

## 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.

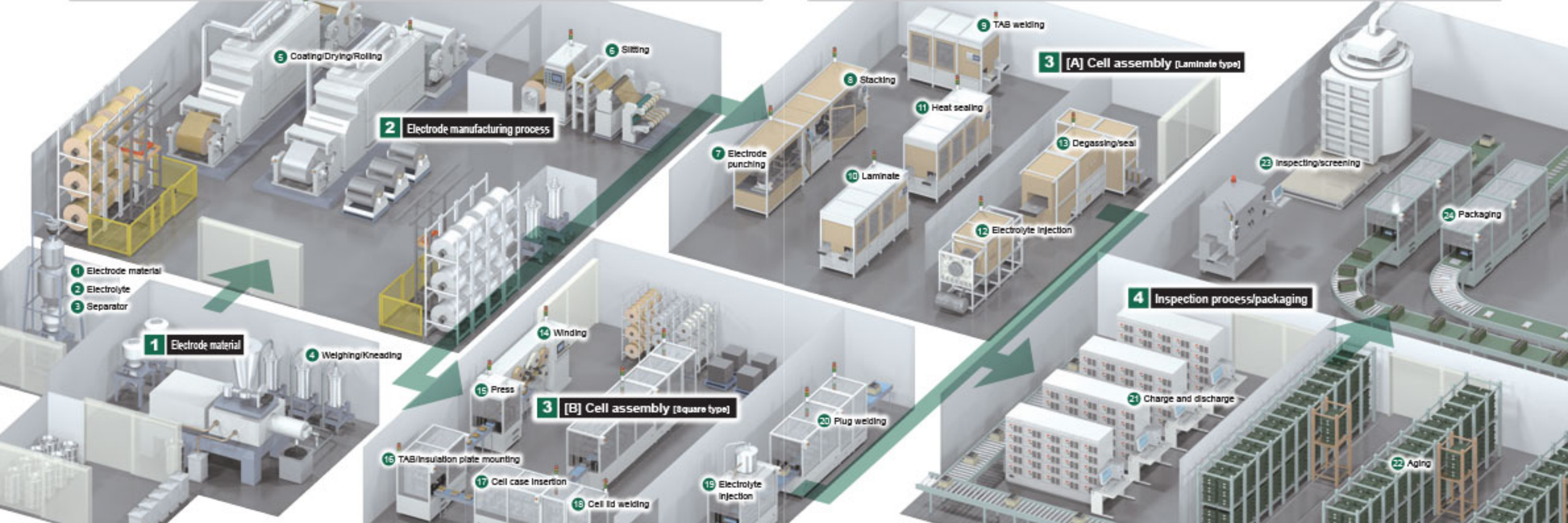
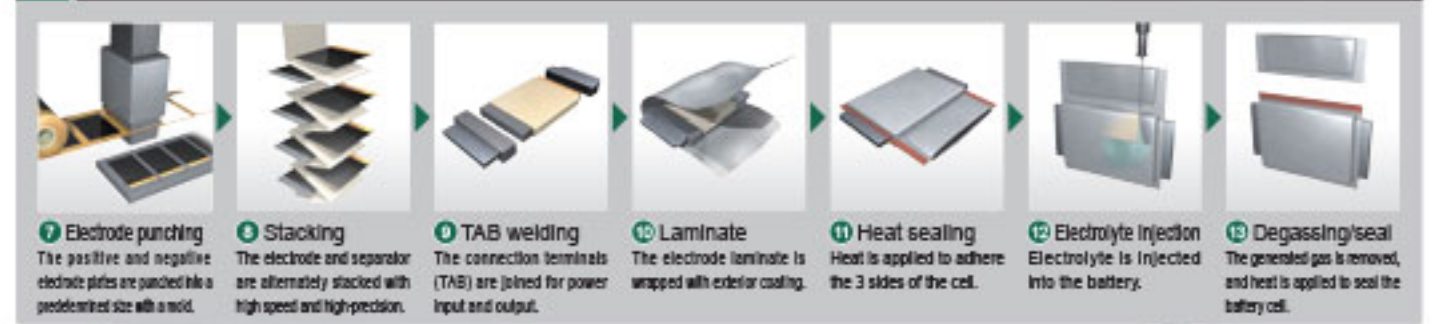
## 1 Electrode material



