

Pneumatic Equipment for Food Industry



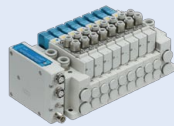
Theme	Food Sanitation	Environmental Resistance				Energy Saving/ Reduced-wiring	High Speed	Temperature Control	High Pressure	Safety Measures	Others
	Hygienic Grease for Food Processing Equipment Applicable Materials	Water Resistant Stainless Steel	Paper Powder/ Dust Resistant	Heat Resistant/ Cold Resistant	Static Neutralization	Air Blow Pressure/ Flow Rate Detection Reduced-wiring	High Speed High Frequency/ Long Service Life Electric/ Positioning	Temperature Control	High Pressure	Standards Measures against Residual Pressure Lurch Prevention Drop Prevention Misoperation Prevention	Steam Adsorption Transfer Maintenance Standards
Equipment											
Actuators	●	●	●	●			●		●	●	●
Valves	●	●				●	●		●	●	●
Fittings & Tubing Flow Control Equipment	●	●		●						●	●
Pressure Control Equipment/ Blow Guns	●	●				●			●		
Static Neutralization Equipment					●						
Detection Switches		●				●			●		
Vacuum Equipment		●				●					●
Temperature Control Equipment							●				
Electric Actuators		●					●				

Process/Theme

Beer, Beverages

	Before filling	Containers		
	Brewing, Blending, Sterilization	Material supply	Molding	Cleaning
Food Sanitation	Hygienic			●
	Grease for Food Processing Equipment (certified by NSF-H1)	●	●	●
	Applicable Materials			●
Environmental Resistance	Water Resistant	●		●
	Stainless Steel	●		●
	Paper Powder/Dust Resistant			
	Heat Resistant/Cold Resistant	●		●
	Static Neutralization		●	
Energy Saving/Reduced-wiring	Air Blow	●	●	●
	Pressure/Flow Rate Detection		●	●
	Reduced-wiring	●	●	●
High Speed	High Speed	●	●	●
	High Frequency/Long Service Life	●	●	●
	Electric/Positioning	●	●	●
Temperature Control	Temperature Control			●
High Pressure	High Pressure		●	
Safety Measures	Standards/Measures against Residual Pressure/Lurch Prevention/Drop Prevention/Misoperation Prevention	●	●	●
Others	Steam/Adsorption Transfer/Maintenance/Standards	●		●

Reduced-wiring



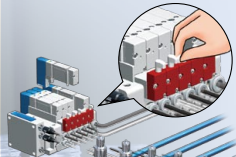
Water Resistant

Enclosure: IP67



Maintenance

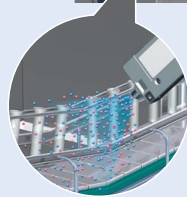
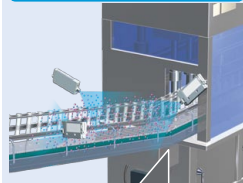
Can be replaced individually!



Steam (Heating)

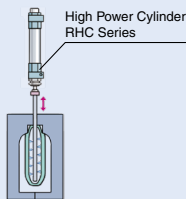


Static Neutralization



High Speed

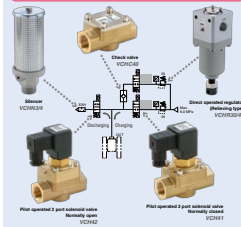
High speed: 3000 mm/s



Pressure/Flow Rate Detection



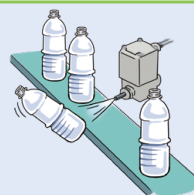
High Pressure



Heat Resistant



Air Blow



Hygienic



Stainless steel
Water resistant

Grease for Food Processing Equipment



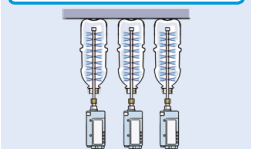
Applicable Materials



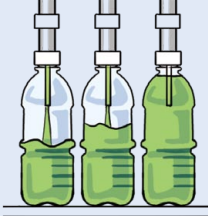
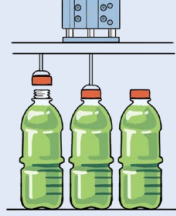






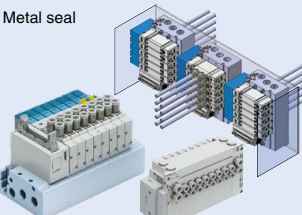
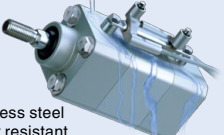


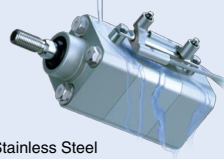

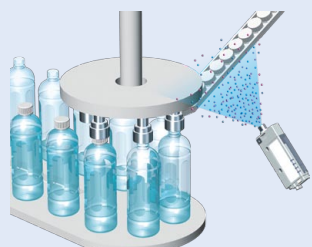
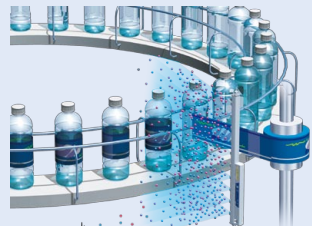
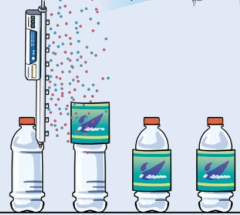
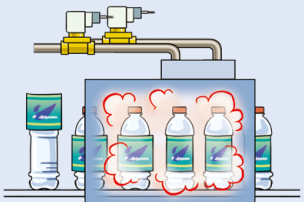
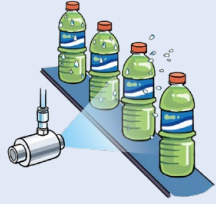
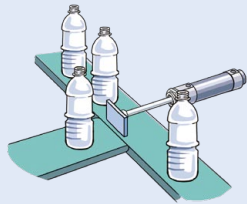
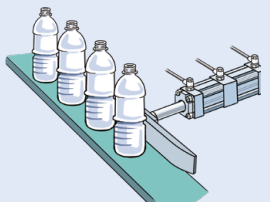
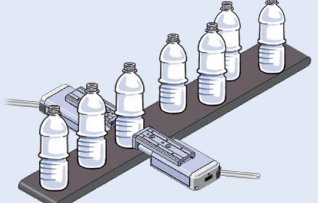
Stainless Steel



Static Neutralization


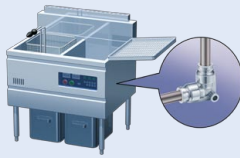
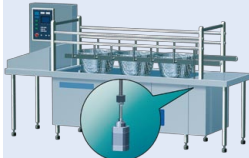
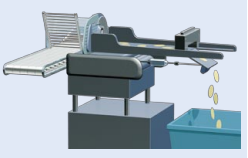


These are examples. Customers are responsible for deciding on the application of the products.

Filling	Capping	Labeler	Transportation
Filling	Capping	Wrapping	Conveyor
			
<p>Filling</p> 	<p>Capping</p> 	<p>Wrapping</p> 	<p>Inspection</p> 
<p>High Frequency</p>  <p>Metal seal</p> <p>Hygienic</p>  <p>Stainless steel Water resistant</p> <p>Heat Resistant</p>  <p>Maintenance/Standards</p> <p>ISO cylinders</p> 	<p>Hygienic</p>  <p>Stainless Steel</p> <p>Grease for Food Processing Equipment</p>  <p>NSF-H1</p> <p>Static Neutralization</p> 	<p>Static Neutralization</p>   <p>Steam</p> 	<p>Air Blow</p>  <p>High Speed</p>  <p>Electric/Positioning</p>  

Process/Theme

Confectionery, Noodle, Bread Production, etc.

	Stirring/Mixing	Heating	Cleaning	Cutting
				
	Stirring/Mixing machine	Oven fryer	Cleaning machine	Slicer
Food Sanitation	Hygienic	●	●	●
	Grease for Food Processing Equipment (certified by NSF-H1)	●	●	●
	Applicable Materials	●	●	●
Environmental Resistance	Water Resistant	●	●	●
	Stainless Steel	●	●	●
	Paper Powder/Dust Resistant	●	●	●
	Heat Resistant/Cold Resistant	●	●	●
	Static Neutralization	●	●	●
Energy Saving/Reduced-wiring	Air Blow	●	●	●
	Pressure/Flow Rate Detection	●	●	●
	Reduced-wiring	●	●	●
High Speed	High Speed	●	●	●
	High Frequency/Long Service Life	●	●	●
	Electric/Positioning	●	●	●
Temperature Control	●	●	●	●
High Pressure	●	●	●	●
Safety Measures	●	●	●	●
Others	●	●	●	●

Hygienic



Stainless Steel

Temperature Control

Grease for Food Processing Equipment




Pressure/Flow Rate Detection




Air Blow



Heat Resistant



Steam (Heating)



Cold Resistant



From -40°C

Heat Resistant




Pressure/Flow Rate Detection

Electric

Air Blow



Hygienic



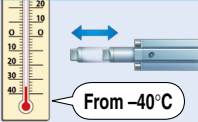
Stainless steel
Water resistant

Temperature Control

Grease for Food Processing Equipment





Cold Resistant



From -40°C

Heat Resistant



Pressure/Flow Rate Detection

Electric


Air Blow

Hygienic



Stainless Steel

Water Resistant

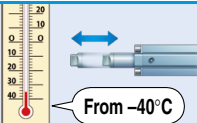
Temperature Control



Grease for Food Processing Equipment

Cold Resistant



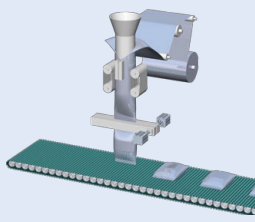
From -40°C

Pressure/Flow Rate Detection

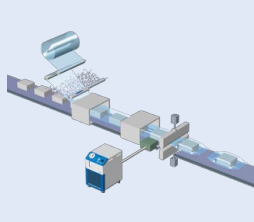
Electric

Air Blow

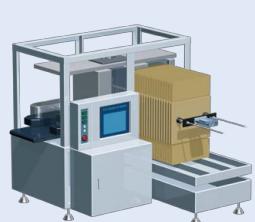
Packaging machine 1



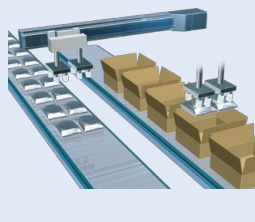
Packaging machine 2



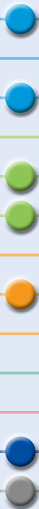
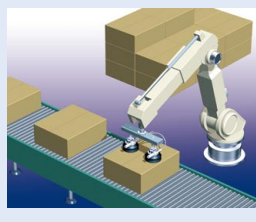
Box making



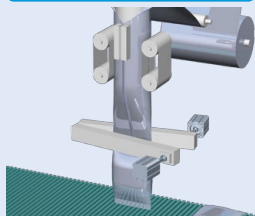
Caser robot



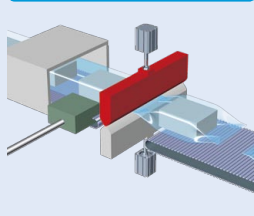
Palletizer



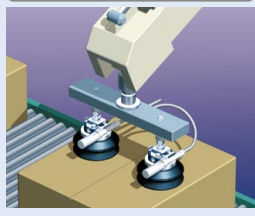
Heat Resistant



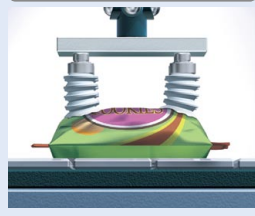
Heat Resistant



Adsorption Transfer



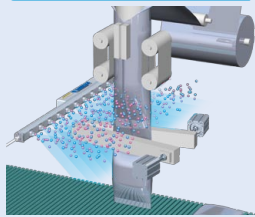
Adsorption Transfer



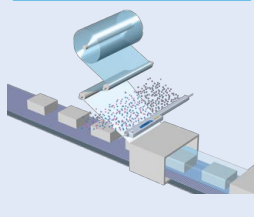
Adsorption Transfer



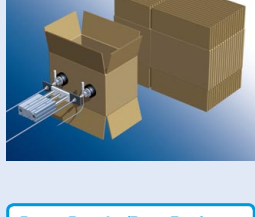
Static Neutralization



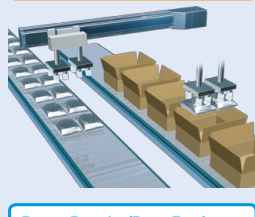
Static Neutralization



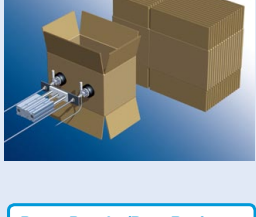
Paper Powder/Dust Resistant



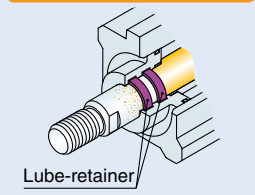
Electric



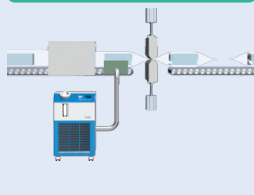
Paper Powder/Dust Resistant



High Frequency/Long Service Life



Temperature Control



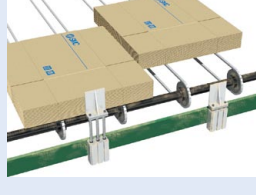
Paper Powder/Dust Resistant



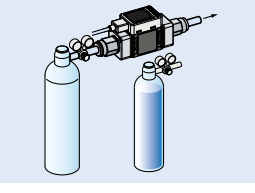
Paper Powder/Dust Resistant



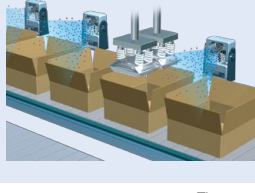
Paper Powder/Dust Resistant



Pressure/Flow Control



Static Neutralization



Applicable Materials

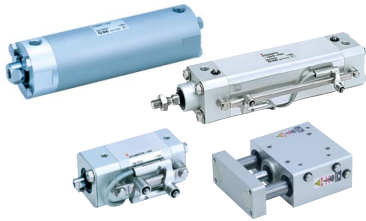


Actuators



Hygienic

▶ P.9



HY□



Grease for Food Processing Equipment

▶ P.10



Made to Order Applicable Models

Symbol	Series
-X9	MXQ, MXF, MXW MXP, MXPJ, MXY
-X79	MIW, MIS, MH□
-XC85	CM2-Z, CG1-Z CA2-Z, CQ2, CQS MGP, MGP-Z



Stainless Steel

▶ P.11



CJ5-S, CG5-S

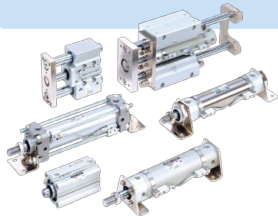
Made to Order ▶ P.11

- Made of stainless steel -XC6
- Tie-rod, cushion valve, tie-rod nut, etc. made of stainless steel -XC7
- Double clevis and double knuckle joint pins made of stainless steel -XC27



Water Resistant

▶ P.12

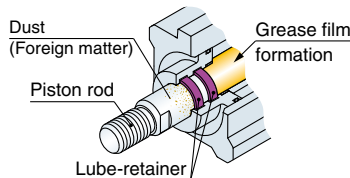


CM2-Z, CG1-Z, CQ2, CA2-Z
MB-Z, MB1-Z, MGPM, MGGM



Paper Powder/Dust Resistant

▶ P.13



CM2-Z

CG1-Z

CA2-Z

CDQS

CDQ2

MXQ□A

MGP

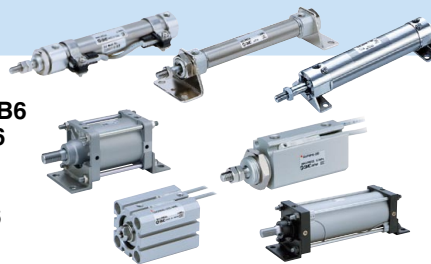
CXS



Heat Resistant

▶ P.14

CJP2-XB6, CJ2-Z-XB6, CM2-Z-XB6, CG1-Z-XB6
MB-Z-XB6, MB1-Z-XB6, CA2-Z-XB6, CS1-XB6
CS2-XB6, CUJ-XB6, CU-XB6, CQS-XB6
CQ2-XB6, CG5-XB6, CY3B-XB6, MK-XB6
MGP-XB6, MGP-Z-XB6, MGQ-XB6, MGG-XB6
MGC-XB6, CXSJ-XB6, CXS-XB6



Others ▶ P.14

- Cylinder with Heat Resistant Auto Switch (Max.150°C) -XB14
- Heat Resistant Air Gripper (-10 to 100°C) -X4



Cold Resistant

▶ P.15



CJP2-XB7, CJ2-Z-XB7, CM2-Z-XB7
CG1-Z-XB7, CU-XB7, CQS-XB7, CQ2-XB7



High Speed

▶ P.15



RHC



High Frequency/Long Service Life

▶ P.15



MQM

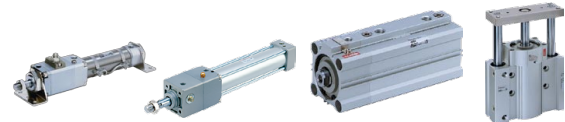


Drop Prevention

▶ P.16






End Lock Cylinders
CBJ2, CBM2, CBG1, CBA2, MBB, CBQ2, MGG, MGP
CXS, CXW, MGZ, MTS, MXS, MXQ, MY1H-Z, MY1H
CS1-X1347 (Made to Order)



Lock Cylinders
CLJ2, CLM2, CLG1, MLGC, CNG, CNA2
MNB, CNS, CLS, CL1, CLQ, RLQ, MLU
MLGP, ML1C, MHT2

Actuators

Others	Standards ▶ P.18		
Standard no.	ISO6432	ISO15552	ISO21287
	C85	CP96/C96	C55
Series			

Specialized Products

- **Stainless Steel Compact Cylinder: Water Resistant Type/** CQ2B32RD-W4420/4491-□, etc. ▶ P.11
- **External Stainless Steel Compact Guide Cylinder/MGPM** □-X2532 ▶ P.11
- **Mechanically Jointed Rodless Cylinder/MY3B63-□-DCJ6064J** ▶ P.12
- **Improved Environmental Resistance: Parallel Style Air Gripper/MHZL2-□-X3361** ▶ P.12
- **Heat Resistant Cylinder with Auto Switch** ▶ P.14
- **Heat Resistant Auto Switch** ▶ P.14
- **Air-Hydro Booster** ▶ P.15

