



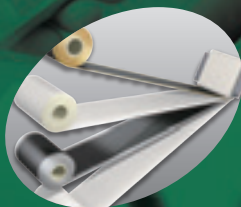


Equipment related to rechargeable batteries P4* Series

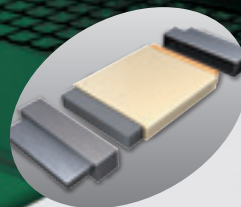
- Material restrictions**

- Dry environment**
DEW POINT
-70°C

- Stable operation**

- Fights dust and its generation**




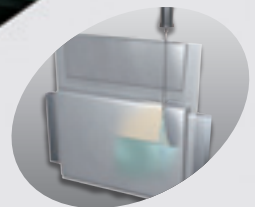
Winding



Stacking



TAB Welding






Immersion

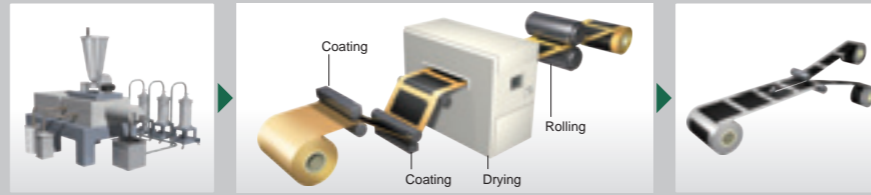
Each manufacturing process in the manufacturing of rechargeable batteries requires support for a variety of environments, such as dust/explosion-proof/vacuum/ultra-dry and material restrictions.

1 Electrode material   



① Electrode material ② Electrolyte ③ Separator




2 Electrode manufacturing process   

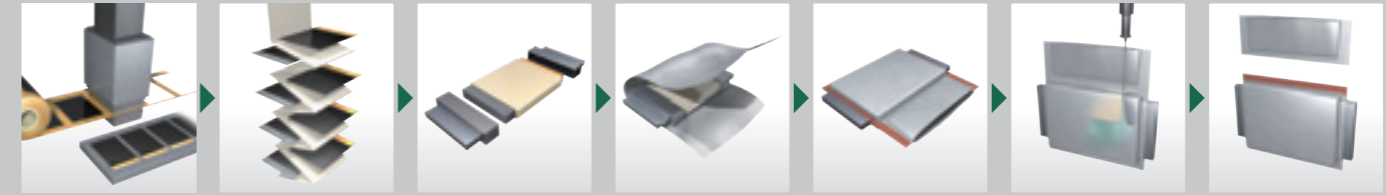


④ Weighing/Kneading
The cathode/anode materials are measured in proper amounts and mixed into pastes.

⑤ Coating/Drying/Rolling
The electrode material is uniformly applied to the metal foil. It is speed dried by hot air and moisture is evaporated. The electrode is rolled with a roller to enhance density.

⑥ Slitting
Rolls of electrode material and separator are cut into the appropriate size.

3 [A] Cell assembly [Laminate type]   



⑦ Electrode punching
The positive and negative electrode plates are punched into a predetermined size with a mold.

⑧ Stacking
The electrode and separator are alternately stacked with high speed and high-precision.

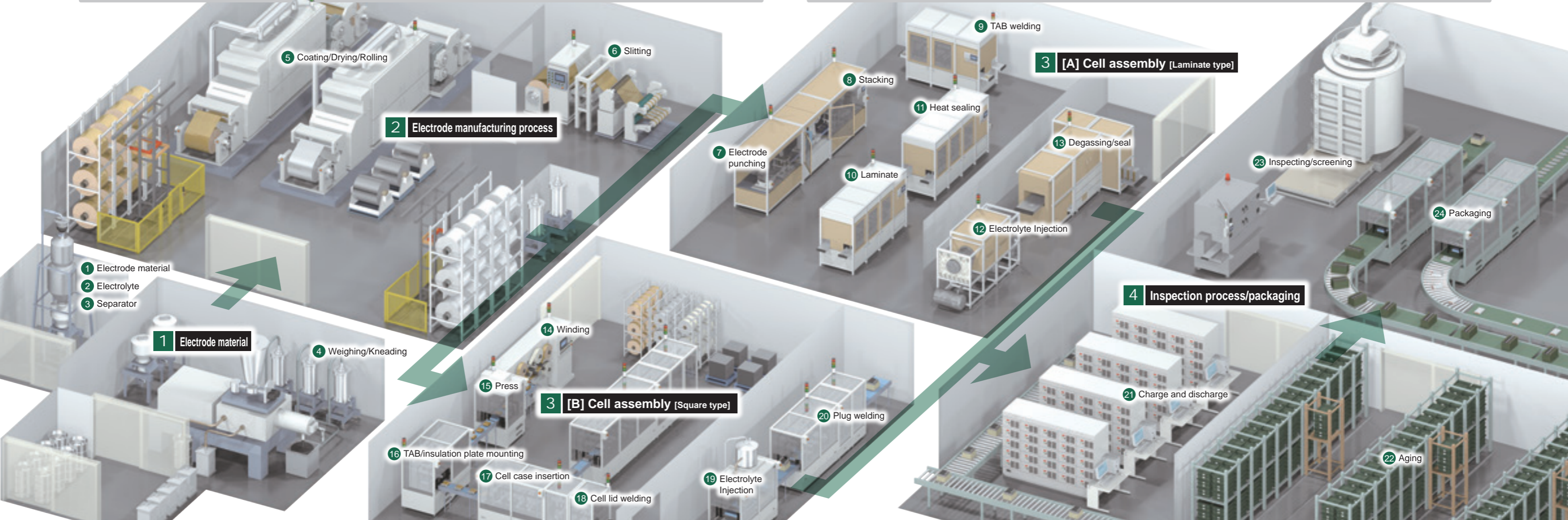
⑨ TAB welding
The connection terminals (TAB) are joined for power input and output.




⑩ Laminate
The electrode laminate is wrapped with exterior coating.

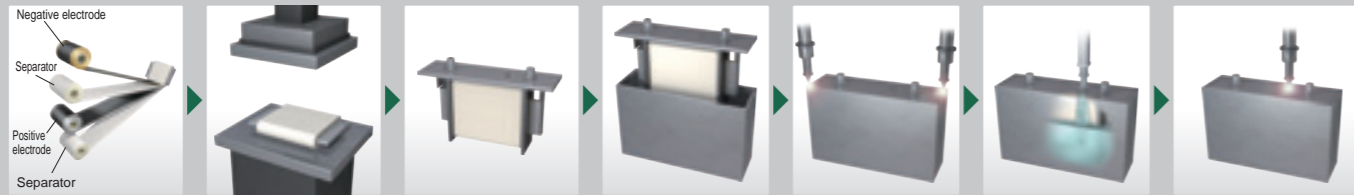
⑪ Heat sealing
Heat is applied to adhere the 3 sides of the cell.

⑫ Electrolyte Injection
Electrolyte is injected into the battery.

⑬ Degassing/seal
The generated gas is removed, and heat is applied to seal the battery cell.



3 [B] Cell assembly [Square type]   



⑭ Winding
Separators are sandwiched between the anode and cathode elements and wound.

⑮ Press
The wound elements are pressed.




⑯ TAB/insulated plate mounting
The terminals (TAB) and insulating plates are joined for power input and output.


⑰ Cell case insertion
The wound body is inserted into the cell case.

⑱ Cell lid welding
The cell case and lid are laser-welded.

⑲ Electrolyte Injection
Electrolyte is injected into the battery.

⑳ Welding of the filler plug
The filler plug is welded to completely seal the battery cell.

4 Inspection process/Packaging   



⑳ Charge / Discharge
The battery is activated by repeatedly charging and discharging.

㉑ Aging
The fully charged battery cell is left at a predetermined temperature for a fixed period.

㉒ Inspection/Screening
Various performances as a product are determined.

㉓ Packaging
Battery cells are stacked and sealed in the case.

Contributes to "Stable operation" and "Long service life components" for equipment that never stops.

With the progress of rechargeable and next-generation battery development, we have responded to the demand for components with improved dry environmental performance. Our products are compatible with the production stability of the manufacturing process and consistently meet the needs of rechargeable battery manufacturing, from electrode production to packaging.

Make Progress!!

P4 Series



Material restrictions

Restrict materials for component parts.

Restricts the use of materials and surface treatments inappropriate for the rechargeable battery manufacturing process.

Dry environment

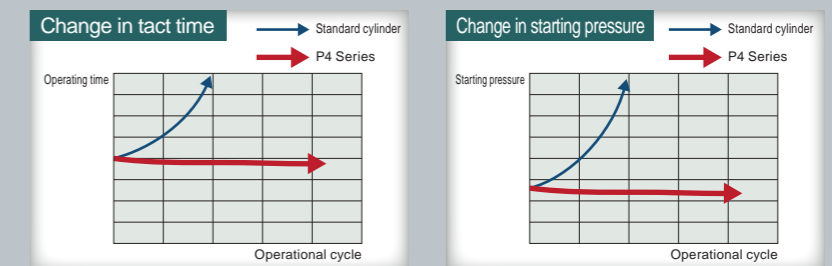
Long service life even in -70°C dew point environments

Adopted grease compatible with ultra-dry environments. Retains the smooth operation of the sliding part for long periods, even in dry environments.

Stable operation

Contributing to a system that never stops

Uses a special grease that supports low dew points and high frequency use. Contributes to stable operation of equipment.



Fights dust and its generation

Suppresses dust generation of metal wear powder

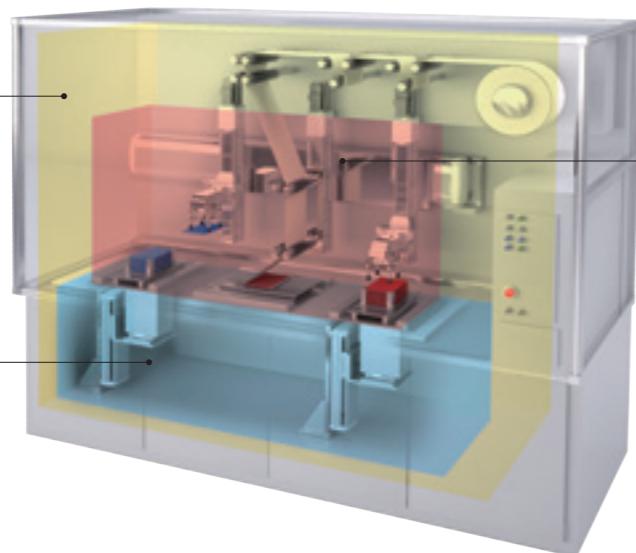
Equipped with a local exhaust function (vacuum treatment port). Prevents contamination of the electrodes or cell by not leaking the metal wear powder outside.

Series Zoning

Compatible models are available in 2 grades (P4 Series, P40 Series) according to the atmosphere and installation location of the device.

B ZONE
Zone above but removed from the workpiece
>>> -P4 Series

C ZONE
Zone below the workpiece
>>> -P4 Series



A ZONE
Zone immediately above and close to the workpiece
>>> -P40 Series
>> -P42 Series

Places used with high frequency or where high durability is required
>> Refer to HP Series General Catalog (catalog No.CC-1421A)



Contributes to the needs of all types of rechargeable batteries and next-generation battery manufacturing processes.

Material limitations for the flow path part/sliding part

* Trace amounts present in the alloy are excluded.

Same mounting size as standard

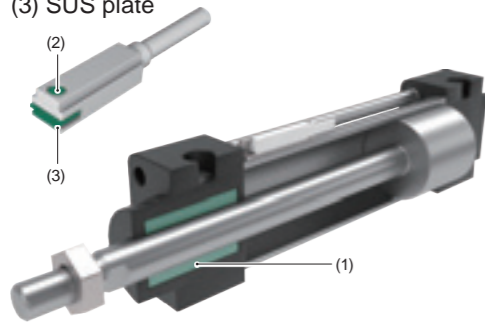
-P4 Series



The use of copper, zinc, and nickel-based materials and electrolytic nickel plating is limited in the construction of the flow path part and sliding part.

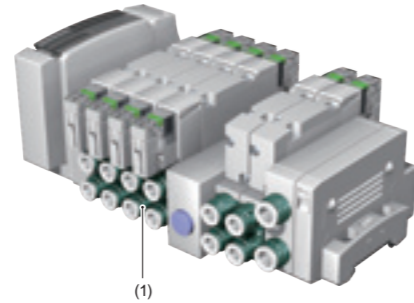
Cylinder

- (1) Copper-based bearing
→ Cast iron-based bearing
- (2) SUS screw
- (3) SUS plate



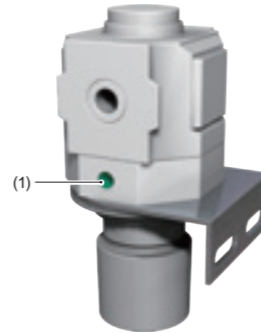
Pneumatic valves

- (1) SUS fitting



Regulator

- (1) Exhaust port



Electric actuator

We offer a wide range of motor-equipped (stepping motor) and motorless (servo motor/stepping motor) variations.

Same mounting size as standard

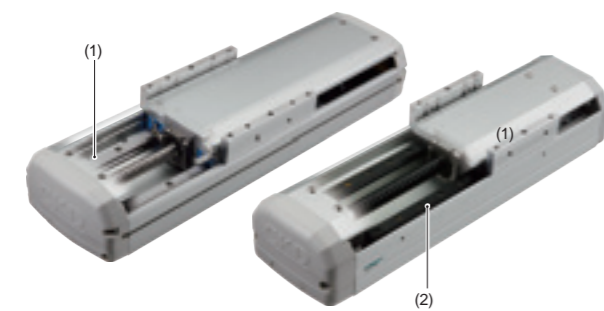


Electrolyte proof specifications

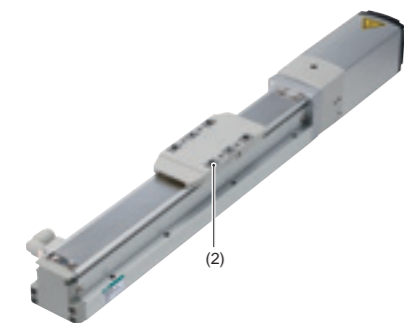
Improved environmental resistance with raydent equivalent processing.