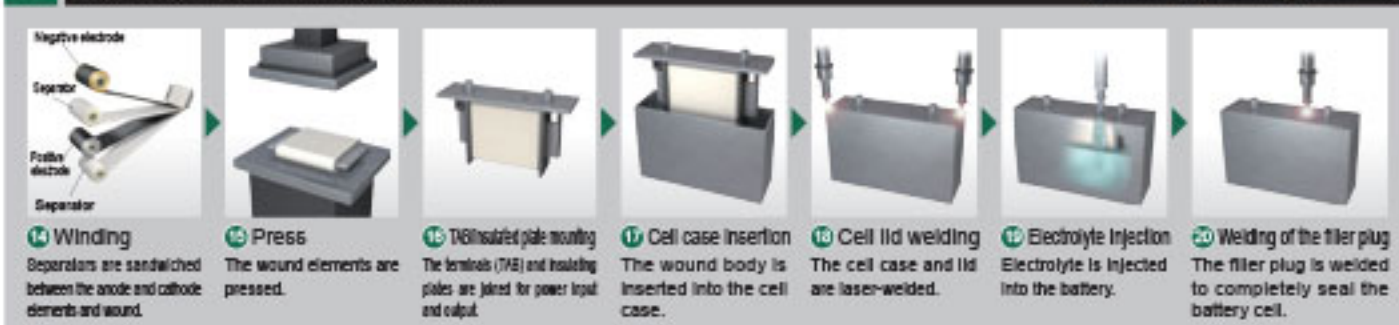
## 2 Electrode manufacturing process



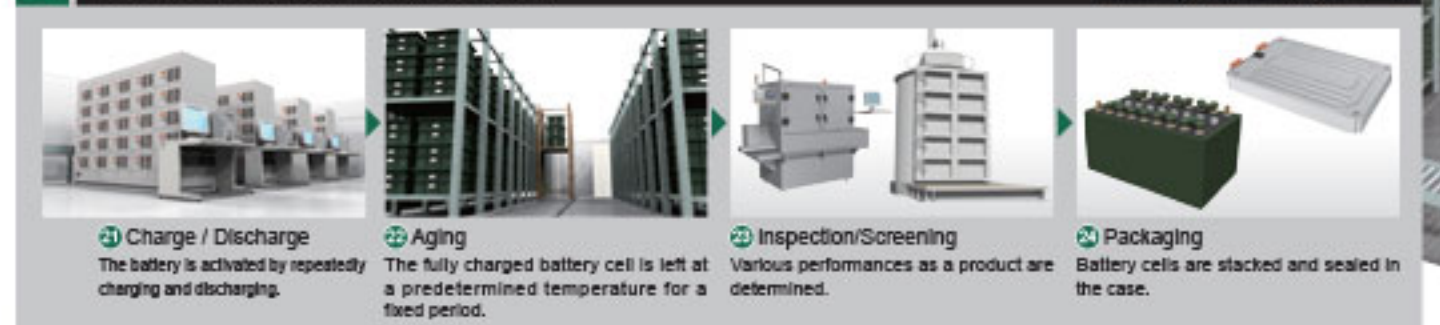
## 3 [A] Cell assembly [Laminate type]



## 3 [B] Cell assembly [square type]



## 4 Inspection process/Packaging



# 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.

- Limited copper material
- Limited zinc material
- Limited nickel-based material
- Limited zinc plating
- Limited electrolytic nickel plating

**Dry environment**

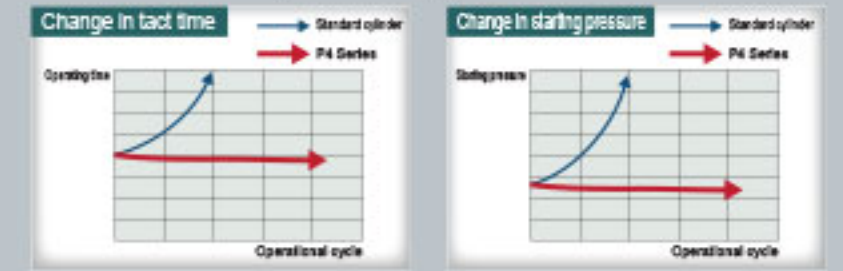
**Long service life even in -70°C dew point environments**

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.



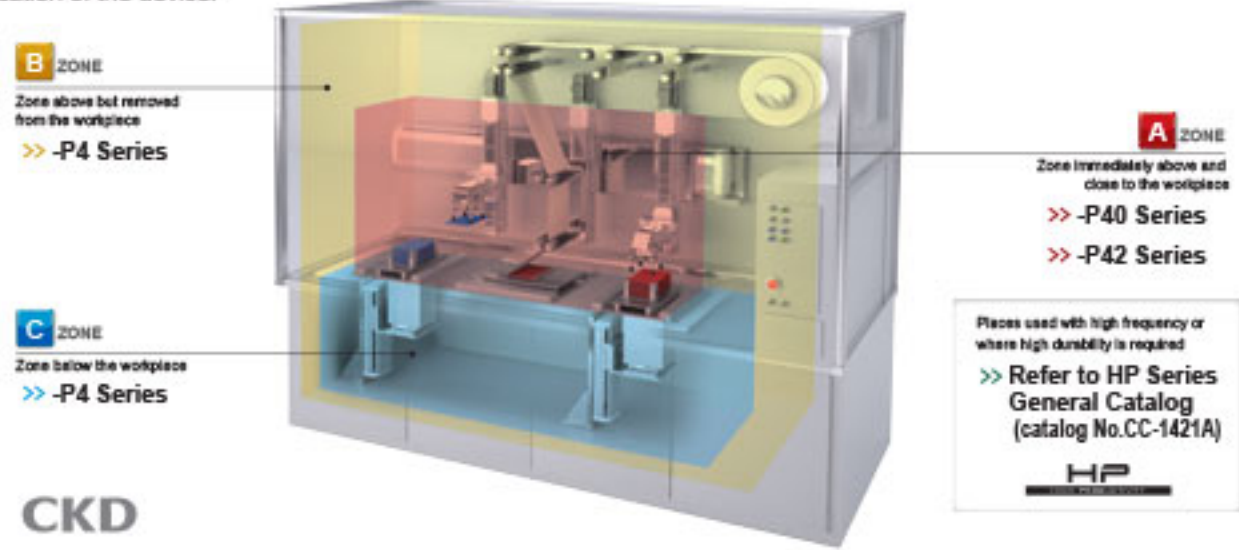
**Fights dust and its generation**

**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.



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

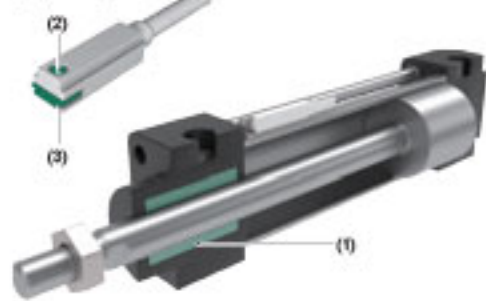
## -P4 Series



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.

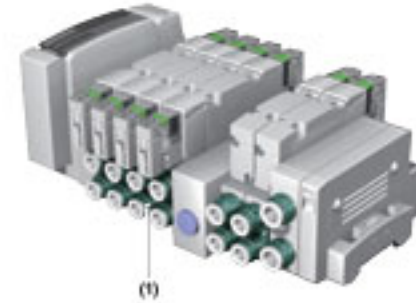
### Cylinder

- (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

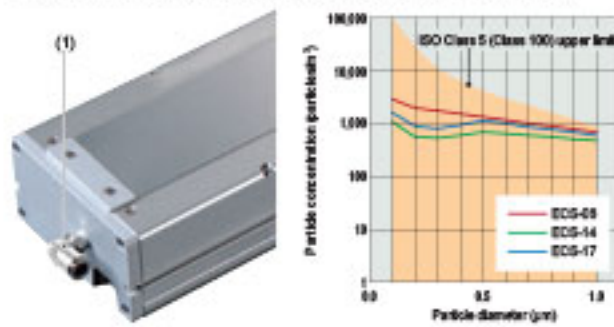


#### Low contamination specifications

- (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.

