

# KOGANEI PRODUCTS GUIDE



# 2014~2015 NEW PRODUCTS

Micro 3-port Solenoid  
Valves 005 Series

Pg. F2



Media Isolation Valves  
PVR Series

Pg. F2



Solenoid Valves F Series

Pg. F3



Basic Cylinders

Pg. F3



Shock Absorber  
KSHP Series

Pg. F4



Filter Regulators  
FRZB Series

Pg. F4



iB-Flow

Pg. F5



iB-Flow Flow Selector

Pg. F5



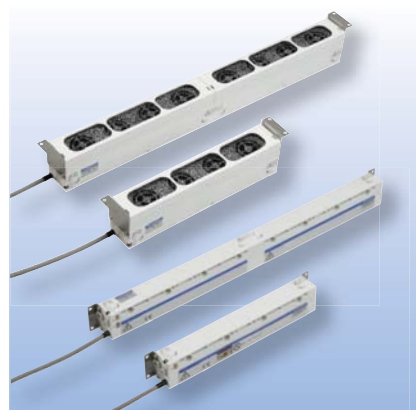
Versatile Dispensing Pump

Pg. F6



Ion Polarity Control  
Ionizer DTY-BX01 Series

Pg. F6



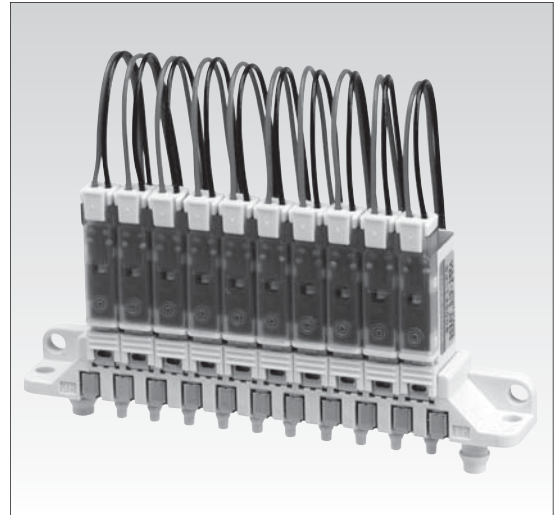


### Micro 3-port Solenoid Valves **005 Series**

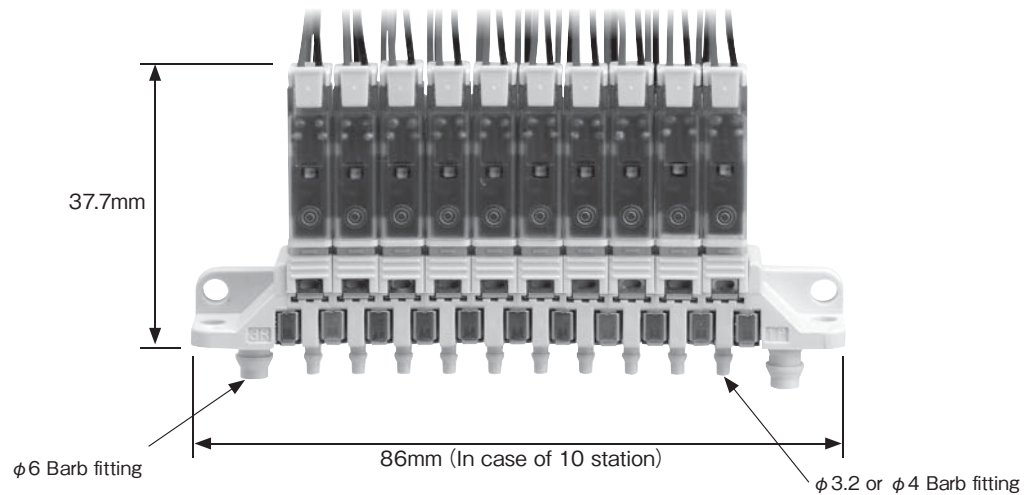
Valve width 5.9 mm, effective area 0.1mm<sup>2</sup>, ultra compact 3-port solenoid valves. Effective for lighter and smaller devices and equipment.

#### Features

- This 3-port solenoid valve is just 5.9 mm wide.
- Split manifolds of 1 to 20 stations available as standard.
- Two mounting surfaces provided.
- Connector and pin type wiring specifications available.
- Single unit valves (for base piping) also available.



Actual size (split type manifold)



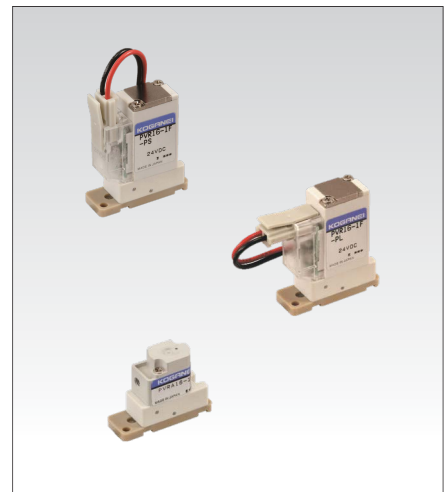
## Coming Soon

### Media Isolation Valves **PVR Series**

A high purity control valve that isolates aggressive gas and liquid media from solenoid and air pilot models to meet the needs of the life science and analytical industry.

#### Features

- High flow rate, 1.6mm orifice in a small body.
- Most compatible, the material of the wetted part is EPDM,FKM,FFKM,PEEK.
- Lowest contamination, dead volume is only 35ul.
- Simple and fast installation using a gasket, captive mounting screws and molded location pins.



## New Products

### Solenoid Valves F Series

**EtherCAT** 

Single/double dual-use solenoid valves F series are compatible with the EtherCAT.




Inch size available

#### Features

- EtherCAT compliant products added to our F10 and F15 series serial transmission compatible manifold.
- 16-output and 32-output models available.



**EtherCAT**  is a registered trademark and patented technology, licensed by Beckhoff Automation GmbH, Germany.



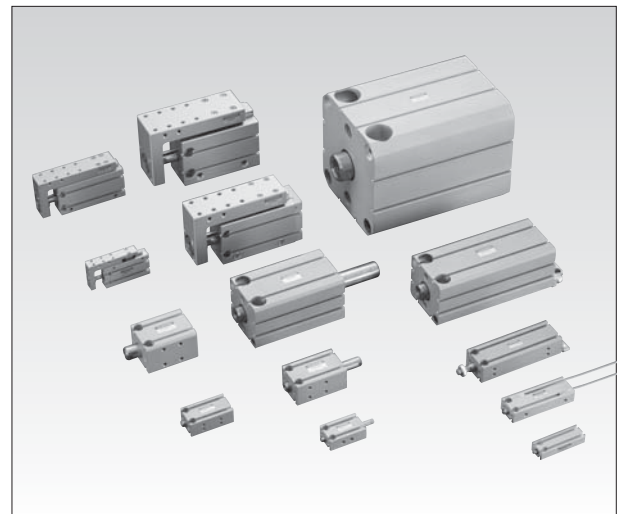
## New Products

### Basic Cylinders

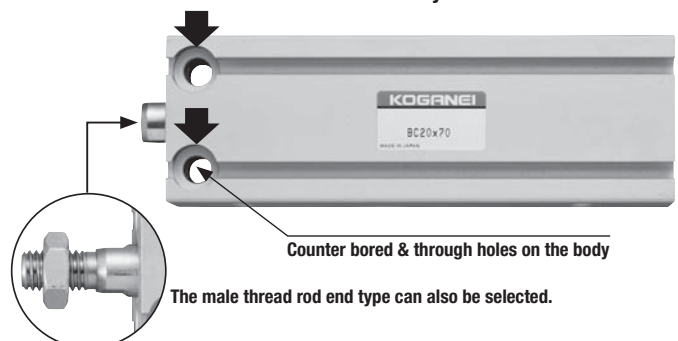
Direct Mounting, Smallest & Lightest.  
Possible to create all assembly processes with just BC cylinders.  
Wide range of variations from  $\varnothing 6$  to  $\varnothing 125$ .

#### Features

- Direct mounting.
- Smallest, Lightest & Compact.
- Excellent series ranging from  $\varnothing 6$  to  $\varnothing 125$ .
- H1 grease compatible as standard.
- Cylinder with guide  $\varnothing 8$  to  $\varnothing 40$  available.
- Two-color LED sensor switches can be mounted.



Can be mounted directly



## New Products

### Adjustment Type Linear Orifice Shock Absorber KSHP Series

Introducing the adjustable linear orifice.  
Long 3 million cycle operating life.  
Uses NSF certified H1 oil (non silicon).

#### New Variations

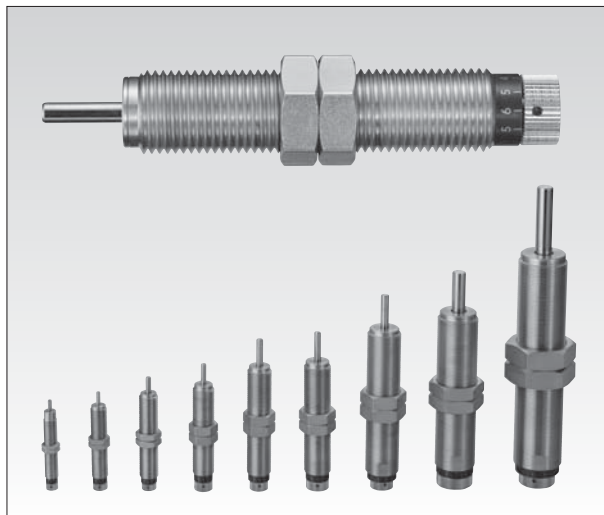
Two new sizes! M6, M8

#### Features

- New release of our first adjustment type linear orifice models.
- Shorten operation cycle times by adjusting the absorbing capacity of the end of strokes.
- Possible to fine tune both impact speed and load for proper shock absorption.
- Linear orifice construction provides longer life.
- Compliant with H1 grade food equipment specifications.
- Uses NSF H1 grade oil (non silicon).



"Linear orifice" is a registered trademark of Koganei Corporation.



M6~M36

Wide range of variations  
11 sizes

## New Products

### FRZB Filter Regulators

Down sizing.  
Close side-by-side spacing.  
Easy-to-use water and fluids removal functions inside and compact design.



Inch size available

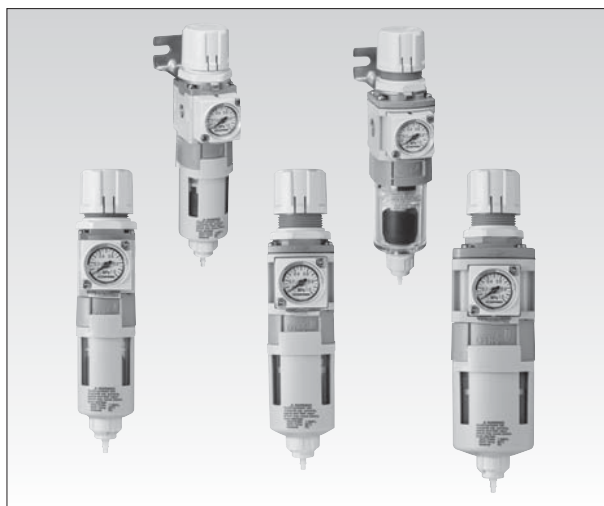


PSI display available

#### Features

- Improved flow rate characteristics allow a smaller configuration (close side-by-side spacing possible).
- Improved knob operability and simple bowl installation and removal.
- Supports □30 integrated pressure gauges, other pressure gauges, and pressure switches
- Ozone resistance specifications and NCU specifications (copper free)<sup>Note</sup> are available as standard.

Note: Excluding pressure switch and pressure gauge options.



#### Drain cock specifications



Auto drain type  
NO(Normally open)  
NC(Normally closed)



Drain cock with fitting



## New Products

# iB Series iB-Flow

## Digital Flow Controller

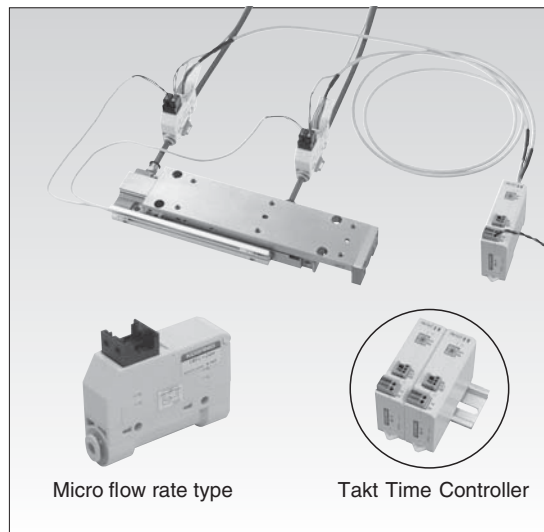
Koganei presents a new actuator controller. First in the industry Takt Time Controller

### New Variations

Two new micro flow rate models!

#### Features

- Automatic takt time corrections  
Takt Time Controller constantly monitors and makes corrections.
- Operation time observable  
Digital setting of cylinder takt time (operation time).
- Safe lock mechanism  
Safety mechanism prevents needle from loosening.
- Digital needle opening control  
Numeric setting of needle opening (0 to 100%).



Micro flow rate type

Takt Time Controller

#### Micro flow rate models

Flow rate (at 0.5 MPa)  
Free flow : 22 l/min (ANR)  
Control flow : 5.5 l/min (ANR)

## New Products

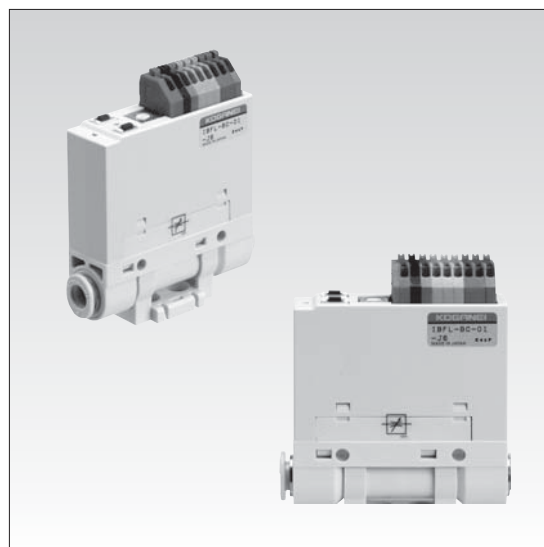
# iB Series iB-Flow

## Flow Selector

Remote operation of needle opening to control flow rate is possible!  
Flow rate feedback can be used for control!  
Possible to switch between multiple flow rates!  
(Max. 7 inputting of points)

#### Features

- Flow rate easy to adjust by remote control (external input)!
- Analog voltage output from flow meter (flow sensor) uploaded to adjust flow rate to the pre-set flow rate!
- Simplified blow feedback control possible.



## New Products

Constant grease dispensing pump for coating

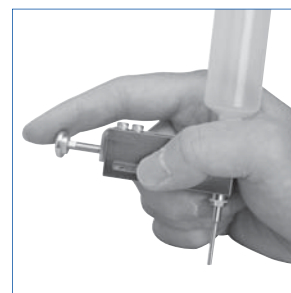
### Versatile Dispensing Pump Series

Introducing our new dispenser.

Dispensing can be done by applying air pressure to the syringe.

#### Features

- Simple construction makes handling easy.
- Proprietary valve construction and plunger system provide extremely uniform volume.
- Combinations of electric sliders, air cylinders, and of course manual operation for fully flexible coating applications.
- Fast and easy to bleed air from system.



## New Products

### Static Electricity Removing Unit Ion polarity control Ionizer **DTY-BX01** series

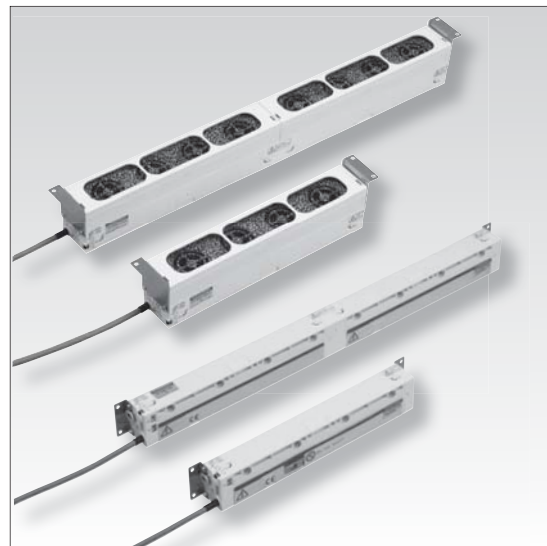
Compact body is just 25 mm x 35 mm.

High voltage wiring not needed, and sensor built in.

All-in-one ionizer.

#### Features

- Two types of 200 mm and 400 mm length available.
- Uses potentiometer for high speed static charge removal and static electricity control.
- Dedicated monitors used to constantly monitor electrostatic charge.

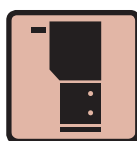


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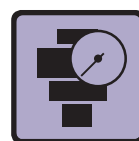
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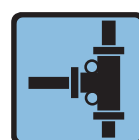
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**Creceed**

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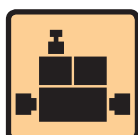


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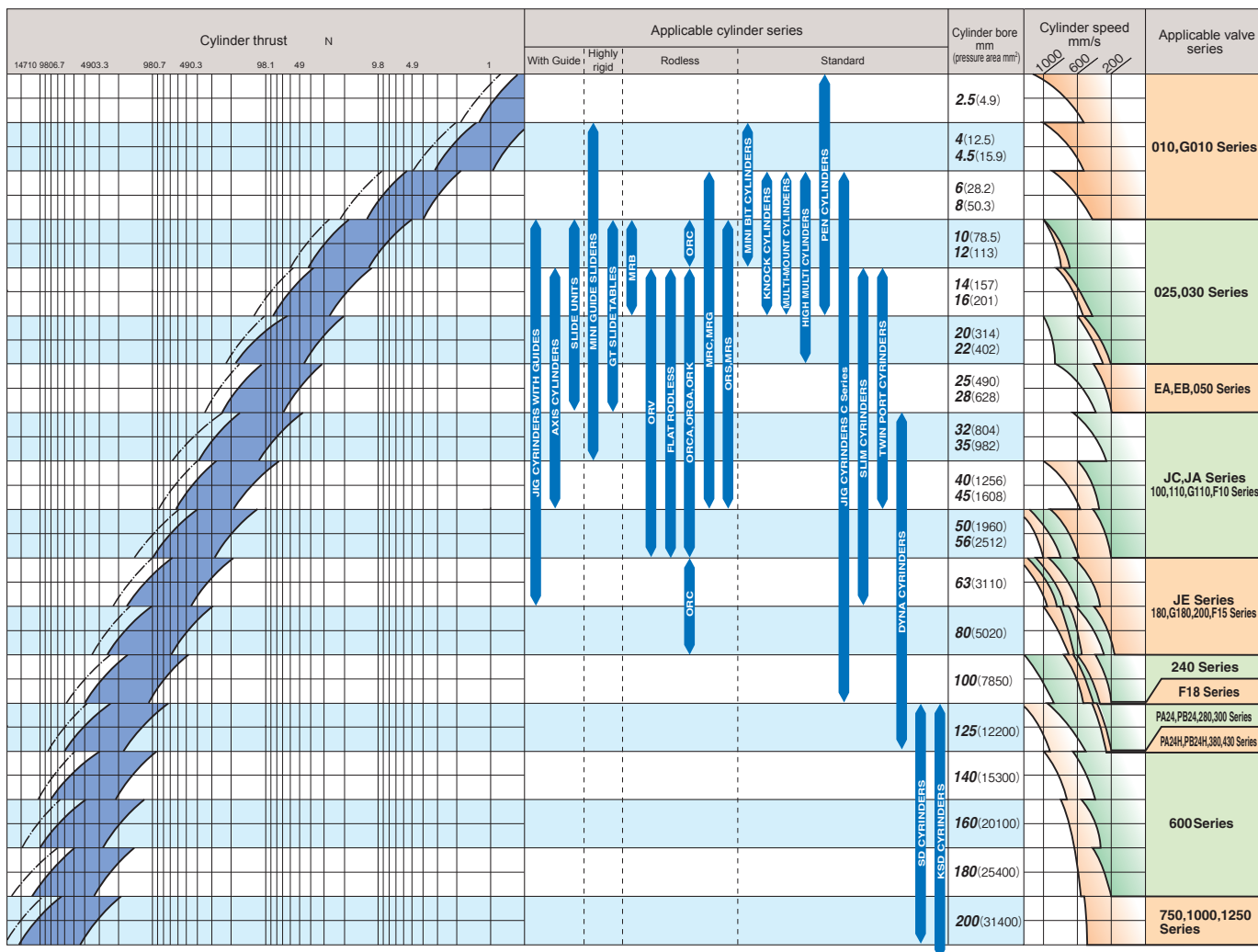
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# Best Selection

## 1. Cylinder and Valve Selection

**1** Select bore size of the cylinder according to the required cylinder thrust.

**2** Decide valve size according to the cylinder bore and speed



### How to Use the Diagram

#### 1. Selection of Cylinder Bore

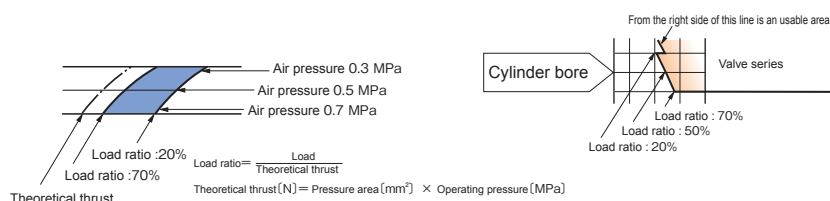
Select a cylinder bore so that the load is within the **blue** area of the diagram. Where the requirements call for 0.5 MPa of air pressure and 98.1 N of thrust, three cylinder bore sizes can be selected,  $\phi 20$  (load ratio of 70%),  $\phi 25$  (load ratio of 50%), and  $\phi 32$  (load ratio of 30%).

#### 2. Selection of Applicable Valve

With the required cylinder speed set at 600 mm/s [23.6 in./sec.], the load ratio at the bore size  $\phi 20$  is about 70%, and the applicable valve is therefore JC, JA, 100, 110, G110, and F10 series. At bore size  $\phi 25$ , as well, where the load ratio is about 50%, the appropriate size is JC, JA, 100, 110, G110, and F10 series. And when the load ratio is about 30% for the bore size  $\phi 32$ , the adaptive valve should be JE, 180, G180, 200, and F15 series.

#### 3. Selection Precautions

For high-speed operations or for other cases where a constant operating speed is required when the load has some variation, select a larger cylinder bore where the load ratio is 50% or less. For valve, piping, and fitting sizes, as well, select sizes that provide enough margin.



### 2. Selection of F.R.L. Combinations

For F.R.L. combinations, watch the flow rate characteristics graph in order to select sizes that let pressure fall to 10% or to 0.05 MPa or less when the system is at maximum flow (total air volume). Use the same criteria for selecting air filters, regulators, and lubricators. Moreover, when the flow is small, ensure that the flow exceeds the lubricator's minimum flow rate for drips.

### 3. Selection of Piping and Fitting Sizes

Select piping and fitting sizes that fit the piping connection port sizes for the equipment, and avoid over-throttling with bushings or other equipment. In addition, use of quick fittings, which do not have a throttle on the inner diameter, can assure adequate flow volume and prevent pressure drops.

#### Reference

##### ● Effective thrust of air cylinders

$$F_A = F \times \eta = \frac{\pi D^2}{4} \times P \times \eta$$

##### ● For selection of F.R.L. units

Air flow rate for air cylinder

$$Q_1 = \frac{\pi D^2}{4} \times L \times \frac{60}{t} \times \frac{P+0.101}{0.101} \times 10^{-6}$$

Air flow rate in piping from valve to cylinder

$$Q_2 = \frac{\pi d^2}{4} \times \ell \times \frac{60}{t} \times \frac{P}{0.101} \times 10^{-6}$$

Total air flow rate

$$Q_3 = Q_1 + Q_2$$

##### ● For selection of compressors

Air consumption volume of air cylinders

$$q_1 = \frac{\pi D^2}{4} \times L \times 2 \times n \times \frac{P+0.101}{0.101} \times 10^{-6}$$

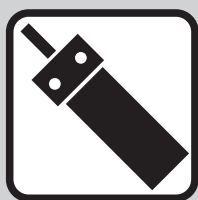
Air consumption volume in piping from valve to cylinder

$$q_2 = \frac{\pi d^2}{4} \times \ell \times 2 \times n \times \frac{P}{0.101} \times 10^{-6}$$


Total air consumption volume

$$q_3 = q_1 + q_2$$

D : Cylinder bore mm  
d : Inner diameter of piping mm  
F : Cylinder's theoretical thrust N  
F<sub>A</sub> : Cylinder's effective thrust N  
L : Cylinder stroke mm  
 $\ell$  : Length of piping mm  
n : Number of cylinder reciprocations per minute times/min  
P : Air pressure MPa  
Q<sub>1</sub> : Required air flow volume for cylinder [  $\ell$  /min (ANR) ]  
Q<sub>2</sub> : Required air flow volume for piping [  $\ell$  /min (ANR) ]  
Q<sub>3</sub> : Total air flow volume [  $\ell$  /min (ANR) ]  
q<sub>1</sub> : Cylinder air consumption volume [  $\ell$  /min (ANR) ]  
q<sub>2</sub> : Piping air consumption volume [  $\ell$  /min (ANR) ]  
q<sub>3</sub> : Total air consumption volume [  $\ell$  /min (ANR) ]  
t : Time required for one cylinder stroke [s]  
 $\eta$  : Cylinder thrust efficiency  
(About 70%, but less than 50% at high speeds)



# KOGANEI PNEUMATIC COMPONENTS ACTUATORS

Line up
 Inch size available
Refer to previous catalog
<b>ACTUATORS</b> ACTUATORS GENERAL CATALOG Catalog No.BK-UC003

## PEN CYLINDERS

- Series spans from  $\phi 2.5$  to  $\phi 16$ , conforming to the non-ion standard for all models.
- Wide variation of 15 models, including made-to-order products.

### Pen Cylinders

Basic model	Diameter mm	Stroke mm	Port size
$\phi 2.5, \phi 4$ Single acting push type : <b>PBSA</b>	2.5	5~10	$\phi 4 \times \phi 2.5$ With barb fitting for nylon and urethane tube
	4	5~20	
Double acting type : <b>PBDA</b>	6	5~100	M5×0.8 (M3×0.5 is available in $\phi 6$ )
Single acting push type : <b>PBSA</b>	10	5~150	
Single acting pull type : <b>PBTA</b>	16	5~200	
Non-rotating double acting type : <b>PBDAL</b>	10	5~60	M5×0.8
Non-rotating single acting push type : <b>PBSAL</b>	16		
Non-rotating single acting pull type : <b>PBTAL</b>	16	5~60	M5×0.8
Double acting double rod type : <b>PBDAD</b>	10	5~60	M5×0.8
	16	5~100	
Double acting with pull side stroke adjusting type : <b>PBD AE</b>	10	15~150	M5×0.8
	16	15~200	
Double acting with push side stroke adjusting type : <b>PBD AP</b>	10	15~60	M5×0.8
	16	15~100	
Double acting dual stroke type : <b>PBD AW</b>	10	5~120	M5×0.8
	16		
Double acting tandem type : <b>PBD AT</b>	10	5~150	M5×0.8
	16		
Double acting heat-resistant type : <b>PBD AF</b>	6	5~100	M5×0.8
Low hydraulic double acting type : <b>PBD AH</b>	10	5~150	
	16	5~200	
Cylinders for Clean Systems	6	5~60	M5×0.8
Double acting type : <b>CS-PBDA</b>	10	5~150	
Single acting type : <b>CS-PBSA</b>	16	5~200	

Remark: Cylinders with sensor switches are also available.

**ACTUATORS** Catalog No.(BK-UC003)

### Made to Order Pen Cylinders

Basic model	Diameter mm	Stroke mm	Port size
Double acting with speed controller type : <b>PBD AU</b>	10	15~150	M5×0.8
	16	15~200	
Double acting with linear bearing type : <b>PBD AA</b>	10	25~300	M5×0.8
	16	25~500	
Double acting with variable cushioned type : <b>PBD AC</b>	10	25~150	M5×0.8
	16	25~300	

Remark: Cylinders with sensor switches are also available.

**ACTUATORS** Catalog No.(BK-UC003)





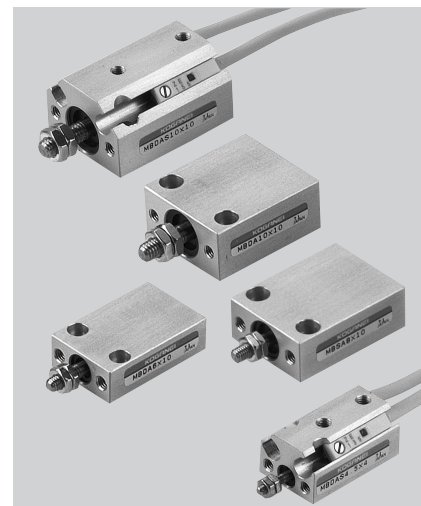
# MINI BIT CYLINDERS

- Total length: up to 41% reduction, volume: up to 67% reduction (compared with Koganei's multi-mount cylinders).

Basic model	Diameter mm	Stroke mm	Port size
Double acting type : <b>MBDA</b>  Cylinders for Clean Systems : <b>CS-MBDA</b>	4.5	4~10	M3×0.5
	6	4~15	
	8	4~20	
	10		
Single acting push type : <b>MBSA</b>	4.5	4~8	
	6		
	8	4~10	
	10		

Remark: Cylinders with sensor switches are also available.  
Catalog No.(BKC0012) Mini Bit Cylinder

**ACTUATORS** Catalog No.(BK-UC003)



ACTUATORS

# MINI GUIDE SLIDERS

- Compact, high precision. Height: 10 mm, width: 18 mm, length: 43 mm. Accuracy and functions are combined within the above dimensions (The dimensions are for the standard cylinder with a bore size of 4.5 mm).
- Nine bore sizes (φ4.5, φ6, φ8, φ10, φ12, φ16, φ20, φ25, φ32)
- Left-right symmetry available for all types.

Basic model	Diameter mm	Stroke mm	Port size
Standard cylinder <sup>Note1</sup> : <b>MGAG</b> □	4.5	5, 10	M3×0.5
	6	5~30	
	8	5~30	
	10	5~50	
	12	10~80	M5×0.8
	16	10~100	
	20	10~125	
	25 <sup>Note2</sup>	10~150	Rc1/8
	32 <sup>Note2</sup>	10~150	
Side-mounted cylinder : <b>MGAL</b> □	4.5	5, 10	M3×0.5
	6	5~30	
	8	5~30	
	10	5~50	
Cylinder with buffer <sup>Note1</sup> : <b>MGAG</b> □ Extended side stroke adjusting cylinder : <b>MGAP</b> □ Extended/retracted-side stroke adjusting cylinder : <b>MGAE</b> □	4.5	5, 10	M3×0.5
	6	5~30	
	8	5~30	
	10	5~50	
Rear piping specification : <b>MGAG</b> □ <b>H</b>  Clean system cylinder : <b>CS-MGA</b> □	12	10~80	M5×0.8
	16	10~100	
	20	10~125	
	25	10~150	
Cylinder with end keep <sup>Note1</sup> : <b>MGAG</b> □ <b>K</b>	12	10~80	M5×0.8
	16	10~100	
	20	10~125	

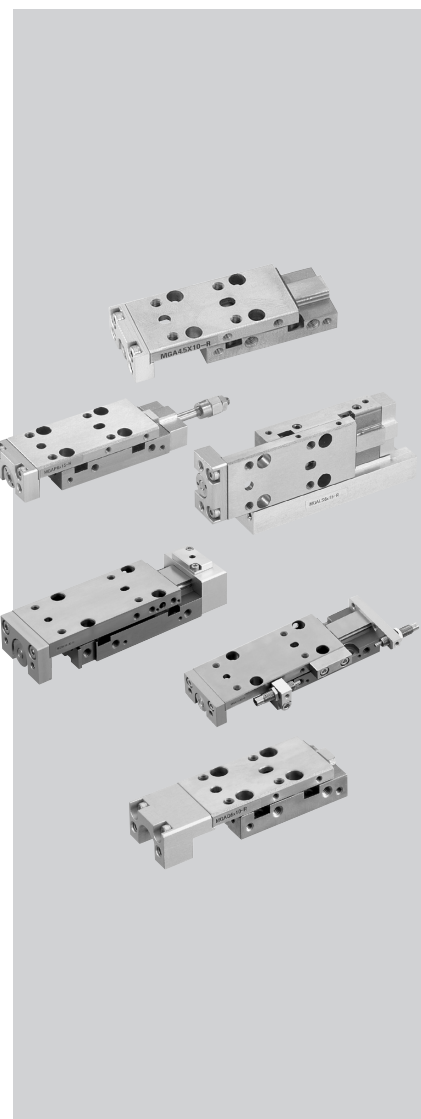
Note 1: Shock absorber can be mounted on a cylinder with a bore size of φ10, φ12, φ16, φ20, φ25, or φ32 as option.

