

## For Process Automation

# GENERAL CATALOG

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## CONTROL VALVES

## ACTUATORS

## INSTRUMENTS

FA • SYSTEMS

## CHEMICAL PUMPS

## PRODUCTION

# KOSO

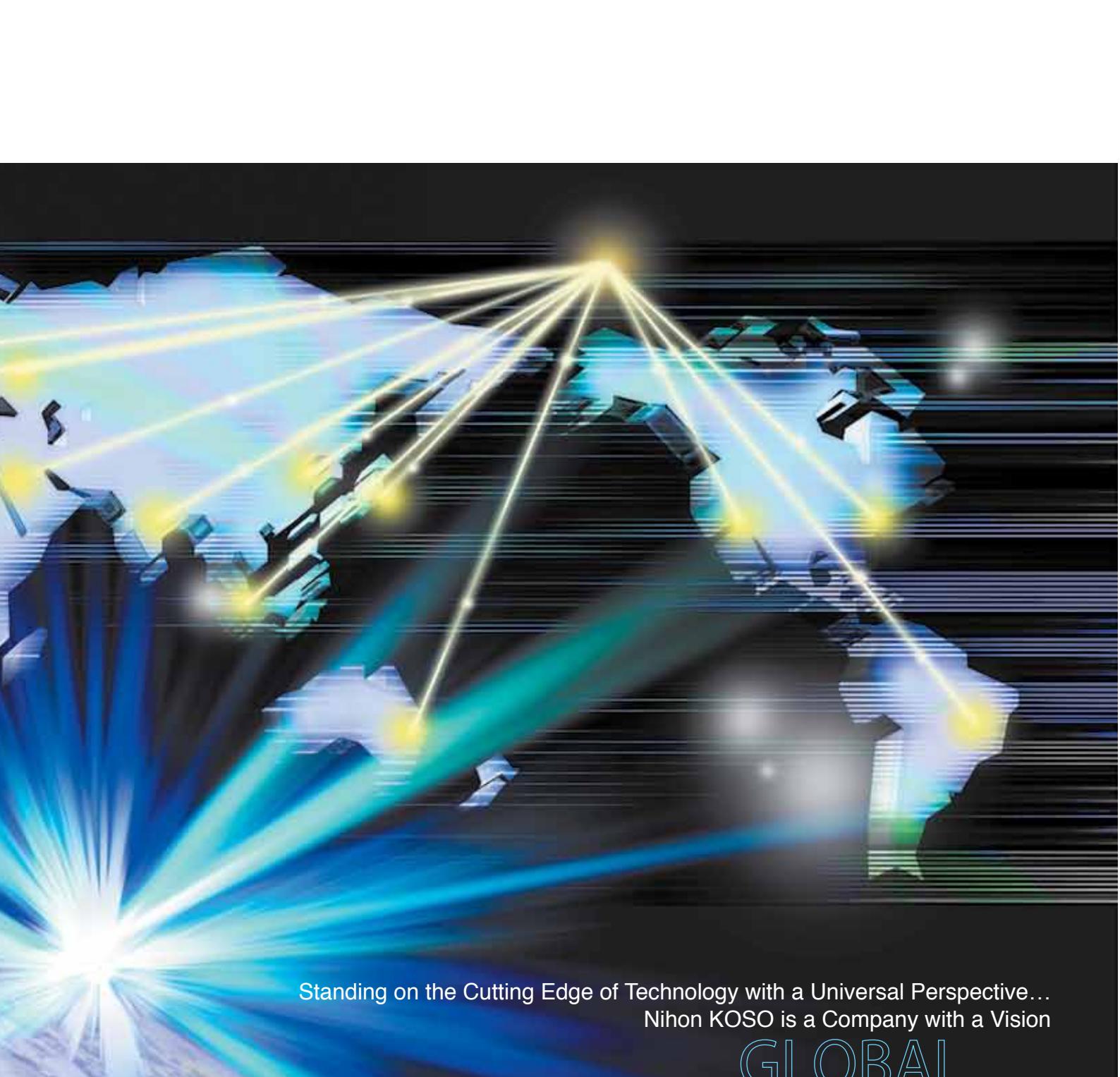
Since its establishment, the KOSO group has developed a diverse range of high-quality control valves of diversified types, greatly contributing to the implementation of process automation (PA) in various industries.

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

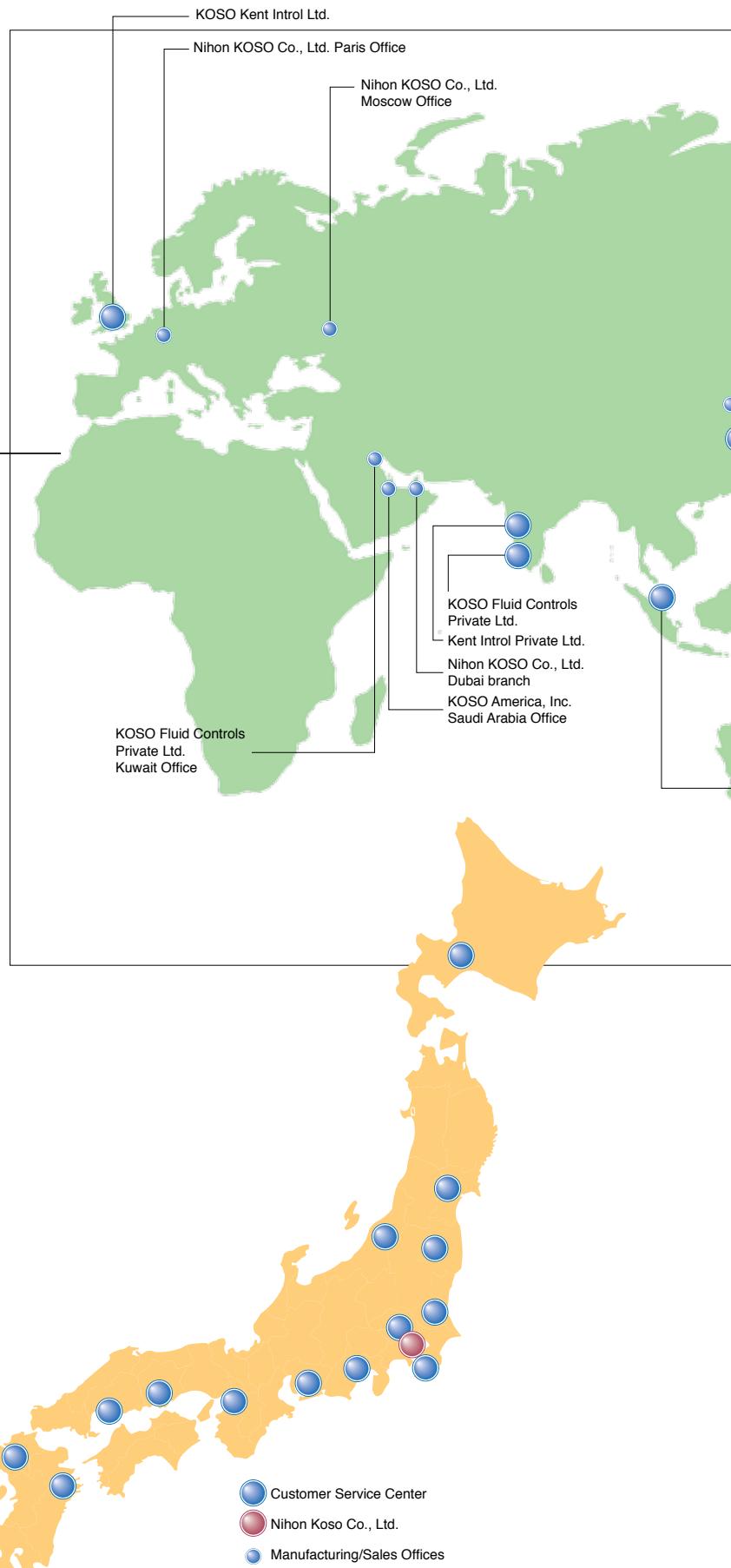
Tel. 81-86-444-1802 Fax. 81-86-444-1812

#### 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)

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

### Head office: KOSO Nihombashi Building

E-mail: [info@koso.co.jp](mailto:info@koso.co.jp)  
 Website: <http://www.koso.co.jp>  
<http://www.koso.com>