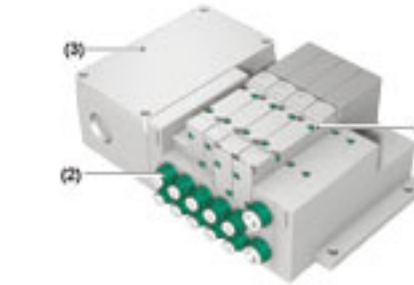
### Cylinder

- (1) Electroless Ni plating



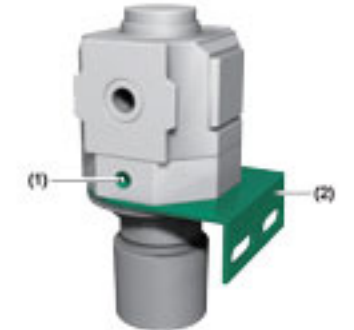
### Pneumatic valves

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



### Regulator

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



1/5 or less dust generation rate achieved

## -P42 Series

\*Our standard cylinder comparison

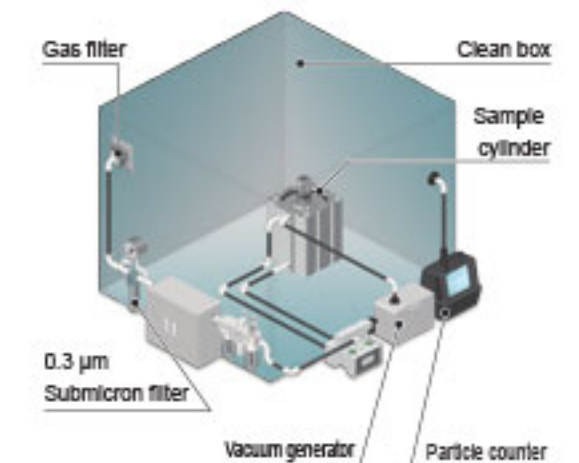


Local exhaust function (vacuum treatment port) is added to P40 specifications. Prevents metal powder from contaminating the electrode and cell, and reduces product failure of rechargeable batteries. In addition, SUS is used in piston rods.

### 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
<b>SSD2 Series</b>	<b>STG Series</b>	<b>SRL3 Series</b>	<b>SMG Series</b>	<b>STR2 Series</b>	<b>LCR Series</b>



Table rotary actuator	Linear Slide Hand	Parallel hand	Compact wide parallel hand	Ultra thin parallel hand
<b>GRC Series</b>	<b>LSH Series</b>	<b>LHAG Series</b>	<b>HMF Series</b>	<b>HLD Series</b>



Precise suction plate	Fine buffer	Air bearing actuator	Cylinder switch	Pilot operated 3, 5-port valve	Direct acting 3-port valve
<b>PVP Series</b>	<b>FBU2 Series</b>	<b>LBC Series</b>		<b>4G Series</b>	<b>3QR Series</b>



Electric actuator	Electric actuator
<b>EBS-L/G, EBR-L/G, EKS-L Series</b>	<b>ETS/ECS Series</b>



Suction pad	Vacuum ejector	Vacuum filter	Vacuum regulator
<b>VSP Series</b>	<b>VSX/VSXM Series</b>	<b>VSFU Series</b>	<b>VRA2000 Series</b>



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
<b>SHD Series</b>	<b>SU Series</b>	<b>SD Series</b>	<b>NS Series</b>	<b>AF2 Series</b>	<b>F3000 Series</b>



Precision regulator	Electro-pneumatic regulator	Pressure	Digital pressure sensor	Compact flow rate sensor	With spool position detection/askal pressure exhaust valve
<b>RP/RPE Series</b>	<b>EVD/EVR Series</b>	<b>G40D/G41D/ G49D/G50D Series</b>	<b>PPX Series</b>	<b>FSM3 Series</b>	<b>SNS Series</b>



Speed controller with adjusting dial	Speed controller, elbow	Fitting, tube	2, 3-port solenoid valve for dry air
<b>DSC Series</b>	<b>SC3F Series</b>		<b>AB/ADK-Z Series</b>



Valve for high vacuum	Air operated valve for chemical liquids	Clean cylinder valve	Air operated ball valve	Diaphragm cylinder valve
<b>AVB Series</b>	<b>AMD Part 3R Series</b>	<b>LAD Series</b>	<b>CHB/CHG Series</b>	<b>NAD Series</b>



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)-(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/ rubber-stop	Double acting/ with valve
			K	SCPD3	SCPD3	D	F	O	T	*C	M	V
ø6 to 16	P4	●		○	○	○					○	○
	P40	●		○	○	○					○	○
	P42	▲				▲					▲	

**CMK2**

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/ piston locking	Single acting/ push	Single acting/ pull	Double acting/ double rod	Double acting/ back to back	Stroke adjustable (pull)	Stroke adjustable (push)	Double acting/ fine speed	Double acting/ heat resistance	Double acting/ rubber-air cushioned	Interlock release valve	Double acting/ rubber-stop	Double acting/ coolant proof	Double acting/ low hydraulic	Double acting/ with cushion
			Q	S	SR	D	B	P	R	F	T	*C	Z	M	G200	H	C
ø20 to 40	P4	●	●	○	○	○	○	○	○				○	○	▲		○
	P40	●	●	○	○	○	○	○	○				○	▲	▲		○*2
	P42																

**SCM**

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/ piston locking	Single acting/ push	Single acting/ pull	Double acting/ double rod	Double acting/ back to back	Double acting/ two-stage	Stroke adjustable (pull)	Stroke adjustable (push)	Double acting/ low speed	Double acting/ low friction	Double acting/ heat resistance	Double acting/ with scope	Double acting/ coolant proof	Double acting/ low hydraulic	Double acting/ with seal kit	Double acting/ rubber-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**

