

For Process Automation

GENERAL GC CATALOG

CONTROL VALVES

ACTUATORS

INSTRUMENTS

FA · SYSTEMS

CHEMICAL PUMPS

PRODUCTION

KOSO

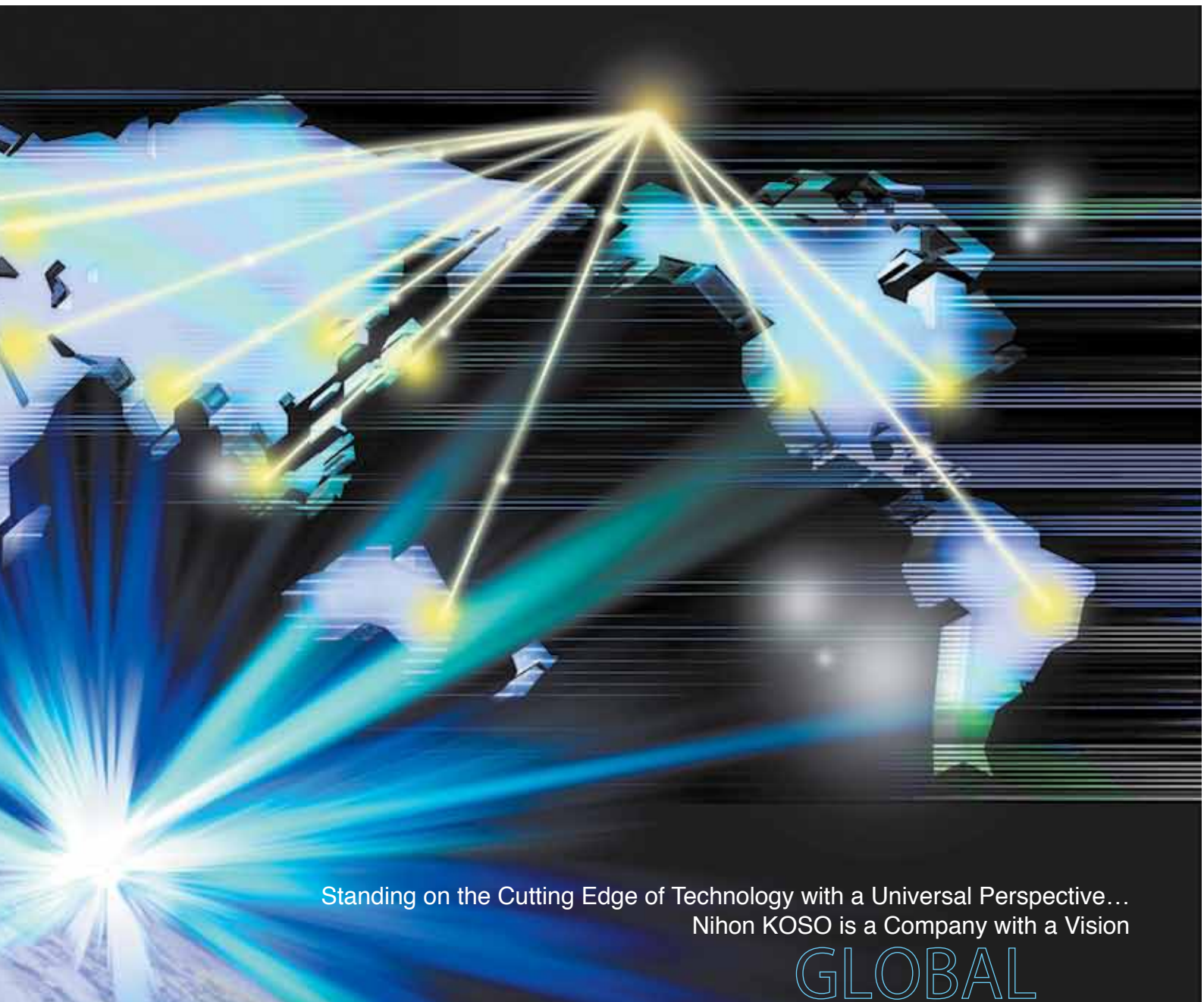
Since its establishment, the KOSO group has developed a diverse range of high-quality control valves of diversified types, greatly contributing to the implementation of process automation (PA) in various industries.

In 1976, KOSO started to develop, manufacture, and sell automation systems utilizing the abundant experience and know-how earned by that time. Today, even stronger from strategic acquisitions, KOSO is able to offer a complete line of automation systems, including sensors, controllers, and computers.

KOSO stands ready to meet every customer need with the best products available as they strive to equip themselves with the total automation systems of the next century.



AUTOMATION SYSTEMS



Standing on the Cutting Edge of Technology with a Universal Perspective...
Nihon KOSO is a Company with a Vision

GLOBAL

JAPAN

Nihon KOSO Co., Ltd.
Tokyo KOSO Co., Ltd.
KOSO Service Co., Ltd.
KOSO Engineering Co., Ltd.
KOSO Co., Ltd.
Nihon KOSO Fuji Co., Ltd.
Herutu Electronics Co., Ltd.
Toyo Steel Belt Ind. Co., Ltd.
Tokyo Okazaki Ind. Co., Ltd.
Shinkosha Co., Ltd.
Tensho Printing Co., Ltd.
Soto Seisakusho Co., Ltd.

OUTSIDE JAPAN

KOSO America, Inc. [Rexa]
KOSO M-Mac International, Inc.
PACIFIC Seismic Products, Inc.
KOSO Kent Introl Ltd.
KOSO Controls Asia Pte. Ltd.
KOSO Fluid Controls Private Ltd.
Kent Introl Private Ltd.

JOINT ENTERPRISES

KOSO - AACI (Anshan) Co., Ltd.
Hangzhou Hangyang KOSO Pump & Valve Co., Ltd.

TECHNOLOGY TRANSFER

Anshan Automation Control Instrument Co., Ltd.
Tianjin No. 4 Instrument Factory
I.M.I Bailey Birkett Ltd.

REP. AGREEMENTS

Ronan Engineering Company
Adalet-PLM
Sor Inc.
Drallim Controls, Ltd.

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Corporate History

The creativity of youth is the key that can open the door to a wonderful future for mankind. At Nihon KOSO Co., Ltd., we believe that youthful power and “creativity” represent our corporate character. These are the two foundations upon which we have built our company into what it is today. With the beginning of this new century, our dreams continue to expand endlessly. At Nihon KOSO, we aspire to achieve the possibilities of the future as we exceed the expectations of the present.

Year.Month	
1965.11	Starts business as control valve manufacturer
1966.8	Establishes Nihon KOSO Industry Co., Ltd.(Manufacturing division)
1971.6	Establishes Tokyo KOSO Co., Ltd.
1974.11	Acquires KHK (The High Pressure Gas Safety Institute of Japan) certification
1976.3	Establishes KOSO Engineering Co., Ltd.
12	Establishes KOSO Service Co., Ltd.
1977.2	Establishes Nihon KOSO Co., Ltd. (Sales division)
1978.5	Establishes KOSO International, Inc.(U.S.A.)
1979.3	Acquires A.P.I. certification
5	Establishes Korea Controls Co., Ltd. (as a joint enterprise)
9	Starts technology transfer negotiation with China National Technology Import & Export Corp.
1980.4	Establishes KOSO Co., Ltd.
1982.11	Signs rep. agreement with Ronan Engineering Company of U.S.A. for sales to Japanese market
11	Acquires interest in Souto Seisakusho Co., Ltd.
1984.5	Introduces IBM factory automation system
1985.2	Signs agreement with I.M.I Baley Birkett Ltd. of U.K. for technology transfer
4	Signs agreement with Anshan Instrument Co. of China for technology transfer
1986.3	Signs agreement with Control Components Inc. of U.S.A. for a mutual technology transfer
5	Diagnosing Chinese business for technology renovation. (JAPAN-CHINA NATIONAL PROJECT)
1987.5	Acquires UNDERWRITERS LABORATORIES INC. certification
12	Signs agreement with Wuxi Instrument Valve Co., Ltd. of China for technology transfer
1988.8	Establishes Korea KOSO Engineering Co., Ltd. (Korea)
1989.5	Establishes Wuxi KOSO Control valve Co., Ltd. (as a joint enterprise) (China)
6	Establishes KOSO-AACI (Anshan) Co., Ltd. (as a joint enterprise)(China)
10	Signs rep. agreement with Adalet-Plm of U.S.A. for sales to Japanese market
1990.1	Establishes Pacific Seismic Product, Inc. (U.S.A.)
5	Establishes Toren Co., Ltd.
1991.3	Signs agreement with Tianjin No. 4 Instrument Factory of China for technology transfer
4	Signs rep. agreement with SOR Inc. of U.S.A. for sales to Japanese market
7	Acquires Herutu Electronics Co., Ltd.
1992.3	Acquires Toyo Steel Belt Ind. Co., Ltd.
4	Signs rep. agreement with Drallim Controls Ltd. of U.K. for sales to Japanese market
1993.5	Establishes KOSO Controls Asia Pte. Ltd. (Singapore)
5	Acquires the ownership of Korea Controls Co., Ltd. (Korea)
5	Establishes KOSO Control Engineering (Wuxi) Co., Ltd. (China)
8	Acquires Rexa Inc. of U.S.A. (Changes Rexa's name to KOSO America, Inc.)
9	Acquires Shinkosha Co., Ltd.
1994.6	Acquires ISO 9001 certification
1995.9	Acquires Sigma Electric Works Co., Ltd
1996.10	Establishes KOSO Control Engineering Co., Ltd. (China)
2000.1	Acquires Tokyo Okazaki Industries Co., Ltd.
7	Korea Controls Co., Ltd. changes its Korean name to KOSO
2001.2	Merges Nihon KOSO Co., Ltd.(Manufacturing division)with KOSO Service Co., Ltd.
6	Establishes KOSO Fluid Controls Private Ltd. (India)
2002.1	Acquires Tensho Printing Co., Ltd.
2	Establishes Hangzhou Hangyang KOSO Pump & Valve Co., Ltd.
3	Establishes SP Laboratory Co., Ltd.
4	Establishes Wuxi KOSO Valve casting Co., Ltd.
7	Acquires the assets of Hammel Dahl globe control valves line
2005.6	TOREN Co., Ltd. Changes its name to Nihon KOSO Fuji Co., Ltd.
6	Acquires the assets of Kent Introl products line
6	Establishes KOSO Kent Introl Ltd. (U.K.)
6	Establishes Kent Introl Private Ltd. (India)

KOSO NETWORK

NIHON KOSO CO., LTD.

1-16-7, Nihombashi, Chuo-ku, Tokyo, 103-0027, Japan
 Tel. 81-3-5202-4300 Fax. 81-3-5202-4301



ISO 9001 Certified
 ISO 14001 Certified

Head Office

Tel. 81-3-5202-4300 Fax. 81-3-5202-4301

Osaka branch office

Tel. 81-6-6378-7117 Fax. 81-6-6378-7050

CSC Hokkaido

Tel. 81-144-31-4400 Fax. 81-144-31-4401

CSC Sendai

Tel. 81-223-33-1891 Fax. 81-223-33-1892

CSC Fukushima

Tel. 81-248-65-3128 Fax. 81-248-65-62224

CSC Niigata

Tel. 81-223-33-1891 Fax. 81-223-33-1892

CSC Kashima

Tel. 81-299-96-6891 Fax. 81-2299-96-6892

CSC Kanto

Tel. 81-436-22-0604 Fax. 81-436-21-1311

CSC Toda

Tel. 81-48-421-5111 Fax. 81-48-421-5115

CSC Fuji

Tel. 81-545-66-3191 Fax. 81-545-66-3192

CSC Nagoya

Tel. 81-568-34-1421 Fax. 81-568-34-1431

CSC Osaka

Tel. 81-6-6378-7117 Fax. 81-6-6378-7050

CSC Hiroshima

Tel. 81-82-943-7750 Fax. 81-82-922-9033

CSC Okayama

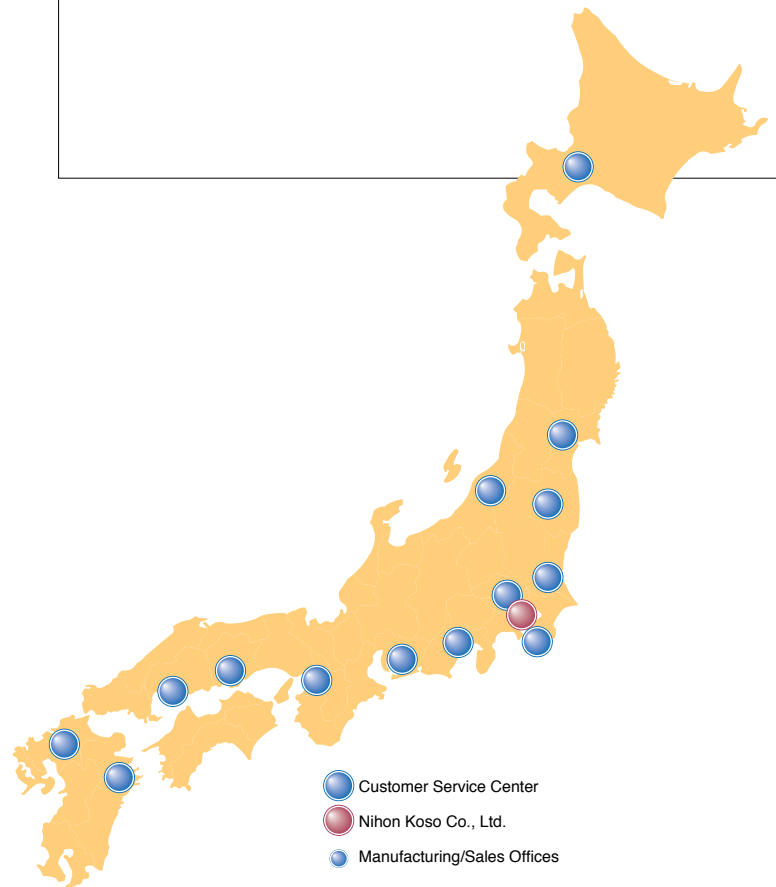
Tel. 81-86-444-1802 Fax. 81-86-444-1812

CSC Kyushu

Tel. 81-93-922-3431 Fax. 81-93-951-1435

CSC Oita

Tel. 81-97-551-4816 Fax. 81-97-551-4827





WORLD-WIDE NETWORK (Sales, Manufacturing, Services)

Head office:
KOSO Nihombashi Building

E-mail: info@koso.co.jp
Website: <http://www.koso.co.jp>
<http://www.koso.com>

Nihon Koso, Co. Ltd. Tokyo office	Tel. (81)3-5202-4300	Fax. (81)3-5202-4301
Paris office	Tel. (33)1-73-75-23-1	Fax. (33)1-73-75-23-1
Moscow office	Tel. (7)495-775-8531	Fax. (7)495-787-2758
Dubai branch	Tel. (971)4-881-3090	Fax. (971)4-881-5090
Beijing office	Tel. (86)10-5877-2863	Fax. (86)10-5877-2867
Koso M-Mac International, Inc., CA, USA	Tel. (1)661-942-4499	Fax. (1)661-942-0999
Koso America, Inc., Boston, USA	Tel. (1)508-584-1199	Fax. (1)508-584-2525
Pacific Seismic Products, Inc., CA, USA	Tel. (1)661-942-4499	Fax. (1)661-942-0999
Koso Kent Introl Ltd. UK	Tel. (44)1484-710311	Fax. (44)1484-407407
Koso Control Engineering (Wuxi) Co., Ltd., China	Tel. (86)510-85129961	Fax. (86)510-85127827
Wuxi Koso Fluid Control Co., Ltd., China	Tel. (86)510-85101567	Fax. (86)510-85105339
Wuxi Koso Valve Casting Co., Ltd., China	Tel. (86)510-85117433	Fax. (86)510-85117433
Hangzhou Hangyang Koso P & V Co. Ltd.	Tel. (86)571-85869508	Fax. (86)571-85343203
Koso-AACI (Anshan) Co., Ltd., China	Tel. (86)412-8812686	Fax. (86)412-8814582
Koso Control Engineering (Anshan) Co., Ltd., China	Tel. (86)412-5220389	Fax. (86)412-5220389
Korea Koso Co., Ltd, Seoul, Korea	Tel. (82)2-539-9011	Fax. (82)2-566-5119
Korea Koso Engineering Co., Ltd, Seoul, Korea	Tel. (82)2-539-9018	Fax. (82)2-566-5119
Koso Controls Asia Pte. Ltd. Singapore	Tel. (65)67472722	Fax. (65)67467677
Kent Introl Private Ltd., India	Tel. (91)253-2383111	Fax. (91)253-2384413
Koso Fluid Controls Private Ltd., India	Tel. (91)491-2566047	Fax. (91)491-2567142

Main Factories and Customer Satisfaction Centers

Our goal in manufacturing is to guarantee high-quality 100% of the time. We strive to achieve this goal by using only the best hardware and software to create advanced, comprehensive production systems with CAD/CAM automation lines, unmanned transport systems, production control systems and other precision processes.