## 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

**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.

COIMBATORE 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



Main Factory and Customer Satisfaction Centers (CSC)

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## CSC HOKKAIDO

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

HOKKAIDO CUSTOMER SATISFACTION CENTER

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## CSC KASHIMA

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

KASHIMA CUSTOMER SATISFACTION CENTER

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## CSC FUJI

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

FUJI CUSTOMER SATISFACTION CENTER

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## CSC TODA

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

TODA CUSTOMER SATISFACTION CENTER

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## 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



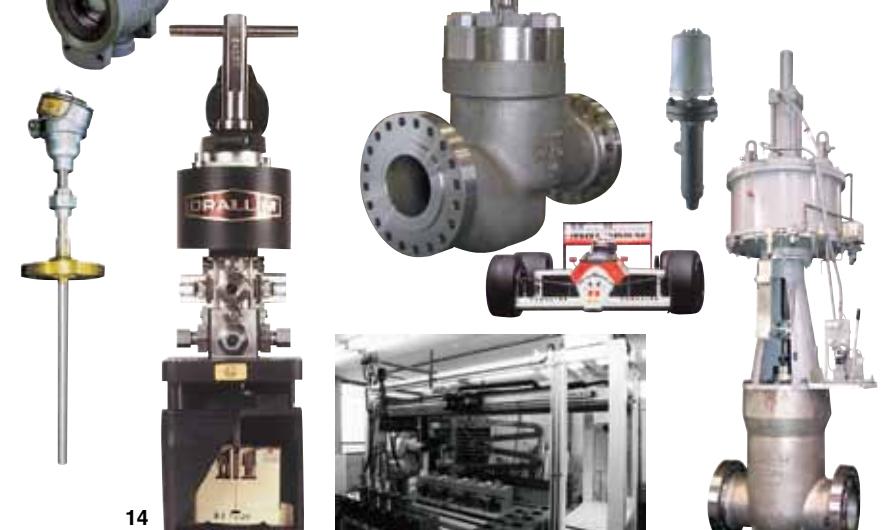
### FACTORY AUTOMATION SYSTEMS

- SYSTEM DESIGN - CONTROL PANELS
- AUTOMATED MACHINES
- STAINLESS STEEL BELTS
- WIRELESS COMMUNICATIONS & CONTROLS
- OTHERS



### PROLONGATION OF VALVES SYSTEMS LIFE TIME

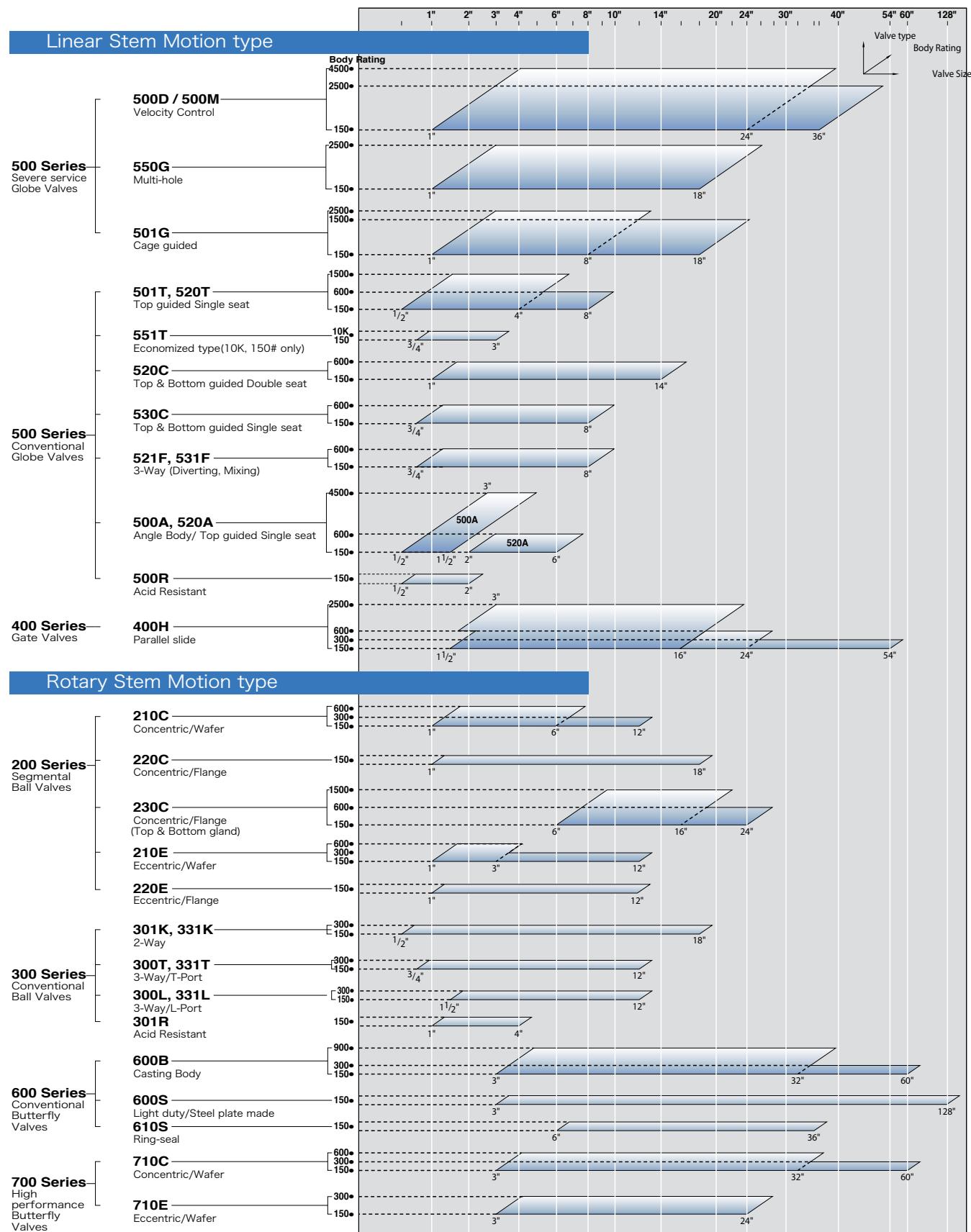
- NET SYSTEMS FOR CUSTOMER SATISFACTION CENTERS
- DEVELOPMENT OF LONG-LIFE VALVES & ACTUATORS



### IT - MULTI-MEDIA & OTHERS

# CONTROL VALVES

## KOSO CONTROL VALVE RANGES



**20 INCH SEVERE SERVICE VALVES 600# ANSI**



**20 INCH SEVERE SERVICE VALVES**



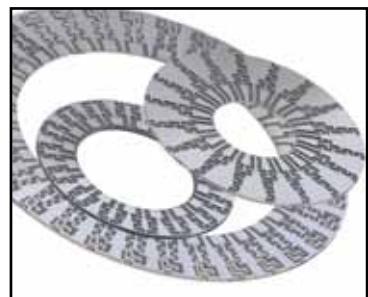
## VECTOR™ SERIES SEVERE SERVICE GLOBE VALVES