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/ piston locking	Double acting/ double rod	Double acting/ low speed	Double acting/ low friction	Double acting/ ultra	Double acting/ rubber-stop	Double acting/ coolant proof	Double acting/ with adhesive	
			Q	D	O	U	G	M	G200	G104	
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/ Seal kit	Double acting/ Two-stage	Double acting/ Low hydraulic	Double acting/ Powerful stopper
			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	
		ø60 to 80	P4
P40	▲*2		

# Pneumatic actuator

Note: 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 enter 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
#6 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 stroke length	Single acting/ push	Single acting/ pull	Double acting/ double rod offset	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 speed	Double acting/ low speed High load	Double acting/ heat resistance	Double acting/ padding function	Double acting/ roller scraper	Double acting/ rotation stop
			K		X	Y	KC	Q	D	B	W	F	0	KU	T1	T2	G	M	
#12 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/ roller scraper	Double acting/ roller scraper	Double acting/ constant pressure	Double acting/ constant pressure	Double acting/ offset	Double acting/ rotation stop
			Q	X	Y	D	B	W	F	0	T	G	G1/G4	G2/G3	001/001	M	
#12 to 180	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/ roller scraper	Double acting/ roller scraper	Double acting/ constant pressure
			F	U	*C	G	G1/G4
#12 to 180	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
#12 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 #6 to 16	P4	●	●	○	○	
	P40	●	●	○	○	

Applicable bore size		Double acting/ pilot	Double acting/ pilot/ fine speed
			F
MSDG #6 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
		●
ø5, 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 select valve
		V	
ø15 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



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

Applicable bore size		Double acting/ single rod	Double acting/ piston locking	Double acting/ roller-act cushioned	Double acting/ cushioned	Double acting/ roller actuator	Double acting/ vane	Double acting/ constant pressure	Double acting/ air-spacer distance
			Q	* C	C	G	G1	G03	G4
#12 to 100	P4	●	●	○	○	○			
	P40	●	●	○	○	○			
	P42	▲	▲	▲	▲				

\*1: Not compatible with STG-K.



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

Applicable bore size		Double acting/ single rod
#6/10	P4	○
	P40	○
	P42	▲



How to order: STS/STL-(Bearing)-(Bore size)-(Stroke length)-(Switch)-(Number)-P4□

Applicable bore size		Double acting/ single rod	Double acting/ piston locking	Double acting/ cushioned	Double acting/ roller actuator
		Q	C	G	
#6 to 100	P4	●	▲	▲	▲
	P40	●	▲	▲	▲
	P42	▲	▲	▲	



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

Applicable bore size		Double acting/ single rod	Double acting/ piston locking	Double acting/ fine speed
		Q	F	
#6 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.



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

Applicable bore size		Double acting/ single rod	Double acting/ piston locking
		Q	
#6 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. (#20, #25 P40 has rust proofing added.)



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

Applicable bore size		Double acting/ single rod	Double acting/ piston locking	Double acting/ fine speed	Double acting/ low speed	Double acting/ double rod
		Q	F	O	D	
#6 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



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
#10 up to 32	P4	●	●
	P40	●	●

### Rodless



How to order		SRL3-[Variation]-[Mounting]- [Bore size][Cushion]-[Stroke length]-[Switch]-[Number]- [Option]P4□		
Applicable bore size		Double acting/standard	Double acting/positive locking	Double acting/mesh gate
			Q	G
#12 to 100	P4	●	●	
	P40	●	●	



How to order		SRM3-[Variation]-[Mounting]- [Bore size][Cushion]-[Stroke length]-[Switch]-[Number]- [Option]P4□	
Applicable bore size		Double acting/standard	Double acting/positive locking
			Q
#25/32 to 40/51	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] Selection.



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

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



How to order		MRG2-[Variation]-[Mounting]- [Bore size][Cushion]-[Stroke length]-[Switch]-[Number]- [Option]P4□	
Applicable bore size		Double acting/basic	
#10/19/25	P4	●	
	P40	▲	

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

### Rotary actuator



How to order		GRC-[K]-[Torque size]-[Angle]-[Switch]-[Number]- [Option]P4□			
Applicable torque		Standard	High accuracy	Fine speed	High accuracy/Inter-locked
			K	F	KF
Torque 0.5 to 0.1 Nm	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



How to order LBC-{Thrust}

		LBC
P4		Standard compliance

## Hand/chuck



How to order HAP-{Size}{Option}{Switch}{Number}-P4□

Applicable bore size		Double acting	Single acting Normally open	Single acting Normally closed
			O	C
#20 35/40	P4	●	●	●
	P40	●	●	●



How to order BHA-{Size}{Option}{Switch}{Number}-P4□

Applicable bore size		Double acting	Single acting Normally open	Single acting Normally closed
			O	C
#12/16/ 20/25	P4	●	●	●
	P40	●	●	●



How to order LHA-{Size}{Option}{Switch}{Number}-P4□

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



How to order LHAG-{Size}{Option}{Switch}{Number}P4□

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



How to order BHG-{Size}{Option}{Switch}{Number}-P4□

Applicable bore size		Double acting	Single acting Normally open	Single acting Normally closed
			O	C
#12/16/ 20/25	P4	●	●	●
	P40	●	●	●



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
#32 to 80	P4	●	●	●	●
	P40	●	●	●	●

Note: 80 ca 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

**HCP**  
Lateral parallel hand



How to order HCP-{Size}-{Option}-{Switch}-{Number}-P4□

Applicable bore size		Double acting	
		P4	P40
#120002	P4	●	●
	P40	●	●

**HLB**  
Bearing thin parallel hand



How to order HLB-{Size}-{Switch}-{Number}-P4□

Applicable bore size		Double acting	
		P4	P40
#131920	P4	▲	▲
	P40	▲	▲

**HLBG**  
Bearing thin parallel hand (With rubber cover)



How to order HLBG-{Size}-{Switch}-{Number}-P4□

Applicable bore size		Double acting	
		P4	P40
#121500	P4	●	●
	P40	●	●

**HMF**  
Compact wide parallel hand



How to order HMF-{Size}-{Option}-{Switch}-{Number}-P4□

Applicable bore size		Double acting		
		Standard	Lag stroke 1	Lag stroke 2
			L1	L2
#12 x 2 to #16x2	P4	●	●	●
	P40	●	●	●