Developing products uncompromisingly from our customer's perspective has always been one of Koso's major operating principles from the date of its inception. To further enhance this driving principle, we have opened Customer Satisfaction Centers (CSC), starting in 1995, at various locations convenient to customers to position ourselves even closer to serve their every day needs. As our history has proven, "Customer Satisfaction is and will always be Koso's first priority.



TOKYO KOSO CO., LTD.

ISO 9001 Certified
ISO 14001 Certified

29 Okubo, Aza-Kawamushinai, Sukagawa-shi, Fukushima, 962-0312
Tel. 81-248-65-3128 Fax. 81-248-65-62224

Manufacture of control valves, actuators and pneumatic devices.
Customer satisfaction center.



FUKUSHIMA FACTORY



KOSO CONTROL ENGINEERING (WUXI)CO., LTD.

ISO 9002 Certified

Tel.(86) 510-5101567 Fax. (86) 510-5122498

Manufacture and sale of control valves, actuators and pneumatic devices. Customer satisfaction center. Casting(cast steel, stainless steel) and investment casting. Sale of casting and investment casting.

WUXI FACTORY

WUXI KOSO FLUID CONTROL CO., LTD.

Tel.(86) 510-8558-5118 Fax.(86) 510-8558-5119

Manufacture and sale of control valves, actuators and pneumatic devices. Customer satisfaction center. Casting(cast steel, stainless steel) and investment casting. Sale of casting and investment casting.



WUXI FACTORY

WUXI KOSO VALVE CASTING CO., LTD.

Tel.(86) 510-5117433 Fax.(86) 510-5117433

Manufacture and sale of steel, stainless steel, heat resisting steel and many kinds of alloy castings made by sand casting and investment casting.



WUXI FACTORY

KOSO AMERICA, INC.

4 Manley Street West Bridgewater, MA 02379 U.S.A.

Tel.(1)508-584-1199 Fax.(1)508-584-2525

<http://www.kosoamerica.com>

Manufacture and sale of intelligent digital actuators. [REXA]
Manufacture and sale of control valves. [Hammel Dahl]



BOSTON FACTORY

KOSO M-MAC INTERNATIONAL, INC.

Sales of control valves and seismic shut-off valves.

PACIFIC SEISMIC PRODUCTS, INC.

233 East Avenue H-8 Lancaster, CA 93535-1821 U.S.A.

Tel.(1)661-942-4499 Fax.(1)661-942-0999

Manufacture of seismic shut-off valves.
Manufacture and sale of die cast parts.



CALIFORNIA FACTORY

Main Factory and Customer Satisfaction Centers (CSC)



KOSO KENT INTROL LTD. ISO 9001 Certified ISO 14001 Certified

Armytage Road Brighouse, West Yorkshire HD6 1QF U.K.

Tel.(44)0-1484-710311 Fax.(44)0-1484-407407

Design, manufacture and after sales service of chokes, severe service and control valves.

BRIGHOUSE FACTORY



KENT INTROL PRIVATE LTD.

H-34 Midc, Ambad, Nashik 422 010 INDIA

Tel.(91)253-2383111 Fax.(91)253-2384413

Design, manufacture and supply of control valves, actuators and accessories.

NASHIK FACTORY

KOSO FLUID CONTROLS PRIVATE LTD.

190, Chandranagar Colony, Chandranagar (P.O), Palakkad-678007, Kerala, INDIA

Tel. (91)491-2566047 Fax. (91)491-2567142



Manufacture and sale of control valves, actuators and pneumatic devices. System advice. Start-up service.

Maintenance service for control valves and industrial instruments.

KERALA FACTORY



KOSO FLUID CONTROLS (PVT.) LTD. (Foundry Division)

1/80, Telungupalayam Road, Pillayappampalayam (Po),

Annur, Coimbatore - 641 653 Tel.(91)4254-263416 Fax. (91)4254-263016



Manufacture and sale of steel, stainless steel, heat resisting steel and many kinds of alloy castings made by sand casting.

COINBATORE FACTORY

**KOSO-AACI (Anshan) CO., LTD.
(Joint Enterprise)**

Tel.(86) Tel.(86)412-8812686 Fax.(86)412-8814582

Manufacture and sale of electronic actuators.

**KOSO CONTROL
ENGINEERING
(Anshan) CO., LTD.**

Manufacture and sale of electro-hydraulic actuators.

**KOREA KOSO CO., LTD.**

ISO 9002 Certified

RM. 1816 Sungjee Heights III B/D 642-6.

Yoksam-Dong, Kangnam-Ku, Seoul, KOREA

Tel.(82)2-539-9011 Fax.(82)2-566-5119

<http://www.kosokor.co.kr>

Manufacture and sale of control valves, actuators and pneumatic devices.



INCHON FACTORY

KOSO CONTROLS ASIA PTE. LTD.

No. 10, Kaki Bukit Road 1 #01-21 416175 SINGAPORE

Tel.(65)67472722 Fax.(65)67467677

System advice. Start-up service. Maintenance service for control valves and industrial instruments.



SINGAPORE CUSTOMER SATISFACTION CENTER

HERUTU ELECTRONICS CO., LTD.<http://www.herutu.co.jp>Manufacture and sale of FA systems and devices.
Manufacture and sale of data communication equipment.

HAMAMATU FACTORY



CSC HOKKAIDO

System advice. Start-up service. Maintenance service for control valves and industrial instruments.

HOKKAIDO CUSTOMER SATISFACTION CENTER



CSC KASHIMA

System advice. Start-up service. Maintenance service for control valves and industrial instruments.

KASHIMA CUSTOMER SATISFACTION CENTER



CSC FUJI

System advice. Start-up service. Maintenance service for control valves and industrial instruments.

FUJI CUSTOMER SATISFACTION CENTER



CSC TODA

System advice. Start-up service. Maintenance service for control valves and industrial instruments.

TODA CUSTOMER SATISFACTION CENTER

CSC KANTO

System advice. Start-up service. Maintenance service for control valves and industrial instruments.

KANTO CUSTOMER SATISFACTION CENTER



CSC NAGOYA

System advice. Start-up service. Maintenance service for control valves and industrial instruments.

OSAKA CUSTOMER SATISFACTION CENTER



CSC OSAKA

System advice. Start-up service. Maintenance service for control valves and industrial instruments.

OSAKA CUSTOMER SATISFACTION CENTER



CSC KYUSHU

System advice. Start-up service. Maintenance service for control valves and industrial instruments.

KYUSHU CUSTOMER SATISFACTION CENTER



KOSO PRODUCTS FOR AUTOMATION SYSTEMS

PROCESS CONTROL SYSTEMS

CONTROL SYSTEMS

SENSOR - INSTRUMENTS

WIRELESS SIGNAL TRANSMISSION SYSTEMS

SEVERE SERVICE CONTROL VALVES

GENERAL SERVICE CONTROL VALVES

CONTROL VALVES & ACTUATORS

ACTUATORS

ACCESSORIES

DESUPERHEATERS



FACTORY AUTOMATION SYSTEMS

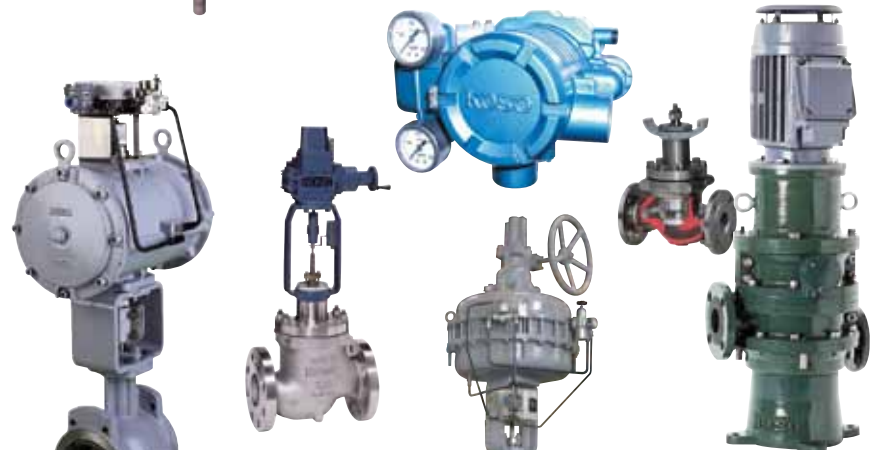
SYSTEM DESIGN - CONTROL PANELS

AUTOMATED MACHINES

STAINLESS STEEL BELTS

WIRELESS COMMUNICATIONS & CONTROLS

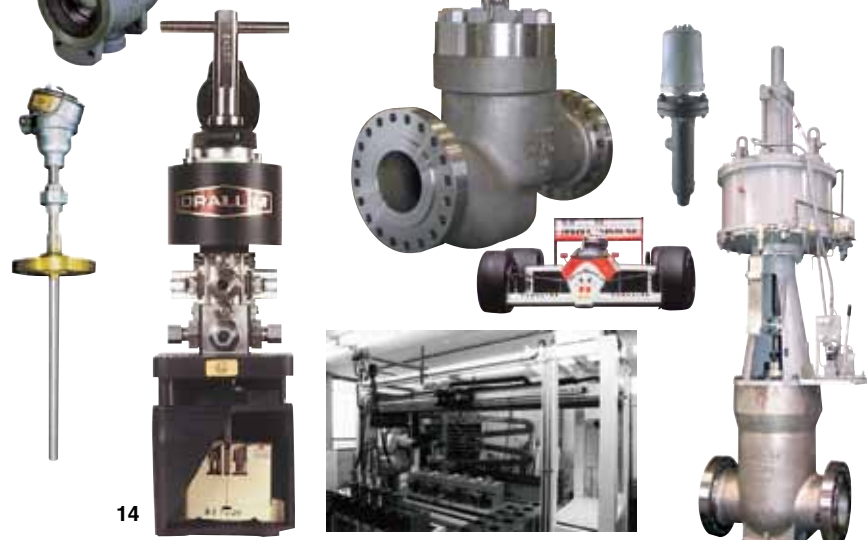
OTHERS



PROLONGATION OF VALVES SYSTEMS LIFE TIME

NET SYSTEMS FOR CUSTOMER SATISFACTION CENTERS

DEVELOPMENT OF LONG-LIFE VALVES & ACTUATORS

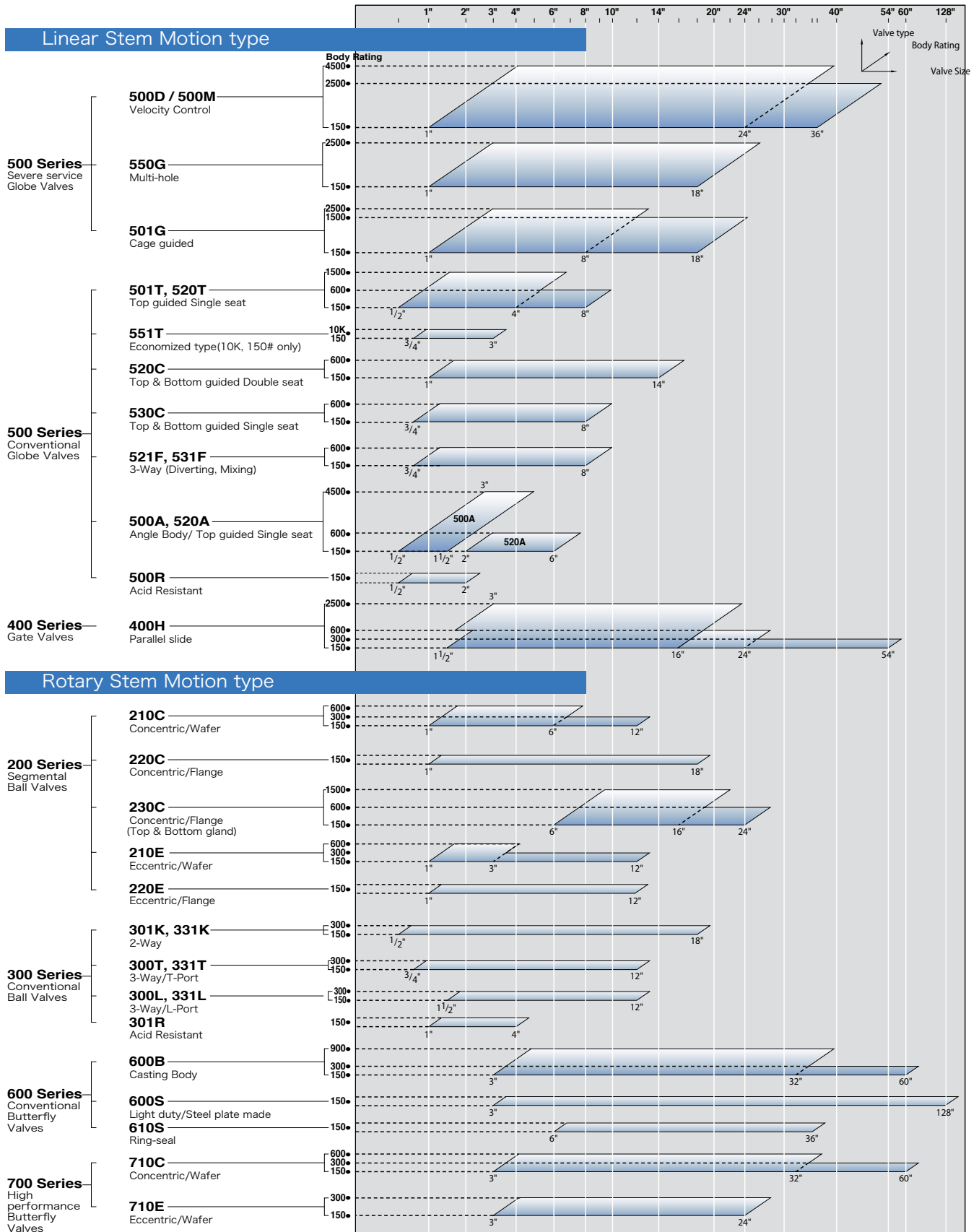


IT - MULTI-MEDIA & OTHERS



CONTROL VALVES

KOSO CONTROL VALVE RANGES



20 INCH SEVERE SERVICE VALVES 600# ANSI



20 INCH SEVERE SERVICE VALVES



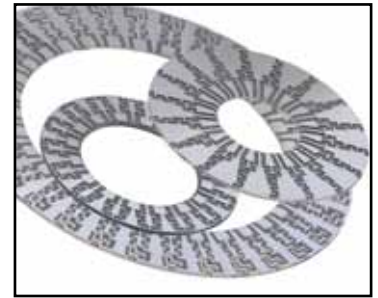
VECTOR™ SERIES SEVERE SERVICE GLOBE VALVES

KOSO VECTOR™

500M: VECTOR™ M trim

500D: VECTOR™ D trim

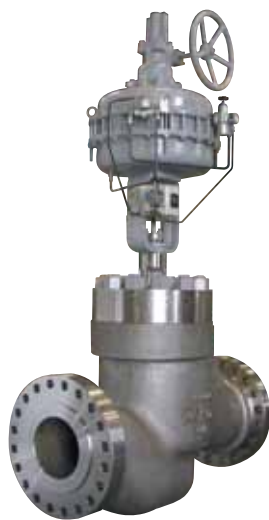
500J: VECTOR™ J trim



In severe services with high temperature and high differential pressure, KOSO's multi-stage VECTOR™ trim promises accurate control and long life, free from cavitation erosion and noise problems, whether the fluid is compressive or non-compressive. This Series is multi-advantageous in that its improved performance and durability allows maintenance cost reduction and system simplification. Since such ancillaries as diffusers and silencers are not necessary and equipment cost can be reduced. With 500M, 500D and 500J VECTOR™ trim choices, depending on the fluid condition, the most suitable model can be selected by comparing features.