Actuators

Valves

Food Sanitation **Hygienic** ▶ P.19



VFN2120N-X23/-X36

Environmental Resistance **Stainless Steel** ▶ P.19,26



LVA

INA-14
XTO-674

Energy Saving/Reduced-wiring **Air Blow** ▶ P.19



VQ20/30

Energy Saving/Reduced-wiring **Reduced-wiring** ▶ P.19



EX260, EX250

M8/M12 Connector
▶ P.20

High Speed **High Speed** ▶ P.20



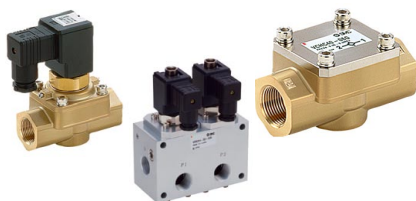
SX10

High Speed **High Frequency/Long Service Life** ▶ P.20



VQC, VQZ

High Pressure **High Pressure** ▶ P.21



VCH4□, VCH410
VCHC40

Safety Measures **Standards** ▶ P.21

Safety Standard ISO13849-1 Certified



VP-X536/538/555, VG-X87

Safety Measures **Measures against Residual Pressure** ▶ P.22



VHS

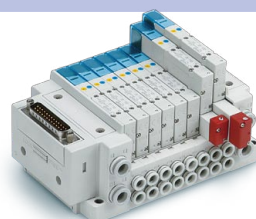
With residual pressure release valve
SY3000/5000/7000

Safety Measures **Lurch Prevention** ▶ P.22



AV

Safety Measures **Drop Prevention** ▶ P.23



Double Check Spacer (With residual pressure release valve)
SY3000/5000/7000
Double Check Block
S0700, VQ, VQC, VQZ

Safety Measures **Misoperation Prevention** ▶ P.23



VR51

Valves

Fittings & Tubing
Flow Control Equipment

Pressure Control
Equipment/Blow Guns

Static Neutralization
Equipment

Detection Switches

Vacuum Equipment

Temperature Control
Equipment

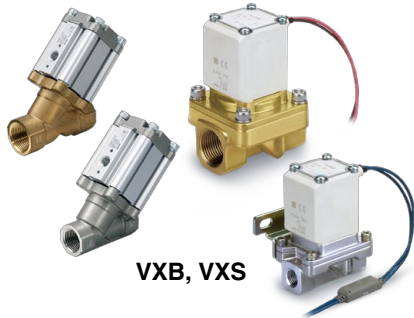
Electric Actuators

Valves

Others

Steam

▶ P.24



VXB, VXS

Others

Maintenance

▶ P.24



SY3000/5000/7000

Specialized Products

- With M12 pre-wired connector/ VQ4000 ▶ P.19

Fittings/Tubing/Flow Control Equipment

Food Sanitation

Applicable Materials

▶ P.27



TL/TIL
TLM/TILM
TH/THH
TD/TID
TU-X214/217

Environmental Resistance

Stainless Steel

▶ P.25



KQG2, KFG2
KPG, MS

KKA

Environmental Resistance

Heat Resistant

▶ P.26



LQ1, LQ3

Environmental Resistance

Stainless Steel

▶ P.29



ASG/AS-FPG
INA-14

Safety Measures

Measures against Residual Pressure

▶ P.30



AS□□□□□E

KE□

Safety Measures

Lurch Prevention

▶ P.31



ASD, ASD-FM, ASD-D, ASD-T

Safety Measures

Drop Prevention

▶ P.32



ASP

Others

Maintenance

▶ P.29



T0604/TH0604-X64

Specialized Products

- Stainless Steel Specification Standard Speed Controller In-line Type/INA ▶ P.29
- Stainless Steel Specification Standard Speed Controller Metal Body Elbow Type/INA ▶ P.29

Pressure Control Equipment/Blow Guns

Environmental Resistance

Stainless Steel

▶ P.33



SRH, SRP

AW-X2622

Energy Saving/Reduced-wiring

Air Blow

▶ P.33



VMG

KN

ZH□-□-X185

Pressure Control Equipment/Blow Guns



High Pressure ▶ P.34



VCHR VCHN

Made to Order ▶ P.35
• High pressure -X425

Specialized Products

- Blow Gun Using Grease for Food Machines/VMG-X7
- Blow Gun with Hook/VMG-X110

Static Neutralization Equipment



Static Neutralization ▶ P.35



IZS4□, IZN10, IZF10, IZF21/31
IZD10, IZE11, IZH10, etc.

Detection Switches



Stainless Steel ▶ P.37



ZSE/ISE80
PSE56□



Pressure/Flow Rate Detection ▶ P.38



Z/ISE20, Z/ISE30A
Z/ISE40A
PSE54□
PSE200/300

PFM, PFMB, PFMC
PF2A, PF3W
LFE□



High Pressure ▶ P.40

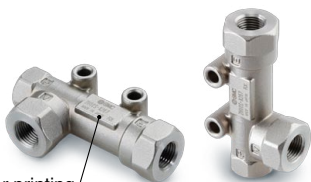


ISE75/75H

Vacuum Equipment



Stainless Steel ▶ P.41



Laser printing

ZH-X267

Others

Adsorption Transfer ▶ P.41



ZK2

ZH

ZH-X185

ZP3E

ZP2

ZP3

XT661

Specialized Products

- Vacuum Pad for Soft Film/ZP-606-25CS0J20 ▶ P.42

Temperature Control Equipment



Temperature Control ▶ P.43

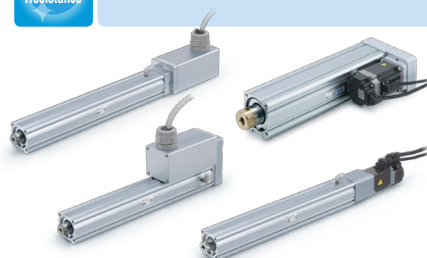


HRSE, HRS, HRS090, HRS100/150
HRSH090, HRSH, IDH□

Electric Actuators



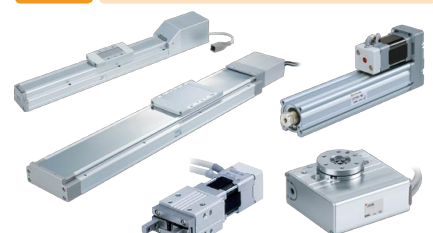
Water Resistant ▶ P.12



LEY-25/32-X5, LEY63-P



Electric/Positioning ▶ P.45



LE□

Actuators

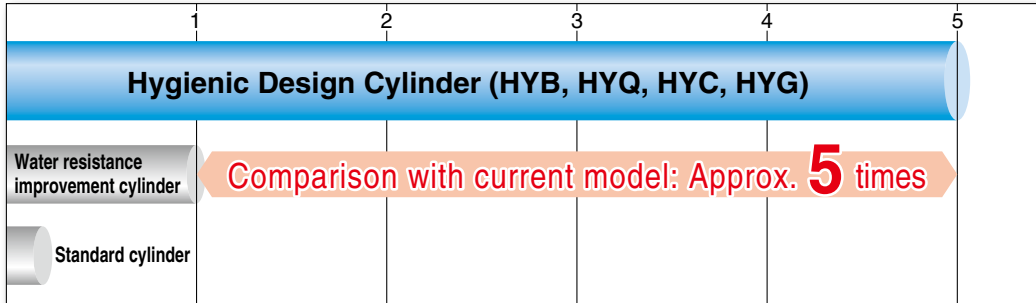


Hygienic

A water resistant cylinder configured for easy cleaning

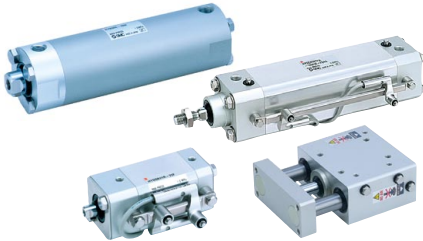
Five times increase in service life compared to current model (SMC ratio)

Water-proof examination result (Reference data)

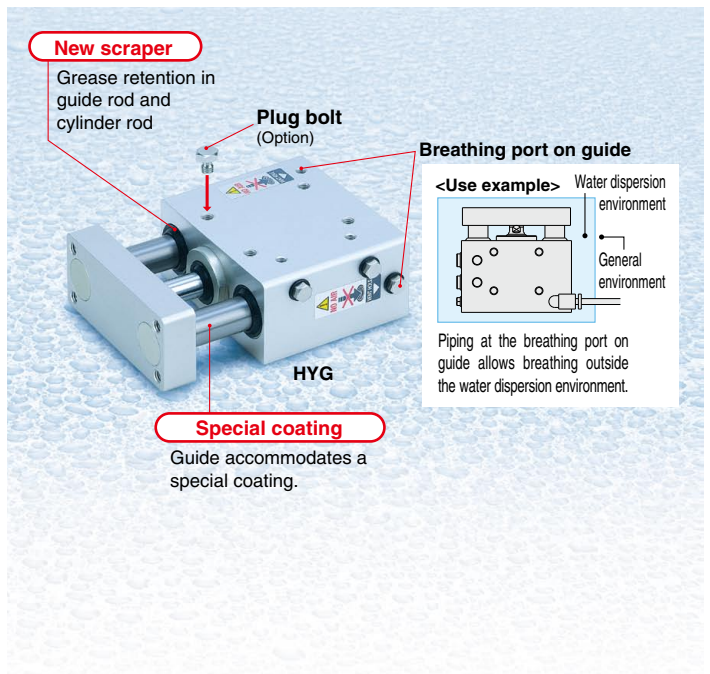
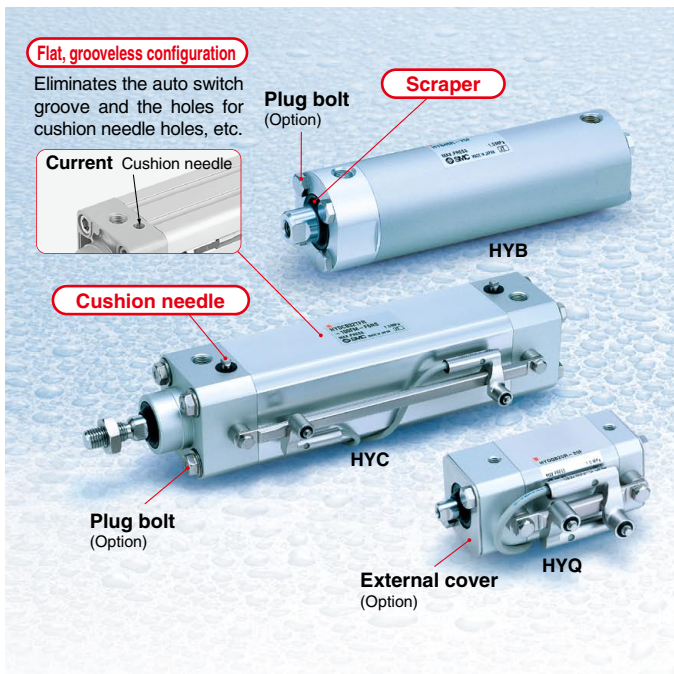


Washing in water/Temperature: 30°C, Flow rate: 160 cc/min

Hygienic Design Cylinder **HY□**



Type	Series	Action	Bore size [mm]
Round type	HYB	Double acting	20, 25, 32, 40, 50, 63, 80, 100
Basic type	HYQ		20, 25, 32, 40, 50, 63
ISO standard type	HYC		32, 40, 50, 63
With guide	HYG		20, 25, 32, 40, 50, 63
Features	Food grade grease (certified by NSF-H1) is available. Ambient and fluid temperature: 0 to 70°C (Without auto switch) 0 to 60°C (With auto switch)		





Grease for Food Processing Equipment

Certified by NSF-H1

Specifications

Seal material	Nitrile rubber
Grease	Grease for food
Auto switch	Mountable
Dimensions	Same as standard type
Specifications other than above	Same as standard type

Warning Precautions

Be aware that smoking cigarettes etc. after your hands have come into contact with the grease used in this cylinder can create a gas that is hazardous to humans.

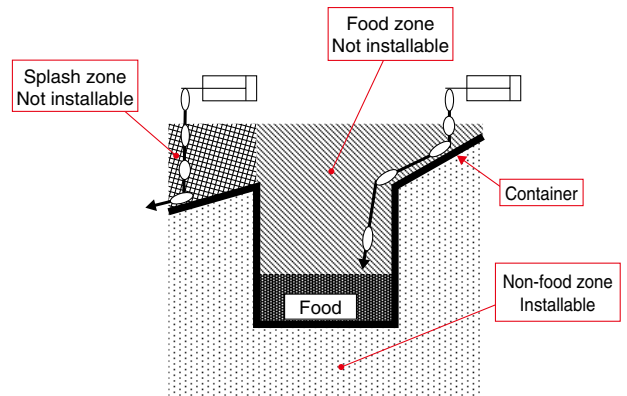
<Not installable>

Food zone.....An environment where food which will be sold as merchandize, directly touches the cylinder's components.

Splash zone.....An environment where food which will not be sold as merchandize, directly touches the cylinder's components.

<Installable>

Non-food zone...An environment where there is no contact with food.



- *: Avoid using this product in the food zone. (Refer to the figure above.)
- *: When the product is used in an area of liquid splash, or a water resistant function is required for the product, please consult with SMC.
- *: Operate without lubrication from a pneumatic system lubricator.
- *: Use the following grease pack for the maintenance work.
GR-H-010 (Grease: 10 g)
- *: Please contact SMC for details about the maintenance intervals for this cylinder, which differ from those of the standard cylinder.

Made to Order

Grease for Food Processing Equipment <Applicable Series>

Food grade grease (certified by NSF-H1) is used for all parts that grease is applied.

Series	Symbol (Suffix)	Series	Symbol (Suffix)
MXQ	-X9	CM2-Z	-XC85
MXF		CG1-Z	
MXW		CA2-Z	
MXP		CQ2	
MXPJ		CQS	
MXY		MGP	
MIW	-X79	MGP-Z	
MIS			
MH□			

Series other than the above are also available. Please contact SMC for details.

Actuators

Valves

Fittings & Tubing
Flow Control Equipment

Pressure Control
Equipment/Blow Guns

Static Neutralization
Equipment

Detection Switches

Vacuum Equipment

Temperature Control
Equipment

Electric Actuators

Actuators



Stainless Steel

Stainless Steel Cylinder C□5-S



Series	Action	Bore size [mm]
CJ5-S	Double acting	10, 16
CG5-S		20, 25, 32, 40, 50, 63, 80, 100
Features	Material External metal parts: Stainless steel 304 Seal: Choose from NBR/FKM Ambient and fluid temperature: -10 to 70°C (Without auto switch), -10 to 60°C (With auto switch) Food grade grease (certified by NSF-H1)	

Made to Order

Applicable for use under environments with water splashing. Stainless steel parts improve corrosion resistance.

Made of Stainless Steel: -XC6 ^{Symbol} Suitable for the cases it is likely to generate rust by being immersed in the water and corrosion.

<Applicable Series>

CM2/CG1-Z/MB-Z*2/MB1-Z*2/CA2-Z*1, 2/CS1*2/CQS/CQ2/CV/MGP-Z/MGP/MGG/MGC/
CXS/CXSJ/RHC Series

*1: Only head end lock is available for the CBA2.

*2: There is a maximum stroke limit for CA2, MB, MB1 (ø100) and CS1 cylinders.

*3: The CS2 series, made of stainless steel, is applicable as -XC68.

The CA2-Z, MB-Z and MB1-Z series are applicable as -XC68. (-XC6 for ø125)

Tie-rod, Cushion Valve, Tie-rod Nut, etc. Made of Stainless Steel: -XC7 ^{Symbol}

When using in locations where the rust generation or corrosion likelihood exists, the standard parts material have been partly changed to the stainless steel.

<Applicable Series>

MB-Z/MB1-Z/CA2-Z/CA2/CV Series

Double Clevis and Double Knuckle Joint Pins Made of Stainless Steel: -XC27 ^{Symbol}

To prevent the oscillating portion of the double clevis or the double knuckle joint from rusting, the material of the pin and the retaining ring has been changed to stainless steel.

<Applicable Series>

CM2/MB-Z/MB1-Z/CA2-Z/CS1/CS2/CV/CG1/CQS/CQ2 Series

Specialized Products

External Stainless Steel Compact Guide Cylinder MGPM□-X2532

- Stainless steel is used for all external metal parts.
- Improved corrosion resistance in environments exposed to water
- Food grade grease (certified by NSF-H1) is used.
- Laser marking (Cylinder plate)



Stainless Steel Compact Cylinder: Water Resistant Type CDQ2B32R-30-DCI7727I

- External parts (piston rod, body) are made of stainless steel 304.
- Using a special scraper improved water resistance.
- Interchangeable mounting pitch with the CQ2 standard product.
- Water resistant 2-color indicator solid state auto switch is mountable.
- Food grade grease (certified by NSF-H1) is used.

Stainless Steel Compact Cylinder: Water Resistant Type CQ2B32RD-W4420-10 CQ2B32RD-W4491-20

- External parts (piston rod, body) are made of stainless steel 304.
- Using a special scraper improved water resistance.
- Interchangeable mounting pitch with the CQ2 standard product.
- Grease: Lithium soap based grease

Water Resistant Compact Cylinder CQ2B20RD-W4419-15

- External parts (piston rod, body) are made of stainless steel 304.
- With special scraper
- Grease: Lithium soap based grease

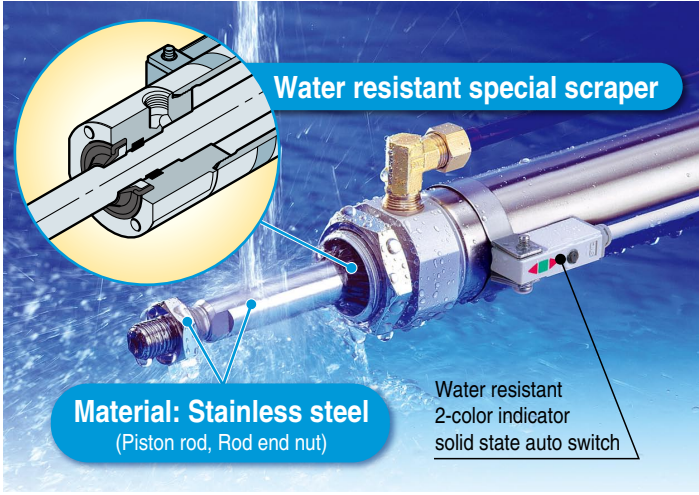




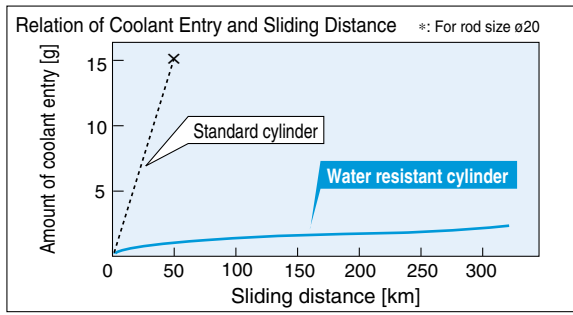
Water Resistant

Water Resistant Cylinders

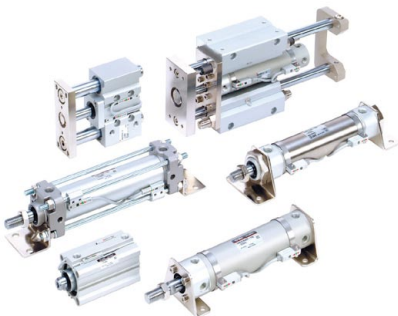
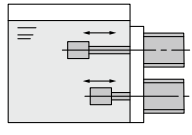
Applicable for use in environments exposed to coolant or with water splashing.



