

Equipment for Machine Tools

SMC offers machine tool solutions to meet



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your automation and labor-saving needs.



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Air Preparation Equipment



Air Preparation Equipment

Air Cooled Aftercooler

HAA Series

- Applicable compressor: 7.5 to 37 kW
- Air flow capacity: 35.3 to 201.3 scfm [1000 to 5700 L/min (ANR)]



Water Cooled Aftercooler

HAW Series

- Applicable compressor: 2.2 to 110 kW
- Air flow capacity: 10.6 to 635.6 scfm [300 to 18000 L/min (ANR)]



Air Tank

AT Series

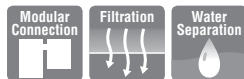
- Tank capacity: 26.4 to 792.5 gal [100 to 3000 L]
- Port size: 15A (1/2) to 4B flange



Main Line Filter

AFF Series

- Nominal filtration rating: 3 μm (Filtration efficiency: 99%)
- Rated flow: 10.6 to 1589 scfm [300 to 45000 L/min (ANR)]
- Port size: 6A (1/8) to 4B flange
- Modular connection (1/8 to 1)



Water Separator

AMG Series



- Water removal rate: 99%
- Rated flow: 10.6 to 423.7 scfm [300 to 12000 L/min (ANR)]
- Port size: 6A to 50A (1/8 to 2)
- Modular connection (1/8 to 1)



Refrigerated Air Dryer Double Energy Saving Function Series

IDF100FS/125FS/150FS Series



- Power consumption: Reduced by up to 76%
- Exhaust heat: Reduced by up to 25%
- Applicable compressor: 100, 125, 150 kW
- Air flow capacity: 18.8 to 27.0 m³/min (ANR)
- Refrigerant: R134a (HFC), R407C (HFC)
Zero ozone depletion potential



Refrigerated Air Dryer

IDF1E to 370D Series

- Applicable compressor: 0.75 to 370 kW
- Air flow capacity: 0.10 to 65.0 m³/min (ANR)
- Refrigerant: R134a (HFC), R407C (HFC)
Zero ozone depletion potential



Refrigerated Air Dryer

IDU3E to 75E Series



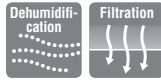
- Applicable compressor: 2.2 to 75 kW
- Air flow capacity: 0.32 to 12.4 m³/min (ANR)
- Refrigerant: R134a (HFC), R407C (HFC)
Zero ozone depletion potential



Air Preparation Equipment

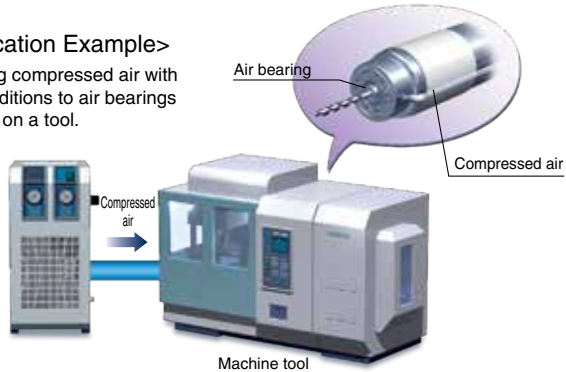
Thermo-dryer with Air Temperature Adjustment Function IDH□ Series

- Provides a stable supply of temperature and pressure controlled dry clean air. It is possible to supply compressed air with the same conditions and quality regardless of the season.
- Built-in filter
Filter nominal filtration rating: 0.01μm (99.9% filtration efficiency)
Outlet oil mist concentration: Max. 0.01 mg/m³ (ANR)
Outlet cleanliness:
Particles of 0.3μm or more: 3.5 particles/L (ANR) or less
- Compatible with power supplies all over the world
Single-phase 100 VAC, 200 VAC, 230 VAC (50/60 Hz)



<Application Example>

Supplying compressed air with fixed conditions to air bearings mounted on a tool.



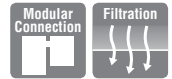
Mist Separator AM Series

- Nominal filtration rating:
0.3μm (Filtration efficiency: 99.9%)
- Rated flow:
10.6 to 423.7 scfm [300 to 12000 L/min (ANR)]
- Port size: 6A to 50A (1/8 to 2)



Micro Mist Separator AMD Series

- Nominal filtration rating:
0.01μm (Filtration efficiency: 99.9%)
- Rated flow:
7 to 1412 scfm [200 to 40000 L/min (ANR)]
- Port size: 6A (1/8) to 6B flange



Super Mist Separator AME Series

- Nominal filtration rating:
0.01μm (Filtration efficiency: 99.9%)
- Rated flow:
7 to 423.7 scfm [200 to 12000 L/min (ANR)]
- Port size: 6A to 50A (1/8 to 2)



Odor Removal Filter AMF Series

- Nominal filtration rating:
0.01μm (Filtration efficiency: 99.9%)
- Rated flow:
7 to 423.7 scfm [200 to 12000 L/min (ANR)]
- Port size: 6A to 50A (1/8 to 2)





Air Pressure Supply Equipment



Modular F.R.L.

Modular F.R.L. Units

AC Series

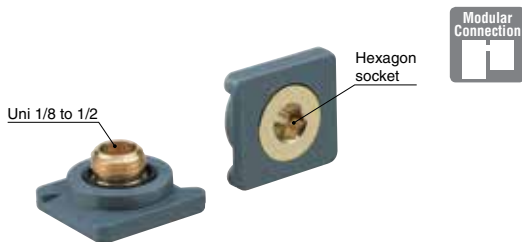


- Better visibility & environmental resistance
- Easy element replacement
Integrated element and bowl.
Replacement can be done by hand.
- Reduced required maintenance space: Max. 46% reduction
- Pressure gauge is selectable according to application.
Square embedded type pressure gauge, Round type pressure gauge, Digital pressure switch



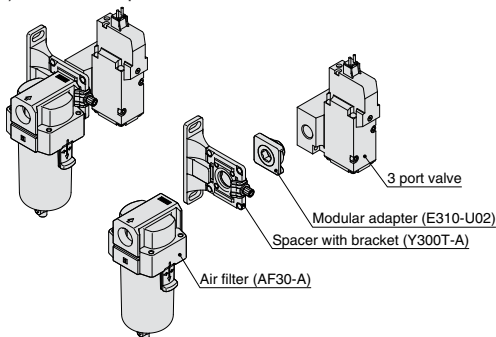
Modular Adapter

E210/310/410 Series



Connects easily to current products!

Example) Air filter + 3 port valve



Flexible mounting

- Can be connected to current products such as 3 port valves and F.R.L. Units.
- Can be freely rotated, thus allowing a wide selection of mounting directions.
- Can be connected to current products of different sizes.
Example: AF30 + ARG20

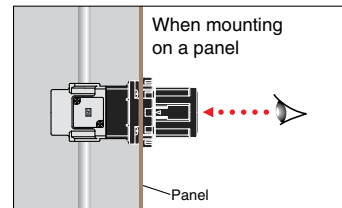
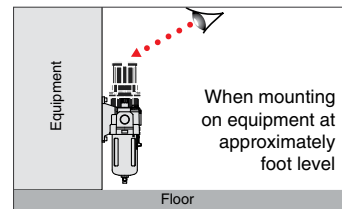
Reduced space/piping maintenance cost

- Can be connected/disconnected without rotation.
- Fittings, tube, etc. are not required for connection.

Regulator with Built-in Pressure Gauge

ARG Series

Visibility of pressure gauge is improved in various installation locations.