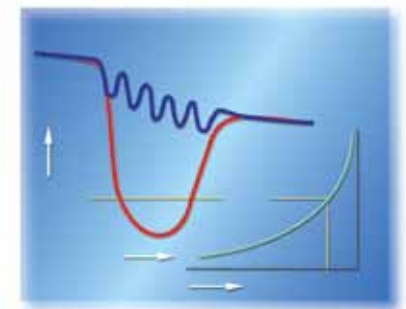
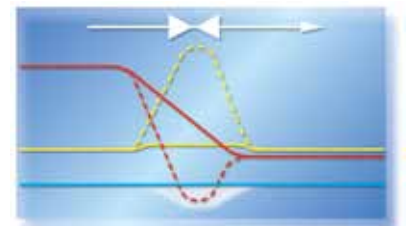
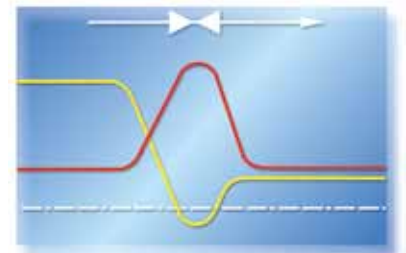
6300LA/540M



5200LA/530M



510M



Specifications

Body type	500M	500D	500J
Body Styles	Globe/Angle	Globe/Angle	Globe/Angle
Body size	1"~36" (900A)	1"~36" (900A)	1"~18" (450A)
Body rating	ANSI Class 150~4500 · JIS10K~63K	ANSI Class 150~4500 · JIS10K~63K	ANSI Class 150~2500 · JIS10K~63K
Fluid temperature	-196~+565°C (-320~+1050°F)		
Connections	(RF, RTJ), (SW, BW), (RF, RTJ) Flanges (RF, RTJ), Butt Weld, Socket Weld, Integral Flanges (RF, RTJ)		
Body materials	SCPH2/WCB, SCPH21/WC6, SCPL1/LCB, SCS13A/CF8, SCS14A/CF8M, A105, F11, F22, etc...		
Trim materials	SUS410/410SS, SUS316, INCONEL, F11(STELLITED) etc...		
Rangeability	50:1~20:1		
Flow characteristics	Linear, Modified Linear, Modified Eq%		
Leakage	Metal seat	ANSI Class IV, V or MSS-SP-61	
	Soft seat	ANSI Class VI	
Trim Levels	Up to Level 24	Up to Level 40	Up to Level 8
Actuator combination	5200LA: Pneumatic Diaphragm Actuator 6300LA: Pneumatic Cylinder Actuator 3500LB, 3600LB: Solid State Electronic Actuator 3800LA: Microprocessor REXA Actuator		

CONTROL VALVES

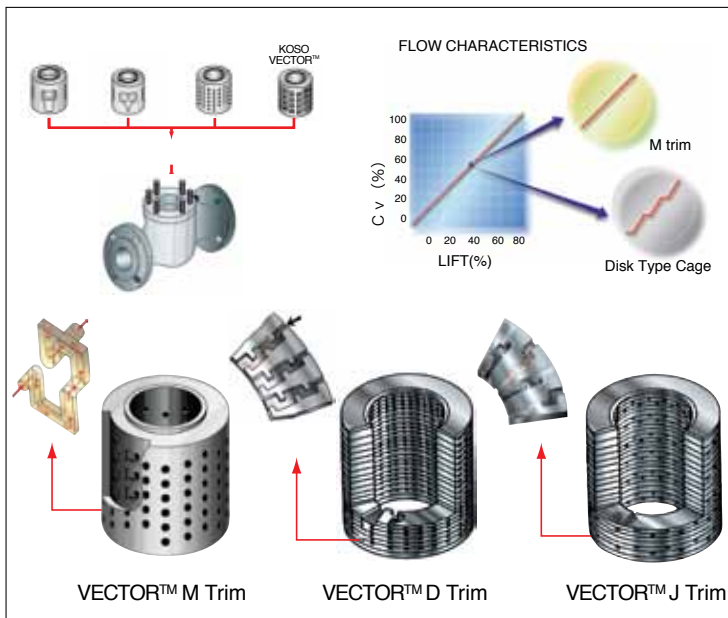
500 SERIES SEVERE SERVICE GLOBE VALVES

501G: Cage Guided Control Valves

550G: Multi-hole Cage Guided Control Valves

The 501G series is our latest cage guide control valve with large Cv value, and dynamic stability. It is suitable for a variety of heavy duty services. This series is characterized by pressure balanced type trim for high pressure drops.

The 550G series provides control valves that meet low noise and anti-cavitation requirements by incorporating multi-hole type cages, instead of the standard cages, in the 501G series cage guided control valves. All the parts except the multi-hole cage are interchangeable with the parts of the 501G series. For severe fluid conditions that cannot be covered by this series, you can choose from KOSO's VECTOR™ velocity control trim options.



6300LA/501G



5200LA/550G

Specifications

	550G : Globe type		501G : Globe type	
	560G : Angle type		511G : Angle type	
Body type: Style	550G : Globe type		501G : Globe type	
Body size	1"(25A)~18"(450A)		1"(25A)~18"(450A)	
Body rating	ANSI Class 150~2500 · JIS 10K~63K		ANSI Class 150~2500 · JIS 10K~63K	
Fluid temperature	-196~+538°C, (-320~100°F)		-196~+538°C, (-320~100°F)	
Connections	(RF,RTJ), (SW,BW) Flanges (RF,RTJ) Butt Weld Socket Weld etc.			
Body materials	SCPH2/WCB, SCPH21/WC6, SCPL1/LCB,SCS13A/CF8, SCS14A/CF8M, etc.			
Trim materials	SUS410/410SS, SUS630/SCS24, SUS316/CF8M, etc.			
Rangeability	5:1~20 : 1		50 : 1~20 : 1	
Flow characteristics	Linear, Modified Linear, ModifiedEq%		Linear, Eq%	
Leakage	Metal seat	ANSI Class IV,V or MSS-SP-61		
	Soft seat	ANSI Class VI		
Actuator combination	5200LA: Pneumatic Diaphragm Actuator 6300LA: Pneumatic Cylinder Actuator 3500LB,3620LA: Solid State Electronic Actuator 3800LA: Microprocessor Actuator			

500 SERIES CONVENTIONAL GLOBE VALVES

501T: Top Guided Single Seat Globe Valves

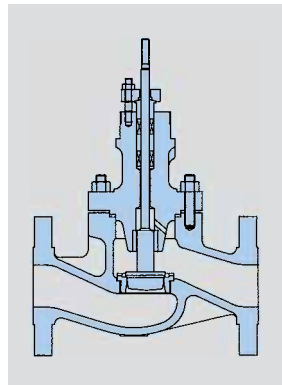
551T: Top Guided Single Seat Globe Valves/JIS10K and ANSI class 150 only

520T: Small Plug Single Seat Globe Valves

KOSO top-guided control valves are compact and simple structured. They are usable in a broad scope of applications, including all cavitation-free liquid services as well as steam and gas services that meet noise regulations. Aiming at quick delivery and low prices, the 551T model is limited to JIS 10K, ANSI (JPI) 150 lbs. with no optional features. The 520T model covers minimum flow applications, with its small plug, specially designed for durability.



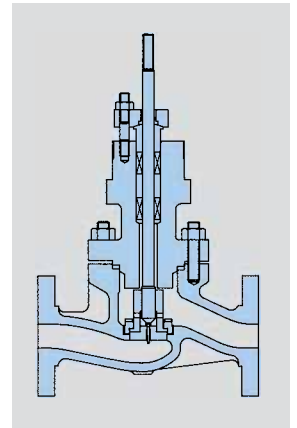
5200LA/501T



501T



5200LA/551T



520T

Specifications

	501T: Globe type	551 T : Globe type	520 T : Globe type
	511 T : Angle type	—	—
Body size	1/2" (15A) ~8" (200A)	3/4" (20A) ~3" (80A)	1/2" (15A) ~1" (25A)
Plug size	1/8" (6A) ~8" (200A)	1/4" (8A) ~3" (80A)	1/64" (1A) ~1/16" (3A)
Body rating	ANSI Class 150~1500 · JIS 10K~63K	ANSI Class 150 · JIS 10K	ANSI Class 150~600 · JIS 10K~40K
Fluid temperature	-196~+538°C (-320°F~+1000°F)	-5~+200°C (23°F~+392°F)	-45~+538°C (49°F~+1000°F)
Connections	RF, RTJ, (SW, BW) Flanges (RF, RTJ), Butt Weld, Socket Weld.		
Body materials	S C P H2/WC B, SCPH21/WC6, SCPL1/LCB, SCS13A/CF8, SCS14A/CF8M, etc.		
Trim materials	SUS316, SUS316+Stellite, SUS316 + TFE etc.		
Rangeability	50:1~30 : 1		6.8~8.8
Flow characteristics	Linear, Eq%, On-Off	Modified Eq%	Needle flow
Leakage	Metal seat	C v 0.01% ANSI Class IV	
	Soft seat	ANSI Class VI	
Actuator combination	5200 L A : Pneumatic Diaphragm Actuator 6300 L A : Pneumatic Cylinder Actuator 3500 L B, 3600 L B : Solid State Electronic Actuator 3800LA : Microprocessor Actuator		

500 SERIES CONVENTIONAL GLOBE VALVES

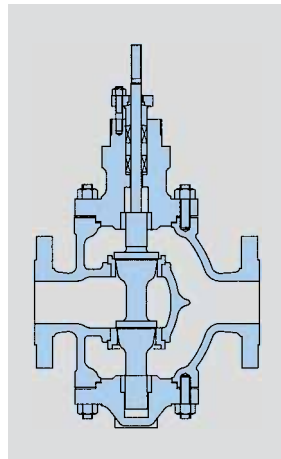
520C: Top and Bottom Guided Double Seated Globe Valves

530C: Top and Bottom Guided Single Seated Globe Valves

These series represent typical conventional top and bottom guided control valves. Supported above and below the plug, they easily deal with vibration-prone conditions, high temperature services and special material combinations, which makes them well-suited for a wide range of applications.



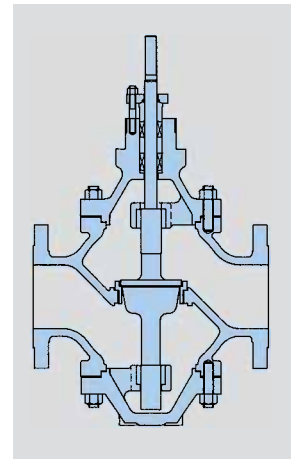
5200LA/520C



520C



5200LA/530C



530C

Specifications

Body type	520C	530C
Body size	1" (25A) ~14" (350A)	3/4" (20A) ~8" (200A)
Body rating	ANSI Class 150~600 · JIS 10K~40K	
Fluid temperature	-196~+538°C (-320~+1000°F)	
Connections	RF,RTJ) , (SW,BW) Flanges (RF,RTJ), Butt Weld, Socket Weld.	
Body materials	SCPH2/WCB, SCPH21/WC6, SCPL1/LCB, SCS13A/CF8, SCS14A/CF8M etc.	
Trim materials	SUS316, SUS316+Stellite	
Rangeability	30:1	
Flow characteristics	Eq%, Linear, On-Off Q-Port	
P-port plug	Cv □0.5% ANSI Class II	Cv □0.01% ANSI Class IV
Q-port plug	—	Cv □0.001% Rated Cv□0.001%
Actuator combination	5200LA: Pneumatic Diaphragm Actuator 6300LA: Pneumatic Cylinder Actuator 3500LB, 3600LB: Solid State Electronic Actuator 3800LA: Microprocessor Actuator	

500 SERIES CONVENTIONAL GLOBE VALVES

521F: 3-Way Diverting Globe Valves

531F: 3-Way Mixing Globe Valves

Diverting valves that divide the into two directions and mixing valves that converge two flows into one are available.

For valve size 2.5 in. (65A) or under, 531F (mixing type) can also be used as a diverting valve with no functional problem.

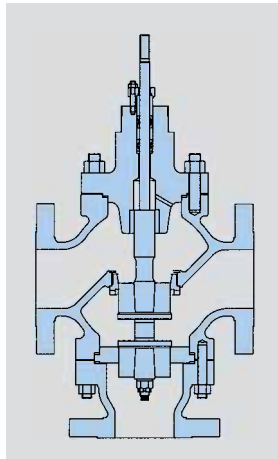
500A: Top Guided Single Seated Angle Valves /Forging Body

520A: Top Guided Single Seated Angle Valves/Casting Body

With this series, slurry-containing fluids, high viscosity fluids, flashing fluids or super high differential pressure fluids can be handled easily.



