfly Valve and complete with Series 6200 Actuator

Butterfly Valve Specifications

Valve Type	Diaphragm/Cylinder Operated Butterfly Control Valve												
Valve Model	Series 9210												
Body Type	High Performance/Damper/TFE Lining/Rubber Lining												
Valve Size (in)	3	4	5	6	8	10	12	14	16	18	20	24	
(mm)	80	100	125	150	200	250	300	350	400	450	500	600	
Pressure Rating	ANSI 150#~300# (JIS 10K~20K, PN 10~25)												
End Connection	WF, RF, FF												
Body Materials	A216WCB, A351CF8/CF8M												
Bonnet Type	Plain(-17°c to 230°c), Extension(-45°c to -17°c, over 230°c), Cryogenic(-196°c to -45°c)												
Packing	Teflon, EPDM												
Gasket	Graphite												
Guiding	Bushing												
Seat Type	Metal/Soft												
Valve Plug Shapes	VANE												
Plug Characteristic	Inherent												
Trim Materials	A351CF8/CF8M, A351CF3/CF3M, and so on												

Series 9310 V-Notch Ball Valves
ANSI 150-300 / JIS 10K-20K
DIN/BS 4504 PN10-PN25

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

Series 9310 V-notched Ball Valve and complete with Series 6200 Actuator

V-notch Ball Valve Specifications

Valve Type	Diaphragm/Cylinder Operated V-notch Ball Control 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 150#~300# (JIS 10K~20K, PN 10~25)														
End Connection	RF, FF, SW, BW, Screw, RTJ														
Body Materials	A216WCB, A351CF8/CF8M, A351CF3/CF3M, H-C, H-B, and so on														
Bonnet Type	Plain(-17℃ to 230℃), Extension(-45℃ to -17℃, over 230℃), Cryogenic(-196℃ to -45℃)														
Packing	Graphite foil, Carbon fiber, Teflon fiber														
Gasket	Spiral Wound Metal gasket														
Guiding	Bushing														
Seat Type	Metal/Soft														
Valve Plug Shapes	V-port														
Plug Characteristic	Equal Percentage/Linear														
Trim Materials	A351CF8/CF8M, A351CF3/CF3M, H-C, H-B, and so on														

Series 9410 Full Bore Seated Ball Valves
ANSI 150 - 600 / JIS 10K-40K
DIN/BS 4504 PN10-PN40

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

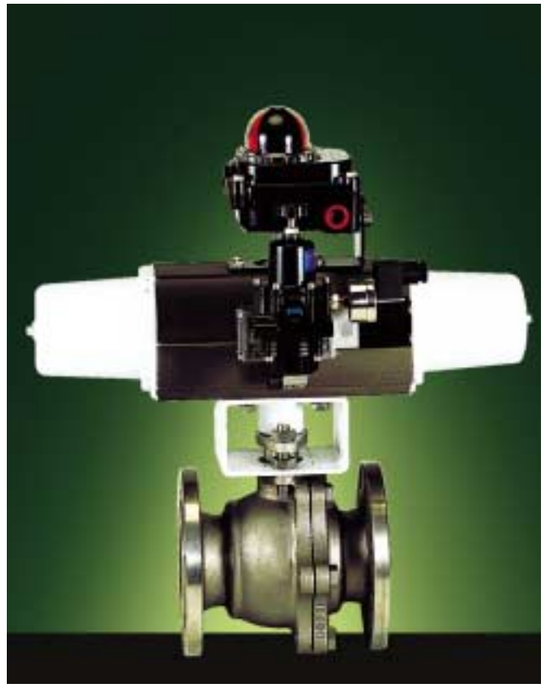
Flanged end, 2-pcs split body construction,
Floating ball design, Full bore or reduced bore,
Fields serviceable, wrench/gear/actuator mounted.

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.



Series 9410 Full Bore Seated Ball Valve and complete with Series 6200 Actuator

Ball Valve Specifications

Valve Type	Cylinder Operated Ball Valve												
Valve Model	Series 9410												
Body Type	2-way, 3-way, 4-way												
Valve Size (in)	3	4	5	6	8	10	12	14	16	18	20	24	
(mm)	80	100	125	150	200	250	300	350	400	450	500	600	
Pressure Rating	ANSI 150#~600# (JIS 10K~40K, PN 10~40)												
End Connection	RF, FF, SW, BW, Screw, RTJ												
Body Materials	A216WCB, A351CF8/CF8M, A351CF3/CF3M, H-C, H-B, and so on												
Bonnet Type	Plain(-17°c to 230°c), Extension(-45°c to -17°c, over 230°c)												
Packing	Teflon, EPDM												
Guiding	O-ring												
Seat Type	Metal/Soft												
Valve Plug Shapes	Ball												
Plug Characteristic	On-off												
Trim Materials	A351CF8/CF8M, A351CF3/CF3M, H-C, H-B, and so on												