2: Only standard cylinder can be selected for φ25, φ32.

Remark: Cylinders with sensor switches are also available.

Catalog No.(BK-C0032) Mini Guide Sliders

**ACTUATORS** Catalog No.(BK-UC003)





Inch size available  
with "H" prefix

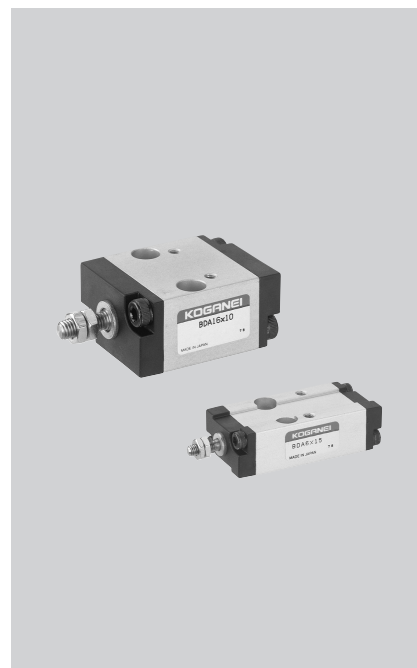
## MULTI MOUNT CYLINDERS

- Easy-to-handle miniature 4 mm sensor switch is possible to be installed.
- Non-rotating type also available, in response to various needs with high non-rotating accuracy.
- Square and compact bodies and mounting brackets make various installations possible.

Basic model	Diameter mm	Stroke mm	Port size
Double acting type : (H)BDA	6	5~30	M5×0.8
Double acting double rod type : (H)BDAD	10		
Non-rotating double acting type : (H)BDAL	16		
Non-rotating double acting double rod type : (H)BDADL			
Single acting push type : (H)BSA	6	5~15	
Single acting pull type : (H)BTA	10		
Non-rotating single acting push type : (H)BSAL	16		
Non-rotating single acting pull type : (H)BTAL			

Remark: Cylinders with sensor switches are also available.

**ACTUATORS** Catalog No.(BK-UC003)



Inch size available  
with "H" prefix

## KNOCK CYLINDERS

- Short body and versatile installation result in a simplified mechanical device.
- Compact and lightweight single acting type achieves remarkable space-saving effects.
- Central locator and wrench flats on the body allow for solid and highly accurate installation.

Basic model	Diameter mm	Stroke mm	Port size
Double acting type : <b>NDA</b>	6	5~20	M5×0.8
Single acting push type : <b>(H)NSA</b>	10	5~30	
	16		

Remark: Cylinders with sensor switches are also available.

**ACTUATORS** Catalog No.(BK-UC003)





Inch size available  
with "H" prefix

# JIG CYLINDERS C Series

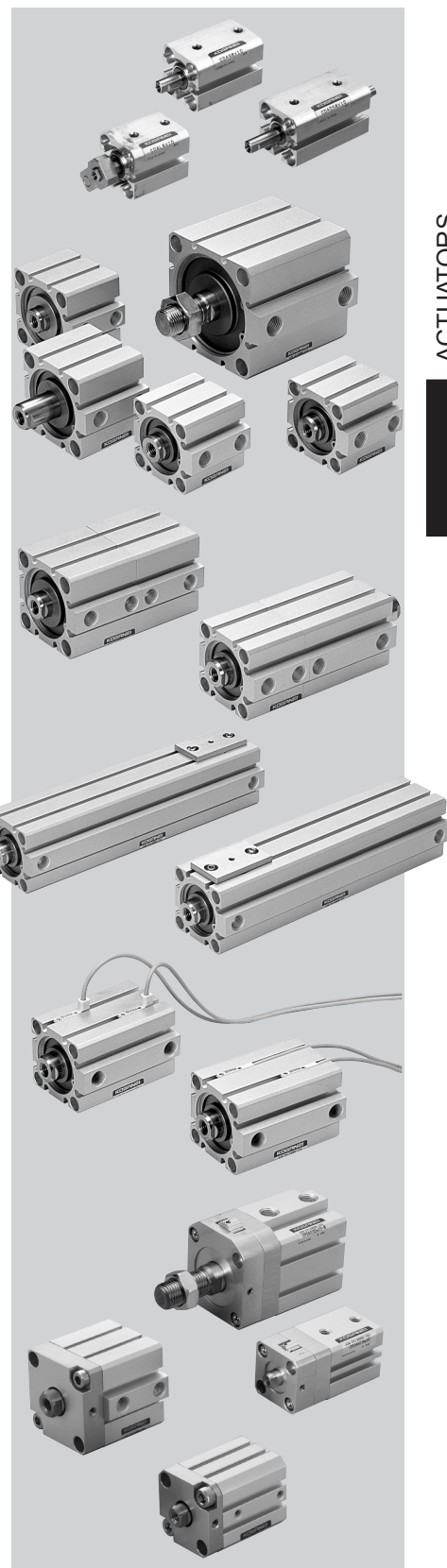
- A short and compact body is totally space-saving.
- Responds to various needs with cylinder bores from  $\phi 6$  to  $\phi 100$  and versatile functions.
- Stroke adjusting type and low friction type have been added.

Basic model	Diameter mm	Stroke mm	Port size
Double acting type : (H)CDA Double acting double rod type : (H)CDAD	6	5~20	M3×0.5
	8		
	10		
Double acting type : (H)CDA Double acting double rod type : (H)CDAD Double acting tandem type : (H)CDAT Double acting dual stroke type : (H)CDAW Double acting lateral load type : (H)CBDA Double acting long stroke type : (H)CCDA	12	5~30 (35~125)	M5×0.8
	16		
	20		
	25	5~50 (75~250)	Rc1/8
	32		
	40		
	50	5~100 (125~300)	Rc1/4
	63		
80			
100	10~100 (125~300)	Rc3/8	
Single acting push type : (H)CSA Single acting pull type : (H)CTA Non-rotating double acting type : (H)CDAL	6	5~10	M3×0.5
	8		
	10		
Single acting push type : (H)CSA Single acting pull type : (H)CTA Single acting double rod type : (H)CSAD Single acting tandem type : (H)CSAT Dual, single acting push type : (H)CSAW Dual, single acting pull type : (H)CTAW	12	5~30	M5×0.8
	16		
	20		
	25		
	32		
	40		
	50	10~40	Rc1/4
	Double acting square rod type : (H)CDAL	20	5~50
25			
32		5~100	Rc1/8
40			
50		10~100	Rc1/4
63			
Double acting end keep type : (H)CCDAK	16	5~125	M5×0.8
	20	5~200	
	25	5~250	
	32	5~300	Rc1/8
	40		
	50	10~300	Rc1/4
	63		
	Push side stroke adjusting double acting type : CPDA	12	5~30
16			
20		5~50	
25		5~100	Rc1/8
32			
40			
Low friction double acting type : CDAZ  Low friction double acting type : CS-DAZ	6	5~20	M3×0.5
	8		
	10		
	12	5~30	M5×0.8
	16		
	20		
	25	5~50	Rc1/8
	32		
40	5~100		

Remarks: 1. Cylinders with sensor switches are also available.

2. Figures in the parentheses ( ) are for the long stroke cylinder.

**ACTUATORS** Catalog No.(BK-UC003)



ACTUATORS





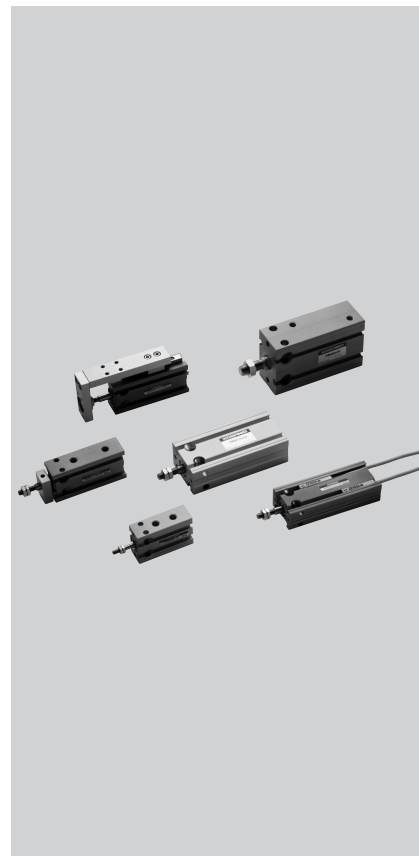
Inch size available  
with "H" prefix

## HIGH MULTI CYLINDERS

- Compact and direct mounting is possible due to its square body and six-surface mounting.
- Non-rotating and with-guide types are available. Their high non-rotating accuracy can meet a variety of needs.
- Employs embedded-type sensor switches.

Basic model	Diameter mm	Stroke mm	Port size
Double acting type : (H)YMDA	6	5~60	M5×0.8
	10		
	16		
	20	5~100	
Single acting push type : (H)YMSA Single acting pull type : (H)YMTA	6	5~15	
	10		
	16		
	20		
Non-rotating double acting type : (H)YMDAL	6	5~30	
	10		
	16		
	20	5~50	
Double acting type with guide : (H)YMDAGS	6	10~60	
	10		
	16		
	20		

Remark: Cylinders with sensor switches are also available.



Inch size available  
with "H" prefix

## JIG CYLINDERS WITH GUIDES

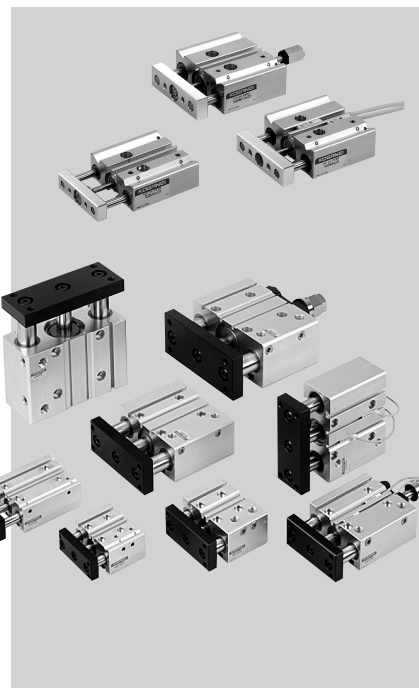
- Most suitable for stoppers and lifters on conveyor line.
- Two types of guide rod bearings — slide bearings and ball bearings — are available depending on the application.
- Four types of installation are possible, in response to the installation environment, and piping location can also be selected in two different directions.

Basic model	Diameter mm	Stroke mm	Port size
Double acting type : (H)SGDA Double acting stroke-adjusting type : (H)SGDAP	6	5~20	M3×0.5
	8		
	10		
Double acting type : (H)SGDA Double acting stroke-adjusting type : (H)SGDAP Double acting end keep type : (H)SGDAK Cylinders for Clean Systems : (H)CS-SGDAQ	12	10~100	M5×0.8
	16		
	20	10~200	Rc1/8
	25		
	32		
	40		
	50		Rc1/4
	63		

Remark: Cylinders with sensor switches are also available.

Catalog No.(BKC0014)Jig Cylinders with Guides φ6, φ8, and φ10

**ACTUATORS** Catalog No.(BK-UC003)



## AXIS CYLINDERS

- Double-sided guides assembled in the cylinder achieve high non-rotating accuracy.
- A sensor indicator shows magnet location so that the sensor switch operation point can be confirmed from outside as standard equipment.
- A compact shock absorber unit of the same design with the body may also be selected.

Basic model	Diameter mm	Stroke mm	Port size
Double acting type	16	25~125	M5×0.8
Bushing type : <b>XDA</b>	20	25~150	
Bearing type : <b>XDAA</b>	25	25~175	
Long bearing type : <b>XDAQ</b>	32	25~225	Rc1/8
Bushing type : <b>XDAD</b>	40	25~300	
Bearing type : <b>XDAAD</b>			
Long bearing type : <b>XDADQ</b>			

Remark: Cylinders with sensor switches are also available.

**ACTUATORS** Catalog No.(BK-UC003)



ACTUATORS

## SLIDE UNITS

- Two cylinders combined into a single table achieves high non-rotating and positioning accuracy.
- Provides twice the thrust while saving space, and a high-performance actuator that greatly reduces design man-hours and costs.

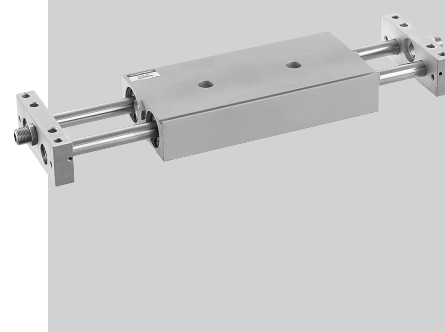


Inch size available with "H" prefix

Basic model	Diameter mm	Stroke mm	Port size
Fixed table type : (H)SUT	10	25~100	M5×0.8
Fixed end plate type : (H)SUP	16	25~200	
Fixed rail-on plate type : (H)SUL	25		Rc1/8

Remark: End-keep mechanism (K), sensor switches, and shock absorbers are also available.

**ACTUATORS** Catalog No.(BK-UC003)





Made in USA  
Inch size available  
with "H" prefix  
( $\phi$ 16, 25, 40mm only)

## TWIN ROD CYLINDERS

- Ingenious non-rotating cylinder combines two cylinders into one compact body.
- Such as design costs and number of parts for non-rotating devices are greatly reduced.
- Strengthened long bushing for the rod bearings realizes efficient design.

Basic model	Diameter mm	Stroke mm	Port size
$\phi$ 6 Double acting type : (H)TDA	6	10~50	M5×0.8

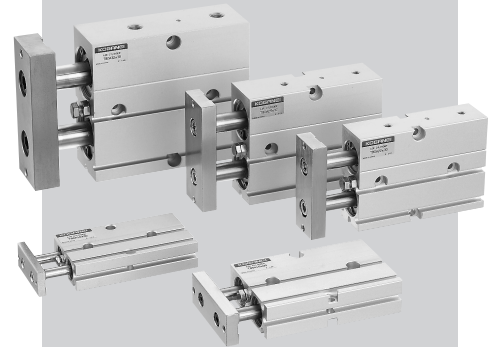
Remark: Cylinders with sensor switches are also available.

**ACTUATORS** Catalog No.(BK-UC003)

Basic model	Diameter mm	Stroke mm	Port size
B series Double acting type : (H)TBDA Double acting long bushing type : (H)TBDAM	10	10~70	M5×0.8
	16	10~100	
	20		
	25		
	32		Rc1/8
B series Single acting push type : (H)TBSA	10	10~60	M5×0.8
	16		
	20		
	25		
B series End keep cylinder : (H)TBDAK	16	10~80	M5×0.8
	20		
	25		

Remark: Cylinders with sensor switches are also available.

**ACTUATORS** Catalog No.(BK-UC003)



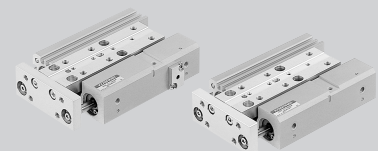
## Z SLIDERS

- Thin-type actuator mounts linear guides.
- Twin rods achieve high cylinder thrust.
- With-buffer spring, with-end keep mechanism, and symmetric cylinders are available.

Basic model	Diameter mm	Stroke mm	Maximum available stroke mm	Port size	
Standard cylinder : ZS	6	10~70	70	M5×0.8	
Cylinder with buffer spring : ZSG	10	10~100	100		
	16		120		
Symmetric cylinder : ZSBB	20		150	Rc1/8	
Symmetric cylinder with buffer spring : ZSBBG	25		150		
Cylinder with end keep mechanism : ZSK	16	10~100	120	M5×0.8	
Cylinder with buffer spring and end keep : ZSGK	20		150	Rc1/8	
Symmetric cylinder with end keep : ZSBBK	25		150		
Symmetric cylinder with buffer and end keep : ZSBBGK					

Remark: Cylinders with sensor switches are also available.

**ACTUATORS** Catalog No.(BK-UC003)





Made in USA  
Inch size available  
with "H" prefix

## SLIT TYPE RODLESS CYLINDERS ORV Series

- Unique oval piston configuration sets new standard for "Lower price, Shorter, and Thinner" rodless cylinder.
- Allows compact and simple design, and is particularly effective for space-saving applications.
- Easy to match with linear guide achieves lower gravity center and smoother operation.



ACTUATORS

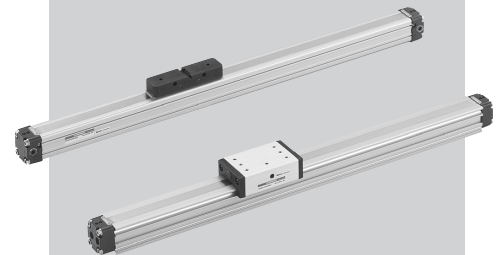
Basic model	Equivalent bore size mm	Stroke mm	Maximum available stroke mm	Port size
Double acting type : (H)ORV	16	25~800	2000	M5×0.8
	20	50~1000		Rc1/8
	25			
	32	100~1200		Rc1/4
	40			
	50			

Remark: Cylinders with sensor switches are also available.

**ACTUATORS** Catalog No.(BK-UC003)

## SLIT TYPE RODLESS CYLINDERS

- Compact design maximally reduces total length and height, in addition to half of the installation space.
- Installation sensor switch for factory automation-oriented advanced design.
- Multiple port locations enable one side piping or versatile piping direction.



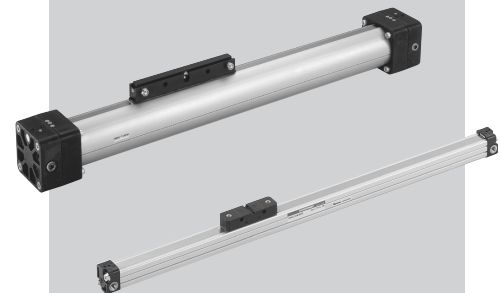
Basic model	Diameter mm	Stroke mm	Maximum available stroke mm	Port size
Double acting type : <b>ORCA</b>  With guide : <b>ORGA</b>	16	100~800	3000	M5×0.8
	20	200~2000	5000	Rc1/8
	25			
	32	300~2000		Rc1/4
	40			
	50	500~2000		Rc3/8

Remark: Cylinders with sensor switches are also available.

**ACTUATORS** Catalog No.(BK-UC003)

## SLIT TYPE RODLESS CYLINDERS

- Long stroke and high-speed operation with half the installation space.
- Slit-type eliminates the need for non rotating device or guides, and can be applied the load directly onto the carriage.
- Simplify the mechanical device structure also greatly reduces design man-hours.



Basic model	Diameter mm	Stroke mm	Maximum available stroke mm	Port size
Double acting type : <b>ORC</b>	10	100~500	2000	M5×0.8
	63	500~2000	5000	Rc3/8
	80	Order-made production		G1/2

Remark: Cylinders with sensor switches are also available.

**ACTUATORS** Catalog No.(BK-UC003)

## SLIT TYPE RODLESS CYLINDERS (with cam follower guides)

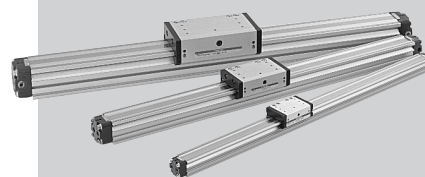
- Roller bearings of cam follower guide achieve smooth operation.
- Adjusting is simple because the cam follower shaft is attached directly to the carriage.
- Large rail width maintains high accuracy for long periods.

With cam follower guide : **ORK**

Basic model	Diameter mm	Stroke mm	Maximum available stroke mm	Port size
With cam follower guide : ORK	16	100~800	3000	M5×0.8
	20	200~2000	5000	Rc1/8
	25			Rc1/4
	32			
	40	300~2000		Rc3/8
	50			

Remark: Cylinders with sensor switches are also available.

**ACTUATORS** Catalog No.(BK-UC003)



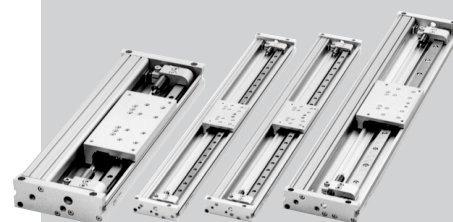
## SLIT TYPE RODLESS CYLINDERS ORS Series

- Table height is designed extremely low to facilitate design of thin-type equipment.
- Shock absorber units are standard equipment.
- Direct mounting at the end plate, and attachment in the T slots on the bottom improves the unit's mounting flexibility.

Basic model	Diameter mm	Stroke mm	Maximum available stroke mm	Port size
Double acting type : <b>ORS</b>	10	150~600	50~2000	M5×0.8
	16		50~3000	
	20	200~800		Rc1/8
	25			
	32			Rc1/4
	40	300~1000		

Remark: Cylinders with sensor switches are also available.

**ACTUATORS** Catalog No.(BK-UC003)



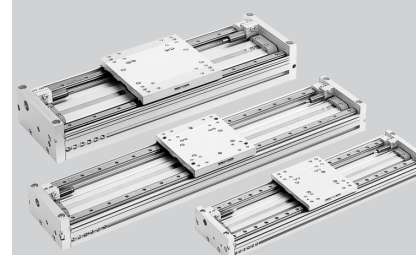
## SLIT TYPE RODLESS CYLINDERS ORW Series

- Highly rigid type with two linear guides.
- Shock absorber units are standard equipment.
- Direct mounting at the end plate, and attachment in the T slots on the bottom improve the unit's mounting flexibility.

Basic model	Diameter mm	Stroke mm	Maximum available stroke mm	Port size
Double acting type : <b>ORW</b>	16	100~600	50~2000	M5×0.8
	25	200~800		Rc1/8
	40	300~1000		Rc1/4

Remark: Cylinders with sensor switches are also available.

**ACTUATORS** Catalog No.(BK-UC003)





NEW

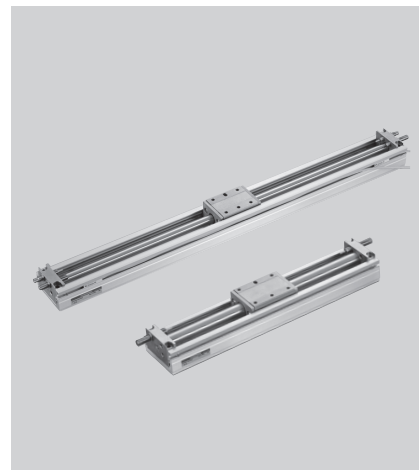
## MAGNET WITH GUIDE TYPE RODLESS CYLINDERS MRB Series

- Built-in guide mechanism. Lightweight, compact, and high-rigidity.
- H1 grade food processing machinery specifications are also available.
- A selection of three stopper types.

Basic model	Diameter mm	Stroke mm	Maximum available stroke mm	Port size
Double acting type : <b>MRB</b>	10	50~500	500	M5×0.8
Food processing machinery : <b>H1-MRB</b>	16			
H1 grease specifications				

Remark: Cylinders with sensor switches are also available.

Catalog No.(BK-C0034) Magnet type Rodless Cylinders with Integrated guides MRB Series.



ACTUATORS

## MAGNET TYPE FLAT RODLESS CYLINDERS

- Unique oval barrel design enables good low-speed performance, low center of gravity, and non-rotating.
- Reduced by 30% in height (compared to Koganei's MRC series).
- With shock absorber specification. M-type mount and sensor switch are available as options.

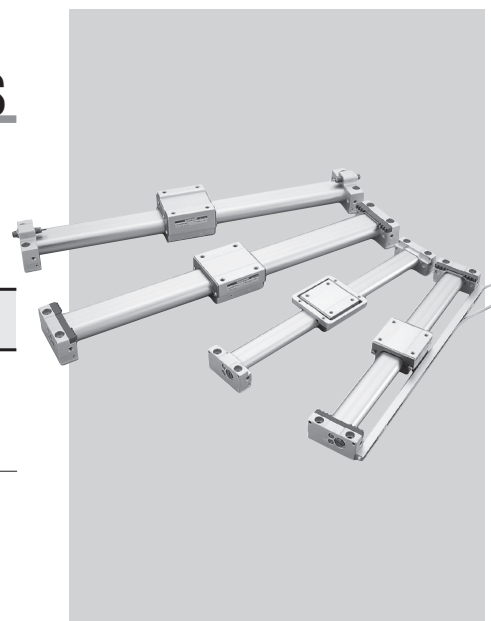
Basic model	Equivalent bore size mm	Stroke mm	Maximum available stroke mm	Port size
Double acting type : <b>MRV</b>	14	100~500	1~1000	M5×0.8
Double acting type : <b>CS-MRV</b> (Clean specification)	22	200~800	1~1500	
Double acting type with shock absorber specification : <b>MRVZ</b>	28	200~800	1~1500	Rc1/8
Double acting type with shock absorber specification : <b>MRVZ</b>	35	200~1000	1~2000	
Double acting type with shock absorber specification (Clean specification) : <b>CS-MRVZ</b>	45	200~1000	1~2000	Rc1/4
Double acting type with shock absorber specification (Clean specification)	56	200~1000	1~2000	

Remark: Cylinders with sensor switches are also available.

**ACTUATORS** Catalog No.(BK-UC003)

Catalog No.(BKC0018) Flat Rodless Cylinders

Catalog No.(BK-C0023) Clean Specification Flat Rodless Cylinders



## MAGNET TYPE RODLESS CYLINDERS MRS Series

- Table height is designed extremely low to facilitate design of thin-type equipment.
- Shock absorber units are standard equipment.
- Direct mounting at the end plate, and attachment in the T slots on the bottom improve the unit's mounting flexibility.

Basic model	Diameter mm	Stroke mm	Maximum available stroke mm	Port size
Double acting type : <b>MRS</b>	10	150~600	50~1000	M5×0.8
	16		50~1500	
	20	200~800	50~2000	Rc1/8
	25			
	32	300~1000		Rc1/4
	40			

Remark: Cylinders with sensor switches are also available.

**ACTUATORS** Catalog No.(BK-UC003)



## MAGNET TYPE RODLESS CYLINDERS MRW Series

- Highly rigid type with two linear guides.
- Shock absorber units are standard equipment.
- Direct mounting at the end plate, and attachment in the T slots on the bottom improve the unit's mounting flexibility.

Basic model	Diameter mm	Stroke mm	Maximum available stroke mm	Port size
Double acting type : <b>MRW</b>	16	100~600	50~1500	M5×0.8
	25	200~800	50~2000	Rc1/8
	40	300~1000		Rc1/4

Remark: Cylinders with sensor switches are also available.

**ACTUATORS** Catalog No.(BK-UC003)



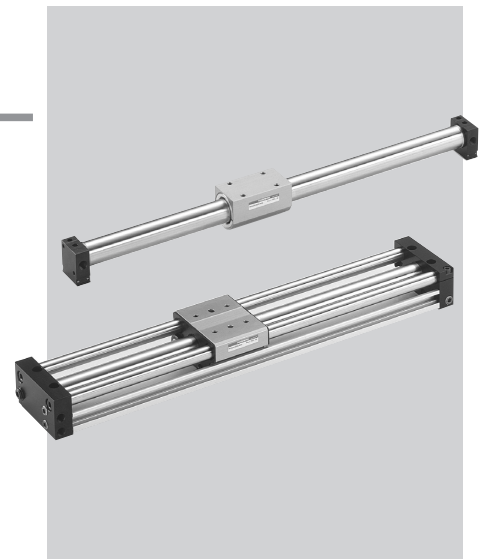
## MAGNET TYPE RODLESS CYLINDERS

- Use a neodymium rare-earth magnet that is the strongest in pneumatic applications for a strong retaining force.
- Cover strokes from a minimum of 50 mm to a maximum available of 2000 mm.
- FA-capable, advanced design with in half the operating space while providing the sensor switch mounting.

Basic model	Diameter mm	Stroke mm	Maximum available stroke mm	Port size
Double acting type : <b>MRC</b>	6	50~200	300	M5×0.8
	10	50~300	500	
	16	100~500	1000(750 for MRG)	
	20	150~600	1500(1000 for MRG)	
With guide : <b>MRG</b>	25	200~800	2000 (1500 for MRG)	Rc1/8
	32			
	40	200~1000		Rc1/4

Remark: Cylinders with sensor switches are also available.

**ACTUATORS** Catalog No.(BK-UC003)





Inch size available  
with "H" prefix

## TWINPORT CYLINDERS

- Innovative air cylinder uses dual tube structure.
- Piping ports concentrated onto one location, to eliminate dead space.
- Compact, highly rigid mount makes space-saving, small mounting pitch, highly accurate for installation.

Basic model	Diameter mm	Stroke mm	Port size
Double acting type : (H)TWDA	16	15~100	M5×0.8
	20	15~150	
	25	15~200	Rc1/8
	32		
	40	15~300	

Remark: Cylinders with sensor switches are also available.

**ACTUATORS** Catalog No.(BK-UC003)



ACTUATORS

## TWIST CYLINDERS

- Linear motion and 90° rotation of rod with a single action.
- Slim body and piping concentrated in one location for space-saving design.
- Cylinder bores are of three types,  $\phi 16$ ,  $\phi 25$ , and  $\phi 40$ .

Basic model	Diameter mm	Stroke mm	Port size
Double acting type Medium load type	16	20,30	M5×0.8
Clockwise rotation : RHDA-ER	25	30,50	Rc1/8
Counter clockwise rotation : RHDA-EL	40		

Remark: Cylinders with sensor switches are also available.

**ACTUATORS** Catalog No.(BK-UC003)



Inch size available  
with "H" prefix

## SWING CYLINDERS

- The two functions of swing and linear motion are simplified and integrated into a single unit.
- Uses individual control to obtain either alternating or simultaneous linear and swing movement.

Basic model	Diameter mm	Stroke mm	Effective torque N·cm	Swing angle	Port size Rc
Double : (H)SDA acting type	25	15~50	54.9	45°, 90°, 135°, 180°	1/8
	40	15~100	129.4		

Remarks: 1. The effective torque shows the values when air pressure is 0.5 MPa.

2. Cylinders with sensor switches are also available.

**ACTUATORS** Catalog No.(BK-UC003)



# SLIM CYLINDERS

- Wide range responds flexibly to all kinds of needs.
- Standard for small- and medium-type cylinders with high-quality and high-reliability design that uses stainless steel tube.
- Can operate at high speed of 700 mm/s (  $\phi 50$  and  $\phi 63$  are 500 mm/s).

## ■ Slim Cylinders

Basic model	Diameter mm	Stroke mm	Port size Rc
Double acting type : <b>DA</b> Double acting type with variable cushion : <b>DAC</b> Double acting square rod type : <b>DAL</b> Double acting double rod type : <b>DAD</b> Low hydraulic double acting type : <b>DAH</b> Double acting end keep type : <b>DAK</b> Double acting low speed type : <b>DAN</b>	20	25~150	1/8
	25	25~200	
	32		
	40	25~300	1/4
	50	25~400	
	63	25~500	
	Single acting push type : <b>SA</b>	20	25~75
32		25~100	
Double acting push side stroke adjusting type : <b>DAP</b> Double acting pull side stroke adjusting type : <b>DAE</b> Double acting type brake cylinder : <b>DAR</b> Double acting tandem type : <b>DAT</b> Double acting heat resistant type : <b>DAF</b> Double acting dual stroke type : <b>DAW</b>	20	25~150(200)	1/8
	25	25~200(250)	
	32	25~200(300)	
	40	25~300(400)	
Double acting block type : <b>DAB</b> Double acting block square rod type : <b>DABL</b> Double acting block cushioned type : <b>DABC</b> Double acting block end keep type : <b>DABK</b> Note: The double acting block square rod type is not available in this size.	16 <sup>Note</sup>	15~100	1/8
	20	25~150	
	25	25~200	
	32		
	40	25~300	1/4
	50		
	63		
	Double acting with valve type : <b>DV</b>	20	25~150
25		25~200	
32			
40		25~300	

Remarks: 1. Cylinders with sensor switches are also available.  
 2. Figures in the parentheses ( ) are for tandem and dual types.