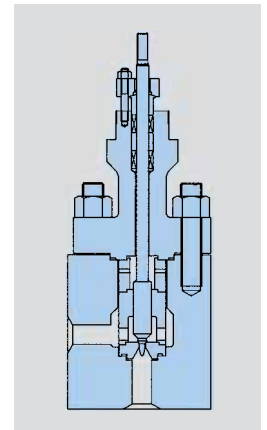
520LA/521F . 531F



531F



520LA/520A



500A

Specifications

Body type	521 F · 531 F	520 A	500 A
Body size	3/4" (20A) ~ 8" (200A)	2" (50A) ~ 6" (150A)	1/2" (15A) ~ 1 1/2" (40A)
Body rating	ANSI Class 150~600 · JIS 10K~40K	ANSI Class 150~600 · JIS 10K~40K	ANSI Class 150~4500 · JIS 10K~63K
Fluid temperature	-45~+300°C (-49~+572°F)	-45~+300°C (-49~+572°F)	-196~+538°C (-320~+1000°F)
Connections	(RF) Flanged(RF)	(RF, RTJ) Flanged(RF, RTJ)	(RF, RTJ) Integral Flanged (RF,RTJ) (S W) Socket Weld
Body materials	SCPH2/WCB, SCS13A/CF8, SCS14A/CF8M		A105, F11, F22, SUS316 etc.
Trim materials	SCS14A/CF8M, SCS24		SUS316, SUS316+Stellite
Rangeability	30 : 1	30 : 1	30 : 1~10 : 1
Flow characteristics	Linear, ON-Off		Eq%, Linear
Seat leakage	C v × 0.1% ANSI Class III		C v × 0.01% ANSI Class IV
Actuator combination	5200LA : Pneumatic Diaphragm Actuator 6300LA : Pneumatic Cylinder Actuator 3500LB, 3600LB : Solid State Electronic Actuator 3800LA : Microprocessor Actuator		

500 SERIES CONVENTIONAL GLOBE VALVES

500R: Acid Resistant Type Globe Valves

This series provides globe style control valves for controlling corrosive and/or poisonous fluids. Body parts are made of pure teflon and gland parts are completely sealed by a bellow seal bonnet made of pure teflon. The valve body is covered by cast iron or stainless steel which is resistant to external shock.

500S: Small Flow Control Valves

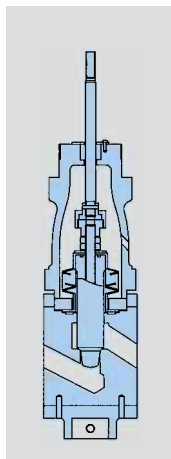
This valve series is compact size, light weight, and high-performance.

It is suitable to service controlling very small flows like in test plants, laboratories, etc.

The valve body is designed to withstand up to 300Kgf/cm²G pressure.



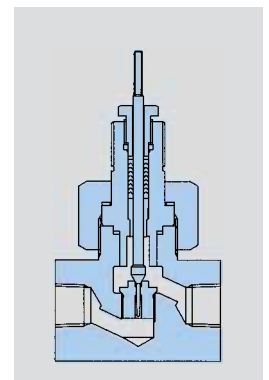
5200LA/500R



500R



5800LA/500S



500S

Specifications

	500R	500S
Body type		
Body size	1/2"(15A~2"(50A)	1/2"(15A)~3/4"(20A)
Body rating	JIS 10K Equivalent	ANSI Class 150~2500 · JIS 10K~63K
Fluid temperature	0~+150°C (-32~+302°F)	-196~+500°C (-320~+932°F)
Connections	(20A) 1(25A) Wafer:3/4 or Less, MFR Std:1 or More	(PT, NPT), (S W) PT, NPT, Socket Weld
Body materials	Pure Teflon/Cover: FC250, SS400, SUS304	SUS316 SUS316, Other Alloy Steel
Trim materials	Pure Teflon	S U S 316, Other Alloy Steel
Rangeability	15:1~30:1	10:1~30:1
Flow characteristics	Eq%, Linear	Eq%, Linear
Seat leakage	ANSI Class VI	Cv×0.01% ANSI Class I V
Actuator combination	5200 LA: Pneumatic Diaphragm Actuator 3500LB, 3600LB: Solid State Electronic Actuator	5800LA: Pneumatic Actuator

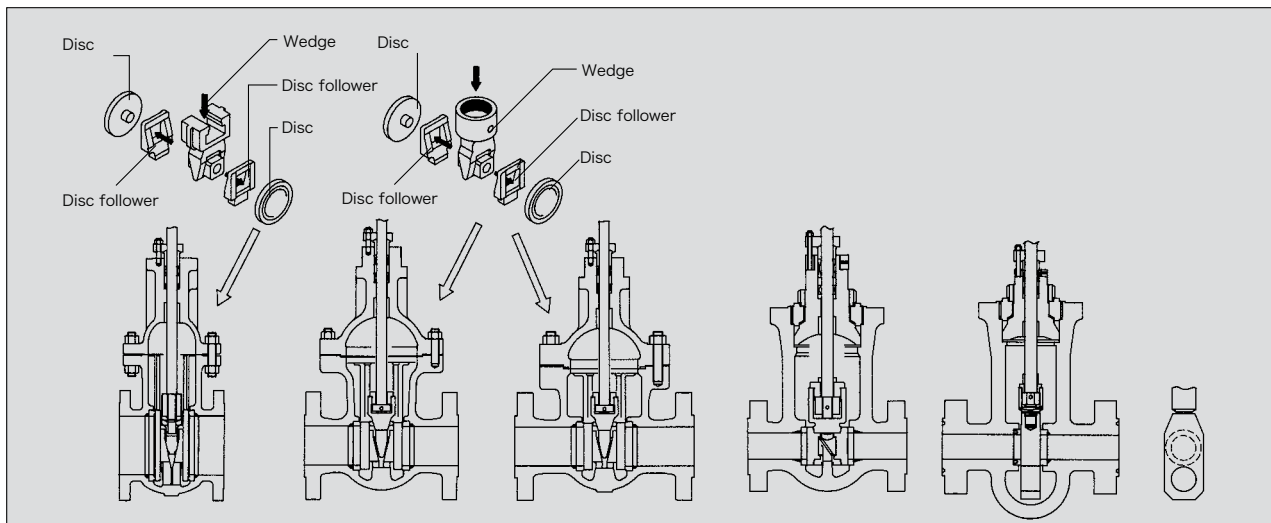
400 SERIES GATE VALVES

400H: Parallel slide valves

Parallel gate slide valves have KOSO's own design/construction to achieve superior metal-to-metal sealing performance. The excellent shut-off performance, brought about by the metal-to-metal sealing, makes it well-suited to a variety of severe service, including emergency shut-off/opening at extremely low or high temperature applications.



6100LA/400H



Class 150

Class 300

Class 600

Class 900/1500

Class 2500

Specifications

Body class	150/300	600	900/1500	2500
Body size	1 1/2" (40A) ~54" (1350A)	1 1/2" (40A) ~24" (600A)	3" (80A) ~16" (400A)	3" (80A) ~16" (400A)
Body rating	ANSI Class 150/300 JIS 10K~30K	ANSI Class 600 JIS 40K	ANSI Class 900/1500 JIS 63K	ANSI Class 2500
Fluid temperature	-196~+538°C (-320~+1000°F)			
Connections	Flanged (RF, RTJ), Butt Weld, Socket Weld.			
Body materials	SCPH2/WCB, SCPH21/WC6, SCPL1/LCB, SCS13A/CF8, SCS14A/CF8M etc.			
Disc materials				
Seat materials	A105/Stellited, SCM435/Stellited, SUS304/Stellited, SUS316/Stellited			
Rangeability	Standard type/15:1~20:1 V-Orifice type/20:1~30:1			
Flow characteristics	Approximate Linear			
Seat leakage	C v 0.000001% Rated Cv 0.000001%			ANSI Class V
Actuator combination	5200 L A : Pneumatic Diaphragm Actuator 6100LA : Pneumatic Cylinder Actuator Electric Motor Actuator(Limitorque, Rotork, Seibu, etc.)			

200 SERIES SEGMENTAL BALL VALVES

210C: Concentric segmental ball valves

This series is a concentric segmental ball valve for modulating applications. A V-notch cut at disc makes rangeability larger and creates a shearing effect by disc and seal ring. Therefore, suitable to large rangeability service and/or control of fluids with entrained particles and/or slurry.

230C: Concentric segmental ball valves

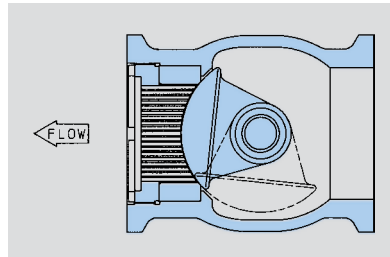
This series is the same as the 210C series except that the stem penetrates the body and is supported by double gland packing. The stem's blow out force is set off in this construction making it suitable for heavier services such as high pressure, high temperature service because of the heat expansion insulated stem design.



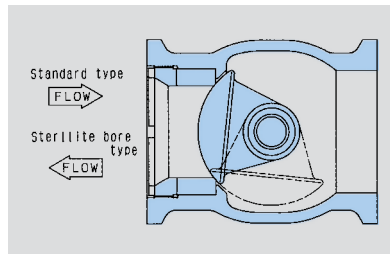
6300RB/210C



3620R/210C



210C ANTI-CAVITATION TYPE



210C CONCENTRIC TYPE



6400RB/230C

Specifications

	210C	220C	230C
Body type	210C	220C	230C
Body size	1" (25A) ~12" (300A)	1" (25A) ~18" (450A)	6" (150A) ~24" (600A)
Body rating	ANSI Class 150~600 · JIS 10K~40K	JIS 10K	ANSI Class 150~1500 · JIS 20K~63K
Fluid temperature	-45~+500°C (-49~+932°F)	-45~+500°C (-49~+932°F)	-45~+650°C (-49~+1202°F)
Connections	Wafer type	(RF) Flanged (RF)	(RF, RTJ) Flanged (RF, RTJ)
Body materials	SCPH2/WCB, SCS13A/C F8, SCS14A/C F8M. e t c.		
Disc materials	SCS14A		SCS13A, SCS14A
Disc treatment	Chrome plated or Stellite		
Seal ring materials	SUS316 R.TFE, SUS316		SUS304, 316
Rangeability	100:1~500:1		100:1
Flow characteristics	Approximate Eq% (Inherent Characteristic)		
Leakage	Metal seat	(H Type seat):(Rated) CV×0.25%	
	Soft seat	ANSI Class VI	
Actuator combination	6300RB, 6400RB, 6500RA, 7300RA: Pneumatic Cylinder Actuator 3500RB, 3600RB: Solid State Electronic Actuator 3400RB: Electric Motor Actuator		

200 SERIES SEGMENTAL BALL VALVES

210E: Eccentric Segmental Ball Valves

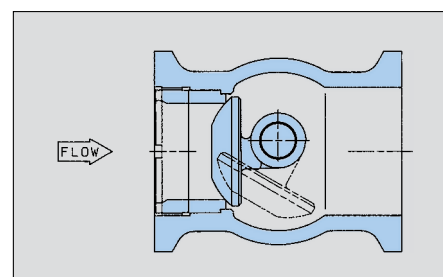
This series of eccentric segmental ball valves is designed for modulating applications. Compared to a globe valve, the ball valve body is compact, light weight, and yet it offers large Cv value, large rangeability and can be converted to reduce bore type (60, 40% reduced) by changing only seal ring.



6300RB/210E



5200RA/210E



210E ECCENTRIC TYPE

Specifications

Body type		210E	220E
Body size		1" (25A) ~12" (300A)	1" (25A) ~12" (300A)
Body rating		ANSI Class 150~600 · JIS 10K~40K	ANSI Class 150~300 · JIS 10K~20K
Fluid temperature		-45~+400°C (-49~+752°F)	-45~+400°C (-49~+752°F)
Connections		Wafer type	Flanged (RF)
Body materials		SCPH2/WCB, SCS13A/CF8, SCS14A/CF8M. etc.	
Disc materials		SCS14A	
Disc treatment		Chrome plated or Stellite	
Seal ring materials		R.TFE, SUS316/Stellite, SUS630	
Rangeability		100:1	
Flow characteristics		Approximate Linear (Inherent Characteristic)	
Leakage	Metal seat	ANSI Class IV	
	Soft seat	ANSI Class VI	
Actuator combination		6300RB, 6500RA, 7300RA: Pneumatic Cylinder Actuator 5200RA: Pneumatic Diaphragm Actuator 3600RB: Solid State Electronic Actuator	

CONTROL VALVES

300 SERIES CONVENTIONAL BALL VALVES

301K: Straight Through Ball Valves

310K: Straight Through Ball Valves

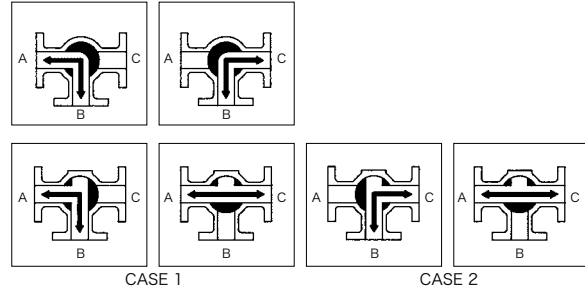
332K: Straight Through Ball Valves

331L: L port 3-way ball valves

331T: T-port 3-way ball valves

301R: Acid resistant ball valves

When totally opened a ball valve has the same bore as the pipeline and it's fluid resistance is negligible. For this reason, this automatic valve is best suited for on-off service, controlling various types of liquid, gas and slurry.



This series have teflon or polyvinyliden fluoride internal parts. This series has teflon or polyvinyliden fluoride internal parts. This model has excellent acid or corrosive fluid resistance. Outside of the internal parts is guarded by cast iron or stainless steel covers.



7300RB/301K



6300RB/332K



6300RA/331T



6300RB/301R

Specifications

Body type	301K	332K	331L · 331T	301R
Full bore size	1/2" (15A) ~ 16" (400A)	1/2" (15A) ~ 8" (200A)	1 1/2" (40A) ~ 12" (200A)	1" (25A) ~ 2 1/2" (65A)
Reduced bore size	4" □ 3" ~ 18" □ 16"	—	6" □ 4" ~ 12" □ 10"	3" □ 2 1/2" ~ 4" □ 3"
Jacketted valve size	1 1/2" □ 1 1/2" □ 1 1/2" ~ 10" □ 8" □ 6"	—	—	—
Body rating	150# ~ 600# · 10K ~ 40K	150# ~ 300# · 10K ~ 20K	—	ANSI Class 150 · JIS 10K
Fluid temperature	-45 ~ +250°C (-49 ~ +482°F)	-20 ~ +230°C (-4 ~ +446°F)	-20 ~ +200°C (-4 ~ +392°F)	-10 ~ +100°C (-14 ~ +212°F)
Connections	Flanged (RF)			Wafer Tapped
Body materials	SCPH2/WCB, SCSBA/CF8, SCS14A/CF8M	SCPH2/WCB, SCS14A/CF8M		PVDF/FCD or SCS13A
Ball materials	SUS316/SCS14A, SCS13A Buffing	SUS316/SCS14A Buffing	SCS14A/CF8M Buffing	PVDF
Seal ring materials	Pure Teflon, Reinforced Teflon			PTFE
Seat leakage	Tight shut off			
Actuator combination	6300RB, 6500RA, 7300RA: Pneumatic Cylinder Actuator 3200RA, 3300RA, 3400RB: Electric Motor Actuator			

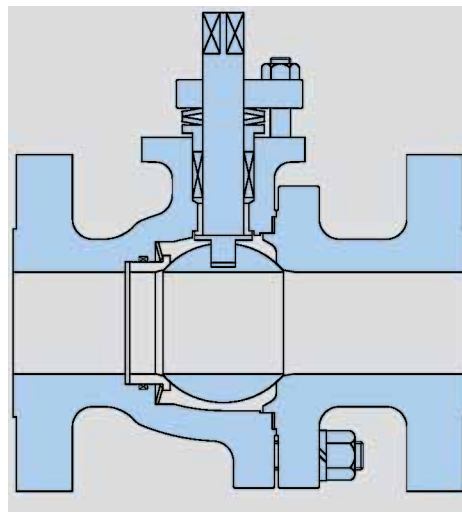
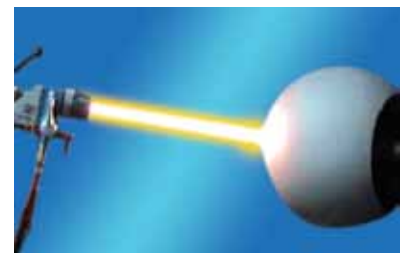
300 SERIES METAL SEATED BALL VALVES

300W: Metal Seated Ball Valves

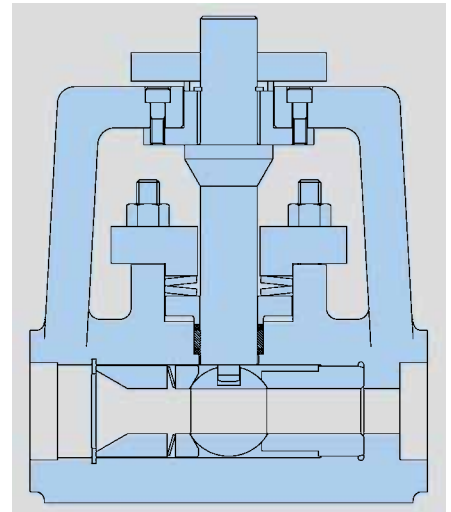
This ball valve series provides zero-leakage in several service applications with high temperature and/or high pressure. The ball and seat are hard coated with chrome carbide or tungsten carbide using Koso's HVOF coating system to provide high erosion and abrasion resistance. They are mate-lapped based on our own technique to ensure 100% sealing. Live loading also ensures zero emissions.