**HLC**  
Thin long stroke parallel hand



How to order HLC-{Size}-{Option}-{Switch}-{Number}-P4□

Applicable bore size		Double acting	
		P4	P40
#8 x 2 to #20 x 2	P4	●	●
	P40	●	●

**HLD**  
Ultra thin parallel hand



How to order HLD-{Size}-{Switch}-{Number}-P4□

Applicable bore size		Double acting	
		P4	P40
#8=4 to #20=4	P4	●	●
	P40	●	●

**HLP2**  
Low-profile long stroke hand



How to order HLP2-{Size}-{Stroke length}-{Switch}-{Number}-P4□

Applicable bore size		Double acting	
		P4	P40
#8=2 to #20=2	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	
ø18/25	P4	●	
	P40	●	

**BHE**  
Centering hand



How to order: BHE-{Size}-{Option}-{Switch}-{Number}-P4□

Applicable bore size		Double acting			
		Standard	Open side adjusted motion	One side adjusted motion	Reverse side adjusted motion
			D	E	DE
ø12 to 32	P4	●	●	●	●
	P40	●	●	●	●

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



How to order: CKG-{Size}-{Option}{D}-{Switch}-{Number}-P4□

Applicable bore size		Double acting	Single acting Normally open	Single acting Normally closed
			O	C
		ø18/25 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
		ø32/38 50/63	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
		ø32/38 50/63	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



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



How to order		FCK-[Series]-[Option]-P4		
Applicable size		Low speed	Median speed	High speed
		L	M	H
		FCK-18.15 to 2.1	P4	●



How to order		FJ-1-3-P4/FJ-1-4-P4/FJ-1-5-P4				
Applicable size		Basic	Foot	Flange		
		FJ-1-FJ-1-4-FJ-5	P4	●	●	●
		P40	▲	▲	▲	
FJ-6 to 45	P4	Standard compliance				
	P40	▲				



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

### Cylinder switch



#### [How to order switch]

If you order switches for the P4 Series separately, do as follows.

SW-□□□-P4 example SW-T2H-P4

(\*) When ordering Low-Voltage Directive compliant products separately, do as follows.

SW-□□□-ST-P4 example SW-T5H-ST-P4

(\*) 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]

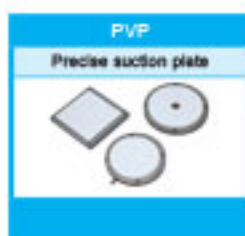
For cylinder specification P4 and P40, switch indicating "P4" is supplied. Cylinder mountable switch differs according to each cylinder.

Refer to the switch compatibility table on pages 23 to 26.

Example) GRC: Reed switch T0\* and T3\* cannot be mounted.

SRM0: Proximity 1-color display T2\*, T3\* cannot be installed.

## Vacuum components



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 float 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:  $\phi 1.8$  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	$\phi 4, \phi 6$	$\phi 4, \phi 6, \phi 8, \phi 10$	
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	$\phi 4, \phi 6$	$\phi 4, \phi 6, \phi 8, \phi 10$	
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 PFX only.  
\*2: Pressure gauge/pressure sensor must be ordered separately. (Attachment options not available.)



How to order	VSPFU-[Filter size]-[Bore size]-P4, FSL-[Filter size]-[Bore size]-[Bracket]-P4		
	VSPFU	FSL	
Port size	$\phi 4, \phi 6, \phi 8, \phi 10$	$\phi 4, \phi 6, \phi 8, \phi 10$	
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)

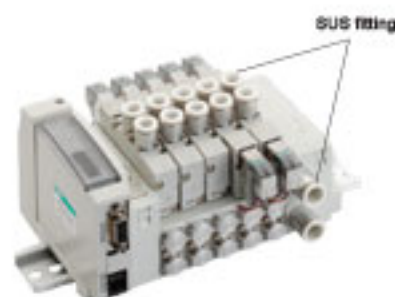
Applicable models Non-Applicable models Contact CKD for details Not applicable

### Pilot operated 3, 5-port valve

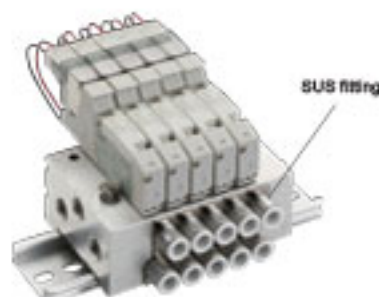


Descriptions	4GA/B1	4GA/B2	4GA/B3	4GA/B4
Valve width [mm]	10	15	18	24.3
Flow characteristics [dm <sup>3</sup> /(bar·l)]	P → A/B	0.88 to 1.4	1.7 to 2.6	2.9 to 4.5
	A/B → R	0.7 to 1.3	2.1 to 2.9	3.3 to 4.2
Max. working pressure [MPa]	0.7			
Min. working pressure [MPa]	0.2			
Proof pressure [MPa]	1.05			
Ambient temperature [°C]	-5 to 55 (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	10	15	18
Flow characteristics [dm <sup>3</sup> /(bar·l)]	P → A/B	0.88 to 1.4	1.7 to 2.5
	A/B → R	0.7 to 1.3	2.1 to 2.9
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	$\frac{1}{2}$ G $\frac{1}{2}$ [Size][Switching section][OR-(Bore size)- [Wiring][Option]-[Voltage]-P4
Manifold Replacement valve	$\frac{1}{2}$ G $\frac{1}{2}$ [Size][Switching section][OR-(Bore size)- [Wiring][Option]-[Voltage]-P4
M4G Series (Metal base)	M $\frac{1}{2}$ G $\frac{1}{2}$ [Size][Switching section][OR-(Bore size)- [Wiring][Option][Mount type]-[Station No.]- [Voltage]-P4
MN4G Series (Block manifold)	MN $\frac{1}{2}$ G $\frac{1}{2}$ [Size][Switching section][OR-(Bore size)- [Wiring][Option]-[Station No.]- [Voltage]-P4
Single unit (Large flow rate)	4 G $\frac{1}{2}$ 4 [Switching section][B-(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, O5, O6)	Push-in fitting straight (Model No.: C)	Push-in fitting elbow (Model No.: CL, CD)	Screw-in (Model No.: M5, O5, O6)	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-5235)" 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.