- (1) Standard
- (2) Anti-rust treated

Motorless specifications



Motor specification

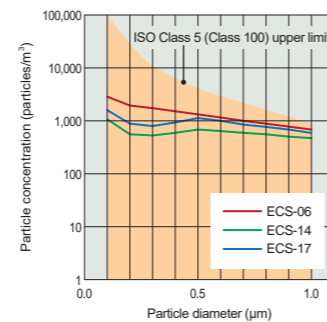
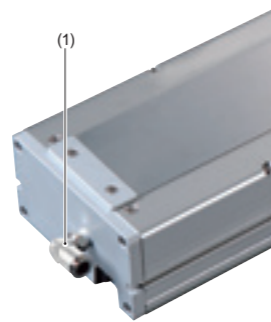


Low contamination specifications

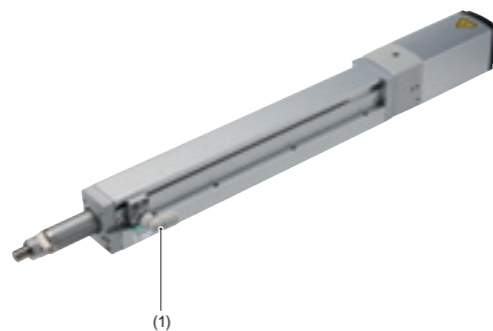
- (1) Counters dust generation

Motorless specifications

Class 100 or equivalent with vacuum treatment port.



Motor specification



Material limitations for all parts

* Electrical components (coil, circuit, wiring section, etc.) are excluded.
* Trace amounts present in the alloy are excluded.

Same mounting size as standard

-P40 Series



The use of copper, zinc, and nickel-based materials, zinc plating, and electrolytic nickel plating is limited in the construction of all parts.

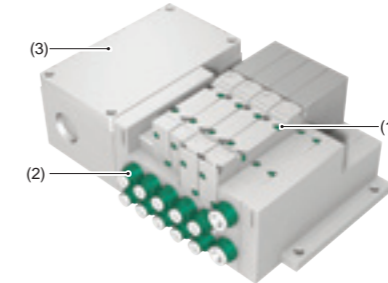
Cylinder

- (1) Electroless Ni plating



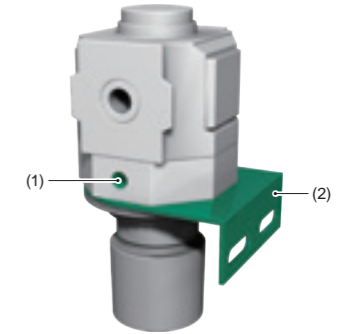
Pneumatic valves

- (1) SUS screw
- (2) SUS fitting
- Electric circuit unit IP65*
- *D-sub-connector specifications are IP40.



Regulator

- (1) Exhaust port
- (2) Electroless Ni plating



* Our standard cylinder comparison

1/5 or less dust generation rate achieved

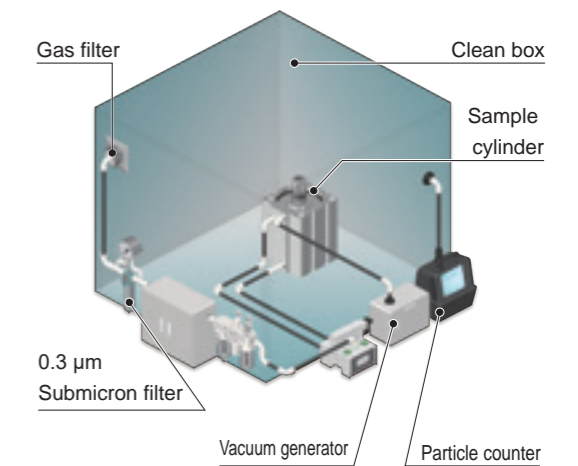
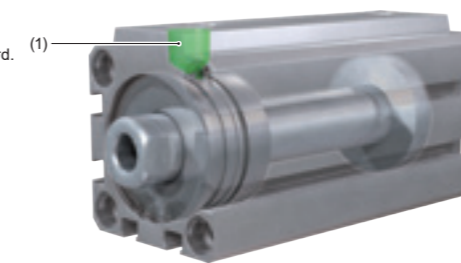
-P42 Series



Local exhaust function (vacuum treatment port) is added to P40 specifications. Prevents metal powder from contaminating the electrode and cell, and reduces product failure of rechargeable batteries. In addition, SUS is used in piston rods.

Cylinder

- (1) Vacuum treatment
- *Dimensions differs from standard.



Test method

The cylinder is operated in a clean box, and dust generation rate is measured.

Test conditions

Supply pressure	0.5 MPa
Cylinder speed	200 mm/s
Frequency	30cpm
Load	No load

For more information about the -P41 Series, please contact our sales department.

Compact cylinder Guided cylinder Rodless cylinder Compact cylinder Twin rod cylinder Linear slide cylinder Standard model

SSD2 Series **STG** Series **SRL3** Series **SMG** Series **STR2** Series **LCR** Series

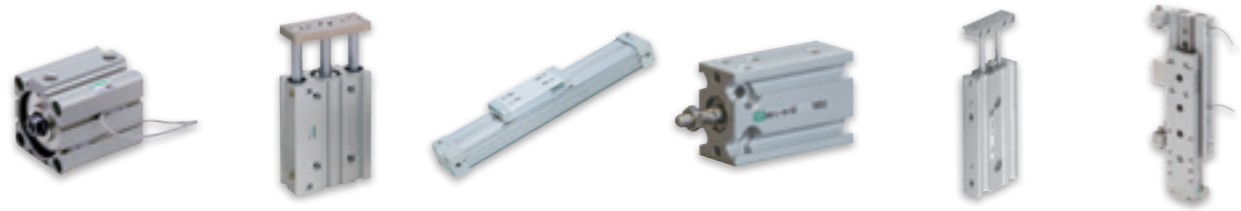


Table rotary actuator Linear Slide Hand Parallel hand Compact wide parallel hand Ultra thin parallel hand

GRC Series **LSH** Series **LHAG** Series **HMF** Series **HLD** Series



Precise suction plate Fine buffer Air bearing actuator Cylinder switch Pilot operated 3, 5-port valve Direct acting 3-port valve

PVP Series **FBU2** Series **LBC** Series **4G** Series **3QR** Series



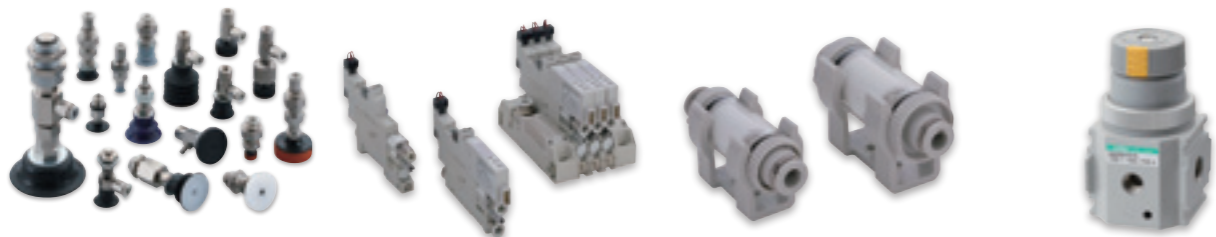
Electric actuator Electric actuator

EBS-L/G, EBR-L/G, EKS-L Series **ETS/ECS** Series



Suction pad Vacuum ejector Vacuum filter Vacuum regulator

VSP Series **VSX/VSXM** Series **VSFU** Series **VRA2000** Series



Super heatless dryer High polymer membrane air dryer Super dryer (High polymer membrane air dryer) Nitrogen Gas Extraction Unit Medium main line filter Air filter

SHD Series **SU** Series **SD** Series **NS** Series **AF2** Series **F3000** Series



Precision regulator Electro-pneumatic regulator Pressure Digital pressure sensor Compact flow rate sensor With spool position detection/Residual pressure exhaust valve

RP/RPE Series **EVD/EVR** Series **G40D/G41D/G49D/G50D** Series **PPX** Series **FSM3** Series **SNS** Series



Speed controller with adjusting dial Speed controller, elbow Fitting, tube 2, 3-port solenoid valve for dry air

DSC Series **SC3F** Series **AB/ADK-Z** Series



Valve for high vacuum Air operated valve for chemical liquids Clean cylinder valve Air operated ball valve Diaphragm cylinder valve

AVB Series **AMD** Part **3R** Series **LAD** Series **CHB/CHG** Series **NAD** Series



Compatible with more than 100 models
A line-up that can contribute to the evolving rechargeable battery manufacturing processes

Pneumatic actuator

Notes: Metal wear powder (copper-based metal is not included) from the mounting part will occur in oscillation mounting formats such as clevis mounting. To order a switch, refer to the switch compatibility table on pages 11 to 14 and order using the listed order model No.

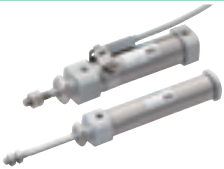
Standard

*1: Zinc plating is used for the sealing washer.
*2: Zinc plating is used for the cushion packing.

●: Applicable models ○: Non-Applicable models ▲: Contact CKD for details □: Not applicable

SCPD3

Pencil shaped cylinder



How to order		SCPD3-[Variation]L-[Mounting]- [Bore size]-[Stroke length]-[Switch]-[Number]- [Option]P4□[Accessory]										
Applicable bore size		Double acting/ single rod	Double acting/ high load	Single acting/ push	Single acting/ pull	Double acting/ double rod	Double acting/ fine speed	Double acting/ low speed	Double acting/ heat resistance	Double acting/ rubber-air cushioned	Double acting/ rotation-stop	Double acting/ with valve
			K	SCPS3	SCPH3	D	F	O	T	* C	M	V
ø6 to 16	P4	●	□	○	○	○	□	□	□	○	○	□
	P40	●	□	○	○	○	□	□	□	○	○	□
	P42	▲	□	□	□	▲	□	□	□	▲	□	□

CMK2 Ex

Small bore size cylinder



How to order		CMK2-[Variation]-[Mounting]- [Bore size][Cushion]-[Stroke length]-[Switch]-[Number]- [Option]P4□[Accessory]															
Applicable bore size		Double acting/ single rod	Double acting/ position locking	Single acting/ push	Single acting/ pull	Double acting/ double rod	Double acting/ back to back	Stroke adjustable (push)	Stroke adjustable (pull)	Double acting/ fine speed	Double acting/ heat resistance	Double acting/ rubber-air cushioned	Double acting/ with speed controller	Double acting/ rotation-stop	Double acting/ coolant proof	Double acting/ low hydraulic	Double acting/ air cushion
			Q	S	SR	D	B	P	R	F	T	* C	Z	M	G2/G3	H	C
ø20 to 40	P4	●	●	○	○	○	○	○	○	□	□	○	○	▲	□	□	○
	P40	●	●	○	○	○	○	○	○*1	□	□	○	▲	▲	□	□	○*2
	P42	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□

SCM Ex

Round shaped cylinder



How to order		SCM-[Variation]-[Mounting]- [Bore size][Cushion]-[Stroke length]-[Switch]-[Number]-[Switch mounting][Option]P4□[Accessory]															
Applicable bore size		Double acting/ single rod	Double acting/ position locking	Single acting/ push	Single acting/ pull	Double acting/ double rod	Double acting/ back to back	Double acting/ two-stage	Stroke adjustable (push)	Stroke adjustable (pull)	Double acting/ low speed	Double acting/ low friction	Double acting/ heat resistance	Double acting/ rubber scraper	Double acting/ tandem	Double acting/ direct mounting foot	Double acting/ rotation-stop
			Q	X	Y	D	B	W	P	R	O	U	T	G	W4	LD	M
ø20 to 100	P4	●	●	○	○	○	○	○	○	○	□	□	□	○	○	○	▲
	P40	●*2	●*2	○	○	○*2	○	○	○	○*1	□	□	□	○	○	○	▲
	P42	▲*2	▲*2	□	□	▲*2	▲	▲	▲	▲*1	□	□	□	▲	▲	□	□

SCG Ex

Tie rod cylinder



How to order		SCG-[Variation]-[Mounting]- [Bore size][Cushion]-[Stroke length]-[Switch]-[Number]- [Option]P4□[Accessory]									
Applicable bore size		Double acting/ single rod	Double acting/ position locking	Double acting/ double rod	Double acting/ low speed	Double acting/ low friction	Double acting/ rubber scraper	Double acting/ rotation-stop	Double acting/ coolant proof	Double acting/ anti-spatter adherence	
			Q	D	O	U	G	M	G2/G3	G1/G4	
ø32 to 100	P4	●	●	○	□	□	○	□	□	□	
	P40	●*2	●*2	○*2	□	□	○*2	□	□	□	

SCS2

Medium bore size cylinder



How to order		SCS2-N-[Mounting]- [Bore size][Cushion]-[Stroke length]-[Option]P4[Accessory]									
Applicable bore size		Double acting/ Lubrication	Double acting/ No lubrication	Double acting/ With switch	Stroke Adjustable (Push)	Double acting/ Heat resistance	Double acting/ Double rod	Double acting/ Back to back	Double acting/ Two-stage	Double acting/ Low hydraulic	Double acting/ Powerful Scraper
			N	LN	P	T	D	B	W	H	G
ø125 to 250	P4	□	○	○	▲	□	▲	▲	▲	□	▲

SCA2

Medium bore size cylinder



How to order		SCA2-[Mounting]- [Bore size][Cushion]-[Stroke length]-[Switch]-[Number]-P4, [Accessory]
Applicable bore size		Double acting/ single rod
		ø40 to 100
	P40	▲*2

Pneumatic actuator

Notes: Metal wear powder (copper-based metal is not included) from the mounting part will occur in oscillation mounting formats such as clevis mounting. To order a switch, refer to the switch compatibility table on pages 11 to 14 and order using the listed order model No.