**ACTUATORS** Catalog No.(BK-UC003)



## ■ Made to Order Slim Cylinders

Basic model	Diameter mm	Stroke mm	Port size Rc
Double acting with scraper type : <b>DAY</b>	20	20~150	1/8
Double acting with wrench flats type : <b>DA-H</b>	25	25~200	
Double acting SUS specification type : <b>SUS-DA</b>	32		
Double acting pivot with bushing type : <b>DA-8B</b>	40	25~300	
Double acting heat resistant block type : <b>DABF</b> Double acting low speed block type : <b>DABN</b>	16	15~100	1/8
	20	25~150	
	25	25~200	
	32		
	40	25~300	1/4
	50		
	63		

Remark: Cylinders with sensor switches are also available.

**ACTUATORS** Catalog No.(BK-UC003)



ACTUATORS



# DYNA CYLINDERS

- Rich product range and mounting types conform to ISO standards, to become standard on tie rod type medium-size cylinders.
- A wider product range covers from non-rotating to with-brake type, at a range from  $\phi 32$  to  $\phi 125$ .
- New cushion needles and floating packing make the series even more easier to use.

Basic model	Diameter mm	Stroke mm	Port size Rc
Double acting type : <b>DDA</b> Double acting double rod type : <b>DDAD</b>	32	50~700(500)* <sup>1</sup>	1/8
	40	50~800	1/4
	50		3/8
	63	50~1000(800)* <sup>1</sup>	
	80	50~1000	1/2
	100		
	125		
Low hydraulic double acting type : <b>DDAH</b>	32	50~700	1/8
	40	50~800	1/4
	50		3/8
	63	50~1000	
	80		1/2
	100		
Non-rotating double acting type : <b>DDAL</b> Non-rotating double acting double rod type : <b>DDADL</b> Double acting tandem type : <b>DDAT</b>	40	50(25)* <sup>2</sup> ~500(650)* <sup>2</sup>	1/4
	50		3/8
	63		
	80		1/2
	100		
Double acting dual stroke type : <b>DDAW</b>	40	50~450	1/4
	50	50~500	3/8
	63		
	80	50~700	1/2
	100		
Double acting with pull side stroke adjusting type : <b>DDAP</b> Double acting with push side stroke adjusting type : <b>DDAE</b>	40	50~700	1/4
	50		3/8
	63		
	80	50~900	1/2
	100		
Val Pack : <b>DDV</b> End keep : <b>DDAK</b> Double acting type brake cylinder : <b>DDAR</b>	40	50~800	1/4(3/8)* <sup>3</sup>
	50	50~1000	3/8
	63		
	80		1/2(3/8)* <sup>3</sup>
	100		

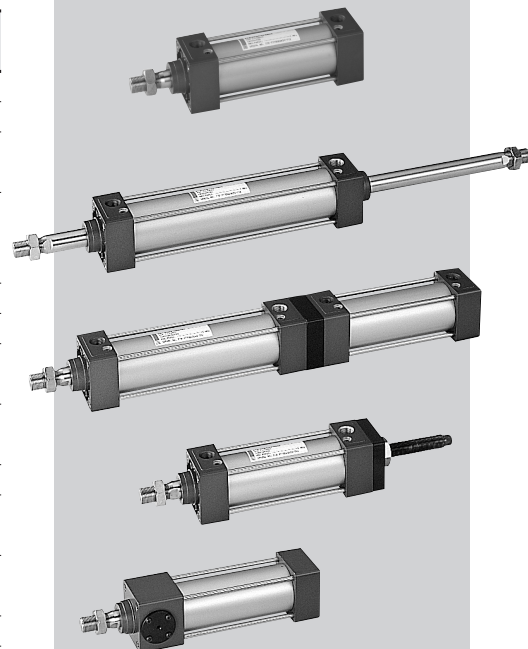
Remark: Cylinders with sensor switches are also available.

※1: Figures in parentheses ( ) are for the double acting, double rod type.

※2: Figures in parentheses ( ) are for the tandem type.

※3: Figures in parentheses ( ) are for the Val Pack connection port size.

**ACTUATORS** Catalog No.(BK-UC003)



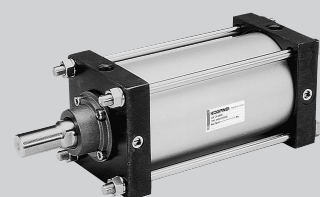
# SD CYLINDERS

- Achieves complete non-lubrication for all cylinders.
- Product range achieves like a medium-sized cylinder range level, such as standard type, heavy-duty rods and double rods.

Basic model	Diameter mm	Stroke mm	Port size Rc
Double acting type : <b>KA□SD</b>	125	0~1000	1/2
Heavy duty rod : <b>KA□SDZ</b>	140		
Double rod : <b>KA□SDD</b>	160		
Low hydraulic : <b>KA□SDH</b>	180		
Push-side stroke adjusting type : <b>KA□SDP</b>	200	0~990	3/4
Pull-side stroke adjusting type : <b>KA□SDE</b>			
Tandem type : <b>KA□SDT</b>			
Dual type : <b>KA□SDW</b>			

Remark: Cylinders with sensor switches are also available.

**ACTUATORS** Catalog No.(BK-UC003)



ACTUATORS

NEW

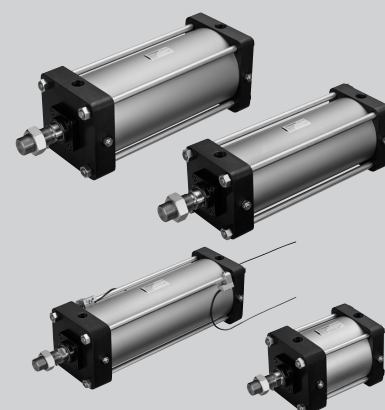
# KSD CYLINDERS

- JIS standards cylinders with high power. Installation dimensions comply with JIS standards.
- Strokes up to 2000mm supported. Compatible with Class 2 pressure vessels.

Basic model	Diameter mm	Stroke mm	Port size Rc
Double acting type (Aluminum Tube Type) : <b>KBSD</b>	125	1~2000	1/2
Tandem type (Aluminum Tube Type) : <b>KBSDT</b>	140		3/4
Dual Stroke type (Aluminum Tube Type) : <b>KBSDW</b>	160		
Pull Side Stroke Adjustment type (Aluminum Tube Type) : <b>KBSDE</b>	180		
Double-rod type (Aluminum Tube Type) : <b>KBSDD</b>	125	1~1200	1/2
Push Side Stroke Adjustment type (Aluminum Tube Type) : <b>KBSDP</b>	140		3/4
	160		
Double acting type (Steel Tube Type) : <b>KCS</b>	125	1~2000	1/2
	140		3/4
	160		
Tandem type (Steel Tube Type) : <b>KCS</b>	180		
	200		
Dual Stroke type (Steel Tube Type) : <b>KCS</b>	250		1
Double-rod type (Steel Tube Type) : <b>KCS</b>	125	1~1200	1/2
	140		3/4
	160		
Push Side Stroke Adjustment type (Steel Tube Type) : <b>KCS</b>	180		
	200		
	250		1
Pull Side Stroke Adjustment type (Steel Tube Type) : <b>KCS</b>	125	1~2000	1/2
	140		3/4
Low Hydraulic type (Aluminum Tube Type) : <b>KBS</b>	160		
Low Hydraulic type (Steel Tube Type) : <b>KCS</b>	180	1~2000	3/4
	200		1
	250		

Remark: Cylinders with sensor switches are also available.

Catalog No.(BK-C0033) KSD Cylinders



# LOW SPEED CYLINDERS

- Achieves low speed, smooth, and stable operation.
- Best suited for low speed transfer of easy to be damaged workpieces.
- External dimensions of all cylinders are the same as standard products.

## ■ (Low Speed Cylinders) Pen Cylinders

Basic model	Diameter mm	Stroke mm	Operating speed range mm/s
Double acting type : <b>T-PBDA</b>	6	5~60	1~200
	10	5~150	
	16	5~200	

## ■ (Low Speed Cylinders) Jig Cylinders C Series

Basic model	Diameter mm	Stroke mm	Operating speed range mm/s
Double acting type : <b>T-CDA</b>	12	5~30	1~200
	16		
	20	5~50	
	25		
	32	5~100	
	40		
	50	10~100	
	63		

## ■ (Low Speed Cylinders) Multi Mount Cylinders

Basic model	Diameter mm	Stroke mm	Operating speed range mm/s
Double acting type : <b>T-BDA</b>	6	5~30	1~200
	10		
	16		

## ■ (Low Speed Cylinders) Slim Cylinders Series

Basic model	Diameter mm	Stroke mm	Operating speed range mm/s
Double acting type : <b>T-DA</b>	16	15~100	1~200
	20	25~150	
	25	25~200	
	32		
	40	25~300	
	50		
	63		

## ■ (Low Speed Cylinders) Twin Rod Cylinders

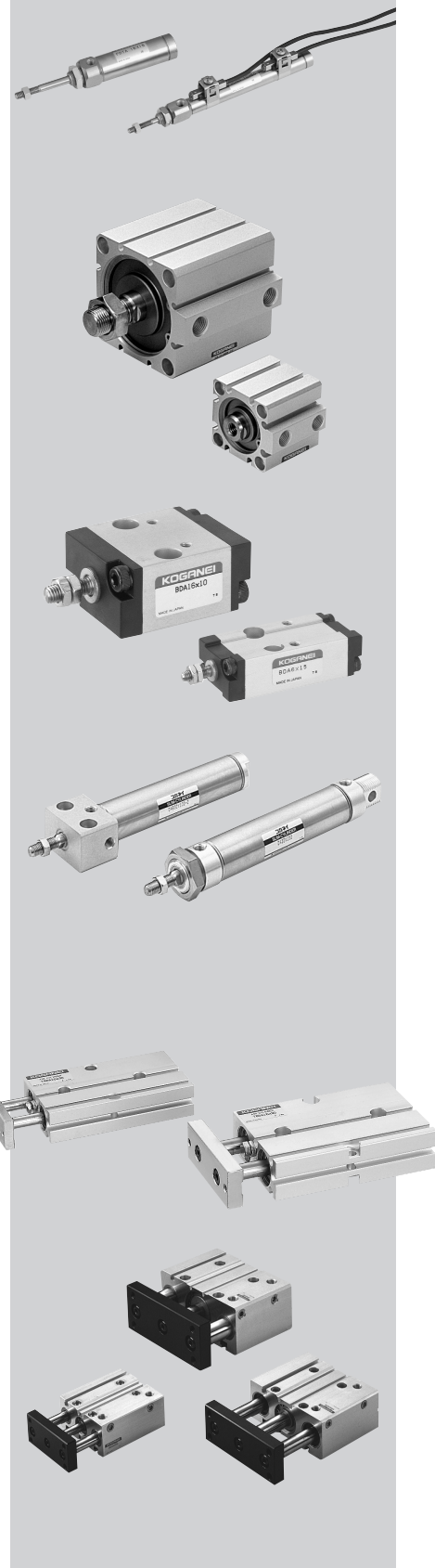
Basic model	Diameter mm	Stroke mm	Operating speed range mm/s
Double acting type : <b>T-TDA</b>	6	10~50	1~200
Double acting type : <b>T-TBDA</b>	10	10~70	
	16	10~100	
	20		
	25		
	32		

## ■ (Low Speed Cylinders) Jig Cylinders with Guides

Basic model	Diameter mm	Stroke mm	Operating speed range mm/s
Double acting type : <b>T-SGDA</b>	6	5~20	5~100
	8		
	10		
Double acting type : <b>T-SGDAQ</b>	12	10~100	5~200
	16		
	20	10~200	
	25		
	32		
	40		
	50		
	63		

Remark: Cylinders with sensor switches are also available for each of the cylinders.

**ACTUATORS** Catalog No.(BK-UC003)





Inch size available  
with "H" prefix

## ROTARY ACTUATORS PISTON TYPE RAP Series

- Block body emphasizes space efficiency, with compact body size and for one side piping.
- Double-rack method emphasizes non-backlash and non-leaking.

Operating type	Model	Effective torque N · m	Swing angle	Port size
Double acting piston type	(H)RAP1	0.078	90°, 100°, 180°, 190°, 360°	M5×0.8
	(H)RAP5	0.373		Rc1/8
	(H)RAP10	0.883		
	(H)RAP20	1.863		

Remarks: 1. The effective torque shows the values when air pressure is 0.5 MPa.  
2. Rotary actuators with sensor switches are also available.

**ACTUATORS** Catalog No.(BK-UC003)



ACTUATORS

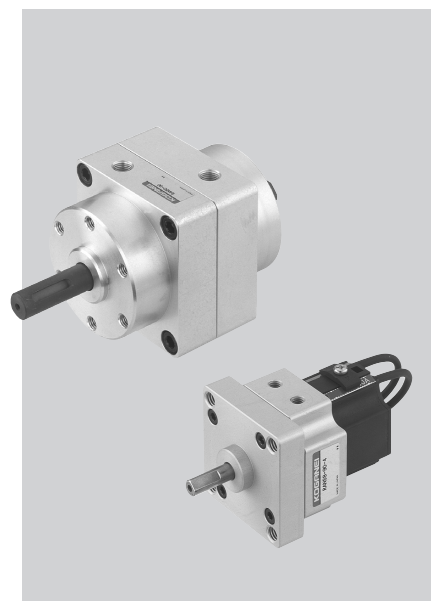
## ROTARY ACTUATORS VANE TYPE RAN Series

- Compact, lightweight, and easy installation, helps to make devices more compact.
- Few air leaks and long life with non-lubricating type.

Operating type	Model	Effective torque N · m	Swing angle	Port size
Double acting vane type	RAN1	0.118	90° 100° 180° 190° 275°	M5×0.8
	RAN3	0.294		Rc1/8
	RAN8	0.785		
	RAN20	1.961		
	RAN50	5.197		M5×0.8
	RANS1	0.118		
	RANS3	0.294		
	RANS8	0.785		
	RANS20	1.961		Rc1/8
	RANS50	5.197		

Remarks: 1. The effective torque shows the values when air pressure is 0.5 MPa.  
2. Rotary actuators with sensor switches are also available.

**ACTUATORS** Catalog No.(BK-UC003)



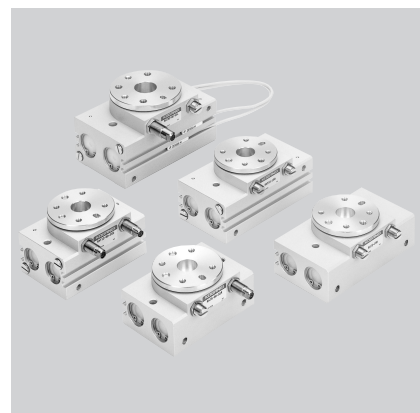
## ROTARY ACTUATORS PISTON TYPE RAT Series

- Lightweight and compact. High precision by using bearing.
- Workpieces are easily mounted on the table.

Operating type	Model	Effective torque N · m	Swing angle	Port size
Double acting single piston type	RAT5	0.42	90°, 180°	M5×0.8
Double acting double piston type	RAT10	0.89		
	RAT30	2.87		

Remark: Rotary actuators with sensor switches, and with shock absorbers, are also available.

**ACTUATORS** Catalog No.(BK-UC003)

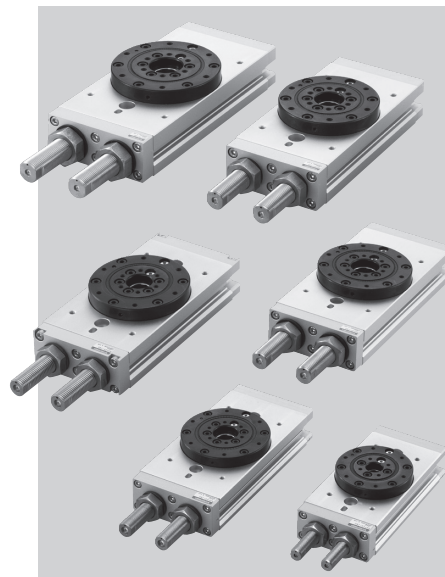


## ROTARY ACTUATORS PISTON TYPE FLAT ROTARY ACTUATORS

- Uses cross roller bearings to achieve high precision and rigidity, and low center of gravity.
- Workpiece can be mounted directly on bearing.
- Thin construction for installation in narrow spaces.
- Equipped with pressure-resistant shock absorbers.

Operating type	Model	Effective torque N · m	Swing angle	Port size
Double acting double piston type	<b>RAF10</b>	0.96	180°	M5×0.8
	<b>RAF20</b>	2.13		
	<b>RAF25</b>	2.34		
	<b>RAF30</b>	3.57		Rc1/8
	<b>RAF50</b>	4.70		
	<b>RAF70</b>	6.65		

Remark: Rotary actuators with sensor switches, and with shock absorbers, are also available.  
Catalog No.(BK-C0028) Rotary Actuators Piston Type Flat Rotary Actuators



## ROTARY ACTUATORS VANE TYPE RAG Series

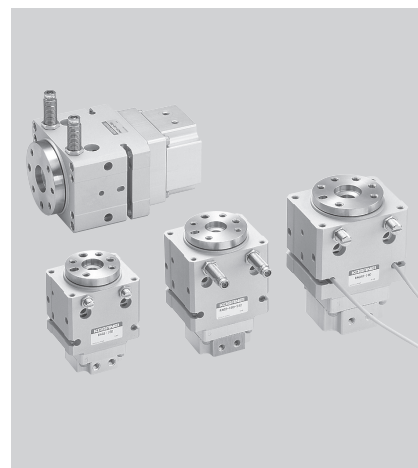
- Uses angular bearings (except for RAG1), to achieve high precision and high rigidity.
- Easy-to-use table type facilitates workpiece mounting.
- Compatible with embedded type sensor switches.

Operating type	Model	Effective torque N · m	Swing angle	Port size
Double acting single vane type	<b>RAG□1</b>	0.118	90°, 180°	M5×0.8
	<b>RAG□3</b>	0.294		
	<b>RAG□8</b>	0.785		
	<b>RAG□20</b>	1.96		

Remark: Rotary actuators with sensor switches, and with shock absorbers, are also available.

**ACTUATORS** Catalog No.(BK-UC003)

Catalog No.(BKC0017) Rotary Actuators Vane Type RAG Series





# AIR HANDS Series

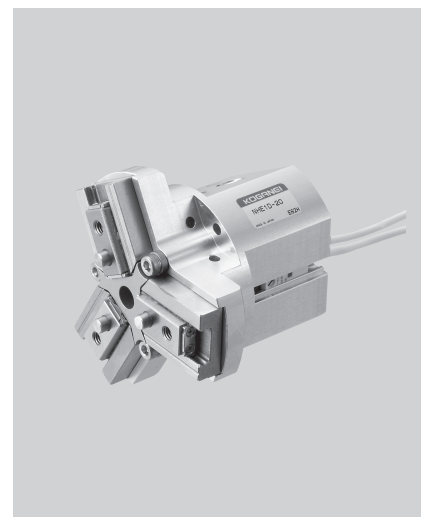
- Suitable for chucking and handling.
- Works in combination with cylinder to ease robot arm design.
- Responds to all kinds of needs, with 180° open specifications, long stroke specifications, cross roller bearing specifications, linear guide specifications, etc.

## Three-finger Hand Linear Guide Specification

Basic model	Cylinder bore size mm	Port size
Double acting type : <b>NHE1D</b>	16	M5×0.8
	20	
	25	

Remark: Air hands with sensor switches are also available.

**ACTUATORS** Catalog No.(BK-UC003)

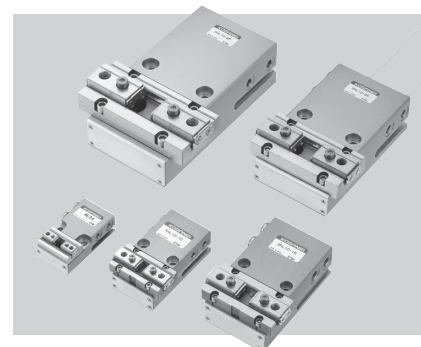


ACTUATORS

## Parallel Type Linear Guide Specification Air Hands L Hands

Basic model	Cylinder bore size mm	Port size
Double acting type : <b>NHL1D</b>	8	M3×0.5
	10	
	16	M5×0.8
	20	
	25	

Remark: Air hands with sensor switches are also available.



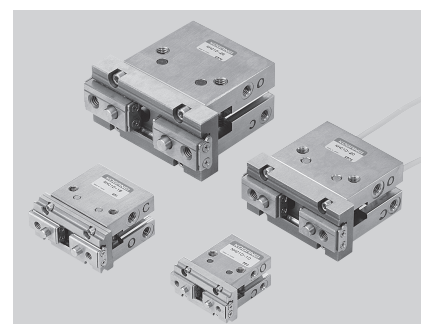
## Parallel Type Linear Guide Specification

Basic model	Cylinder bore size mm	Port size
Double acting type : <b>NHC1D</b>	10	M3×0.5
	16	M5×0.8
	20	
	25	

Remark: Air hands with sensor switches are also available.

Catalog No.(BKC0021) High-Rigidity, High-Precision Air Hand NHC1 Series

**ACTUATORS** Catalog No.(BK-UC003)

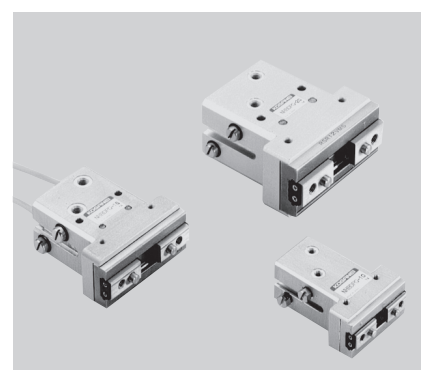


## ParallelType Linear Guide Specification

Basic model	Cylinder bore size mm	Port size
Double acting type : <b>NHBDPG</b>	8	M3×0.5
	10	
	16	M5×0.8
	20	
	32	
Single acting normally open type : <b>NHBRPG</b>	8	M3×0.5
	10	
	16	M5×0.8
	20	

Remark: Air hands with sensor switches are also available.

**ACTUATORS** Catalog No.(BK-UC003)



### Air Hands for Clean Systems Parallel Type Linear Guide Specification

Basic model	Cylinder bore size mm	Port size
Double acting type : <b>CS-NHBDPG</b>	8	M3×0.5
	10	
	16	M5×0.8
	20	

Remark: Air hands with sensor switches are also available.

**ACTUATORS** Catalog No.(BK-UC003)

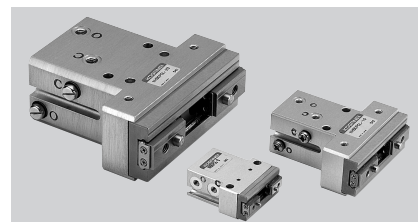


### Parallel Type Linear Guide Specification Long Stroke

Basic model	Cylinder bore size mm	Port size
Double acting type : <b>NHBDPGL</b>	8	M3×0.5
	10	
	16	M5×0.8
	20	

Remark: Air hands with sensor switches are also available.

**ACTUATORS** Catalog No.(BK-UC003)

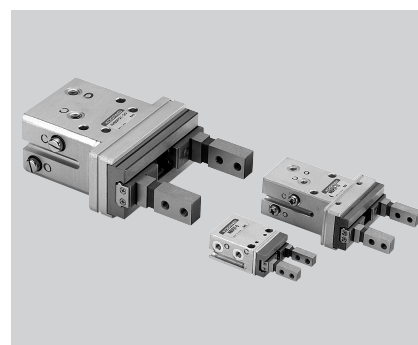


### Parallel Type Linear Guide Specification with Fingers

Basic model	Cylinder bore size mm	Port size
Double acting type : <b>NHBDPGY</b>	8	M3×0.5
	10	
	16	M5×0.8
	20	
Single acting normally open type : <b>NHBRPGY</b>	8	M3×0.5
	10	
	16	M5×0.8
	20	

Remark: Air hands with sensor switches are also available.

**ACTUATORS** Catalog No.(BK-UC003)

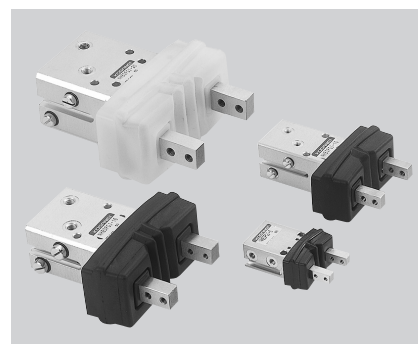


### Parallel Type Linear Guide Specification with Rubber Glove

Basic model	Cylinder bore size mm	Port size
Double acting type : <b>NHBDPGJ</b>	8	M3×0.5
	10	
	16	M5×0.8
	20	
Single acting normally open type : <b>NHBRPGJ</b>	8	M3×0.5
	10	
	16	M5×0.8
	20	

Remark: Air hands with sensor switches are also available.

**ACTUATORS** Catalog No.(BK-UC003)

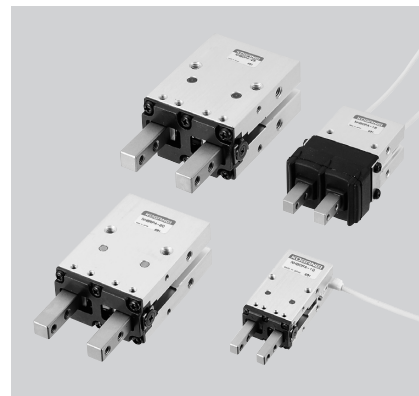


### Parallel Type Cross Roller Bearing Specification

Basic model	Cylinder bore size mm	Port size
Double acting type : <b>NHBDPA</b>	6	M3×0.5
	10	
	16	M5×0.8
	20	
	25	
Single acting normally open type : <b>NHBRPA</b>	6	M3×0.5
	10	
	16	M5×0.8
	20	
	25	

Remark: Air hands with sensor switches are also available.

**ACTUATORS** Catalog No.(BK-UC003)



### Parallel Type (Parallel Operation Type)

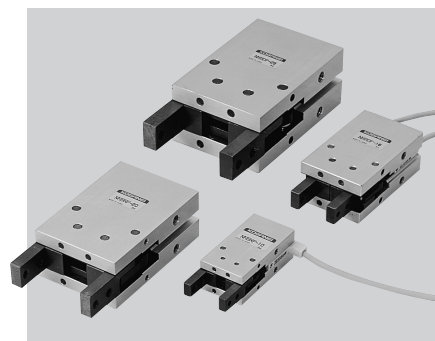


Inch size available with "H" prefix

Basic model	Cylinder bore size mm	Port size
Double acting type : <b>(H)NHBDP</b>	10	M3×0.5
	16	M5×0.8
	20	
	25	
Single acting normally open type : <b>(H)NHBRP</b>	10	M3×0.5
	16	M5×0.8
	20	
	25	

Remark: Air hands with sensor switches are also available.

**ACTUATORS** Catalog No.(BK-UC003)



### Swing Type (Angular Operation)

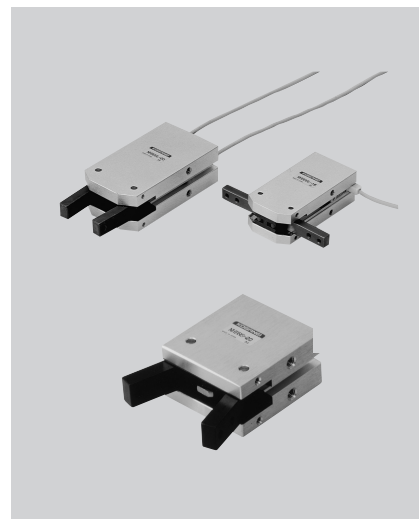


Inch size available with "H" prefix

Basic model	Cylinder bore size mm	Port size
Double acting type : <b>(H)NH BDS</b>	8	M3×0.5
	10	
	16	M5×0.8
	20	
	25	
Double acting type 180° open specification : <b>NH BDSL</b>	12	M3×0.5
	16	M5×0.8
	20	
	25	
Single acting normally open type : <b>(H)NH BRS</b>	8	M3×0.5
	10	
	16	M5×0.8
	20	
	25	

Remark: Air hands with sensor switches are also available.

**ACTUATORS** Catalog No.(BK-UC003)



### Swing Type High Precision 180° Open Specification

Basic model	Cylinder bore size mm	Port size
Double acting type : <b>NH BDSLG</b>	12	M3×0.5
	16	M5×0.8
	20	

Remark: Air hands with sensor switches are also available.

**ACTUATORS** Catalog No.(BK-UC003)

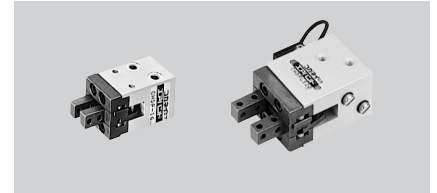


### ■ Parallel Type (Parallel Operation Type)

Basic model	Cylinder bore size mm	Port size
Double acting type : <b>CHDP</b> Double acting long stroke type : <b>CHDPL</b>	16	M5×0.8
	20	
	32	

Remark: Air hands with sensor switches are also available.

**ACTUATORS** Catalog No.(BK-UC003)

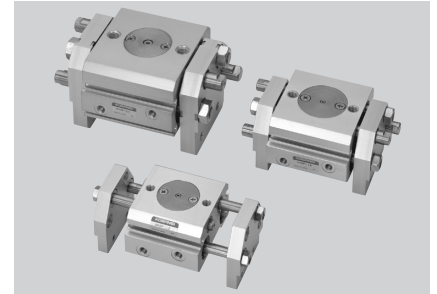


### ■ Wide Type Air Hands (Parallel Rack Type)

Basic model	Cylinder bore size mm	Port size
Double acting type : <b>WHDP</b>	12	M5×0.8
	16	
	20	
	25	

Remark: Air hands with sensor switches are also available.

**ACTUATORS** Catalog No.(BK-UC003)

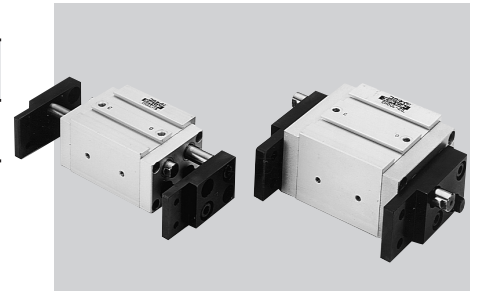


### ■ Parallel Rack Type

Basic model	Cylinder bore size mm	Port size
Double acting long stroke specification type : <b>CHDUL</b>	16	M5×0.8
	25	

Remark: Air hands with sensor switches are also available.

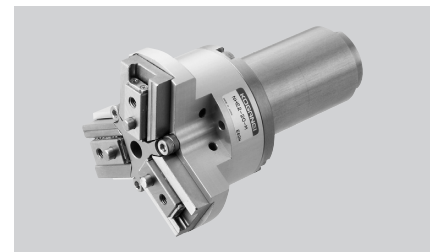
**ACTUATORS** Catalog No.(BKUC001)



### ■ Three-finger Mechanical Hands Linear Guide Specification

Basic model	Nominal bore mm
Normally closed single acting type : <b>NHE2</b>	16
	20
	25

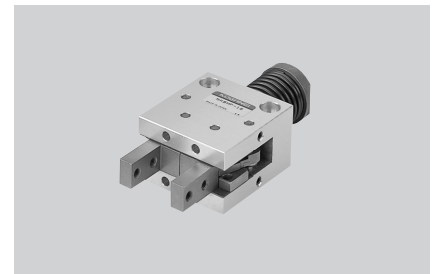
**ACTUATORS** Catalog No.(BK-UC003)



### ■ Parallel Type Mechanical Hands

Basic model	Nominal bore mm
Normally open single acting type : <b>NHBMRP</b>	10
	16
	20
Normally closed single acting type : <b>NHBMP</b>	10
	16
	20

**ACTUATORS** Catalog No.(BK-UC003)



### ■ Parallel Type Mechanical Hands with Linear Guides

Basic model	Nominal bore mm
Normally closed single acting type : <b>NHBMPG</b>	8
	10
	16
	20

**ACTUATORS** Catalog No.(BK-UC003)



## LINEAR MAGNETIC SENSOR CONTROLLER

- Enables linear sensing on cylinder positions in specified range.
- Analog output (1-5V DC) equipped as standard. This allows connection with a control device.
- Offers 4-point switch output.
- Sensor head is same shape as ZE-type sensor switch.