Soft Start-up Valve

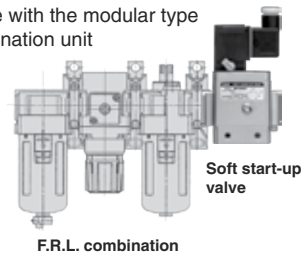
AV Series



- 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



Connectable with the modular type F.R.L. combination unit



Mechanical Valves

Compliant with OSHA Standards: Pressure Relief

3 Port Valve with Locking Holes

VHS Series



- Compliant with OSHA standards (Occupational Safety and Health Administration Department of Labor).



- Manually operated valve can be used to prevent accidents caused by residual pressure in pneumatic lines.
- It is 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.



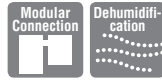
For pressure relief

Air Preparation Equipment

Membrane Air Dryer IDG□A/IDG Series



- It is possible to easily supply dry air using the hollow fiber membrane.
- Non-fluorocarbon
- Power supply not required.
- Compatible with low dew points -76°F [-60°C]
- No vibration or heat discharge.
- With dew point indicator



Air Preparation Filters AFF/AM□ Series



Main Line Filter AFF Series

Series	AFF
Nominal filtration rating [μm]	3 (Filtration efficiency: 99%)
Rated flow scfm [L/min (ANR)]	11 to 1589 [300 to 45000]
Port size	1/8 to 4 ^B flange



Micro Mist Separator AMD Series

Series	AMD
Nominal filtration rating [μm]	0.01 (Filtration efficiency: 99.9%)
Rated flow scfm [L/min (ANR)]	7 to 1412 [200 to 40000]
Port size	1/8 to 6 ^B flange



Super Mist Separator AME Series

Series	AME
Nominal filtration rating [μm]	0.01 (Filtration efficiency: 99.9%)
Rated flow scfm [L/min (ANR)]	7 to 424 [200 to 12000]
Port size	1/8 to 2

Water Separator AMG Series



- Eliminates water droplets in the compressed air.
- Water removal rate: 99%
- Easy! Convenient! Eliminates water droplets just by connecting to air line!



Series	AMG
Air flow capacity	11 to 424 scfm [300 to 12000 [L/min (ANR)]]
Port size	1/8 to 2



Mist Separator AM Series

Series	AM
Nominal filtration rating [μm]	0.3 (Filtration efficiency: 99.9%)
Rated flow scfm [L/min (ANR)]	11 to 424 [300 to 12000]
Port size	1/8 to 2



Micro Mist Separator with Pre-filter AMH Series

Series	AMH
Nominal filtration rating [μm]	0.01 (Filtration efficiency: 99.9%)
Rated flow scfm [L/min (ANR)]	7 to 424 [200 to 12000]
Port size	1/8 to 2



Odor Removal Filter AMF Series

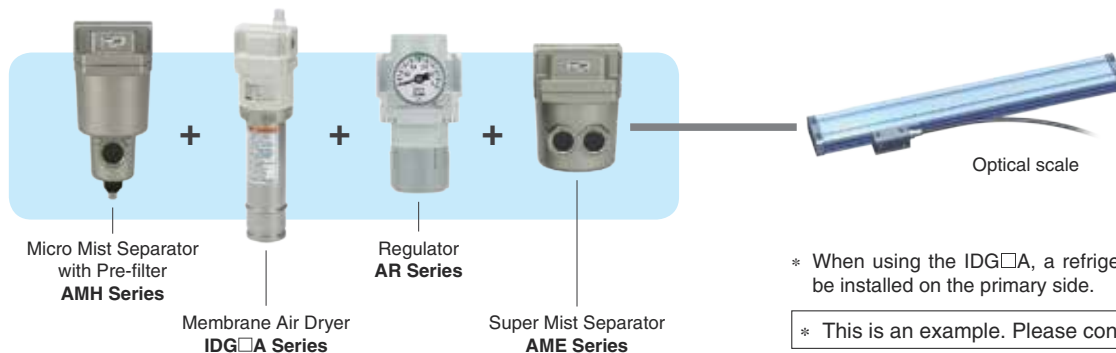
Series	AMF
Nominal filtration rating [μm]	0.01 (Filtration efficiency: 99.9%)
Rated flow scfm [L/min (ANR)]	7 to 424 [200 to 12000]
Port size	1/8 to 2

ISO Quality Class

Select equipment according to the compressed air quality class in ISO 8573-1:2010 (JIS B 8392-1:2012). For details, refer to the Air Preparation Equipment Selection Guide in the **Web Catalog** of our website.

<Example of System>

Quality of the air class required by the application can be achieved.



Pneumatic Solenoid Valves

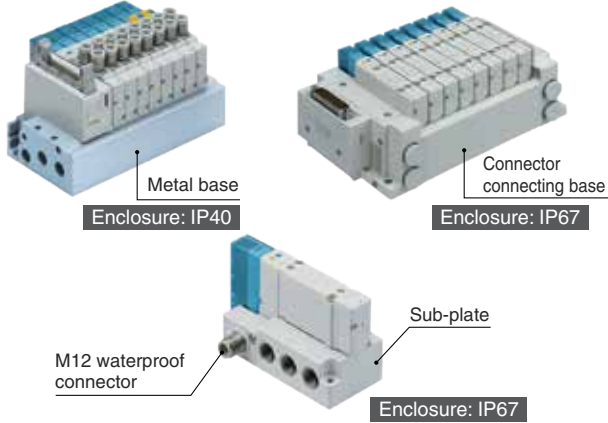
Plug-in Type

5 Port Solenoid Valve

SY Series



- Power consumption: 0.1 W (With power saving circuit)/0.35 W (Standard)
- Service life: 200 million cycles (Metal seal)/70 million cycles (Rubber seal)



Series	Flow rate characteristics		Applicable cylinder size*1
	4/2→5/3 (A/B→EA/EB)		
	C[dm ³ /(s·bar)]	b	
SY3000	1.6	0.19	ø50
SY5000	3.6	0.17	ø63
SY7000	5.9	0.20	ø80

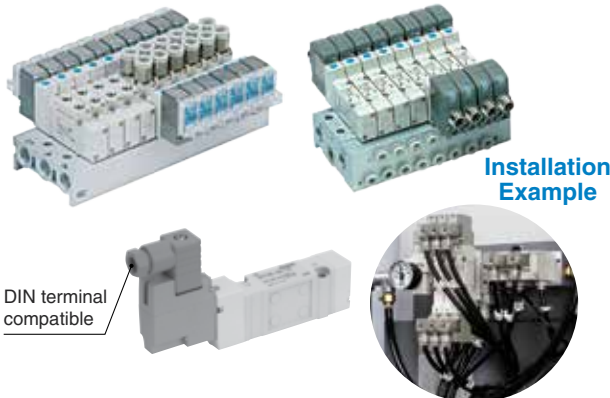
*1 Use as a guide for selection.
Please check the actual conditions with SMC Model Selection Software.

5 Port Solenoid Valve

SY Series



- Power consumption: 0.1 W (With power saving circuit)/0.35 W (Standard)
- Combined mounting of 3 port valve and 5 port valve is possible.
- A wide variety of manifold options, such as aluminum body manifold, DIN rail, and stacking type manifold, are available.
- UL Standards compliant product is available. (30-SY)



Series	Flow rate characteristics		Applicable cylinder size*1
	4/2→5/3 (A/B→EA/EB)		
	C[dm ³ /(s·bar)]	b	
SY3000	1.1	0.30	ø40
SY5000	2.8	0.29	ø63
SY7000	4.5	0.27	ø80
SY9000	10	0.29	ø100

*1 Use as a guide for selection.
Please check the actual conditions with SMC Model Selection Software.