Space saving structure

●: Applicable models ○: Non-Applicable models ▲: Contact CKD for details □: Not applicable

MDC2
Compact direct mounting cylinder

How to order		MDC2-L-[Bore size]-[Stroke length]-[Switch]-[Number]-P4□				
Applicable bore size		Double acting/ single rod	Single acting/ push	Single acting/ pull	Double acting/ fine speed	
			X	Y	F	
ø6 to 10	P4	●	○	○		
	P40	●	○	○		
	P42	▲				

SSD2
Compact cylinder

How to order		SSD2-[Variation]L-[Bore size]-[Stroke length]-[Switch]-[Number]- [Option]P4□- [Mounting bracket]- [Accessory]																
Applicable bore size		Double acting/ single rod	Double acting/ single rod High load	Double acting/ single rod long stroke length	Single acting/ push	Single acting/ pull	Double acting/ rubber-air cushioned High load	Double acting/ position locking	Double acting/ double rod	Double acting/ back to back	Double acting/ two-stage	Double acting/ fine speed	Double acting/ low speed	Double acting/ low friction High load	Double acting/ heat resistance	Double acting/ packing Fluoro rubber	Double acting/ rubber scraper	Double acting/ rotation-stop
			K		X	Y	KC	Q	D	B	W	F	0	KU	T1	T2	G	M
ø12 to 200	P4	●	●	○	○	○	○	○	○	○	○					○	○	▲
	P40	●	●	○	○	○	○	○	○	○	▲					○	○	▲
	P42	▲	▲	▲			▲	▲	▲	▲	▲					▲		

SSD
Compact cylinder

How to order		SSD-[Variation]L-[Bore size]-[Stroke length]-[Switch]-[Number]- [Option]P4□- [Mounting bracket]- [Accessory]														
Applicable bore size		Double acting/ single rod	Double acting/ position locking	Single acting/ push	Single acting/ pull	Double acting/ double rod	Double acting/ back to back	Double acting/ two-stage	Double acting/ fine speed	Double acting/ low speed	Double acting/ heat resistance	Double acting/ rubber scraper	Double acting/ anti-spatter adherence	Double acting/ coolant proof	Double acting/ double rod/ anti-spatter adherence	Double acting/ rotation-stop
			Q	X	Y	D	B	W	F	O	T	G	G1/G4	G2/G3	DG1 DG4	M
ø12 to 160	P4	●	●	○	○	○	○	○				○				▲
	P40	●	●	○	○	○	○	○				○				▲
	P42	▲	▲			▲	▲	▲								

SSD-K
Compact cylinder high load

How to order		SSD-K[Variation] L-[Bore size]-[Stroke length]-[Switch]-[Number]- [Option]P4□- [Mounting bracket]- [Accessory]						
Applicable bore size		Double acting/ single rod	Double acting/ fine speed	Double acting/ low friction	Double acting/ rubber-air cushioned	Double acting/ rubber scraper	Double acting/ anti-spatter adherence	Double acting/ coolant proof
			F	U	* C	G	G1/G4	G2/G3
ø12 to 160	P4	●			○	○		
	P40	●			○	○		
	P42	▲			▲			

SSG
Guided super compact cylinder

How to order		SSG-L-[Bore size]-[Stroke length]-[Switch]-[Number]-P4□	
Applicable bore size		Double acting	
ø12 to 100	P4	●	
	P40	●	
	P42		

MSD/MSDG
Small compact cylinder

How to order		MSD/MSDG-L-[Bore size]-[Stroke length]-[Switch]-[Number]- [Piping port position]P4□					
Applicable bore size		Double acting/ single rod	Double acting/ single rod high load	Single acting/ push	Single acting/ pull	Double acting/ fine speed	
			K	X	Y	F	
MSD ø6 to 16	P4	●	●	○	○		
	P40	●	●	○	○		

Applicable bore size		Double acting/ guided	Double acting/ guided/ fine speed
			F
MSDG ø6 to 16	P4	●	
	P40	●	

Pneumatic actuator

Notes: Metal wear powder (copper-based metal is not included) from the mounting part will occur in oscillation mounting formats such as clevis mounting. To order a switch, refer to the switch compatibility table on pages 11 to 14 and order using the listed order model No.

Space saving structure


●: Applicable models ○: Non-Applicable models ▲: Contact CKD for details □: Not applicable

SMG
Compact cylinder



How to order		SMG-L-[Mounting]- [Bore size]-[Stroke length]-[Switch]-[Number]-P4□				
Applicable bore size		Double acting/ single rod	Single acting/ push	Single acting/ pull	Double acting/ fine speed	Double acting/ rotation-stop
			X	Y	F	M
ø6 to 32	P4	●	○	○	□	○
	P40	●	○	○	□	○
	P42	▲	□	□	□	▲

FC*
Flat cylinder



How to order		FCD/FCS/FCH-L-[Bore size]-[Stroke length]-[Switch]-[Number]- [Option]P4□			
Applicable bore size		Double acting/ single rod	Single acting/ push	Single acting/ pull	Double acting/ double rod
		FCD	FCS	FCH	FCD-D
ø25 to 63	P4	○	○	○	○
	P40	○	○	○	○

STK
Stopper cylinder



How to order		STK-[I.D.]-[Stroke length]-[Switch]-[Number]- [Option]P4□			
Applicable bore size		Double acting/ single rod	Single acting/ push	Single acting/ pull	Contact CKD for other variations.
			X	Y	
ø20 to 50	P4	●	□	○	
	P40	●	□	○	

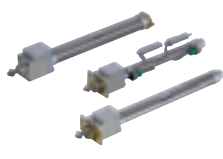
MVC
Compact cylinder with suction pad



How to order		MVC-[Bore size]-[Stroke length]-[Switch]-[Number]- [Pad type]-[Buffer]-P4□	
Applicable bore size		Double acting	
ø6, ø10	P4	●	□
	P40	●	□

With brake

ULK/ULKP
Brake cylinder



How to order		ULK-[Mounting]- [Bore size]-[Stroke length]-[Switch]-[Number]- [Option]P4□[Accessory]	
Applicable bore size		Double acting	Double acting/ With solenoid valve
			V
ø16 to 40	P4	▲	□
	P40	▲	□

Note: Standard grease used

USSD
Position locking compact cylinder



How to order		USSD-L-[Bore size]-[Stroke length] -[Lock direction]-[Switch]-[Number]- [Option]P4□- [Mounting bracket]	
Applicable bore size		Double acting	Double acting/ High load
			K
ø20 to 100	P4	○	○
	P40	○	○


Note: Standard grease used

Pneumatic actuator

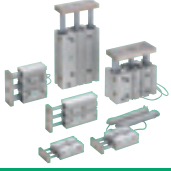
Notes: Metal wear powder (copper-based metal is not included) from the mounting part will occur in oscillation mounting formats such as clevis mounting. To order a switch, refer to the switch compatibility table on pages 11 to 14 and order using the listed order model No.

Combined functions

●: Applicable models ○: Non-Applicable models ▲: Contact CKD for details □: Not applicable

STG-B/M 

Guided cylinder



How to order **STG-[Bearing]- [Bore size]-[Stroke length]-[Switch]-[Number]- [Option]P4**□

Applicable bore size		Double acting/ single rod	Double acting/ position locking	Double acting/ rubber-air cushioned	Double acting/air cushioned	Double acting/ rubber scraper	Double acting/coil scraper	Double acting/ coolant proof	Double acting/ anti-splatter adherence
		Q	* C	C	G	G1	G2/G3	G4	
ø12 to 100	P4	●	●	○	○	○			
	P40	●	●	○	○	○			
	P42	▲	▲	▲	▲				

*1: Not compatible with STG-K.

STM-B/M

Guided cylinder



How to order **STM-[Bearing]- [Bore size]-[Stroke length]-[Switch]-[Number]-[Option]-P4**□

Applicable bore size		Double acting/ single rod
ø6/10	P4	○
	P40	○
	P42	▲


STS/L-B/M

Guided cylinder

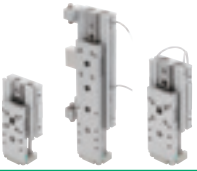


How to order **STS/STL-[Bearing]- [Bore size]-[Stroke length]-[Switch]-[Number]-P4**□

Applicable bore size		Double acting/ Single rod	Double acting/ position locking	Double acting/air cushioned	Double acting/ rubber scraper
		Q	C	G	
ø8 to 100	P4	●	▲	▲	▲
	P40	●	▲	▲	▲
	P42	▲	▲	▲	

LCR 


Linear slide cylinder



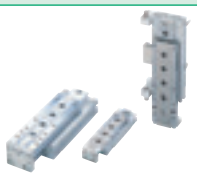
How to order **LCR-[Variation]-[Bore size]-[Stroke length]-[Switch]-[Number]- [Option]P4**□

Applicable bore size		Double acting/ single rod	Double acting/ position locking	Double acting/ fine speed
		Q	F	
ø6 to 25	P4	●	●	
	P40	●	●	
	P42	▲	▲	

*1: Even when P40 is selected for the external stopper option, Electrolytic nickel plating is used for the stopper part.

LCG 

Linear slide cylinder



How to order **LCG-[Variation]-[Bore size]-[Stroke length]-[Switch]-[Number]- [Option]P4**□

Applicable bore size		Double acting/ single rod	Double acting/ position locking
		Q	
ø6 to 25	P4	●	●
	P40	●	●
	P42	▲	▲

*1: Even when P40 is selected for the external stopper option, electrolytic nickel plating is used for the stopper part.
 *2: If P4 is chosen, rust proofing (option code: U) is recommended for LCG-20, 25. (ø20, ø25 P40 has rust proofing added.)

STR2

Twin rod cylinder



How to order **STR2-[Bearing][Variation]-[Bore size]-[Stroke length]-[Switch]-[Number]- [Option]P4**□


Applicable bore size		Double acting/ single rod	Double acting/ position locking	Double acting/ fine speed	Double acting/ low speed	Double acting/ double rod
		Q	F	O	D	
ø6 to 32	P4	●	●			○
	P40	●	●			○
	P42	▲	▲			▲

Pneumatic actuator

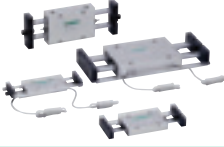
Note: To order a switch, refer to the switch compatibility table on pages 11 to 14 and order using the listed order model No.

Combined functions

●: Applicable models ○: Non-Applicable models ▲: Contact CKD for details □: Not applicable

UCA2 

Unit cylinder



How to order		UCA2-[Fixing method]- [Bore size]-[Stroke length]-[Switch]-[Number]- [Option]P4□			
Applicable bore size		Metal bush Bearing Type	Ball Bearing Type		
			B		
ø10 up 32	P4	●	●		
	P40	●	●		

Rodless

SRL3

Rodless cylinder



How to order		SRL3-[Variation]-[Mounting]- [Bore size][Cushion]-[Stroke length]-[Switch]-[Number]- [Option]P4□				
Applicable bore size		Double acting/standard	Double acting/position locking	Double acting/resin guide	Resin guide/position locking	
			Q	G	GQ	
ø12 to 100	P4	●	●			
	P40	●	●			

SRM3

Rodless cylinder with high precision guide

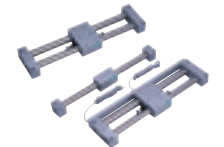


How to order		SRM3-[Variation]-[Mounting]- [Bore size][Cushion]-[Stroke length]-[Switch]-[Number]- [Option]P4□			
Applicable bore size		Double acting/standard	Double acting/position locking		
			Q		
ø25/32 40/63	P4	●	●		
	P40	●	●		

*1: Square nut, a standard accessory, is not included.
*2: The grease nipple is not assembled.
*3: If the switch model No. is not selected, apply "CO" (for reed switch), "C1" (for proximity switch) after [Stroke length] S e l e c t i o n .

MRL2 

Magnet rodless cylinder



How to order		MRL2-[Variation]-[Mounting]- [Bore size][Cushion]-[Stroke length]-[Switch]-[Number]- [Option]P4□		
Applicable bore size		Double acting/basic		
ø6 to 32	P4	●		
	P40	●		

*1: Electrolytic nickel plating is used in the magnet.

MRG2

Magnet rodless cylinder with high precision guide



How to order		MRG2-[Variation]-[Mounting]- [Bore size][Cushion]-[Stroke length]-[Switch]-[Number]- [Option]P4□		
Applicable bore size		Double acting/basic		
ø10/16/25	P4	●		
	P40	▲		

*1: Electrolytic nickel plating is used in the magnet.

Rotary actuator

GRC

Table Rotary actuator



How to order		GRC-[K]-[Torque size]-[Angle]-[Switch]-[Number]- [Option]P4□			
Applicable size		Standard	High accuracy	Fine speed	High accuracy/fine speed
			K	F	KF
Torque 0.5 to 8.1 N·m	P4	●	●		
	P40	●(*1)	●(*1)		
	P42	▲	▲		

*1: Even when P40 is selected for the external stopper option, electrolytic nickel plating is used for the stopper part.
*2: Zinc plating is used in part of the bearings - the sealing washer of the angle adjustment unit.

Pneumatic actuator

Notes To order a switch, refer to the switch compatibility table on pages 11 to 14 and order using the listed order model No.

Air bearing actuator

●: Applicable models ○: Non-Applicable models ▲: Contact CKD for details □: Not applicable

LBC
Air bearing actuator




How to order LBC-[Thrust]

LBC	
P4	Standard compliance

Hand/chuck


HAP
Parallel hand



How to order HAP-[Size]-[Option]-[Switch]-[Number]-P4□

Applicable bore size		Double acting	Single acting Normally open	Single acting Normally closed
			O	C
ø20/25/40	P4	●	●	●
	P40	●	●	●

BHA
Compact cross roller parallel hand



How to order BHA-[Size]-[Option]-[Switch]-[Number]-P4□

Applicable bore size		Double acting	Single acting Normally open	Single acting Normally closed
			O	C
ø12/16/20/25	P4	●	●	●
	P40	●	●	●

LHA
Linear guide hand



How to order LHA-[Size]-[Option]-[Switch]-[Number]-P4□

Applicable bore size		Double acting	Single acting Normally open	Single acting Normally closed
			O	C
ø6 to 32	P4	●	●	●
	P40	●	●	●

LHAG 
Linear guide hand (with rubber cover)



How to order LHAG-[Size]-[Option]-[Switch]-[Number]P4□

Applicable bore size		Double acting	Single acting/ Normally open	Single acting/ Normally closed
			O	C
ø12 to 32	P4	●	●	●
	P40	●	●	●

BHG
Compact crossover roller parallel hand (with rubber cover)



How to order BHG-[Size]-[Option]-[Switch]-[Number]-P4□

Applicable bore size		Double acting	Single acting Normally open	Single acting Normally closed
			O	C
ø12/16/20/25	P4	●	●	●
	P40	●	●	●

HKP
Cross roller parallel hand



How to order HKP-[Size]-[Option]-[Switch]-[Number]-P4□

Applicable bore size		Double acting	Single acting Normally open	Single acting Normally closed	Rubber cover (Nitrile rubber)
			O	C	G
ø32 to 80	P4	●	●	●	●
	P40	●	●	●	●








Note: 80 cs is double-acting only

Pneumatic actuator

Notes To order a switch, refer to the switch compatibility table on pages 11 to 14 and order using the listed order model No.