- $\frac{1}{2}$  G  $\frac{1}{2}$  1, MN4G  $\frac{1}{2}$  1: CF, C18
- $\frac{1}{2}$  G4D3: C6, C10
- $\frac{1}{2}$  G4E3: C6
- $\frac{1}{2}$  G44: C10, C12

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

\*10: Contact CKD for European Standards compliant products.

### Pilot check valve



Descriptions	4G2R-PCS-P4
Flow characteristics [dm <sup>3</sup> /(bar·l)]	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 <sup>3</sup> /(bar·l)]	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 P→A [dm <sup>3</sup> /(s·bar)]	Flow characteristics A→R [dm <sup>3</sup> /(s·bar)]
Max. working pressure [MPa]	0.3	0.36	0.36
Min. working pressure [MPa]	0.32 to 0.36	0.36 to 0.4	0.7
Proof pressure [MPa]	0.7	-0.1	1.05
Ambient temperature [°C]	0 to 50	0 to 50	5 to 50
Fluid temperature [°C]	0 to 50	5 to 50	12 DC, 24 DC
Rated voltage [V]			

How to order	
Single unit	3QR1 (Solenoid position) (M5 - (Electrical connections) (Flow rate) - (Voltage)
Replacement valve	3QR1 (Solenoid position) (M5 - (Electrical connections) (Flow rate) - (Voltage)
Manifold	3QR1 (Solenoid position) (M5 - (Electrical connections) (Flow rate) - (Voltage)

Note: Supports P4 specifications as standard



Descriptions	Standard	Large flow rate	
		Flow characteristics P→A [dm <sup>3</sup> /(s·bar)]	Flow characteristics A→R [dm <sup>3</sup> /(s·bar)]
Max. working pressure [MPa]	0.11	0.11	0.18
Min. working pressure [MPa]	0.11	0.11	0.11
Proof pressure [MPa]	0.3	0.65	0
Ambient temperature [°C]	-0.1	0.1	-0.1
Fluid temperature [°C]	1.05	0 to 50	5 to 50
Rated voltage [V]		24 DC	

How to order	
Single unit	3QB1 (Solenoid position) (M5 - (Electrical connections) (Pressure specification) - (Voltage)
Replacement valve	3QB1 (Solenoid position) (M5 - (Electrical connections) (Pressure specification) - (Voltage)
Manifold	M3QB1 (Solenoid position) (M5 - (Electrical connections) (Pressure specification) - (Station No.) - (Voltage)

Note: Supports P4 specifications as standard

## Explosion-proof 3, 5-port valve



Descriptions	Valve width	Standard			
		4GD/E1	4GD/E2	4GD/E3	4GD/E4
Flow characteristics P → A/B [dm <sup>3</sup> /(s·bar)]	10	15	18	24.3	
Max. working pressure [MPa]	0.88 to 1.4	1.7 to 2.5	3.0 to 4.5	6.3 to 11.0	
Min. working pressure [MPa]	0.7 to 1.3	2.1 to 2.9	3.3 to 4.2	6.8 to 13.9	
Proof pressure [MPa]	0.7	0.2	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 to IIC T4 Gb				
Standards	IEC 947-5-1, IEC 61810-1, IEC 61810-2, IEC 61810-3, IEC 61810-4, IEC 61810-5, IEC 61810-6, IEC 61810-7, IEC 61810-8, IEC 61810-9, IEC 61810-10, IEC 61810-11, IEC 61810-12, IEC 61810-13, IEC 61810-14, IEC 61810-15, IEC 61810-16, IEC 61810-17, IEC 61810-18, IEC 61810-19, IEC 61810-20, IEC 61810-21, IEC 61810-22, IEC 61810-23, IEC 61810-24, IEC 61810-25, IEC 61810-26, IEC 61810-27, IEC 61810-28, IEC 61810-29, IEC 61810-30, IEC 61810-31, IEC 61810-32, IEC 61810-33, IEC 61810-34, IEC 61810-35, IEC 61810-36, IEC 61810-37, IEC 61810-38, IEC 61810-39, IEC 61810-40, IEC 61810-41, IEC 61810-42, IEC 61810-43, IEC 61810-44, IEC 61810-45, IEC 61810-46, IEC 61810-47, IEC 61810-48, IEC 61810-49, IEC 61810-50, IEC 61810-51, IEC 61810-52, IEC 61810-53, IEC 61810-54, IEC 61810-55, IEC 61810-56, IEC 61810-57, IEC 61810-58, IEC 61810-59, IEC 61810-60, IEC 61810-61, IEC 61810-62, IEC 61810-63, IEC 61810-64, IEC 61810-65, IEC 61810-66, IEC 61810-67, IEC 61810-68, IEC 61810-69, IEC 61810-70, IEC 61810-71, IEC 61810-72, IEC 61810-73, IEC 61810-74, IEC 61810-75, IEC 61810-76, IEC 61810-77, IEC 61810-78, IEC 61810-79, IEC 61810-80, IEC 61810-81, IEC 61810-82, IEC 61810-83, IEC 61810-84, IEC 61810-85, IEC 61810-86, IEC 61810-87, IEC 61810-88, IEC 61810-89, IEC 61810-90, IEC 61810-91, IEC 61810-92, IEC 61810-93, IEC 61810-94, IEC 61810-95, IEC 61810-96, IEC 61810-97, IEC 61810-98, IEC 61810-99, IEC 61810-100				
Degree of protection	IP67				