### KOSO VECTOR™

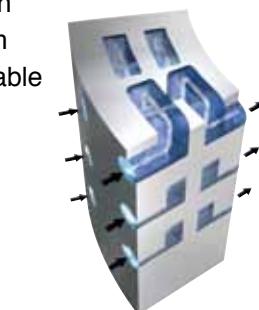
#### 500M: VECTOR™ M trim

#### 500D: VECTOR™ D trim

#### 500J: VECTOR™ J trim



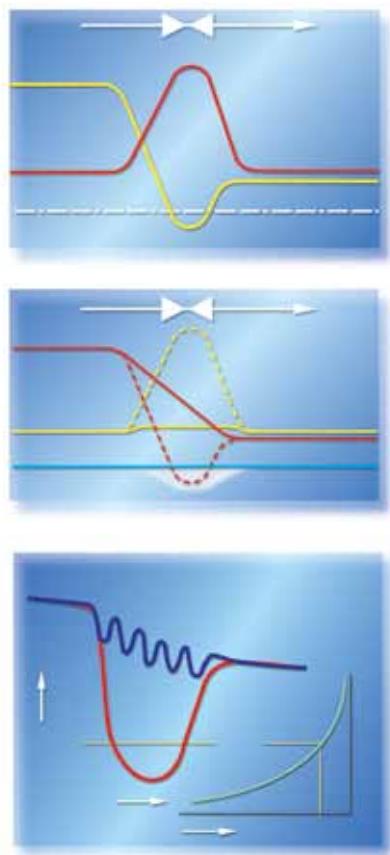
In severe services with high temperature and high differential pressure, KOSO's multi-stage VECTOR™ trim promises accurate control and long life, free from cavitation erosion and noise problems, whether the fluid is compressive or non-compressive. This Series is multi-advantageous in that its improved 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 Globe/Angle	500D Globe/Angle	500J Globe/Angle
Body Styles			
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

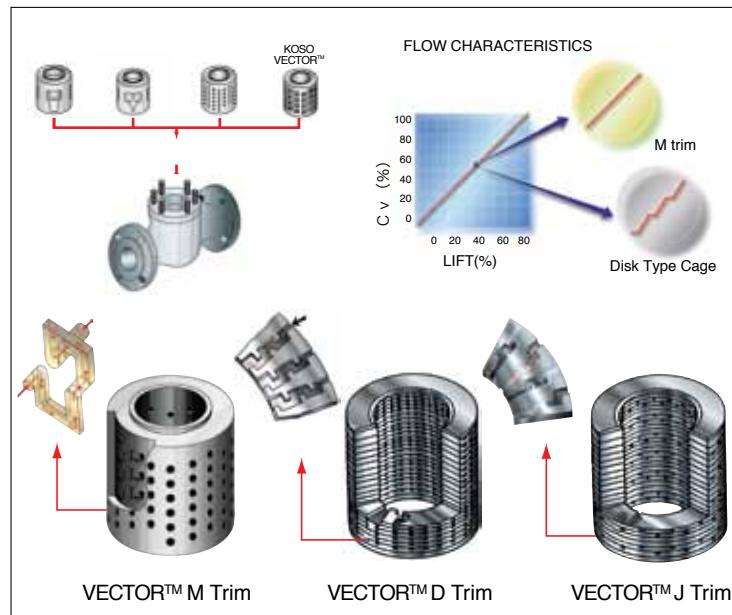
## 500 SERIES SEVERE SERVICE GLOBE VALVES

### 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

Body type: Style	550G : Globe type 560G : Angle type	501G : Globe type 511G : Angle 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 Soft seat	ANSI Class IV,V or MSS-SP-61 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

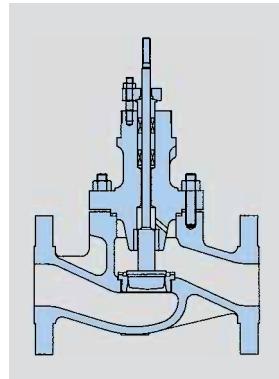
### 551T: Top Guided Single Seat Globe Valves/JIS10K and ANSI class 150 only

### 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.



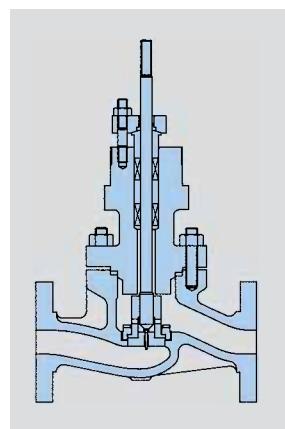
5200LA/501T



501T



5200LA/551T



520T

## Specifications

Body type	501T: Globe type 511T: Angle type	551T : Globe type	520T : Globe 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/W C B, SCPH21/WC6, SCPL1/LCB, SCS13A/CF8, SCS14A/CF8M, etc.		
Trim materials	SUS316, SUS316+Stellite, SUS316 + TFE etc.		SUS316+Stellite
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		

# CONTROL VALVES

## 500 SERIES CONVENTIONAL GLOBE VALVES

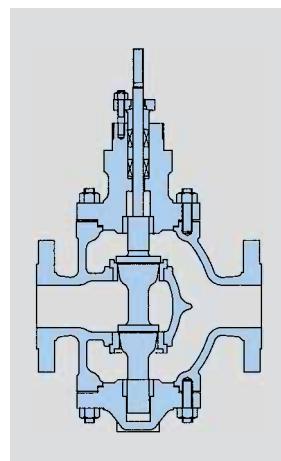
### 520C: Top and Bottom Guided Double Seated Globe Valves

### 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.



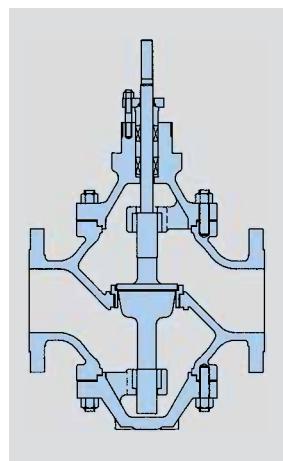
5200LA/520C



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 $\leq$ 0.5% ANSI Class II	Cv $\leq$ 0.01% ANSI Class IV
Q-port plug	—	Cv $\leq$ 0.001% Rated Cv $\leq$ 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.

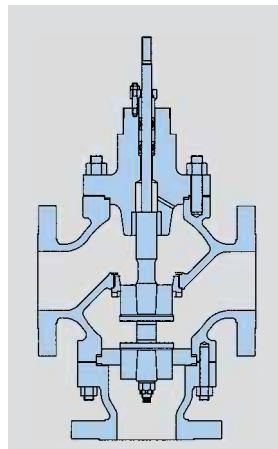
### 500A: Top Guided Single Seated Angle Valves /Forging Body

### 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.



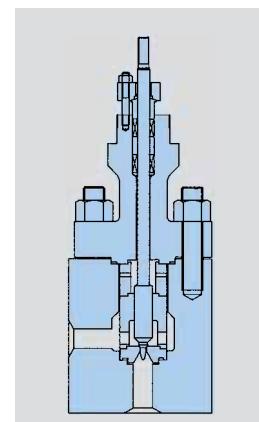
520LA/521F . 531F



531F



5200LA/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) ~11/2" (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	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		

# CONTROL VALVES

## 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

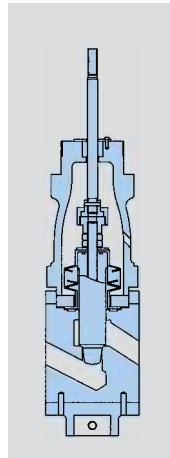
This valve series is compact size, light weight, and high-performance.

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/cm<sup>2</sup>G pressure.



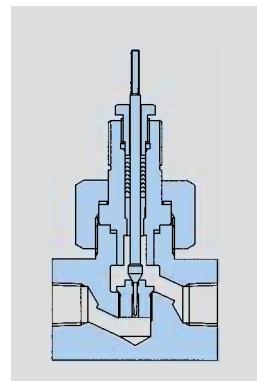
5200LA/500R



500R



5800LA/500S



500S

### Specifications

Body type	500R	500S
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	(20 A) 1(25 A) 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