Compliant with ISO13849-1 Categories:
3 Port Solenoid Valve/Residual Pressure Release Valve
with Detection of Main Valve Position

VP/VG Series



With Detection of Main Valve Position **Category 2**



The detecting function of the main valve position detects inconsistencies between the input signal and valve operation.

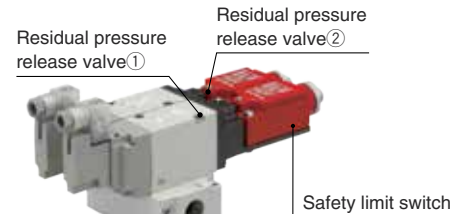


Redundant system can be constructed easily. **Category 3, 4**

When the dual residual pressure release valve is used, if one of the valves fails to operate, the other one releases residual pressure.

Dual Residual Pressure Release Valve

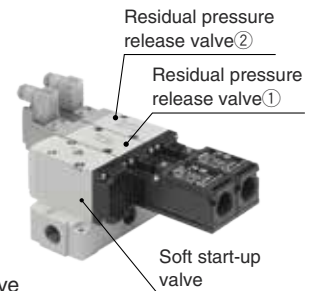
VP544-X538



With Soft Start-up Function

VP544-X555

A function to gradually increase the initial pressure of the pneumatic system has been added to the dual residual pressure release valve.

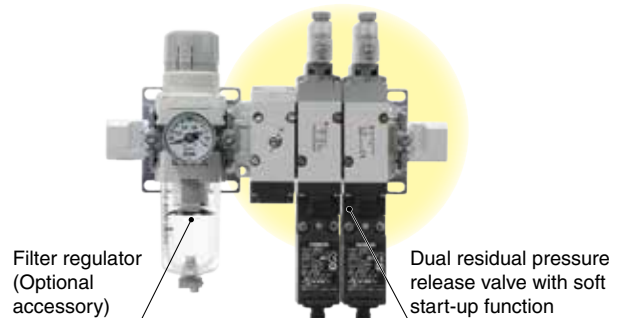


Dual Residual Pressure Release Valve

VG342-X87



Can be connected to modular type F.R.L. units.



Products do not come assembled. They should be ordered separately and assembled by the customer.

Modular Connection Type
Residual Pressure Relief 3 Port Solenoid Valve

VP500/700 Series

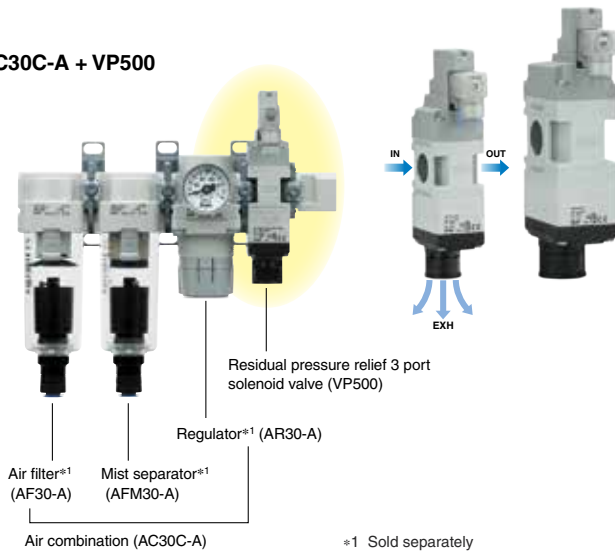


- Allows for space saving and reduced piping labor.
- Power consumption: 0.35 W (Without light)
- Can be connected to F.R.L. units.



Series	Applicable combination		
	AC25-A	AC30-A	AC40-A
VP500	●	●	
VP700			●

AC30C-A + VP500



Products do not come assembled. They should be ordered separately and assembled by the customer.

■ Pressure Switches

3-Screen Display
High-Precision Digital Pressure Switch

ISE20 Series



- Visualization of setting items
- Simple 3-step setting
- Easy screen switching:
Setting is possible while checking the measured value.
- Delay time: Fastest 1.5 ms or less
- Current consumption: 25 mA or less
- Enclosure: IP40



Series	Type	Rated pressure range
ISE20	Positive pressure	-14.5 to 145 psi [-0.100 to 1.000 MPa]

2-Color Display
High-Precision Digital Pressure Switch

ISE40A Series



- Enclosure: IP65
- Can copy up to 10 switches simultaneously.
- 3-step setting
- With One-touch fitting



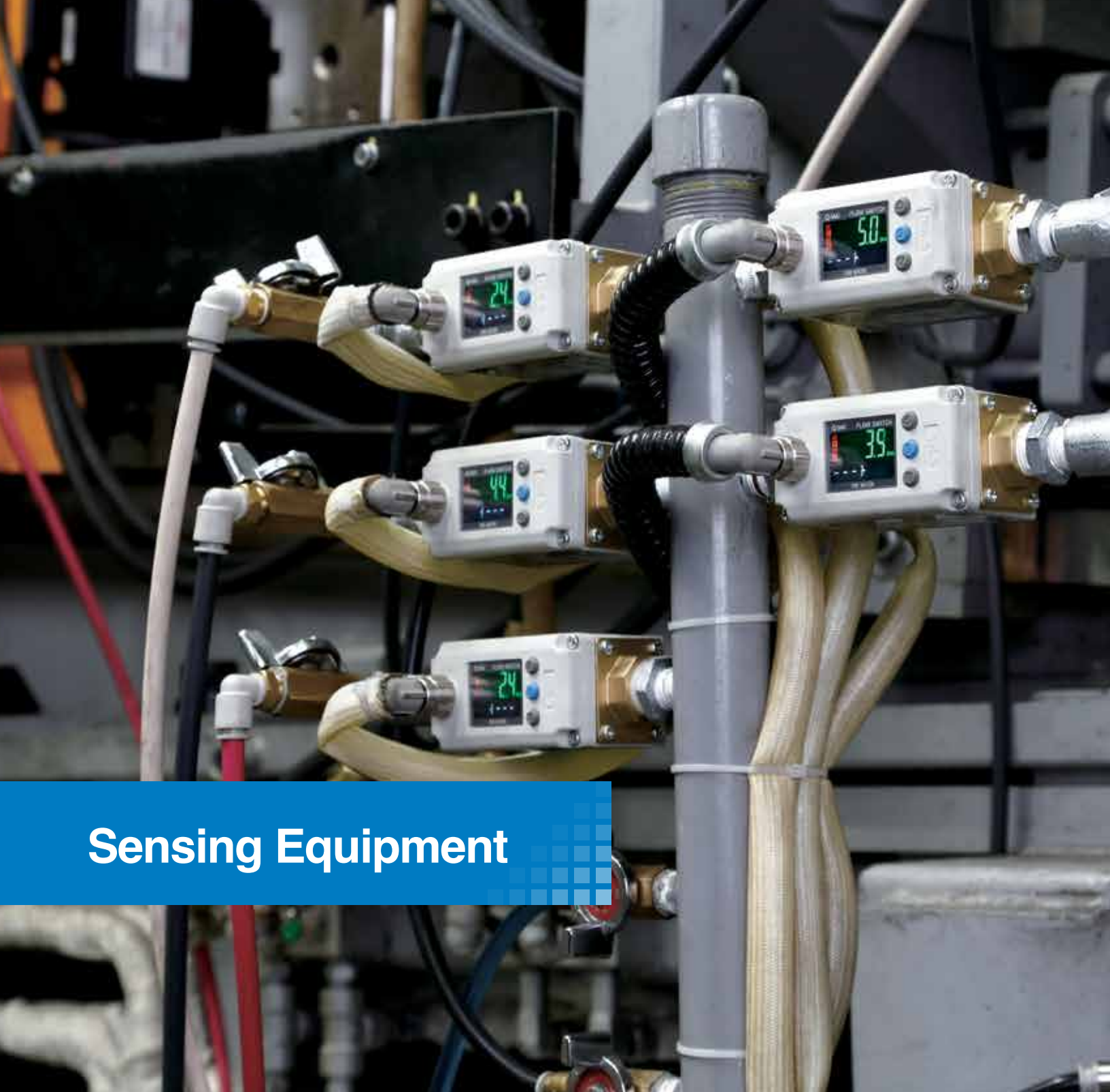
Series	Type	Rated pressure range
ISE40A	Positive pressure	-14.5 to 145 psi [-0.100 to 1.000 MPa]