How to order	
Single unit	4G [Size] (Solenoid position) (Bore size) - (Electric wire connection) (Option) - (Voltage) - P4
Manifold Replacement valve	4G [Size] (Solenoid position) (Bore size) - (Electric wire connection) (Option) - (Voltage) - P4
Manifold	M 4G [Size] (Solenoid position) (Bore size) - (Electric wire connection) (Option) (Mount type) - (Station No.) - (Voltage) - P4

Degree of protection IP67



## P40 Series (Material restrictions for all parts)



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

How to order	
Single unit	W4G [Size] (Switching section) (Bore size) - (Wiring) (Option) - (Voltage) - P40
Manifold Replacement valve	M W4G [Size] (Switching section) (Bore size) - (Option) - (Voltage) - P40
Individual wiring manifold	MW W4G [Size] (Switching section) (Bore size) - (Wiring) (Option) - (Station No.) - (Voltage) - P40
Reduced wiring manifolds	

Degree of protection IP65



SUS screw SUS fitting

	MW4G 2 Series	MW4G 4 Series
Electrical connections	R1, T10, T20, T30, T51, T80*, T80*	R1, T10, T80, T80, T7EC*
Manual override	Blank, M	
Available options	H, A, F, Z8	H, A, F, Z1, Z3

	W4G2 Series		W4G4 Series	
	Push-in fitting Straight type (Model No.: C*)	Screw-in fitting (Model No.: 05, 10)	Push-in fitting Straight type (Model No.: C*)	Push-in fitting Straight type (Model No.: C*)
P40	●	●	●	● Excluding C12

- \*1: Refer to "Pneumatic Valves (Catalog No. CB-223GA)" 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 PG terminal is used for T80\*. 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	Standard	
	Flow characteristics [dm <sup>3</sup> /(s·bar)]	Flow rate
Max. working pressure [MPa]	0.8	0.7
Min. working pressure [MPa]	0.2	0.2
Proof pressure [MPa]	1.05	1.05
Ambient temperature [°C]	-5 to 55	(No freezing)
Fluid temperature [°C]	5 to 55	

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

## Pneumatic auxiliary components

### Clean air components

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

**SU300]-W/SU400]-W**  
Super dryer (high polymer membrane air dryer)



How to order	SU301 □ /302 □ /401 □ /402 □ - [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]-W/SD400]-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

## RB500

## Compact regulator



How to order RB500-[Direction][Bore size]-NT[option]P4□

RB500	
Port size	Push-in fitting ø4/ø6
P4	●
P40	▲

- \*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.

## RP1000/2000

## Precision regulator



How to order RP1000/2000-[Bore size]- [Pressure range]P4□-[Bracket]

	RP1000	RP2000
Port size	Rc1/4	Rc3/8
P4	●	●
P40	▲	▲

- \*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.

## RPE

## Precision regulator



How to order RPE1000-[Port size]- [Pressure range] P4-[Bracket]

RPE1000	
P4	●

- \*1: Pressure gauge/pressure sensor must be ordered separately. (Attachment options not available.)  
 \*2: RPE1000 dimensions are different from the standard dimensions.

## EVD



## Electro-pneumatic regulator

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	●	●

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.

F1000/F2000/F3000/  
F4000/F6000/F8000

## Filter



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		●	●	●	●	

- \*1: Auto-drain is not available.  
 \*2: Metal bowl is not available.  
 \*3: Y element is not available for P40.

M1000/M2000/M3000/  
M4000/M6000/M8000

## Oil mist filter



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		●	●	●	●	

- \*1: Auto-drain is not available.  
 \*2: Metal bowl is not available.  
 \*3: With differential pressure indicator option is not available.

R1000/R2000/R3000/  
R4000/R6000/R8000Regulator  
Reverse regulator

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		▲	▲	▲	▲	

- \*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, R6000, and R8100, only non-relief (option code: N) is available.  
 \*7: Zinc die-casting is used in the diaphragm part of R3000 to R6000 and R3100 to R8100.

## Pneumatic auxiliary components

### Clean air components

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

W1000/W2000/W3000/ W4000/W8000  Filter/Regulator Reverse regulator/ Regulator	How to order	W1□00□2□00□3□00□4□00□5□00-(Bore size)-W-(Option)P4□-(Pipe adaptor set) [Bracket]				
		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", "T8" 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  Drain separator	How to order	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  Pressure gauge	How to order	G40D/G41D/G49D/G59D-(Bore size)-P-(Pressure)-P4			
		G40D	G41D	G49D	G59D
	Port size	R 1/8	R1/8, 1/4	R 1/8	1/4
P4	●	●	●	●	

FCS500/FCS1000  Inline clean filter	How to order	FCS500/FCS1000-(H push-in fitting bore size)-(Attachment)-P40			
		FCS500		FCS1000	
	Port size	Push-in fitting #4 to 8	Screw type/ SUS type (P9)	Push-in fitting #8 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  Clean exhaust filter	How to order	FAC10/100/200-(Port size) FAC3000-(Port size)-(Attachment)			
		FAC10	FAC100	FAC200	FAC3000
	Port size	#4, 6, 8, 10	R1/8, 1/4	R3/8, 1/2	Rc3/8, 1/2
P4	□	Standard compliance			

P1100/P4100/P8100  Pressure switch	How to order	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  Compact mechanical pressure switch	How to order	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.



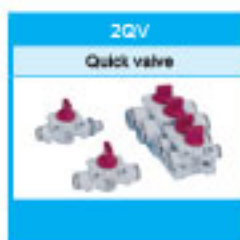
How to order	V3301-[Bore size]-W-FL □	
	V3301	
Port size	Rc1/4 to Rc1/2	
P4	▲	
P40	▲	

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.