Hand/chuck

●: Applicable models ○: Non-Applicable models ▲: Contact CKD for details □: Not applicable

<p>HCP</p> <p>Lateral parallel hand</p> 	<p>How to order HCP-[Size]-[Option]-[Switch]-[Number]-P4□</p> <table border="1"> <thead> <tr> <th rowspan="2">Applicable bore size</th> <th colspan="2">Double acting</th> </tr> <tr> <th>P4</th> <th>P40</th> </tr> </thead> <tbody> <tr> <td rowspan="2">ø12/20/32</td> <td>P4</td> <td>●</td> </tr> <tr> <td>P40</td> <td>●</td> </tr> </tbody> </table>	Applicable bore size	Double acting		P4	P40	ø12/20/32	P4	●	P40	●									
Applicable bore size	Double acting																			
	P4	P40																		
ø12/20/32	P4	●																		
	P40	●																		
<p>HLB</p> <p>Bearing thin parallel hand</p> 	<p>How to order HLB-[Size]-[Switch]-[Number]-P4□</p> <table border="1"> <thead> <tr> <th rowspan="2">Applicable bore size</th> <th colspan="2">Double acting</th> </tr> <tr> <th>P4</th> <th>P40</th> </tr> </thead> <tbody> <tr> <td rowspan="2">ø12/15/20</td> <td>P4</td> <td>▲</td> </tr> <tr> <td>P40</td> <td>▲</td> </tr> </tbody> </table>	Applicable bore size	Double acting		P4	P40	ø12/15/20	P4	▲	P40	▲									
Applicable bore size	Double acting																			
	P4	P40																		
ø12/15/20	P4	▲																		
	P40	▲																		
<p>HLBG</p> <p>Bearing thin parallel hand (With rubber cover)</p> 	<p>How to order HLBG-[Size]-[Switch]-[Number]-P4□</p> <table border="1"> <thead> <tr> <th rowspan="2">Applicable bore size</th> <th colspan="2">Double acting</th> </tr> <tr> <th>P4</th> <th>P40</th> </tr> </thead> <tbody> <tr> <td rowspan="2">ø12/15/20</td> <td>P4</td> <td>●</td> </tr> <tr> <td>P40</td> <td>●</td> </tr> </tbody> </table>	Applicable bore size	Double acting		P4	P40	ø12/15/20	P4	●	P40	●									
Applicable bore size	Double acting																			
	P4	P40																		
ø12/15/20	P4	●																		
	P40	●																		
<p>HMF</p> <p>Compact wide parallel hand</p> 	<p>How to order HMF-[Size]-[Option]-[Switch]-[Number]-P4□</p> <table border="1"> <thead> <tr> <th rowspan="3">Applicable bore size</th> <th rowspan="3"></th> <th colspan="3">Double acting</th> </tr> <tr> <th rowspan="2">Standard</th> <th>Long stroke 1</th> <th>Long stroke 2</th> </tr> <tr> <th>L1</th> <th>L2</th> </tr> </thead> <tbody> <tr> <td rowspan="2">ø12 x 2 to ø40x2</td> <td>P4</td> <td>●</td> <td>●</td> <td>●</td> </tr> <tr> <td>P40</td> <td>●</td> <td>●</td> <td>●</td> </tr> </tbody> </table>	Applicable bore size		Double acting			Standard	Long stroke 1	Long stroke 2	L1	L2	ø12 x 2 to ø40x2	P4	●	●	●	P40	●	●	●
Applicable bore size				Double acting																
				Standard	Long stroke 1	Long stroke 2														
		L1	L2																	
ø12 x 2 to ø40x2	P4	●	●	●																
	P40	●	●	●																
<p>HLC</p> <p>Thin long stroke parallel hand</p> 	<p>How to order HLC-[Size]-[Option]-[Switch]-[Number]-P4□</p> <table border="1"> <thead> <tr> <th rowspan="2">Applicable bore size</th> <th colspan="2">Double acting</th> </tr> <tr> <th>P4</th> <th>P40</th> </tr> </thead> <tbody> <tr> <td rowspan="2">ø8 x 2 to ø30 x 2</td> <td>P4</td> <td>●</td> </tr> <tr> <td>P40</td> <td>●</td> </tr> </tbody> </table>	Applicable bore size	Double acting		P4	P40	ø8 x 2 to ø30 x 2	P4	●	P40	●									
Applicable bore size	Double acting																			
	P4	P40																		
ø8 x 2 to ø30 x 2	P4	●																		
	P40	●																		
<p>HLD</p> <p>Ultra thin parallel hand</p> 	<p>How to order HLD-[Size]-[Switch]-[Number]-P4□</p> <table border="1"> <thead> <tr> <th rowspan="2">Applicable bore size</th> <th colspan="2">Double acting</th> </tr> <tr> <th>P4</th> <th>P40</th> </tr> </thead> <tbody> <tr> <td rowspan="2">ø8x4 to ø20x4</td> <td>P4</td> <td>●</td> </tr> <tr> <td>P40</td> <td>●</td> </tr> </tbody> </table>	Applicable bore size	Double acting		P4	P40	ø8x4 to ø20x4	P4	●	P40	●									
Applicable bore size	Double acting																			
	P4	P40																		
ø8x4 to ø20x4	P4	●																		
	P40	●																		
<p>HLF2</p> <p>Low-profile long stroke hand</p> 	<p>How to order HLF2-[Size]-[Stroke length]-[Switch]-[Number]-P4□</p> <table border="1"> <thead> <tr> <th rowspan="2">Applicable bore size</th> <th colspan="2">Double acting</th> </tr> <tr> <th>P4</th> <th>P40</th> </tr> </thead> <tbody> <tr> <td rowspan="2">ø8x2 to ø20x2</td> <td>P4</td> <td>▲</td> </tr> <tr> <td>P40</td> <td>▲</td> </tr> </tbody> </table>	Applicable bore size	Double acting		P4	P40	ø8x2 to ø20x2	P4	▲	P40	▲									
Applicable bore size	Double acting																			
	P4	P40																		
ø8x2 to ø20x2	P4	▲																		
	P40	▲																		


Pneumatic actuator

Notes To order a switch, refer to the switch compatibility table on pages 11 to 14 and order using the listed order model No.

Hand/chuck

●: Applicable models ○: Non-Applicable models ▲: Contact CKD for details □: Not applicable

HMD
Thin wide angle hand



How to order		HMD-[Size]-[Switch]-[Number]-P4□		
Applicable bore size		Double acting		
		Standard		
ø16/25	P4	●		
	P40	●		

BHE
Centering hand



How to order		BHE-[Size]-[Option]-[Switch]-[Number]-P4□			
Applicable bore size		Double acting			
		Standard	Open stroke adjustment mechanism	Close stroke adjustment mechanism	Open and close stroke adjustment mechanism
ø12 to 32	P4	●	●	●	●
	P40	●	●	●	●

CKG
3-way finger bearing chuck (With rubber cover)



How to order		CKG-[Size]-[Option]G-[Switch]-[Number]-P4□		
Applicable bore size		Double acting	Single acting Normally open	Single acting Normally closed
			O	C
ø16/25/32/40/50	P4	●	●	●
	P40	●	●	●

CKL2
Powerful chuck



How to order		CKL2-[Size]-[Option]-[Switch]-[Number]-P4□		
Applicable bore size		Double acting	Single acting Normally open	Single acting Normally closed
			O	C
ø20/25/32/40/50/63/80/100	P4	●	●	●
	P40	●	●	●

CKLB2
2-way powerful chuck



How to order		CKLB2-[Size]-[Option]-[Switch]-[Number]-P4□		
Applicable bore size		Double acting	Single acting Normally open	Single acting Normally closed
			O	C
ø20/25/32/40/50/63/80/100	P4	●	●	●
	P40	●	●	●

CKF
Hollow chuck



How to order		CKF-[Size]-[Option]-[Switch]-[Number]-P4□		
Applicable bore size		Double acting	Single acting Normally open	Single acting Normally closed
			O	C
ø30 to 80	P4	▲	▲	▲
	P40	▲	▲	▲

Pneumatic actuator

Notes: To order a switch, refer to the switch compatibility table on pages 23 to 26 and order using the listed order model No.

Related products

●: Applicable models ○: Non-Applicable models ▲: Contact CKD for details □: Not applicable

NCK 

Shock absorber




How to order		NCK-[Mounting]-[Series]-[Option]-P4□	
Applicable size	Basic		
All sizes	P4	●	
	P40	●	

FCK

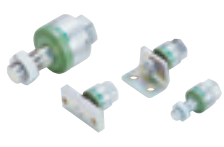
Shock absorber



How to order		FCK-[Series]-[Option]-P4		
Applicable size	Basic	Low speed	Medium speed	High speed
		L	M	H
FCK-*0.15 to 8.1	P4	●	●	●

FJ 

Floating fitting



How to order		FJ-*3-P4/FJ-*4-P4/FJ-*5-P4		
Applicable size	Basic	Foot	Flange	
FJ-*3 FJ-*4 FJ-*5	P4	●	●	●
	P40	▲	▲	▲
FJ-*6 to 45	P4	Standard compliance		
	P40	▲		

FK 

Simplified floating fitting



How to order		FK-[Thread size]-P40	
Applicable size	Basic	Male thread	Female thread
		N	
All sizes	P4	Standard compliance	
	P40	●	●

Cylinder switch

T/F/M/K

Cylinder switch



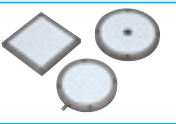
[How to order switch]
 If you order switches for the P4 Series separately, do as follows.
 SW-□□□-P4 example SW-T2H-P4
 (*1) When ordering Low-Voltage Directive compliant products separately, do as follows.
 SW-□□□-ST-P4 example SW-T5H-ST-P4
 (*2) If you order products with resin connector Discrete, do as follows. Applies to the above T2H, T2YH, T2WH, K2YH, M2WV, F2H only.
 SW-□□□-P4J example SW-T2H-P4J

[Incorporated switch]
 For cylinder specification P4 and P40, switch indicating "P4" is supplied. Cylinder mountable switch differs according to each cylinder.
 Refer to the switch compatibility table on pages 23 to 26.
 Example) GRC: Reed switch TO* and T5* cannot be mounted.
 SRM3: Proximity 1-color display T2*, T3* cannot be installed.

Vacuum components

PVP

Precise suction plate



How to order		PVP-[Shape]- [Porous material size]- [Vacuum port position]- [Option]	
		PVP	
P4		Standard compliance	

Vacuum components

●: Applicable models ○: Non-Applicable models ▲: Contact CKD for details □: Not applicable



How to order	VSP-[Holder shape/Pad diameter/Pad material]- [Port size]-P4	
	VSP	
P4	▲	

*1: Holder shape is only available for fixed type.
 *2: Free holder and position locking valve are not supported.
 *3: For pad material, only S, U, F, SE, FS and Blank are supported.
 *4: Pad shapes K, F, Q cannot be selected.
 *5: ø1.8 mm push-in fitting size is not available.



How to order	FBU2-[shape]- [Bearing precision]- [Pressure]-[Buffer stroke length] -[Tail shape]- [Head shape]	
	FBU2	
P4	Standard compliance	



How to order		
Single unit	VSX-[Vacuum characteristics][Nozzle diameter][Valve]-[Port]-3-[Switch specifications]- [Mounting method]-P4	
Manifold	VSXM-[Vacuum characteristics][Nozzle diameter][Valve]-[Port]-3-[Station No.]- [Switch specifications]-P4	
	VSX	VSXM
Port size	ø4, ø6	ø4, ø6, ø8, ø10
P4	▲	▲

*1: Applicable only for common exhaust.



How to order		
Single unit	VSXP-[Valve][Port]-3-[Switch specifications]- [Mounting method]-P4	
Manifold	VSXPM-[Valve][Port]-3-[Station No.]- [Switch specifications]-P4	
	VSXP	VSXPM
Port size	ø4, ø6	ø4, ø6, ø8, ø10
P4	●	▲

*1: Applicable only for 2-way valve.



How to order	VFA1000/3000/4000-[Bore size]- [Option]P4- [Attachment]		
	VFA1000	VFA3000	VFA4000
Port size	Rc1/8, 1/4	Rc1/4, 3/8	Rc3/8, 1/2
P4	●	●	●

Note: Metal bowl is not available.



How to order	VRA2000-[Bore size]- [Option]P4	
	VRA2000	
Port size	Rc1/4, 3/8	
P4	●	

*1: Available pressure gauge is PPX only.
 *2: Pressure gauge/pressure sensor must be ordered separately. (Attachment options not available.)



How to order	VSFU-[Filter size]-[Bore size]-P4, FSL[Filter size]-[Bore size]-[Bracket]-P4	
	VSFU	FSL
Port size	ø4, ø6, ø8, ø10	ø4, ø6, ø8, ø10
P4	●	▲

Pneumatic valves

How to order P4 Series

"-P4" : Indicates the product that requires modification to SUS fitting with P4 specification against standard products.

P4 compliant as standard: Indicates products that comply with P4 specifications as standard products and do not require "-P4" at the end of the model number.

P4 Series (flow path, sliding part material restrictions)

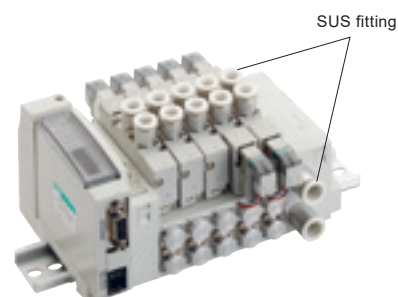
●: Applicable models ○: Non-Applicable models ▲: Contact CKD for details □: Not applicable

Pilot operated 3, 5-port valve

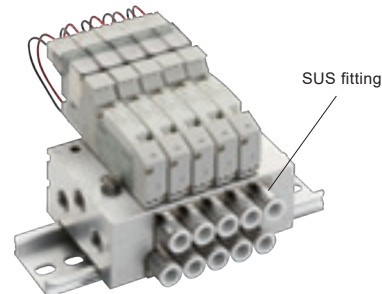


Descriptions	4GA/B1	4GA/B2	4GA/B3	4GA/B4	
Valve width [mm]	10	15	18	24.3	
Flow characteristics [dm ³ /(s·bar)]	P → A/B	0.86 to 1.4	1.7 to 2.6	2.9 to 4.5	6.3 to 11.0
	A/B → R	0.7 to 1.3	2.1 to 2.9	3.3 to 4.2	6.8 to 13.9
Max. working pressure [MPa]	0.7				
Min. working pressure [MPa]	0.2				
Proof pressure [MPa]	1.05				
Ambient temperature [°C]	-5 to 55 (no freezing)				
Fluid temperature [°C]	5 to 55				
Rated voltage [V]	12 DC, 24 DC, 3 DC, 5 DC, 100 AC, 200 AC				

*1: 4G4 Series is not compatible with 3 VDC, 5VDC, or 200 VAC.