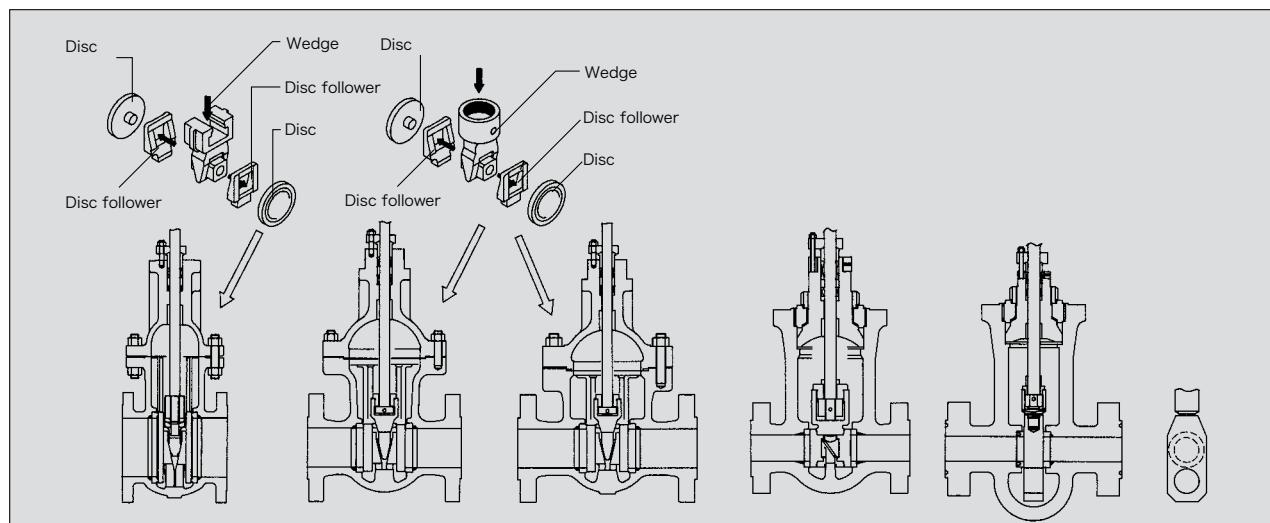
## 400 SERIES GATE VALVES

### 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	A105/Stellited, SCM435/Stellited, SUS304/Stellited, SUS316/Stellited			
Seat materials				
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.)			

# CONTROL VALVES

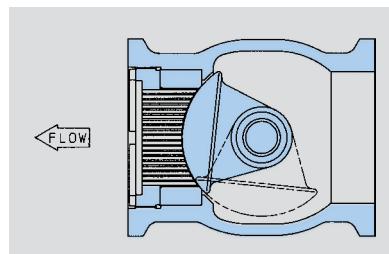
## 200 SERIES SEGMENTAL BALL VALVES

### 210C: Concentric segmental ball valves

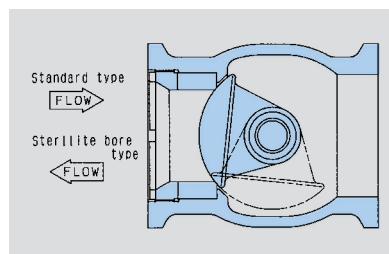
This series is a concentric segmental ball valve for modulating applications. A V-notch cut at disc makes rangeability larger and creates a shearing effect by disc and seal ring. Therefore, suitable to large rangeability service and/or control of fluids with entrained particles and/or slurry.

### 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.



210C ANTI-CAVITATION TYPE



Standard type



Sterilite bore type



6300RB/210C

3620R/210C

210C CONCENTRIC TYPE

6400RB/230C

### Specifications

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	S C P H2/WC B, S C S 13A/C F 8, S C S 14A/C F 8M. 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 Soft seat	(H Type seat): (Rated) CV x 0.25%	
		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

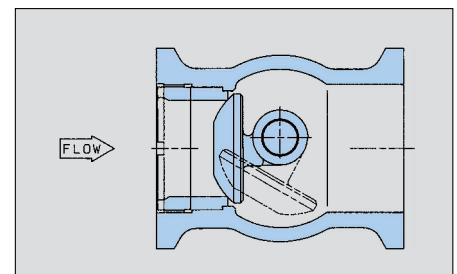
This series of eccentric segmental ball valves is designed for modulating applications. Compared to a globe valve, the ball valve body is compact, light weight, and yet it offers large Cv value, large rangeability and can be converted to reduce bore type (60, 40% reduced) by changing only seal ring.



6300RB/210E



5200RA/210E



210E ECCENTRIC TYPE

## Specifications

	210E	220 E
Body type		
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	SCS14 A	
Disc treatment	Chrome plated or Stellited	
Seal ring materials	R.TFE, SUS316/Stellited, 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

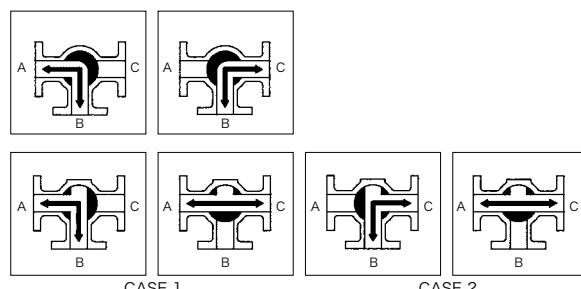
### 332K: Straight Through Ball Valves

### 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.



7300RB/301K



6300RB/332K



6300RA/331T



6300RB/301R

This series have teflon or polyvinylidene fluoride internal parts. This series has teflon or polyvinylidene 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.

## 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) ~21 1/2" (65A)
Reduced bore size	4"□3"~18"□16"	—	6"□4"~12"□10"	3"□2 1/2"~4"□3"
Jacketted valve size	11/2"□1/2"□1/2"~10"□8"□6"	—	—	—
Body rating	150#~600# · 10K~40K	150#~300# · 10K~20K	ANSI Class 150 · JIS 10K	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			

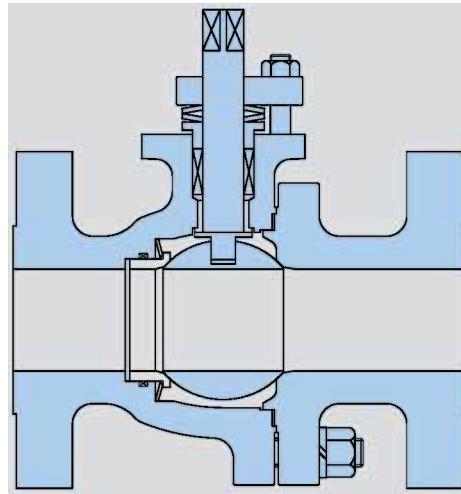
## 300 SERIES METAL SEATED BALL VALVES

### 300W: Metal Seated Ball Valves

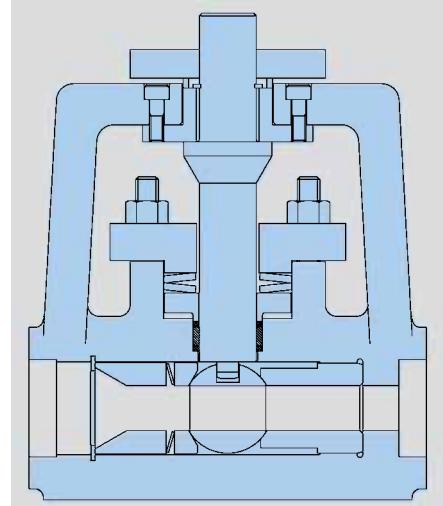
This ball valve series provides zero-leakage in several service applications with high temperature and/or high pressure. The ball and seat are hard coated with chrome carbide or tungsten carbide using Koso's HVOF coating system to provide high erosion and abrasion resistance. They are mate-lapped based 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 (R F)	Socket Weld, Butt Weld / Flange RF (ANSI Class 600#)
Body Materials	SCPH2/WC B, SCS13A/C F8, SCS14A/C F8M. 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 / Stellited	TungstenCarbide / Chrome Carbide
Leakage	Metal seat	0
Structure	Floating / Trunnion	Floating