• Dramatically improved water resistance



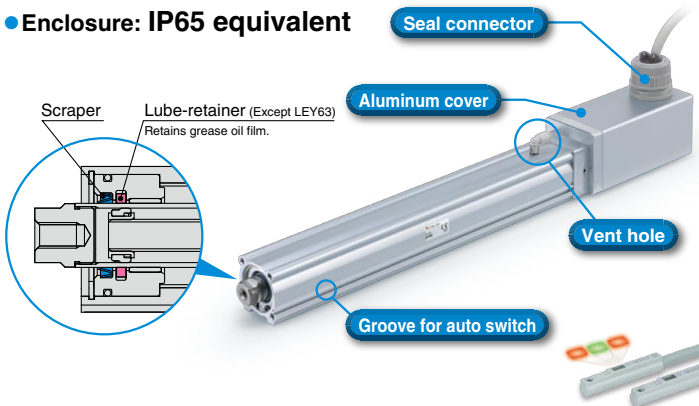
Conditions
 Operating conditions Air
 Pressure 0.5 MPa
 Coolant Water-soluble
 Piston speed 200 mm/s
 Operating cycle 60 cpm



Description	Series	Bore size [mm]
Air cylinder	CM2-Z	20, 25, 32, 40
Air cylinder	CG1-Z	32, 40, 50, 63, 80, 100
Compact cylinder	CQ2	20, 25, 32, 40, 50, 63, 80, 100
Air cylinder	CA2-Z	40, 50, 63, 80, 100
Air cylinder	MB-Z	32, 40, 50, 63, 80, 100
Square tube type air cylinder	MB1-Z	32, 40, 50, 63, 80, 100
Compact guide cylinder	MGPM	20, 25, 32, 40, 50, 63, 80, 100
Guide cylinder	MGGM	32, 40, 50, 63, 80, 100
Features	Using a special scraper improved water resistance, compared to standard cylinders.	

Electric Actuator/Rod Type: Dust-tight/Water-jet-proof (IP65 Equivalent)

• Enclosure: IP65 equivalent



<Applicable Series>

Size	Motor type	Model
25	• Step motor (Servo/24 VDC)	LEY-X5
	• Servo motor (24 VDC)	
	• AC servo motor	
63	AC servo motor	LEY63□□□-P



Specialized Products

Water Resistant Compact Cylinder CQSB12RD-P6057-10

• With special scraper/Material: NBR



Mechanically Jointed Rodless Cylinder MY3B63-□-DCJ6064J

• Piston seal material changed to H-NBR.
 • Application example:
 In the area around the ultrasonic cleaning machine in a high temperature region*1 (Hydrocarbon-based cleaning liquid at-atmosphere)
 *1: Do not use in locations where the product is directly exposed to cleaning liquid.

Improved Environmental Resistance Parallel Style Air Gripper MHZL2-10SF-X3361

• Dust cover prevents moisture from entering. Material: Fluororubber
 • O-ring/Seal material: Fluororubber
 • Fluorine grease
 • Magnet holder/Finger/Piston material: Stainless steel



Actuators
 Valves
 Fittings & Tubing
 Flow Control Equipment
 Pressure Control Equipment/Blow Guns
 Static Neutralization Equipment
 Detection Switches
 Vacuum Equipment
 Temperature Control Equipment
 Electric Actuators

Actuators

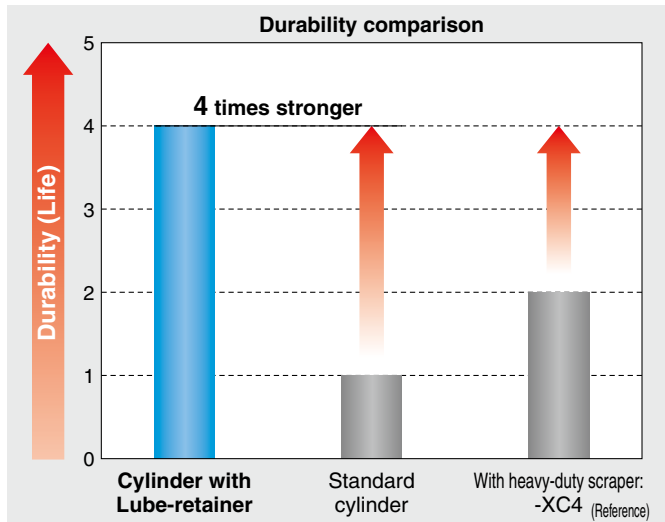


Paper Powder/Dust Resistant

Applicable to Operation in Micro-powder (10 to 100 μm) /General Environments: Cylinder with Stable Lubrication Function (Lube-retainer)
CM2-Z/CG1-Z/CA2-Z/CDQS/CDQ2/MXQ□A/MGP/CXS

Durability is 4 times stronger

than the standard model in micro-powder environments.

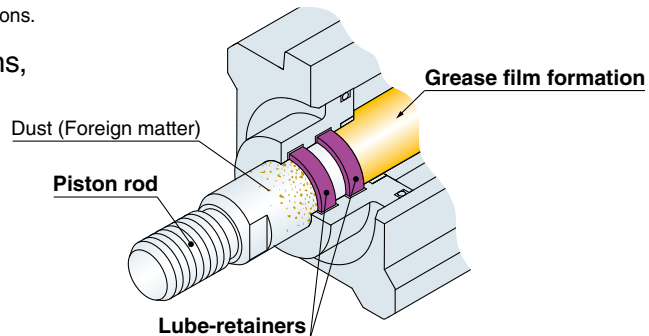


Comparison with the standard model and model with heavy-duty scraper (-XC4) (Relative ratio of B10)

*: The durability test is conducted in accordance with SMC test conditions.

As the Lube-retainer is mounted at two locations,

- Grease film is formed on the piston rod surface to improve the durability.
- Entry of dust and foreign matter is prevented.











Even with the built-in stable lubrication function (Lube-retainer),
 the overall length and mounting are the same as those of the standard model.

*: Except for some models

- The number of operating cycles can be improved even in general environments.

Applicable Cylinders

Air Cylinder CM2-Z Series ø20 to ø40  RoHS	Air Cylinder CG1-Z Series ø20 to ø100  RoHS	Air Cylinder CA2-Z Series ø40 to ø100  RoHS	Compact Cylinder/Compact Type CDQS Series ø20 to ø25  RoHS
Compact Cylinder CDQ2 Series ø32 to ø100  RoHS	Air Slide Table MXQ□A Series ø6 to ø25  RoHS	Compact Guide Cylinder MGP Series ø20 to ø100  RoHS	Dual Rod Cylinder CXS Series ø6 to ø32  RoHS



Heat Resistant

Made to Order

Heat Resistant Cylinder (-10 to 150°C): -XB6

Symbol

Seal material and grease have been changed, so that it could be used even at higher temperature up to 150 from -10°C.

Specifications

Ambient temperature range	-10°C to 150°C (CS1, CS2: 0°C to 150°C)
Seal material	Fluororubber
Grease	Heat resistant grease
Specifications other than above and external dimensions	Same as standard type

<Applicable Series>

CJP2/CJ2-Z/CM2-Z/CG1-Z/MB-Z/MB1-Z/CA2-Z/CUJ/CU/CQS/CG5/CS1/CS2/CQ2/MGP/MGP-Z/MGQ/MGG/MGC/CXSJ/CXS/MK Series

CY3B Series

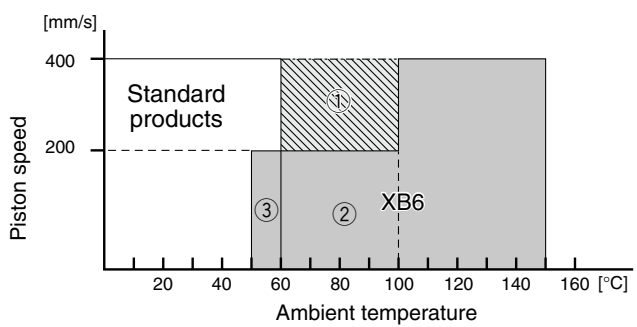
Specifications

Applicable size	CY3B
Bore size	ø6 to ø63
Ambient and fluid temperature	50 to 150°C*1
Maximum operating pressure	0.5 MPa
Piston speed	50 to 400 mm/s*1

*1: When using in less than 100°C range, since it could make a difference in the maintenance cycle, depending on the operating speed, use it at 200 mm/s or less.

⚠ Temperature Range for Operating Cylinder and Piston Speed

- ① When using with the operating temperature from 60 up to 100°C, and the piston speed of more than 200 mm/s, please consult with SMC separately.
- ② When using with the operating temperature from 50 up to 100°C, and the piston speed of 200 mm/s or less, XB6 specifications can be used.
- ③ As for XB6, regarding the temperature range (over 50 to 60°C) which overlaps the one of standard products, consider the tendency of operating temperature (upper, lower limits), then choose a model.



When using with the operating temperature fluctuated between 50°C or less and 100°C or more, the operating speed, etc. will be largely restricted by the durability. Prior to use, please contact SMC.

Heat Resistant Air Gripper (-10 to 100°C): -X4

Symbol

Seal material and grease have been changed, so that it could be used even at higher temperature up to 100 from -10°C.

Specifications

Ambient temperature range	-10°C to 100°C
Seal material	Fluororubber
Grease	Heat resistant grease (GR-F)
Specifications other than above and external dimensions	Same as standard type

<Applicable Series>

MHC/MHF/MHK/MHL/MHS/MHT/MHW/MHY/MHZ Series

Cylinder with Heat Resistant Auto Switch

Symbol

(Max. 150°C): -XB14

Heat resistant compact cylinder which can mount heat resistant solid state switch (D-M9□J)

Specifications

Applicable cylinder	Compact cylinder/Standard type
Series	CQ2
Bore size [mm]	16, 20, 25, 32, 40, 50, 63
Type	Non-lube
Fluid	Air
Proof pressure	1.5 MPa
Maximum operating pressure	1.0 MPa
Minimum operating pressure	0.05 MPa (For ø16 only, 0.07 MPa)
Ambient and fluid temperature	0 to 150°C
Rubber bumper	None
Rod end thread	Male or female thread
Stroke length tolerance	+1.0 0 mm
Piston speed	50 to 500 mm/s

Heat Resistant 2-Color Indicator Solid State Auto Switch (Single Unit)

- Heat resistant type
- The optimum operating range can be determined by the color of the light. (Red → Green ← Red)



Specialized Products

Heat Resistant Cylinder with Auto Switch MGP20 to 63 Series

- The heat resistant solid state auto switch (D-F7NJL) can be mounted on the MGPM20/25/32/50/63.



Heat Resistant Auto Switch D-A73HM-536

- Can be used in an atmosphere of 130°C.



⚠ Cannot be mounted on standard cylinders. Please contact SMC for applicable cylinders.

Actuators

Valves

Fittings & Tubing
Flow Control Equipment

Pressure Control
Equipment/Blow Guns

Static Neutralization
Equipment

Detection Switches

Vacuum Equipment

Temperature Control
Equipment

Electric Actuators

Actuators



Cold Resistant

Made to Order

Cold Resistant Cylinder (-40 to 70°C): -XB7 Symbol Seal material and grease have been changed, so that it could be used even at lower temperature down to -40°C.

Specifications

Ambient temperature range	-40°C to 70°C	Auto switch	Not mountable
Seal material	Low nitrile rubber	Dimensions	Same as standard type
Grease	Cold resistant grease		
Specifications other than above	Same as standard type		

<Applicable Series>
CJP2/CJ2-Z/CM2-Z/CG1-Z/
CU/CQS/CQ2 Series

High Speed

High Speed

High Power Cylinder RHC

- The capacity to absorb 10 to 20 times more energy than general purpose cylinders (CG1 series).
- Smooth cushioning for high speed operation (3000 mm/s) with light loads and low/medium speed operation with heavy loads
- XC93: With greater water resistance + stable lubrication function



High Speed

High Frequency/Long Service Life

Low Friction Cylinder/Metal Seal Type

High speed, High frequency actuation

H type achieves speeds up to 3000 mm/s (without fixed orifice), and continuous actuation up to 50 cycles per second. (MQML□□H)

Long service life

Long service life of 10000 km or 100 million full cycles.

Lateral Load Resisting Low Friction Cylinder MQM



Series	Bore size [mm]	Operating pressure range [MPa]	Actuation speed [mm/s]
MQML Standard type	6 (Standard only)	ø6: 0.02 to 0.7	0.5 to 1000
	10	ø10 to ø25: 0.005 to 0.7	
	16		
MQML□□H High speed/frequency	20	0.01 to 0.7	5 to 3000
	25		

Variations

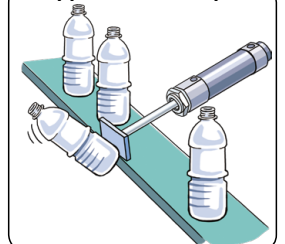
Compact Low Friction Cylinder MQQ



Low Friction Cylinder (Single Acting) MQP



Application Example



High Pressure

High Pressure

Specialized Products

Air-Hydro Booster: Hydraulic Cylinder Integrated

CHDF50-A4954-30/-A7662-125

CHD2□-DCP8894P/-DCH7274H/-DCP1252P

- 11 tons (36 times pressure increase at 8 mm stroke)
- 1.9 tons (16 times pressure increase at 5 to 10 mm stroke)

Part number	Operating pressure range [MPa]	Pressure increase ratio	Full stroke [mm]	Pressure increase stroke [mm]
CHDF50-A4954-30	0.3 to 0.6	16 : 1	30	5
CHDF50-A7662-125	0.3 to 0.6	16 : 1	125	5
CHD2H100-100-DCP8894P	0.2 to 0.38	36 : 1	100	8
CHD2F50-40-DCH7274H	0.3 to 0.6	16 : 1	40	10
CHD2F50-100-DCP1252P	0.3 to 0.6	16 : 1	100	5

End Lock Cylinders

Drop prevention at the stroke end position


- When air is discharged at the stroke end position, the lock engages.
- Separate air piping for locking is not required.

Air Cylinder CBJ2



Bore size	ø16
Lock position	Both ends

Air Cylinder CBM2



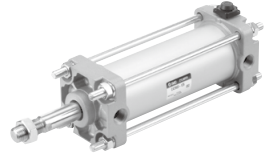
Bore size	ø20 to ø40
Lock position	Both ends

Air Cylinder CBG1




Bore size	ø20 to ø100
Lock position	Both ends

Air Cylinder CBA2




Bore size	ø40 to ø100
Lock position	Both ends

Air Cylinder MBB



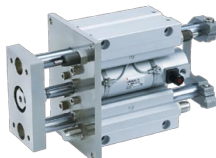
Bore size	ø32 to ø100
Lock position	Both ends

Compact Cylinder CBQ2




Bore size	ø20 to ø100
Lock position	Both ends

Guide Cylinder MGG




Bore size	ø20 to ø100
Lock position	Both ends

Compact Guide Cylinder MGP



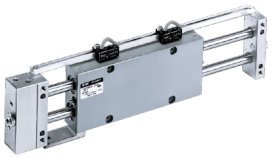
Bore size	ø20 to ø100
Lock position	Both ends

Dual Rod Cylinder CXS



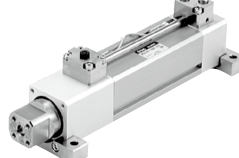
Bore size	ø6 to ø32
Lock position	Retraction stroke end

Slide Unit CXW




Bore size	ø10 to ø32
Lock position	Single end (Lock unit side)

Non-rotating Double Power Cylinder MGZ



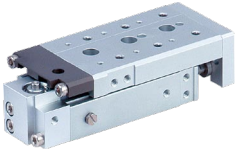
Bore size	ø40 to ø63
Lock position	Extension stroke end

Precision Cylinder MTS




Bore size	ø12 to ø40
Lock position	Retraction stroke end

Air Slide Table MXS



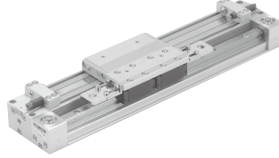
Bore size	ø8 to ø25
Lock position	Retraction stroke end

Air Slide Table MXQ



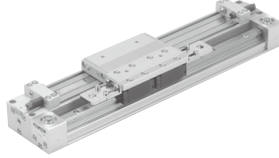
Bore size	ø6 to ø25
Lock position	Retraction stroke end

Mechanically Jointed Rodless Cylinder MY1H-Z



Bore size	ø25 to ø40
Lock position	Both ends

Mechanically Jointed Rodless Cylinder MY1H



Bore size	ø16 to ø20
Lock position	Both ends

Air Cylinder CS1

**Made to Order
(-X1347)**

Bore size	ø125, ø140, ø160
Lock position	Both ends

Actuators

Safety Measures

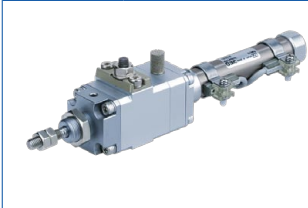
Drop Prevention

Lock Cylinders

Locking is possible at any desired stroke position.

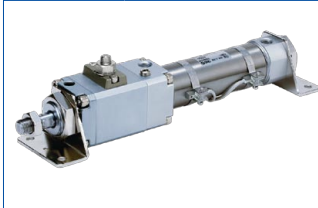
- Emergency stops and intermediate stops are possible.
(The CLQ, RLQ, MLU, MLGP and CLK1 series cannot perform an intermediate stop.)
- Locking position can be changed in accordance with the external stopper position and the thickness of clamped workpieces.