Model	Mountable actuator	Output method
ZL1	AIR HAND NHC1 Series	<ul style="list-style-type: none"> <li>● NPN open collector</li> <li>● Analog output voltage(1-5V DC)</li> </ul>
	L HAND	
	AIR HANDS NHB SERIES PARALLEL Type	
	AIR HANDS NHB SERIES SWING Type	
	AIR HANDS NHB Series 180° Open Specification	
	FLAT Type AIR HANDS	

Note: For details of the mountable actuator, see the respective product catalogs.



ACTUATORS

## STROKE SENSORS

- Can measure stop position of air cylinders by 1/100 mm unit.
- Determines workpiece tolerance pass/fail with combination of counter, and manages history by retrieving data into PLC.
- Resolution: 0.0025 mm; sensor accuracy:  $\pm 0.015$  mm (when measuring 10 mm)
- Can be mounted with Mini Guide Sliders and Rod Sliders.

Model	Detection method	Signal output	Mountable actuator
ZMA1□	Optical linear encoder	Open collector output	Mini Guide Sliders Rod Sliders







Inch size available  
with "H" prefix

## CYLINDER JOINTS

- Eases the work of shaft centering and parallelism alignment between cylinders and workpieces, greatly reducing installation time.
- A simple appearance and easy handling with a dust seal.

Model	Applicable cylinder rod screw size	Allowable eccentricity mm	Angle variation
(H)CJ-3×0.5	M3×0.5	0.5	±5°
(H)CJ-4×0.7	M4×0.7		
(H)CJ-5×0.8	M5×0.8		
(H)CJ-6×1	M6×1		
(H)CJ□-8×1-□	M8×1		
(H)CJ□-10×1.25-□	M10×1.25	0.75	
(H)CJ□-12×1.25-□	M12×1.25	1.0	
(H)CJ□-14×1.5-□	M14×1.5		
(H)CJ□-18×1.5-□	M18×1.5	1.25	
(H)CJ□-22×1.5-□	M22×1.5	2.0	
(H)CJ□-26×1.5-□	M26×1.5	2.5	

ACTUATORS Catalog No.(BK-UC003)



Inch size available  
with "H" prefix

## CYLINDER ROD ENDS

- Compatible with 11 different types, by thread size. Can correspond to air cylinders of  $\phi 6 \sim \phi 100$ .
- Non-lubricating type with a fluororesin liner for maintenance-free operation.

Model	Thread size	Allowable static radial force N
(H)CRE-3×0.5	M3×0.5	1863.3
(H)CRE-4×0.7	M4×0.7	3334.3
(H)CRE-5×0.8	M5×0.8	5785.9
(H)CRE-6×1	M6×1	7355.0
(H)CRE-8×1	M8×1	14121.6
(H)CRE-10×1.25	M10×1.25	19711.4
(H)CRE-12×1.25	M12×1.25	23437.9
(H)CRE-14×1.5	M14×1.5	25497.3
(H)CRE-18×1.5	M18×1.5	31283.2
(H)CRE-22×1.5	M22×1.5	48641.0
(H)CRE-26×1.5	M26×1.5	50504.3

ACTUATORS Catalog No.(BK-UC003)





# KOGANEI PNEUMATIC COMPONENTS VALVES

Line up



Inch size available

Refer to previous catalog

**VALVES**

VALVES  
GENERAL CATALOG  
Catalog No.BKUV002

## SOLENOID VALVES G010 Series

- A range includes a low current type with achieving power consumption of 0.5W, and a large flow type for high-speed response.
- Positive pressure and normally open (NO) specifications now available to offer the best choices for varied control needs.

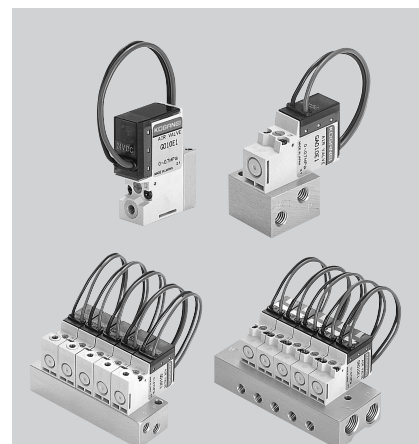


Inch size available  
with "H" prefix

- Direct acting type
- Port size M3x0.5, M5x0.8

Model	Position	Ports	Effective area [Cv value] mm²	Solenoid
(H)G010E1	2	2 · 3	0.2 [0.011]	Single solenoid
(H)G010LE1			0.1 [0.006]	Low current single solenoid
(H)G010HE1			0.45 [0.025]	Single solenoid

**VALVES** Catalog No.(BKUV002)



## SOLENOID VALVES 010 Series

- 2-, 3-port small solenoid valves with width of 10 mm and low power consumption of 1.7W.
- Best suited for the control of  $\phi 2.5 \sim \phi 10$  single acting cylinder operations and electropneumatic relays.

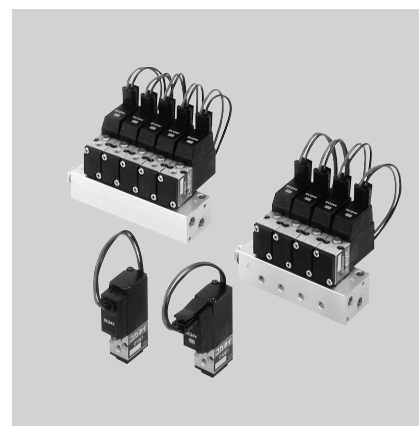


Inch size available  
with "H" prefix

- 010E1: Direct acting type, 010-4E1: Internal pilot type
- Port size M3x0.5

Model	Position	Ports	Effective area [Cv value] mm²	Solenoid
(H)010E1	2	2 · 3	0.2 [0.01]	Single solenoid
(H)010-4E1		5		

**VALVES** Catalog No.(BKUV002)



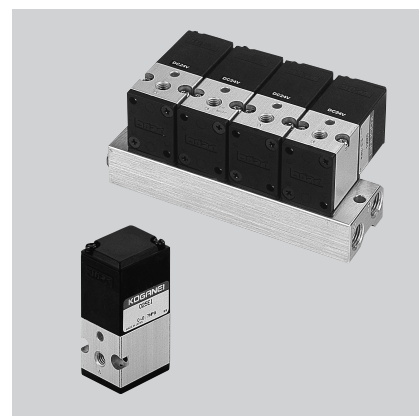
## SOLENOID VALVES 025 Series

- Direct acting valves with low power consumption of 0.5W. Achieve direct drive by IC using a solenoid equipped with a surge suppressor.
- Contribute to the down-sizing of control systems and power savings.

- Direct acting type
- Port size M5x0.8

Model	Position	Ports	Effective area [Cv value] mm²	Solenoid
025E1	2	2 · 3	0.5 [0.03]	Single solenoid

**VALVES** Catalog No.(BKUV002)





Inch size available  
with "H" prefix

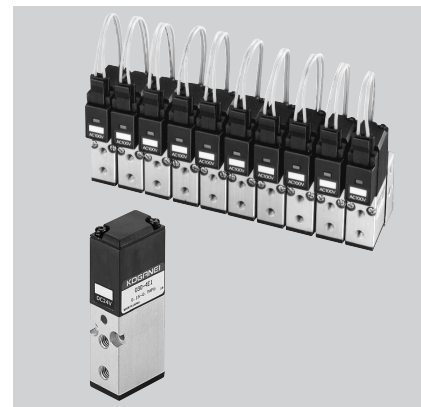
## SOLENOID VALVES 030 Series

- Suitable for control of every small actuator operation such as  $\phi 6 \sim \phi 20$  double/single acting cylinders.
- Option system provides easy installation and maintenance and makes the valves easy to use.

- 030E1: Direct acting type, 030-4E1: Internal pilot type
- Port size P, A M5x0.8

Model	Position	Ports	Effective area [Cv value] mm <sup>2</sup>	Solenoid
(H)030E1	2	2 · 3	0.6 [0.04]	Single solenoid
(H)030-4E1		5		

**VALVES** Catalog No.(BKUV002)



Inch size available  
with "H" prefix

## SOLENOID VALVES EA, EB Series

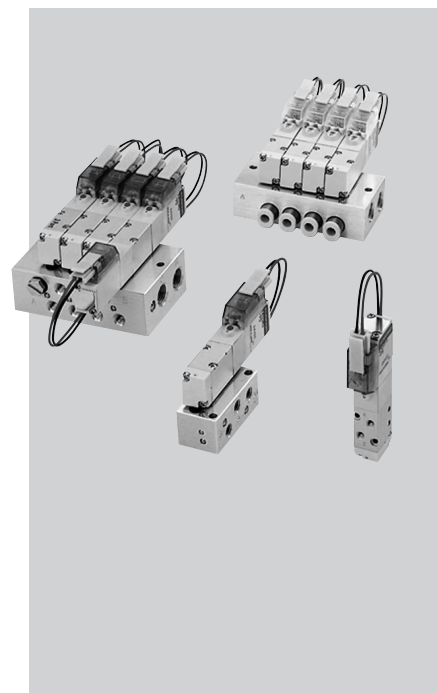
- Valve width of 10 mm, and low power consumption of 0.55W (standard type) and 0.15W (low current type).
- Quick response type also available, meeting varied needs and requirements of professional controls.
- Best suited for pilot-operated valves, and for controlling the operation of cylinders with bore up to  $\phi 25$  mm.

- Internal pilot type
- Port size M3x0.5, M5x0.8

Model	Position	Ports	Effective area [Cv value] mm²	Solenoid
(H)EA10□F1,A1	2	2	1.3 [0.07]	Single solenoid
(H)EA10□F2,A2		3		
(H)EA10□F3,A3				
(H)EA10□F4,A4				
(H)EA10□F5,A5		5		Double solenoid
(H)EA10□F6,A6				
(H)EB10□F1,A1	2	2	1.3 [0.07]	Single solenoid
(H)EB10□F2,A2		3		
(H)EB10□F3,A3				
(H)EB10□F4,A4				

Catalog No.(BKV0009) Solenoid Valves EA,EB,JC,JE Series

**VALVES** Catalog No.(BKUV002)



Inch size available  
with "H" prefix

## SOLENOID VALVES 050 Series

- 2-,3-,5-port poppet type solenoid valves of high reliability and durability in controlling of  $\phi 6 \sim \phi 25$  cylinder operation.
- By adopting direct action, these valves can easily control low pressure actuators.

- Direct acting type
- Port size M5x0.8, Rc1/8

Model	Position	Ports	Effective area [Cv value] mm <sup>2</sup>	Solenoid
(H)050E1	2	2 · 3	1.5 [0.08]	Single solenoid
(H)050-4E1		5	1.2 [0.07]	
(H)050-4E2		2 · 3	1.5 [0.08]	Double solenoid
(H)050LE1		5	1.2 [0.07]	

**VALVES** Catalog No.(BKUV002)



## SOLENOID VALVES 100 Series

- 2-, 3-, 5-port solenoid valves most suitable for control of  $\phi 20 \sim \phi 50$  cylinder operation and low pressure actuators.
- By adopting a pressure balance poppet system, these valves offer various functions such as selector valves and divider valves.

- Direct acting type
- Port size Rc1/8

Model	Position	Ports	Effective area (Cv value) mm <sup>2</sup>	Solenoid
100E1	2	2 · 3	5.0 [0.28]	Single solenoid
100-4E1		5	3.4 [0.19]	
100-4E2			3.0 [0.17]	Double solenoid

VALVES Catalog No.(BKUV002)



## SOLENOID VALVES 110 Series

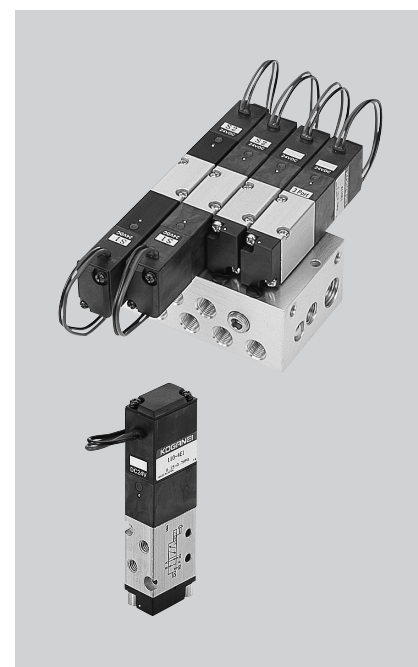
- Abundant series configuration allowing for any application, including control of  $\phi 20 \sim \phi 40$  cylinder operations.
- Options provide easy installation and maintenance and make the valves easy to use.

IMPERIAL INCH Inch size available with "H" prefix

- Pilot type
- Port size M5x0.8

Model	Position	Ports	Effective area (Cv value) mm <sup>2</sup>	Solenoid
(H)111E1	2	2 · 3	4.2 [0.23]	Single solenoid
(H)110-4E1		5		Double solenoid
(H)110-4E2			3.8 [0.21]	
(H)113-4E2	3			
(H)112E1	2	2 · 3	4.2 [0.23]	External piloted single solenoid
(H)110-4KE2		5	3.8 [0.21]	Twin solenoid
(H)113-4KE2	3			
(H)A110-4ME2	2	5	4.0 [0.22]	Tandem solenoid
(H)A113-4ME2	3		3.6 [0.2]	

VALVES Catalog No.(BKUV002)



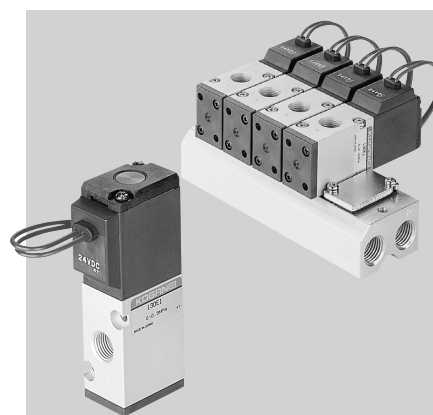
## SOLENOID VALVES 130 Series

- Offers a 19 mm valve width, selector valves, divider valves, and many other functions, for various application.
- Direct acting, new type poppet configuration provides reliable operations, to achieve reducing maintenance costs.

- Direct acting type
- Port size Rc1/8

Model	Position	Ports	Effective area (Cv value) mm <sup>2</sup>	Solenoid
130E1	2	2 · 3	4.5 [0.25]	Single solenoid
130LE1			2.3 [0.13]	Low current single solenoid

VALVES Catalog No.(BKUV001)





Inch size available  
with "H" prefix

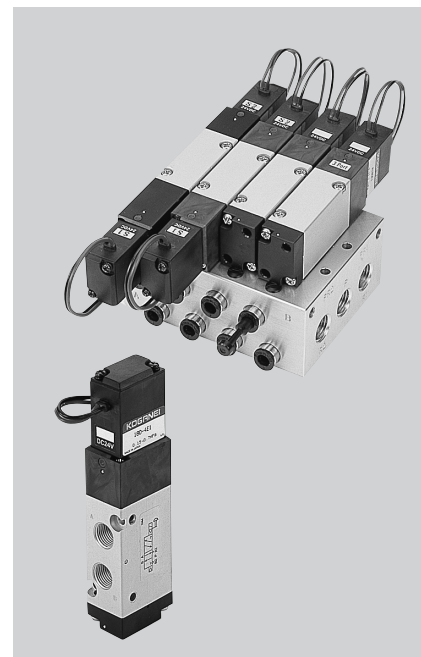
## SOLENOID VALVES 180 Series

- Abundant series configuration allowing for any application, including control of  $\phi 20 \sim \phi 80$  cylinder operations.
- Options provide easy installation and maintenance and make the valves easy to use.

- Pilot type
- Port size Rc 1/8

Model	Position	Ports	Effective area [Cv value] mm <sup>2</sup>	Solenoid
(H)181E1	2	2 · 3	10.2 [0.57]	Single solenoid
(H)180-4E1		5		Double solenoid
(H)180-4E2			3	
(H)183-4E2				
(H)182E1	2	2 · 3	10.2 [0.57]	External piloted single solenoid
(H)180-4KE2	3	5	9.0 [0.50]	Twin solenoid
(H)183-4KE2				
(H)A180-4ME2	2	5	8.2 [0.46]	Tandem solenoid
(H)A183-4ME2	3			

**VALVES** Catalog No.(BKUV002)



VALVES



Inch size available  
with "H" prefix

## SOLENOID VALVES 200 Series

- 2-, 3-, 5-port solenoid valves most suitable for control of  $\phi 32 \sim \phi 80$  cylinder operations and for low pressure actuators.
- By adopting a pressure balance poppet system, these valves offer various functions such as selector valves and divider valves.

- Direct acting type
- Port size Rc1/4

Model	Position	Ports	Effective area (Cv value) mm <sup>2</sup>	Solenoid
(H)200E1	2	2・3	8.5 [0.47]	Single solenoid
(H)200-4E1		5	7.5 [0.42]	Double solenoid
(H)200-4E2	3		6.5 [0.36]	
(H)203-4E2				

**VALVES** Catalog No.(BKUV002)



Inch size available  
with "H" prefix

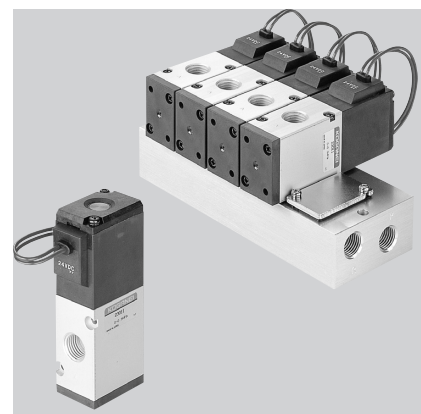
## SOLENOID VALVES 230 Series

- Offers a 24 mm valve width, selector valves, divider valves, and many other functions, for various applications.
- Direct acting, new type poppet configuration provides reliable operations, to achieve reducing maintenance costs.

- Direct acting type
- Port size Rc1/4

Model	Position	Ports	Effective area [Cv value] mm <sup>2</sup>	Solenoid
230E1	2	2 · 3	8.0 [0.45]	Single solenoid
230LE1			4.5 [0.25]	Low current single solenoid

**VALVES** Catalog No.(BKUV001)



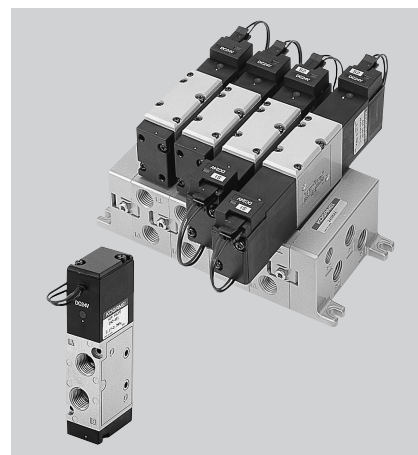
## SOLENOID VALVES 240 Series

- Best suited for control of operation of mid-sized actuators such as  $\phi 50 \sim \phi 100$  cylinders.
- This series is intended for job-site applications through the use of such features as plug-in type lead wire connections and stacking type manifolds.

- Internal pilot type
- Port size Rc 1/4

Model	Position	Ports	Effective area (Cv value) mm <sup>2</sup>	Solenoid
(H)240-4E1	2	5	16 (0.88)	Single solenoid
(H)240-4E2				Double solenoid
(H)243-4E2	3		15 (0.83)	

**VALVES** Catalog No.(BKUV002)



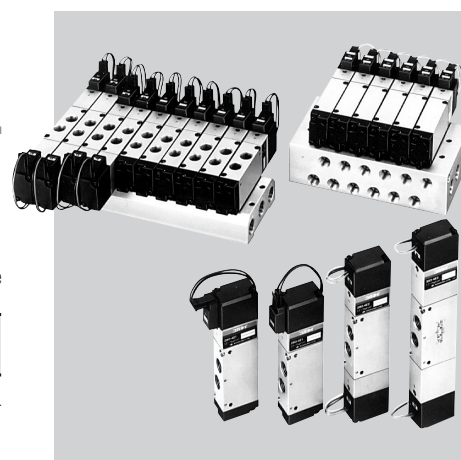
## SOLENOID VALVES 280 Series

- Best suited for control of operation of mid-sized actuators such as  $\phi 50 \sim \phi 100$  cylinders.
- This series is highly reliable and easy-to-use because of its use of a low-current solenoid.

- Internal pilot type
- Port size Rc 1/4

Model	Position	Ports	Effective area (Cv value) mm <sup>2</sup>	Solenoid
280-4E1	2	5	25 (1.39)	Single solenoid
280-4E2				Double solenoid
283-4E2	3		22 (1.22)	

**VALVES** Catalog No.(BKUV001)



## SOLENOID VALVES 300 Series

- Best suited for control of operation of mid-sized actuators such as  $\phi 50 \sim \phi 100$  cylinders.
- By combining a lip seal type main valve with a poppet type piloted valve, these valves are highly reliable even without lubrication.

- Internal pilot type
- Port size Rc 1/4, Rc 3/8

Model	Position	Ports	Effective area (Cv value) mm <sup>2</sup>	Solenoid
300-4E1	2	5	25 (1.39)	Single solenoid
300-4E2				Double solenoid
303-4E2	3		20 (1.11)	
300-4LE1	2	5	25 (1.39)	Low current single solenoid
300-4LE2				Low current double solenoid

**VALVES** Catalog No.(BKUV002)



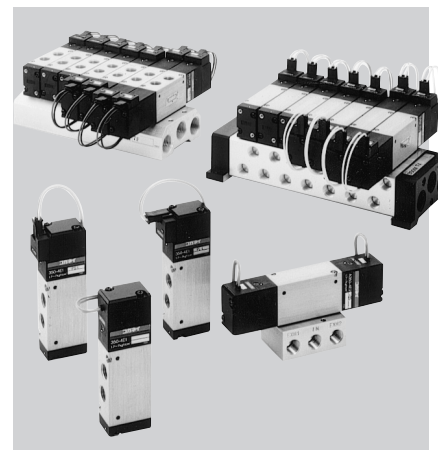


## SOLENOID VALVES 350 Series

- Best suited for control of operation of mid- and large-sized actuators such as  $\phi 50 \sim \phi 125$  cylinders.
- Options provide easy installation and maintenance and make the valves easy to use.

- Internal pilot type
- Port size Rc 1/4

Model	Position	Ports	Effective area [Cv value] mm <sup>2</sup>	Solenoid
350-4E1	2	5	26.5 [1.47]	Single solenoid
350-4E2	3		23.5 [1.31]	Double solenoid
353-4E2	3		23.5 [1.31]	

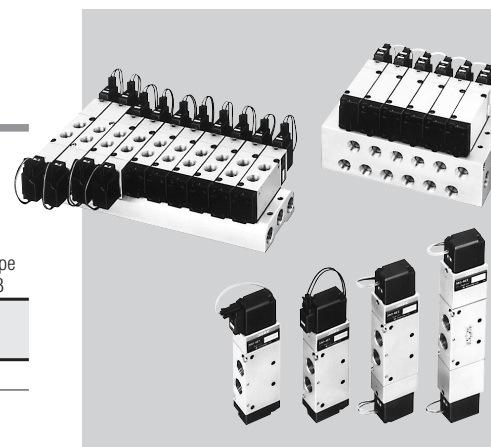


## SOLENOID VALVES 380 Series

- Best suited for control of operation of mid-sized actuators such as  $\phi 50 \sim \phi 125$  cylinders.
- By adopting a low current solenoid, these valves are highly reliable and easy to use.

- Internal pilot type
- Port size Rc 3/8

Model	Position	Ports	Effective area [Cv value] mm <sup>2</sup>	Solenoid
380-4E1	2	5	40 [2.22]	Single solenoid
380-4E2	3		35 [1.94]	Double solenoid
383-4E2	3		35 [1.94]	



**VALVES** Catalog No.(BKUV001)

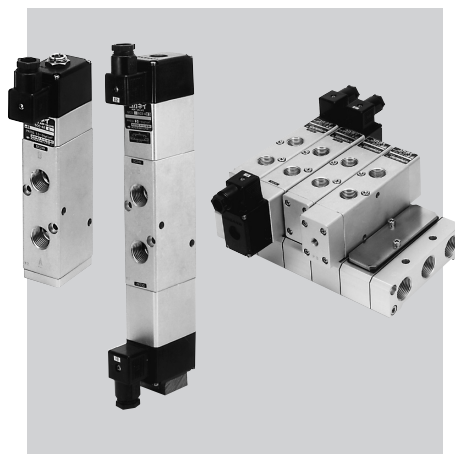
## SOLENOID VALVES 600 Series

- Best suited for control of operation of large actuators such as  $\phi 100 \sim \phi 180$  cylinders.
- By combining a lip seal type main valve with a poppet type piloted valve, these valves are highly reliable even without lubrication.

- Internal pilot type
- Port size Rc 1/2, Rc 3/8

Model	Position	Ports	Effective area [Cv value] mm <sup>2</sup>	Solenoid
600-4E1	2	5	60 [3.33]	Single solenoid
600-4E2	3		60 [3.33]	Double solenoid
603-4E2	3			

**VALVES** Catalog No.(BKUV002)



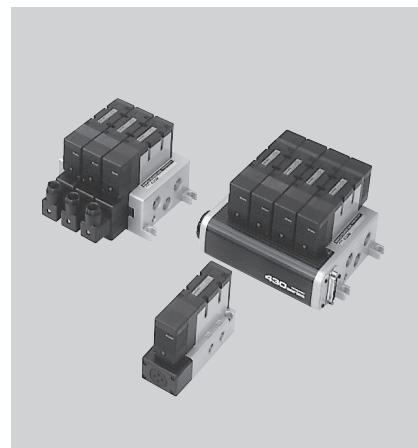
## SOLENOID VALVES 430 Series

- Corresponding to  $\phi 50 \sim \phi 125$  actuators. Stacking method makes for easy increasing of the number of stations with plug-in method.
- Multi-connector and D-sub connector are available. Separate wiring is possible on each station.

- Pilot type
- Port size Rc 1/4, Rc 3/8

Model	Position	Ports	Effective area [Cv value] mm <sup>2</sup>	Solenoid
430-4E1	2	5	40 [2.2]	Single solenoid
430-4E2				Double solenoid
433-4E2	3		35 [1.9]	

**VALVES** Catalog No.(BKUV002)



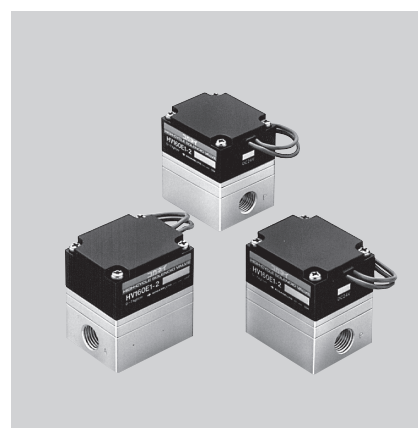
## HIGH CYCLE SOLENOID VALVE

- These valves have long service life of 500,000,000 times at a high frequency of 1500 cycles/min. and durability.
- Simple structure of poppet type promises high reliability in high frequency operations.

- Direct acting type
- Port size Rc1/4

Model	Position	Ports	Effective area [Cv value] mm <sup>2</sup>	Solenoid
HV160E1-2	2	2	7.0 [0.39]	Single solenoid

**VALVES** Catalog No.(BKUV002)



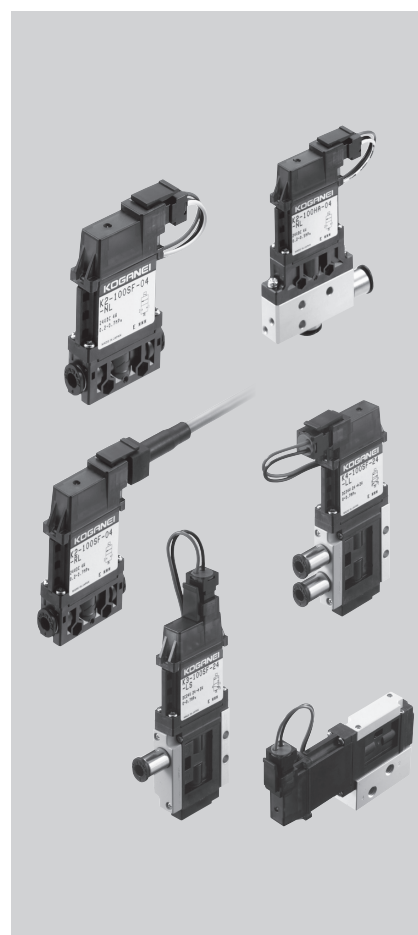
**NEW**

## HI-SPEED SOLENOID VALVES K Series

- Valve width: 10mm, IP 67 equivalent.
- High-speed response: 0.4~4.0ms (when ON).
- Suitable for sorting, material handling and intermittent blowing applications.
- Low power 1~2W.
- Vacuum specifications (K3 series)

Model	Position	Ports	Effective area [Cv value] mm <sup>2</sup>	Solenoid
K2-100SF-□	2	2	1.0 [0.06] ~ 1.5 [0.08]	Single solenoid
K2-100HF-□			1.5 [0.08] ~ 2.5 [0.14]	
K2-100LF-□			1.0 [0.06] ~ 2.0 [0.11]	
K2-100SA-□			1.3 [0.07] ~ 2.0 [0.11]	
K2-100HA-□			2.0 [0.11] ~ 3.0 [0.17]	
K2-100LA-□			1.0 [0.06]	
K3-100SF-□		3	1.0 [0.06] ~ 1.5 [0.08]	
K3-100HF-□			2.0 [0.11]	
K3-100SA-□			1.0 [0.06] ~ 1.5 [0.08]	
K3-100HA-□			2.0 [0.11]	
K3-100VF-□		4	1.0 [0.06] ~ 1.5 [0.08]	
K3-100VA-□				
K4-100SF-□			1.0 [0.06] ~ 1.5 [0.08]	
K4-100HF-□			2.0 [0.11]	
K4-100SA-□			1.0 [0.06] ~ 1.5 [0.08]	
K4-100HA-□			2.0 [0.11]	

Catalog No.(BK-V0012) High-speed valve K2-K3-K4 K





Inch size available  
with "H" prefix

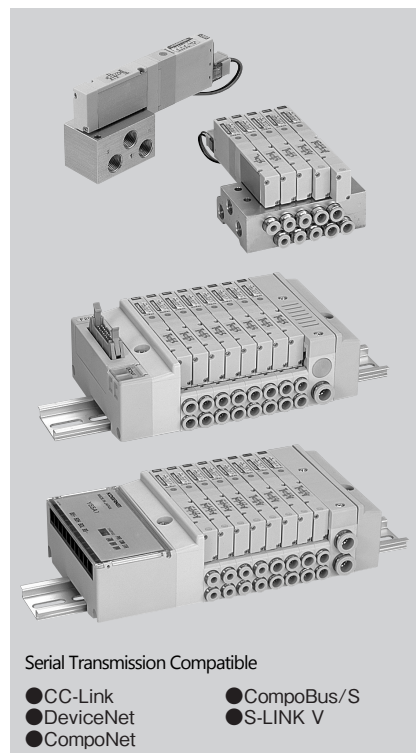
## SOLENOID VALVES JA Series

- Valve width 10.5 mm and effective area 3.5 mm<sup>2</sup>. Suitable for operating up to  $\phi$  40 bore size cylinder.
- A tandem 3-port, 4-position valve equipped with two 3-port valve functions in one valve body.

Basic model	Position	Ports	Effective area [Cv value] mm <sup>2</sup>	Solenoid
(H)JA10□A1	2	2 · 3	3.2[0.18]	Single solenoid
(H)JA10□A2				
(H)JA10□A3				
(H)JA10□A4				
(H)JA10□A5				
(H)JA10□A6	3	5	3.1[0.17]	Double solenoid
(H)JA10□A7				
(H)JA10□A8				
(H)JA10□A9				
(H)JA10□AA	4	Tandem	3.2[0.18]	
(H)JA10□AB		3		
(H)JA10□AC				

Catalog No.(BKV0006) JA Series Solenoid Valves

**VALVES** Catalog No.(BKUV002)



VALVES



Inch size available  
with "H" prefix

## SOLENOID VALVES JC. JE Series

- JC and JE series with valve width of 10 mm and 12 mm respectively; low power consumption of 0.55W (standard type) and 0.15W (low current type).
- Quick response and large flow rate, meeting varied needs and requirements of professional controls.
- JC and JE series are suitable for the operation of cylinders with bore up to  $\phi$  40 mm and up to  $\phi$  80 mm respectively.