# CONTROL VALVES

## 700 SERIES HIGH PERFORMANCE BUTTERFLY VALVES

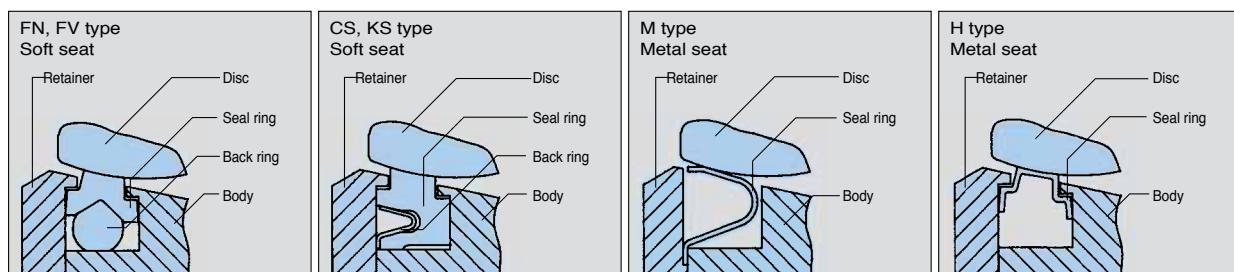
### 710C: Concentric PARA-SEAL C Valves

### 710E: Concentric PARA-SEAL E Valves

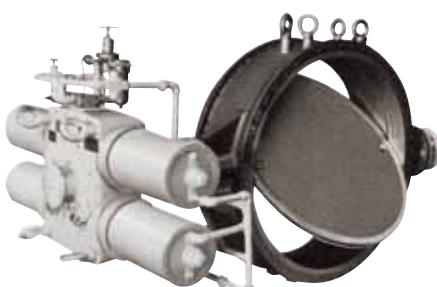
### 720E: Eccentric PARA-SEAL Valves

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



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° Opening/25 : 1		90° Opening/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		3500RB, 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

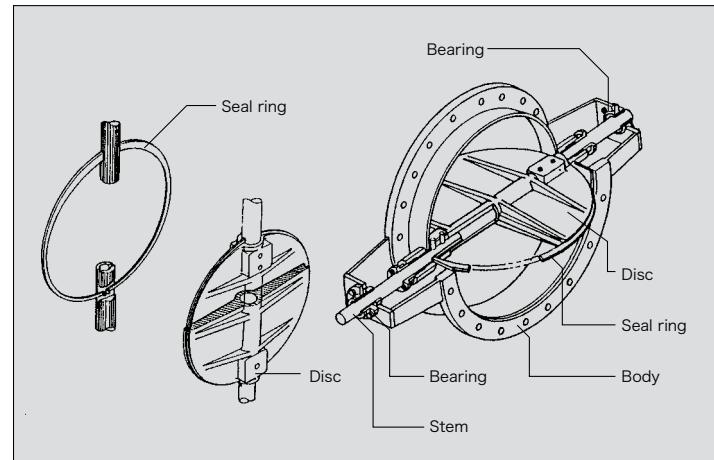
This butterfly valve design features a metal seal ring with a cut-end which is set around the disc. This construction allows for low seating force and better shut off performance. It also provides more resistance against very high operating temperatures. The seat ring's thermal expansion with fluid temperature 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)	-45~+750°C (-49~+1382°F)
Connections	Wafer type	(RF) Flanged (RF)	
Body materials	SCPH2/WCB, SCS13A/C F8, SCS14A/C F8M. e t c.	SS400, SUS304, SUS316. 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 Cv (Inherent Characteristics)		
Seal ring materials	—	—	SUS316 or Inconel
Seat Leakage	Standard	90° Cv×2.5~0.5%	90° Cv×5.0~1.5%
	15° seal	—	90° Cv×0.5~0.2%
	Back seat	—	90° Cv×2.0~1.0%
Actuator combinations		6300RB, 6500RA, 7300RA: Pneumatic Cylinder Actuator 3500RB, 3600RB: Solid State Electronic Actuator 5200TA: Pneumatic Diaphragm Actuator	



# KOSO

## Control Valves



## KOSO ACTUATOR RANGES

### Linear Stem Motion type Actuators

	Type	Series Code	1x10 <sup>3</sup>	3x10 <sup>3</sup>	5x10 <sup>3</sup>	1x10 <sup>4</sup>	Output(N)		3x10 <sup>5</sup>	5x10 <sup>5</sup>
							3x10 <sup>4</sup>	5x10 <sup>4</sup>	1x10 <sup>5</sup>	
Motorized	AC Motor	3420L				10,000				
	DC Motor	3500LB				9,800				
Solid State Electronic	AC Motor	3620L				10,000				
	Step Motor	3800LA								533,787
Microprocessor controlled Digital or Analog	AC Motor	4800LA							110,000	
Electro-Hydraulic Actuators	AC Motor	4800LA								
Pneumatic Diaphragm	Multi Spring	5200LA				16,475				
Pneumatic Double Cylinder	1-Piston	6100LA							106,820	
	2-Piston	6200LA								213,640
	1-Piston	6300LA							129,850	
Pneumatic Spring Cylinder	1-Piston	6300LA							30,576	
Hydraulic Double Cylinder	1-Piston	9000LA								539,000

### Rotary Stem Motion type Actuators

	Type	Series Code	50	100	300	500	1x10 <sup>3</sup>	Output(N · m)		3x10 <sup>4</sup>	5x10 <sup>4</sup>
								3x10 <sup>3</sup>	5x10 <sup>3</sup>	1x10 <sup>4</sup>	
Motorized	AC Motor	3200RA	49								
	AC Motor	3300RA	49								
	AC Motor	3420R					1,500				
Solid State Electronic	DC Motor	3500RB				588					
	AC Motor	3620R					1,500				
Microprocessor controlled Digital or Analog	Step Motor	3800RA								45,194	
Electro-Hydraulic Actuators	AC Motor	4800RA								20,000	
Pneumatic Diaphragm	Multi Spring	5200RA				558					
Pneumatic Double Cylinder	Large Torque	6400RB								20,500	
	Middle Torque	6500RA							7,500		
	Small Torque	7300RB							6,987		
	2-Step Action	7900RA							2,594		
Pneumatic Spring Cylinder	Middle Torque	6500RA							2,960		
	7300RB								4,413		
	Small Torque	6300RB							2,232		
	2-Step Action	7900RA							1,091		
Hydraulic Double Cylinder	1-Piston	9000RA								995	98,000

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

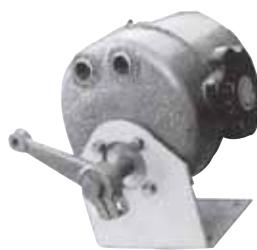
### 3500: Solid State Electronic Actuators

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												

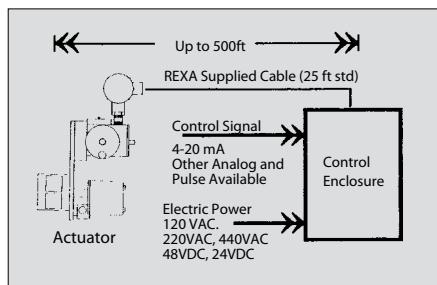


### Microprocessor Controlled Actuators

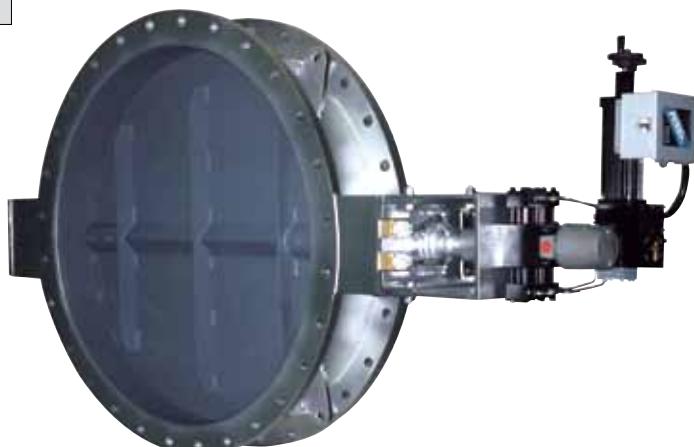
#### HIGH POWER·HIGH SPEED·HIGH PERFORMANCE ACTUATOR

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

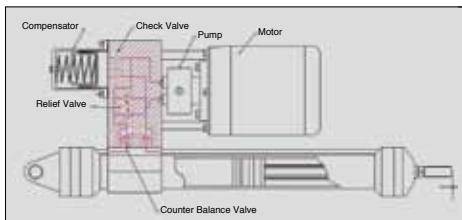
6100LA, 6200LA		Double Acting type								
Type code	6110LA	6116LA	6128LA	6136LA	6141LA	6154LA	6254LA			
Size	100	160	280	360	415	540	540×2			
Output N at 500KPa	3430	9310	29890	45570	62220	106820	213640			
Max. stroke - mm	60	210	310	610	810	810	1360			
6300LA	Double Acting type					Spring Return type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



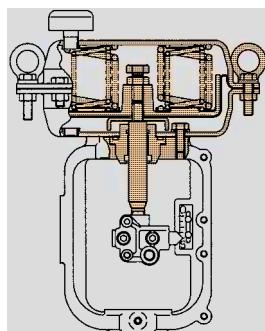
3800RA

## Specifications

6300RB													Double Acting type													
Type code	63B0RB	63B1RB	63B2RB	63BARB	63B3RB	63BBRB	63B4RB	63BCRB	63B5RB	63BDRB	63B6RB	63BERB	63B7RB	AT050	AT100	AT200	AT250	AT300	AT350	AT400	AT450	AT500	AT550	AT600	AT650	AT700
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	AT050	AT100	AT200	AT250	AT300	AT350	AT400	AT450	AT500	AT550	AT600	AT650	AT700
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.																									