Fine Lock Cylinder CLJ2



Bore size $\phi 16$
Locking direction Both directions

Fine Lock Cylinder CLM2



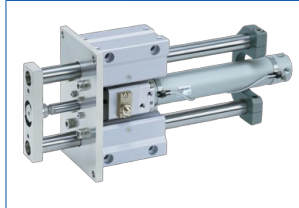
Bore size $\phi 20$ to $\phi 40$
Locking direction Both directions

Fine Lock Cylinder CLG1



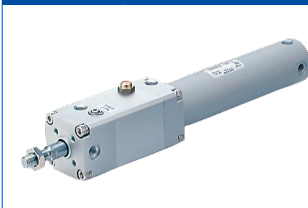
Bore size $\phi 20$ to $\phi 40$
Locking direction Both directions

Built-in Fine Lock Cylinder Guide Cylinder MLGC



Bore size $\phi 20$ to $\phi 40$
Locking direction Both directions

Cylinder with Lock CNG



Bore size $\phi 20$ to $\phi 40$
Locking direction Both directions

Cylinder with Lock CNA2



Bore size $\phi 40$ to $\phi 100$
Locking direction Both directions

Cylinder with Lock MNB



Bore size $\phi 32$ to $\phi 100$
Locking direction Both directions

Cylinder with Lock CNS



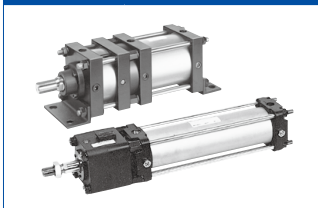
Bore size $\phi 125$ to $\phi 160$
Locking direction Both directions

Cylinder with Lock CLS



Bore size $\phi 125$ to $\phi 250$
Locking direction Both directions

Lock-up Cylinder CL1



Bore size $\phi 40$ to $\phi 160$
Locking direction One direction

Compact Cylinder with Lock CLQ



Bore size $\phi 20$ to $\phi 100$
Locking direction One direction

Compact Cylinder with Air Cushion and Lock RLQ



Bore size $\phi 32$ to $\phi 63$
Locking direction One direction

Plate Cylinder with Lock MLU



Bore size $\phi 25$ to $\phi 50$
Locking direction One direction

Compact Guide Cylinder with Lock MLGP



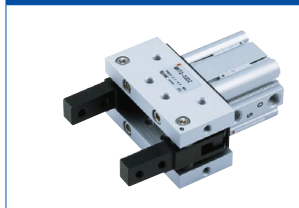
Bore size $\phi 20$ to $\phi 63$
Locking direction One direction

Hy-rodless Cylinder ML1C



Bore size $\phi 25$ to $\phi 40$
Locking direction Both directions

Toggle Type Air Gripper MHT2



Bore size $\phi 32$ to $\phi 63$
Locking direction When closed

ISO cylinders are designed to meet with the international standard laid down by the International Organization for Standardization (ISO).

As long as the standard number is identical, the mounting sizes are applicable worldwide.

ISO 6432 C85












ISO 15552 CP96/C96



ISO 21287 C55



ISO Cylinder Series Variations

Standard no.	Series	Action	Bore size [mm]														
			8	10	12	16	20	25	32	40	50	63	80	100	125		
ISO 6432	Standard 	C85	Double acting, Single rod	●	●	●	●	●	●								
		C85	Double acting, Double rod	●	●	●	●	●	●								
		C85	Single acting, Single rod	●	●	●	●	●	●								
	Non-rotating rod 	C85K	Double acting, Single rod	●	●	●	●	●	●								
		C85K	Single acting, Single rod	●	●	●	●	●	●								
	Direct mount 	C85R	Double acting, Single rod	●	●	●	●	●	●								
ISO 15552	Standard 	CP96	Double acting, Single rod							●	●	●	●	●	●	●	
		CP96	Double acting, Double rod							●	●	●	●	●	●	●	●
		CP96	Double acting, Single rod							●	●	●	●	●	●	●	●
	Non-rotating rod 	CP96K	Double acting, Single rod							●	●	●	●	●	●	●	●
		CP96K	Double acting, Double rod							●	●	●	●	●	●	●	●
	ISO 15552	Standard 	C96	Double acting, Single rod							●	●	●	●	●	●	●
C96			Double acting, Double rod							●	●	●	●	●	●	●	●
C96			Double acting, Single rod							●	●	●	●	●	●	●	●
Non-rotating rod 		C96K	Double acting, Single rod							●	●	●	●	●	●	●	●
		C96K	Double acting, Double rod							●	●	●	●	●	●	●	●
Smooth Cylinder 		C96Y	Double acting, Single rod							●	●	●	●	●	●	●	●
ISO 21287	Standard 	C55	Double acting, Single rod						●	●	●	●	●	●	●	●	

Valves



Hygienic

**NAMUR Interface
3/5 Port Solenoid Valve
IP67 Compliant, Hygienic Design Type
VFN2120N-X23/
-X36**



Series	Port size	Power consumption
VFN2120N-X23/-X36	1/4" (NPT, G)	0.5 W
Features	Equivalent to IP67 Ambient and fluid temperature: -10 to 60°C Function plate realized 3/5 port selectable Electrical entry: M12 connector	



Stainless Steel

**Air Operated High Purity
Chemical Liquid Valve
LVA**

Body material: Stainless steel 316

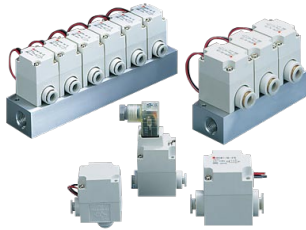


Series	Valve type	Port size	Orifice dia. [mm]
Threaded type	LVA	N.C./N.O./C.O.	1/8 to 1
Features	Fluid temperature: 0 to 100°C (Diaphragm: PTFE) 0 to 60°C (Diaphragm: NBR, EPR) Diaphragm material: Choose from PTFE/NBR/EPR		



Air Blow

Pilot Operated 2 Port Solenoid Valve for Dry Air VQ20/30



Series	Valve type	Port size	Cv
VQ20	N.C.	ø6 to ø12	0.33
VQ30	N.C.	ø6 to ø12	0.80
Features	Application: Air-blow, Blow-off of workpiece, etc. High frequency operation possible: High speed response 7 ms or less (VQ20), 20 ms or less (VQ30) Easy piping with One-touch Fittings Dust-tight, water-jet-proof (IP65) compliant in DIN terminal type Manifold model: VV2Q22, VV2Q32		



Reduced-wiring

Serial Transmission System EX



For Output

Series	Enclosure	Communication protocol *1	Applicable valve
EX260	IP67	DeviceNet™ PROFIBUS DP CC-Link PROFINET EtherCAT® EtherNet/IP™	SY3000, 5000, 7000 VQC1000, 2000, 4000, 5000 SV1000, 2000, 3000 S0700 (IP40)

*1: The applicable protocols differ depending on the series. Refer to the catalog for details.

Serial Transmission System EX



For Input/Output

Series	Enclosure	Communication protocol *1	Applicable valve
EX250	IP67	DeviceNet™ PROFIBUS DP CC-Link EtherNet/IP™ AS-Interface CANopen	SY3000, 5000, 7000 VQC1000, 2000, 4000, 5000 SV1000, 2000, 3000 S0700 (IP40)

*1: The applicable protocols differ depending on the series. Refer to the catalog for details.

Specialized Product

With M12 pre-wired connector/VQ4000

- With M12 (4-pin) pre-wired connector for ASi system
- IP65 compliant

Energy Saving/
Reduced-wiring

Reduced-wiring

M8/M12 Connector PCA/EX9/EX500



- Communication cable/connector: CC-Link, DeviceNet™, PROFIBUS DP, PROFINET, EtherCAT®, EtherNet/IP™
- Conforming to IEC61076-2-101 and IEC60947-5-2
- IP67 (IEC60529)
- Fieldwireable connectors: No exclusive tools, reduction in wiring time
- SPEEDCON: Just insert the connector and make 1/2 rotation.

High Speed

High Speed

High Speed 2 Port Valve SX10



Series	Flow rate (L/min: at 0.25 MPa)	Power consumption [W]	Max. operating frequency [Hz]
SX10	50	80	1200
		40	1000
		10	550
		4	350
SX10	100	80	650
		40	550
		10	300
		4	200
SX10	150	80	600
		40	500
		10	250
Features	High speed response: ON 0.45 ms, OFF 0.4 ms (±0.05 ms)	High frequency: 1200 Hz Width: 9 mm	
	Long service life: 5 billion cycles or more	Low power consumption: 4 W, continuous energization is possible.	

- The response time, service life and maximum operating frequency are based on SMC's test conditions.
- Response time: The values at a flow rate of 50 L/min and power consumption of 80 W

High Speed

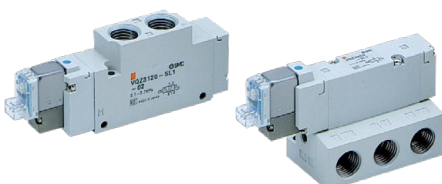
High Frequency/Long Service Life

5 Port Solenoid Valve/Metal Seal Type VQC1000/2000



Series	Sonic conductance: C	Applicable cylinder size [mm]	Power consumption [W]
VQC1000	0.72 dm ³ /(s·bar)	50	0.95 (High speed response)
VQC2000	2.6 dm ³ /(s·bar)	80	0.4 (Standard)
Features	Service life: 200 million cycles (Based on SMC's test conditions.)		
	Response time: 10 ms (VQC1000), 20 ms (VQC2000)		
Accuracy: ±2 ms (VQC1000/2000)			
IP67			

5 Port Solenoid Valve/Metal Seal Type VQZ



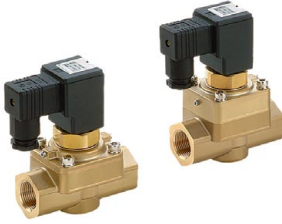
Series	Sonic conductance: C	Applicable cylinder size [mm]	Power consumption [W]
VQZ1000	0.7 dm ³ /(s·bar)	63	0.9 (High speed response) 0.35 (Standard)
VQZ2000	1.9 dm ³ /(s·bar)	80	
VQZ3000	3.0 dm ³ /(s·bar)	100	
Features	Service life: 200 million cycles (Based on SMC's test conditions.)		
	Response time: 10 ms (VQZ1000/2000/3000)		
Accuracy: ±2 ms			

Valves

High Pressure

High Pressure

Pilot Operated 2 Port Solenoid Valve VCH40



Series	Maximum operating pressure [MPa]	Port size
VCH41 (N.C.) VCH42 (N.O.)	5.0	3/4, 1
Features	Service life: 10 million cycles (Based on SMC's test conditions.) Uses the polyurethane elastomer poppet for valve parts. Improves durability at high pressure.	

Pilot Operated 3 Port Solenoid Valve VCH400



Manifold (Made to Order)

Series	Maximum operating pressure [MPa]	Port size
VCH410	5.0	1/2, 3/4, 1
Features	Service life: 10 million cycles (Based on SMC's test conditions.) Uses the polyurethane elastomer poppet for valve parts. Improves durability at high pressure.	

Check Valve VCHC40

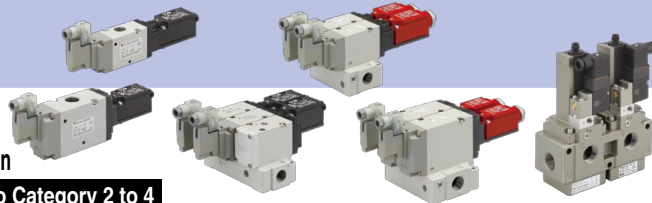


Series	Maximum operating pressure [MPa]	Port size
VCHC40	5.0	3/4, 1
Features	Service life: 10 million cycles (Based on SMC's test conditions.) Uses the polyurethane elastomer poppet for valve parts. Improves durability at high pressure.	

Refer to page 34 for Direct Operated Regulator for 6.0 MPa and 5.0 MPa Silencer.

Safety Measures

Standards



Safety Standard ISO13849-1 Certified 3 Port Solenoid Valve/
Residual Pressure Release Valve with Detection of Main Valve Position
VP-X536/-X538/-X555, VG-X87 Corresponding to Category 2 to 4

Series	Category	Safety limit switch manufacturer	Standards						Enclosure
			Machinery Directive	2006/42/EC		CE	cUL	RoHS	
			Harmonized standards	EN ISO13849-1: 2008 EN ISO13849-2: 2012	EN ISO4414: 2010				
Residual Pressure Release Valve VP542/742-X536	2	OMRON Corporation	●	●	●	●	●	IP65	
		Rockwell Automation, Inc.	●	●	●	●	●		
Dual Residual Pressure Release Valve VP544/744-X538	3, 4	OMRON Corporation	●	●	●	●	●	IP65	
		Rockwell Automation, Inc.	●	●	●	●	●		
Dual Residual Pressure Release Valve with Soft Start-up Function VP544/744-X555	3, 4	OMRON Corporation	●	●	●	●	●	IP65	
		Rockwell Automation, Inc.	●	●	●	●	●		
Dual Residual Pressure Release Valve VG342-X87	3, 4	OMRON Corporation	●	●	●	●	● ^{*1}	IP40	
		Rockwell Automation, Inc.	●	●	●	●	●		

*1: Only port size 3/4"

Measures against Residual Pressure

Conforming to OSHA Standard: Pressure Relief 3 Port Valve with Locking Holes VHS



- Conforming to OSHA standard (Occupational Safety and Health Administration Department of Labor).
- Manually operated valve can be used to prevent accidents caused by residual pressure in pneumatic lines.
- Possible to verify the supply and exhaust status of air flow at a glance.
- When in the exhaust position, the valve may be padlock secured. Prevents accidental start-ups while personnel are cleaning or servicing equipment.
- Push the handle and then turn, 2-step action prevents malfunction.

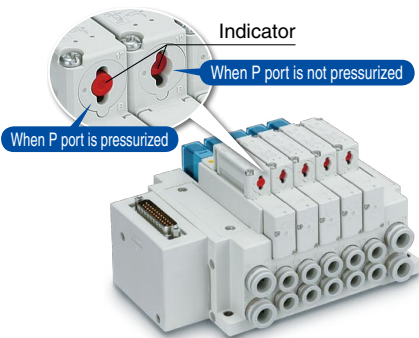
Aluminum handle and bonnet type is available.



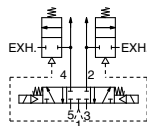
IP67 compliant

With Residual Pressure Release Valve (SY5000/7000)

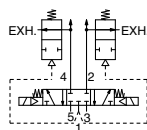
- The pressure of the 4 (A) and 2 (B) ports is also exhausted automatically at the same when the pressure of the 1 (P) port is exhausted.
- The pressure can be visualized using the indicator (red).



[When 1(P) port is pressurized]

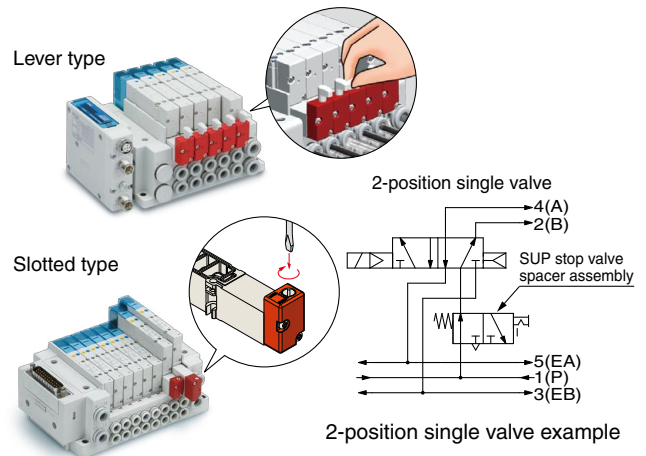


[When 1(P) port is not pressurized]



SUP Stop Valve Spacer with Residual Pressure Release Valve

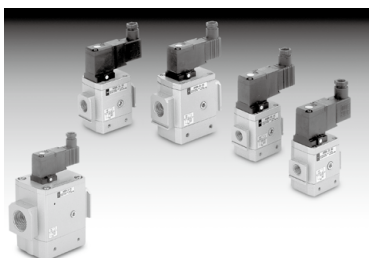
Air supply to each valve can be stopped individually. The valve and cylinder can be replaced without stopping other devices and equipment.



Lurch Prevention

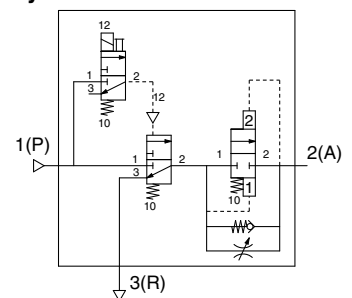
Soft Start-up Valve AV

Start-up valve for low speed air supply to gradually raise initial pressure in an air system and for quick exhaust by cutting off air supply.



Series	Coil rated voltage
AV	100, 200, 110 to 120, 220 VAC (50/60 Hz), 240 VAC (50/60 Hz), 12, 24 VDC

Symbol



Valves

Safety Measures

Drop Prevention

5 Port Solenoid Valve Manifold Options: Double Check Spacer/Double Check Block

Can hold an intermediate cylinder position for an extended time.

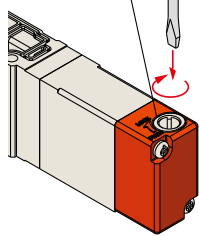
Combining with a 3-position exhaust center solenoid valve will enable the cylinder to stop in the middle or maintain its position for long periods of time. The combination with a 2-position single/double solenoid valve will prevent the dropping at the cylinder stroke end when the SUP residual pressure is released.

Double Check Spacer (With residual pressure release valve)

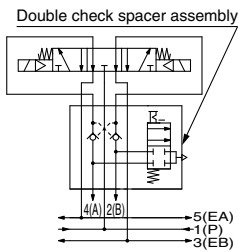


Double check spacer with residual pressure release valve

Button for manual release of residual pressure
To exhaust residual pressure on cylinder side.