The ball never leaves the seat and wipes contaminants away. This self-cleaning action prevents interference and damage from contaminants. Therefore, this valve is suitable for the slurry service the abrasive services.

This flexible valve design be easily adapted to the flow characteristics of the service condition by simply changing the ball window shape.



300W



310W

Specifications

Body Type		300W	310W
Body Size		1" (25A)~24" (600A)	1/2" (15A)~1" (25A)
Body Rating		ANSI Class 150~600 / JIS 10K~40K	ANSI Class 600/900/1500/2500/2500 Special Class
Fluid Temperature		-45~538°C (-49~+1000°F)	-45°C ~ 600°C (-49~+1112°F)
Connections		Flanged (RF)	Socket Weld, Butt Weld / Flange RF (ANSI Class 600#)
Body Materials		SCPH2/W/C B, SCS13 A/C F 8, SCS14 A/C F 8M. etc.	A105/A182-F11/A182-F22/A182-F91
Ball/Seat Materials		SUS316 / SUS410	410SS/INCONEL
Ball Treatment		TungstenCarbide / Chrome Carbide / Self-Fluxing Alloy	TungstenCarbide / Chrome Carbide
Seat Treatment		TungstenCarbide / Chrome Carbide / Stellite	TungstenCarbide / Chrome Carbide
Leakage	Metal seat	0	0
Structure		Floating / Trunnion	Floating

CONTROL VALVES

700 SERIES HIGH PERFORMANCE BUTTERFLY VALVES

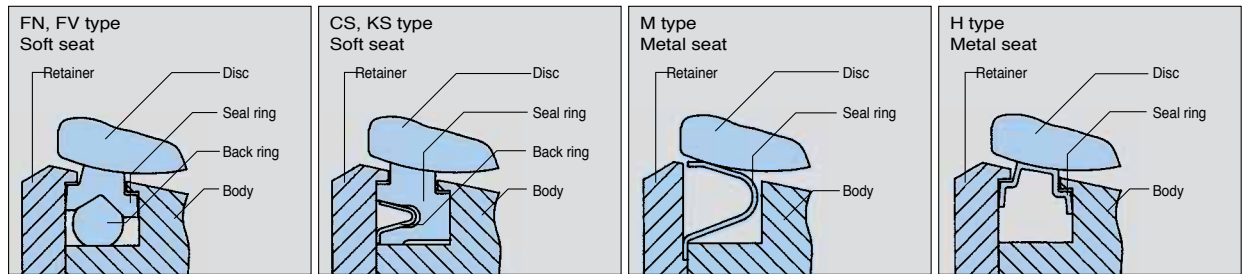
710C: Concentric PARA-SEAL C Valves

710E: Concentric PARA-SEAL E Valves

720E: Eccentric PARA-SEAL Valves

This PARA-SEAL valve is a high performance butterfly valve of high durability and high seating performance. It has several different seal ring constructions suitable for a variety of service applications.

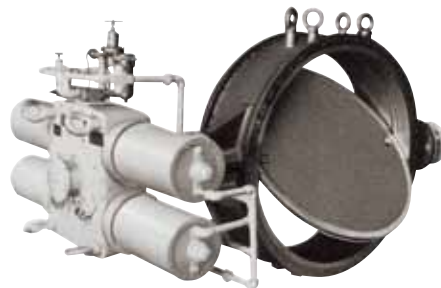
Seal-ring Construction



6300RB/710E



5200RA/710E



6400RB/710C



3620R/710E



6300RB/710E

Specifications

Body type	710E		720E		710C	
Body size	3" (80A) ~24" (600A)				3" (80A) ~60" (1500A)	
Body rating	ANSI Class 150~300 · JIS 10K~20K					
Fluid temperature	-196~+500°C				-196~+600°C	
Connections	Wafer type		Flanged (RF)		Wafer type	
Body materials	SCPH2/WC B, SCS13A/C F 8, SCS14A/C F 8M etc.					
Disc materials	SCPH2/WC B, SCS13A/C F 8, SCS14A/C F 8M etc.					
Disc treatment	Chrome plated or Stellite					
Rangeability	60° Opning/25 : 1		90° Opning/50 : 1			
Flow characteristics	Approximate Eq% (Inherent Characteristic)					
Seal ring type	FN	FV	CS	KS	M	H
Seal ring materials	R. TFE	R. TFE	R. TFE	Kel-F	SUS316	SUS316, 630
Back ring materials	NBR	VITON	SUS316	SUS316	-	-
Seat Leakage	ANSI Class VI				Rated Cv×0.01~0.00001%	
Actuator combination	6300RB, 6400RB, 6500RA, 7300RA: Pneumatic Cylinder Actuator 3500 R B, 3600RB: Solid State Electronic Actuator 5200RA: Pneumatic Diaphragm Actuator					

600 SERIES CONVENTIONAL BUTTERFLY VALVES

600B: Butterfly Valves/Casting Body type

600S: Butterfly Valves/Fabricated Body type

610S: RING-SEAL type Butterfly Valves

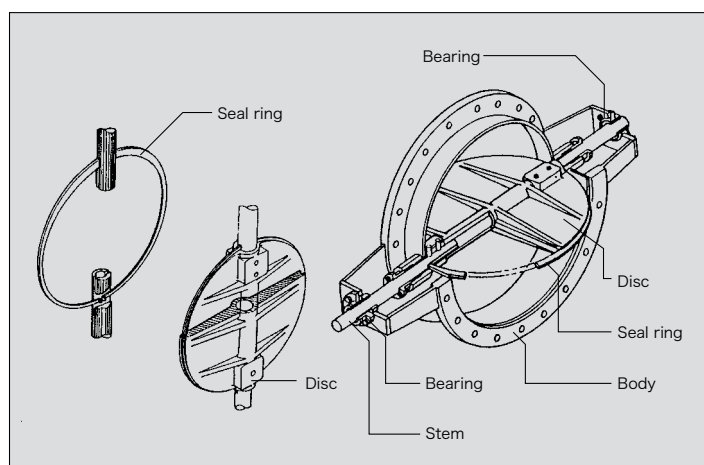
This butterfly valve design features a metal seal ring with a cut-end which is set around the disc. This construction allows for low seating force and better shut off performance. It also provides more resistance against very high operating temperatures. The seat ring's thermal expansion with fluid temperature fluctuation makes the valve best suited to high-temperature fluid applications.



6300RA/600B



6300RA/600S



610S

Specifications

Body type		600B	600S	610S
Body size		3" (80A) ~60" (1500A)	3" (80A) ~128" (3200A)	6" (150A) ~36" (900A)
Body rating		ANSI Class 150~900 · JIS 5K~63K	ANSI Class 125 · JIS 2K~10K	ANSI Class 125 · JIS 2K~10K
Fluid temperature		-45~+600°C (-49~+1112°F)		-45~+750°C (-49~+1382°F)
Connections		Wafer type		(RF) Flanged (RF)
Body materials		SCPH2/WC B, SCS13A/C F 8, SCS14 A/C F 8M. e t c .		SUS304, SUS316 etc.
Disc materials				SCS14A/CF8M
Rangeability		60° Opening/15:1 90° Opening/30:1		100:1~150:1
Flow characteristics		Approximate Eq% (Inherent Characteristics)		
Seal ring materials		—		SUS316 or Inconel
Seat Leakage	Standard	90° Cv×0.25~0.5%		90° Cv×0.25~0.1%
	15° seal	—		—
	Back seat	—		—
Actuator combinations		6300RB, 6500RA, 7300RA: Pneumatic Cylinder Actuator 3500RB, 3600RB: Solid State Electronic Actuator 5200TA: Pneumatic Diaphragm Actuator		



K O S O

Control Valves



ACTUATORS

KOSO ACTUATOR RANGES

Linear Stem Motion type Actuators

Type	Series Code	Output(N)
Motorized	AC Motor	3420L
	DC Motor	3500LB
Solid State Electronic	AC Motor	3620L
Microprocessor controlled Digital or Analog	Step Motor	3800LA
Electro-Hydraulic Actuators	AC Motor	4800LA
Pneumatic Diaphragm	Multi Spring	5200LA
Pneumatic Double Cylinder	1-Piston	6100LA
	2-Piston	6200LA
	1-Piston	6300LA
Pneumatic Spring Cylinder	1-Piston	6300LA
Hydraulic Double Cylinder	1-Piston	9000LA

Rotary Stem Motion type Actuators

Type	Series Code	Output(N · m)
Motorized	AC Motor	3200RA
	AC Motor	3300RA
	AC Motor	3420R
Solid State Electronic	DC Motor	3500RB
	AC Motor	3620R
Microprocessor controlled Digital or Analog	Step Motor	3800RA
Electro-Hydraulic Actuators	AC Motor	4800RA
Pneumatic Diaphragm	Multi Spring	5200RA
Pneumatic Double Cylinder	Large Torque	6400RB
	Middle Torque	6500RA
	Middle Torque	7300RB
	Small Torque	6300RB
	2-Step Action	7900RA
Pneumatic Spring Cylinder	Middle Torque	6500RA
	Middle Torque	7300RB
	Small Torque	6300RB
Hydraulic Double Cylinder	1-Piston	9000RA

Other manufacturer's actuators may be specified and mounted on KOSO valves on our own responsibility.

3000 SERIES ELECTRIC CONTROL MOTOR ACTUATORS

3200: Motorized Actuators

3300: Motorized Actuators

3420: Motorized Actuators

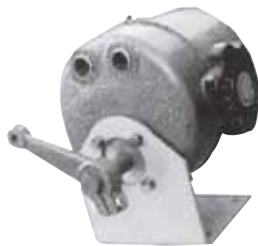
3500: Solid State Electronic Actuators

3620: 3500: Brushless DC Motor Driven

3620: 3620: AC Reversible Motor Driven

For two position (ON-OFF) operation, the 3420 series utilizes the same high reliability mechanical components found in the 3620. Since a potentiometer can be attached for position sensing, this series is cost-effective for simplified instrumentation.

In this Series, actuators receive signals (DC4~20mA) and drive motors by solid state controllers to control valves.



3300RA



3200RA



3500RB



3500LB



3420R
3620R



3420L
3620L

Specifications

Type	Linear Stem Motion Type			Rotary Stem Motion Type			
	3420L	3500LB	3620L	3200RA 3300RA	3420R	3500RB	3620R
Max. output	10000 N	9800 N	10000 N	49 N · m	1500 N · m	588 N · m	1500 N · m
Power source	AC 100V 50/60 HZ			AC 100V 50/60 HZ			
Max. stroke/angle	100 mm			90 °			
Control signal	4~20mA DC			SW. signal		4~20 mA DC	
Environment temp.	-10~+60°C (-14~+140°F)			-10~+60°C (-14~+140°F)			
Conduit	G1/2			G1/2	G1/2, Size D : G3/4		
Enclosure type	Weather, Explosion Proof 3200RA/3300RA : Weather Proof Only						
Options	3200: Sub-Limit Switch, Space heater 3300, 3400: Sub-Limit Switch, Space heater, Potentiometer, Manual handle 3500: Split range, Position transmitter, Junction box, Manual handle, Space heater 3620: Torque Switch, Potentiometer, Junction box, Manual handle, Space heater						

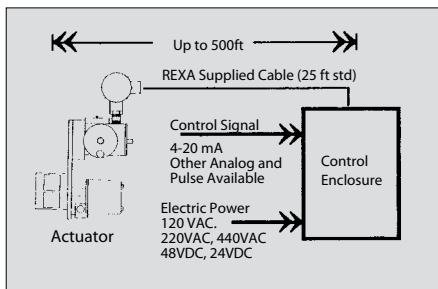
3000 SERIES ELECTRO-HYDRAULIC ACTUATORS

REXA Microprocessor Controlled Actuators

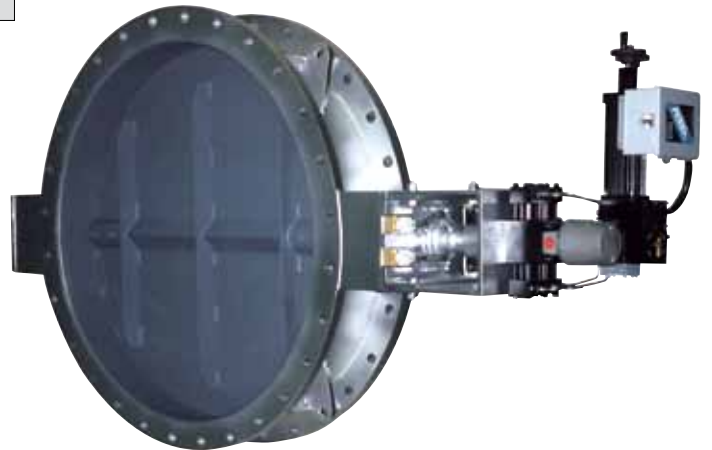
HIGH POWER·HIGH SPEED·HIGH PERFORMANCE ACTUATOR

This series of actuators represents the next generation of intelligent digital actuators. These are multi-function hybrid process control devices incorporating computer functions to fully utilize the advantages of both electric and hydraulic types, i.e., high speed and large output.

Major components are: digital motor, gear pump and electronic circuit. Unique hydraulic Flow Match System (patented) controlled by direct digital signals secures stabilized high speed response and high accuracy action. The actuators feature a fail safe upon power loss. Furthermore, two kinds of power modules provide redundancy and high power to enhance electric safety. With this series, we are closer than ever to the concept of “maintenance free.”