Descriptions	4GD/E1	4GD/E2	4GD/E3	
Valve width [mm]	10	15	18	
Flow characteristics [dm ³ /(s·bar)]	P → A/B	0.86 to 1.4	1.7 to 2.5	3.0 to 4.5
	A/B → R	0.7 to 1.3	2.1 to 2.9	3.3 to 4.2
Max. working pressure [MPa]	0.7			
Min. working pressure [MPa]	0.2			
Proof pressure [MPa]	1.05			
Ambient temperature [°C]	-5 to 55 (Freezing absence)			
Fluid temperature [°C]	5 to 55			
Rated voltage [V]	12 DC, 24 DC, 100 AC			



How to order	
Single unit	$\frac{3}{4}$ G $\frac{A}{B}$ [Size][Switching section]0R-[Bore size]- [Wiring][Option]-[Voltage]-P4
Manifold Replacement valve	$\frac{3}{4}$ G $\frac{A}{B}$ [Size][Switching section]9R-[Bore size]- [Wiring][Option]-[Voltage]-P4
M4G Series (Metal base)	M $\frac{3}{4}$ G $\frac{A/D}{B/E}$ [Size][Switching section]0R-[Bore size]- [Wiring][Option][Mount type]-[Station No.]- [Voltage]-P4
MN4G Series (Block manifold)	MN $\frac{3}{4}$ G $\frac{A/D}{B/E}$ [Size][Switching section]0R-[Bore size]- [Wiring][Option]-[Station No.]- [Voltage]-P4
Single unit (Large flow rate)	4 G $\frac{A}{B}$ 4 [Switching section]0-[Bore size]- [Wiring][Option]-[Voltage]-P4

	4G Series		M4G Series *5) *6)			MN4G Series *7) *9)	
	Push-in fitting straight (Model No.: C*)	Screw-in (Model No.: M5, 06, 08)	Push-in fitting straight (Model No.: C*)	Push-in fitting elbow (Model No.: CL, CD/)	Screw-in (Model No.: M5, 06, 08)	Push-in fitting straight (Model No.: C*)	Push-in fitting elbow (Model No.: CL, CD/)
P4	● *8)	●	● *8)		●	● *8)	

*1: Base piping (B) type Discrete and 4GA/D1-M5 type are standard products and equivalent to P4 specifications.

*2: Copper-free material applies to flow rate part.

*3: Refer to "Pneumatic Valves (Catalog No.CB-023S)" for serial communication specifications.

*4: Push-in fitting elbow is not supported.

*5: Due to the attached M5 plug change, external pilot is available with P4 specification with or without fitting.

*6: In-stop valve spacer and spacer pilot check valve are not supported.

*7: External pilot specification is not available as standard.

*8: The following are not supported for push-in fitting straight.

$\frac{3}{4}$ G $\frac{A}{B}$ 1, MN4G $\frac{A}{B}$ 1: CF, C18

$\frac{3}{4}$ GA/D3: C6, C10

$\frac{3}{4}$ GB/E3: C6

$\frac{3}{4}$ GA4: C10, C12

*9: Atmosphere opening type cannot be selected for MN4G end block and supply and exhaust block.

*10: Contact CKD for European Standards compliant products.

Pilot check valve



Descriptions	4G2R-PCS-P4
Flow characteristics [dm ³ /(s·bar)]	2.2
Max. working pressure [MPa]	0.7
Min. working pressure [MPa]	0.2
Proof pressure [MPa]	1.05
Ambient temperature [°C]	-5 to 55 No freezing
Fluid temperature [°C]	5 to 55



Descriptions	4G1R-PC
Valve width [mm]	10
Flow characteristics [dm ³ /(s·bar)]	0.3
Max. working pressure [MPa]	0.7
Min. working pressure [MPa]	0.2
Proof pressure [MPa]	1.05
Ambient temperature [°C]	-5 to 55 (No freezing)
Fluid temperature [°C]	5 to 55

Pneumatic valves

Direct acting 3-port valve

The direct acting 3-port valve 3QR Series supports P4 Series as standard.

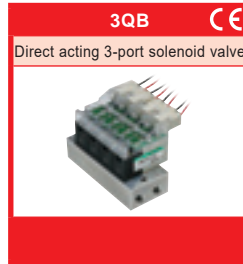
●: Applicable models ○: Non-Applicable models ▲: Contact CKD for details □: Not applicable



Descriptions		Standard	Large flow rate
Flow characteristics [dm ³ /(sbar)]	P → A	0.3	0.36
	A → R	0.32 to 0.36	0.38 to 0.4
Max. working pressure [MPa]		0.7	
Min. working pressure [MPa]		-0.1	
Proof pressure [MPa]		1.05	
Ambient temperature [°C]		0 to 50	
Fluid temperature [°C]		5 to 50	
Rated voltage [V]		12 DC, 24 DC	

How to order	
Single unit	3QRB1 [Solenoid position]0-M5 - [Electrical connections][Flow rate]- [Voltage]
Replacement valve	3QRA1 [Solenoid position]9-M5 - [Electrical connections][Flow rate]- [Voltage]
	3QRB1 [Solenoid position]9-00 - [Electrical connections][Flow rate]- [Voltage]
Manifold	M3QRA1 [Solenoid position]0-M5 - [Electrical connections][Flow rate]- [Station No.]- [Voltage]

Note: Supports P4 specifications as standard



Descriptions		3QB1-H	3QB1-HP	3QB1-HV
Flow characteristics [dm ³ /(sbar)]	P → A	0.11	0.11	0.18
	A → R	0.11	0.11	0.11
Max. working pressure [MPa]		0.3	0.65	0
Min. working pressure [MPa]		-0.1	0.1	-0.1
Proof pressure [MPa]		1.05		
Ambient temperature [°C]		0 to 50		
Fluid temperature [°C]		5 to 50		
Rated voltage [V]		24 DC		

How to order	
Single unit	3QB1 [Solenoid position]0-M5 - [Electrical connections]H [Pressure specification]- [Voltage]
Manifold Replacement valve	3QB1 [Solenoid position]9-00- [Electrical connections]H [Pressure specification]- [Voltage]
Manifold	M3QB1 [Solenoid position]0-M5- [Electrical connections] H [Pressure specification]- [Station No.]- [Voltage]

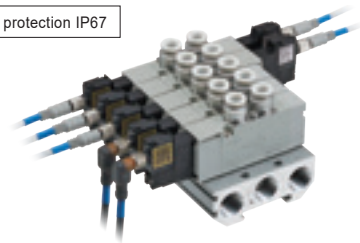
Note: Supports P4 specifications as standard

Explosion-proof 3, 5-port valve



Descriptions		4GD/E1	4GD/E2	4GD/E3	4GD/E4
Valve width		10	15	18	24.3
Flow characteristics [dm ³ /(sbar)]	P → A/B	0.86 to 1.4	1.7 to 2.5	3.0 to 4.5	6.3 to 11.0
	A/B → R	0.7 to 1.3	2.1 to 2.9	3.3 to 4.2	6.8 to 13.9
Max. working pressure [MPa]		0.7			
Min. working pressure [MPa]		0.2			
Proof pressure [MPa]		1.05			
Ambient temperature [°C]		-5 to 55°C (no freezing)			
Fluid temperature [°C]		5 to 55°C			
Rated voltage [V]		12 DC			
Explosion-proof grade		Ex ib IIC T4 Gb			
Standards		JPEX (Japan), IECEx (International), GBEx (China), KCs (South Korea)			
Degree of protection		IP67			

Degree of protection IP67



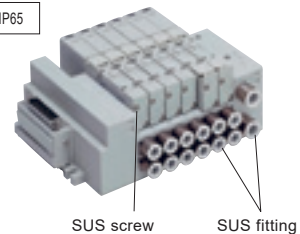
How to order	
Single unit	³ / ₄ G ^D / _E [Size] [Solenoid position]0 ^{EJ} / _{EX} - [ConnectionBore size]- [Electric wireConnection][Option]-4-P4
Manifold Replacement valve	³ / ₄ G ^D / _E [Size][Solenoid position]9 ^{EJ} / _{EX} - [ConnectionBore size]- [Electric wireConnection][Option]-4-P4
Manifold	M ³ / ₄ G ^D / _E [Size] [Solenoid position]0 ^{EJ} / _{EX} - [ConnectionBore size]- [Electric wireConnection][Option][Mount type]-[Station No.]-4 -P4

P40 Series (Material restrictions for all parts)



Descriptions		W4G2	W4G4
Valve width		15	24.3
Flow characteristics [dm ³ /(sbar)]	P → A/B	1.7 to 2.4	6.4 to 7.7
	A/B → R	1.7 to 2.5	6.4 to 8.3
Max. working pressure [MPa]		0.7	1.0
Min. working pressure [MPa]		0.2	0.2
Proof pressure [MPa]		1.05	1.5
Ambient temperature [°C]		-5 to 55°C (no freezing)	
Fluid temperature [°C]		5 to 55°C	
Rated voltage [V]		12 DC, 24 DC	
Degree of protection		IP65	

Degree of protection IP65



How to order	
Single unit	W4G ² / ₄ [Size][Switching section]0-[Bore size]- [Wiring][Option]-[Voltage]-P40
Manifold Replacement valve	W ³ / ₄ G ² / ₄ [Size][Switching section]9-[Bore size]-[Option]-[Voltage]-P40
Individual wiring manifold Reduced wiring manifolds	MW ³ / ₄ G ² / ₄ [Size][Switching section]0-[Bore size]- [Wiring][Option]-[Station No.]- [Voltage]-P40

	MW4G ² / ₂ Series	MW4G ² / ₄ Series
Electrical connections	R1, T10, T20, T30, T51, T8D*, T8G*	R1, T10, T6D1, T6G1, T7EC*
Manual override	Blank, M	
Available options	H, A, F, Z6	H, A, F, Z1, Z3

	W4G2 Series	W4G4 Series	
	Push-in fitting Straight type (Model No.: C*)	Screw-in fitting (Model No.: 08, 10)	Push-in fitting Straight type (Model No.: C*)
P40	●	●	●* Excluding C12

*1: Refer to "Pneumatic Valves (Catalog No.CB-023SA)" for serial communication specifications.
 *2: M12 connector is resin connector.
 *3: End block atmosphere release/common exhaust type is not available.
 *4: Manifold external pilot specification is not available as standard.
 *5: Maximum size is C10 for push-in fitting straight.
 *6: Push-in fitting elbow is not applicable.
 *7: The degree of protection is equivalent to IP40 for T30 and T51.
 8: M12 connector is used for T7EC and FG terminal is used for T8G*. These are copper-based metal + nickel plating.
 *9: Contact CKD when ordering parts only.
 *10: Contact CKD for other options.
 *11: Accessories cannot be selected from the manifold specifications sheet. Contact CKD separately.
 *12: Contact CKD for European Standards compliant products.



Descriptions		W4G2-PC-P40
Flow characteristics [dm ³ /(sbar)]		0.8
Max. working pressure [MPa]		0.7
Min. working pressure [MPa]		0.2
Proof pressure [MPa]		1.05
Ambient temperature [°C]		-5 to 55 (No freezing)
Fluid temperature [°C]		5 to 55

Pneumatic auxiliary components

Note: The photos on this page are standard products. Appearance may differ from actual P4 specification products.

Clean air components

●: Applicable models ○: Non-Applicable models ▲: Contact CKD for details □: Not applicable

SU300_E-W/SU400_E-W
Super dryer (High polymer membrane air dryer)



How to order	SU301 _E /302 _E /401 _E /402 _E - [Inlet air pressure]-W-[Unit]-[Option]-P4□
	SU
Port size	Rc3/8
P4	●
P40	▲

*1: Applicable only for common exhaust.
*2: Auto-drain is not available.
*3: For unit option C3, zinc die-casting is used in the diaphragm part of the regulator. For pressure adjustment springs without regulator gas contact and pressure adjustment screws in P40, zinc plating is used.

SD300_E-W/SD400_E-W
Super dryer (High polymer membrane air dryer)



How to order	SD30□□/SD40□□-[Inlet air pressure]-W-[Option]-P4□
	SD
Port size	Rc3/8
P4	●
P40	▲

*1: Applicable only for common exhaust.

SU3000-W/SU4000-W
Super dryer (High polymer membrane air dryer)



How to order	SU30□□/SU40□□-[Outlet air atmospheric dew point]- [Inlet air pressure]-W-[Option]-P4□
	SU
Port size	Rc3/8, 1/2
P4	●
P40	▲

*1: Applicable only for common exhaust.
*2: Auto-drain is not available.
*3: For unit option C3, zinc die-casting is used in the diaphragm part of the regulator. For pressure adjustment springs without regulator gas contact and pressure adjustment screws in P40, zinc plating is used.

SD3000/4000
Super dryer (High polymer membrane air dryer)



How to order	SD30□□/SD4□□□-[Outlet air atmospheric dew point]- [Inlet air pressure]-[Option]-P4□
	SD
Port size	Rc3/8, 1/2
P4	●
P40	▲

*1: Applicable only for common exhaust.

SHD
Desiccant air dryers



How to order	Contact CKD for model numbers.
	SHD
P4	▲

AF2
Medium main line filter



How to order	AF2-[Flow rate classification][Element] [Bore size]-P4
	AF2
Port size	Rc1,1 1/4,1 1/2,2,2 1/2
P4	▲

AF3000/AF5000
Large main line filter











How to order	AF3□□□/AF5□□□-[Bore size]-[Option]-P4
	AF3000/AF5000
Port size	Flange 2B, 3B, 4B, 6B, 8B
P4	▲

Pneumatic auxiliary components

Clean air components

●: Applicable models ○: Non-Applicable models ▲: Contact CKD for details □: Not applicable