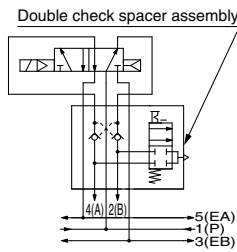


[Intermediate stop]



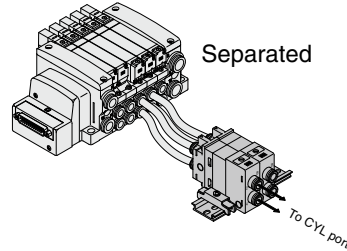
Exhaust center

[Drop prevention]



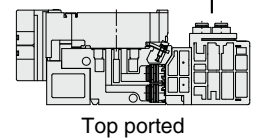
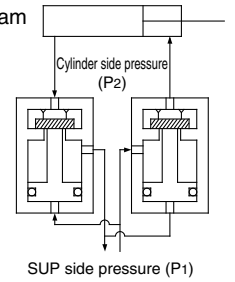
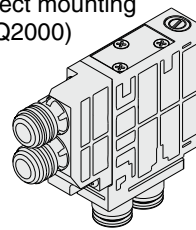
2-position single/double

Double Check Block

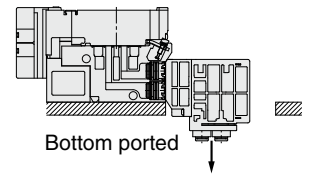


Separated

Direct mounting (VQ2000)



Top ported



Bottom ported

Safety Measures

Misoperation Prevention

Two Hand Control Valve VR51 Series

When starting an operation, accidents such as fingers being caught can be prevented, by requiring both hands to start these push button operated valves.

Conforming to EN574



Synchronized, two-handed operation

An output is not available if the time lag exceeds 0.5 seconds.

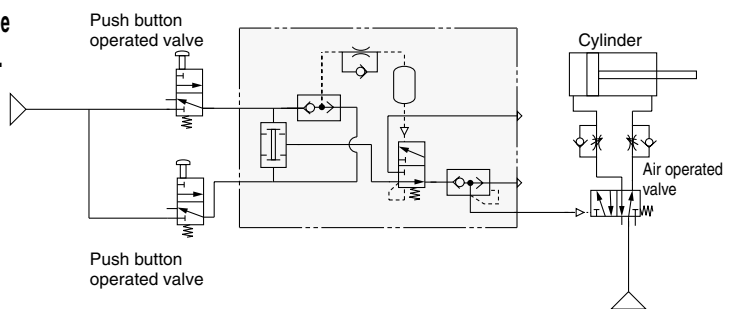
Silencer (Accessory)

Flame resistant One-touch fitting



Basic circuit example

Two Hand Control Valve



Series	Connection piping size	Option/Accessory
VR51	Flame resistant One-touch fitting ø6	Bracket, Silencer
	Flame resistant One-touch fitting ø1/4	

Others

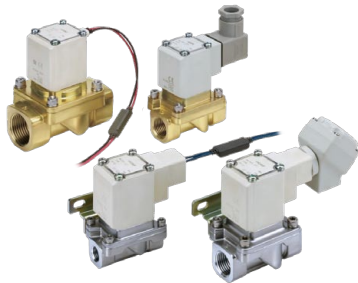
Steam

For Steam Angle Seat Valve: Air Operated Type VXB



Series	Valve type	Port size	Orifice diameter [mmφ]
VXB	N.C.	3/8, 1/2, 3/4 10 A, 15 A, 20 A	11, 14, 18
Features	Low pressure loss due to angle seat structure Reduced leakage with rubber seal Long service life: 3 million cycles (Steam), 5 million cycles (Air) Low leakage: 10 cm ³ /min or less Space saving: Height 100 mm Body material: Stainless steel 316L equivalent, Bronze (CAC)		

For Steam Zero Differential Pressure Type Pilot Operated 2 Port Solenoid Valve VXS



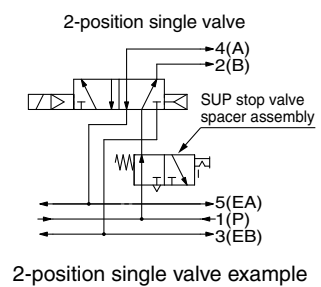
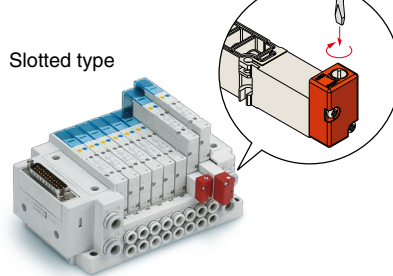
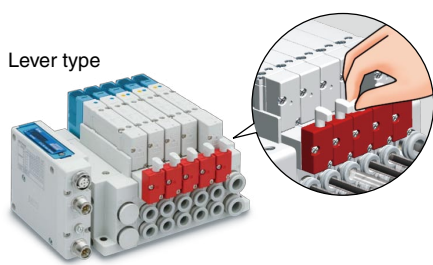
Series	Valve type	Port size	Orifice diameter [mmφ]
VXS	N.C.	1/4 to 1	10 to 25
Features	Long service life: 3 million cycles (Based on SMC's test condition) Improved air filtration Reduced apparent power: 18 VA → 12 VA, 20 VA → 15 VA Reduced coil temperature rise: 120°C → 100°C IP65		

Others

Maintenance

SUP Stop Valve Spacer with Residual Pressure Release Valve

Air supply to each valve can be stopped individually. The valve and cylinder can be replaced without stopping other devices and equipment.

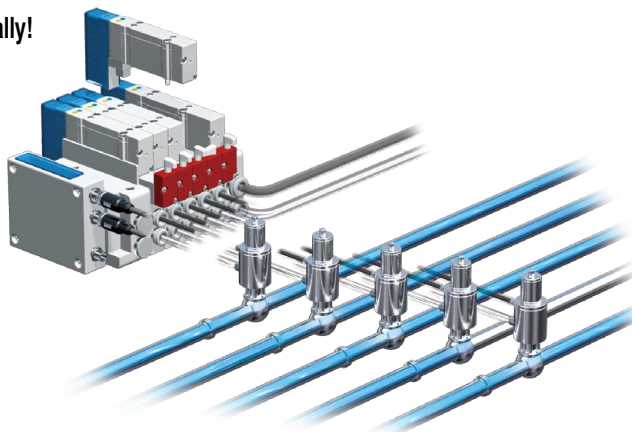


Solenoid valves can be replaced individually!

The solenoid valves can be replaced individually without stopping the equipment during maintenance.

<Application example>

Air operated valves, such as sanitary valve and automatic valve control



Fittings/Tubing/Flow Control Equipment

Fittings



Stainless Steel

Stainless Steel 316 One-touch Fittings **KQG2**



*: Can be used with steam.



Series	Applicable tubing O.D.		Connection thread
KQG2	Metric	ø3.2, ø4, ø6, ø8, ø10, ø12, ø16	M5 R, Rc 1/8, 1/4, 3/8, 1/2
	Inch	ø1/8", ø5/32", ø1/4", ø5/16" ø3/8", ø1/2"	UNF10-32 NPT1/8, 1/4, 3/8, 1/2
Features	<ul style="list-style-type: none"> • Compact and lightweight • Fluid temperature: -5 to 150°C • Material: Metal parts stainless steel 316, Seal parts special FKM • Grease-free/Can be used with steam. Certified to meet current Food Sanitation Law standards. 		

Stainless Steel 316 Insert Fittings **KFG2**



*: Can be used with steam.



Series	Applicable tubing O.D.		Connection thread
KFG2	Metric	ø4, ø6, ø8, ø10, ø12, ø16	R, Rc 1/8, 1/4, 3/8, 1/2
	Inch	ø1/8", ø5/32", ø1/4", ø5/16" ø3/8", ø1/2"	NPT1/8, 1/4, 3/8, 1/2
Features	<ul style="list-style-type: none"> • Compact and lightweight • Fluid temperature: -65 to 260°C (Swivel elbow: -5 to 150°C) • Material: Stainless steel 316. Rubber material is not used. (Except swivel elbow) • Grease-free/Can be used with steam. Certified to meet current Food Sanitation Law standards. 		

Clean One-touch Fittings for Driving Air Piping **KPG**



Series	Applicable tubing O.D.	Connection thread
KPG	ø4, ø6, ø8, ø10, ø12	M5, 1/8, 1/4, 3/8, 1/2
Features	<ul style="list-style-type: none"> • One-touch fittings suitable for drive air systems in clean room environments • Resin parts: Polypropylene • Metal parts: Stainless steel 304 	

Miniature Fittings: Stainless Steel 316 **MS**



Series	Applicable tubing O.D.	Connection thread
MS	ø3.2, ø4, ø6	M5
Features	<ul style="list-style-type: none"> • Possible to use in corrosive conditions. • Compact piping space • Hose nipple, Hose elbow, Barb 	

S Couplers: Stainless Steel Type **KKA**



Series	Connection thread
KKA	1/8, 1/4, 3/8, 1/2, 3/4, 1, 1 1/4, 1 1/2
Features	<ul style="list-style-type: none"> • Body material: Stainless steel 304 • Seal material: Fluororubber (Special FKM) is employed. • Grease-free • Both plug and socket have an integral check valve.



Stainless Steel

Made to Order

Check Valves Seal material and grease have been changed, so that it could be used even at higher temperature up to 100 from -10°C.

- Body material: All stainless steel (Main parts: Stainless steel)
- High temperature: 80°C/Low temperature: -30°C
- Low cracking pressure: 0.01 MPa
- Rubber material: NBR/FKM/CR

INA-14-47--

All stainless steel



INA-14-

Specifications

Model		INA-14-47- <input type="checkbox"/>	INA-14-85- <input type="checkbox"/>
Fluid		Air, Water	
Proof pressure		1.5 MPa	
Operating pressure range		0.05 to 1 MPa	
Ambient and fluid temperature		-5 to 60°C (No freezing)	-5 to 80°C (No freezing)
Valve seal material		NBR	FKM
Port size		Rc1/4, Rc3/8, Rc1/2	
Sonic conductance	Rc1/4	9.5 dm ³ /(s·bar)	
	Rc3/8, Rc1/2	10.5 dm ³ /(s·bar)	
Critical pressure ratio		0.45	

INA-14-290

Main parts: Stainless steel
Seal material: NBR



INA-14-290

Specifications

Model		INA-14-290
Fluid		Air, Water
Proof pressure		1.5 MPa
Operating pressure range		0.02 to 1 MPa
Ambient and fluid temperature		-5 to 60°C (No freezing)
Port size		2 x Rc1/8
Sonic conductance		1.25 dm ³ /(s·bar)
Critical pressure ratio		0.45

XTO-674-A

Main parts: Stainless steel
Seal material: NBR/FKM/CR



XTO-674-

Specifications

Model		XTO-674- <input type="checkbox"/> A	XTO-674- <input type="checkbox"/> AE	XTO-674- <input type="checkbox"/> AH	XTO-674- <input type="checkbox"/> AL
Fluid		Air, Water	Air		
Proof pressure		1.5 MPa			
Operating pressure range		0.05 to 1 MPa	0.01 to 1 MPa	0.05 to 1 MPa	
Ambient and fluid temperature		-5 to 60°C (No freezing)	-5 to 80°C (No freezing)	-30 to 60°C (No freezing)	
Port size		Rc1/4, Rc3/8, Rc1/2			
Sonic conductance	Rc1/4	9.5 dm ³ /(s·bar)			
	Rc3/8, Rc1/2	10.5 dm ³ /(s·bar)			
Critical pressure ratio		0.45			



Heat Resistant

Fluoropolymer Fittings: Hyper Fittings/ Insert Bushing Type

LQ1



Series	Maximum operating pressure	Operating temperature [°C]
LQ1	1.0 MPa	0 to 200
Features	Material: New PFA Quadruple seal construction Reducer enables tube size changeability with no change of body required.	

Fluoropolymer Fittings: Hyper Fittings/ Flare Type

LQ3



Series	Maximum operating pressure	Operating temperature [°C]
LQ3	1.0 MPa	Nut material PVDF: 0 to 150 Nut material PFA: 0 to 200
Features	Material: New PFA Triple seal construction Excellent and easy installation	

Fittings/Tubing/Flow Control Equipment

Tubing



Applicable Materials

Food-related laws and regulations compliant products

Compatible with Food Sanitation Law

Compatible with the test conforming to Japan's Food Sanitation Law based on the 370th notice given by the Ministry of Health and Welfare in 1959.

Complies with FDA (Food and Drug Administration)

Complies with FDA (Food and Drug Administration) §177-1550 and §177-2600 dissolution tests.

Series		Compatible with Food Sanitation Law	Complies with FDA (Food and Drug Administration)
Tubing	TL/TIL	●	●
	TLM/TILM	●	●
	TH/THH	●	●
	TD/TID	●	●
	TU-X217	●	—
	TU-X214	—	●

Fluoropolymer Tubing TL/TIL

Compatible with Food Sanitation Law

Complies with FDA (Food and Drug Administration)

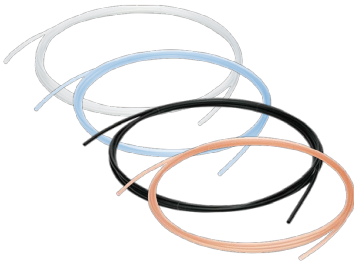


Series	Applicable tubing O.D.		Color
TL/TIL	Metric	ø4, ø6, ø8, ø10, ø12, ø19	Translucent
	Inch	ø1/8", ø3/16", ø1/4", ø3/8" ø1/2", ø3/4", ø1"	
Features	<ul style="list-style-type: none"> ● Material: Super PFA ● Max. operating pressure: 1.0 MPa (at 20°C)*1 ● Max. operating temperature: 260°C (This can vary according to operating pressure.) *1: This can vary according to size.		

Fluoropolymer Tubing (PFA) TLM/TILM

Compatible with Food Sanitation Law

Complies with FDA (Food and Drug Administration)



Series	Applicable tubing O.D.		Color
TLM/TILM	Metric	ø2, ø3, ø4, ø6, ø8, ø10 ø12, ø16, ø19, ø25	Translucent, Black, Blue, Red
	Inch	ø1/8", ø3/16", ø1/4", ø3/8" ø1/2", ø3/4", ø1", ø1 1/4"	
Features	<ul style="list-style-type: none"> ● Material: Super PFA ● Max. operating pressure: 2.3 MPa (at 20°C)*1 ● Max. operating temperature: 260°C (This can vary according to operating pressure.) *1: This can vary according to size.		

FEP Tubing (Fluoropolymer) TH/THH

Compatible with Food Sanitation Law

Complies with FDA (Food and Drug Administration)



Series	Applicable tubing O.D.		Color
TH/THH	Metric	ø4, ø6, ø8, ø10, ø12	Translucent, Black, Red, Blue
	Inch	ø1/8", ø3/16", ø1/4" ø3/8", ø1/2", ø3/4"	
Features	<ul style="list-style-type: none"> ● Material: FEP ● Max. operating pressure: 2.3 MPa (at 20°C)*1 ● Max. operating temperature: 200°C (This can vary according to operating pressure.) *1: This can vary according to size.		

Soft Fluoropolymer Tubing TD/TID

Compatible with Food Sanitation Law

Complies with FDA (Food and Drug Administration)



Series	Applicable tubing O.D.		Color
TD/TID	Metric	ø4, ø6, ø8, ø10, ø12	Translucent
	Inch	ø1/8", ø3/16", ø1/4", ø3/8", ø1/2"	
Features	<ul style="list-style-type: none"> ● Material: Modified PTFE ● Max. operating pressure: 1.6 MPa (at 20°C)*1 ● Max. operating temperature: 260°C (This can vary according to operating pressure.) *1: This can vary according to size.		



Applicable Materials

Compatible with Food Sanitation Law: Polyurethane Tubing **TU-X217**

Compatible with Food Sanitation Law



Series	Applicable tubing O.D.		Color
TU-X217	Metric	ø4, ø6, ø8, ø10, ø12	Black, White, Blue, Clear

Polyurethane Tubing **TU-X214**

Complies with FDA (Food and Drug Administration)



Series	Applicable tubing O.D.		Color
TU-X214		ø4, ø6, ø8, ø10, ø12	Black, White, Red, Blue, Yellow, Green, Clear, Orange



Made to Order

Double-layered Tubing for Instrumentation Device (Single-tubed/Double-tubed)

IN-241 Series

T0604 to T1075-X120/121/166 Series

Double-layered tubing with an external layer of vinyl chloride or polyolefin to protect the inner tubing
Inner tubing color: "Black" or "Black + White"



Model	Diameter [mm]	Number of cores		Inner tubing color		Material		Outer layer thickness [mm]		Length per roll					
		1	2	Black	Black + White	Vinyl chloride	Polyolefin	0.5	1	100 m		200 m		300 m	
										Reel	Roll	Reel	Reel	Roll	
IN-241-2522-100	O.D. ø6	●		●			●	●		●					
IN-241-2522-300		●		●			●	●					●		
T0604-1-100-X120-A		●		●		●			●	●					
T0604-1-300-X120-A		●		●		●			●	●				●	
T0604-2-100-X120-A		I.D. ø4		●		●	●			●	●				
T0604-2-100-X121-A			●		●	●			●	●					
IN-241-1047			●		●	●	●			●	●		●		
IN-241-2523-100	O.D. ø8	●		●			●	●		●					
IN-241-2523-300		●		●			●	●					●		
T0806-1-100-X120-A		●		●		●			●	●					
T0806-1-300-X120		I.D. ø6	●		●		●			●	●				●
IN-241-2502-100			●		●		●	●			●				
IN-241-2593-100			●		●		●	●			●				
T1075-1-100-X120-A	O.D. ø10	●		●		●			●	●					
T1075-1-300-X120		●		●		●			●	●				●	
IN-241-2503-100	I.D. ø7.5		●		●		●	●			●				
IN-241-2594-100			●		●		●	●			●				
T1075-2-300-X166				●		●		●	●					●	

*: If you need a different number of cores, different colors or lengths over 300 m, please contact our sales representatives.

Fittings/Tubing/Flow Control Equipment

Others

Maintenance

Longer Length Reel T0604/TH0604-X64

Compatible with Food Sanitation Law

Complies with FDA (Food and Drug Administration)



Series	Applicable tubing O.D.	Color
T0604-X64 TH0604-X64	ø6	Black, White (Nylon) Translucent (FEP tubing)
Features	<ul style="list-style-type: none"> Length per roll: 500 m, 250 m Material: Nylon tubing/T Series, FEP tubing (Fluoropolymer)/TH Series Compatible with Food Sanitation Law (TH Series) Compatible with the test conforming to Japan's Food Sanitation Law based on the 370th notice given by the Ministry of Health and Welfare in 1959. Complies with FDA (Food and Drug Administration) §177-1550 and §177-2600 dissolution tests. 	