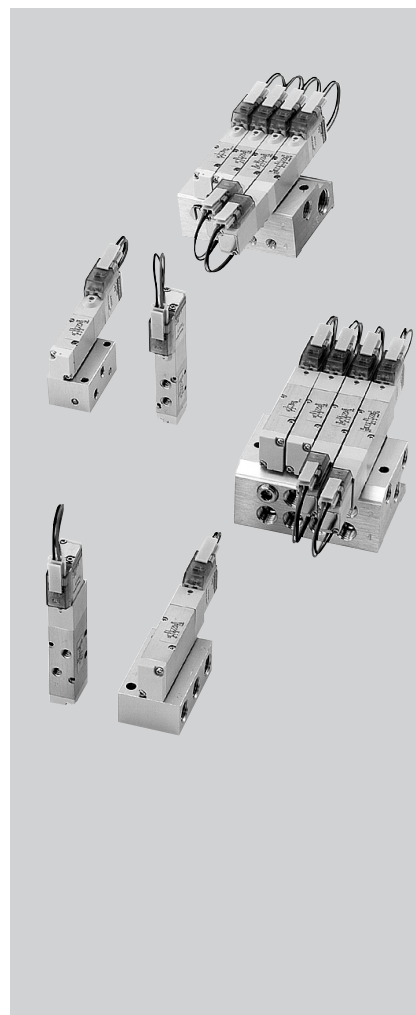
- Internal pilot type
- Port size M5x0.8, Rc1/8, 1/4

Basic model	Position	Ports	Effective area (Cv value) mm <sup>2</sup>	Solenoid
(H)JC10□F1,A1	2	2	Note 3.0 [0.17]	Single solenoid
(H)JC10□F2,A2		3		
(H)JC10□F3,A3				
(H)JC10□F4,A4				
(H)JC10□F5,A5		5		
(H)JC10□F6,A6				
(H)JC10□F7,A7	3			
(H)JC10□F8,A8				
(H)JC10□F9,A9				
(H)JE12□F1,A1	2	2	Note 9.5 [0.53]	Single solenoid
(H)JE12□F2,A2		3		
(H)JE12□F3,A3				
(H)JE12□F4,A4				
(H)JE12□F5,A5		5		
(H)JE12□F6,A6				
(H)JE12□F7,A7	3			
(H)JE12□F8,A8				
(H)JE12□F9,A9				

Note: For base piping.

Catalog No.(BKV0009) Solenoid Valves EA,EB,JC,JE Series

**VALVES** Catalog No.(BKUV002)





Inch size available

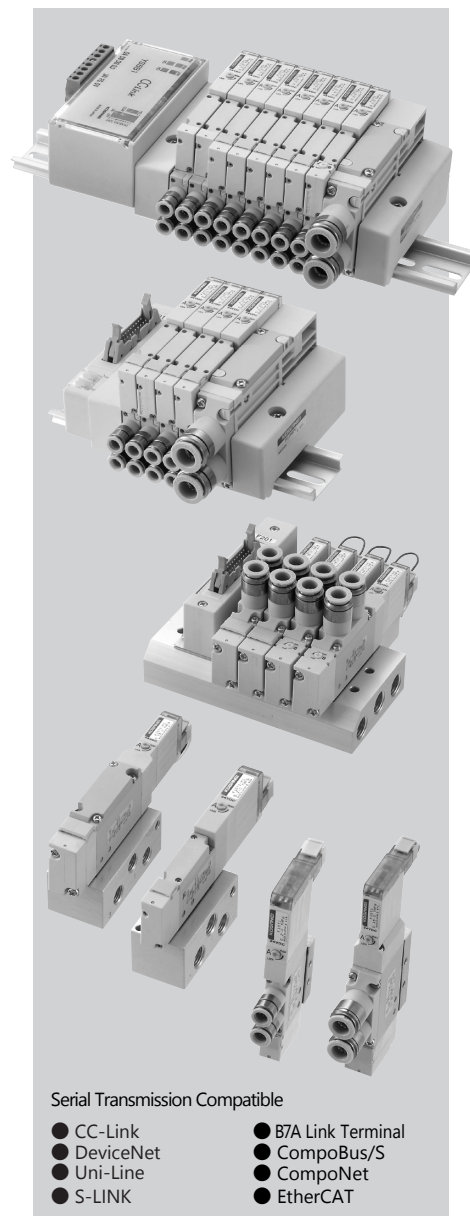
# SOLENOID VALVES F Series

- In the 2-position valve, switching the manual override allows selection between a single solenoid valve function and a double solenoid valve function.
- Uses different size double-use fittings that are fitted with tubes of two differing sizes.
- Low-current type and tandem 3-port valve have been added to F10 and F15 series.
- Stop valve and back pressure prevention valve (optional) have been added.

- Pilot type
- Port size M5x0.8, Rc 1/8, Rc1/4

Basic model	Position	Ports	Effective area (Cv value) mm <sup>2</sup>	Solenoid
F10□T0	2	5	4.8 [0.27]	Single solenoid
F10□T1				Single solenoid, double solenoid double-use type
F10□T2			3	
F10□T3				
F10□T4				
F10□T5	4	Tandem 3-port	3.7 [0.2]	Double solenoid
F10□TA				
F10□TB				
F10□TC				
F15□T0	2	5	10.3 [0.57]	Single solenoid
F15□T1				Single solenoid, double solenoid double-use type
F15□T2				
F15□T3	3			Double solenoid
F15□T4				
F15□T5				
F15□TA	4	Tandem 3-port	8 [0.44]	Double solenoid
F15□TB				
F15□TC				
F18T0	2	5	18 [1]	Single solenoid
F18T1				Single solenoid, double solenoid double-use type
F18T2				
F18T3	3			Double solenoid
F18T4				
F18T5				

Catalog No.(BK-V0011) Solenoid Valves F Series



## Serial Transmission Compatible

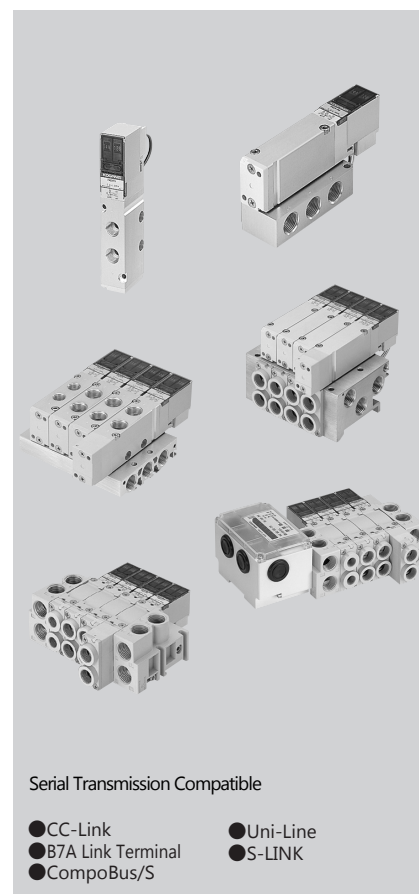
- CC-Link
- DeviceNet
- Uni-Line
- S-LINK
- B7A Link Terminal
- CompoBus/S
- CompoNet
- EtherCAT

# SOLENOID VALVES PA,PB Series

- New-generation, 5-port solenoid valve achieves compact, thin body, and large flow capacity.
- Standard type PA series, and newly designed PB series with a combination valve and manifold.
- Allows switching from double to single solenoid type (for 2-position double solenoid valves only).
- Select from two types of effective area in the same body.
- New functions include a perfect spacer (optional).

Model	Position	Ports	Effective area [Cv value] mm <sup>2</sup>	Solenoid	
PA24□F5	2	5	25 [1.4], 36 [2.0]	Single solenoid	
PA24□F6				Double solenoid	
PA24□F7	3				
PA24□F8					
PA24□F9					
PA24□A5	2				Single solenoid
PA24□A6	3				Double solenoid
PA24□A7					
PA24□A8					
PA24□A9					
PB24□C5	2	5	25 [1.4], 36 [2.0]	Single solenoid	
PB24□C6	3			Double solenoid	
PB24□C7					
PB24□C8					
PB24□C9					

**VALVES** Catalog No.(BKUV002)



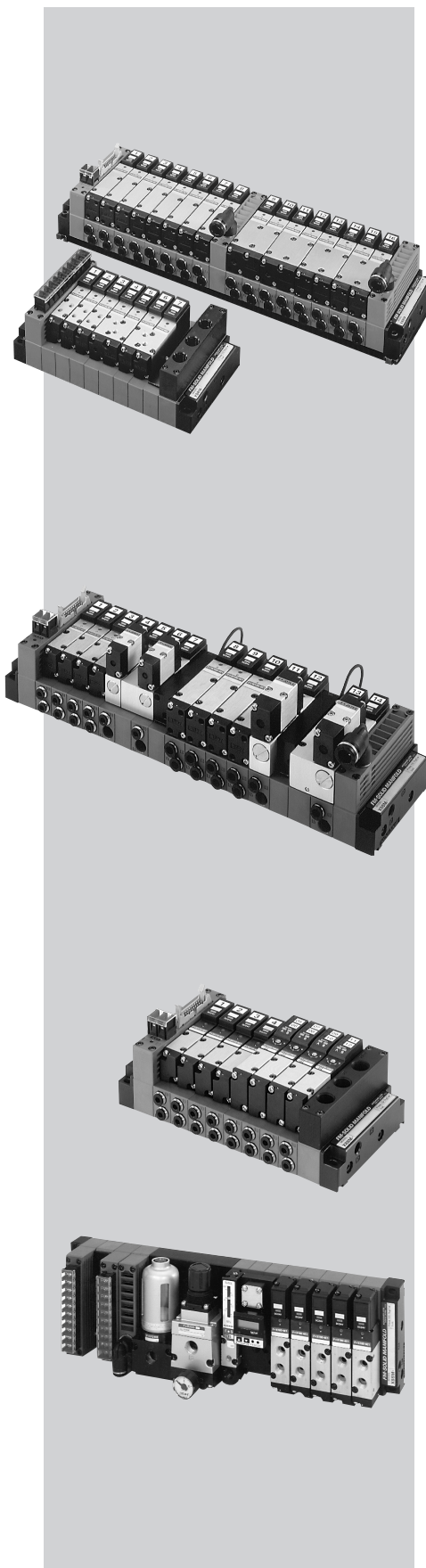
# FM-SOLID MANIFOLD X88M Series

- Modern manifolds aim at high levels of integration ability by adding and upgrading each function, such as valves, wiring and piping, in the assembling module method.
- Corresponds to 110 and 180 series, which have been field proven by adopting plug-in type solenoids.
- Module combinations seem as if they were made-to-order because both location and number of modules can be chosen.

Basic model	Constitution module model		Type
X88M	Valve module	(H)FMX110E1	Direct piping type
		(H)FMX110-4E1	
		(H)FMX110-4KE2	
		(H)FMX113-4KE2	
		(H)FMX180E1	
		(H)FMX180-4E1	
		(H)FMX180-4KE2	
		(H)FMX183-4KE2	
		(H)FMW110E1	Base piping type
		(H)FMW110-4E1	
		(H)FMW110-4KE2	
		(H)FMW113-4KE2	
		(H)FMW180E1	
		(H)FMW180-4E1	
		(H)FMW180-4KE2	
		(H)FMW183-4KE2	
	FMY FMY Valve module	(H)FMY110-4ME2	Base piping type
		(H)FMY113-4ME2	
		(H)FMY180-4ME2	
		(H)FMY183-4ME2	
	Block-off plate module	(H)FMX110-BP	For direct piping
		(H)FMX180-BP	For base piping
		(H)FMW110-BP	
		(H)FMW180-BP	
		(H)FMY110-BP	
		(H)FMY180-BP	
	Wiring module	(H)FMC-F200	Flat cable connector
		(H)FMC-D250	D-sub connector
		(H)FMC-E250	D-sub connector Side connection specification
		(H)FMC-T100	Terminal board
		(H)FMC-T180	Terminal board Wiring bush connection type
	Piping module	(H)FMP-FJ	With built-in quick fitting
		(H)FMP-FR	P-port female thread
		(H)FMP-PR	All port female thread
	Filter module	(H)FMF200	—
	Regulator module	(H)FMR200-GA20	With $\phi 20$ pressure gauge (Bottom piping)
		(H)FMR200-GD20	With $\phi 20$ pressure gauge (Back piping)
	Pressure switch module	(H)FMS220-PS	Electronic pressure switch With straight connector
		(H)FMS220-PL	Electronic pressure switch With elbow connector
		(H)FMS110□-SP	Mechanical pressure switch Reed switch type (2-lead wire)
		(H)FMS111□-SP	Mechanical pressure switch Solid state type (3-lead wire)
	Ejector module <small>Note</small>	(H)FMJ05E1	With single solenoid valve
		(H)FMJ05E2	With vacuum breaking valve
		(H)FMJ07E1	With single solenoid valve
		(H)FMJ07E2	With vacuum breaking valve

Note: Vacuum switch (-E) is available in ejector module.

**VALVES** Catalog No.(BKUV002)



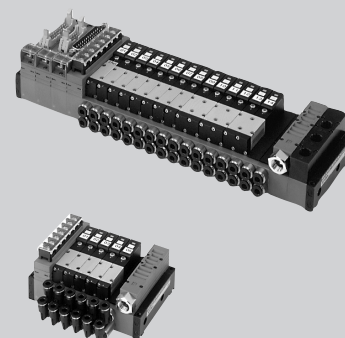


# FM-SOLID MANIFOLD X80M Series

- This series solenoid mounts 090 series controls cylinder of up to  $\phi 40$  with low power of valves width of 10 mm. 0.5W (with LED indicator).
- The small type of assembling modules, including 7 types of end block in which space can be fully used for various purposes, and 4 types of piping module that can be selected according to piping requirements.
- With the use of a split, separate air supplies of 2 pressures, or 3 pressures are possible. A remote control BOX is available for operation from remote places.

Basic model	Constitution module model		Type
X80M	Valve module	FMWR090E1	Base piping type
		FMWR090-4E1	
		FMWR090-4KE2	
		FMWR090-4ME2	Base piping type (Tandem solenoid)
		FMWR093-4ME2	
	Wiring module	FMCR-F100	Flat cable
		FMCR-F200	
		FMCR-D250	D-sub connector
		FMCR-G250	
		FMCR-T070	Terminal plate
	Piping module	FMPR-FJ8□	With built-in quick fitting
		FMPR-FR01	P-port female thread
		FMPR-PR01S	All port female thread
	Block-off plate module	FMWR090-BP	—

**VALVES** Catalog No.(BKUV002)



VALVES

# SOLENOID VALVES ROUND TYPE Series

- A widely-varied and highly-reliable series ranging from compact to large, and backed by long years of experience.
- Uses own poppet and diaphragm poppet method to prevent air leaks.

● 2 positions

Model	Ports	Effective area [Cv value] mm²	Port size Rc	Operating method	Solenoid
062E1	2・3	2.5 [0.12]	1/4	Direct acting type	Single solenoid
126E1	2	5.5 [0.27]			
250E1	2・3	15 [0.76]	1/4,3/8	Internal pilot type	
375E1		70 [3.5]	3/8		
501E1			1/2		
750E1		140 [7.0]	3/4		
1000E1		280 [14.0]	1		
1250E1			1 1/4		
062SE2	2・3	2.5 [0.12]	1/4	Direct acting type	Keep solenoid
062E2				Direct acting type	Double solenoid

**VALVES** Catalog No.(BKUV002)

● 2 positions

Model	Ports	Effective area [Cv value] mm <sup>2</sup>	Port size Rc	Operating method	Solenoid
062-4E1	4	1.8 [0.08]	1/4	Direct acting type	Single solenoid
125-4E1		3.5 [0.17]			
250-4E1	4	15 [0.76]	1/4,3/8	Internal pilot type	
254-4E1					
375-4E1		50 [2.5]	3/8		
501-4E1			1/2		
750-4E1		100 [5.0]	3/4		
062-4SE2	4	1.8 [0.08]	1/4	Direct acting type	Keep solenoid
125-4SE2		3.5 [0.17]			
254-4SE2		15 [0.76]	1/4,3/8	Internal pilot type	
062-4E2		1.8 [0.08]	1/4	Direct acting type	
250-4E2	5	15 [0.76]	1/4,3/8	Internal pilot type	Double solenoid
254-4E2	4				
375-4E2		50 [2.5]	3/8		
501-4E2			1/2		

**VALVES** Catalog No.(BKUV002)

● 3 positions

Model	Ports	Effective area [Cv value] mm <sup>2</sup>	Port size Rc	Operating method	Solenoid
253-4E2	4	15 [0.76]	1/4,3/8	Internal pilot type	Double solenoid
503-4E2		50 [2.5]	3/8,1/2,3/4		

**VALVES** Catalog No.(BKUV002)



062E1



750E1



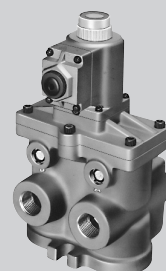
1000E1



062-4E1



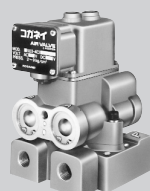
125-4E1



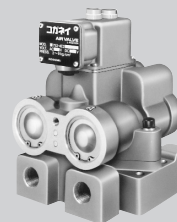
750-4E1



Manifold 062 Series



253-4E2



503-4E2

# AIR-PILOTED VALVES Series

- This long-life, high-performance valve is the optimum choice for a master or pilot valve providing total air pressure control.
- In addition to the 2-, 3-, or 5-port valve, the check valve, the shuttle valve, and the quick exhaust valve, the low-pressure, air-operated valve for interface use is now available as standard.

● 2 positions

Model		Ports	Effective area [Cv value] mm <sup>2</sup>	Port size
Single pilot	Double pilot			
110-4A	110-4A2	5	4.2 [0.23]	M5×0.8
180-4A	180-4A2		10.2 [0.57]	Rc1/8
240-4A	240-4A2		16 [0.88]	Rc1/4
300-4A	300-4A2		25 [1.39]	Rc1/4,Rc3/8
600-4A	600-4A2		60 [3.33]	Rc1/2,Rc3/8

**VALVES** Catalog No.(BKUV002)

● 2 positions

Model		Ports	Effective area [Cv value] mm <sup>2</sup>	Port size Rc
Single pilot	Double pilot			
350-4A	350-4A2	5	26.5 [1.47]	1/4

● 2 positions

Model		Ports	Effective area [Cv value] mm <sup>2</sup>	Port size Rc
Single pilot	Double pilot			
280-4A	280-4A2	5	25 [1.39]	1/4
380-4A	380-4A2		40 [2.22]	3/8

**VALVES** Catalog No.(BKUV001)

Model	Ports	Effective area [Cv value] mm²	Port size Rc	Pilot
125A	2・3	5.5 [0.27]	1/8	Single pilot
250A		15 [0.76]	1/4,3/8	
375A		70 [3.5]	3/8	
500A		55 [2.7]	1/2	
501A		70 [3.5]		
750A		140 [7]	3/4	
1000A		280 [14]	1	
1250A			1 1/4	
125AA	3	5.5 [0.27]	1/8	Single pilot, internal pilot holding type
250AA		15 [0.76]	1/4	
125A2	2・3	5.5 [0.27]	1/8	Double pilot
250A2		15 [0.76]	1/4,3/8	
250-4A	5		1/4	Single pilot
254-4A	4		1/4,3/8	
375-4A		3/8		
501-4A		1/2		
250-4AA	5	15 [0.76]	1/4	Single pilot, internal pilot holding type
254-4AA	4		1/4,3/8	

**VALVES** Catalog No.(BKUV002)



110-4A



180-4A 180-4A2



600-4A



300-4A



125A



500A



1000A



250-4A



501-4A



125A2



250A2

## Low Pressure Air-operated Valves

● 2 positions

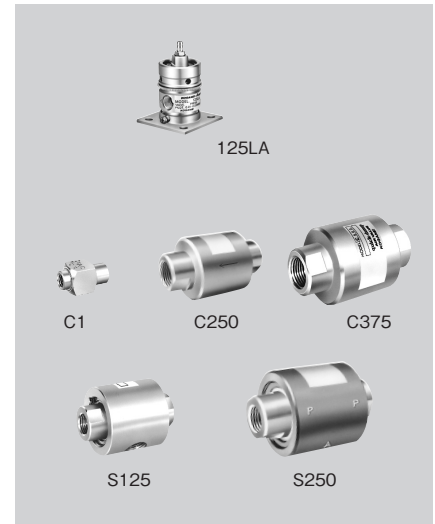
Model	Ports	Effective area (Cv value) mm <sup>2</sup>	Port size Rc	Pilot pressure MPa
125LA	2・3	5.5 [0.27]	1/8	0.001~0.003

**VALVES** Catalog No.(BKUV002)

## Check Valves, Shuttle Valves

● 2 positions

Function	Model	Effective area (Cv value) mm <sup>2</sup>	Port size
Check valves	C1	2.5 [0.12]	M5×0.8
	C125	6 [0.30]	Rc1/8
	C250	14 [0.72]	Rc1/4
	C375	74 [3.7]	Rc3/8
	C500		Rc1/2
Shuttle valves	S125	6 [0.30]	Rc1/8
	S250	14 [0.72]	Rc1/4

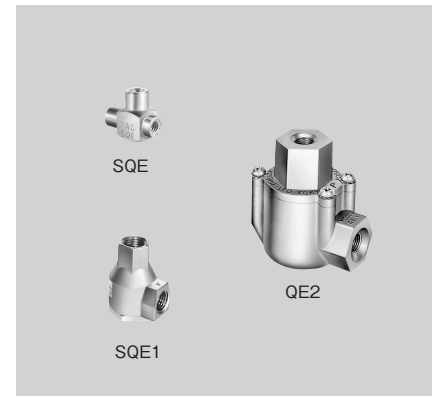


## Quick Exhaust Valves

Model	Port size	Flow volume ℓ/min (ANR)	
		P→A	A→R
SQE	M5×0.8	220	220
SQE1	P・A Rc1/8 R Rc1/4	1,400	1,700
SQE2	Rc1/4	2,100	2,600
QE2	P・A Rc1/4 R Rc3/8	4,400	4,400
QE3	Rc3/8	5,200	5,200
QE4	P・A Rc1/2 R Rc3/4	10,200	12,000
QE5	Rc3/4	12,000	13,800

Remark: Flow volume is for air pressure of 0.7 MPa.

**VALVES** Catalog No.(BKUV002)



# MANUAL VALVES, MECHANICAL VALVES

- Simple diaphragm poppet structures support highly-reliable air pressure control and reduce the breakdowns.
- Lightweight, compact design eliminates the need for selection of installation locations or installation direction.

## Manual Valves, Foot Valves

Model	Operating method	Position	Ports	Effective area (Cv value) mm²	Port size Rc	Remarks
125P	Push button	2	2・3	5.5 [0.27]	1/8,1/4	——
125HO						With holding mechanism
250P				Lever	3	5
125V	5.5 [0.27]	1/8				
250V	15 [0.76]	1/4,3/8	Exhaust center			
250-4H			——			
250F			Foot control	2	2・3	15 [0.76]
250FL	With holding mechanism					
250-4F	5	——				
250-4FL		With holding mechanism				

**VALVES** Catalog No.(BKUV002)

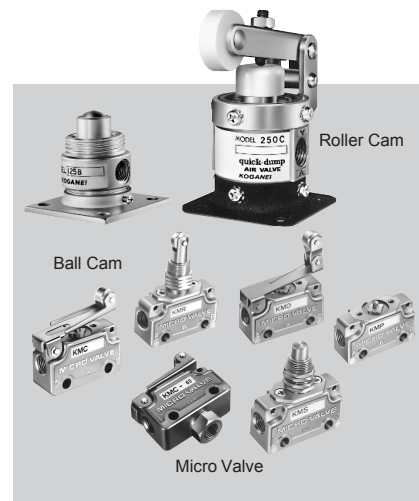


## Mechanical Valves, Micro Valves

● 2 positions, 2-, 3-port

Model	Operating method	Effective area [Cv value] mm²	Port size Rc
125B	Ball cam	5.5 [0.27]	1/8
250B		15 [0.76]	1/4,3/8
250C	Roller cam		1/4,3/8
125MC		5.5 [0.27]	
125MOC			
KMP	Pin plunger	1.8 [0.08]	
KMC	Roller cam		
KMO	One-way roller cam		
KMS	Straight plunger		
KMR	Roller plunger		

VALVES Catalog No.(BKUV002)



## SQUARE TYPE SOLENOID VACUUM VALVES

- A lightweight and compact 2, 3-port direct acting solenoid vacuum valve series.
- Vacuum and pressure types capable of forced separation or vacuum breaking also available in the series.

Model	Ports	Effective area [Cv value] mm <sup>2</sup>	Port size	Operating system
GV010E1	2 ∙ 3	0.2 [0.011]	M3×0.5	Direct acting type
GV010LE1		0.1 [0.006]		
GV010HE1		0.45 [0.025]		
V030E1	2 ∙ 3	0.6 [0.02]	M5×0.8	
V050E1		1.5 [0.08]	M5×0.8,Rc1/8	
V100E1		5.0 [0.28]	Rc1/8	
SV100E1				
V112E1	2 ∙ 3	4.2 [0.23]	M5×0.8	External pilot type
V182E1		10.2 [0.57]	Rc1/8	
V200E1	2 ∙ 3	8.5 [0.47]	Rc1/4	Direct acting type
SV200E1				
V130E1	2 ∙ 3	4.8 [0.27] /2.8 [0.16] Low current type	Rc1/8	
V130LE1				
SV130E1				
SV130LE1				
V230E1	2 ∙ 3	8.0 [0.45] /5.0 [0.28] Low current type	Rc1/4	
V230LE1				
SV230E1				
SV230LE1				

VALVES Catalog No.(BKUV002)



# ROUND TYPE VACUUM VALVES

- Poppet and diaphragm structure that holds leakage to an absolute minimum preventing valve sticking.
- Wide-ranging line-up includes solenoid vacuum valves, pilot vacuum valves, manual vacuum valves, and mechanical vacuum valves.

## ■ Solenoid Vacuum Valves

Model	Ports	Effective area mm <sup>2</sup>	Port size Rc	Operating system
V062E1	2 · 3	2.5	1/4	Direct acting type
V126E1	2	5.5		
VA250AE1	3	15	1/4,3/8	External pilot type
VA500AE1		55	1/2	
VV250AE1		15	1/4,3/8	External vacuum pilot indirect action system
VV500AE1		55	1/2	
VA250AE2		15	1/4,3/8	Double solenoid external air pilot indirect action system
VA500AE2		55	1/2	

**VALVES** Catalog No.(BKUV002)

## ■ Piloted Vacuum Valves

Model	Ports	Effective area mm <sup>2</sup>	Port size Rc	Operating system
VA125A	3	5.5	1/8	Air pilot
VA250A		15	1/4,3/8	
VA500A		55	1/2	
125A2	2 · 3	5.5	1/8	Double air pilot
250A2		15	1/4,3/8	

**VALVES** Catalog No.(BKUV002)

## ■ Manual Vacuum Valves

● 2 positions

Model	Ports	Effective area mm <sup>2</sup>	Port size Rc	Operating system
V125P	3	5.5	1/8	Push-button
V250P	2 · 3	15	1/4,3/8	
V125V	3	5.5	1/8	Lever
V250V		15	1/4,3/8	

**VALVES** Catalog No.(BKUV002)

## ■ Mechanical Vacuum Valves

● 2 positions

Model	Ports	Effective area mm <sup>2</sup>	Port size Rc	Operating system
V125B	3	5.5	1/8	Ball cam
V250B		15	1/4,3/8	
V125MC	2 · 3	5.5	1/8	Roller cam
V250C		15	1/4,3/8	

**VALVES** Catalog No.(BKUV002)





## MANUAL VALVES

- Best suited for air cylinder operation.
- Manual switching valve with slide valve construction.
- Rotary type (Swing lever) assures switching operation.

Model	Ports	Effective area mm <sup>2</sup>	Port size Rc	Operating method
400HV-02	4	26	1/4	Direct acting type
400HV-03			3/8	
400HV-04			1/2	



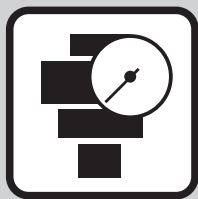
## TAC AIR VALVES

- Compact equipment for logic elements provides simple and total air pressure control at low cost.
- In combination with various actuators, it can serve as a master valve for cylinder operation control, a manual valve, or limited valve.




Functions	Ports	Effective area   mm²	Port size
Push button valve	2 · 3 · 5	1.8~5.5	M5×0.8, Rc 1/8
Pin lever valve	3 · 5		
Actuator for push button valve operation	Ball cam, roller cam, foot, elbow, or hand operation, fingertip operation, air pilot operation		
Regulator	—		M5×0.8, Rc 1/8
Quick exhaust valve	—	2.5	M5×0.8
Check valve			

**VALVES** Catalog No.(BKUV002)





# KOGANEI PNEUMATIC COMPONENTS AIR TREATMENT PRODUCTS

Line up	
	Inch size available
	PSI display available
Refer to previous catalog	
	ACCESSORIES GENERAL CATALOG AIR TREATMENT, AUXILIARY, VACUUM, AND FLUORORESIN PRODUCTS Catalog No.BK-UA002

## DESKTOP TYPE COMPRESSORS

- A4-size air compression source is easy to use anywhere.
- Horizontal and standing models available.
- The design keeps noise to 55 db or less.

Model	Discharge flow rate ℓ /min	Maximum pressure MPa	Input voltage
DPP-AY□□	2.0 (at 0.5 MPa)	0.55	DC24V
DPP-AT□□			



## DESKTOP TYPE AIR TANKS

- The air tank can be used for either compressed air or vacuum.
- Suitable as an auxiliary tank for a Desktop Type Compressor or Vacuum Pump.

Model	Built-in tank capacity mℓ	Maximum operating pressure MPa
DPT-Y18	1800	0.8
DPT-T18		



## MEMBRANE AIR DRYERS

- Freon-free air dryer uses hollow fiber membranes.
- A power supply is unnecessary.
- The eliminated moisture is emitted as water vapor, preventing collected liquid problems.

Type	Model	Dry air flow rate ℓ /min (ANR)	Port size Rc
Membrane type	<b>KRM-05</b>	20~120	1/4
	<b>KRM-1</b>	40~180	
	<b>KRM-3</b>	120~540	1/2

**AIR TREATMENT** Catalog No.(BK-UA002)



## TUBE DRYERS

- Freon-free air dryer uses hollow fiber membranes.
- A power supply is unnecessary.
- The eliminated moisture is emitted as water vapor, preventing collected liquid problems.
- With dew point indicator.

Model	Rated secondary air flow rate ℓ /min (ANR)	Outer diameter of tube
FDH-015-J6	15	φ 6
FDH-015-L-J6		
FDH-030-J6	30	
FDH-030-L-J6		
FDH-015-J8	15	φ 8
FDH-015-L-J8		
FDH-030-J8	30	
FDH-030-L-J8		



## COOL SEPARATOR

- This differential pressure type features a lighter weight and compact body.
- Demonstrates guaranteed humidity removing performance even during flow rate and pressure fluctuation.
- Automatically drain discharges by automatic drain trap.

Model	Processed air volume ℓ /min (ANR)	Dew point drop °C	Applied compressor kw	Port size Rc
<b>KAE-7</b>	700	3(Under pressure)	5	1/2

**AIR TREATMENT** Catalog No.(BK-UA002)



## SUB-LINE FILTERS

- Line filters, micro mist filters, activated charcoal filters, etc., are now available in a product series. The filters eliminate oils, solids, smells, etc., from main lines in order to derive clean air suitable for intended purposes.

### Line Filters

Model	Processed air volume m³/min (ANR)	Nominal filtration rating $\mu\text{m}$	Port size Rc
KLF-75	0.33	3	3/8
KLF-150	1.0		1/2
KLF-200	1.65		3/4

AIR TREATMENT Catalog No.(BK-UA002)

### Micro Mist Filters

Model	Processed air volume m³/min (ANR)	Nominal filtration rating $\mu\text{m}$	Port size Rc
KMF-75	0.33	0.3	3/8
KMF-150	1.0		1/2

AIR TREATMENT Catalog No.(BK-UA002)

### Activated Charcoal Filters

Model	Processed air volume m³/min (ANR)	Collection efficiency (residual oil) ppm (mg/mg)	Port size Rc
KKF-150	1.0	0.05(initial period) 0.1(normal)	1/2
KKF-200	1.65		3/4

AIR TREATMENT Catalog No.(BK-UA002)



PSI display available



Inch size available

NEW

## CMZ Series

- The combination of iB-Cyclone and FRZ Series is newly released.