■ Fittings

S Couplers
KK130 Series

- Pressure loss reduction leads to energy saving.
 - Cv factor: Increased by 34% *1
 - Plug insertion force: Reduced by 22% (20 N) *1
 - Lightweight: Reduced by 14% (12 g) *1
- *1 Compared to the current KK13 series.





Sensing Equipment



Pressure Switches

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



- Visualization of setting items
- Simple 3-step setting
- Easy screen switching:
Setting is possible while checking the measured value.
- Delay time: Fastest 1.5 ms or less
- Current consumption: 25 mA or less
- Enclosure: IP40



Series	Type	Rated pressure range
ZSE20F	Compound pressure	-14.5 to 14.5 psi [-100.0 to 100.0 kPa]
ZSE20	Vacuum pressure	0 to -14.6 psi [0.0 to -101.0 kPa]
ISE20	Positive pressure	-14.5 to 145 psi [-0.100 to 1.000 MPa]

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



- Enclosure: IP65
- Can copy up to 10 switches simultaneously.
- 3-step setting
- With One-touch fitting



Series	Type	Rated pressure range
ZSE40AF	Compound pressure	-14.5 to 14.5 psi [-100.0 to 100.0 kPa]
ZSE40A	Vacuum pressure	0 to -14.7 psi [0.0 to -101.3 kPa]
ISE40A	Positive pressure	-14.5 to 145 psi [-0.100 to 1.000 MPa]

Installation Example



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



- Metal body type (Die-cast aluminum)
- Enclosure: IP67
- With M12 connector



Series	Type	Rated pressure range
ISE70	Positive pressure (for air)	0 to 145 psi [0 to 1 MPa]
ISE75	Positive pressure (for general fluids)	0 to 1450 psi [0 to 10 MPa]
ISE75H	Positive pressure (for general fluids)	0 to 2176 psi [0 to 15 MPa]

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



- The stainless diaphragm makes it suitable for a wide variety of fluids.
- VCR® and Swagelok® fittings are available.
- Enclosure: IP65



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

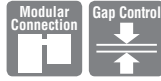
Series	Type	Rated pressure range
ZSE80F	Compound pressure	-14.5 to 14.5 psi [-100.0 to 100.0 kPa]
ZSE80	Vacuum pressure	0 to -14.6 psi [0.0 to -101.0 kPa]
ISE80	Positive pressure	-14.5 to 145psi [-0.100 to 1.000 MPa]
ISE80H	Positive pressure	-14.5 to 290 psi [-0.100 to 2.000 MPa]

Pressure Switches

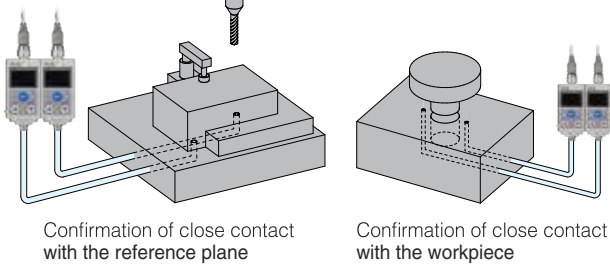
3-Color Display Digital Gap Checker ISA3 Series



- Check at a glance if a workpiece is placed or not.
- The clearance distance between the detection surface and the workpiece can be found intuitively.
- Simple setting: Change the settings while checking the displayed value.
- Energy saving: Air consumption reduced by 60%
- Improved drainage resistance: 10 times or more
- Enclosure: IP67 equivalent



Application Examples



Series	Rated distance range	Supply side piping specifications	Detection side piping specifications
ISA3-F	0.01 to 0.03 mm	Rc, G 1/8	ø4, ø6 One-touch fitting, G 1/8
ISA3-G	0.02 to 0.15 mm	Rc, G 1/8	ø4, ø6 One-touch fitting, G 1/8
ISA3-H	0.05 to 0.30 mm	Rc, G 1/8	ø4, ø6 One-touch fitting, G 1/8

Compact Pneumatic Pressure Sensor PSE54 Series



- Analog output (voltage)
- Enclosure: IP40



Series	Type	Rated pressure range
PSE541	Vacuum pressure	0 to -14.6 psi [0 to -101 kPa]
PSE543	Compound pressure	-14.5 to 14.5 psi [-100 to 100 kPa]
PSE540	Positive pressure	0 to 145 psi [0 to 1 MPa]

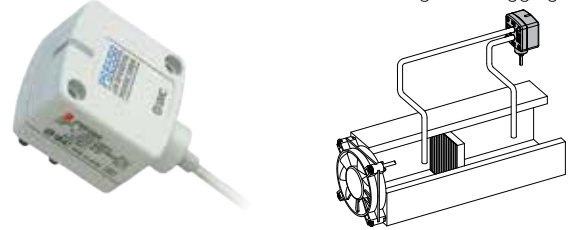
Low Differential Pressure Sensor PSE550 Series



- Suitable for applications such as air current volume maintenance, filter blockage, and liquid surface detection.
- Analog output (voltage/current)
- Enclosure: IP40



Application Example Monitoring filter clogging



Series	Type	Rated pressure range
PSE550	Vacuum pressure	0 to 0.29 psi [0 to 2 kPa]

Pressure Sensor for General Fluids PSE57 Series



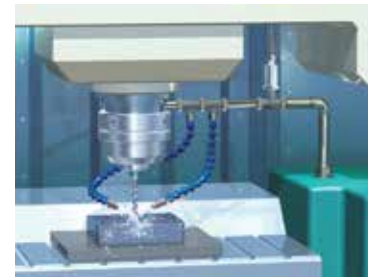
- Materials of parts in contact with fluid
- Enclosure: IP65

Piping port	C3604 + Nickel plating
Pressure sensor	Al ₂ O ₃ (Alumina 96%)



Application Example

Liquid coolant pressure control



Series	Type	Rated pressure range	Proof pressure
PSE570	Positive pressure	0 to 145 psi [0 to 1 MPa]	435 psi [3.0 MPa]
PSE573	Compound pressure	-14.5 to 14.5 psi [-100 to 100 kPa]	87 psi [600 kPa]
PSE574	Positive pressure	0 to 73 psi [0 to 500 kPa]	218 psi [1.5 MPa]
PSE575	Positive pressure	0 to 290 psi [0 to 2 MPa]	725 psi [5.0 MPa]
PSE576	Positive pressure	0 to 725 psi [0 to 5 MPa]	1813 psi [12.5 MPa]
PSE577	Positive pressure	0 to 1450 psi [0 to 10 MPa]	4351 psi [30 MPa]

Multi-Channel Digital Pressure Sensor Controller PSE200 Series



- 4 inputs, 5 outputs
- Applicable sensor: PSE53□, 54□, 56□, 570/573
- Enclosure: IP65 (Front face), IP40 (Others)