3800LA



3800RA

Specifications

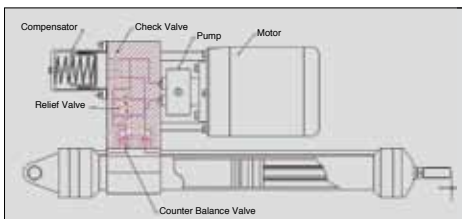
6100LA, 6200LA	Double Acting type							
Type code	6110LA	6116LA	6128LA	6136LA	6141LA	6154LA	6254LA	
Size	100	160	280	360	415	540	540×2	
Output N at 500KPa	3430	9310	29890	45570	62220	106820	213640	
Max. stroke - mm	60	210	310	610	810	810	1360	
6300LA	Double Acting type				Spring Return type			
Type code	6315LA	6320LA	6330LA	6345LA	6360LA	6330LA	6345LA	6360LA
Size	150	200	300	450	600	300	450	600
Output N at 500KPa	7938	14308	32242	73010	129850	7644	17248	30576
Max. stroke - mm	210	210	210	410	410	210	210	210
Air supply	Double Acting : 300~500 KPa Spring Return : 500 KPa							
Action	(D A) , (R A) Direct Action or Reverse Action							
Environment temp.	-20~+60°C (-4~+140°F), -50~+60°C (-58~+140°F), 0~+100°C (32~+212°F) Standard type: -20~+60°C (-4~+140°F), Low temp.service:-50~+60°C (-58~+140°F), High Temp.service:0~+100°C (32~+212°F)							
Options	Manual handwheel, Limit Switch, Positioner, Air-set, Speed controller etc.							

4800 SERIES ELECTRO-HYDRAULIC ACTUATORS

4800: Electro-Hydraulic Actuators



The M-MAC series is the electro-hydraulic actuator which combines the power of hydraulics, the reliability of solid state electronics and the flexibility of user-configured control. It features a compact design, and all the major components of a hydraulic system are packaged with a stand alone modular actuator, which provides excellent value. Simply install, then hook up to the appropriate electric power source. M-MAC series also allows for precise positioning independent of load variation. The motor only operates when motion is required and it achieves the power consumption. The dedicated controller allows the user to set the desired actuator operation parameters.



3800LA



3800RA

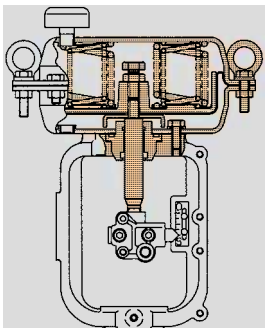
Specifications

6300RB		Double Acting type											
Type code	63B0RB	63B1RB	63B2RB	63BARB	63B3RB	63BBRB	63B4RB	63BCRB	63B5RB	63BDRB	63B6RB	63BERB	63B7RB
Size	AT050	AT100	AT200	AT250	AT300	AT350	AT400	AT450	AT500	AT550	AT600	AT650	AT700
Output N · m at 500KPa	16.6	29.3	58.2	91.5	133	215	277	435	567	766	1064	1787	2594
6300RB		Spring Return type											
Type code	63B0RB	63B1RB	63B2RB	63BARB	63B3RB	63BBRB	63B4RB	63BCRB	63B5RB	63BDRB	63B6RB	63BERB	63B7RB
Size	AT050	AT100	AT200	AT250	AT300	AT350	AT400	AT450	AT500	AT550	AT600	AT650	AT700
Output N · m at 500KPa	6.7	11.1	22.1	36.7	50.7	82	105	165	224	292	425	721	992
Air supply	Double Acting: 300~500 KPa Spring Return: 300, 400, 500 KPa												
Action	(DA) (RA) Direct Action or Reverse Action												
Environment temp.	-20~+60°C (-4~+140°F), -50~+60°C (-58~+140°F), 0~+100°C (32~+212°F) Standard type: -20~+60°C (-4~+140°F), Low temp.service:-50~+60°C (-58~+140°F), High Temp.service:0~+100°C (32~+212°F)												
Options	Manual handwheel, Limit Switch, Positioner, Air-set, Speed controller, Lock Valve, Lock up Valve, Solenoid Valve etc.												

5000 SERIES PNEUMATIC DIAPHRAGM ACTUATORS

5200: Pneumatic Diaphragm Actuators

This series provides high performance, high power multi-spring diaphragm actuators that are compact and light-weight. Receiving pneumatic or electric signals, the unit balances the force created when the diaphragm is air-pressured through positioner and the force of compressed spring, so that the output shaft is controlled and placed at a set position. Control of position by pneumatic signals (20~100Kpa) directly applied on the diaphragm is also possible. In combination with KOSO's positioner the 5200 pneumatic diaphragm actuators provide high accuracy position control.



5200LA

5200LA

526LLA

5200RA

Specifications

Type	Linear Stem Motion Type					Rotary Stem Motion Type			
	5221LA	5227LA	5235LA	524 SLA 524LLA	526 SLA 526LLA	5221RA	5227RA	5235RA	524LRA
Actuator size	218	270	350	450	650	218	270	350	450
N	2185	3648	4315	7453	16475	—	—	—	—
N · m	—	—	—	—	—	46.4	116.2	183.2	553.7
Air supply KPa	140, 300, 340		140, 300		300	300, 340		300	
Spring range Kpa	20~100, 80~200, 120~300		20~100, 80~200		80~200	80~200, 120~300		80~200	
Max. stroke/angle	20mm	30mm	40mm	80mm	110mm	60°			
Action	(D A) (R A) Direct Action or Reverse Action								
Environment temp.	-10~+70°C, -40~+40°C, 0~+100°C Standard type: -10~+70°C, Low temp.service: -40~+40°C, High Temp.service: 0~+100°C								
Options	Manual handle, Limit SW, Positioner, Air-set etc.								

6000 SERIES PNEUMATIC CYLINDER ACTUATORS

Linear Stem Motion type

6100LA: Pneumatic Cylinder Actuators (1 piston type)

6200LA: Pneumatic Cylinder Actuators (2 piston type)

Valve stem and actuator output shaft connection is inside the cylinder.

6300LA: Pneumatic Cylinder Actuators (1 piston type)

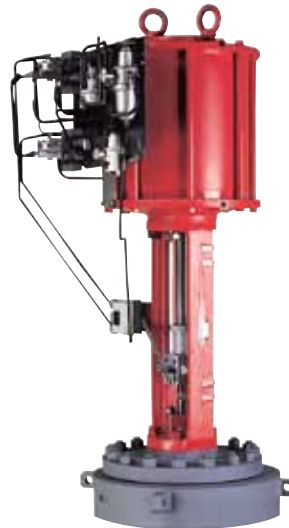
Valve stem and actuator output shaft connection is outside the cylinder in-yoke.



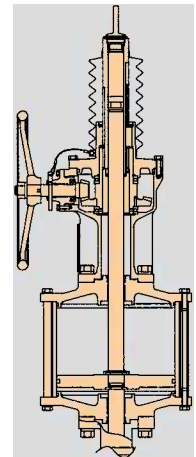
6100 with side handle



6200 with top-side handle



6300LA without handle



6300LA with top-side handle

Specifications

6100LA, 6200LA		Double Acting type							
Type code		6110LA	6116LA	6128LA	6136LA	6141LA	6154LA	6254LA	
Size		100	160	280	360	415	540	540×2	
Output N at 500KPa		3430	9310	29890	45570	62220	106820	213640	
Max. stroke	mm	60	210	310	610	810	810	1360	
6300LA		Double Acting type					Spring Return type		
Type code		6315LA	6320LA	6330LA	6345LA	6360LA	6330LA	6345LA	6360LA
Size		150	200	300	450	600	300	450	600
Output N at 500KPa		7938	14308	32242	73010	129850	7644	17248	30576
Max. stroke	mm	210	210	210	410	410	210	210	210
Air supply		Double Acting : 300~500 KPa Spring Return : 500 KPa							

6000 SERIES PNEUMATIC CYLINDER ACTUATORS

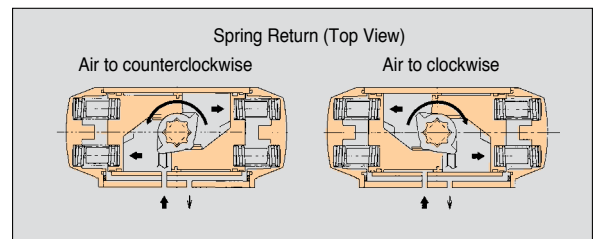
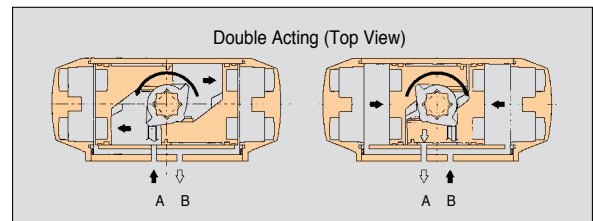
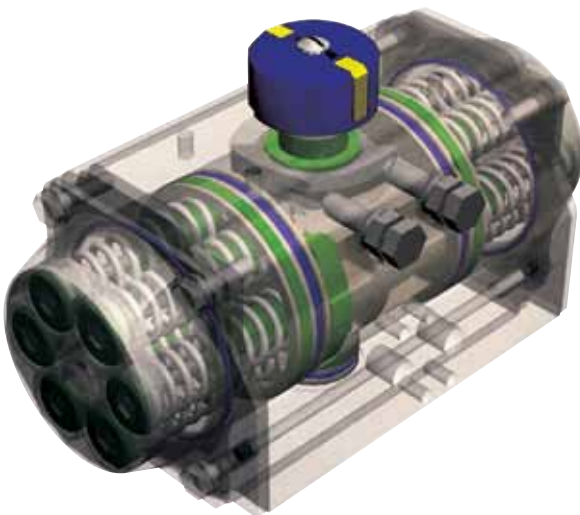
Rotary Stem Motion type

6300RB: Pneumatic Cylinder Actuators

Small Torque Cylinder

2 Piston Rack & Pinion Pneumatic Actuator

Output Shaft Rotating angle/90° or 60°



Specifications

6300RB		Double Acting type												
Type code		63B0RB	63B1RB	63B2RB	63BARB	63B3RB	63BBRB	63B4RB	63BCRB	63B5RB	63BDRB	63B6RB	63BERB	63B7RB
Size		AT050	AT100	AT200	AT250	AT300	AT350	AT400	AT450	AT500	AT550	AT600	AT650	AT700
Output N · m at 500KPa		16.6	29.3	58.2	91.5	133	215	277	435	567	766	1064	1787	2594
6300RB		Spring Return type												
Type code		63B0RB	63B1RB	63B2RB	63BARB	63B3RB	63BBRB	63B4RB	63BCRB	63B5RB	63BDRB	63B6RB	63BERB	63B7RB
Size		AT050	AT100	AT200	AT250	AT300	AT350	AT400	AT450	AT500	AT550	AT600	AT650	AT700
Output N · m at 500KPa		6.7	11.1	22.1	36.7	50.7	82	105	165	224	292	425	721	992
Air supply		Double Acting : 300~500 KPa Spring Return : 300, 400, 500 KPa												
Action		(D A) (R A) Direct Action or Reverse Action												
Environment temp.		-20~+60°C, -50~+60°C, 0~+100°C Standard type: -20~+60°C Low temp.service: -50~+60°C, High Temp.service: 0~+100°C												
Options		Manual handwheel, Limit Switch, Positioner, Air-set, Speed controller, Lock Valve, Lock up Valve, Solenoid Valve etc.												

6000, 7000 SERIES PNEUMATIC CYLINDER ACTUATORS Rotary Stem Motion type

7300RB: Pneumatic Cylinder Actuators

Middle Torque Cylinder
 2 Piston Rack & Pinion Pneumatic Actuator
 Output Shaft Rotating angle/90° or 60°

6500RA: Pneumatic Cylinder Actuators

Middle Torque Cylinder
 2 Piston Scotch Yoke type Pneumatic Actuator
 Output Shaft Rotating angle/90° or 60°

6400RB: Pneumatic Cylinder Actuators

Large Torque Cylinder
 4 Piston Scotch Yoke type Pneumatic Actuator
 Output Shaft Rotating angle/90° or 60°



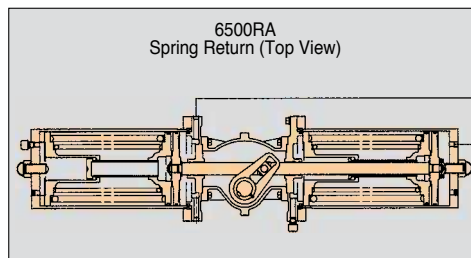
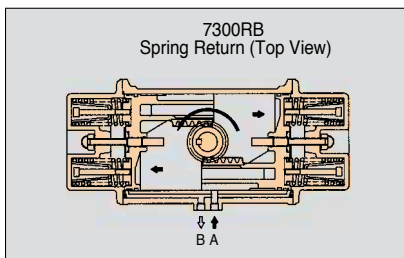
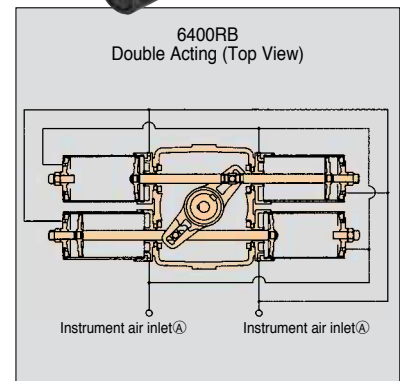
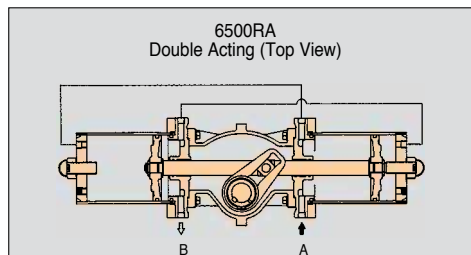
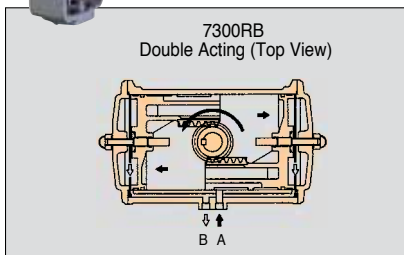
7300RB