### Combinations

Standard	For low-pressure	Combination	Options
CMZ440	CMZ441	IBCY40+FRZ4□	<ul style="list-style-type: none"> <li>• Residual pressure exhaust valve</li> <li>• Pressure gauges</li> <li>• Pressure gauges for low pressure</li> <li>• Pressure switch module</li> </ul>
CMZ540	CMZ541	IBCY50+FRZ4□	
CMZ550	CMZ551	IBCY50+FRZ5□	

Catalog No.(BK-P027) CMZ Series





Inch size available

# COMPACT FR Series

- Compact and lightweight air filters, regulators, and filter regulators.
- With quick fittings for easy mounting and piping on equipment.

## Filter Regulators

Model		Piping connection fitting	Options
Standard	For low-pressure		
<b>FRN100</b>	<b>FRN101</b>	φ 4, φ 6	<ul style="list-style-type: none"> <li>• Brackets</li> <li>• Mounting rings</li> </ul>
<b>FRN110</b>	<b>FRN111</b>		

**AIR TREATMENT** Catalog No.(BK-UA002)

## Filters (For Both Pressure and Vacuum)

Model	Filtration μ m	Piping connection fitting	Options
<b>FN100</b>	5	φ 4, φ 6	<ul style="list-style-type: none"> <li>• Brackets</li> </ul>

**AIR TREATMENT** Catalog No.(BK-UA002)

## Filters (Dedicated for Vacuum and Vacuum Breaking)

Model	Filtration μ m	Piping connection fitting	Options
<b>VFN100</b>	5	φ 4, φ 6	<ul style="list-style-type: none"> <li>• Brackets</li> </ul>

**AIR TREATMENT** Catalog No.(BK-UA002)

## Regulators

Model		Piping connection fitting	Options
Standard	For low-pressure		
<b>RN100</b>	<b>RN101</b>	Side piping ϕ 4, ϕ 6	<ul style="list-style-type: none"><li>• Brackets</li><li>• Mounting rings</li></ul>
<b>RN110</b>	<b>RN111</b>		
<b>RDN100</b>	<b>RDN101</b>	Bottom piping ϕ 4, ϕ 6	
<b>RND110</b>	<b>RND111</b>		

**AIR TREATMENT** Catalog No.(BK-UA002)

## Manifold Regulators

Model		Piping connection fitting	Options
Standard	For low-pressure		
<b>MRN100</b>	<b>MRN101</b>	IN: Rc1/8 OUT: φ 4, φ 6	<ul style="list-style-type: none"> <li>• Brackets</li> <li>• Mounting rings</li> </ul>
<b>MRN110</b>	<b>MRN111</b>		

**AIR TREATMENT** Catalog No.(BK-UA002)



NEW

# FRZ Series

- Compact design, more flexible installation orientation.
- Improved knob operability and maintainability.

IMPERIAL  
PSI

PSI display available

IMPERIAL  
INCH

Inch size available

## Filter Regulators

Model			Port size	Options
Standard	For low-pressure	Built-in check mechanism		
FRZ30	FRZ31	FRZ32	M5×0.8, Rc1/8, Rc1/4	<ul style="list-style-type: none"> <li>• Brackets</li> <li>• Pressure gauges</li> <li>• Pressure gauges for low pressure</li> <li>• Pressure switches</li> </ul>
FRZ40	FRZ41	—	Rc1/8, Rc1/4, Rc3/8	
FRZ50	FRZ51	—	Rc1/4, Rc3/8, Rc1/2	

## Regulators

Model			Port size	Options
Standard	For low-pressure	Built-in check mechanism		
RZ30	RZ31	RZ32	M5×0.8, Rc1/8, Rc1/4	<ul style="list-style-type: none"> <li>• Brackets</li> <li>• Pressure gauges</li> <li>• Pressure gauges for low pressure</li> <li>• Pressure switches</li> </ul>
RZ40	RZ41	—	Rc1/8, Rc1/4, Rc3/8	
RZ50	RZ51	—	Rc1/4, Rc3/8, Rc1/2	

## Residual pressure exhaust valve

Model	Port size Rc	Effective area mm <sup>2</sup> [Cv value]
50VZ-01	1/8	21.38 [1.19]
50VZ-02	1/4	43.01 [2.39]
50VZ-03	3/8	62.28 [3.46]
50VZ-04	1/2	66.81 [3.71]

Catalog No.(BK-E0006) FRZ Series



# SMALL-SIZED PRECISION REGULATOR

- The single diaphragm type achieves highly precise pressure regulation in a compact size.
- Pressure regulation is easy and smooth with a push-locking type regulator knob.

## Small-sized Precision Regulator

Model	Port size Rc	Sensitivity MPa	Options
PR100	1/8	0.001	<ul style="list-style-type: none"> <li>• Brackets</li> <li>• Pressure gauges</li> </ul>

AIR TREATMENT Catalog No.(BK-UA002)





# MULTI Series

- This line-up includes all devices needed for air preparation at air line ends.
- Because these are modular models, it is easy to combine the necessary functions for each line.

## F.R.L. Combinations

Model	Port size Rc	Devices included			Options
		Air filters	Regulators	Lubricators	
C150	1/8,1/4	F150	R150	L150	Air filters <ul style="list-style-type: none"><li>• Auto-draining drain cocks</li><li>• Drain cocks with fittings Lubricators</li><li>• Drain cocks</li><li>• Drain cocks with fittings Regulators</li><li>• Pressure gauges for low pressure</li></ul>
C200	1/4	F300		L300	
C300	1/4,3/8	F600	R300	L600	
C400			R600		
C600	1/4,3/8,1/2				

**AIR TREATMENT** Catalog No.(BK-UA002)

## Filter Regulators

Model			Port size Rc	Options
Standard	For low-pressure	Built-in checking device		
FR150	FR151	FR152	1/8,1/4	• Auto-draining drain cocks • Drain cock with fittings • Pressure gauges for low pressure
FR300	FR301	FR302	1/4,3/8	
FR600	FR601	FR602	1/4,3/8,1/2	

**AIR TREATMENT** Catalog No.(BK-UA002)

## Air Filters

Model	Port size Rc	Nominal filtration rating $\mu\text{m}$	Options
F150	1/8,1/4	5	• Brackets • Auto-draining drain cocks • Drain cocks with fittings
F300	1/4,3/8		
F600	1/4,3/8,1/2		

**AIR TREATMENT** Catalog No.(BK-UA002)

## Mist Filters

Model	Port size Rc	Nominal filtration rating $\mu\text{m}$	Rate of solid removal %	Rate of oil removal %	Options
MF300	1/4,3/8	0.3	99.9	99.9	<ul style="list-style-type: none"><li>• Brackets</li><li>• Auto-draining drain cocks</li><li>• Drain cocks with fittings</li></ul>
MF400	1/4,3/8,1/2				
MF600					

**AIR TREATMENT** Catalog No.(BK-UA002)

## Micro Mist Filters

Model	Port size Rc	Nominal filtration rating $\mu\text{m}$	Rate of solid removal %	Rate of oil removal %	Options
MMF150	1/4,3/8	0.01	99.9999	99.9999	<ul style="list-style-type: none"><li>• Brackets</li><li>• Auto-draining drain cocks</li><li>• Drain cocks with fittings</li></ul>
MMF300	1/4,3/8,1/2				
MMF400					

**AIR TREATMENT** Catalog No.(BK-UA002)

## Regulators

Model			Port size Rc	Options
Standard	For low-pressure	Built-in check device		
R150	R151	R152	1/8,1/4	• Pressure gauges for low pressure
R300	R301	R302	1/4,3/8	
R600	R601	R602	1/4,3/8,1/2	

**AIR TREATMENT** Catalog No.(BK-UA002)



F.R.L. Combinations



Filter Regulators



Air Filters



Mist Filters



Micro Mist Filters



Regulators

## ■ Precision Regulator

Model	Port size Rc	Sensitivity MPa	Options
<b>PR200</b>	1/4	0.001	• Brackets

**AIR TREATMENT** Catalog No.(BK-UA002)

## ■ High Relief Regulators

Model		Port size Rc	Options
Internal pilot model	External pilot model		
<b>HR200</b>	<b>HRA200</b>	1/8,1/4	• Brackets
<b>HR600</b>	<b>HRA600</b>	3/8,1/2	• Pressure gauges

**AIR TREATMENT** Catalog No.(BK-UA002)

## ■ Manifold Regulators

Model		Port size Rc	Options
Built-in check device	Built-in check device for low pressure		
<b>MR302</b>	<b>MR303</b>	1/4,3/8	• Pressure gauges

**AIR TREATMENT** Catalog No.(BK-UA002)

## ■ Lubricators

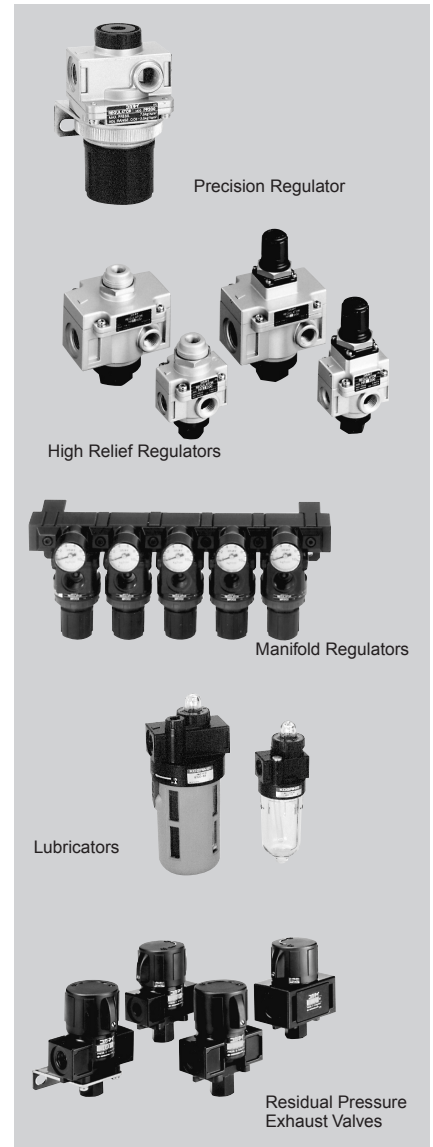
Model		Port size Rc	Options
Standard	Micro lubricators		
<b>L150</b>	—	1/8,1/4	• Brackets • Drain cocks • Drain cocks with fittings
<b>L300</b>	<b>L301</b>	1/4,3/8	
<b>L600</b>	<b>L601</b>	1/4,3/8,1/2	

**AIR TREATMENT** Catalog No.(BK-UA002)

## ■ Residual Pressure Exhaust Valves

Model	Valve functions	Port size Rc	Effective area mm²
<b>300V-01</b>	• Knob type manual valve • 2-position, 3-port	1/8	15
<b>300V-02</b>		1/4	27
<b>300V-03</b>		3/8	40
<b>600V-04</b>		1/2	55

**AIR TREATMENT** Catalog No.(BK-UA002)



# DRAIN FILTERS

- Uses a high-performance condensation and separation element to maintain a constant separation efficiency (99%) regardless of changes in the flow speed or flow rate of the supplied air.
- A wide range of port diameter is provided conforming to the air supply volumes.

Model	Port size Rc	Drainage separation rate %	Options
<b>DF300</b>	1/4,3/8	99 min.	• Brackets • Auto-draining drain cocks • Drain cock with fittings • Nylon bowls
<b>DF600</b>	3/8,1/2		
<b>DF900</b>	3/4, 1		

**AIR TREATMENT** Catalog No.(BK-UA002)



# F.R.L. LARGE FLOW Series

- All functions in the series are for optimum air preparation of large flows at air line ends.
- A modular model which can be chosen depending on intended use. Compact and easy to maintain.

## F.R.L. Combinations

Model	Port size Rc	Comprising devices				Options
		Air filters	Mist filters	Regulators	Lubricators	
CN650	3/4,1	FN650	—	RN650	LN650	<ul style="list-style-type: none"> <li>• Air filters</li> <li>• Auto-draining drain cocks</li> <li>• Drain cocks with fittings</li> <li>• Regulators</li> <li>• Pressure gauges with built-in switches</li> <li>• Digital pressure gauges with built-in sensors</li> <li>• Lubricators</li> </ul>
CN750		FN900	—	RN650	LN900	
CN900		FN900	—	RN900	LN900	
CY650		FN650	—	RN650	—	
CY900		FN900	—	RN900	—	
CZ650		—	MF800	RN650	—	
CZ900		—	MF800	RN900	—	

**AIR TREATMENT** Catalog No.(BK-UA002)

## Air Filters

Model	Port size Rc	Nominal filtration rating $\mu\text{m}$	Options
FN650	3/4,1	5	<ul style="list-style-type: none"> <li>• Brackets</li> <li>• Auto-draining drain cocks</li> <li>• Drain cocks with fittings</li> <li>• Nylon bowl</li> </ul>
FN900		5	
FN901		40	

## Mist Filters

Model	Port size Rc	Collected particle sizes $\mu\text{m}$	Collection efficiency %	Options
MF800	1/2,3/4,1	0.3	99.9	<ul style="list-style-type: none"> <li>• Brackets</li> <li>• Auto-draining drain cocks</li> <li>• Drain cocks with fittings</li> </ul>
MF1000				

**AIR TREATMENT** Catalog No.(BK-UA002)

## Micro Mist Filters

Model	Port size Rc	Collected particle sizes $\mu\text{m}$	Collection efficiency %	Options
MMF600	1/2,3/4,1	0.01	99.9	<ul style="list-style-type: none"> <li>• Brackets</li> <li>• Auto-draining drain cocks</li> <li>• Drain cocks with fittings</li> </ul>
MMF800				

**AIR TREATMENT** Catalog No.(BK-UA002)

## Regulators

Model			Port size Rc	Options
Standard	For low-pressure	Built-in checking device		
RN650	RN651	RN652	3/4,1	<ul style="list-style-type: none"> <li>• Inlaid pressure gauges</li> <li>• Pressure gauge with built-in switches</li> <li>• Digital pressure gauge with built-in sensors</li> </ul>
RN900	—	RN902		

**AIR TREATMENT** Catalog No.(BK-UA002)

## Lubricators

Model			Port size Rc	Options
Standard	Micro lubricators	Machine lubricators		
LN650	LN651	—	3/4,1	<ul style="list-style-type: none"> <li>• Brackets</li> <li>• Drain cocks with fittings</li> <li>• Nylon bowls</li> </ul>
LN900	LN901	LN902		

**AIR TREATMENT** Catalog No.(BK-UA002)



## IN-LINE FILTERS

- Provides more than 10 times the filtering area of flat membrane elements in the same space by using porous hollow fiber membrane elements.
- Long-life device that offers high filtration accuracy is compact yet handles high flow rate.
- Ideal for final filters for blow air such as used in IC manufacturing devices.

Model	Port size	Collected particle size $\mu\text{m}$	Processed air volume $\ell/\text{min}$ (ANR)
PLF050	M5×0.8	0.01	50*
PLF100	Rc1/8		100*

※ Recommended maximum flow (pressure drops at 0.03 MPa) when air pressure is 0.7MPa.

**AIR TREATMENT** Catalog No.(BK-UA002)



## CLEAN LINE FILTERS

- The filtration membrane uses a PTFE membrane and PTFE non-woven fabric in a dual-layer structure that assures stable performance, and guarantees a collecting efficiency of 100% for microscopic particles of 0.01  $\mu\text{m}$ .
- The component is performed precision cleaning inside of the clean rooms. Because few microscopic particles become adhered to it, a quick response is achieved.

Model	Port size Rc	Nominal filtration rating $\mu\text{m}$	Collection efficiency %	Options
CLF050	1/8, 1/4	0.01	100	• Brackets

**AIR TREATMENT** Catalog No.(BK-UA002)



Inch size available



PSI display available

## STAINLESS REGULATORS

- Best suited for foodstuff-related lines that require corrosion resistance, and for other lines with non-oil and non-grease requirements for such applications as solvents in liquid crystal and semiconductor-related processes, carrier gas pressure control in clean water circuits, blow pressure control, and clean air and gas pressure control.

Model		Specifications	Port size	Options
Standard	For low-pressure			
RS100□	RS101□	Relief type	M5×0.8 Rc1/8, Rc1/4	• Brackets • Pressure gauges
RS110□	RS111□	Non-relief type		

**AIR TREATMENT** Catalog No.(BK-UA002)



## PRECISION STAINLESS REGULATORS

- Allows high-precision settings (0.001 MPa) for carrier gas pressure control, blow pressure control, clean air and gas pressure control, etc., for all kinds of solvents and clean water circuits used in liquid crystal and semiconductor-related processes.

Model	Port size	Options
PRS100	M5×0.8, Rc1/8, Rc1/4	• Brackets • Pressure gauges

**AIR TREATMENT** Catalog No.(BK-UA002)





Inch size available



PSI display available

# PRESSURE GAUGES

- Compact pressure gauge with outer diameter of  $\phi 2$ ,  $\phi 40$ ,  $\square 40$ , and  $\square 50$ .
- A wide product range, including electronic type, panel mount type, precision type, and with-switch type.

## Pressure Gauges with Built-in Switch

Model	Pressure adjusting range MPa	Port size
GS1-50	0.1~0.83	M5×0.8

**AIR TREATMENT** Catalog No.(BK-UA002)

## Small Pressure Gauges

Model	Pressure indication range MPa	Port size
G1-20A	0~1.0	Rc 1/8
G1-20D		$\phi 6$ plug-in
G1-20DPL		

**AIR TREATMENT** Catalog No.(BK-UA002)

## Panel Mount Pressure Gauges

Model	Pressure indication range MPa	Port size
GP1-40	0~1.0	Rc 1/4 (M5×0.8)
GP3-40	0~0.3	

**AIR TREATMENT** Catalog No.(BK-UA002)

## Small Precision Pressure Gauges

Model	Pressure indication range MPa	Port size
G3P-40	0~0.3	Rc 1/4 (M5×0.8)
GP3P-40		

**AIR TREATMENT** Catalog No.(BK-UA002)



## MANIFOLD REGULATORS

- Regulates and confirms supply pressure for multiple lines at a single location.
- Adding a new high-relief type provides flexible response to all kinds of applications.

Model			Port size Rc	Options
Standard	Built-in checking device	High-relief model		
MR050	MR052	—	1/8	—
MR100	MR102	HR100	1/8, 1/4	● Pressure gauges

**AIR TREATMENT** Catalog No.(BK-UA002)



## ELECTRO-PNEUMATIC TRANSDUCING REGULATORS ETR Series

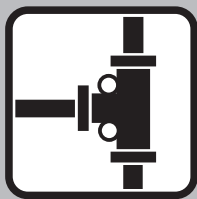
- Flexible control of air pressure regulated by electrical signals.
- Highly reliable, long-life, non-bleed function included, P.M.W. control, using poppet structure of the main unit for easy air control.

Model	Port size Rc	Pressure setting range MPa
ETR010	1/8	0.049~0.686
ETR200	1/4	
ETR600	1/2	
ETR601		0.02~0.2


**AIR TREATMENT** Catalog No.(BK-UA002)







# KOGANEI PNEUMATIC COMPONENTS AIR SYSTEM AUXILIARY PRODUCTS

Line up	
	Inch size available
Refer to previous catalog	
<b>AUXILIARY</b>	ACCESSORIES GENERAL CATALOG AIR TREATMENT, AUXILIARY, VACUUM, AND FLUORORESIN PRODUCTS Catalog No.BK-UA002

## FITTING Series

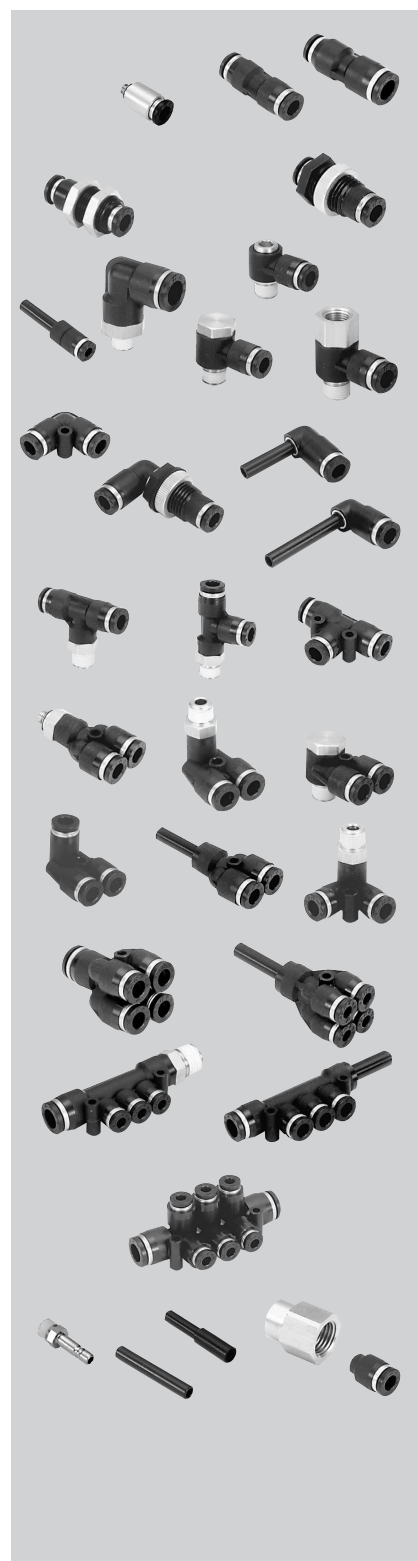
- From the standard type to multi-functional types.
- The wide range composition makes possible selection of the most suitable fitting.

### Quick Fittings (Standard Type, Mini Type)

Model	Name	Outer diameter of tube	Connection screw
TS	Straight	$\phi 1.8\sim\phi 16$	M3×0.5~R1/2
TSH	Hexagon socket head straight	$\phi 1.8\sim\phi 12$	
TSK	Cartridge	$\phi 3\sim\phi 6$	M6×0.75, M8×0.75
TSM	Female straight	$\phi 3\sim\phi 12$	M3×0.5~Rc3/8
US	Union straight	$\phi 1.8\sim\phi 16$	—
USD	Different diameter union	$\phi 1.8\sim\phi 16$	
UK	Union for bulkhead	$\phi 3\sim\phi 12$	
UKM	Female union for bulkhead	$\phi 4\sim\phi 12$	
UKB	Union for bulkhead B		
UR	Reducer	$\phi 1.8\sim\phi 10$	—
TL	Elbow	$\phi 1.8\sim\phi 16$	
TLL	Long elbow	$\phi 3\sim\phi 12$	M5×0.8~R1/2
SL	Swing elbow	$\phi 4\sim\phi 16$	
SLH	Hexagon socket head swing elbow	$\phi 4\sim\phi 12$	—
SLM	Female swing elbow		
UL	Union elbow	$\phi 1.8\sim\phi 16$	—
UKBL	Elbow for bulkhead	$\phi 4\sim\phi 12$	
ULA	Socket elbow	$\phi 3\sim\phi 12$	—
ULAL	Long socket elbow	$\phi 4\sim\phi 12$	
ULAD	Different diameter socket elbow	$\phi 3\sim\phi 10$	M5×0.8~R1/8
TLV	45° elbow	$\phi 4, \phi 6$	
ULAV	45° socket elbow		
TT	Tee	$\phi 1.8\sim\phi 16$	M3×0.5~R1/2
TB	Branch tee		
UT	Union tee		—
UTD	Different diameter union tee	$\phi 3\sim\phi 12$	
TBY	Branch Y		$\phi 4\sim\phi 12$
TBLY	Branch elbow Y	M5×0.8~R1/2	
SLY	Swing elbow Y		$\phi 3\sim\phi 12$
SLYM	Female swing elbow Y	—	
UY	Union Y		$\phi 3\sim\phi 12$
UYD	Different diameter union Y	$\phi 3\sim\phi 10$	—
ULY	Union elbow Y	$\phi 4\sim\phi 12$	
UB	Branch union Y	$\phi 3\sim\phi 12$	—
UBD	Different diameter branch union Y	$\phi 3\sim\phi 10$	
UXA	Cross A	$\phi 3\sim\phi 6$	—
UXB	Cross B (different diameter)		
UXC	Cross C (different diameter)		
UZ	Tetra union	$\phi 4\sim\phi 12$	M5×0.8~R1/2
TBZ	Branch tetra		
UWD	Different diameter double Y	$\phi 4\sim\phi 8$	—
TBW	Branch double Y	$\phi 4, \phi 6$	R1/8,R1/4
UBW	Branch union double Y		—
UED	Different diameter triple	$\phi 4\sim\phi 10$	
TBE	Branch triple		R1/8~R3/8
UBE	Branch union triple	$\phi 4\sim\phi 10$	—
TBEW	Branch triple double		R1/4~R1/2
UEDW	Different diameter triple double	—	—
TJ	Jack		$\phi 4\sim\phi 16$
AN	Socket nipple	—	
AND	Different diameter socket nipple		M5×0.8~Rc1/2
BB	Extension bush	—	Rc1/8~Rc1/2
BBD	Different diameter extension socket		
UP	Plug	$\phi 1.8\sim\phi 16$	—
UC	Cap	$\phi 3\sim\phi 12$	

Remark: NCU specification, Non-oil specification, Stainless specification are also available.

**AUXILIARY** Catalog No.(BK-UA002)



### Low-speed Control Type Speed Controllers with Quick Fittings

Model		Port size	Outer diameter of tube	Remarks
Meter out control	Meter in control			
SSC□-□-A	SSC□-□-B	M5×0.8~R1/4	φ4~φ10	Straight type
SCC□-□-A	SCC□-□-B	M3×0.5~R1/4	φ1.8~φ10	Elbow type
SSUC□		—	φ1.8, φ3	Union straight type

### Standard Type Speed Controllers with Quick Fittings

Model		Port size	Outer diameter of tube	Remarks
Meter out control	Meter in control			
SC□-□-A	SC□-□-B	M3×0.5~R1/2	φ3~φ12 (both nylon and urethane tubes)	Elbow type

**AUXILIARY** Catalog No.(BK-UA002)

### Free Type Speed Controllers with Quick Fittings

Model		Port size	Outer diameter of tube	Remark
Meter out control	Meter in control			
SSF□-□-A	SSF□-□-B	M3×0.5~R1/2	φ3~φ12 (both nylon and urethane tubes)	—

Remark: NCU specification is also available.

**AUXILIARY** Catalog No.(BK-UA002)

### Horizontal Free Type Speed Controllers with Quick Fittings

Model		Port size	Outer diameter of tube	Remark
Meter out control	Meter in control			
SSF4-M5-A-P	SSF4-M5-B-P	M5×0.8	φ4	Tube outer diameter φ4 and port size M5×0.8 are only available.

Remark: NCU specification is also available.

**AUXILIARY** Catalog No.(BK-UA002)

### Union Straight Type Speed Controllers with Quick Fittings

Model	Port size	Outer diameter of tube	Remark
SSU□	—	φ4~φ12	Union straight type

**AUXILIARY** Catalog No.(BK-UA002)

### Large Flow Type Speed Controllers with Quick Fittings

Model	Port size R	Outer diameter of tube	Remark
Meter out control			
SCG□-□-A	1/8~1/2	φ6~φ12	Elbow type

**AUXILIARY** Catalog No.(BK-UA002)

### Low pressure Type Speed Controllers with Quick Fittings

Model		Port size	Outer diameter of tube	Remarks
Meter out control	Meter in control			
SC□-□-AL	SC□-□-BL	M5×0.8~R1/4	φ4, φ6	Elbow type
SSU□L		—		Union straight type

**AUXILIARY** Catalog No.(BK-UA002)



## ■ Free Type for Low pressure Speed Controllers with Quick Fittings

Model		Port size	Outer diameter of tube	Remark
Meter out control	Meter in control			
SSF□□-AL	SSF□□-BL	M5×0.8~R1/4	φ4~φ10	—

Remark: NCU specification is also available.

**AUXILIARY** Catalog No.(BK-UA002)

## ■ Quick Fittings (Rotary Type)

Model	Name		Outer diameter of tube	Connection screw
TSR	Standard type	Straight	φ4~φ12	M5×0.8~R1/2
TLR		Elbow		
TSRH	High rotary type	Straight	—	1/8~1/2
TLRH		Elbow		
TARH		Male thread – female thread		
TBRH		Male thread – male thread		

## ■ Quick Fittings with Stop Valves

Model	Name	Outer diameter of tube	Connection screw
TSS	Straight	φ4~φ12	M5×0.8~R1/2
TLS	Elbow		—
USS	Union straight		

Remark: NCU specification, Non-oil specification, are also available.

**AUXILIARY** Catalog No.(BK-UA002)

## ■ Throttle Valves

Model	Name	Outer diameter of tube	Thread size
TVF	Free type	φ4~φ12	M5×0.8~R1/2
TVL	Elbow		—
TVU	Union straight		
TVM	Exhaust restrictor valve with muffler	—	M5×0.8~R1/2

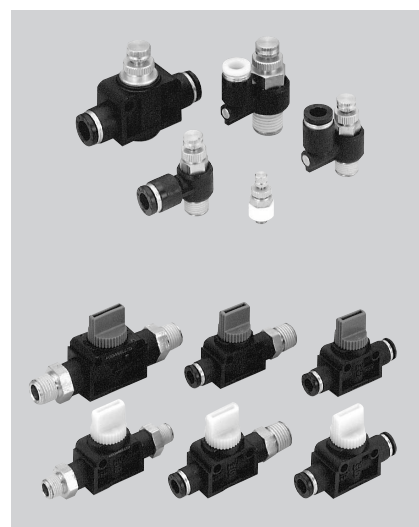
Remark: NCU specification, Non-oil specification, are also available.

## ■ Hand Valves

Model	Name	Outer diameter of tube	Thread size
FVA	Straight A	φ6~φ12	R1/8~R1/2
FVB	Straight B		
FVN	Nipple	R1/8~R3/8	R1/8~R3/8
FVU	Union straight	φ6~φ12	—

Remark: NCU specification is also available.

**AUXILIARY** Catalog No.(BK-UA002)



## ■ Check Valves

Model	Name	Outer diameter of tube	Thread size
CVS	Straight	$\phi 4 \sim \phi 12$	M5×0.8~R1/2
CVR	Male screw-female screw	—	R1/8~R1/2
CVU	Union	$\phi 4 \sim \phi 12$	—
CVUD	Different diameter union	$\phi 10, \phi 12$	

Remark: NCU specification, Non-oil specification, are also available.



## ■ Regulators with Quick Fittings

Model	Name	Tube size	Thread size
RTS	Straight	$\phi 4 \sim \phi 8$	M5×0.8~R1/4
RTL	Elbow		
RTL-G	Elbow with pressure gauge		

Remark: NCU specification is also available.

**AUXILIARY** Catalog No.(BK-UA002)



## ■ Power Reducers

Model	Name	Tube size	Thread size
TPS	Straight	$\phi 4 \sim \phi 12$	M5×0.8~R1/2
TPL	Elbow		

Remark: NCU specification is also available.

**AUXILIARY** Catalog No.(BK-UA002)



## ■ Supply Joints

Model	Name	Main side thread size	Sub main side tube and thread size
STQ	Terminal quick	M8×1~M18×1	$\phi 4 \sim \phi 16$
STB	Terminal branch	M14×1, M18×1	$\phi 10, \phi 12$
STS	Terminal straight	M12×1~M18×1	M8×1~M18×1
STT	Terminal taper	M8×1~M18×1	M5×0.8~R3/8
SBA	Bushing A		R1/8~R1/2
SBB	Bushing B	M12×1~M18×1	M8×1~M14×1
SBC	Bushing C	M8×1~M18×1	M5×0.8~R1/4
SLB	Elbow		R1/8~R1/2
SST	Socket		$\phi 4 \sim \phi 12$
SKR	Reducer for bulkhead		
SPG	Plug		—
SCP	Cap		
SBN	Nipple		
SZB	Bracket		
SZS	Spanner for assembling	—	

Remark: NCU specification is also available.