Series	Set pressure range
PSE200	-14.6 to 14.6 psi [-101 to 101 kPa]
	1.45 to -14.6 psi [10 to -101 kPa]
	-1.45 to 14.6 psi [-10 to 101 kPa]
	-14.5 to 145 pi [-0.1 to 1 MPa]

2-Color Display Digital Pressure Sensor Controller PSE300 Series



- 1 input, 2 outputs
- Applicable sensor: PSE53□, 54□, 550, 56□, 570/573/574
- Enclosure: IP40



Series	Set pressure range
PSE300	-14.6 to 14.6 psi [-101 to 101 kPa]
	1.45 to -14.6 psi [10 to -101 kPa]
	-1.45 to 14.6 psi [-10 to 100 kPa]
	-14.5 to 145 pi [-0.1 to 1 MPa]
	-7.3 to 73 psi [-50 to 500 kPa]
	0.029 to 0.29 psi [-0.2 to 2 kPa]

Pneumatic Pressure Switch IS3000 Series



- Micro switch type
- Can be used for micro loads around 10 mA.
- With neon light



Series	Type	Set pressure range
IS3000	Positive pressure	14.5 to 102 psi [0.1 to 0.7 MPa]

General Purpose Pressure Switch: Snap Switch Type ISG Series



- For general fluids
- Equivalent to IP44 (Drip proof)
- With neon light



Open type Open and hysteresis scale plate type Drip proof

Series	Type	Set pressure range
ISG11□, 21□	Positive pressure	2.9 to 44 psi [0.02 to 0.3 MPa]
ISG12□, 22□	Positive pressure	7.3 to 102 psi [0.05 to 0.7 MPa]
ISG13□, 23□	Positive pressure	14.5 to 145 psi [0.1 to 1.0 MPa]
IS2761	Positive pressure	14.5 to 145 psi [0.1 to 1.0 MPa]
ISG19□, 29□	Vacuum pressure	-1.45 to -14.5 psi [-10 to -100 kPa]

Flow Switches

2-Color Display Digital Flow Switch PFMB Series



- Dry air, N₂
- Grease-free
- Integrated flow adjustment valve
- Compact, Space saving
- Enclosure: IP40



Series	Rated flow range cfm [L/min]
PFMB	0.07 to 7.06 [2 to 200]
	0.18 to 17.7 [5 to 500]
	0.35 to 353 [10 to 1000]
	0.71 to 70.6 [20 to 2000]

Flow Switches

3-Color Display Digital Flow Switch PFMC Series



- Dry air, N₂
- 3-color/2-screen display
- Expanded flow range: Wide range of flow measurement is possible with one product.
- Compact, Space saving
- Enclosure: IP65



Series	Rated flow range cfm [L/min]
PFMC	0.18 to 17.7 [5 to 500]
	0.35 to 35.3 [10 to 1000]
	0.71 to 70.6 [20 to 2000]

Digital Flow Switch for Air PF2A Series



- 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
- Port size: 6A to 50A (1/8 to 2)
- Enclosure: IP65



Series	Rated flow range cfm [L/min]
PF2A	0.04 to 0.35 [1 to 10]
	0.18 to 1.77 [5 to 50]
	0.35 to 3.53 [10 to 100]
	0.71 to 7.06 [20 to 200]
	1.77 to 17.7 [50 to 500]
	5.30 to 106 [150 to 3000]
	10.6 to 212 [300 to 6000]
	21.2 to 424 [600 to 12000]

Installation Example



3-Color Display Digital Flow Switch for Water PF3W Series



- Flow sensor with 3-color/2-screen display
- Integrated temperature sensor
- 40% smaller (compared with PF2W)
- Grease-free
- Fluid temperature: 32 to 194°F [0 to 90°C]
- PVC piping type: Applicable to deionized water and chemical liquids
- Enclosure: IP65

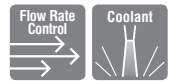


Series	Rated flow range gal/min [L/min]
PF3W	0.11 to 0.88 [0.5 to 4]
	0.44 to 3.52 [2 to 16]
	1.1 to 8.8 [5 to 40]
	2.2 to 22 [10 to 100]
	11 to 55 [50 to 250]

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

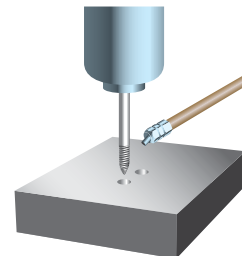


- Pressure loss: 2.9 psi [0.02 MPa] or less
- Reverse flow can be detected.
- Operating fluid temperature: 32 to 185°F [0 to 85°C]
- Applicable fluid: Water, Water-soluble coolant
- Enclosure: IP65



Application Example

Flow control for water-soluble coolant



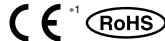
Series	Rated flow range gal/min [L/min]
LFE□	0.11 to 4.4 [0.5 to 20]
	0.55 to 22 [2.5 to 100]
	1.1 to 44 [5 to 200]

Stroke Reading Cylinders

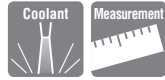
High Precision Stroke Reading Cylinder

CEP1 Series

*1 CE-compliant: When connecting to a multi-counter (CEU5□□-D, power supply voltage 24 VDC). Refer to the multi-counter operation manual for details.



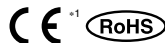
- Can be used in an environment where the product is exposed to fluids (water, oil, coolant, etc.).
- Resolution: 0.01 mm (Accuracy ± 0.02 mm)
- Standard with special scraper.



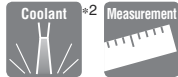
Stroke Reading Cylinder

CE1 Series

*1 CE-compliant: When connecting to a multi-counter (CEU5□□-D, power supply voltage 24 VDC). Refer to the multi-counter operation manual for details.



- Can be used in an environment where the product is exposed to fluids (water, oil, coolant, etc.). (Special order *2)
- Resolution: 0.1 mm (Accuracy ± 0.2 mm)

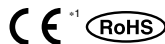


*2 The CE1 series does not come standard scraper. Please contact SMC to special order a cylinder with a scraper. (Exceptions: $\phi 12$, $\phi 20$)

Multi-counter

CEU5 Series

*1 CE-compliant: When connecting to a stroke reading cylinder (CE1) or a high precision stroke reading cylinder (CEP1). (CEU5□□-D type) For details, refer to the operation manual.



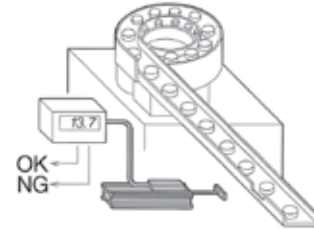
- Counter for connecting the CE1 series or CEP1 series



Application Examples

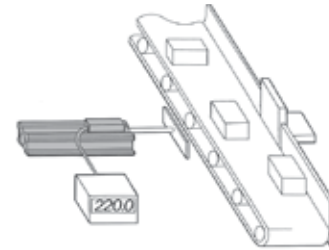
Parts inspection

Measures the dimensions of parts, discriminates between good and defective articles, prevents the mixing of different parts, etc.



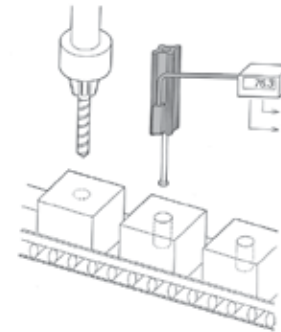
Length/width discrimination

Distinguishes between lengthwise or crosswise while correcting the position of a workpiece.