Series 6100 Multispring Diaphragm Actuators

General

The Series 6100 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 :

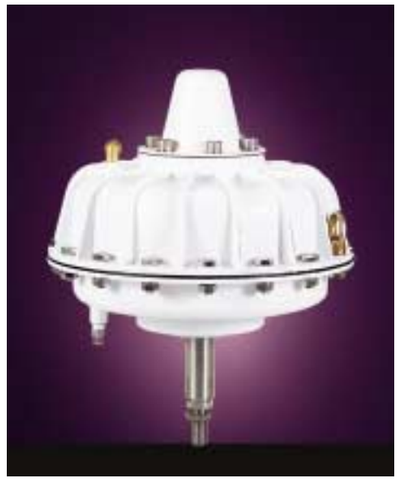
- Reversible fail action without extra parts in the field.
- Wide selection of optional accessories available.
- Compact and simple design.
- Inviolate rolling diaphragm simplifies actuator design.
- Variable stroke up to 5".

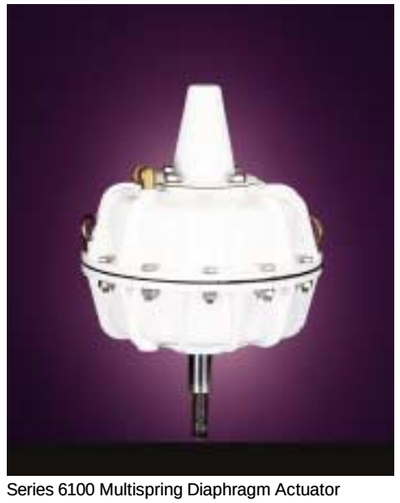
Design Integrity :

- 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.





Series 6100 Multispring Diaphragm Actuator

Diaphragm Actuator Specifications

Actuator Type	Multispring Diaphragm Actuator								
Actuator Model	Series 6100								
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
Supply Pressure Range	Standard : 4.0kgf/cm^2(G), Range : 3.5 ~ 5.0 kgf/cm^2								
Spring Range	1.0~3.0 kgf/cm^2(G)								
Body Materials	AL2024 / AC2B								
Diaphragm Materials	EPDM/NBR								
Guiding	Bushing								
Movement	Reciprocate, Rotary (with rotary box)								

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 :

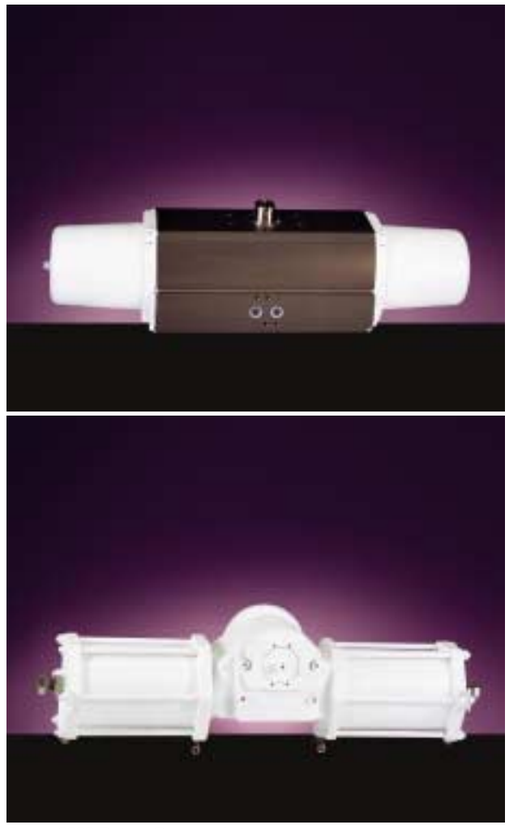
- Double acting and spring return acting
- Single piston and double piston
- Wide selection of optional accessories available
- Wide adjustable range (maximum rotating angle - 110°)

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)



Series 6200 Rotary Cylinder Actuator

Cylinder Actuator Specifications

Actuator Type	Double Acting/Spring Return Type Cylinder Actuator								
Actuator Model	Series 6200								
Body Type	Scotch yoke, Linkage, Piston Type								
ACtuator Size (Model)	AC06	AC08	AC10	AC12	AC14	AC17	AC20	AC25	AC30
Supply Pressure Range	Standard : 4.0kgf/cm2(G), Range : 3.5 ~ 5.0 kgf/cm2								
Spring Range	2.0~3.0 kgf/cm2(G)								
Body Materials	FCD450								
Guiding	Bushing								
Movement	Rotary (Scotch yoke, Linkage), Reciprocate (Piston)								