**AUXILIARY** Catalog No.(BK-UA002)

## ■ Connectors (For Standard, Mini Type Use)

Model	Name	Outer diameter of tube
TCS	Standard straight	$\phi 6, \phi 8$
TCL	Standard elbow	
TCS-M	Mini straight	$\phi 3 \sim \phi 8$
TCL-M	Mini elbow	
CBT	Connector band	—
CBH	Connector band	

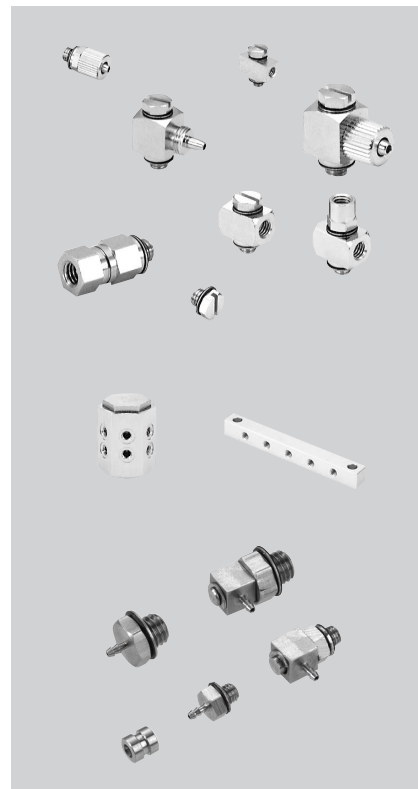
**AUXILIARY** Catalog No.(BK-UA002)

# TAC Fittings (For Nylon Tubes)

Model	Name	Outer diameter of tube	Port connection screw	
BF	Straight	φ1.8~φ6	M3×0.5~R1/8	
PBF			R1/8	
UEF	Universal elbow		M3×0.5, M5×0.8	
UTF	Universal tee		——	
NBF	Nipple		M5×0.8	
UER	Elbow		M3×0.5, M5×0.8	
EF	Elbow	——	M5×0.8	
TF	Tee			
URTF	Universal branch tee			
UXF	Universal cross			
NF	Nipple			M3×0.5, M5×0.8
SF	Revolving fittings			M5×0.8
EXF	Extension fittings		M3×0.5, M5×0.8	
CF	Coupling		——	
BHF	Fittings for bulkheads		M5×0.8	
RBF	Bushing		M5×0.8 ~R1/4	
PF	Plug		M3×0.5, M8×0.75	
AM	Air manifold		Rc1/8	
MBF				
RM	Rotary air manifold		M5×0.8	
TBF	Terminal			
89	Gasket		——	
8	Bracket			

Remark: NCU specification, Stainless specification are also available.

**AUXILIARY** Catalog No.(BK-UA002)



# TUBES

- Pneumatic line for use with nylon and urethane tubes. Product line-up includes full range of sizes.
- These two-line flat tubes are ideal for installation in narrow spaces. Streamlined piping arrangement designed for ease of maintenance.
- Tubes are in different colors for ease of use in complicated air lines. (Yellow, green, blue and opal (milk-white) colors.)

Material	Model	Outer diameter x inner diameter mm	
Nylon	N3.2	Size (mm)	3.2×2.4
	N5		5×3
	N6		6×4
	N4-B		4×2.5
	N6-B		6×4
	N8-B		8×6
	N10-B		10×7.5
	N12-B		12×9
	N16-B		16×13
Soft Nylon	SN4	Size (mm)	4×2.5
	SN6		6×4
	SN8		8×6
	SN10		10×7.5
	SN12		12×9
Urethane	U2 (U2A-B:Electronic conductive type)	Size (mm)	1.8×1
	U3		3×1.5
	U4		4×2.5
	U6		6×4
	U8		8×5
	U10		10×6.5
	U12		12×8

AUXILIARY Catalog No.(BK-UA002)

## Flat Tubes

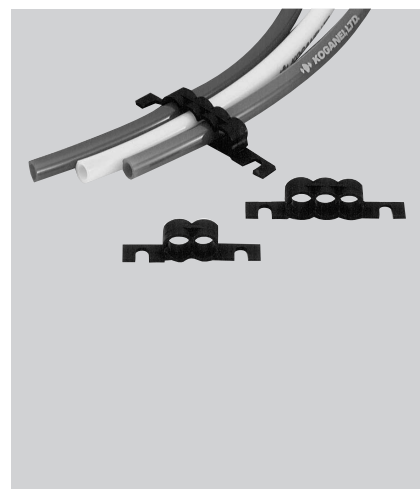
Material	Model	Outer diameter x inner diameter mm	
Nylon	N4P-B	Size (mm)	4×2.5
	N6P-B		6×4
Urethane	U4P-B		4×2.5
	U6P-B		6×4

AUXILIARY Catalog No.(BK-UA002)

## Tube Holders

Model	Number of tubes that can be bound	Outer diameter of tube mm	
TH4-2	2	Size (mm)	4
TH6-2			6
TH8-2			8
TH10-2			10
TH12-2			12
TH4-3	3		4
TH6-3			6
TH8-3			8
TH4-4	4		4
TH6-4			6
TH8-4			8
TH10-4			10
TH12-4			12

AUXILIARY Catalog No.(BK-UA002)







Inch size available  
with "H" prefix

# SPEED CONTROLLERS

- Adjust the speed of the air cylinder, etc.
- Available with elbow type, direct connecting with cylinder type, and a large number of other shapes and sizes.

Model	Port size	Method of piping				
		Control flow IN	Control flow OUT			
(H)TSCO	M3×0.5	Female thread	Female thread			
(H)TSCO-L						
(H)TSCO-UC						
(H)TSCO-UL						
(H)TSC	M5×0.8 or clamp fitting for ϕ 4×2.5	Female thread	Clamp fitting			
(H)TSC-F		Male thread				
(H)TSC-F-BF		Universal male thread	Female thread			
(H)TSC-US			Clamp fitting			
(H)TSC-US-BF		Male thread	Female thread			
(H)TSC-L			Clamp fitting			
(H)TSC-L-BF						
(H)SCO		M5×0.8	Female thread	Female thread		
(H)SCO-F	Male thread		Male thread			
(H)SCO-US	Universal male thread		Universal male thread			
(H)SCO-UL						
(H)SC1	Rc1/8	Female thread	Female thread			
(H)SC2		Male thread				
(H)SCL1	Rc1/4					
(H)SCL2	Rc1/8	Female thread				
(H)KSC11	Rc1/4					
(H)KSC22	Rc1/4					
(H)KSC21						
(H)KSC31	Rc3/8					
(H)KSC41	Rc1/2					
(H)KSC6	Rc3/4					
(H)KSC8	Rc1					

AUXILIARY Catalog No.(BK-UA002)

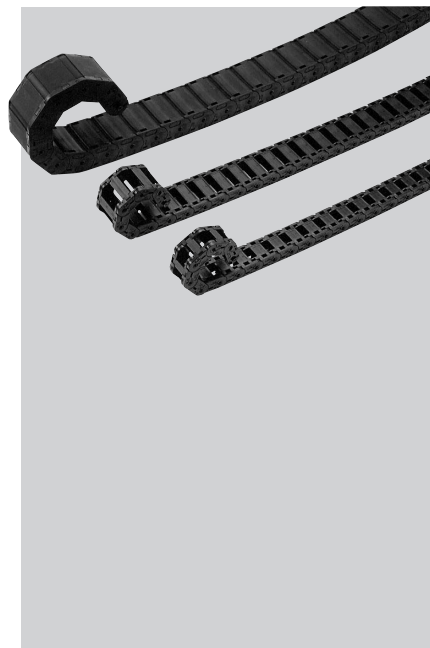


## PLACHAIN DUCTS

- The tubes and cables are bound smartly and reliably to support the smooth operation of the moveable parts in the devices.
- Easy-to-handle and made of lightweight, highly durable engineering plastic.

Type	Size	Minimum bending radius mm	Maximum cable and tube outer diameters mm
Full open : PU	202	30,45	φ 11
	203		
	204		
	206	38,50	φ 19
	306		
	408		
Full cover : PO	204	38,50	φ 10
	206		
	408	70,100,150,200	φ 20

**AUXILIARY** Catalog No.(BK-UA002)



## MUFFLERS, EXHAUST FILTERS

- With superior sound reducing functions, these compact devices offer minimum resistance to exhaust. Dust from the exhaust port is prevented from entering the devices.
- The exhaust filter removes oil from exhaust and reduces noise to create a clean and quiet operating environment.

Model	Port size	Remarks
KM-03	M3×0.5	Made of plastic
KM-05	M5×0.8	
KM-10	R1/8	
KM-11	R1/8	
KM-22	R1/4	
KM-23		
KM-31	R3/8	
KM-41	R1/2	
KM-J6	ϕ 6	
KM-J8	ϕ 8	
KM-J10	ϕ 10	
KM-J12	ϕ 12	
150-30A	M5×0.8	Made of sintered brass
KM-1	R1/8	
KM-2	R1/4	
KM-3	R3/8	
KM-4	R1/2	
KM-6	R3/4	
KM-8	R1	
EF300	Rc1/4,Rc3/8	Exhaust filters
EF600	Rc3/8,Rc1/2	
EF800	Rc3/4,Rc1	

**AUXILIARY** Catalog No.(BK-UA002)





Inch size available  
with "H" prefix

## AIR-HYDRO CONVERTERS AND AIR BLEEDERS

- An easy-to-use low hydraulic system which enables precision control of the cylinder speed at a low cost.

### ■ Air-hydro Converters

Model	Inner diameter mm	Oil level displacement mm	Port size Rc
(H)AHC	32	50~200	1/8
	40	50~200	Air 1/8 Oil 1/4
	50	50~300	

### ■ Air Bleeders

Model	Port size Rc	Options
(H)AHB150-01	1/8	Brackets
(H)AHB150-02	1/4	

**AUXILIARY** Catalog No.(BK-UA002)



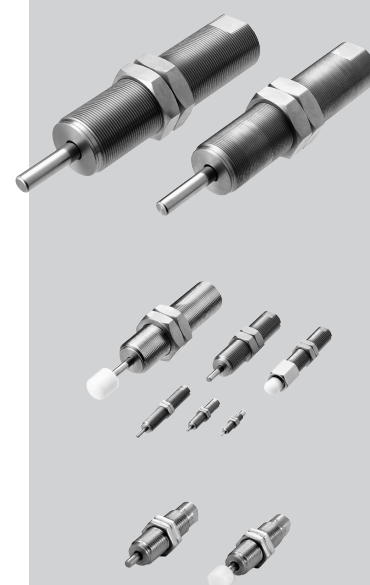
# SHOCK ABSORBERS

- Effectively absorbs shocks and noises, shortens tact times, and improves machining accuracy, as well as preventing damage.
- Both the variable type (provides optimum absorption) and the compact fixed type are available.
- The sensor shock absorber gives operation verification signals from the shock absorber side.

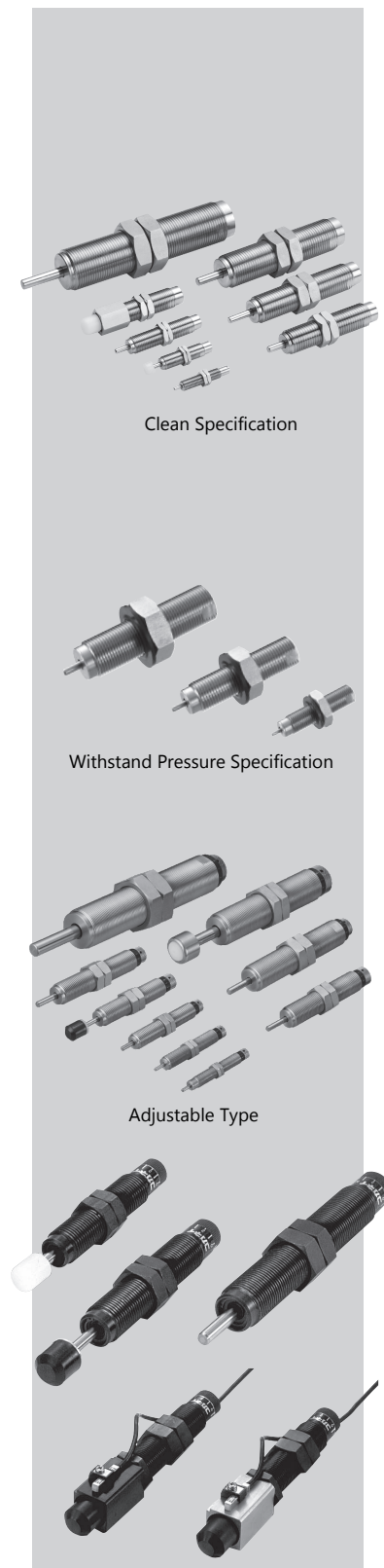
Type	Model	Maximum absorption J
Fixed absorption type	Linear orifice type	KSHJ4 × 3-01
		KSHJ4 × 3-02
		KSHJ6 × 4-01
		KSHJ6 × 4-02
		KSHJ6 × 6-01
		KSHJ6 × 6-02
		KSHJ8 × 4-01, -11(with hexagon socket)
		KSHJ8 × 4-02, -12(with hexagon socket)
		KSHJ8 × 5-□
		KSHJ8 × 8-□
		KSHJ10 × 6-01(with hexagon socket)
		KSHJ10 × 6-02(with hexagon socket)
		KSHJ10 × 10-□
		KSHJ10 × 15-01
		KSHJ10 × 15-03
		KSHJ12 × 6-01(with hexagon socket)
		KSHJ12 × 6-02(with hexagon socket)
		KSHJ12 × 10-□
		KSHJ14 × 8-01(with hexagon socket)
		KSHJ14 × 8-02(with hexagon socket)
		KSHJ14 × 12-□
		KSHJ16 × 8-01(with hexagon socket)
		KSHJ16 × 8-02(with hexagon socket)
		KSHJ16 × 15-□
		KSHJ18 × 16-□
		KSHJ20 × 10-01(with hexagon socket)
		KSHJ20 × 10-02(with hexagon socket)
		KSHJ20 × 16-□
		KSHJ22 × 25-□
		KSHJ25 × 25-□
		KSHJ27 × 25-□
		KSHJ30 × 30-□
		KSHJ33 × 30-□
		KSHJ36 × 50-□
		KSHJ42 × 50-□
		KSHJ42 × 70-□
		KSHJ45 × 50-□
		KSHJ48 × 50-□
		KSHA4 × 4-□-A
		KSHA4 × 4-□-B
		KSHA4 × 4-□-BD
		KSHA5 × 5-□-B
		KSHA5 × 5-□-D
		KSHA5 × 5-□-E
		KSHA6 × 5-□-A
		KSHA6 × 5-□-B
		KSHA6 × 5-□-D
		KSHA6 × 5-□-DE
		KSHA6 × 8-□-D
		KSHA6 × 8-□-E
		KSHA6 × 8-□-F
		KSHA7 × 8-□-G
		KSHA7 × 8-□-K
		KSHA8 × 10-□-GK
		KSHA8 × 10-□-L

Remark: Insert types are also available. (BK-A0004) Linear Orifice Shock Absorbers KSHJ Series

**AUXILIARY** Catalog No.(BK-UA002)



Type	Model	Maximum absorption J
Fixed absorption type	Linear orifice type (Clean specification)	CS-KSHC3×3-A
		CS-KSHC3×3-AB
		CS-KSHC3×3-B
		CS-KSHC4×4-□-B
		CS-KSHC4×4-□-BD
		CS-KSHC5×5-□-D
		CS-KSHC5×5-□-DE
		CS-KSHC6×8-□-DE
		CS-KSHC6×8-□-EF
		CS-KSHC8×8-□-EF
		CS-KSHC8×8-□-G
		CS-KSHC9×10-□-GK
		CS-KSHC9×10-□-L
		CS-KSHC11×15-□-M
		CS-KSHC11×15-□-P
		CS-KSHC14×16-□-R
		CS-KSHC14×16-□-T
		CS-KSHC18×25-□-X
	Linear orifice pressure-proof type	KSHK10×5-01
		KSHK10×5-02
		KSHK12×6-01
		KSHK12×6-02
		KSHK14×7-□
		KSHK16×8-01
		KSHK16×8-02
		KSHK18×9-01
		KSHK18×9-02
		KSHK20×10-01
		KSHK20×10-02
	Linear orifice adjustment type	KSHP10×8
		KSHP12×10
		KSHP14×12
		KSHP16×15
		KSHP18×20
		KSHP20×22
		KSHP25×25
		KSHP30×30
		KSHP36×50
Variable absorption type	Multi orifice type	KSHE5×8
		KSHE6×10
		KSHE8×15
		KSHE10×20
		KSHE12×22
		KSHES8×15
		KSHES10×20
		KSHES12×22
	Single orifice type	KSH5×8
		KSH6×10
		KSH8×15
		KSH10×20
		KSH12×22



# PRESSURE SWITCHES

- Compact pressure switch for vacuum and pressure, with superior reliability and response.
- Choose from various types of specifications according to applications.

## Electronic Pressure Switches PS4 Series

Model		Operating pressure range MPa	Output method
2 points switch output (fixed differential)	1 point switch output (variable differential) plus analog output		
PS410	PS410A	0 ~ -100kPa	NPN open collector Analog output: 1 ~ 5V
PS420	PS420A	0 ~ 1	

AUXILIARY Catalog No.(BK-UA002)



Inch size available



PSI display available

## Digital Pressure Switches GS6 Series

Model		Operating pressure range	Port size
Standard	High-Performance		
GS610	GS610A	-100.0 ~ 100.0kPa	R1/8(M5×0.8)
GS620	GS620A	-0.100 ~ 1.000MPa	

Catalog No.(BK-A0002) Digital Pressure Switches GS6



# FLOW METER FA Series

- Employs separate flow measuring method with an orifice, for large measured flow rate and low pressure loss per piping port size.
- Uses a thermal-type mass flow rate measurement sensor capable of accurate measurement, regardless of changes in gas temperature or pressure.
- Self-diagnostic function simplifies finding solutions to problems, when product abnormalities occur.

Model	Flow rate range	Port size
FAS-002	4 ~ 200	Rc1/4
FAS-005	10 ~ 500	Rc1/2
FAS-030	60 ~ 3000	Rc1
FAS-060	120 ~ 6000	Rc1 1/2
FAS-120	240 ~ 12000	Rc2



# AIR INDICATORS

- The color display shows the presence or absence of air in the line, and the operating conditions.
- The clear color display switching provides superior visibility.

Model	Port size	Remarks
KIS-R	M5×0.8	ON When air pressure is applied, the red light turns on.
KIS-G		ON When air pressure is applied, the green light turns on.
KIL-R	M5×0.8, Rc1/8	ON When air pressure is applied, the red light turns on.
KIL-G		ON When air pressure is applied, the green light turns on.

AUXILIARY Catalog No.(BK-UA002)





# HOLDERS AND COLUMN TUBES

- Strong and easy to use, these products support various design and assembly operations in which mechanical devices are used.


Name	Model	Length mm	Material
Holder	<b>PHU40</b>	—	Aluminum alloy casting
	<b>PHU54</b>		
	<b>PHU74</b>		
	<b>PHB40</b>	—	Aluminum alloy casting
	<b>PHB54</b>		
	<b>PHB74</b>		
Column tube	<b>PHP40</b>	300, 450, 600	Mild steel (Nickel plated)
	<b>PHP54</b>	450, 600, 750	
	<b>PHP74</b>	600, 750, 900	

**AUXILIARY** Catalog No.(BK-UA002)





# KOGANEI PNEUMATIC COMPONENTS VACUUM PRODUCTS

Line up	
	Inch size available
Refer to previous catalog	
<b>VACUUM</b>	ACCESSORIES GENERAL CATALOG AIR TREATMENT, AUXILIARY, VACUUM, AND FLUORORESIN PRODUCTS Catalog No.BK-UA002

## DESKTOP TYPE VACUUM PUMPS

- Vacuum sources are easy to use anywhere.
- Horizontal and standing models available.
- The design keeps noise to 55 db or less.

Model	Suction flow rate ℓ /min(ANR)	Maximum vacuum kPa	Input voltage
DPV-AY□□	5.7	-75	DC24V
DPV-AT□□			

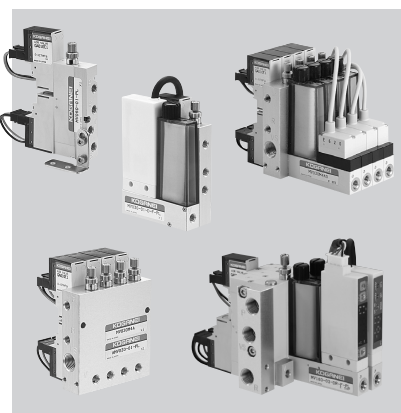


## VACUUM VALVE UNITS

- Best suited for vacuum control of vacuum-suction transport systems.
- Electronic vacuum switch comes with easy to read LED display.

Basic model	Effective area on negative pressure side mm <sup>2</sup>	Port size	Options
MV030	0.55	M5×0.8	<ul style="list-style-type: none"> <li>• With filter</li> <li>• With electronic vacuum switch</li> <li>• With pressure sensor</li> <li>• Manifold</li> <li>• Vacuum-breaker air control valve</li> </ul>
MV090	2		
MV180	4		

**VACUUM** Catalog No.(BK-UA002)



# MICRO EJECTORS

- Easy-to-use vacuum generator using compressed air allows for high-speed transfer of a workpiece without damaging it.
- These compact devices can be mounted on movable parts. High level of response obtained when its mounted location is closest to the workpiece.

## Micro Ejectors FME Series



Inch size available

Model	Vacuum flow ℓ /min (ANR)	Port size	Options
FME□05	5.5	φ 4/ φ 6	<ul style="list-style-type: none"> <li>• With solenoid valve</li> <li>• Manifold</li> <li>• With electronic vacuum switch</li> </ul>
FME□05L	5		
FME□07	10		
FME□07L	8		
FME□10	19		
FME□10L	17		

Catalog No.(BKS0002) Micro Ejectors FME Series

## Micro Ejectors GME Series

Model	Vacuum flow ℓ /min (ANR)	Port size	Options
GME05	5.5	M5×0.8	<ul style="list-style-type: none"><li>• With solenoid valve</li><li>• Manifold</li><li>• With electronic vacuum switch</li></ul>
GME07	11	Rc1/8	
GME10	22		

Catalog No.(BKS0001)Micro Ejectors GME Series

**VACUUM** Catalog No.(BK-UA002)

## Micro Ejectors



Inch size available  
with "H" prefix

Model	Vacuum flow ℓ /min (ANR)	Port size	Options
(H)ME03	3.0	M5×0.8,M3×0.5	<ul style="list-style-type: none"><li>• With solenoid valve</li><li>• Manifold (with filter)</li><li>• With electronic vacuum switch</li></ul>
(H)ME05	6.3	M5×0.8	
(H)ME07	12.5	M5×0.8,Rc1/8	
(H)ME12		Rc1/8	<ul style="list-style-type: none"><li>• With solenoid valve</li><li>• With filter</li><li>• With vacuum switch</li></ul>
(H)ME25	25	Rc1/4	
(H)ME60	58		

**VACUUM** Catalog No.(BK-UA002)

# MULTISTAGE MICRO EJECTORS

- The MED, MEDT series have a two-stage nozzle structure to obtain about double the suction flow rate with the same nozzle diameter.

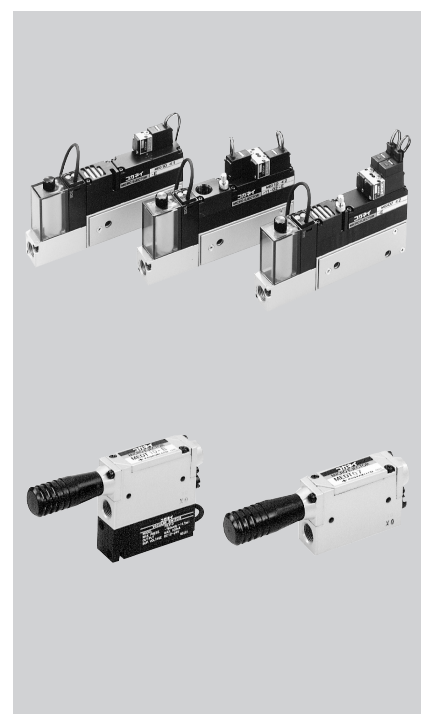
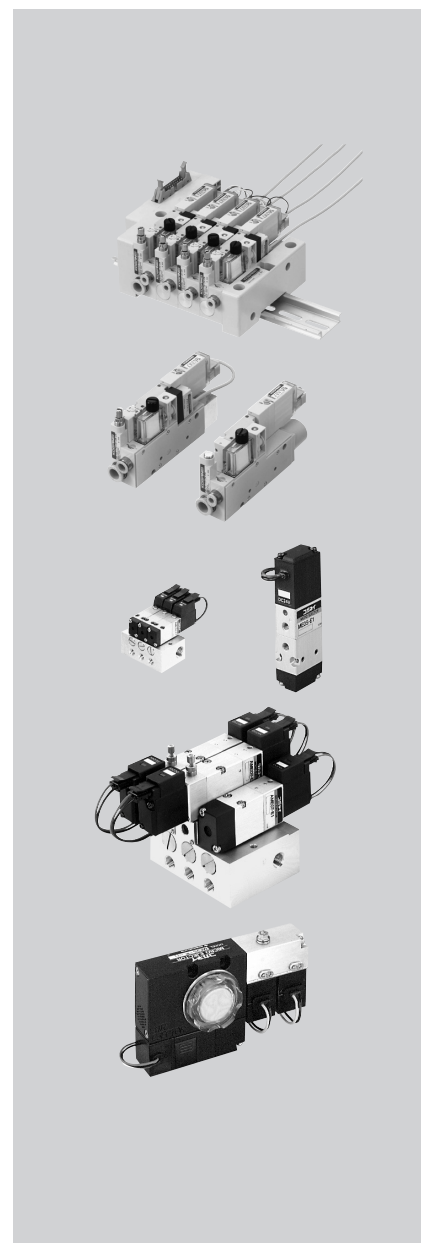
## Multistage Micro Ejectors

Model	Vacuum flow ℓ /min (ANR)	Port size Rc	Options
(H)MED07-E	25	1/8,1/4	<ul style="list-style-type: none"> <li>• With solenoid valve</li> <li>• Manifold (with filter)</li> <li>• With electronic vacuum switch</li> </ul>
(H)MED10-E	50		

## Multistage Micro Ejectors MEDT

Model	Vacuum flow ℓ /min (ANR)	Port size Rc	Options
(H)MEDT07	25	1/8	• With electronic vacuum switch
(H)MEDT10	50		
(H)MEDT12	85	1/4	
(H)MEDT14	95		

**VACUUM** Catalog No.(BK-UA002)



## VACUUM PADS

- These products are ideal for compact and light workpiece transfer systems. Workpiece pick up miss will be eliminated and durability is superb.
- The shapes, dimensions and materials can be selected to suit the size and condition of the workpiece. Four types of metal mountings are available.
- Conductive vacuum pad and halogen-processed vacuum pad are also available.

Model	Piping direction	Pads holding type	Pad diameter mm
KPHF	Horizontal piping	Fixed	2~200
KPHS		With built-in spring	
KPVF	Vertical piping	Fixed	
KPVS		With built-in spring	
KPPF	Horizontal piping	Ball joint, fixed	
KPPS		Ball joint, spring	
KPLF		Non-rotating, fixed	
KPLS		Non-rotating, spring	



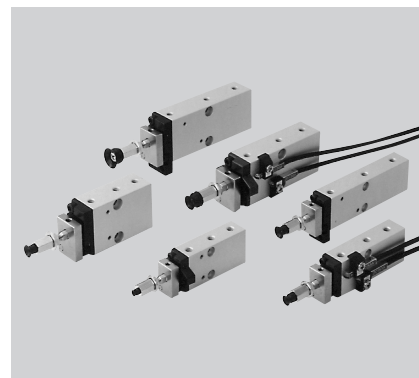
**VACUUM** Catalog No.(BK-UA002)

## MULTI MOUNT CYLINDERS FOR VACUUM PADS

- With a hollow rod structure and the very short overall length, these cylinders have been designed for easier installation with complete tube connection on one side.
- With a very little movement, these cylinders securely cover vacuum pick up, transfer and other functions.

Basic model	Diameter mm	Stroke mm	Port size
Double Acting non-rotating type : BDAV	10	5~30	M5×0.8
	16		

Remark: Cylinders with sensor switches also available.



## VACUUM REGULATORS

- Vacuum pressure can be freely set by attaching the regulator to a vacuum line.
- A lightweight and compact body enables easy panel mounting by only opening of holes.

Basic model	Port size	Pressure setting range kPa	Suction flow volume ℓ/min (ANR)
VR100	M5×0.8 Rc1/8	-6.5~-100	MAX.45

**VACUUM** Catalog No.(BK-UA002)



## PILOT TYPE VACUUM REGULATORS

- Vacuum pilot type achieves superior pressure stability even with severe changes in flow rate.
- External pilot type also available.

Basic model	Port size Rc	Pressure setting range kPa	Suction flow rate ℓ/min (ANR)
NVR200-01	1/8	-2.5~-95	MAX.130
NVR200-02	1/4		MAX.200
NVRA200-01	1/8		MAX.130
NVRA200-02	1/4		MAX.200



## NON-CONTACT TRANSFER COMPONENTS

- No contact means no pad marks or scratches left on the workpiece.
- Aerated or somewhat bumpy workpieces can also be handled by this system.

Basic model	Lifting force N <sup>note</sup>	Consumption flow ℓ/min (ANR) <sup>note</sup>	Port size	Options
NCT20	0.9	100	M5×0.8	<ul style="list-style-type: none"> <li>• Bumper</li> <li>• Pressure sensor</li> <li>• Optoelectric sensor</li> </ul>
NCT30	1.3			
NCT40	2.0	110		
NCT60	6.0	210		

Note: Figures for NCT20 and NCT30 are for application of 0.5 MPa through a φ4 ×φ2.5 tube for 1000 mm.

Figures for NCT40 and NCT60 are for application of 0.5 MPa through a φ6 ×φ4 tube for 1000 mm.

**VACUUM** Catalog No.(BK-UA002)



## MULTI-CHANNEL PRESSURE SENSOR CONTROLLERS

- Single controller handles simultaneous four-point detection.
- There are two output modes: the general-purpose mode, and the mode corresponding to a slight differential pressure and useful for detection of micro workpieces.

Model	No. of control sensors	Operating pressure range kPa	Output method
PSU	4	0~−101.3 −100~220 −100~1000	NPN open collector

**VACUUM** Catalog No.(BK-UA002)



## MULTI-CHANNEL FLOW RATE SENSOR CONTROLLERS

- Single controller handles simultaneous four-point detection.
- If the workpiece suction hold cannot be detected by pressure sensors it can be detected by flow-rate sensors.
- Three kinds of sensor heads are available, classified according to flow-rate range.

Model	No. of control sensors	Flow-rate range ℓ/min (ANR)	Output method
FSU	4	−500~500 −3~3 0~10	NPN open collector

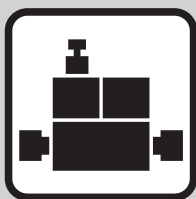


## One-channel Flow Sensor Controllers

- If the workpiece suction hold cannot be detected by pressure sensors it can be detected by flow-rate sensors.
- Three kinds of sensor heads are available, classified according to flow-rate range.

Model	No. of control sensors	Flow-rate range ℓ/min (ANR)	Output method
FS1U	1	−500~500 −3~3 0~10	NPN open collector





# KOGANEI PNEUMATIC COMPONENTS FLUORORESIN PRODUCTS

Refer to previous catalog

FLUORORESIN  
PRODUCTS

ACCESSORIES GENERAL CATALOG  
AIR TREATMENT, AUXILIARY,  
VACUUM, AND FLUORORESIN  
PRODUCTS  
Catalog No.BK-UA002

## PURE PROCESS Series

Among various plastic materials, fluororesin exhibits particularly superior chemical resistance, heat resistance, low friction, electrical insulation, low tackiness, weather resistance, and other features. This superior material is fabricated using micro-machining technology for PTFE products, and Koganei's independently developed injection molding method for PFA products, all under Koganei's rigorous quality control. These products are used in the semiconductor, liquid crystal, and other electronics sectors, as well as in chemicals, food products, medical equipment, chemical plants, and a wide variety of other industrial sectors.