### 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 S LA 524LLA	526 S LA 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

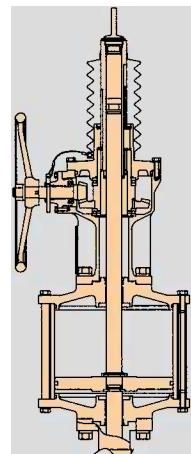
## 6100LA: Pneumatic Cylinder Actuators (1 piston type)

## 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	540x2	
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

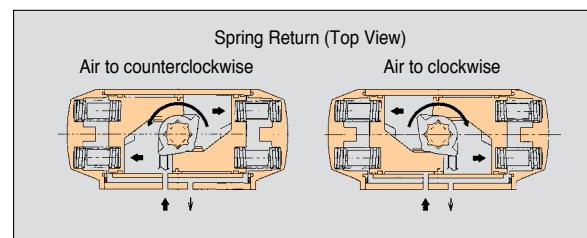
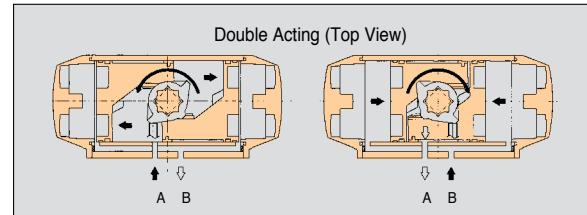
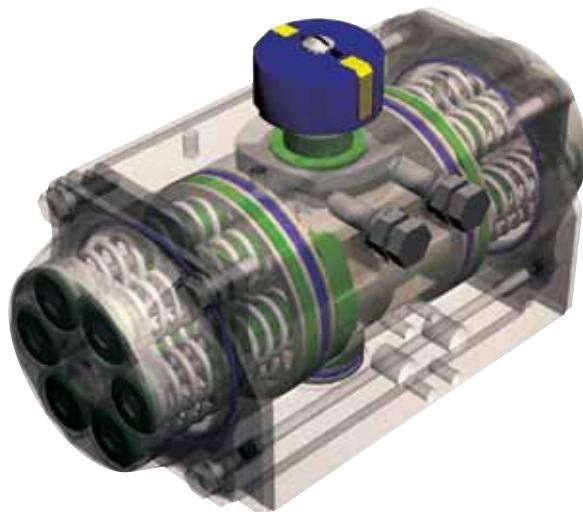
Rotary Stem Motion type