<p>RB500</p> <p>Compact regulator</p> 	<table border="1"> <tr> <td>How to order</td> <td colspan="2">RB500-[Direction][Bore size]-NT[option]P4□</td> </tr> <tr> <td></td> <td colspan="2">RB500</td> </tr> <tr> <td>Port size</td> <td colspan="2">Push-in fitting $\varnothing 4/\varnothing 6$</td> </tr> <tr> <td>P4</td> <td colspan="2">●</td> </tr> <tr> <td>P40</td> <td colspan="2">▲</td> </tr> </table>	How to order	RB500-[Direction][Bore size]-NT[option]P4□			RB500		Port size	Push-in fitting $\varnothing 4/\varnothing 6$		P4	●		P40	▲		<p>*1: Pressure gauge/pressure sensor must be ordered separately. (Pressure gauge option is "T" only) *2: Non-relief only is available. *3: Only straight direction is available for fittings. *4: For pressure adjustment springs without gas contact and pressure adjustment screw units in P40, zinc plating is used.</p>																				
How to order	RB500-[Direction][Bore size]-NT[option]P4□																																				
	RB500																																				
Port size	Push-in fitting $\varnothing 4/\varnothing 6$																																				
P4	●																																				
P40	▲																																				
<p>RP1000/2000</p> <p>Precision regulator</p> 	<table border="1"> <tr> <td>How to order</td> <td colspan="2">RP1000/2000-[Bore size]- [Pressure range]P4□- [Bracket]</td> </tr> <tr> <td></td> <td>RP1000</td> <td>RP2000</td> </tr> <tr> <td>Port size</td> <td>Rc1/4</td> <td>Rc3/8</td> </tr> <tr> <td>P4</td> <td>●</td> <td>●</td> </tr> <tr> <td>P40</td> <td>▲</td> <td>▲</td> </tr> </table>	How to order	RP1000/2000-[Bore size]- [Pressure range]P4□- [Bracket]			RP1000	RP2000	Port size	Rc1/4	Rc3/8	P4	●	●	P40	▲	▲	<p>*1: Pressure gauge/pressure sensor must be ordered separately. (Attachment options not available.) *2: Zinc plating is used for pressure adjustment springs without gas contact in P40. *3: Dimensions differs from the standard products. There are mounting restrictions because of bleed port connection. Check the dimensions for each case.</p>																				
How to order	RP1000/2000-[Bore size]- [Pressure range]P4□- [Bracket]																																				
	RP1000	RP2000																																			
Port size	Rc1/4	Rc3/8																																			
P4	●	●																																			
P40	▲	▲																																			
<p>RPE</p> <p>Precision regulator</p> 	<table border="1"> <tr> <td>How to order</td> <td colspan="2">RPE1000-[Port size]- [Pressure range] P4-[Bracket]</td> </tr> <tr> <td></td> <td colspan="2">RPE1000</td> </tr> <tr> <td>P4</td> <td colspan="2">●</td> </tr> </table>	How to order	RPE1000-[Port size]- [Pressure range] P4-[Bracket]			RPE1000		P4	●		<p>*1: Pressure gauge/pressure sensor must be ordered separately. (Attachment options not available.) *2: RPE1000 dimensions are different from the standard dimensions.</p>																										
How to order	RPE1000-[Port size]- [Pressure range] P4-[Bracket]																																				
	RPE1000																																				
P4	●																																				
<p>EVD </p> <p>Electro-pneumatic regulator</p> 	<table border="1"> <tr> <td>How to order</td> <td colspan="2">Standard: EVD-1/3 [pressure control range]- [Input signal][Port size][Output signal]-[Option]-3-P4 IO-Link type: EVD-1/3 [pressure control range]-C [port size][Unit change]-[Option]-3-P4</td> </tr> <tr> <td></td> <td>EVD-1100/1500/1900</td> <td>EVD-3100/3500/3900</td> </tr> <tr> <td>Port size</td> <td>Rc1/4</td> <td>Rc1/4, Rc3/8</td> </tr> <tr> <td>P4</td> <td>●</td> <td>●</td> </tr> </table>	How to order	Standard: EVD-1/3 [pressure control range]- [Input signal][Port size][Output signal]-[Option]-3-P4 IO-Link type: EVD-1/3 [pressure control range]-C [port size][Unit change]-[Option]-3-P4			EVD-1100/1500/1900	EVD-3100/3500/3900	Port size	Rc1/4	Rc1/4, Rc3/8	P4	●	●	<p>Note: The bracket option of EVD-1*00-*P4 is blank or L11 (L type, wall mounted for exhaust fitting). Standard B1 and L1 types cannot be selected.</p>																							
How to order	Standard: EVD-1/3 [pressure control range]- [Input signal][Port size][Output signal]-[Option]-3-P4 IO-Link type: EVD-1/3 [pressure control range]-C [port size][Unit change]-[Option]-3-P4																																				
	EVD-1100/1500/1900	EVD-3100/3500/3900																																			
Port size	Rc1/4	Rc1/4, Rc3/8																																			
P4	●	●																																			
<p>F1000/F2000/F3000/ F4000/F6000/F8000</p> <p>Filter</p> 	<table border="1"> <tr> <td>How to order</td> <td colspan="6">F1000/2000/3000/4000/6000/8000-[Bore size]-W-[Option]P4□- [Bracket]</td> </tr> <tr> <td></td> <td>F1000-W</td> <td>F2000-W</td> <td>F3000-W</td> <td>F4000-W</td> <td>F6000-W</td> <td>F8000-W</td> </tr> <tr> <td>Port size</td> <td>Rc1/8, 1/4</td> <td>Rc1/4, 3/8</td> <td>Rc1/4, 3/8</td> <td>Rc1/4, 3/8, 1/2</td> <td>Rc3/4,1</td> <td>Rc3/4,1</td> </tr> <tr> <td>P4</td> <td>●</td> <td>●</td> <td>●</td> <td>●</td> <td>●</td> <td>●</td> </tr> <tr> <td>P40</td> <td></td> <td>●</td> <td>●</td> <td>●</td> <td>●</td> <td></td> </tr> </table>	How to order	F1000/2000/3000/4000/6000/8000-[Bore size]-W-[Option]P4□- [Bracket]							F1000-W	F2000-W	F3000-W	F4000-W	F6000-W	F8000-W	Port size	Rc1/8, 1/4	Rc1/4, 3/8	Rc1/4, 3/8	Rc1/4, 3/8, 1/2	Rc3/4,1	Rc3/4,1	P4	●	●	●	●	●	●	P40		●	●	●	●		<p>*1: Auto-drain is not available. *2: Metal bowl is not available. *3: Y element is not available for P40.</p>
How to order	F1000/2000/3000/4000/6000/8000-[Bore size]-W-[Option]P4□- [Bracket]																																				
	F1000-W	F2000-W	F3000-W	F4000-W	F6000-W	F8000-W																															
Port size	Rc1/8, 1/4	Rc1/4, 3/8	Rc1/4, 3/8	Rc1/4, 3/8, 1/2	Rc3/4,1	Rc3/4,1																															
P4	●	●	●	●	●	●																															
P40		●	●	●	●																																
<p>M1000/M2000/M3000/ M4000/M6000/M8000</p> <p>Oil mist filter</p> 	<table border="1"> <tr> <td>How to order</td> <td colspan="6">M1000/2000/3000/4000/6000/8000-[Bore size]-W-[Option]P4□- [Bracket]</td> </tr> <tr> <td></td> <td>M1000-W</td> <td>M2000-W</td> <td>M3000-W</td> <td>M4000-W</td> <td>M6000-W</td> <td>M8000-W</td> </tr> <tr> <td>Port size</td> <td>Rc1/8, 1/4</td> <td>Rc1/4, 3/8</td> <td>Rc1/4, 3/8</td> <td>Rc1/4, 3/8, 1/2</td> <td>Rc3/4,1</td> <td>Rc3/4,1</td> </tr> <tr> <td>P4</td> <td>●</td> <td>●</td> <td>●</td> <td>●</td> <td>●</td> <td>●</td> </tr> <tr> <td>P40</td> <td></td> <td>●</td> <td>●</td> <td>●</td> <td>●</td> <td></td> </tr> </table>	How to order	M1000/2000/3000/4000/6000/8000-[Bore size]-W-[Option]P4□- [Bracket]							M1000-W	M2000-W	M3000-W	M4000-W	M6000-W	M8000-W	Port size	Rc1/8, 1/4	Rc1/4, 3/8	Rc1/4, 3/8	Rc1/4, 3/8, 1/2	Rc3/4,1	Rc3/4,1	P4	●	●	●	●	●	●	P40		●	●	●	●		<p>*1: Auto-drain is not available. *2: Metal bowl is not available. *3: With differential pressure indicator option is not available.</p>
How to order	M1000/2000/3000/4000/6000/8000-[Bore size]-W-[Option]P4□- [Bracket]																																				
	M1000-W	M2000-W	M3000-W	M4000-W	M6000-W	M8000-W																															
Port size	Rc1/8, 1/4	Rc1/4, 3/8	Rc1/4, 3/8	Rc1/4, 3/8, 1/2	Rc3/4,1	Rc3/4,1																															
P4	●	●	●	●	●	●																															
P40		●	●	●	●																																
<p>R1000/R2000/R3000/ R4000/R6000/R8000</p> <p>Regulator Reverse regulator</p> 	<table border="1"> <tr> <td>How to order</td> <td colspan="6">R1□00/2□00/3□00/4□00/6□00/8□00-[Bore size]-W-[Option]P4□- [Pipe adaptor set] [Bracket]</td> </tr> <tr> <td></td> <td>R1000-W R1100-W</td> <td>R2000-W R2100-W</td> <td>R3000-W R3100-W</td> <td>R4000-W R4100-W</td> <td>R6000-W R6100-W</td> <td>R8000-W R8100-W</td> </tr> <tr> <td>Port size</td> <td>Rc1/8, 1/4</td> <td>Rc1/4, 3/8</td> <td>Rc1/4, 3/8</td> <td>Rc1/4, 3/8, 1/2</td> <td>Rc3/4,1</td> <td>Rc3/4,1</td> </tr> <tr> <td>P4</td> <td>●</td> <td>●</td> <td>●</td> <td>●</td> <td>●</td> <td>●</td> </tr> <tr> <td>P40</td> <td></td> <td>▲</td> <td>▲</td> <td>▲</td> <td>▲</td> <td></td> </tr> </table>	How to order	R1□00/2□00/3□00/4□00/6□00/8□00-[Bore size]-W-[Option]P4□- [Pipe adaptor set] [Bracket]							R1000-W R1100-W	R2000-W R2100-W	R3000-W R3100-W	R4000-W R4100-W	R6000-W R6100-W	R8000-W R8100-W	Port size	Rc1/8, 1/4	Rc1/4, 3/8	Rc1/4, 3/8	Rc1/4, 3/8, 1/2	Rc3/4,1	Rc3/4,1	P4	●	●	●	●	●	●	P40		▲	▲	▲	▲		<p>*1: Pressure gauge/pressure sensor must be ordered separately. (Pressure gauge option is "T", "T8", "T6" only) *2: R1 option is not available. *3: R6000 Dimensions is different from the standard. *4: For pressure adjustment springs without gas contact and pressure adjustment screw units in P40, zinc plating is used. *5: R2 option is not available. *6: For R1000, R1100, R8000, and R8100, only non-relief (option code: N) is available. *7: Zinc die-casting is used in the diaphragm part of R3000 to R8000 and R3100 to 8100.</p>
How to order	R1□00/2□00/3□00/4□00/6□00/8□00-[Bore size]-W-[Option]P4□- [Pipe adaptor set] [Bracket]																																				
	R1000-W R1100-W	R2000-W R2100-W	R3000-W R3100-W	R4000-W R4100-W	R6000-W R6100-W	R8000-W R8100-W																															
Port size	Rc1/8, 1/4	Rc1/4, 3/8	Rc1/4, 3/8	Rc1/4, 3/8, 1/2	Rc3/4,1	Rc3/4,1																															
P4	●	●	●	●	●	●																															
P40		▲	▲	▲	▲																																

Pneumatic auxiliary components

Clean air components

●: Applicable models ○: Non-Applicable models ▲: Contact CKD for details □: Not applicable

W1000/W2000/W3000/ W4000/W8000	How to order				
	W1□00/2□00/3□00/4□00/8□00-[Bore size]-W-[Option]P4□-[Pipe adaptor set] [Bracket]				
Filter/Regulator Reverse regulator/ Regulator	W1000-W W1100-W	W2000-W W2100-W	W3000-W W3100-W	W4000-W W4100-W	W8000-W W8100-W
Port size	Rc1/8, 1/4	Rc1/4, 3/8	Rc1/4, 3/8	Rc1/4, 3/8, 1/2	Rc3/4, 1
P4	●	●	●	●	●
P40		▲	▲	▲	

*1: Pressure gauge/pressure sensor must be ordered separately. (Pressure gauge option is "T", "T8", "T6" only)
 *2: Auto-drain is not available.
 *3: Metal bowl is not available.
 *4: R1 option is not available.
 *5: For pressure adjustment springs without gas contact and pressure adjustment screw units in P40, zinc plating is used.
 *6: R2 option is not available.
 *7: For W1000, W1100, W8000, and W8100, only non-relief (option code: N) is available.
 *8: Zinc die-casting is used in the diaphragm part of W3000 to W8000 and W3100 to W8100.
 *9: Y element is not available for P40.

FX	How to order		
Drain separator	FX1004/1011/1037-[Port size]-W-[Option]-P4-[Attachment]		
	FX1004	FX1011	FX1037
Port size	Rc1/4, 3/8	Rc1/4, 3/8, 1/2	Rc3/4, 1
P4	●	●	●
P40	▲	▲	▲

*1: Auto-drain is not available.
 *2: Metal bowl is not available.

G40D/G41D/G49D/G59D	How to order			
Pressure gauge	G40D/G41D/G49D/G59D-[Bore size]-P [Pressure]-P4			
	G40D	G41D	G49D	G59D
	Display ø42.5 with safety marker	Display ø42 with limit marker	Display ø42	Display ø52
Port size	R 1/8	R1/8, 1/4	R 1/8	1/4
P4	●	●	●	●

FCS500/FCS1000	How to order			
Inline clean filter	FCS500/FCS1000-[H push-in fitting bore size]- [Attachment]-P40			
	FCS500		FCS1000	
Port size	Push-in fitting ø4 to 8	Screw type/ SUS type (P9)	Push-in fitting ø8 to 12	Screw type/ SUS type (P9)
P4		Supports P4 specifications as standard		Supports P4 specifications as standard
P40	▲	Supports P40 specifications as standard	▲	Supports P40 specifications as standard

FAC	How to order			
Clean exhaust filter	FAC10/100/200-[Port size] FAC3000-[Port size]- [Attachment]			
	FAC10	FAC100	FAC200	FAC3000
Port size	ø4, 6, 8, 10	R1/8, 1/4	R3/8, 1/2	Rc3/8, 1/2
P4	Standard compliance			

P1100/P4100/P8100	How to order		
Pressure switch	P1100/P4100/P8100-[Bore size][Branch direction]-W-P4- [Attachment]- [Lead wire length]		
	P1100	P4100	P8100
Port size	Rc1/8, 1/4	Rc1/4, 3/8, 1/2	Rc3/4, 1
P4	▲	●	▲

*1: The atmospheric pressure inlet port is M5.
 *2: Fitting attachment option for atmospheric introduction port is not available.

APS	How to order	
Compact mechanical pressure switch	APS-[Piping port position/bore size/scale plate direction] [Lead wire length]-W-[Option]-P4	
	APS	
Port size	Rc1/8	
P4	●	

*1: The atmospheric pressure inlet port is M5.
 *2: Fitting attachment option for atmospheric introduction port is not available.

Pneumatic auxiliary components

Clean air components

●: Applicable models ○: Non-Applicable models ▲: Contact CKD for details □: Not applicable

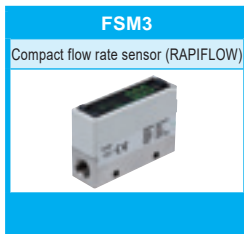


How to order	PPX-R10P-6M-J-P40/PPX-R10N-6M-J-P40	
	PPX	
Port size	Rc1/8 M5 female thread	
P4	Standard compliance	
P40	● Product is limited to the above model numbers	

*1: Bracket mounting is not possible for P40.

*2: P40 is compatible only with PPX-R10P-6M-J-P40/PPX-R10N-6M-J-P40.

*3: P40 Connector must be ordered separately. PPX-C2-FL401967-P40



How to order	FSM3-[Display][Flow rate range] [Flow direction][Body material/applicable fluids][Port size][Piping specifications][Output specifications] [Unit specifications][Valve option]-[Lead wire][Mounting attachments] [Included documents]- [Clean-room specifications]	
	FSM3	
P4	Standard compliance	

*1: Stainless steel body is P4 compatible as standard.

*2: Resin body and products with needle valve are not P4 compatible.