### Fluororesin Valve Series

Type	Model	Orifice mm	Suck back volume cm <sup>3</sup>	Operating pressure MPa
Air operated diaphragm type 2-port valves	F-AV030	1	—	0.2
	F-AV050	1.6	—	0.2
	F-AV070	1.8	—	0.2
	F-AV070	2	—	0.5
	F-AV100	2.5	—	0.5
	F-AV125	4	—	0.5
	F-AV250	6 · 8	—	0.5
	F-AVP070	2	—	0.5
	F-AVP125	4	—	0.5
Air operated diaphragm type 3-port valves	F-AVP250	8	—	0.5
	F-DAV070	2	—	0.5
	F-DAV125	4	—	0.5
	F-DAV250	6	—	0.5
	F-DAVP070	2	—	0.5
Suck back valves	F-DAVP125	3.2	—	0.5
	F-DAVP250	8	—	0.5
	F-SV070	—	0.045	0.3
	F-SV125	—	0.25	0.3
Air operated valves with suck back diaphragm type	F-SV250	—	0.40	0.3
	F-SAV070	1.8	0.04	0.2
	F-SAV070	2	0.045	0.3
	F-SAV100	2.5	0.25	0.3
	F-SAV125	4	0.25	0.3
	F-SAV250	6	0.40	0.3
	F-SAVP070	2	0.045	0.3
Solenoid valve diaphragm type 2-port valve	F-SAVP125	4	0.25	0.3
	F-EV120	3	—	0.15
	F-SAV250	6	—	0.2
High viscosity specification valves	F-AV500	12	—	0.5
Valve with dual flow rate switching mechanism	F-C250	(14mm <sup>2</sup> )	—	0.9
Check valve	TSC-60W	—	—	0.9

Value in parentheses ( ) is effective area.

Catalog No.(BKF0003) Pure Process Series

FLUORORESIN PRODUCTS Catalog No.(BK-UA002)

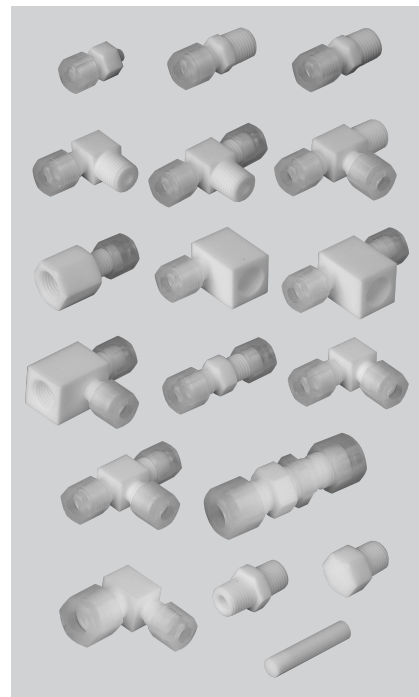


## Fluororesin H Series Fittings

Model	Parts	mm		Inch	Connecting thread
		mm	Inch		
F-H-MC□-M6	Male connector M6 thread	φ3~φ6	—	—	M6×1
F-H-MC	Male connector	φ3~φ25	1/8~1	—	R1/8~1
F-H-MCT	Male connector through	φ3~φ25	1/8~1	—	R1/8~1
F-H-ME	Male elbow	φ3~φ25	1/8~1	—	R1/8~1
F-H-MBT	Male branch tee	φ3~φ25	1/8~1	—	R1/8~1
F-H-MRT	Male run tee	φ3~φ25	1/8~1	—	R1/8~1
F-H-FC	Female connector	φ3~φ25	1/8~1	—	Rc1/8~1
F-H-FE	Female elbow	φ3~φ25	1/8~1	—	Rc1/8~1
F-H-FBT	Female branch tee	φ3~φ25	1/8~1	—	Rc1/8~1
F-H-FRT	Female run tee	φ3~φ25	1/8~1	—	Rc1/8~1
F-H-U	Union	φ3~φ25	1/8~1	—	—
F-H-UE	Union elbow	φ3~φ25	1/8~1	—	—
F-H-UT	Union tee	φ3~φ25	1/8~1	—	—
F-H-PU	Panel union	φ3~φ25	1/8~1	—	—
F-H-RU	Reducing union	φ3~φ25	1/8~1	—	—
F-H-RUE	Reducing union elbow	φ3~φ25	1/8~1	—	—
F-H-UN	Union nut	φ3~φ25	1/8~1	—	—
F-H-K	Nipple	—	—	—	R1/8~1
F-H-PG	Plug	—	—	—	R1/8~1
F-H-BT	Block off tube	φ6~φ25	1/8~1	—	—

Catalog No.(BKF0003) Pure Process Series

FLUORORESIN PRODUCTS Catalog No.(BK-UA002)

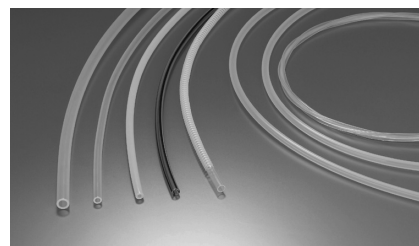


## Fluororesin Tube Series

Model	Parts	Tube outer dia.	
		mm	Inch
F-9003-PFA	PFA tubes	φ3~φ25	φ 3.17~φ 25.40
F-9003-PFA-HG	PEA-HG tubes	φ3~φ25	φ 3.17~φ 25.40
F-9003-PFA-NE	PFA-NE tubes	φ3~φ25	φ 3.17~φ 25.40
F-9003-BT	BT tubes	φ4~φ12	φ 3.17~φ 12.70
F-9003-RPL	RPL tubes	φ6~φ12	φ 6.4~φ 12.70

Catalog No.(BKF0003) Pure Process Series

FLUORORESIN PRODUCTS Catalog No.(BK-UA002)



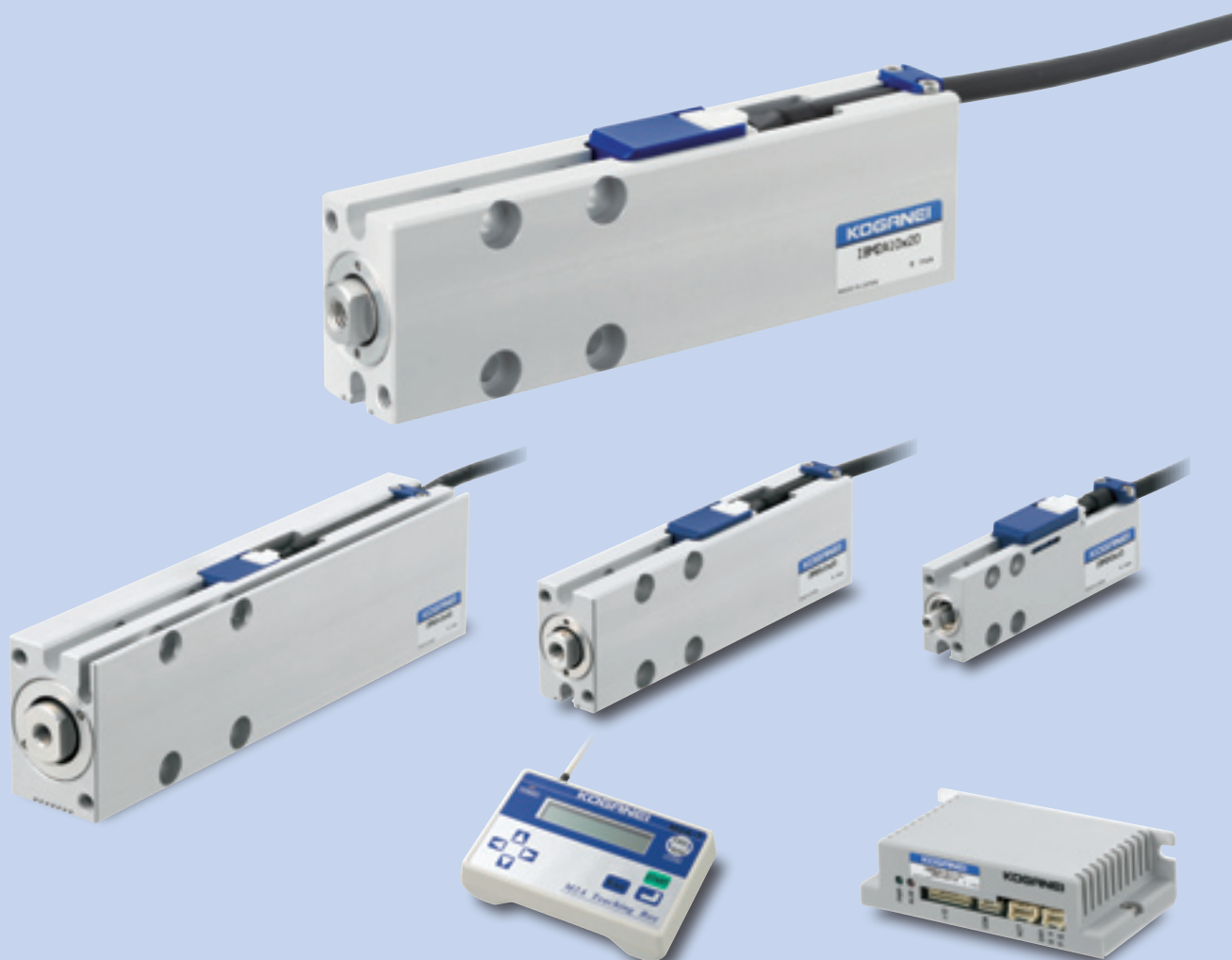




## iB-Move

- Linear Stepping Actuator
- Simple operation  
Simple point-to-point operation.
- Simple setup  
Simple stroke, acceleration/deceleration, thrust level settings.
- Low cost  
Open-loop control enables low cost.
- Silent, clean  
A linear motor and no deceleration mechanism greatly reduces operating noise. Grease-less for cleaner operation.
- Maintenance-free  
Simple construction eliminates the need for maintenance.

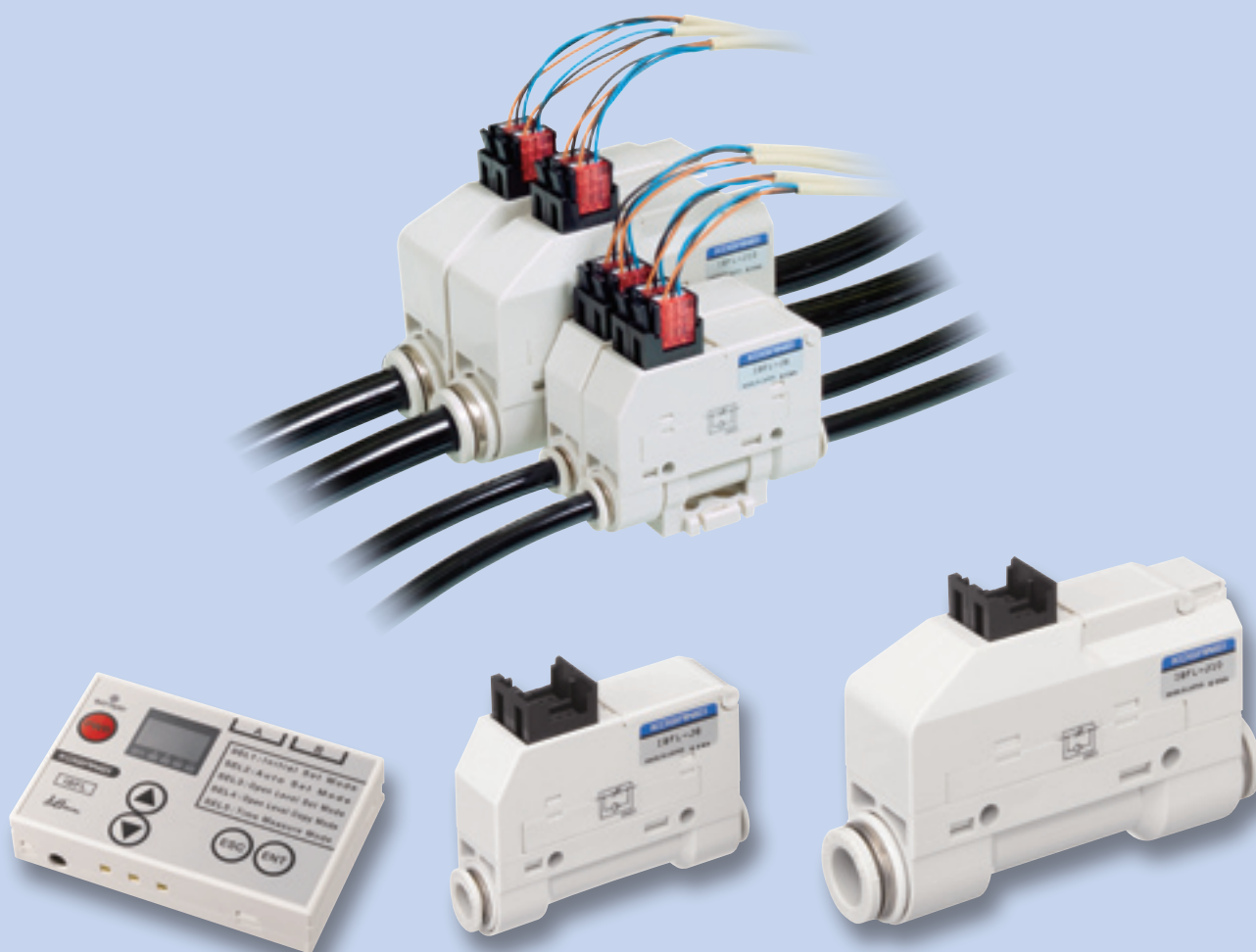
Catalog No.(BK-C0029) Linear Stepping Actuator iB-Move



## iB-Flow

- Digital Flow Controller
- Digital cycle time setting  
Easy setup of cylinder operation time (Input of values from 0.05 to 30 seconds).
- Safe lock mechanism  
Safety mechanism prevents needle from loosening.
- Operation time observable  
Cylinder operation time can be measured.
- Copy function  
Simple cylinder synchronization setups.
- Digital needle opening control  
Numeric setting of needle opening (0 to 100%).

Catalog No.(BK-A0005) Digital Flow Controller iB-Flow



## iB-Cyclone



Inch size available

- Superior water separation performance

Half the size and over 99%<sup>Note</sup> water separation ratio compared to other comparable devices.

Note: According to Koganei measurement standards

- Cyclone system

High-speed cyclone water separator uses the power of centrifugal separation (patent pending).

- Maintainability improved

Maintenance free because filter element is not used.

Select NO type or NC type auto drain.

- Wide range of flow rates

Excellent water separation performance in a wide range of flow rates.

- Compatible in a wide range of environments

Specifications for ozone resistance, NCU specifications (copper free) compatible as standard.

Catalog No.(BK-E0007) Water Separator iB-Cyclone



# Creceed

The Koganei Creceed series was built from Koganei's creative ideas (CREate) and our customers' successful results (sucCEED).

## DESKTOP ROBOT CELL MASTER

### Compact

Mounting areas for main body units are standardized into an A4 work size of 210 (W) x 300 (D) mm for the DTRB and DTHB series (A4 type), and an A3 work size of 310 (W) x 506 (D) mm for the DTHB series (A3 type), to ensure the widest possible selection of mounting locations. This compact size is suitable for working environments, whether it be one-man cell production, where a single operator handles multiple units, or regular cell production. Use of precision slide threads ensures high precision.

Remark: The specifications and outward look may be changed without notice.

### Easy Operation

Even a beginner can operate the robot easily, just by inputting moving "points" and "parameters" on a teaching box. A pre-programmed customized operation software is available. Easy program change and multi-tasking for several units are also available.

## CELL MASTER DTHB Series

### A3 type

Maximum speed .....500 mm/s

Repeatability.....X-Y:  $\pm 0.05$  mm, Z:  $\pm 0.02$  mm

Number of programming steps...Total number of steps: 10000 steps

Interpolative speed .....1 - 200 mm/s



### A4 type

Maximum speed .....200 mm/s

Repeatability..... $\pm 0.02$  mm

Number of programming steps...Total number of steps: 10000 steps

Interpolative speed .....1 - 200 mm/s



## CELL MASTER DTRB Series

Maximum speed.....200 mm/s

Repeatability..... $\pm 0.02$  mm

Programming capacity .....1000 steps x 6 groups



# ELECTRIC ACTUATORS

## ELEWAVE Series

An inexpensive electromotive actuator with outstanding cost performance.

### Electric Hands

Gripping control is performed by a newly-developed controller.

- Soft touch through free speed control
- Linear guide boosts precision and rigidity
- Numerical control allows free stroke settings (64 points)
- Mode selection for positioning and grip control available
- Stepping motor + encoder
- Superior cost performance
- Communications function enables sensing of grip position

### Electric Rotary Actuators

Compact table-type rotary actuator for ease of use.

- High resolution, high precision
- Free swing angle settings (64 points)
- Compact, high rigidity
- Stepping motor + encoder
- Superior cost performance
- Shockless start and stop; free setting of any acceleration/deceleration

### NS Sliders

Compact, thin-type square form actuators that stimulate creativity.

- High-speed type (120 mm/s) and high-thrust type (50 N)
- Multipoint positioning operation possible (64 points)
- High precision and high rigidity with linear guide
- Stepping motor and encoder
- Shockless start and stop
- Superior cost performance

Catalog No.(BK-C0027) ELECTRIC ACTUATORS ELEWAVE Series



## ION WIPER

Ion Wiper incorporates a high-frequency AC ionizer and air curtain into a unit box that can maintain a clean work station through efficient static removal, dust removal, and dust collection.



## STATIC ELECTRICITY REMOVING UNIT: IONIZER

Two types are available ; the Blow type version can remove static electricity with pinpoint accuracy by carrying ion through a tube, and the Fan type does not require an air supply. These units can be used with a low voltage DC power supply due to the use of a compact high voltage transformer.

Catalog No.(BK-R0001) Static Electricity Removing Unit IONIZER

Catalog No.(BK-P023)Static Electricity Removal Method Unit IONIZER Bar Type DTY-BA11 Series

Catalog No.(BK-P022)Handy Surface Potential Meter DTY-KVS11

Catalog No.(BK-R0005)Static Electricity Removing Unit IONIZER Blow Type DTY-ELK01 Series



## ELECTROSTATIC POTENTIAL SENSOR EP SENSOR

An optimum sensor for inline electrostatic monitoring.

Ensures constant monitoring of invisible electrostatics without expending manhours for electrostatic measurement or control. This EP Sensor can ensure constant monitoring of electrostatic control for locations that are difficult to measure using handy-type instruments.

Catalog No.(BK-R0002) Electrostatic Potential Sensor EP Sensor



## CLEANLINESS MONITOR CC MONITOR

The light scattering principle is used for high-precision and stable detection of floating particles at 0.3  $\mu\text{m}$  or larger, and displays the cleanliness level in 10 stages on an LED.

In response to contamination problems, multipoint and constant monitoring can ensure early detection of contamination sources.

An alarm output can also be set at a desired cleanliness level. In addition, existing LANs with Ethernet capability can be used to gather detection data.

Catalog No.(BK-P017) Cleanliness Monitor CC Monitor







# Plus Accuracy

Actuators gain advanced positioning accuracy and high rigidity. The Koganei Alpha Series improves on its sophistication as a drive module, providing superior applications and labor-saving support for FA line design and manufacturing.



Twin rod cylinder

## TWIN ROD CYLINDERS

Two rods make guides unnecessary. Moreover, the bearing part uses linear ball bearings, assuring high non-rotating precision and end twisting accuracy of the plate even at full stroke. Achieving twice the thrust of previous cylinders and high space efficiency, the flat, block body features a more compact mechanical device.

Cylinder bore .....  $\phi 10$ ,  $\phi 16$ ,  $\phi 20$ ,  $\phi 25$ ,  $\phi 32$

Stroke..... 10~100 mm

Non-rotating accuracy.....  $\pm 0.1^\circ$

**ACTUATORS** Catalog No.(BK-UC003)



## GT SLIDE TABLES (TYPES B, C)

Compact actuator is a unit type that provides a combination of a compact body with a cylinder and miniature guide to achieve high accuracy and high rigidity as the Z axis. It is the industry's first compact slide table that uses an endless type miniature guide. The space-saving design makes one-sided piping possible.

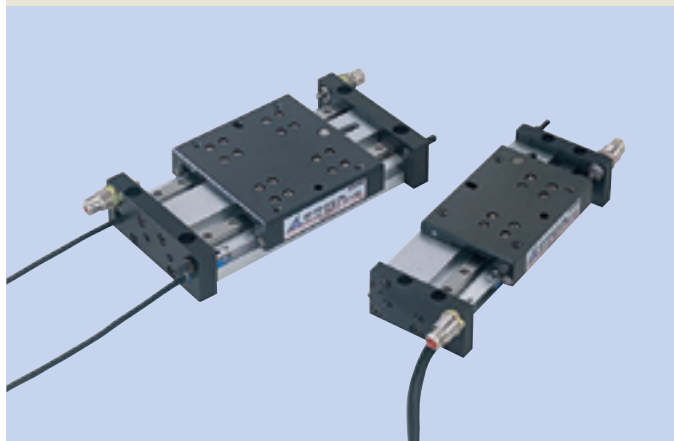
Cylinder bore .....  $\phi 10$ ,  $\phi 16$ ,  $\phi 25$  (Type B),  $\phi 10$ ,  $\phi 16$  (Type C)

Stroke..... 15~120 mm Repeating position accuracy .....  $\pm 0.025$  mm

Maximum loading mass..... 3 kg ( $\phi 10$ ), 4 kg ( $\phi 16$ ), 5 kg ( $\phi 25$ ) (Type B)

1 kg ( $\phi 10$ ), 1 kg ( $\phi 16$ ) (Type C)

**ACTUATORS** Catalog No.(BK-UC003)



## ROD SLIDERS

The work table includes a twin rod cylinder and two guides to achieve high accuracy, high rigidity, and large load. In addition, the center stopper structure prevents the table from slanting to assure stable accuracy. Dowel pin holes for mounting location give easy and sure installation and removal.

Cylinder bore .....	φ 6, φ 10, φ 16, φ 20, φ 25
Stroke.....	10~80 mm
Repeatability.....	±0.05 mm
Maximum payload.....	4.9 N (φ 6), 29.4 N (φ 10), 39.2 N (φ 16), 58.8 N (φ 20), 78.5 N (φ 25)

**ACTUATORS** Catalog No.(BK-UC003)

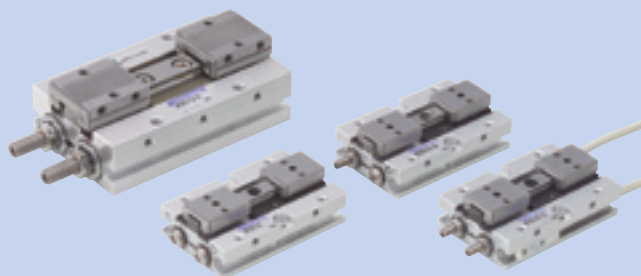


## FLAT TYPE AIR HANDS

The flat-type air hand, with linear guides to increase accuracy and rigidity, adopts a double piston method to achieve larger gripping force. Select from synchronous, non-synchronous, and long types according to workpiece requirements. The thin figure achieves a height of just 15 mm from the body surface to the guides at φ 6, and just 37 mm at φ 18, while an option can be selected with stroke adjusting mechanism (in both opening and closing directions) for all models.

Bore size .....	φ 6, φ 8, φ 12, φ 14, φ 18
Stroke.....	12~80 mm
Effective gripping force.....	From 12 N at φ 6 to 105 N at φ 18

**ACTUATORS** Catalog No.(BK-UC003)



# SYSTEMATIC HANDLING MODULES

Handling modules standardize the various functions of fixing, rotating, linear motion, tolerance absorption, and gripping for robot hand units on production lines. The installation dimensions between modules are of four types, including the □ 32 mm J size, □ 50 mm S size, □ 65 mm M size, and □ 85 mm L size. Moreover, the M size is equipped with mounting holes for the S size, while the L size is also equipped for the M size. The system reduces design time and costs, allowing for early set-up of automated production lines.

**ACTUATORS** Catalog No.(BK-UC003)



● **Mounting module SHM11S/11M/11L**

- Installation axis dimension:  $\phi 10$ ,  $\phi 13$ ,  $\phi 20$
- Mass: 190~330 g



● **Turning module SHM21S/21M/21L**

- Pressure range MPa: 0.2~0.6
- Turning angle repeatability:  $\pm 0.03$  degrees
- Mass: 300~1500 g



● **Reversing module SHM31S/31M/31L**

- Reversing angle range: 0~180 degrees
- Turning angle repeatability:  $\pm 0.03$  degrees
- Mass: 460~1900 g



● **Shift module SHM41S/41M/41L**

- Cylinder bore: 12, 16, 20 mm
- Stroke: 10~40 mm
- Repeatability:  $\pm 0.05$  mm
- Mass: 280~980 g



● **Cushion module SHM51S/51M/51L**

- Stroke: 5, 8, 10, 15, 20 mm
- Repeatability:  $\pm 0.05$  mm
- Mass: 250~810 g



● **Compliance module SHM61J/61S/61M/61L**

- Centrifugal force N: 5
- Repeatability when locked:  $\pm 0.02$  mm
- Mass: 110~600 g



● **Parallel clamp module SHM73J/71S/71M/71L**

- Stroke: One side 8, 12, 15 mm
- Gripping width: 26~73 mm
- Mass: 120~880 g



● **Parallel clamp module SHM72S/72M/72L**

- Stroke: One side 20, 26, 30 mm
- Gripping width: 100~518 mm
- Mass: 490~2200 g

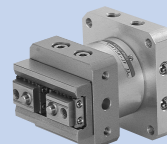
## SHM MICRO Series

Achieves further down-sizing!



● **Compliance module SHM61J/SHM62J**

- Centrifugal force N: 5
- Repeatability when locked:  $\phi 0.04$  mm MAX.
- Mass: 110 g



● **Parallel clamp module SHM73J-16/SHM73J-12/SHM73B-12**

- Cylinder bore:  $\phi 16$ ,  $\phi 12$  mm
- Open/close stroke:  $8 \pm 0.5$ ,  $6 \pm 0.5$  mm
- Mass: 240 g, 135 g, 120 g

## OTHER PRODUCTS

### CLEAN SYSTEM PRODUCTS

Clean system products respond to the necessity of maintaining high clean production environments. With such measures as excellent dust-prevention and advanced corrosion-resistant materials processing, they are ideal for the prevention of particle pollution inside the cleanrooms.

Catalog No.(AR009)



### HIGH-PRECISION CONSTANT DISPENSING PUMP Series

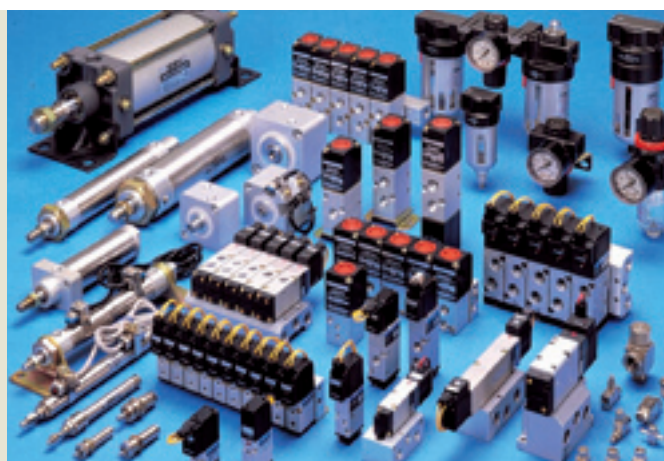
- The liquid contact area is composed of fluorine resin, and is resistant to various liquid chemicals.
- The liquid contact area is structured without a slide portion, to virtually avoid generation of particles.
- Daily maintenance is unnecessary, enabling constant dispensing maintained at high repeatability of dispensing volume.

Catalog No.(SP188)



### NON-ION Series

These pneumatic systems strictly prevent the generation of copper ions or fluorine gas. The systems respond to the needs of battery manufacturing lines and cathode-ray tube manufacturing lines.



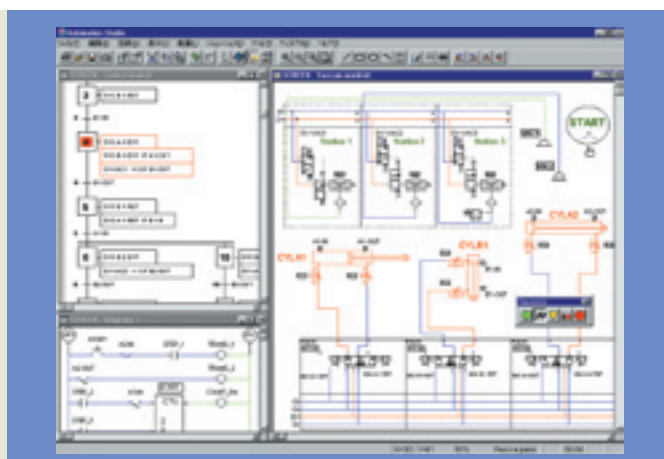
### AUTOMATION STUDIO

Circuit design CAD, and circuit simulation software

The Automation Studio is a software package for the design of various kinds of automatic control circuits, and for software simulation of the designed circuits.

- Possible for circuit diagrams: Ladder circuits, pneumatic circuits, hydraulic circuits, digital electronic circuits, block diagrams, etc.

Catalog No.(P271)



## FLUID CONTROL EQUIPMENT PROPORTIONAL CONTROL VALVES KFPV050, KFPV300 Series

The proportional control valves KFPV 050, KFPV300 series are developed based on the concepts of precision, efficiency, and simplicity. They can be used in combination with a controller to change the size of input signals. The result is the stepless adjustment of flow rates for the high-precision control of air, gases, and liquids.

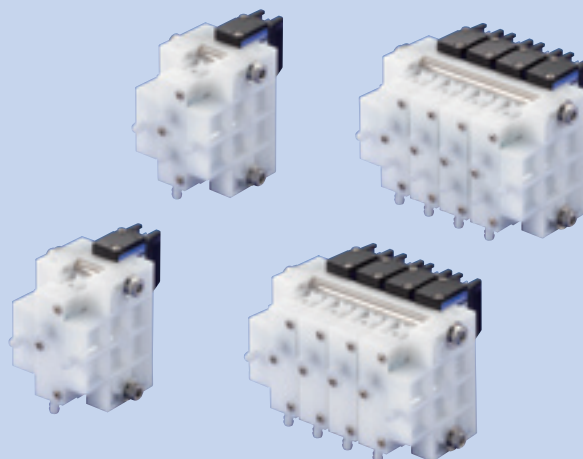
Catalog No.(BKV0010) Fluid Control Equipment Proportional Control Valves  
KFPV050 Series



## Compact Valves for Chemical Solution and Analyzer Equipment PVS Series

- 1.5 mm orifice diameter and 12 mm width indirect acting 2- and 3-port solenoid valves for chemical solutions
- Best suited for dispensing process of analyzers
- Designed with consideration given to a flow in a valve chamber
- Indirect acting valves adopted not to transfer heat to media
- Free combination of manifolds (Up to 20 valves can be mounted)

Catalog No.(BK-V0013) PVS Series



## Circulated cooling water Water-quality improvement device DB Scale Separator

We suggest a new way of water treatment.

The scale and corrosion component are separated and disposed of from the circulated cooling water by using new "non-chemical" technology to maintain water quality stably.

Catalog No.(P332), (P348)





# KOGANEI WORLDWIDE SERVICE NETWORK SERVES YOU ANYWHERE IN THE WORLD.

## Sales and Service Points in 32 Countries Worldwide.



**Reliable KOGANEI pneumatic products can satisfy customer's needs anywhere in the world.**

**Highly valued and field proven KOGANEI products are well accepted throughout the world.**

◆ When you want to know more about Koganei products, sales network and distribution throughout the world, please visit our Website. Also let us know your concerns and questions via E-mail.  
Koganei Internet Home Page Address  
(Available both in Japanese and in English)  
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E-mail: [overseas@koganei.co.jp](mailto:overseas@koganei.co.jp)

◆ For more detailed information regarding distribution locations, please check the Koganei distribution list "Worldwide Service Network" (Catalog No.SP125)

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## KOGANEI GREEN PROCUREMENT

**Customers concerned about green procurement can rest assured that KOGANEI develops and provides products where the environment has been taken into account.**

KOGANEI has established a Green Partner Program with the aim of procuring less environmental load products, parts, and materials from suppliers who are actively engaged in environmental protection, and of delivering environmentally friendly products to our customers, in order to protect the environment and to help build a recycling-oriented society.







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