Flow Control Equipment

Environmental Resistance

Stainless Steel

Stainless Steel Speed Controller ASG



Series	Applicable tubing I.D. [mm]	Connection thread
ASG	4, 6, 8, 10, 12	M5, 1/8, 1/4, 3/8, 1/2
Features	Material · Metal parts: Stainless steel 316, Seal parts: Special FKM Ambient and fluid temperature: -5 to 60°C	

Clean Speed Controller with One-touch Fitting AS-FPG



Series	Port size	Applicable tubing O.D.
AS-FPG	M5 x 0.8, R1/8, 1/4, 3/8, 1/2	ø4 to ø12
Features	<ul style="list-style-type: none"> Low particulate generating speed controllers designed for use in clean rooms Resin parts: Polypropylene Metal parts: Stainless steel 304 	

Specialized Products

Stainless Steel Specification Standard Speed Controller (In-line Type)

Metal parts are stainless steel.



Series	Connection thread
INA-14-82 INA-14-179 INA-14-211 INA-14-196 INA-14-145	M5, 1/8, 1/4 3/8, 1/2

Stainless Steel Specification Standard Speed Controller (Metal Body Elbow Type)

Metal parts are stainless steel.



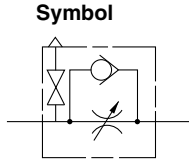
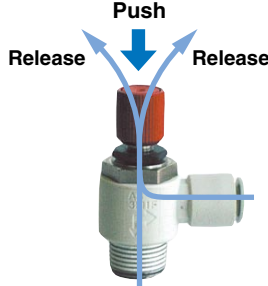
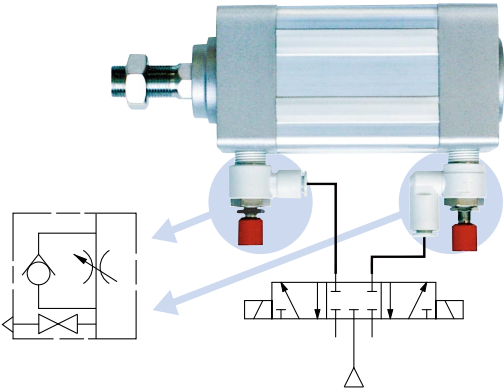
Series	Connection thread	Control type
INA-14-233 INA-14-213 INA-14-166 INA-14-172 INA-14-167 INA-14-209	M3, M5 1/8, 1/4 3/8, 1/2	Meter-out

Measures against Residual Pressure

Speed Controller with Residual Pressure Release Valve AS□□□□□E

Residual pressure can be easily released with one push of button.

Eye-catching red color release button.

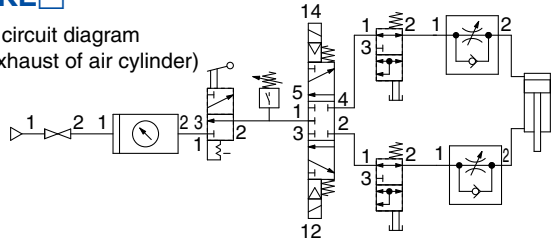


Type	Series	Port size in the cylinder side	Applicable tubing O.D.
With One-touch Fitting (Elbow type, Universal type)	AS□□□□1FE	1/8 to 1/2	ø4 to ø12
In-line Type (Metal Body)	AS□□000E		—

Residual Pressure Release Valve with One-touch Fittings KE□

Residual pressure in the cylinder can be easily released with one push of the push button.

Example of circuit diagram (Residual exhaust of air cylinder)



Type	Series	Applicable tubing O.D.
With One-touch fittings without a push button guard	KEA	ø6 to ø12
With One-touch fittings with a push button guard	KEB	
Rc thread with a push button guard	KEC	Connection thread: Rc1/4, 3/8

Fittings/Tubing/Flow Control Equipment

Flow Control Equipment

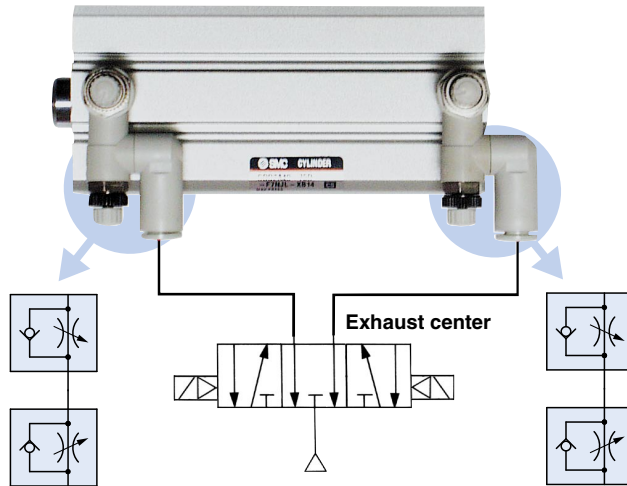


Lurch Prevention

Dual Speed Controller with One-touch Fittings ASD Series

Prevents sudden extensions with meter-in/meter-out control.

Two flow control valves and check valves have been integrated.



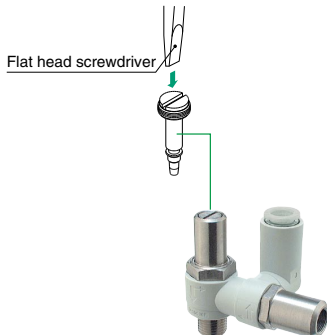
Type	Series	Port size in the cylinder side	Applicable tubing O.D.	
			Metric size	Inch size
Dual speed controller	ASD	M5 to 1/2	ø4 to ø12	ø1/8" to ø3/8"

Dual Speed Controller for Low Speed Operation ASD-FM Series



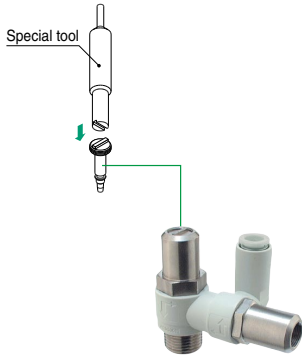
Type	Series	Port size in the cylinder side	Applicable tubing O.D.	
			Metric size	Inch size
Dual speed controller with One-touch fitting	ASD□30FM	M5 to 1/4	ø4 to ø10	ø1/8" to ø3/8"

Dual Speed Controller Adjustable by Flat Head Screwdriver ASD-D Series



Type	Series	Port size in the cylinder side	Applicable tubing O.D.	
			Metric size	Inch size
Dual speed controller with One-touch fitting	ASD□□□F-D	M5 to 1/2	ø4 to ø12	ø1/8" to ø3/8"

Tamper Proof Dual Speed Controller ASD-T Series



Type	Series	Port size in the cylinder side	Applicable tubing O.D.	
			Metric size	Inch size
Dual speed controller with One-touch fitting	ASD□□□F-T	M5 to 1/2	ø4 to ø12	ø1/8" to ø3/8"

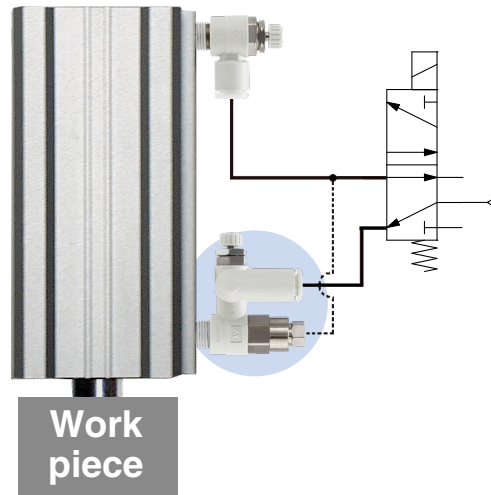
Safety Measures

Drop Prevention

Speed Controller with Pilot Check Valve ASP Series

Pilot check valve and speed controller are combined.
Realizes momentary intermediate stoppage of a cylinder and able to adjust speed control of it.

Tubing mount direction is 360° free.
Electroless nickel plated is provided as standard.



Work piece

Example of drop prevention circuit



Type	Series	Port size in the cylinder side	Applicable tubing O.D.	
			Metric size	Inch size
Speed controller with pilot check valve	ASP	1/8 to 1/2	ø6 to ø12	ø1/4" to ø1/2"

Actuators

Valves

Fittings & Tubing
Flow Control Equipment

Pressure Control
Equipment/Blow Guns

Static Neutralization
Equipment

Detection Switches

Vacuum Equipment

Temperature Control
Equipment

Electric Actuators

Pressure Control Equipment/Blow Guns



Grease for Food Processing Equipment

Specialized Products

Blow Gun Using Grease for Food Processing Machines/VMG-X7

Grease for food processing machines*1 is applied to wetted parts (sealing parts). *1: Grease meets NSF (USDA) H1 standards.



Stainless Steel

Clean Regulator SRH



Series	Relief mechanism	Port size	Set pressure [MPa]
SRH	Non-relief	Rc1/8, 1/4, 3/8, 1/2 9/16-18UNF, 7/8-14UNF	Low pressure type: 0.02 to 0.2 High pressure type: 0.05 to 0.7
SRH	Relief	Rc1/8, 1/4, 3/8, 1/2	
Features		<ul style="list-style-type: none"> Contamination controlled stainless steel regulator Oil-free Two types of diaphragm materials: PTFE, Fluororubber 	

Precision Clean Regulator SRP



Series	Port size	Set pressure [MPa]
SRP	M5, 1/8	Low pressure type: 0.005 to 0.2 High pressure type: 0.01 to 0.4
Features		<ul style="list-style-type: none"> High precision low flow consumption stainless steel regulator Bleed air flow 0.5 L/min (ANR) or less (0.2 MPa at outlet pressure) Setting sensitivity: 0.3% F.S. Repeatability: 1% F.S.

Filter Regulator AW30/40-X2622



Series	Port size	Set pressure [MPa]
AW30/40-X2622	1/4, 3/8, 1/2	0.05 to 0.85
Features		<ul style="list-style-type: none"> Stainless steel 316 and special temperature environment (-40°C) specifications External parts material: Stainless steel 316 Ambient and fluid temperature: -40 to 80°C NACE International Standards compliant

Specialized Products

Blow Gun with Hook/VMG-X110

Install mounting hook in blow gun (Material: Stainless steel)



Air Blow

Blow Gun VMG



Series	Port size	Operating pressure range [MPa]	Effective area [mm ²]	Nozzle port size
VMG	Rc, NPT, G 1/4, 3/8	0 to 1.0	30	Rc1/4
Features		<ul style="list-style-type: none"> Reduction of 2,000 m³ per annum is possible. (Energy saving) Pressure loss 1% or less (Nozzle diameter: ø2.5) 		

Energy Saving/
Reduced-wiring

Air Blow

Nozzles for Blowing KN



Series	Type	Nozzle size
KN	Nozzle with male thread	ø1 to ø8
	High efficiency nozzle	ø1 to ø2
	Low noise nozzle with male thread	ø0.75 x 4 to ø1.1 x 8
	Copper extension nozzle	ø1.5 to ø3
	Pivoting nozzle	ø4, ø6
	Nozzle with self-align fitting	ø1 to ø6
	Nozzle for One-touch fitting	ø1 to ø3

Vacuum Flow ZH□-□-X185

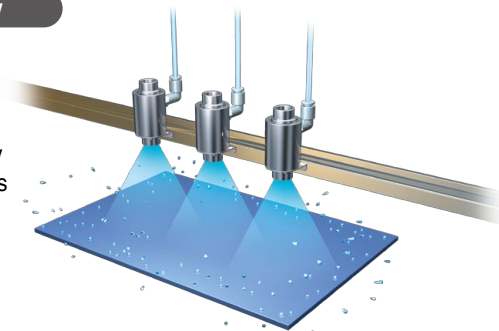


Series	Features
ZH□-□-X185	<ul style="list-style-type: none"> By supplying compressed air, large blow and vacuum flow rate available A blow flow rate 4 times the supply air A vacuum flow rate 3 times the supply air Large passage diameter available for suction of machining chips, particles, etc. Maintenance free Mounting bracket available

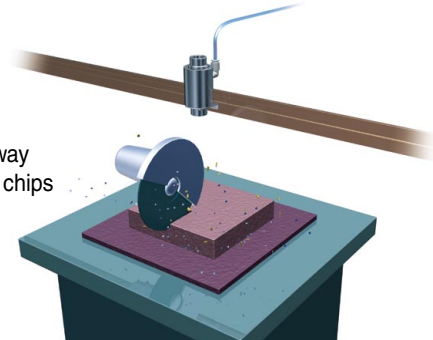
Application Examples

Blow

Blowing away water droplets



Blowing away machining chips



High Pressure

High Pressure

Direct Operated Regulator for 6.0 MPa (Relieving Type) VCHR



Series	Type	Port size	Set pressure [MPa]
VCHR30/40	Direct operated regulator (Relieving type)	G3/4, 1, 1 1/2	0.5 to 5.0 (Max. operating pressure 6.0)
Features	<ul style="list-style-type: none"> Service life: 10 million times Improved durability in high pressure environments using a polyurethane elastomer poppet. Uses NSF-H1 approved grease at guide rings (sliding parts). Improved durability using a metal seal type relief valve. Uses special fluororesin seal for sliding parts. Stable unattached response, and not easily affected by pressure. 		

5.0 MPa Silencer VCHN



Series	Features
VCHN	<ul style="list-style-type: none"> Reduces clogging with the double-layer structure. Noise reduction: 35 dB (A)

Actuators

Valves

Fittings & Tubing
Flow Control Equipment

Pressure Control
Equipment/Blow Guns

Static Neutralization
Equipment

Detection Switches

Vacuum Equipment

Temperature Control
Equipment

Electric Actuators

Pressure Control Equipment/Blow Guns

High Pressure

High Pressure

Made to Order

High Pressure

Strong materials are used in the manufacturing of regulators intended for high pressure operation. Also, construction modification allows a wider set pressure range.



Specifications

Part number	AR20 to 60-B-X425
Proof pressure [MPa]	3.0
Maximum operating pressure [MPa]	2.0
Set pressure range [MPa]	0.1 to 1.7
Ambient and fluid temperature [°C]	-5 to 60 (No freezing)

Static Neutralization Equipment

Environmental Resistance

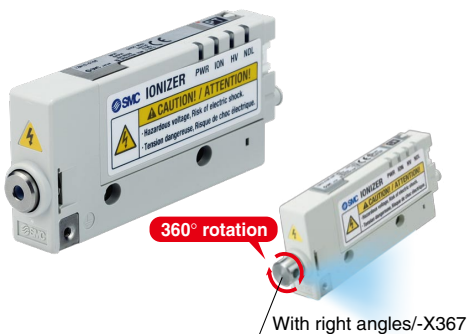
Static Neutralization

Ionizer/Bar Type IZS40/41/42



Series	Type	Ion generation method	Offset voltage
IZS42	Dual AC type	Corona discharge type	Within ± 30 V
IZS41	Feedback sensor type		
IZS40	Standard type		
Features	<ul style="list-style-type: none"> • Potential amplitude is reduced with Dual AC type. 25 V or less (at the installation height of 300 mm) • Rapid neutralization of static electricity by a feedback sensor. • Reduction of adjustment and maintenance labor by auto balance sensor. • Simple operation: Can be controlled by powering the ionizer ON. (Standard type) • Setting ionizer with remote controller. • Transition wiring may be used. • High speed static neutralization cartridges and energy saving static neutralization cartridges are available. • CE, RoHS compliant 		

Ionizer/Nozzle Type IZN10



Series	Ion generation method	Offset voltage
IZN10	Corona discharge type	Energy saving static neutralization nozzle: Within ± 10 V High flow rate nozzle: Within ± 15 V
Features	<ul style="list-style-type: none"> • Nozzle type: Dust removal and static neutralization by air blow, spot type static neutralization • Slim design: Thickness dimension 16 mm • CE, UL, RoHS compliant • Nozzle type can be selected according to applications. <ul style="list-style-type: none"> • Energy saving static neutralization nozzle (Short range static neutralization, design focuses on ion balance) • High flow static neutralization nozzle (Long range static neutralization and dust removal) 	

Static Neutralization Equipment

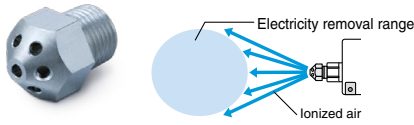


Static Neutralization

Made to Order

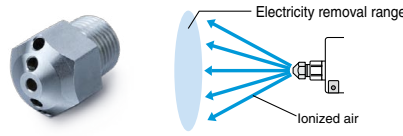
Nozzle Variations

Circular diffusion nozzle



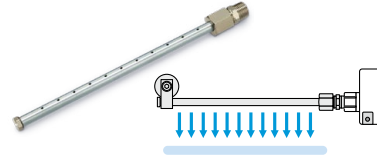
Part number
IZN10-G-X198

Flat diffusion nozzle



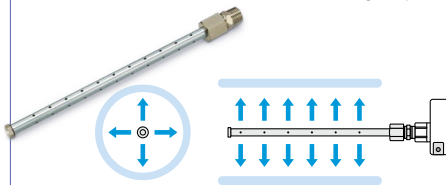
Part number
IZN10-G-X199

Bar nozzle (straight type)



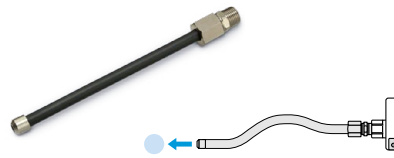
Part number	Bar length [mm]
IZN10-G-100-X216	100
IZN10-G-200-X216	200
IZN10-G-300-X216	300
IZN10-G-400-X216	400
IZN10-G-500-X216	500
IZN10-G-600-X216	600

Circumferential jet bar nozzle (straight type)



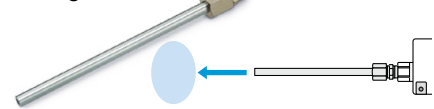
Part number	Bar length [mm]
IZN10-G-X278	150

Bender tube nozzle

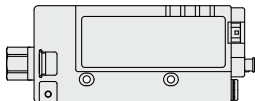


Part number	Bar length [mm]
IZN10-G-100-X205	100
IZN10-G-200-X205	200
IZN10-G-300-X205	300
IZN10-G-400-X205	400
IZN10-G-500-X205	500
IZN10-G-600-X205	600

Long nozzle



Part number	Bar length [mm]
IZN10-G-100-X226	100
IZN10-G-200-X226	200
IZN10-G-300-X226	300
IZN10-G-400-X226	400
IZN10-G-500-X226	500
IZN10-G-600-X226	600



IZN10-11 □ □

For the ionizer, please select a female thread type (Rc1/8) for the piping.