6500RA



6400RB



Specifications

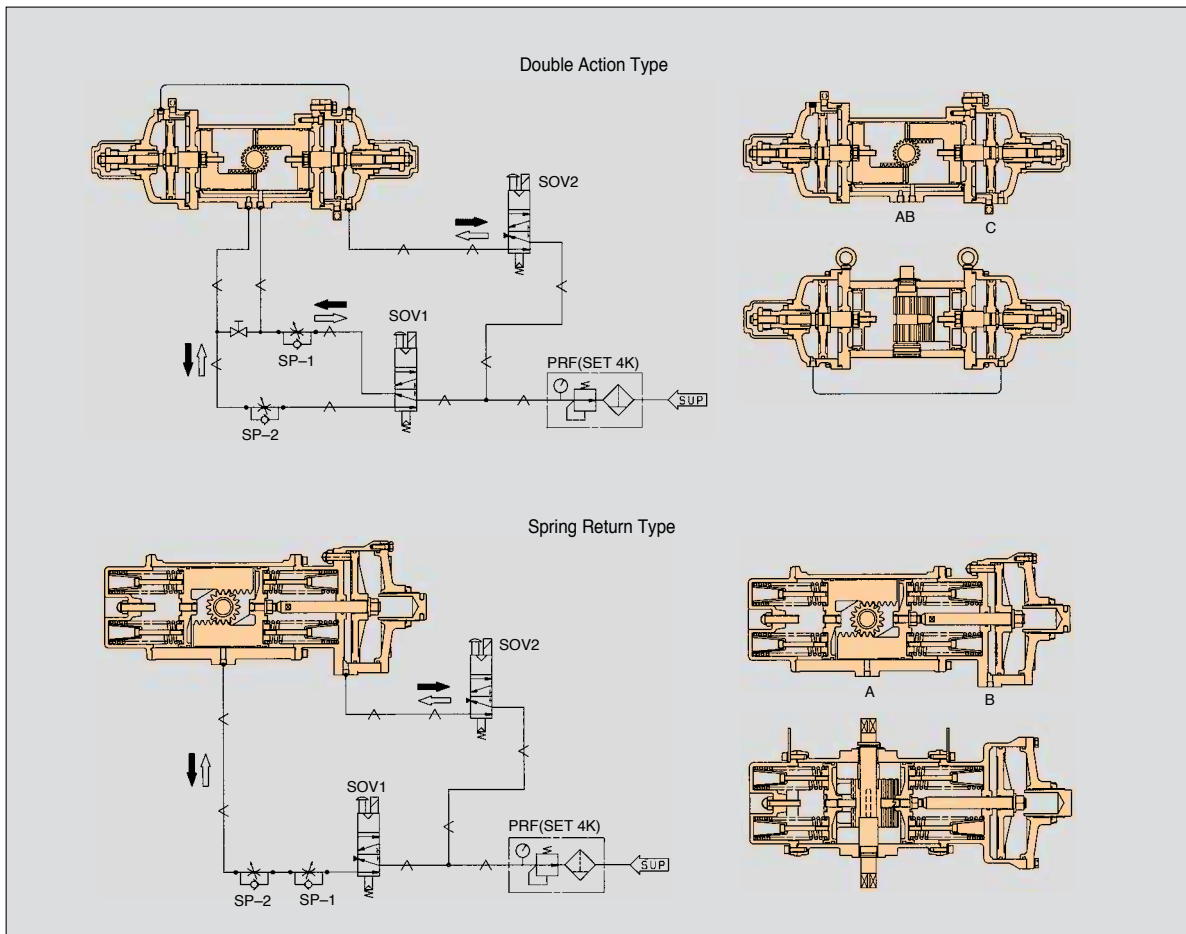
7300RB	Double Acting type				Spring Return type			
Type code	7317RB	7323RB	7328RB	7337RB	7317RB	7323RB	7328RB	7337RB
Size	170	235	280	375	170	235	280	375
Output N · m at 500KPa	637	1712	2962	6987	212	589	995	2332
6500RA, 6400RB	6500RA				6400RB			
	Double Acting type		Spring Return type		Double Acting type			
Type code	6517RA	6520RA	6528RA	6520RA	6528RA	6536RA	6420RB	6428RB
Size	170	200	280	200	280	360	200	280
Output N · m at 500KPa	1850	3200	7500	907	2231	4413	9370	20500
Air supply	Double Acting : 300~500 KPa Spring Return : 300, 400, 500 KPa							
Action	(D A) (R A) Direct Action or Reverse Action							
Environment temp.	-20~+60°C, -50~+60°C, 0~+100°C Standard type: -20~+60°C, Low temp.service:-50~+60°C, High Temp.service:0~+100°C							
Options	Manual handwheel, Limit Switch, Positioner, Air-set, Speed controller, Lock Valve, Lock up Valve, Solenoid Valve etc.							

6000, 7000 SERIES PNEUMATIC CYLINDER ACTUATORS Rotary Stem Motion type

7900RA: 2 Step Action type Pneumatic Cylinder Actuators

Output Shaft Rotating angle/90°

2 Piston Rack & Pinion Pneumatic Actuator



Specifications

7900RA	Double Acting type					Spring Return type					
	79B3RA	79B4RA	7917RA	7923RA	7928RA	79B3RA	79B4RA	7917RA	7923RA	7928RA	
Type code	79B3RA	79B4RA	7917RA	7923RA	7928RA	79B3RA	79B4RA	7917RA	7923RA	7928RA	
Size	AT300	AT400	170	230	280	AT300	AT400	170	230	280	
Output	N · m AT 400 KPa	106	222	510	1370	2370	40.5	84	170	455	796
	N · m AT 500 KPa	133	277	637	1712	2960	50.7	105	212	569	995
Air supply	Double Acting : 300~500 KPa Spring Return : 300, 400, 500 KPa										
Action	(D A) , (R A) Direct Action or Reverse Action										
Environment temp.	-20~+60°C (-4~+140°F), -50~+60°C (-58~+140°F), 0~+100°C (32~+212°F) Standard type: -20~+60°C (-4~+140°F), Low temp.service:-50~+60°C (-58~+140°F), High Temp.service:0~+100°C (32~+212°F)										
Options	Manual handwheel, Speed controller, Solenoid Valve, Air-set etc.										

EP800: Electro-Pneumatic Positioner

This series is for positioning of pneumatic actuator operated control valves. The input signal 4~20mA DC is changed to air pressure. Accurate positioning is achieved by having valve position feedback from the valve stem.

PP800: Pneumatic-Pneumatic Positioner

Same series as EP800 but with a pneumatic signal (20~100Kpa). Also double acting and single acting types are available.

PRF300: Airfilter-Regulator

For regulating instrument air.

CL-420: Lock Valves

CL-523: Used for shut off, switching, or locking of instrumental air circuit (air relay).



Specifications

Type	EPA800 for single acting	EPC800 for double acting	EPB800 5200LAfor 5200LA actuator
Input signal / Characteristic	4~20, 4~12, 12~20 mA DC / Linear		
Air supply	140~700 KPa		
Type	Single acting type	Double Acting type	
Linearity/Hysteresis	±1.0% / 0.5%	±1.5% / 0.8%	
Response level/Repeatability	0.1% / 0.2%	0.2% / 0.3%	
Air consumption	5 NI/min. at Sup. 140 KPa [gaug]	Output air pressure(50%) 15 NI/min. at Sup. 400 KPa [gaug]	
Max. capacity	175 NI/min. at Sup. 140 KPa [gaug]	Output atmosphere 400 NI/min. at Sup. 400 KPa [gaug]	
Enclosure	Weather proof type, Explosion proof type Intrinsically safe explosion proof type		
Air/Electric wiring connection	Rc. 1/4 / G1/2		
Environment temp.	-20~+60°C (-4~+140°F), -50~+60°C (-58~+140°F), 0~+100°C (32~+212°F) Standard type: -20~+60°C (-4~+140°F), Low temp.service:-50~+60°C (-58~+140°F), High Temp.service:0~+100°C (32~+212°F)		

EP1000: Electro-pneumatic Positioner

This Smart positioner follows HART Standard and also meets specifications for the use of Foundation Fieldbus. The EP1000 series is designed to be compact and low-cost, and is a concentrated, small positioner featuring the latest digital technology.

SPS2000: Electro-pneumatic Positioner

This Smart positioner follows HART Standard and also meets specifications for the use of Foundation Fieldbus. The SPS2000 series is a user and earth-friendly positioner that is designed to be high shake-proof and low consumption.

Both share common internal control units and have a self-diagnosis function as well as auto-tuning and digital calibration. Koso Hart, a communication & diagnosis software, comes with the unit as freeware.



EP 1000



SPS 2000



KOSO Hart

Specifications

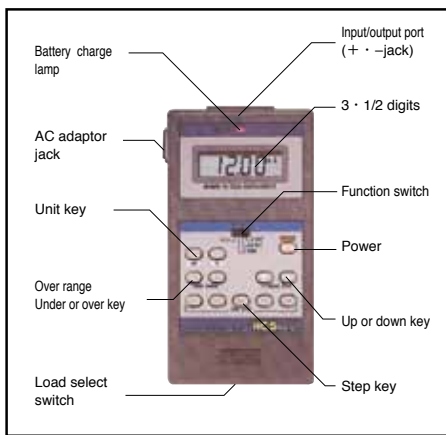
Series	EP1000	SPS2000
Power Source	2-Wire / Bus Powered	
Input Voltage	10V DC at 60°F (140°F) (HART)	
Xfer-Function	(Linear)/Eq%/Q-Open/(Custom Curve)	
Pilot Valve		
Air Consumption	15 NI/min at 400 kPa air supply	8 NI/min at 400 kPa air supply
Calibration	(Built-in 3-button) / HHC / KosoHart (HART)	
Smart Function	Autotuning/Cut-off Action/Alarm Sending etc.	
Self-Diagnosis	Supply Air Press./Ambient Temp./Operation Diagnosis etc.	
Enclosure	IP65 / Exd CT6	
Attachment	Auto-Manual	Auto-Manual/Speed Controller
Approx. Weight	1.8 kg	2.1-2.3 k g

SIMULATOR

HCS400: CURRENT SIMULATOR

HCS500: CURRENT/VOLTAGE SIMULATOR

This Series provides simulators that can meet severe requirements of ever changing and progressing instrumentation technology. Excellent functions and features, starting with high accuracy 1/100 digital output setting, are available for ease of operation.



Specifications HCS

Type		HCS400-A Dry battery	HCS400-B Charge up battery	HCS500-A Dry battery	HCS500-B Charge up battery
Resolution	Current mode	mA indication: 0.01mA (Span < 20mA), 0.1mA (Span ≥ 20mA) % indication: 0.1%			
	Voltage mode	—		V indication: 0.01V % indication: 0.1%	
Input and Output range	Source mode	0~20.5mA (-25~103%)		Current: 0~20.5mA (-25~103%) Voltage: 0~5.12V (-25~103%)	
	Read mode	0~24mA (-25~125%)			
	2-Wire mode	0~20.5mA (-25~103%) / Loop Voltage limit 5~40 VDC			
Output function	Current mode	Standard mode 500Ω Max./High mode 750Ω Max.			
	Voltage mode	—		Max. 10mA (500Ω at 5V output)	
Output setting	0.01 step/up/Down key	0.01mA		Current: 0.01mA, Voltage: 0.01V	
	25% step/25% STEP key	Current: 4, 8, 12, 16, 20mA (0, 25, 50, 75, 100%)			
		Voltage: 1, 2, 3, 4, 5V (0, 25, 50, 75, 100%)			
	Over range: UNDER/OVER key	—		Current/Under: 2mA (-12.5%), Over: 20.5mA (103%) Voltage/Under: 0.5V (-12.5%) / Over: 5.12V (103%)	

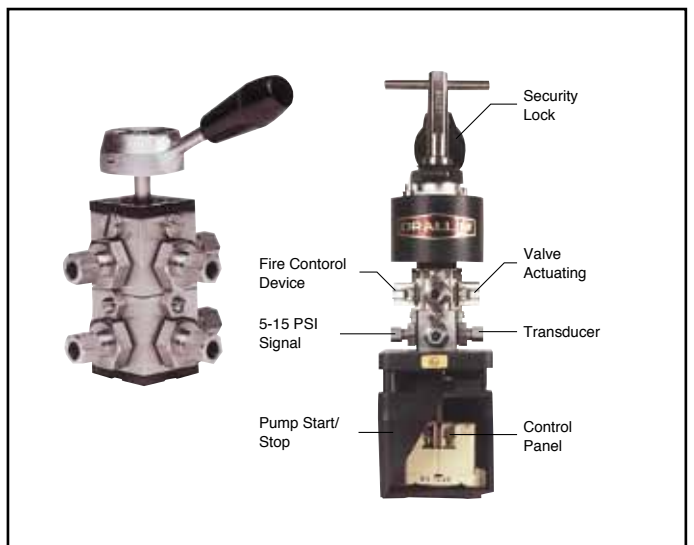


Pneumatic Electric Safety Interlock Systems PIV

DRALLIM PIV (Pneumatic Interlock Valve). This series is designated to the standard specifications of major oil companies - Shell and BP. The Drallim PIV allows online inspection by combining pneumatic and electrical circuitry, which can contribute to the safe operation of your plant.

Features

- The Drallim PIV can monitor the emergency shut-off and solenoid valves while the plant is in operation
- The Drallim PIV provides the security of individual key operator access
- The Drallim PIV can be used for multiple applications with its combination of pneumatic and electrical connections



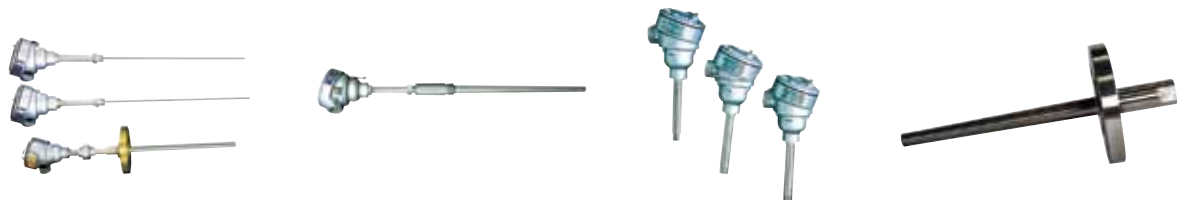
THERMOCOUPLE, RTD

Thermocouple, RTD

Among thermometers of practical use, thermocouples are suitable for a wide range of industrial applications ranging from extremely low to extremely high temperatures. We custom manufacture the thermocouple temperature sensors according to the customers' needs. Some are weather-proof, intended for general industrial purposes. Others are explosion-proof, used in hazardous explosive areas. In applications where higher accuracy is required, RTD is suitable.

As in the case of thermocouples, various kinds of RTD temperature sensors are available at Tokyo Okazaki including both weather-proof type for general industries and explosion-proof type for hazardous locations.

- Thermocouple with thermowell
- RTD with thermowell
- Sheath thermocouple for extremely high press.
- Sheath RTD
- Thermocouple for special use
- Sheath RTD for low temp. tank



Temperature Sensor Accessories

A variety of accessories are available for thermocouple and RTD sensors.

- Thermowell
- Compression fitting
- Lead wire
- Junction Box, Connector

FLOW ELEMENTS OF DIFFERENTIAL PRESSURE METHOD

Orifice plates, flow nozzles and venturi tubes are inexpensive and practical flow sensors with guaranteed accuracy. These devices have been standardized by many public authorities. For more than three decades, we have been engaged in the design and manufacture of those flow sensors of differential pressure method, that is orifice plates, flow nozzles, venturi tubes, etc.

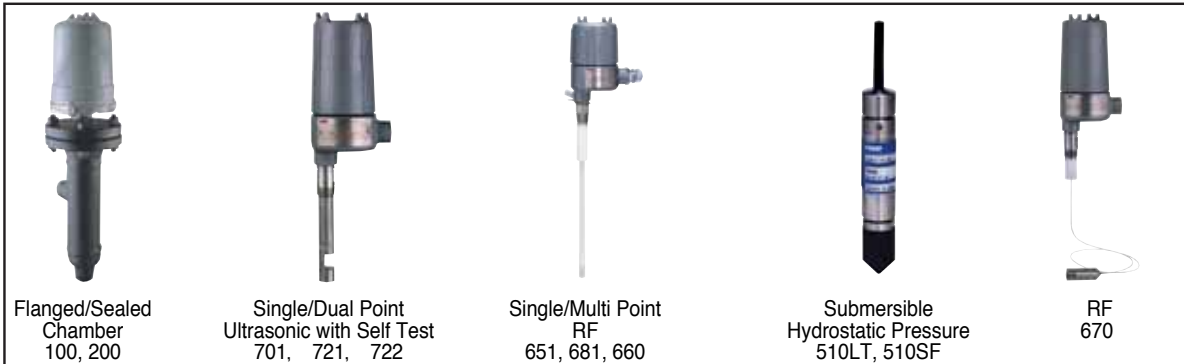
Not only sensors, our product line includes restriction plates for pressure or flow control as well as their accessories, such as orifice meter runs and rectifiers.