### 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 &amp; Pinion Pneumatic Actuator

Output Shaft Rotating angle/90° or 60°

**6500RA: Pneumatic Cylinder Actuators**

Middle Torque Cylinder

2 Piston Scotch Yoke type Pneumatic Actuator

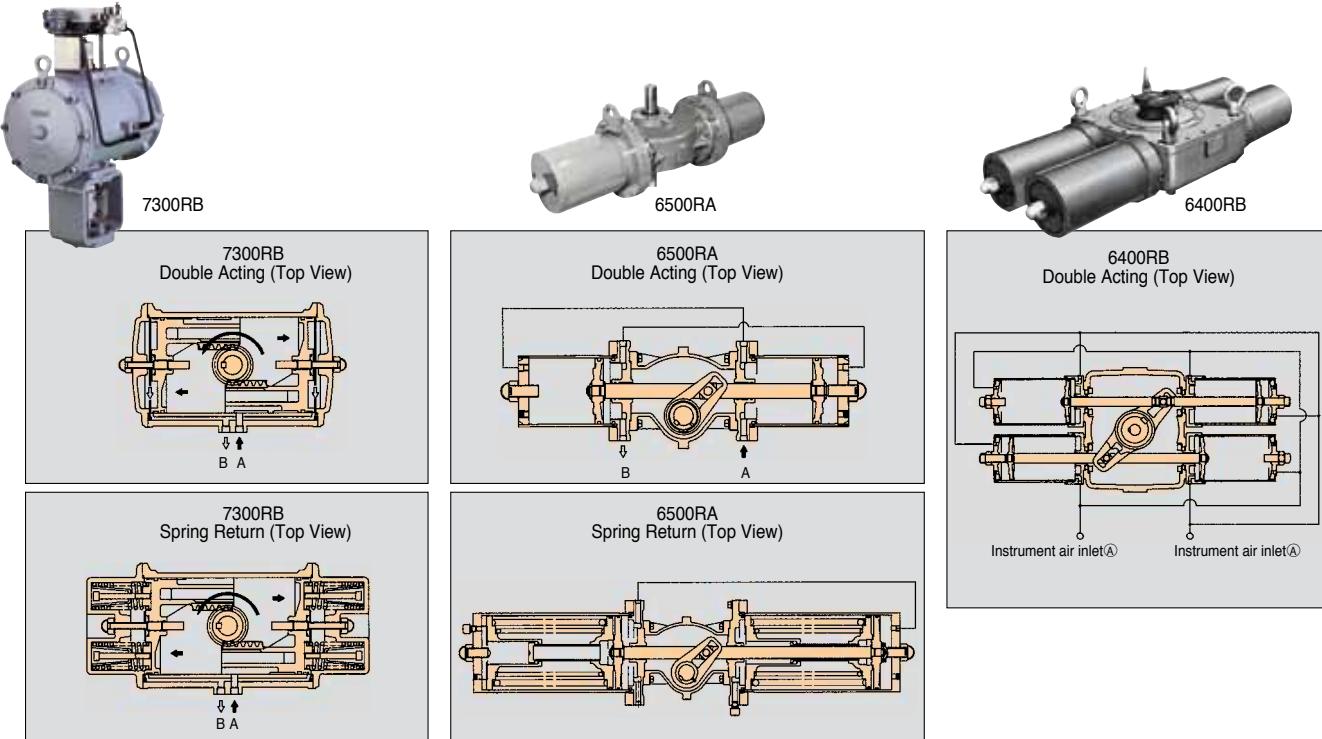
Output Shaft Rotating angle/90° or 60°

**6400RB: Pneumatic Cylinder Actuators**

Large Torque Cylinder

4 Piston Scotch Yoke type Pneumatic Actuator

Output Shaft Rotating angle/90° or 60°

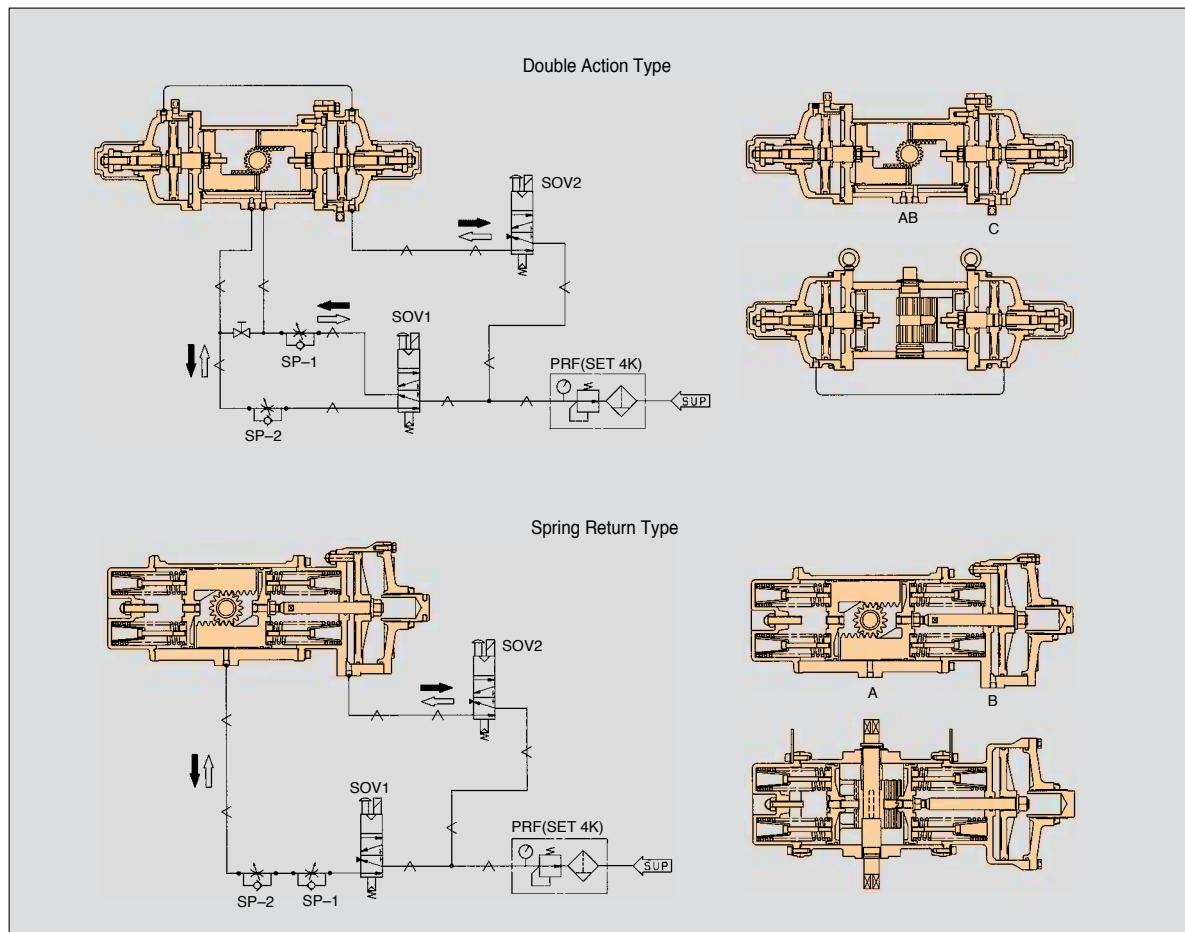
**Specifications**

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			
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.										

### 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										
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.																

## ACCESSORIES FOR PNEUMATIC ACTUATORS

Rotary Stem Motion type

## 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 5200LA for 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

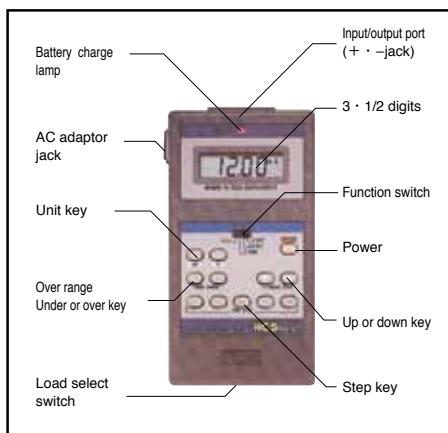
Series	EP1000	SPS2000
Power Source	2-Wire / Bus Powered	
Input Voltage	10V DC at 60°F (140°F) (HART)	
Xfer-Function	(Linear)/Eq%/Q-Open/(Custom Curve)	
Pilot Valve		
Air Consumption	15 NI/min at 400 kPa air supply	8 NI/min at 400 kPa air supply
Calibration	(Built-in 3-button) / HHC / KosoHart (HART)	
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 kg

## 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%)	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%)		

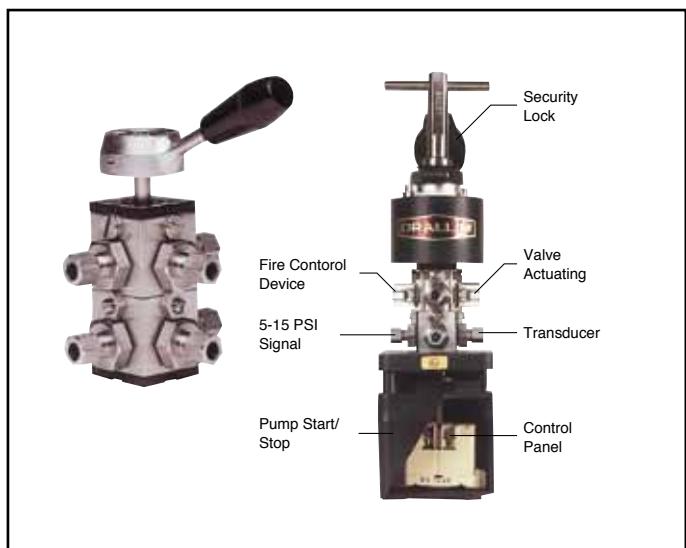


## Pneumatic Electric Safety Interlock Systems PIV

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.

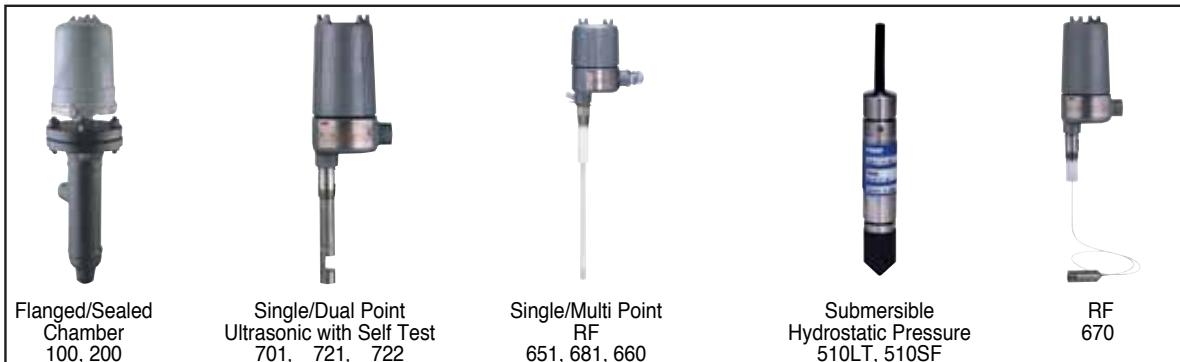
Not only sensors, our product line includes restriction plates for pressure or flow control as well as their accessories, such as orifice meter runs and rectifiers.