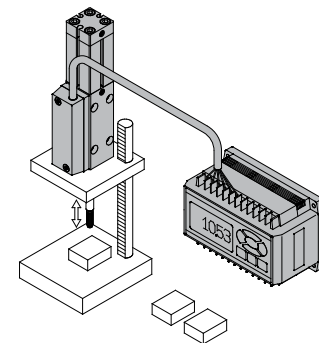
Inspection of machined holes

Can detect machined hole depth, burrs, foreign matter, etc.



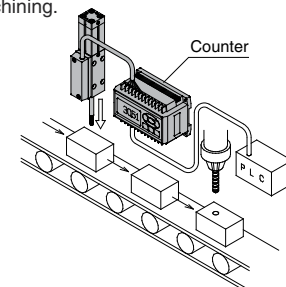
Measurement of dimensions

Can measure dimensions of parts.



Measurement of machining dimensions

Performs adjustment of machining depth, etc. by measuring the part dimensions before machining.





Coolant Equipment



2/3 Port Valves for Fluid Control

Coolant Valve SGC Series



- Low power consumption: 0.35 W (for 24 VDC/Y type)
- Max. operating pressure:
73 psi, 145 psi, 232 psi [0.5 MPa, 1 MPa, 1.6 MPa]
- Service life: 5 million cycles or more
(Based on SMC's test conditions)



Series	Valve type	Port size	Orifice dia. [mmø]
SGC	N.C./N.O.	3/8 to 2	9 to 51

Installation Example



High Pressure Coolant Valve SGH Series



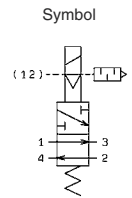
- Max. operating pressure: 435 psi, 1015 psi [3 MPa, 7 MPa]
- Compatible with high-speed grinding and long drilling processes
- Coolant valve for high-pressure coolant liquid that is ideal for lubrication, dust blowing, and cooling
- Low power consumption: 0.35 W (for 24 VDC)
- Service life: 3 million cycles or more
(Based on SMC's test conditions)



Series	Valve type	Port size	Orifice dia. [mmø]
SGH	N.C./N.O.	3/8 to 1	6 to 15.4

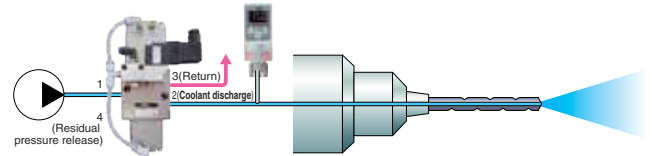
4 Port Coolant Valve Made to Order

- Can be used as a pressure relief valve when through coolant is used.
- Prevents malfunctions caused by residual pressure and improves cycle time.



DXT513H□-□□-□□□1 (1015 psi [7MPa])
DXT544M□-□□-□□□1 (580 psi [4 MPa])

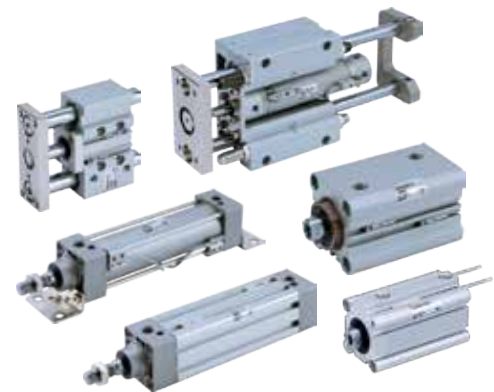
Application Example



Air Cylinders

Water Resistant Cylinder

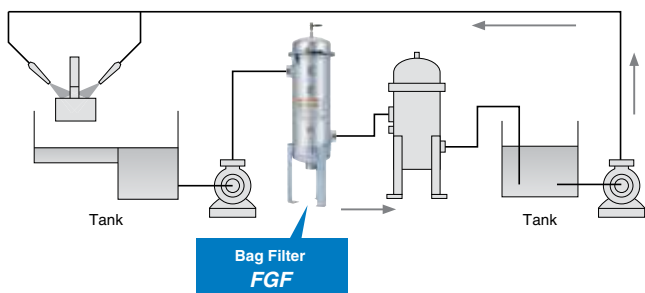
- Compatible with an operating environment using coolants
- Anti-coolant performance has been improved compared to the standard cylinders.
- With water resistant 2-color indicator auto switch



Industrial Filters

Bag Filter FGF Series

- Ideal for high flow filtration. (Max. 528gal/min [2000 L/min])
- Port size: Rc2, 100 (4^B)JIS10^KFF, 150 (6^B)JIS10^KFF



Industrial Filter/Vessel Series FGD Series

- Ideal for low flow filtration. (Max. 15.9 gal/min [60 L/min])
- Port size: Rc3/8, 1/2, 3/4



Filter for Cleaning Fluid/Quick Change Filter FQ1 Series

- No tools required, easy element replacement
- Ideal for low flow filtration. (Max. 7.9 gal/min [30 L/min])
- Port size: Rc1/2, 3/4, 1



Pressure Switches

2-Color Display Digital Pressure Switch/ For General Fluids

ISE75/75H Series



- Rated pressure: 1450 psi/2176 psi [10 MPa/15 MPa]
- Metal body type (Die-cast aluminum)
- Enclosure: IP67
- With M12 connector



Series	Type	Rated pressure range
ISE75	Positive pressure (for general fluids)	0 to 1450 psi [0 to 10 MPa]
ISE75H	Positive pressure (for general fluids)	0 to 2176 psi [0 to 15 MPa]

2-Color Display Digital Pressure Switch ISE80H Series

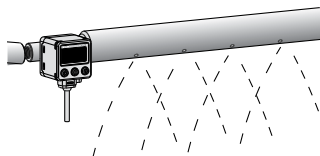


- The stainless diaphragm makes it suitable for a wide variety of fluids.
- Enclosure: IP65
- Withstand pressure: 580 psi [4 MPa]
- VCR® and Swagelok® fittings are available.
- Applicable fluid: Water, Argon, Hydraulic fluid (JIS-K2213), Carbon dioxide, Silicone oil (JIS-K2213), Air-containing drainage, Lubricant (JIS-K6301), Nitrogen, Fluorocarbon

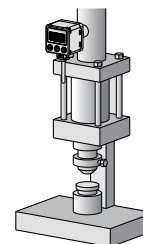


Application Examples

Confirmation of supply pressure of cleaning lines



Confirmation of working pressure of hydraulic cylinder



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

Series	Type	Rated pressure range
ISE80H	Positive pressure	-14.5 to 290 psi [-0.100 to 2.000 MPa]

Pressure Sensor for General Fluids

PSE57 Series

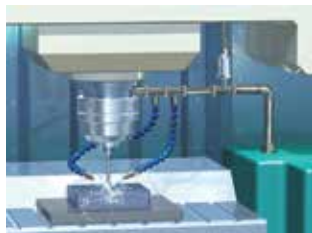
- Materials of parts in contact with fluid

Piping port	C3604 + Nickel plating
Pressure sensor	Al ₂ O ₃ (Alumina 96%)

- Enclosure: IP65

**Application Example**

Liquid coolant pressure control



Series	Type	Rated pressure range	Proof pressure
PSE570	Positive pressure	0 to 145 psi [0 to 1 MPa]	435 psi [3.0 MPa]
PSE573	Compound pressure	-14.5 to 14.5 psi [-100 to 100 kPa]	87 psi [600 kPa]
PSE574	Positive pressure	0 to 73 psi [0 to 500 kPa]	218 psi [1.5 MPa]
PSE575	Positive pressure	0 to 290 psi [0 to 2 MPa]	725 psi [5.0 MPa]
PSE576	Positive pressure	0 to 725 psi [0 to 5 MPa]	1813 psi [12.5 MPa]
PSE577	Positive pressure	0 to 1450 psi [0 to 10 MPa]	4351 psi [30 MPa]