Compatible tube O.D.	Body size			
	04	06	08	10
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, ø5, ø5, 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, ø5, ø5, ø10, ø12	
P4	●	



How to order	ZSF-[Shape][Compatible tube O.D.]- [Piping size]-P4	
	ZSF	
Port size	ø4, ø5, ø5, ø10, ø12	
P4	●	

### Auxiliary valve



How to order	QEL-[Tube O.D.]-P4	
	QEL	
Port size	ø4, ø5	
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

## QEV2

Quick exhaust valve



How to order QEV2-[Port size]- [Option][Accessory]

	QEV2
Port size	Rc1/8 to 1
P4	Standard compliance

## SHV2

Shuttle valve



How to order SHV2-[Port size]- [Option][Accessory]

	SHV2
Port size	Rc1/8 to 1
P4	Standard compliance

Note: Select a fluoro rubber specification

## CHV2

Check valve



How to order CHV2-[Port size]-[Flow rate]- [Option][Accessory]

	CHV2
Port size	Rc1/8 to 1/1/2
P4	Standard compliance

Note: Select a fluoro rubber specification

## Silencer

## SMW2

Metering valve with silencer



How to order SMW2-[Port size]

	SMW2
Port size	R1/8, 1/4
P4	Standard compliance

## FA

Exhaust cleaner



How to order FA [Series classification]31-[Port size]- [Option]

	FA
Port size	Rc3/8 to 2
P4	Standard compliance

## Tube

## UP/F/U/NU/KX/SR2

Tube



How to order Tube-[Size]-[Option]

	UP/F/U/NU/KX/SR2
O.D.	φ1.6, φ3.2, φ4, φ5, φ6, φ10, φ12, φ15
P4	Standard compliance

## ET

Fluoro resin tube



How to order ET-[Size]- [Option]

	ET
O.D.	φ4, φ5, φ6, φ10, φ12
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	AB [Model No.] [Port size] [Orifice size] [Body material/sealant combination] [Coil] [Option][ZP4□] [Voltage]
Single unit	
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	AG [Model No.] [Port size] [Orifice size] [Body material/sealant combination] [Coil] [Option][ZP4□] [Voltage]
Single unit	
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,G1/4,3/8,1/2NPT,3/8NPT
P4	Standard compliance



## Fluid control components

### Fluid control components

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

<b>CHB</b> 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.	
<b>CHG</b> 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.	
<b>SAB/SVB</b> 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, 3/2 flange, 40 flange, 50 flange	Rc1/4 to Rc2, 3/2 flange, 40 flange, 50 flange
	P4	●	▲
<b>NAB/GNAB</b> 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	●	
<b>NAD/GNAD</b> 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/plate/body/sealant combination]-P4	
		NAD	
	Port size	Rc3/8	
	P4	●	
<b>LAD</b> 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	●	
<b>NP13/NP14</b>  3-port solenoid valve for air 	How to order	NP1 [Actuation]- [Port size]-1[Coil housing][Option]-[Voltage]-P4	
		NP13/NP14	
	Port size	Rc3/8 to Rc2	
	P4	●	
		*1: Coil option is 20, 2H, 20S, 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



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



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.



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	●	



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



How to order	AMD[Size][Actuation]3R-[Connection method]- [Actuator option][Body option] [Operating port direction][Mounting method]				
	AMD2*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:AMD2\*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



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



EBS-G

Electric actuator

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
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	EBS-G
P4	●



EBR-G

Electric actuator

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



EBS-L

Electric actuator

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
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	EBS-L
P4	●

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



EBR-L

Electric actuator

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.



ETS

Electric actuator

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.



ECS

Electric actuator

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
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	ECS
P4	●

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



EKS

Electric actuator

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  
33 million cycles or more

Subject to CKD prescribed conditions



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



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  
33 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  
23 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  
13 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.



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: 1.2Nm to 1000Nm



### TDISC<sup>®</sup> Servo Motor

Direct drive motor

#### TDISC Series

Direct drive motor compatible with various high-end processing stages

Maximum torque: 6.5Nm to 3700Nm



### ROBODEX<sup>Std.</sup>

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



### ROBODEX<sup>Pulse</sup>

Table

#### FLCR Series

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



### ROBODEX<sup>Pulse</sup>

2-Finger Gripper

#### FLSH Series

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



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<sup>Pulse</sup>

Rotary

#### FGRC Series

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



### ROBODEX<sup>Pulse</sup>

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



## Image processing program

# Facilea

Visual programming tool for image processing

### Facilea

20-minute easy image processing even for beginners

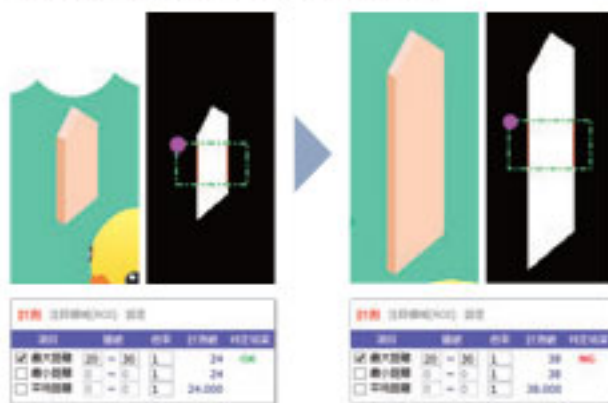


Simple 3-step

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

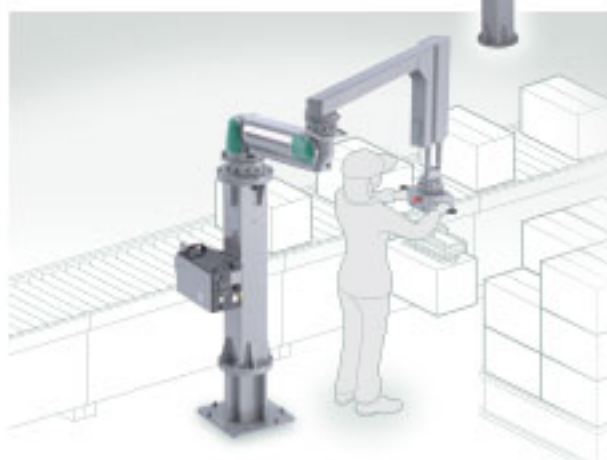


## PAW Series

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-798A)
- 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,



For PDF and DXF data of new products,



For 2D/3D CAD data





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