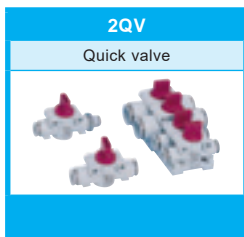
How to order	V3301-[Bore size]-W-FL □	
	V3301	
Port size	Rc1/4 to Rc1/2	
P4	▲	
P40	▲	

Note: Only LS is available for electrical connection.



How to order	V3000/V3010/V6010-[Bore size]-W-[Option]P4 □ [Attachment]	
	V3000/V3010	V6010
Port size	Rc1/4 to Rc1/2	Rc3/4, Rc1
P4	●	●
P40	▲	▲

*1: For P40, zinc plating is used in the exhaust air flow path part.



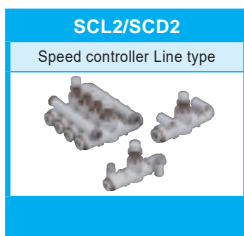
How to order	2QV-[Bore size]-P4	
	2QV	
Port size	ø4, ø6, ø8, ø10, ø12	
P4	●	



How to order	SNS-[Station No.]- [Bore size]-[Option]-3	
	SNS	
Port size	Rc3/8, Rc1/2	
P4	Standard compliance	

Products certified for safety standard ISO13849-1

Speed controller



How to order	SCL2-[Body size]-[Compatible tube O.D.]-P4 * Needle valve is not available now.	
	SCL2/SCD2	
Port size	ø4, ø6, ø8, ø10	
P4	●	

Note: Only ● part of the table below is supported.

		Body size			
		04	06	08	10
Compatible tube O.D.	H44	●			
	H66		●		
	H88			●	
	H1010				●

Pneumatic auxiliary components

Speed controller

●: Applicable models ○: Non-Applicable models ▲: Contact CKD for details □: Not applicable



How to order	SC3W-[Port size]- [Compatible tube O.D.]-[Option]-P4	
	SC3W	
Port size	M3, M5, R1/8, 1/4, 3/8, 1/2	
P4	●	

*1: The dimensions of pipe size M5 product is different from the standard SC3W.

*2: Compatible tube O.D. 3 (ø3, 2) is not available.

*3: Option is meter-in only.



How to order	DSC-[Port size]- [Compatible tube O.D.] - [Control method][Flow rate]-P4	
Standard	DSC-[Port size]- [Compatible tube O.D.] - [Control method][Flow rate]-P4	
Compact	DSC-C-[Port size]- [Compatible tube O.D.] - [Control method][Flow rate]-P4	
	DSC	DSC-C
Port size	M5, R1/8, 1/4, 3/8, 1/2	M5, R1/8
P4	●	▲



How to order	SC3F/SCLF-[Piping size]-[Compatible tube O.D.]-[Option]-P4	
	SC3F	SCLF
Port size	M3, M5, R1/8, R1/4, R3/8, R1/2	ø4, ø6, ø8, ø10, ø12
P4	●	●

Fitting



How to order	FTS4-M3-P4, FPL-M5-P4	
	FTS4	FPL
Port size	M3	M5
P4	▲	▲

Note: M3 gasket dimensions are different from the standard dimensions.

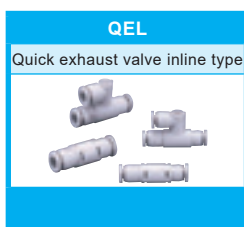


How to order	ZW-[Shape][Compatible tube O.D.] - [Piping size] -P4	
	ZW	
Port size	ø4, ø6, ø8, ø10, ø12	
P4	●	



How to order	ZSF-[Shape][Compatible tube O.D.] - [Piping size] -P4	
	ZSF	
Port size	ø4, ø6, ø8, ø10, ø12	
P4	●	

Auxiliary valve




How to order	QEL-[Tube O.D.]-P4	
	QEL	
Port size	ø4, ø6	
P4	▲	


*1: Applicable only for type with exhaust port fitting.


Pneumatic auxiliary components

●: Applicable models ○: Non-Applicable models ▲: Contact CKD for details □: Not applicable


Auxiliary valve


QE V2		How to order	QE V2-[Port size]- [Option][Accessory]	
Quick exhaust valve			QE V2	
		Port size	Rc1/8 to 1	
		P4	Standard compliance	

SH V2		How to order	SH V2-[Port size]- [Option][Accessory]	
Shuttle valve			SH V2	
		Port size	Rc1/8 to 1	
		P4	Standard compliance	
Note: Select a fluoro rubber specification				


CH V2		How to order	CH V2-[Port size]-[Flow rate] -[Option][Accessory]	
Check valve			CH V2	
		Port size	Rc1/8 to 1/1/2	
		P4	Standard compliance	
Note: Select a fluoro rubber specification				


Silencer

SM W2		How to order	SM W2-[Port size]	
Metering valve with silencer			SM W2	
		Port size	R1/8, 1/4	
		P4	Standard compliance	

FA		How to order	FA [Series classification]31-[Port size]- [Option]	
Exhaust cleaner			FA	
		Port size	Rc3/8 to 2	
		P4	Standard compliance	

Tube

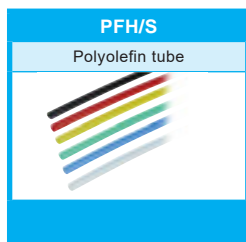
UP/F/U/NU/KX/SR2		How to order	Tube-[Size]-[Option]	
Tube			UP/F/U/NU/KX/SR2	
		O.D.	ø1.8, ø3.2, ø4, ø6, ø8, ø10, ø12, ø15	
		P4	Standard compliance	

ET		How to order	ET-[Size]- [Option]	
Fluoro resin tube			ET	
		O.D.	ø4, ø6, ø8, ø10, ø12	
		P4	Standard compliance	

Pneumatic auxiliary components

Tube

●: Applicable models ○: Non-Applicable models ▲: Contact CKD for details □: Not applicable



How to order	PF[type]- [Size]-[Option]-P4
	PFH/S
O.D.	ø4, ø6, ø8, ø10, ø12
P4	●

Gas generator



How to order	NS-[Body size][Membrane unit size][Number of units][Bore size][Option] [Installation direction]-P4
Port size	Rc3/8,Rc1
P4	▲

*1: Applicable only for common exhaust.

Fluid control components

Fluid control components



How to order	
Single unit	AB [Model No.] - [Port size]- [Orifice size]- [Body material/sealant combination] [Coil] [Option]ZP4□- [Voltage]
Manifold	GAB [Model No.][Thread]- [Orifice size]- [Station No.] - [Body material/sealant combination] [Coil] [Option]ZP4□- [Voltage]
	AB3/AB4-Z GAB3/GAB4-Z
Classification	Direct acting 2-port valve for dry air
Body material	Stainless steel
P4	●
P40	●

*1: Body material Select from stainless steel products.
*2: Body material/Seal combination code M only.
*3: Pipe material is SUS316.



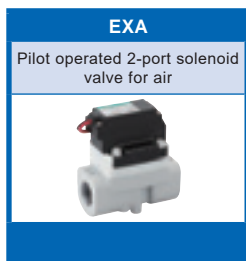
How to order	
Single unit	AG [Model No.][Port size]- [Orifice size]- [Body material/sealant combination] [Coil] [Option]ZP4□- [Voltage]
Manifold	GAG [Model No.][NO port size]- [Orifice size]- [Station No.] - [Body material/sealant combination] [Coil] [Option]ZP4□- [Voltage]
	AG3/AG4-Z GAG3/GAG4-Z
Classification	Direct acting 3-port valve for dry air
Body material	Stainless steel
P4	●
P40	●

*1: Body material Select from stainless steel products.
*2: Body material/Seal combination code M only.
*3: Pipe material is SUS316.



How to order	ADK11-[Port size]- [Body material/sealant combination] [Coil] [Option]ZP4□- [Voltage]
	ADK11-Z
Classification	Pilot kick 2-port valve for dry air
Body material	Stainless steel
P4	●
P40	●

*1: Body material Select from stainless steel products.
*2: Body material/Seal combination code M only.
*3: Pipe material is SUS316.



How to order	EXA-[Port size]- [Sealant material][Coil][Option]-[Voltage]
	EXA
Port size	Rc1/4,3/8,G1/4,3/8,1/4NPT,3/8NPT
P4	Standard compliance

Fluid control components

Fluid control components

●: Applicable models ○: Non-Applicable models ▲: Contact CKD for details □: Not applicable

CHB
Air operated 2-port ball valve



How to order	CHB-[Port size]- [Body material]-P4	
	CHB-N	
Port size	Rc3/8, 1/2, 3/4, 1, 1 1/4, 1 1/2, 2	
P4	●	

Note: Body material code N only.

CHG
Air operated 3-port ball valve



How to order	CHG-[Port size]- [Body material]-P4	
	CHG-N	
Port size	Rc1/2, 3/4, 1, 1 1/4, 1 1/2, 2	
P4	●	


Note: Body material code N only.

SAB/SVB
Air operated 2-port valve



How to order	SAB [Actuation][Working fluid]- [Port size][Thread/flange]-[Body/sealant combination][Other options]-[Assembly direction]-P4	
	SVB [Actuation][Working fluid]- [Port size][Thread/flange]-[Body/sealant combination][Coil][Other options]-[Assembly direction]- [Voltage]-P4	
	SAB	SVB
Port size	Rc1/4 to Rc2, 32 flange, 40 flange, 50 flange	Rc1/4 to Rc2, 32 flange, 40 flange, 50 flange
P4	●	▲

NAB/GNAB
Air operated 2-port valve



How to order		
Single unit	NAB [Actuation][Working fluid]- [Port size]- [Cylinder cover/body/sealant combination] [Option]-P4	
Manifold	GNAB [Actuation][Working fluid]- [Air supply category]- [Manifold station No.]- [Cylinder cover/body/sealant combination]-P4	
	NAB/GNAB	
Port size	Rc1/4, 3/8	
P4	●	

NAD/GNAD
Diaphragm cylinder valve



How to order		
Single unit	NAD [Actuation][Working fluid]-[Port size]- [Body/sealant combination] [Option]-P4	
Manifold	GNAD [Actuation][Working fluid]- [Air supply category]- [Manifold station No.]- [Cylinder cover/sub-plate/body/sealant combination]-P4	
	NAD	
Port size	Rc3/8	
P4	●	

LAD
Diaphragm cylinder valve



How to order	LAD [Actuation]-[Port size]- [Material combination] [Option]-P4	
	LAD	
Port size	Rc3/8, 1/2, 3/4, 1	
P4	●	

NP13/NP14 
3-port solenoid valve for air



How to order	NP1 [Actuation]- [Port size]-1[Coil housing][Option]-[Voltage]-P4	
	NP13/NP14	
Bore size	Rc3/8 to Rc2	
P4	●	

*1: Coil option is 2G, 2H, 2GS, 2HS only.
*2: Voltage: 24 VDC only.
*3: Rc1 1/4 to Rc2 is a made-to-order product.


Fluid control components

Fluid control components

●: Applicable models ○: Non-Applicable models ▲: Contact CKD for details □: Not applicable

NAP11

Air operated 3-port valve



How to order	NAP11-[port size]- [Body/sealant combination] -P4		
	NAP11		
Port size	Rc3/8 to 2		
P4	●		

NVP11 CE

Air operated 3-port valve with solenoid valve




How to order	NVP11-[port size]- [Body/sealant combination] [Coil housing] [Option]-[Voltage]-P4		
	NVP11		
Port size	Rc3/8 to 2		
P4	●		

*1: Coil option is 2G, 2H, 2GS, 2HS only.
 *2: Voltage: 24 VDC only.
 *3: Rc1 1/4 to Rc2 is a made-to-order product.

SNP

3-port solenoid valve with spool position detection



How to order	SNP-[Station No.]- [Port size]- [Sealant material][Coil option][Limit switch][Bracket][Silencer]-[Voltage]-P4		
	SNP		
Port size	Rc3/8, 1/2, 3/4		
P4	●		

HVB

Solenoid valve for high vacuum



How to order	HVB2 to 5 Series: HVB[Series size]12-[Connection method]- [Orifice size]- [Coil option] [Mounting plate]- [Voltage]	
	HVB6, 7 Series:HVB[Series size]12-[Connection method]- [OrificeDiameter][Thermal class]-[Option]-[Voltage]	
	HVB2 to 5	HVB6, 7
P4	Standard compliance	

*1: Fluorine grease is used.

Wet Fine system

AMD3R**

Air operated valve for chemical liquids



How to order	AMD[Size][Actuation]3R-[Connection method]- [Actuator option] [Body option] [Operating port direction][Mounting method]				
	AMDZ*3R	AMD0*3R	AMD3*3R	AMD4*3R	AMD5*3R
Connection	1/8", 1/4"	1/4", 3/8"	3/8", 1/2"	3/4"	1 "
P4	Standard compliance				

*1:AMDZ*3R, 0*3R, 4*3R, and 5*3R specifications are described in Wet Fine System/High Purity Chemical Liquid System (Catalog No.CB-031A).

Dry Fine system

AVB

Air operated valve for high vacuum



How to order	AVB**7-X****,AVB**3-X****	
	AVB**7	AVB**3
Port size	NW16, NW25, NW40, NW50, NW63	NW25, NW40, NW50, NW80
P4	▲	

Note: Use after checking the compatibility of the working fluid with the gas-contacting materials.

Electric actuator

●: Applicable models ○: Non-Applicable models ▲: Contact CKD for details □: Not applicable



How to order	EBS-[Body size] G[Motor mounting direction]- [Screw lead] [Stroke length] [Brake] [Encoder] N-C [Relay cable] - [Anti-rust treatment][Fitting]-P4
	EBS-G
P4	●



How to order	EBR-[Body size] G[Motor mounting direction]- [Mounting]- [Screw lead] [Stroke length] [Brake] [Encoder] N-C [Relay cable] - [Fitting]-P4
	EBR-G
P4	●



How to order	EBS-[Body size][Motor][Motor mounting direction]-[Screw lead][Stroke length][Brake] NN-[Mounted motor specification] [Motor size][Origin sensor][Limit sensor]-[Anti-rust treatment]-P4
	EBS-L
P4	●

Note: The attached origin sensor and limit sensor do not have material restrictions on the components.



How to order	EBR-[Body size][Motor][Motor mounting direction]-00-[Screw lead][Stroke length][Brake]NN-[Mounted motor specification][Motor size][Origin sensor][Limit sensor]-P4
	EBR-L
P4	●

Note: The attached origin sensor and limit sensor do not have material restrictions on the components.



How to order	ETS-[Body size]-[Screw lead][Stroke length]-[Motor mounting direction][Mounted motor specification][Motor size][Brake] [Origin sensor][Limit sensor][Grease nipple][Positioning pin hole]- [Magnet slider method]- [Anti-rust treatment]-P4
	ETS
P4	●

Note: The attached origin sensor and limit sensor do not have material restrictions on the components.