Multi-Channel Digital Pressure Sensor Controller

PSE200 Series

- Four sensors can be connected.
- Applicable sensor: PSE53, 54, 56, 570/573
- A single controller can monitor various applications.
- 4 inputs, 5 outputs
- Enclosure: IP65 (Front face), IP40 (Others)



Series	Set pressure range
PSE200	-14.6 to 14.6 psi [-101 to 101 kPa]
	1.45 to -14.6 psi [10 to -101 kPa]
	-1.45 to 14.6 psi [-10 to 101 kPa]
	-14.5 to 145 psi [-0.1 to 1 MPa]

2-Color Display Digital Pressure Sensor Controller

PSE300 Series

- Applicable sensor: PSE53, 54, 550, 56, 570/573/574
- Compatible with voltage input and current input
- Response time: 1 ms
- Space saving, capable of vertical and horizontal contact mounting
- Panel mounting, Bracket mounting, DIN rail mounting
- Enclosure: IP40



Series	Set pressure range
PSE300	-14.6 to 14.6 psi [-101 to 101 kPa]
	1.45 to -14.6 psi [10 to -101 kPa]
	-1.45 to 14.5 psi [-10 to 100 kPa]
	-14.5 to 145 psi [-0.1 to 1 MPa]
	-7.25 to 72.5 psi [-50 to 500 kPa]
	-0.029 to 0.29 psi [-0.2 to 2 kPa]

Flow Switches

3-Color Display

Electromagnetic Type Digital Flow Switch

LFE Series

- Applicable fluid: Water, Water-soluble coolant
- Pressure loss: 2.9 psi [0.02 MPa] or less
- Reverse flow can be detected.
- Enclosure: IP65



Series	Rated flow range gal/min [L/min]
LFE	0.13 to 5.28 [0.5 to 20]
	0.66 to 26.4 [2.5 to 100]
	1.32 to 52.8 [5 to 200]

Hydraulic Equipment

Line Filter

FH34/44/54/64 Series

- Operating pressure: 508, 1015, 2031, 3046 psi [3.5, 7.0, 14.0, 21.0 MPa]
- O-ring: Choice of NBR (Petroleum, Water-glycol, Emulsion) or FKM (Phosphoric ester)
- Paper element and micromesh element are selectable.
- Option: Differential pressure indicator, Differential pressure indication switch

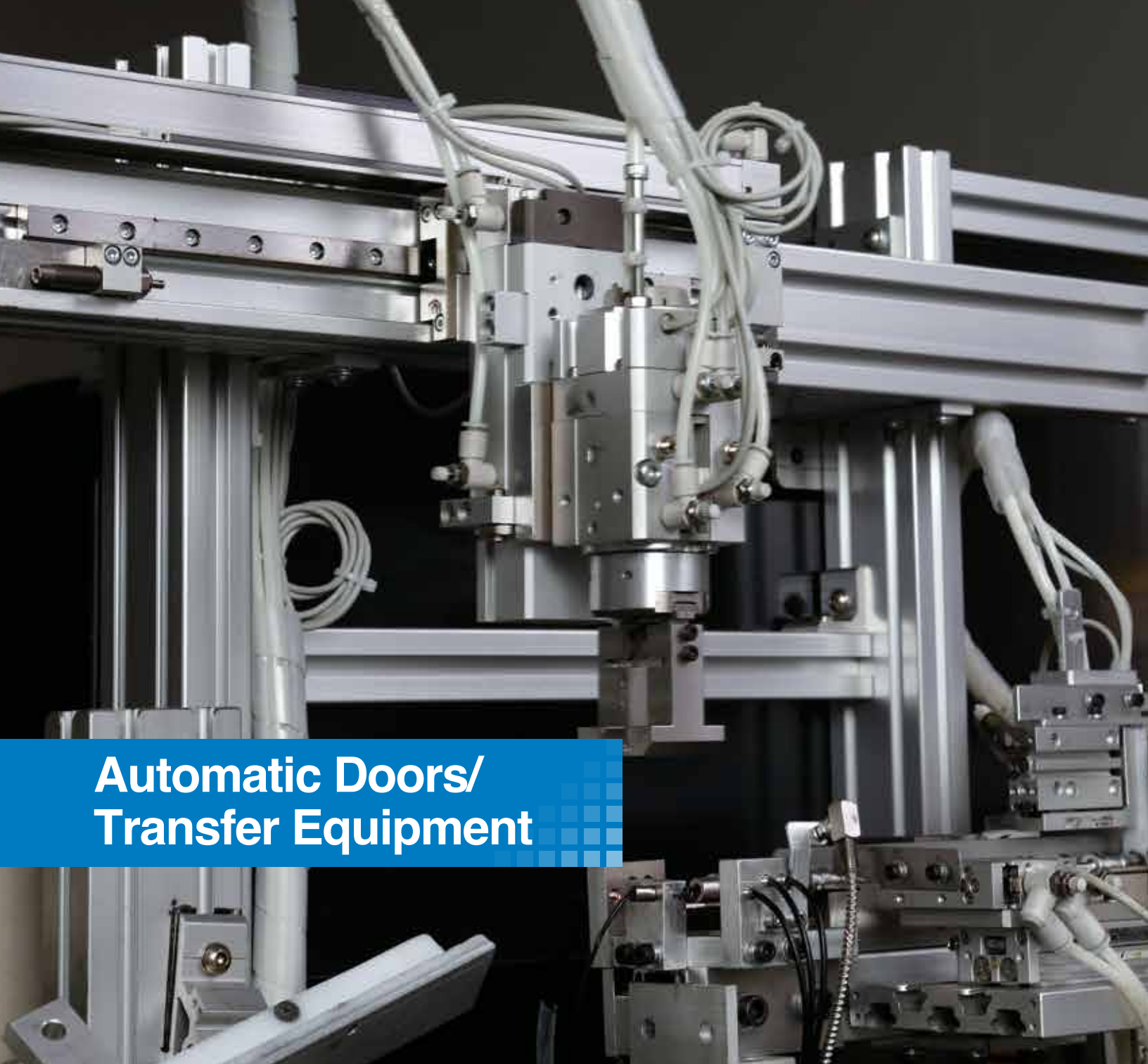


Magnetic Separator

FHM Series

- Adsorbs and eliminates contaminants in the fluid by means of magnetism.
- There are no consumable parts and the running cost is basically zero.
- Fluid: Petroleum, Water-glycol, Cutting oil, Emulsion, Phosphoric ester





Automatic Doors/ Transfer Equipment



Air Cylinders

Water Resistant Cylinder

Compatible with an operating environment using coolants

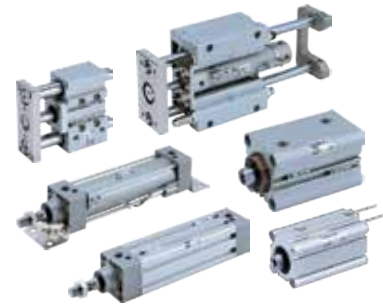
- Anti-coolant performance has been improved compared to standard cylinders.
- With water resistant 2-color indicator auto switch