IZE11 Series

Intermittent Control Timer IZE110-X238



Application: Improved dust removal effect under low air consumption by intermittent ion blowing

Series	Changeable frequency
IZE110-X238	0.1 to 50.0 Hz
Features	<ul style="list-style-type: none"> • A digital timer that can control ON/OFF switches of valves etc. • Set individual ON and OFF times: 0.1 to 99.9 seconds • Display of accumulated number of changes It can be used for maintaining valve or cylinder operation. • Switch output (Output under timer control) • 2 types of trigger input <ul style="list-style-type: none"> · Repeat input (ON/OFF operation during trigger input) · One-shot input (ON/OFF operation for a time set from trigger input) • CE, RoHS compliant

Fan Type Ionizer IZF10



Series	Ion generation method	Offset voltage
IZF10	Corona discharge type (DC)	±13 V
Features	<ul style="list-style-type: none"> • Compact design: 80 mm x 110 mm x 39 mm • Weight: 280 g • Static neutralization time: 1.5 seconds • With alarm Incorrect high voltage, Emitter dirt detection • CE, RoHS compliant 	

Static Neutralization Equipment



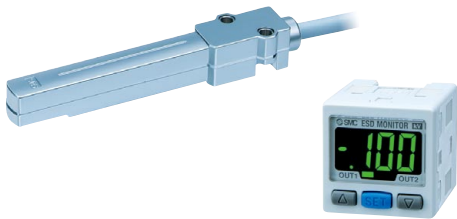
Static Neutralization

Fan Type Ionizer IZF21/31



Series	Ion generation method	Offset voltage	Maximum air flow
IZF21	Corona discharge type	±5 V	1.8 m ³ /min
IZF31			4.4 m ³ /min
Features	<ul style="list-style-type: none"> • Thickness: 40 mm • Extensive/rapid static neutralization • Flow rate adjustment function (1 to 10 steps) • Easier maintenance <ul style="list-style-type: none"> · Emitter cartridge is easily replaceable. · Automatic cleaning function of emitters • Averaging operation • CE, RoHS compliant 		

Electrostatic Sensor IZD10/IZE11



Series	Measurement potential	Output voltage	Effective detection distance
IZD10-110	±0.4 kV (At detection distance 25 mm)	1 to 5 V (Output impedance: Approx. 100 Ω)	10 to 50 mm
IZD10-510	±20 kV (At detection distance 50 mm)		25 to 75 mm
Series	Rated measurement range	Smallest settable increment	Output
IZE11	-0.4 kV to +0.4 kV -20 kV to +20 kV	0.001 kV (at ±0.4 kV) 0.1 kV (at ±20 kV)	Switch output x 2 + Analog output (1 to 5 V, 4 to 20 mA)
Features	<ul style="list-style-type: none"> • Detects electrostatic potential of the workpiece, and is capable of switch output, analog output or output of current. • CE, UL, RoHS compliant 		

Handheld Electrostatic Meter IZH10



Series	Rated charge amount range	Minimum display unit
IZH10	±20.0 kV	0.1 kV (±1.0 to ±20.0 kV) 0.01 kV (0 to ±0.99 kV)
Features	<ul style="list-style-type: none"> • Easy-to-use handheld electrostatic meter • CE, RoHS compliant 	

Detection Switches



Stainless Steel

Self-contained Type

2-Color Display Digital Pressure Switch ZSE80(F)/ISE80(H)



Series	Type	Rated pressure range
ZSE80F	Compound pressure	-100.0 to 100.0 kPa
ZSE80	Vacuum pressure	0.0 to -101.0 kPa
ISE80	Positive pressure	-0.100 to 1.000 MPa
ISE80H	Positive pressure	-0.100 to 2.000 MPa
Features	<ul style="list-style-type: none"> • Wetted parts: Stainless steel 304/Stainless steel 630 • IP65 • Suitable for a wide variety of fluids • Low leakage. Choice of VCR® or Swagelok® fitting is available. • Rear ported, Bottom ported 	

Remote Type

Pressure Sensor for General Fluids PSE56□



*: Refer to page 38 for pressure sensor controller.

Series	Type	Rated pressure range
PSE563	Compound pressure	-100 to 100 kPa
PSE561	Vacuum pressure	0 to -101 kPa
PSE564	Positive pressure	0 to 500 kPa
PSE560	Positive pressure	0 to 1 MPa
Features	<ul style="list-style-type: none"> • Wetted parts: Stainless steel 316L • IP65 • Suitable for a wide variety of fluids • Analog output (Voltage/Current) • Low leakage. Choice of VCR® or Swagelok® fitting is available. 	

VCR® and Swagelok® are registered trademarks of Swagelok Company.

Detection Switches

Energy Saving/
Reduced-wiring

Pressure/Flow Rate Detection

Self-contained Type

3-Screen Display High-Precision Digital Pressure Switch ZSE20(F)/ISE20



Series	Type	Rated pressure range
ZSE20F	Compound pressure	-100.0 to 100.0 kPa
ZSE20	Vacuum pressure	0.0 to -101.0 kPa
ISE20	Positive pressure	-0.100 to 1.000 MPa
Features	<ul style="list-style-type: none"> Setting is possible while checking the measured value. Delay time: Fastest 1.5 ms or less Current consumption: 25 mA or less With a snapshot function 	

2-Color Display High-Precision Digital Pressure Switch ZSE30A(F)/ISE30A



Series	Type	Rated pressure range
ZSE30AF	Compound pressure	-100.0 to 100.0 kPa
ZSE30A	Vacuum pressure	0.0 to -101.0 kPa
ISE30A	Positive pressure	-0.100 to 1.000 MPa
Features	<ul style="list-style-type: none"> With One-touch fitting (Straight, Elbow) Space-saving, mountable side by side without clearance (Panel mount) With display calibration function Can copy to up to 10 switches simultaneously. 	

2-Color Display High-Precision Digital Pressure Switch ZSE40A(F)/ISE40A



Series	Type	Rated pressure range
ZSE40AF	Compound pressure	-100.0 to 100.0 kPa
ZSE40A	Vacuum pressure	0.0 to -101.3 kPa
ISE40A	Positive pressure	-0.100 to 1.000 MPa
Features	<ul style="list-style-type: none"> IP65 Fluid: Air, Non-corrosive gas, Non-flammable gas Can copy to up to 10 switches simultaneously. 3-step setting With One-touch fitting 	

Remote Type

Compact Pneumatic Pressure Sensor PSE54□



Series	Type	Rated pressure range
PSE543	Compound pressure	-100 to 100 kPa
PSE541	Vacuum pressure	0 to -101 kPa
PSE540	Positive pressure	0 to 1 MPa
Features	<ul style="list-style-type: none"> Analog output (voltage) 	

Pressure Sensor Controller PSE200/300



Actuators

Valves

Fittings & Tubing
Flow Control Equipment

Pressure Control
Equipment/Blow Guns

Static Neutralization
Equipment

Detection Switches

Vacuum Equipment

Temperature Control
Equipment

Electric Actuators

Detection Switches

Energy Saving/
Reduced-wiring

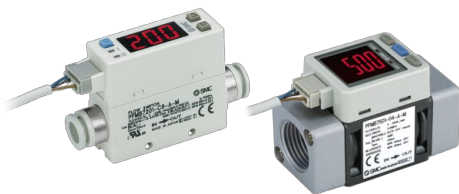
Pressure/Flow Rate Detection

2-Color Display Digital Flow Switch PFM



Series	Rated flow range [L/min]
PFM	0.2 to 10 (0.2 to 5)
	0.5 to 25 (0.5 to 12.5)
	1 to 50 (1 to 25)
	2 to 100 (2 to 50) (): For CO ₂
Features	<ul style="list-style-type: none"> • Air, N₂, Ar, CO₂ • Grease-free • Integrated flow adjustment valve • Compact, Lightweight, Space-saving

2-Color Display Digital Flow Switch PFMB



Series	Rated flow range [L/min]
PFMB	2 to 200
	5 to 500
	10 to 1000
	20 to 2000
Features	<ul style="list-style-type: none"> • Air, N₂ • Grease-free • Integrated flow adjustment valve (200 L type) • Compact, Space-saving

3-Color Display Digital Flow Switch PFMC



Series	Rated flow range [L/min]
PFMC	5 to 500
	10 to 1000
	20 to 2000
Features	<ul style="list-style-type: none"> • Enclosure: IP65 • Dry air, N₂ • 3-color/2-screen display • Expanded flow range: Wide range of flow measurement with one product • Compact, Space-saving

Digital Flow Switch for Air PF2A



Series	Rated flow range [L/min]
PF2A	1 to 10
	5 to 50
	10 to 100
	20 to 200
	50 to 500
	150 to 3000
	300 to 6000
600 to 12000	
Features	<ul style="list-style-type: none"> • Integrated type and separate monitor type are available. • Switch output, accumulated pulse output, analog output • Capable of switching back and forth between cumulative and instantaneous flow • IP65

Energy Saving/
Reduced-wiring

Pressure/Flow Rate Detection

3-Color Display Digital Flow Switch for Water **PF3W**



Series	Rated flow range [L/min]
PF3W	0.5 to 4
	2 to 16
	5 to 40
	10 to 100
	50 to 250
Features	<ul style="list-style-type: none"> Flow sensor with 3-color/2-screen display Integrated temperature sensor 40% smaller (compared with PF2W) IP65 compliant, Grease-free Fluid temperature: 0 to 90°C PVC piping type: Applicable to deionized water and chemical liquids

3-Color Display Digital Flow Switch for PVC Piping **PF3W**



Series	Rated flow range [L/min]
PF3W	10 to 100
	30 to 250
Features	<ul style="list-style-type: none"> Applicable fluid: Deionized water, Chemical liquids, etc. Flow sensor with 3-color/2-screen display IP65 compliant, Grease-free Fluid temperature: 0 to 70°C PVC pipe O.D.: 25A

3-Color Display Electromagnetic Type Digital Flow Switch **LFE□**



Series	Rated flow range [L/min]
LFE□	0.5 to 20
	2.5 to 100
	5 to 200
Features	<ul style="list-style-type: none"> Compact and lightweight 56 mm x 40 mm x 90 mm (H x W x D) Weight: 340 g (LFE1□3) Reverse flow can be detected. Operating fluid temperature: 0 to 85°C Current consumption: 45 mA Applicable fluids: Water, Water-soluble coolant

High Pressure

High Pressure

2-Color Display Digital Pressure Switch **ISE70/75(H)**



Series	Type	Rated pressure range
ISE70	Positive pressure (for air)	0 to 1 MPa
ISE75	Positive pressure (for general fluids)	0 to 10 MPa
ISE75H	Positive pressure (for general fluids)	0 to 15 MPa
Features	<ul style="list-style-type: none"> Metal body type (Die-cast aluminum) IP67 With M12 connector 	

Actuators

Valves

Fittings & Tubing
Flow Control Equipment

Pressure Control
Equipment/Blow Guns

Static Neutralization
Equipment

Detection Switches

Vacuum Equipment

Temperature Control
Equipment

Electric Actuators

Vacuum Equipment



Stainless Steel

All Stainless Steel Vacuum Ejector ZH□□-X267

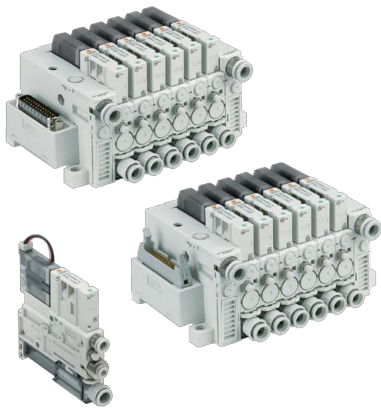


Series	Nozzle diameter [mm]	Max. suction flow [L/min (ANR)]	Air consumption [L/min (ANR)]	Guidelines for applicable pad [mm]
ZH05-X267	0.5	5	13	2 to 13
ZH07-X267	0.7	12	23	2 to 20
ZH10-X267	1.0	24	46	2 to 32
Features	<ul style="list-style-type: none"> • All stainless steel (SCS13: Equivalent to stainless steel 304) • Sealant not required • Maximum operating temperature: 260°C • Grease-free 			

Others

Adsorption Transfer

Vacuum Unit ZK2



Ejector series	Nozzle diameter [mm]	Max. suction flow [L/min (ANR)]	Air consumption [L/min (ANR)]	Guidelines for applicable pad [mm]	Vacuum pump system series
ZK2□07	0.7	29	24	2 to 40	ZK2□00
ZK2□10	1.0	44	40	2 to 50	
ZK2□12	1.2	61	58	2 to 125	
ZK2□15	1.5	67	90	2 to 150	
Features	<ul style="list-style-type: none"> • Compatible with ejector systems and the vacuum pump systems • Digital pressure switch for vacuum with energy saving function cuts supply air when the pressure reached the desired vacuum. Air consumption: 90% reduction • More efficient ejector Suction flow: 50% increase Air consumption: 30% reduction (Compared to other SMC single stage ejectors) • Compact/Lightweight: Volume 88 cm³ (28% reduction) Weight 81 g (59% reduction) 				

Body Ported Type Vacuum Ejector ZH



Series	Nozzle diameter [mm]	Vacuum pressure reached ^{*1} [kPa]		Max. suction flow [L/min (ANR)]		Air consumption [L/min (ANR)]
		Type S	Type L	Type S	Type L	
ZH05D□A	0.5	-90	-48	6	13	13
ZH07D□A	0.7			12	28	27
ZH10D□A	1.0			26	52	52
ZH13D□A	1.3			40	78	84
ZH15D□A	1.5	-66	-66	58	78	113
ZH18D□A	1.8			76	128	162
ZH20D□A	2.0			90	155	196
Features	<ul style="list-style-type: none"> • Overall length: Max. 11% reduction (51.8 mm/ZH05D□A-06-06-06) • Weight: Max. 74% reduction (23.3 g/ZH20D□A-10-12-12N) 					

*1: Supply pressure: 0.45 MPa

Vacuum Flow ZH□-□-X185



Series	Passage diameter
ZH10-X185	ø13
ZH20-X185	ø21.6
ZH30-X185	ø30
ZH40-X185	ø42
Features	<ul style="list-style-type: none"> • By supplying compressed air, large blow and vacuum flow rate available • A blow flow rate 4 times the supply air • A vacuum flow rate 3 times the supply air • Large passage diameter available for suction of machining chips, particles, etc. • Maintenance free • Mounting bracket available • Application examples Blow: Blowing away water droplets and machining chips. Vacuum: Vacuuming the smoke during soldering. Transferring materials such as pellets or fine particles.

Adsorption Transfer

Vacuum Pad ZP3E



Series	Type	Pad diameter
ZP3E-□UM-□	Flat type with groove	ø32, ø40, ø50, ø63, ø80, ø100, ø125
ZP3E-□BM-□	Bellows type with groove	ø32, ø40, ø50, ø63, ø80, ø100, ø125
Features	<ul style="list-style-type: none"> Stability of suction position, improved ease of removal. Groove on the adsorption surface secures the interior space. Ribs reduce the inclinations during transport of workpiece. The number of mounting screws reduced (4 pcs. → 1 pc.) Pad and metal parts can be disposed of separately. 	

4.5-Stage Bellows Pad ZP2



Series	Pad diameter
ZP2-TB15	ø15
ZP2-TB20	ø20
ZP2-TB30	ø30
ZP2-T40	ø40
ZP2-T46	ø46
Features	<ul style="list-style-type: none"> For adsorbing workpieces flowing at high speeds Follows various shapes of workpieces. Pad material: Silicone rubber (Rubber hardness: A40, A50, A60)

Vacuum Pad ZP3



Series	Type	Pad diameter
ZP3	Flat	ø1.5, ø2, ø3.5
ZP3	Flat with groove	ø4, ø6, ø8, ø10, ø13, ø16
ZP3	Bellows	ø4, ø6, ø8, ø10, ø13, ø16
Features	<ul style="list-style-type: none"> Compact, Space-saving, Overall length is shortened. One-touch fitting and barb fitting for ø2 are available. 	

Non-contact Gripper XT661



Series	Outer body diameter	Note
Cyclone type	ø20, ø40, ø60, ø80, ø100	High lifting force
Low profile cyclone type	ø20, ø25	Low profile: 1.8 mm
Bernoulli type	ø40, ø60, ø80, ø100, □120, □150	Vibration reducing
Features	<ul style="list-style-type: none"> Assist in non-contact workpiece transfer. Max. workpiece suction distance: 10 mm Cyclone type: High lifting force: Max. 44 N Bernoulli type: Amplitude of the workpiece during gripping: ±0.01 mm or less 	

Specialized Products

Vacuum Pad for Soft Film
ZP-606-25CS0J20

- Reduction of wrinkles made on thin workpieces, such as film or vinyl, during adsorption
- Reliable suction of film or vinyl



Thermo-chiller: Basic Type HRSE

Compact basic type



Series	Set temperature range	Cooling capacity	Temperature stability	Cooling method	Circulating fluid
HRSE	10 to 30°C	1.2 kW, 1.6 kW 2.2 kW (Air-cooled, 60 Hz)	±2.0°C	Air-cooled refrigeration	Tap water, Ethylene glycol aqueous solution (15%)
Features	<ul style="list-style-type: none"> • Simple function and performance. Thermo-chiller of the basic type. • Large energy saving by triple control! Power consumption 33% energy saving • Compact/Lightweight 32 kg (100 VAC) • Maintenance free: Magnet pump • Low-noise design: 55 dB(A) 				

Thermo-chiller: Standard Type HRS

Standard type



Series	Set temperature range	Cooling capacity	Temperature stability	Cooling method	Circulating fluid
HRS012 to 060	5 to 40°C	1.3 kW, 1.9 kW 2.4 kW, 3.2 kW 5.1 kW, 5.9 kW (Air-cooled, 60 Hz)	±0.1°C	Air-cooled refrigeration Water-cooled refrigeration	Tap water, Deionized water, Ethylene glycol aqueous solution (15%)
Features	<ul style="list-style-type: none"> • With this chiller, cooling water can be obtained anywhere it is necessary because of easy installation and easy operation. • For a wide range of applications such as laser machine tool, analytical equipment, LCD manufacturing equipment, mold temperature control, etc. • Compact: W 377 x H 615 x D 500 mm (HRS012/018/024) • Timer operation function, Low level in tank, Power failure auto-restart, Antifreezing operation function, etc. • Self diagnosis function • Available as overseas models (Single-phase 200 to 230 VAC, Single-phase 100, 115 VAC) • Conforms to UL specifications, CE-marking. (Except 9 kW) 				

Thermo-chiller: Standard Type HRS090



Series	Set temperature range	Cooling capacity	Temperature stability	Cooling method	Circulating fluid
HRS090	5 to 35°C	9 kW (Air-cooled, 60 Hz)	±0.5°C	Air-cooled refrigeration Water-cooled refrigeration	Tap water, Deionized water, Ethylene glycol aqueous solution (15%)
Features	<ul style="list-style-type: none"> • Lightweight and Compact • Cooling capacity: 9 kW • Temperature stability: ±0.5°C • Set temperature range: 5 to 35°C • Maximum ambient temperature: 45°C • Power supply: 3-phase 200 to 230 VAC, 380 to 415 VAC 				

Thermo-chiller: Standard Type HRS100/150



Series	Set temperature range	Cooling capacity	Temperature stability	Cooling method	Circulating fluid
HRS100 HRS150	5 to 35°C	9.5 kW 14.5 kW (Air-cooled, 60 Hz)	±1.0°C	Air-cooled refrigeration Water-cooled refrigeration	Tap water, Deionized water, Ethylene glycol aqueous solution (15%)
Features	<ul style="list-style-type: none"> • No heater required, circulating fluid is heated using heat exhausted by refrigerating circuit. • Compatible power supplies in Europe, Asia, Oceania, North, Central and South America • Low-noise design: 70 dB(A) • Outdoor installation: IPX4 				

Thermo-chiller: Inverter Type HRSH090



Series	Set temperature range	Cooling capacity	Temperature stability	Cooling method	Circulating fluid
HRSH090	5 to 40°C	9.5 kW (Air-cooled)	±0.1°C	Air-cooled refrigeration Water-cooled refrigeration	Tap water, Deionized water, Ethylene glycol aqueous solution (15%)
Features	<ul style="list-style-type: none"> ● Power consumption reduced by 53% Outstanding energy saving effect with the triple inverter! ● Cooling capacity: 9.5 kW (Air-cooled), 11.0 kW (Water-cooled) ● Low-noise design: Max. 66 dB(A) ● Maximum ambient temperature: 45°C 				

Thermo-chiller: Inverter Type HRSH

Large type



Series	Set temperature range	Cooling capacity	Temperature stability	Cooling method	Circulating fluid
HRSH	5 to 35°C	10 kW, 15 kW 20 kW, 25 kW 28 kW (Air-cooled, 60 Hz)	±0.1°C	Air-cooled refrigeration Water-cooled refrigeration	Tap water, Deionized water, Ethylene glycol aqueous solution (15%)
Features	<ul style="list-style-type: none"> ● Outstanding energy saving effect with the triple inverter! ● Outdoor installation, Splashproof type (IPX4) ● Maximum ambient temperature: 45°C ● Temperature stability: ±0.1°C (when a load is stable) ● Space-saving and lightweight 280 kg (25 kW type) ● Conforms to UL specifications, CE-marking. 				