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



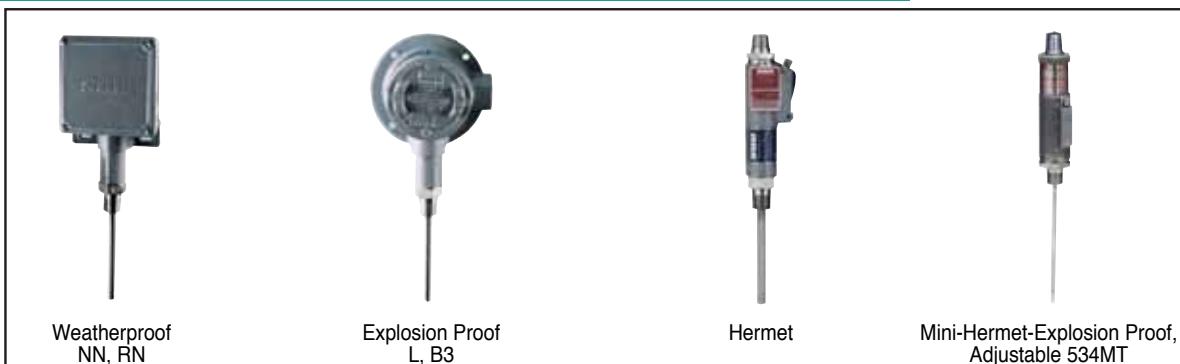
## PRESSURE SWITCHES/TRANSMITTERS



## DIFFERENTIAL PRESSURE SWITCHES/TRANSMITTERS



## TEMPERATURE SWITCHES/TRANSMITTERS



## IRONAN 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.

## IRONAN 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.

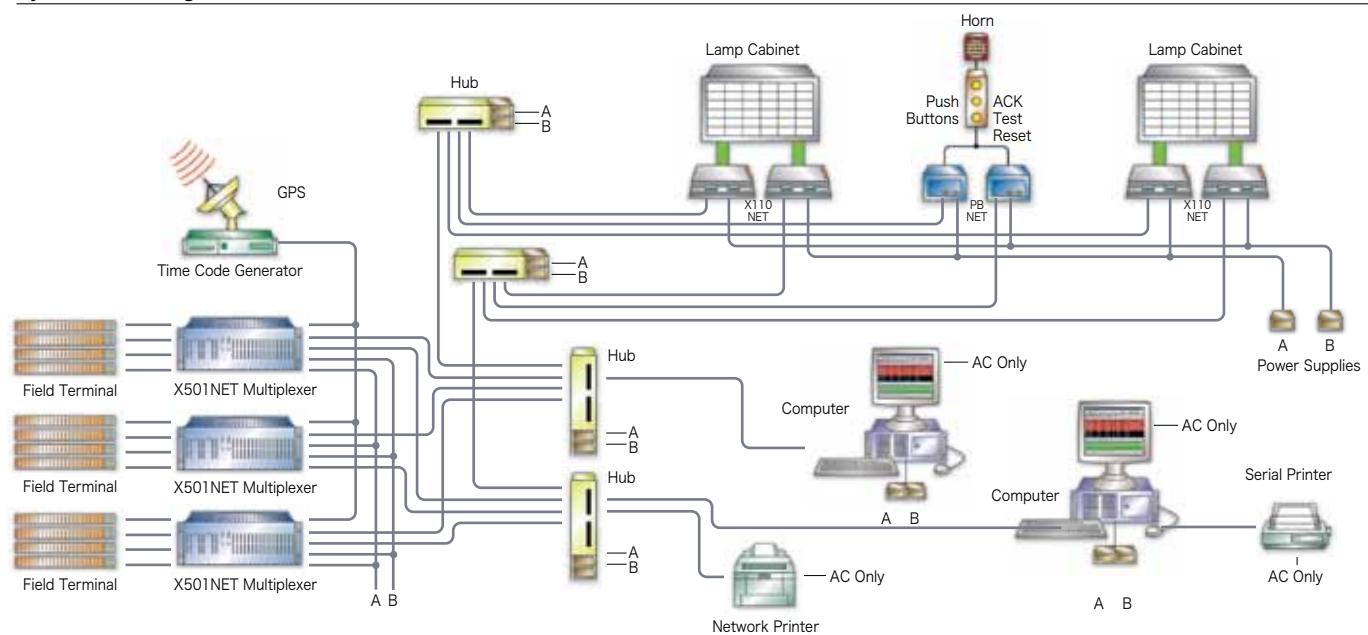


SEQUENCE OF EVENTS RECORDERS



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

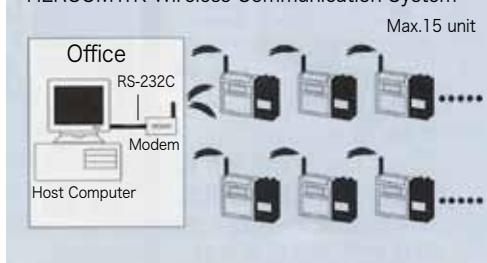
## Wireless Indicator

Radio communication of F-1 Machine Running Data



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

HERCOM11K Wireless Communication System



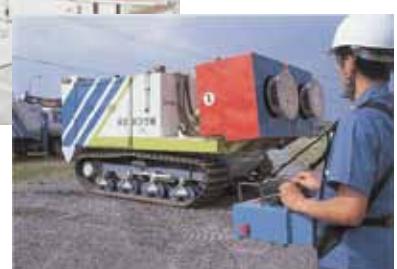
## Wireless Communication Products



## Wireless Forklift Call for Parts Supply



Shutter remote control

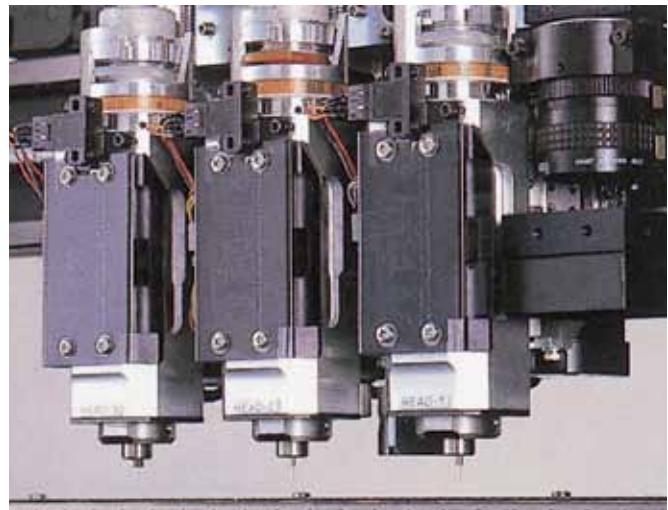


#### Wireless remote operation

**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

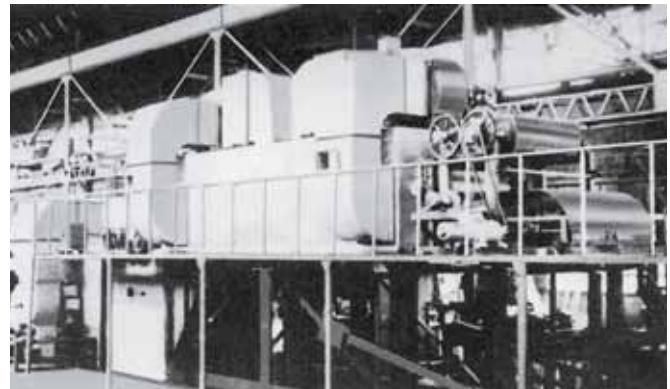
- Being wireless, the unit requires no wiring work. It can start working on the day of delivery.
- Excellent display readability
- Output of radio wave used is as low as 1/2,000,000 of PHS. There is no effect on other medical devices.
- Up to approx. 100 sets can be utilized within the same area.



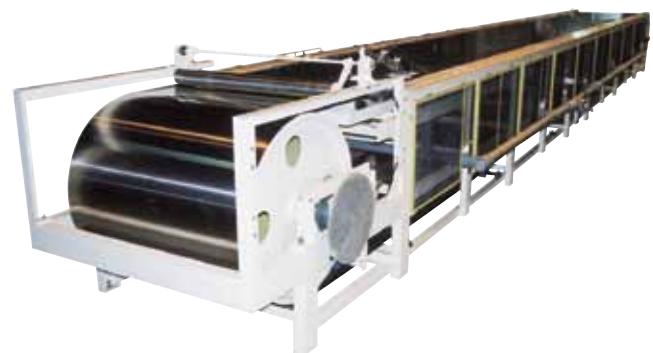
## TOYO STEEL BELT

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 in friction coefficient and hysteresis.
- Outstanding heat resistance (-60~400°C, -76~752°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 Conveyer



### Tire Treadware Test Machine



## 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



MODEL PM1000  
(Suction Port Diameter 100mm)

PUMP PROTECTOR

**PM Series** for chemical  
**EM Series**



**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
Diacharge 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
	60Hz	10m-50l/min	10m-160l/min	15m-190l/min	20m-200l/min	15m-280l/min	30m-200l/min	25m-260l/min	25m-600l/min
Motor	POles	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
	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.

## 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.



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



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.



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

# GENERAL CATALOG

For Process Automation

**KOSO**



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