How to order	ECS-[Body size]-[Screw lead][Stroke length]-[Motor mounting direction][Mounted motor specification][Motor size][Brake] [Origin sensor][Limit sensor][Grease nipple][Positioning pin hole]- [Magnet slider method]- [Anti-rust treatment]-P4
	ECS
P4	●

Note: The attached origin sensor and limit sensor do not have material restrictions on the components.



How to order	EKS-[Body size][Motor][Motor mounting direction]-[Screw lead][Stroke length][Brake] NN-[Mounted motor specification] [Motor size] [Motor shaft fixing method][Origin sensor] [Limit sensor] [Anti-rust treatment]N-P4
	EKS
P4	●
P40	●

Note: The attached origin sensor and limit sensor do not have material restrictions on the components.

HP Series

Optimized sliding parts. Does not break even with high frequency usage

Long service life cylinder

HP1 Series **P4**

Unexplained stops
Significantly reduced

Number of replacements
Significantly reduced

Durability count
20 million cycles or more

Subject to CKD prescribed conditions



Pencil shaped cylinder SCP3 P4	Round shaped cylinder SCM P4	Small bore size cylinder CMK2 P4	
Compact cylinder SSD2 P4	Compact direct mounting cylinder MDC2	Small compact cylinder MSD P4	Small guided compact cylinder MSDG-L P4
Compact cylinder SMG P4	Linear slide cylinder LCR P4	Linear slide cylinder LCG P4	
Guided cylinder STM P4	Guided cylinder STG P4	Twin rod cylinder STR2 P4	

Improved environmental resistance. Does not break even in dusty environments

Environment-resistant cylinder

G-HP1 Series

Unexplained stops
Significantly reduced

Number of replacements
Significantly reduced

Environmentally-resistant
improvement

Durability count
5 million cycles and over

Subject to CKD prescribed conditions



Pencil shaped cylinder SCP3	Small bore size cylinder CMK2	Round shaped cylinder SCM	Tie rod cylinder SCG	Compact cylinder SSD2
Compact cylinder SMG	Linear slide cylinder LCR	Guided cylinder STG	Guided cylinder STS/ STL	

Increased linear guide rigidity. Achieves high rigidity, high precision, and high durability

Linear Slide Hand

LSH-HP1 Series **P4**

LST-HP1 Series

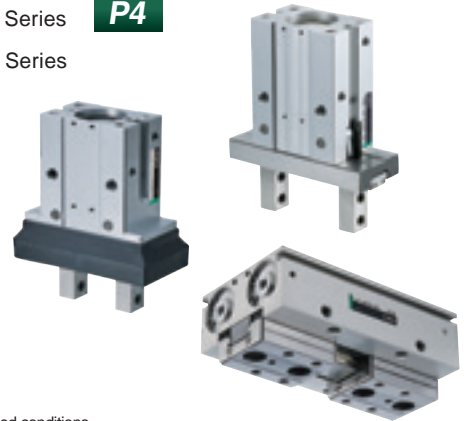
Unexplained stops
Significantly reduced

Number of replacements
Significantly reduced

Exchangeable
Significantly reduced

Durability count
20 million cycles or more

Subject to CKD prescribed conditions



Grips and measures simultaneously. Can be replaced before breakdowns

Measuring hand

LSHM-HP2 Series

LSTM-HP2 Series

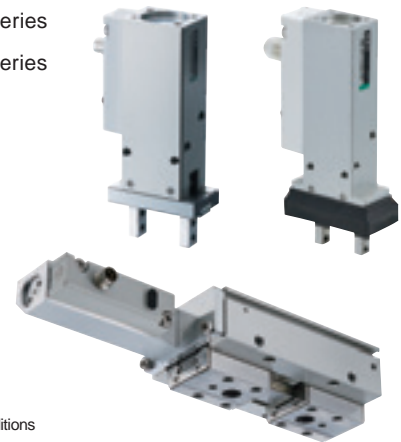
Unexplained stops
Significantly reduced

Number of replacements
Significantly reduced

Predictive maintenance
Available

Durability count
20 million cycles or more

Subject to CKD prescribed conditions



Increased Component service life and productivity from compressed air

Air booster

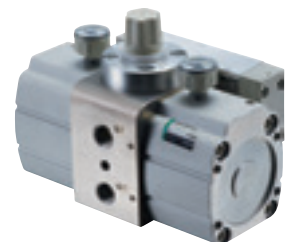
ABP2-HP1 Series

Unexplained stops
Significantly reduced

Number of replacements
Significantly reduced

Durability count
10 million cycles or more

Subject to CKD prescribed conditions



Models compatible with the P4* Series are also available. Refer to HP Series General Catalog (Catalog No.CC-1421A) for details.

Equipment related to rechargeable batteries P4* Series

These are not compatible with P4 Series Rechargeable Battery Components.

Electric motion components

ABSODEX

Direct drive motor

AX Series

Direct drive motor ideal for indexing table drive

Maximum torque: 1.2N·m to 1000N·m



Direct drive motor

TDISC Series

Direct drive motor compatible with various high-end processing stages

Maximum torque: 8.5N·m to 3700N·m

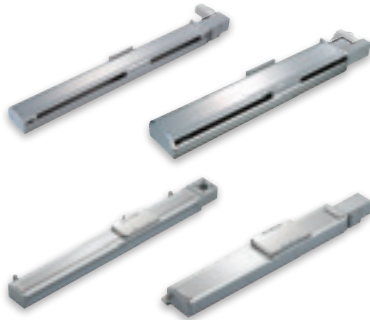


ROBODEX Std.

Slider

ETV/ECV Series

- Motorless specifications
- Low dust specification (ECV)
- 6 sizes
- Servo motor 100 to 750W compatible
- Max. load capacity: 85kg (horizontal)
- Max. Stroke: 3500mm



Electric shuttle mover

ESM Series

- Motorless specifications
- Three-dimensional transport P&P system
- Belt drive
- Various motors can be mounted (motorless type)
- Long stroke with a max. length of 20 m

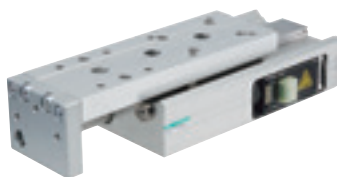


ROBODEX Pulse

Table

FLCR Series

- Ball screw + belt drive
- 3 sizes
- Built-in motor saves space
- G Option connected to controller ECG
- Brake options available



Rotary

FGRC Series

- Worm gear + belt drive
- 3 sizes
- Manual table position adjustment
- Self-lock mechanism
- G Option connected to controller ECG



ROBODEX Pulse

2-Finger Gripper

FLSH Series

- Sliding screw drive
- 3 sizes
- Manual finger position adjustment
- Self-lock mechanism
- G Option connects to controller ECG



Thin 2-Finger Gripper

FFLD Series

- 3 sizes
- Built-in controller
- 1 cable
- Max. Stroke 80mm (one side)
- Max. gripping power 500N (one side)
- Interface IO-Link



Related products

Image processing program



Visual programming tool for image processing

Facilea

20-minute easy image processing even for beginners

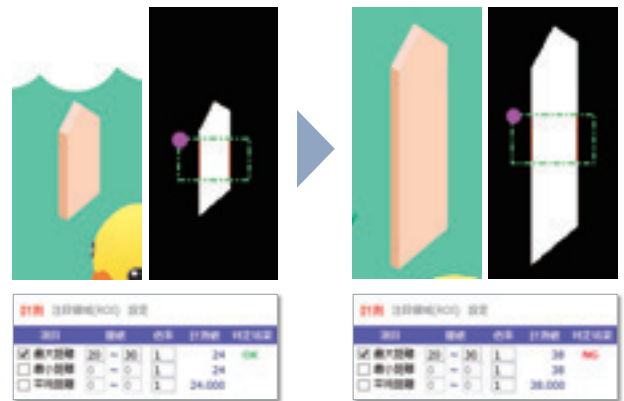


Simple 3-step

Anyone can easily build an image processing system by dragging and dropping and entering simple settings.

[Distance measurement]

Converts a color image to a gray image and binarisation*. Measure the distance, and make a judgment.



* binarisation: Processing that converts an image to black and white

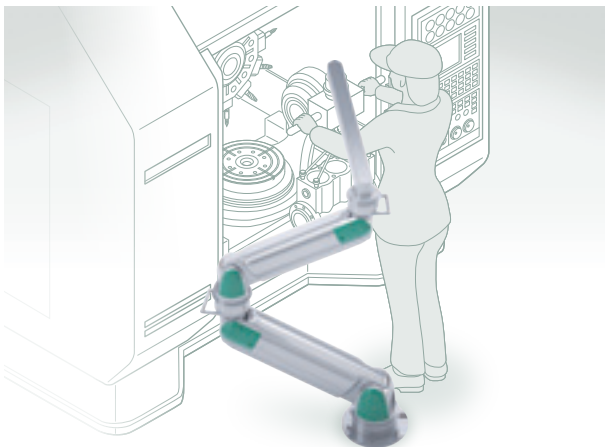
Assistive device

Transform workstyles with assistive devices

PowerArm

PAW Series

Improves work environment by assisting in heavy duty work

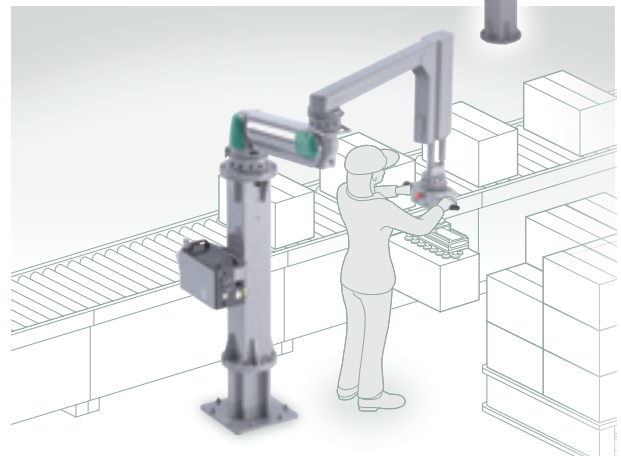


PAW Series Powerful Arm

PowerArm (palletizing specifications)

PAW-A* Series

Space-saving and easy stacking and unloading of work



Catalogs



Eight different catalogs are available.

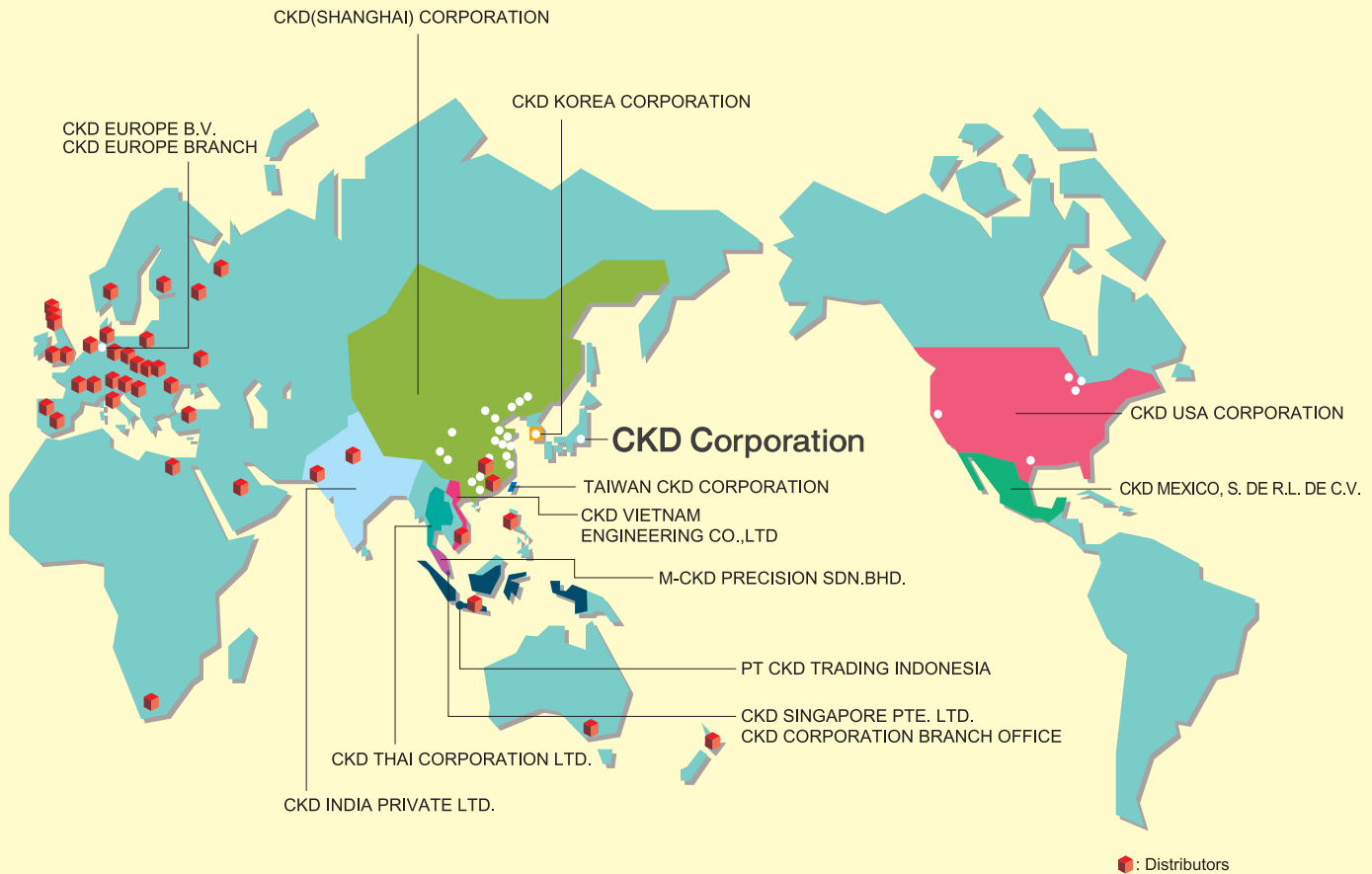
- Pneumatic Valves (Catalog No. CB-023SA)
- Pneumatic Cylinders I and II (Catalogs No. CB-029SA, CB-030SA)
- General Purpose Valves (Catalog No. CB-03-1SA)
- Pneumatic, Vacuum and Auxiliary Components (Catalog No. CB-024SA)
- Vacuum System Components SELVACS (Catalog No. CC-796A)
- ABSODEX General (Catalog No. CB-054A)
- Electric actuator Motorless General (Catalog No. CB-055A)

● Please do not hesitate to make use of these resources, through application with your Sales representative or nearest CKD sales office.

Homepage

Catalog PDFs and CAD data of CKD products are available for download.

For PDF and DXF data of the general catalogs,	
CKD Website Component Products	> Materials/download Digital catalogs/catalog PDFs
For PDF and DXF data of new products,	
CKD Website Component Products	> Search product list Search new products
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