Thermo-dryer IDH□

With air temperature adjustment function



Series	Air flow capacity [L/min (ANR)]	Outlet air temperature adjustment range	Outlet air set pressure range	Outlet air temperature stability	Cooling method
IDH□4	100 to 500	15 to 30°C	0.15 to 0.85 MPa	±0.1°C	Heater operation PID control
IDH□6	200 to 800				
Features	<ul style="list-style-type: none"> ● Stable supply of temperature and pressure controlled dry clean air! Possible to supply compressed air with the same conditions and quality regardless of the season. ● Application example Supplying compressed air with constant conditions to air bearings mounted on the tool. ● Built-in filter Filter nominal filtration rating: 0.01 μm (99.9% filtration efficiency) Outlet oil mist concentration: Max. 0.01 mg/m³ (ANR) Outlet cleanliness: Particles of 0.3 μm or more: 3.5 particles/L (ANR) or less ● Power supply available all over the world Single-phase 100, 200, 230 VAC (50/60 Hz) 				

Electric Actuators

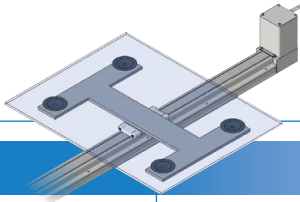
High Speed

Electric/Positioning

Electric Actuators

Transfer

Load and unload transfer of workpieces



Slider Type

LEF Series

Step Motor (Servo/24 VDC)

Servo Motor (24 VDC)

AC Servo Motor (100/200/400 W)

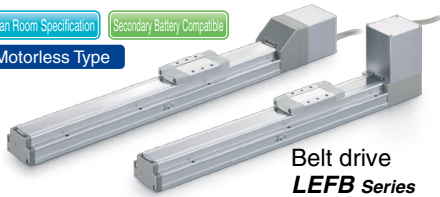
Ball screw drive

Clean Room Specification

Secondary Battery Compatible

LEFS Series

Motorless Type

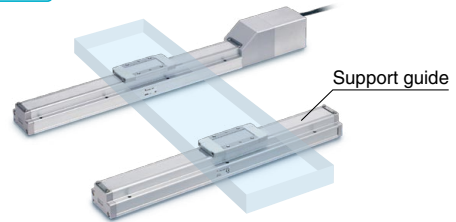


Belt drive
LEFB Series

LEFG Series

Support Guide

Clean Room Specification



Support guide

LEJ Series

AC Servo Motor (100/200 W)

Ball screw drive

Clean Room Specification

Secondary Battery Compatible

LEJS Series

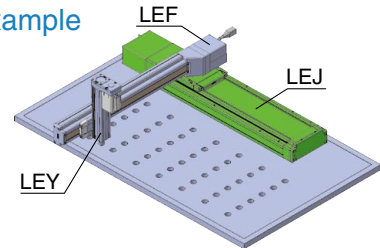
Motorless Type



Belt drive
LEJB Series

Application Example

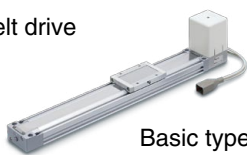
Pick and place



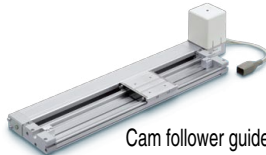
LEM Series

Step Motor (Servo/24 VDC)

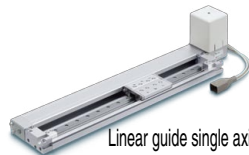
Belt drive



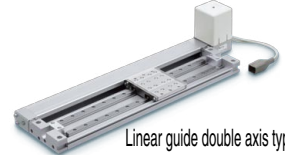
Basic type
LEMB Series



Cam follower guide type
LEMC Series

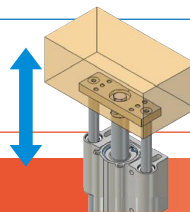


Linear guide single axis type
LEMH Series



Linear guide double axis type
LEMHT Series

Lift Up/Push



Rod Type

LEY Series

Dust-tight/Water-jet-proof (IP65 Equivalent)

Secondary Battery Compatible

Motorless Type

Step Motor (Servo/24 VDC)

Servo Motor (24 VDC)

AC Servo Motor (100/200/400 W)

Motor top mounting type
LEY Series



In-line motor type
LEY□D Series

LEY Series

Guide Rod Type LEYG Series

Step Motor (Servo/24 VDC)

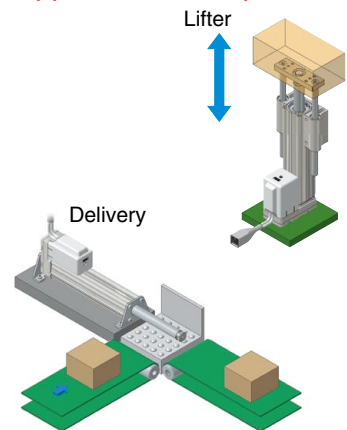
Servo Motor (24 VDC)

AC Servo Motor (100/200 W)

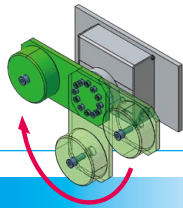
● Lateral end load:
5 times more



Application Examples



Rotate



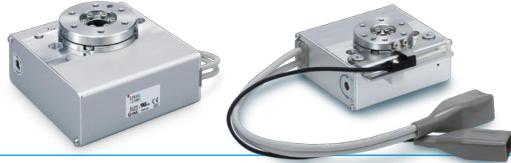
Rotary Table

LER Series

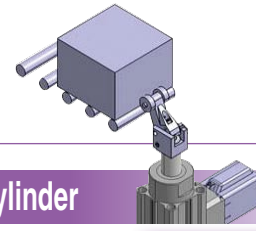
Step Motor (Servo/24 VDC)

[Basic type]
[High precision type]

[Continuous rotation specification]
Rotation angle: 360°



Stop



Electric Stopper Cylinder

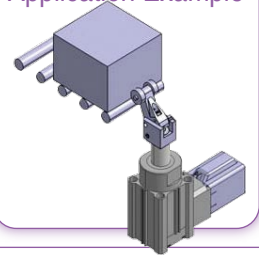
LEB Series

Made to Order

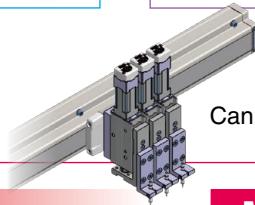
Suitable for conveyor lines
without an air supply



Application Example



Space Saving



Can be mounted with short pitch. (LEP)

Guide Rod Slider

LEL Series

Step Motor (Servo/24 VDC)

Belt drive
● Low-profile/Flat
Height 48 mm



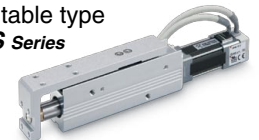
Miniature

LEP Series

Step Motor (Servo/24 VDC)

Rod type
LEPY Series

Slide table type
LEPS Series



Slide Table

Compact Type LES Series

Step Motor (Servo/24 VDC) Servo Motor (24 VDC)



Basic type
LES□R Series

Symmetrical type
LES□L Series

In-line motor type
LES□D Series

High Rigidity Type LESH Series

Step Motor (Servo/24 VDC) Servo Motor (24 VDC)



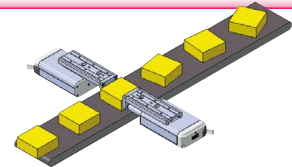
Basic type
LESH□R Series

Symmetrical type
LESH□L Series

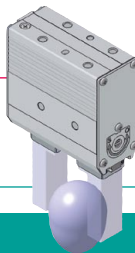
In-line motor type
LESH□D Series

Application Example

Positioning of pallets
on a conveyor



Grip

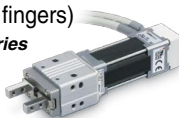


Gripper

LEH Series

Step Motor (Servo/24 VDC)

Z Type (2 fingers)
LEHZ Series



ZJ Type (2 fingers)
With dust cover
LEHZJ Series



F Type (2 fingers)
Long stroke
LEHF Series



S Type (3 fingers)
Can hold round
workpieces.
LEHS Series



Electric Actuators

High Speed

Electric/Positioning

Controller/Driver

Step Motor (Servo/24 VDC)

Servo Motor (24 VDC)

Step Data Input Type

LECP6 Series
LECA6 Series

- 64 points positioning
- Input using controller setting kit or teaching box



Parallel I/O Type

JXC73/83 Series

- 4 axis synchronous control
- Linear/circular interpolation



Step Motor (Servo/24 VDC)

Programless Type

LECP1 Series

- 14 points positioning
- Control panel setting (PC is not required.)



Programless Type (With Stroke Study)

LECP2 Series

- End to end operation similar to an air cylinder
- 2 stroke end points + 12 intermediate points positioning



Specialized for Series LEM

Step Motor (Servo/24 VDC)

Pulse Input Type

LECPA Series



CC-Link Direct Input Type

LECPMJ Series

CC-Link



EtherNet/IP™ Direct Input Type

JXC91 Series

EtherNet/IP



LEC-G Series

CC-Link V2

PROFI BUS

DeviceNet
EtherNet/IP



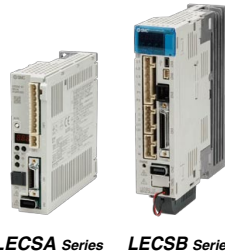
AC Servo Motor

Pulse Input Type

LECSA Series

LECSB Series

- Absolute encoder (LECSB)
- Built-in positioning function (LECSA)



LECSA Series LECSB Series

CC-Link Direct Input Type

LECSA Series

CC-Link



SSCNET III Type

LECSA Series

SSCNET III
SERVO SYSTEM CONTROLLER NETWORK



MECHATROLINK II Type

LECYM Series

MECHATROLINK - II



MECHATROLINK III Type

LECYU Series

MECHATROLINK - III



SSCNET III/H Type

LECSA Series

SSCNET III/H
SERVO SYSTEM CONTROLLER NETWORK



Electric Actuators

Temperature Control
Equipment

Vacuum Equipment

Detection Switches

Static Neutralization
Equipment

Pressure Control
Equipment/Blow Guns

Fittings & Tubing
Flow Control Equipment

Valves

Actuators

SMC's unique production system achieves



Die Maintenance



Aluminum Melting Furnace Line



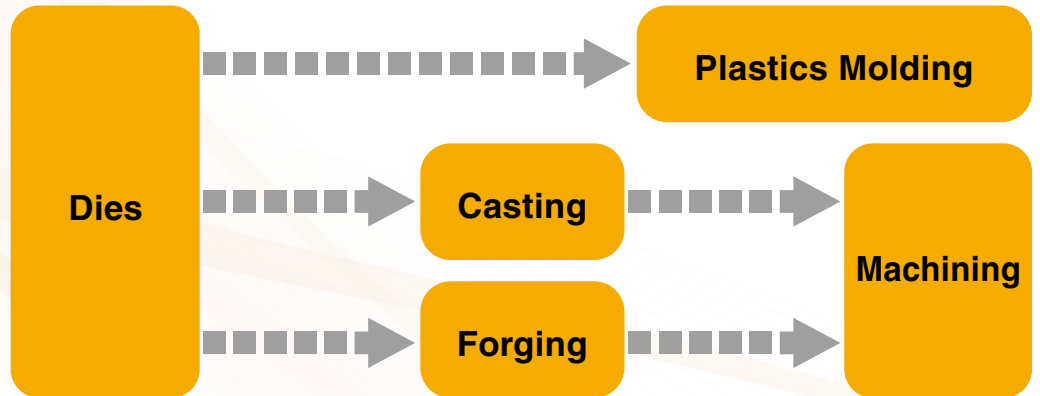
NC Machinery Line



Piston Rod Machinery Line

Production and Supply

SMC's Integrated Production System



Impact Molding



Punching Press

high quality, low cost and a short lead time.

SMC products reflect a market trend towards greater diversification with a vast array of 12,000 basic models and over 700,000 variations. This is made possible by an integrated production system that includes casting, machining, surface treatment, coating, assembly and inspection, all performed in SMC's factories in order to supply our products with a high level of quality, reasonable pricing and shorter delivery times to our customers. Furthermore, we use a unique production control system in which instructions for all production operations are performed automatically based on information from orders received. As a result, SMC has achieved shorter lead times for its product.



Valve Body Machining



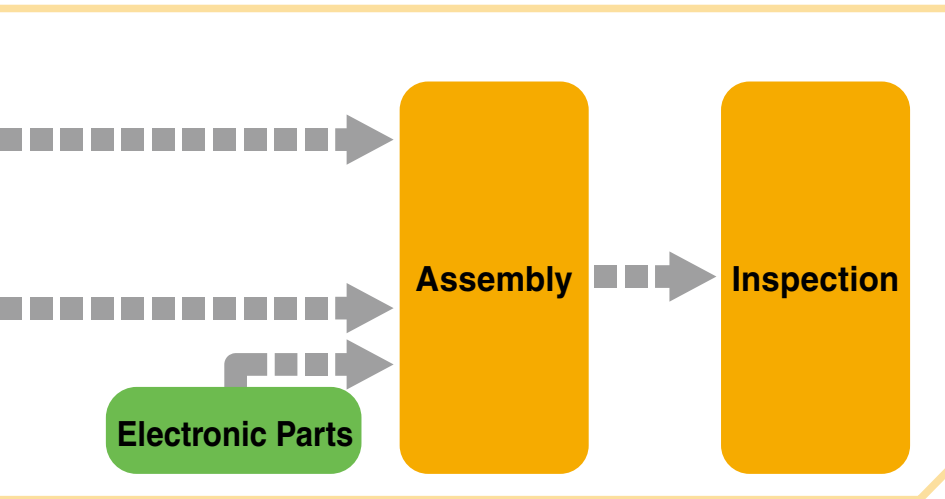
Plastics Molding



Coil Winding



Clean Room



Assembly/Inspection of Temperature Control Equipment



Electronic Substrate Mounting



Automatic Assembly Equipment



A global production network supports a stable & continuous supply of high quality products throughout the world.

SMC delivers products for world markets from five key factory locations in Japan, in the Tsukuba district of Ibaraki prefecture and the Soka district of Saitama prefecture, as well as from other key locations in China and Singapore. Additionally, to respond quickly and increase flexibility to the demands of the local market, overseas production facilities have been established in SMC subsidiaries around the world.

1 Production Facilities (Japan)



Soka Area (Saitama Pref.)

Total land area: 31,757 m²
Total floor area: 47,920 m²



Tsukuba Area (Ibaraki Pref.)

Total land area: 171,939 m²
Total floor area: 79,884 m²



Kamaishi Area (Iwate Pref.)

Total land area: 86,196 m²
Total floor area: 52,396 m²



Tohno Factory (Iwate Pref.)

Total land area: 78,845 m²
Total floor area: 28,536 m²



Yamatsuri Factory (Fukushima Pref.)

Total land area: 315,761 m²
Total floor area: 44,362 m²



Distribution Center (Ibaraki Pref.)

Total land area: 32,207 m²
Total floor area: 19,514 m²

2 Key Overseas Production Facilities



China Factory

SMC (China) Co., Ltd.
Total land area: 172,558 m²
Total floor area: 115,389 m²

SMC (Beijing) Manufacturing Co., Ltd.
Total land area: 315,857 m²
Total floor area: 147,056 m²



Singapore Factory

SMC Manufacturing (Singapore) Pte. Ltd.
Total land area: 47,911 m²
Total floor area: 37,800 m²



3 Overseas Local Production Facilities

North, Central & South America



■ U.S.A.



■ Brazil



■ Mexico

- Chile
- Argentina
- Bolivia

Europe/Africa



■ Germany



■ U.K.



■ Italy

- Switzerland
- Austria
- Sweden
- France
- Spain
- Turkey
- South Africa



■ Russia



■ Czech Republic

Asia/Oceania



■ Australia



■ Korea



■ India

- Singapore
- Malaysia
- New Zealand
- Hong Kong
- China (Guangzhou)
- Taiwan
- Thailand

Pneumatic Equipment for Food Industry