Service for diameter restriction calculation is also provided. We invite you to see how our proven technology can be of service to you.

- Orifice plates
- Flow nozzles
- Venturi tubes
- Restriction Orifices



LEVEL SWITCHES/TRANSMITTERS



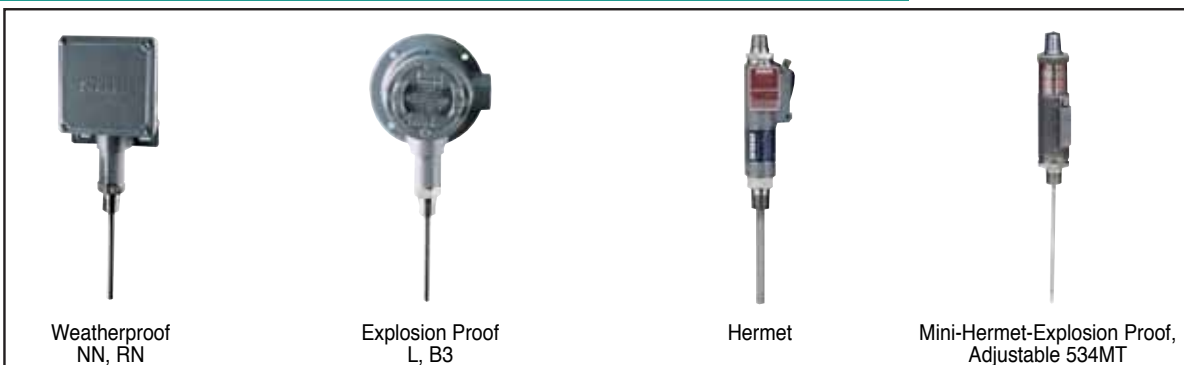
PRESSURE SWITCHES/TRANSMITTERS



DIFFERENTIAL PRESSURE SWITCHES/TRANSMITTERS



TEMPERATURE SWITCHES/TRANSMITTERS



RONAN Sequence of Events Recorders

Accepting contact signals of field events, including abnormal temperature/pressure and fault control valve action, the system records the sequential data of the events with 1 mS resolution. Stored data is computer-processed in real time. Necessary data, such as time passed, time grouped or event frequency, are selected, analyzed and printed out.

RONAN Annunciators

This Annunciator System displays process control status based on input of contact signals, analog signals, and digital signals from various points in the plant. The display panel has windows independently indicating various equipment conditions. Individual window frames can take various sizes. Each of the horizontal and vertical sides can be divided into 2 to 4 sides. Display lens/bezel colors are selected by the customer.

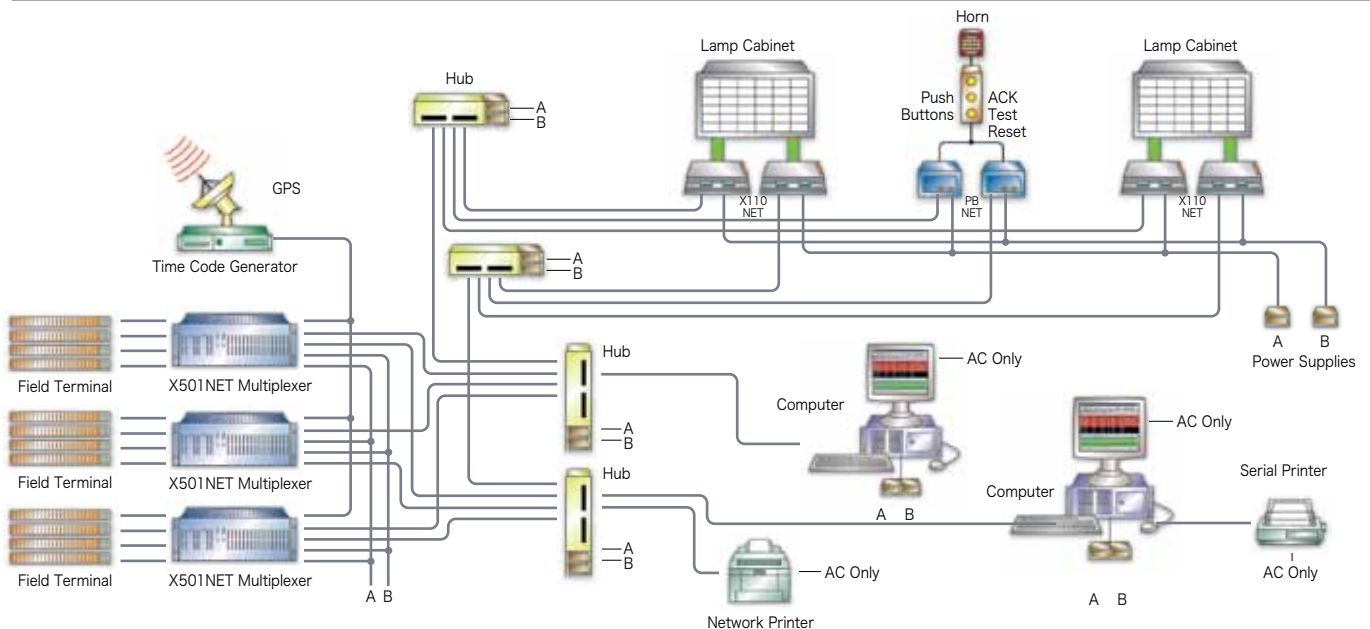


SEQUENCE OF EVENTS RECORDERS



ANNUNCIATORS

System Block Diagram



Data Communication Devices

Communication with remote locations or mobile objects is made possible with these devices.

Message Indicators

These devices show messages utilizing optical movement. Indicator contents can be controlled by personal computers. Message indicators are used at various facilities, including factories, restaurants and hospitals.

Production Control Indicators

Work progress status at production lines is displayed by these indicators. Very useful in finding and recovering schedule delays and ultimately securing reliable delivery control.

Remote Control

Remotely located equipment can be controlled by simply switching on and off the device at hand.

Operation Monitors

This system measures machine availability and records downtime and failure. Real time data transfer and control can be done through personal computers.



Wireless Torque Wrench



Controller

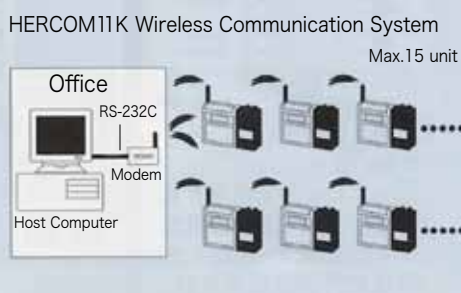


Wireless Indicator

Radio communication of F-1 Machine Running Data



Stable high-speed communication realized even under critical temperature, vibration, etc.



Wireless Communication Products



Wireless Forklift Call for Parts Supply



Shutter remote control

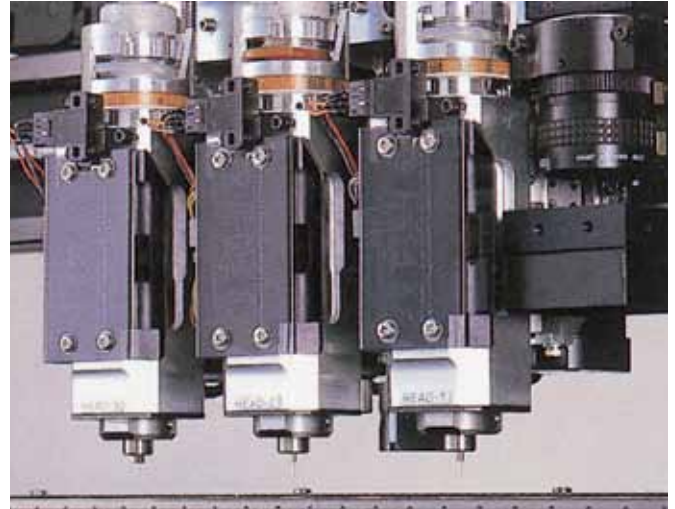


Wireless remote operation

HERUTU WIRELESS COMMUNICATION SYSTEMS

Manufacture of Chip Mounter Dispensers

HERUTU manufactures chip mounter dispensers using advanced production technology and engineering know-how.



Tokyo Bay Undersea Tunnel Construction Monitoring System

- Measured values of atmospheric pressure, temperature, humidity and methane density in the undersea pit are sent to the surface by radio or cables.
- Live pictures showing work status inside the pit are transmitted by radio or cables.
- Work instructions for machinery including excavators is provided.



Medi Call-II

Usable in an instant in broad applications

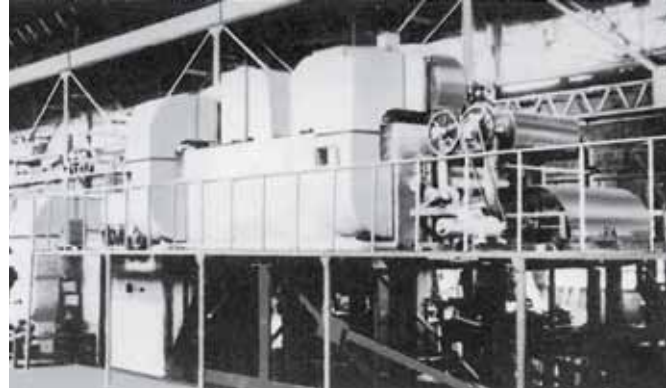
- Being wireless, the unit requires no wiring work. It can start working on the day of delivery.
- Excellent display readability
- Output of radio wave used is as low as 1/2,000,000 of PHS. There is no effect on other medical devices.
- Up to approx. 100 sets can be utilized within the same area.



TOYO STEEL BELT

Toyo Steel Belt designs and makes conveyer systems and test/inspection systems utilizing the characteristics of steel belts.

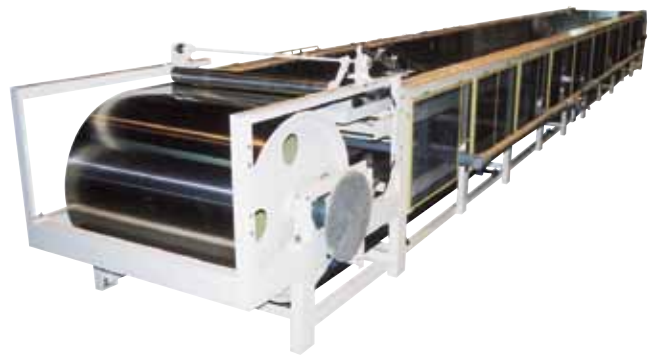
- Combined functions: Thermal and mechanical work, including heating, drying, cooling, freezing, pressing, and sorting can be performed while conveying.
- Energy saving: Power consumption is smaller than with rubber belts because the steel is lighter and has a lower friction coefficient and hysteresis.
- Outstanding heat resistance ($-60\sim 400^{\circ}\text{C}$, $-76\sim 752^{\circ}\text{F}$), corrosion resistance (extremely hygiene), oil resistance, wear resistance and durability.
- Excellent in smoothness and high speed (max. 250km/h).



Steel Belt Sorter



Steel Belt Sorter



Belt Conveyor



Tire Treadware Test Machine



MAC-PUMP | CHEMICAL PUMPS

No Shaft Seal (Seal-less)

The MAC-PUMP eliminates the conventional shaft seal found in all centrifugal pumps. This means that impeller magnet assembly separated with the rear casing synchronises the driving magnet (permanent magnet) mounted on the electric motor shaft.

High Corrosive Resistance

The MAC-PUMP, using injection molded fluoro-plastic components is designed to handle a wide range of strong acids and caustic solvents.

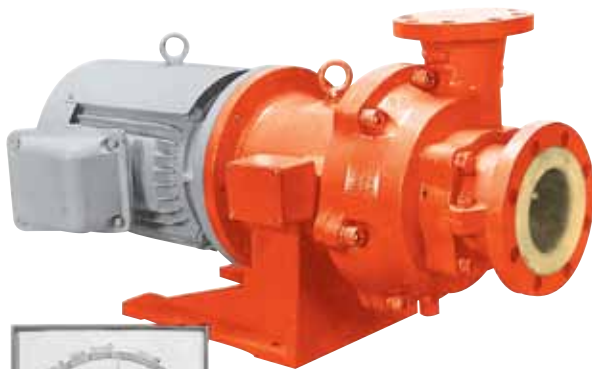
Serviceability

Consisting of only four sub-assemblies that contact the solution, the MAC-PUMP can be easily completely disassembled and reassembled.

Pump Protector (MAC-METER)

The MAC-METER protects the pump from dry operation.

Solid Cast Iron Outer Shell



PUMP PROTECTOR

MODEL PM1000
(Suction Port Diameter 100mm)

PM Series
EM Series for chemical



VM Series
for chemical slurry

Specifications

Model	M250	M400	M500	M503F/M503N	M650	M655F	M800	M801	M1000	
Suction port(mm)	25	40	50	50	65	65	80	80	100	
Discharge port(mm)	25	40	40	40	50	50	50	50	80	
Standard Head-Capacity	50Hz	10m-60l/min	10m-170l/min	15m-230l/min	20m-200l/min	15m-320l/min	25m-200l/min	25m-300l/min	25m-340l/min	25m-600l/min
	60Hz	10m-50l/min	10m-160l/min	15m-190l/min	20m-200l/min	15m-280l/min	30m-200l/min	25m-260l/min	25m-400l/min	25m-600l/min
Motor	POles	2	2	2	2	2	2	2	2	2
	Kilo-watts	0.4	0.75	1.5	2.2	2.2	3.7	3.7	5.5	7.5/5.5
	Phase Volts	*3Φ 200 220 400 440								
Weight Kg	35	45	60	62	75	96	105	150	180	

Connection flanges : JIS 10K RF, DIN 10K RF, ANSI Class 150RF

Standard head-capacity : Based on pumping water at room temperature.

Standard motor : Pump with totally enclosed fan cooled outdoor motor.

Standard voltage other voltage available.



SHINKOSHA CO., LTD.

<http://www.shinko-sha.jp>

Film Production

- Producing and manufacturing strategic PR films that meet corporate needs
- High resolution films for displays at various events
- Producing and manufacturing entertainment films
- TV commercials, TV programs
- Producing and manufacturing artist promotion videos

Multimedia Contents Production Producing/manufacturing CD-ROM/ DVD titles

Production of 2D/3D animations using diversified techniques.
Producing music for TV commercials, TV games, movies, etc.

Network

- Consulting on Internet business as well as its marketing
- Networking for web servers, LAN, Intranet, etc.
- Designing online digital content for Websites
- Constructing databases with Oracle Postgre SQL etc.



Veritas HOME PAGE

Event Planning and Running

Planning and running various events.

Space designing and staging at public and commercial facilities.

Production of Printed Materials

Planning and designing printed matters using full digital technologies, including commercial literature such as catalogs, pamphlets, posters as well as company/school brochures.

Editing and layout services for books in general, manuals, company newsletters, etc.

Management and administration services for full scope of paper medium processing, including printing and book-binding are available.

Nevada-California International Consortium of universities and college(NIC) HOME PAGE



CD-ROM
CHIBA UNIVERSITY OF
COMMERCE's
English catalog in CD-ROM



GENERAL GCATALOG

For Process Automation

KOSO

<http://www.koso.co.jp>
<http://www.koso.com>