<Applicable Cylinders>

■ Air Cylinders

CM2 Series $\phi 20$ to $\phi 40$ / **CG1 Series** $\phi 32$ to $\phi 100$ / Air Cylinder **MB Series** $\phi 32$ to $\phi 100$ / Square Tube Type Air Cylinder **MB1 Series** $\phi 32$ to $\phi 100$ / Compact Cylinder **CQ2 Series** $\phi 20$ to $\phi 100$ / **CA2 Series** $\phi 40$ to $\phi 100$ / Compact Guide Cylinder **MGP Series** $\phi 20$ to $\phi 100$ / Guide Cylinder **MGG Series** $\phi 32$ to $\phi 100$



■ Hydraulic Cylinders

Compact Hydraulic Cylinder Compliant with JIS Standards (1450 psi [10 MPa])
CHKDB Series $\phi 20$ to $\phi 100$ / Hydraulic Cylinder Compliant with JIS Standards (1015 psi [7 MPa])
CH2F Series $\phi 32$ to $\phi 100$

Compact Guide Cylinder

MGP Series

- Weight reduced by up to 24% with a shorter guide rod and thinner plate.
- Space required between the bottom of the cylinder body and your equipment is reduced by max. 22 mm because of shortened guide rod.
- Round type and magnetic field resistant auto switches can be mounted directly without spacer.



Cylinder with Lock CNA2 Series

- Locking cylinders are ideal for intermediate stops, emergency stops, and drop prevention. (Bi-directional lock)
- Bore size: 40, 50, 63, 80, 100



Cylinder with Lock CNS Series

- Bore size: 125, 140, 160



Cylinder with Lock CLS Series

- Bore size: 125, 140, 160, 180, 200, 250



Compact Cylinder with Lock CLQ Series

- Bore size: 20, 25, 32, 40, 50, 63, 80, 100



Compact Cylinder with Air Cushion and Lock RLQ Series

- Bore size: 32, 40, 50, 63



Plate Cylinder with Lock MLU Series

- Bore size: 25, 32, 40, 50



Compact Guide Cylinder with Lock MLGP Series

- Bore size: 20, 25, 32, 40, 50, 63, 80, 100



Air Cylinders

Air Cylinder JMB Series

RoHS



- Intermediary bore sizes: $\phi 45$, $\phi 56$, $\phi 67$, $\phi 85$
Air saving, Space saving
- Overall length shortened by 27 mm (Compared with MBB50-100)
- Weight reduced by up to 30% (1.45 kg \rightarrow 1.00 kg)
(Compared with MBB50-100)
- Air saving: Reduced by up to 29%
Air consumption can be reduced by optimal size selection.
- Reduces labor time.
Air cushion adjustment is not required due to non-adjustable air cushion.



Air Cylinder JCM Series

RoHS

- Overall length shortened by up to 97 mm (Compared with the current CM2B40)
- Weight reduced by up to 54% (0.69 kg \rightarrow 0.32 kg)
(Compared with the current CM2B40-50Z)
- Various cover types available
- Port size: M5 and Rc1/8 available
- Male and female rod end available



Compact Cylinder JQC Series

RoHS

- Compact: Reduced overall length 6.5 mm, width 6 mm, height 4 mm
- Weight reduced by up to 45% (150 g \rightarrow 82 g)
- Volume reduced by up to 40% (Compared with the CDQS series)



Compact Guide Cylinder JMGP Series

RoHS

- Compact: Reduced overall length 30.5 mm, height 16 mm (Compared with the MGPM32-25Z)
- Weight reduced by up to 69% (0.32 kg R 0.1 kg: Compared with the MGPM16-10Z)
- 3 mounting options:
Top mounting, Underside mounting, Bottom mounting
- Piping is possible in 4 directions.
- The solid state auto switch D-M9m is mountable.
- Suitable for pushing, lifting, or clamping on a transport line



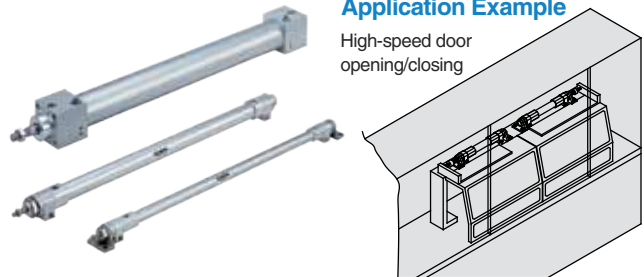
Specialty Cylinders

High Power Cylinder RHC Series

- For high-speed opening/closing of ATC doors
- Has 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 improved water resistance + stable lubrication function
Equipped with an improved water resistant scraper (Fluororubber). The Lube-retainer creates a grease coating around the piston rod, which improves lubrication. Stainless steel can be selected for the piston rod and rod end nut.

Application Example

High-speed door opening/closing



Rotary Clamp Cylinder MK Series

- Allowable moment of inertia 3 times higher ($\phi 20$ to $\phi 63$)
(The same as the former heavy-duty MK2 series)
- It is possible to mount small auto switches on 4 surfaces.



Rodless Cylinders

Mechanically Jointed Rodless Cylinder with Protective Cover MY1□W Series

- Protective cover with improved water resistance and dust-proof construction. The side seal prevents water and dust from entering from the sides.



Air Grippers

Linear Guide Parallel Type Air Gripper MHZ□2 Series

- Linear guide improves rigidity and accuracy.
- Dust-proof and drip-proof construction
- Dust cover material is selectable.



Type	Series	Cylinder bore size [mm]
Compact	MHZA2-6	6
Compact, with dust cover	MHZAJ2-6	6
Standard	MHZ2	6, 10, 16, 20, 25, 32, 40
Long stroke	MHZL2	10, 16, 20, 25
With dust cover	MHZJ2	6, 10, 16, 20, 25

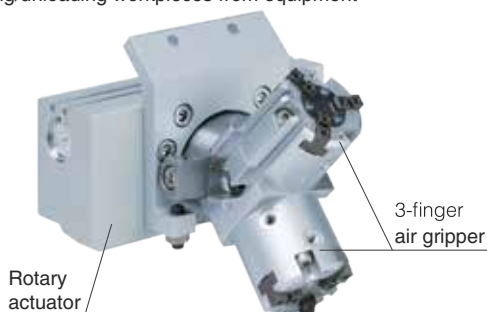
Slide Guide Round Body Air Gripper: 2-Finger, 3-Finger, 4-Finger Type MHS Series

- Vertically compact, lightweight due to the wedge-shaped cam construction
- Repeatability: ± 0.01 mm
- Long stroke type: Strokes two times longer than the standard type
- Reliable workpiece removal with through-holes and a center pusher



Air Gripper Reverse Unit Made to Order

- For workpiece transfer with gantry loaders
- For loading/unloading workpieces from equipment



Electric Actuators

Electric Actuator: Slider Type Ball Screw Drive LEFS Series



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

- Max. work load: 65 kg
- Positioning repeatability: ± 0.02 mm

AC Servo Motor

- High-output motor (100/200/400 W)
- Improved high-speed transfer ability
- Max. speed: 1,500 mm/s
- High acceleration/deceleration (20,000 mm/s²)
- Positioning repeatability: ± 0.01 mm



Electric Actuator: Slider Type Belt Drive LEFB Series

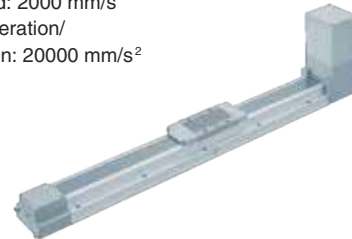


Step Motor (Servo/24 VDC), Servo Motor (24 VDC)

- Max. stroke: 2000 mm
- Max. speed: 2000 mm/s

AC Servo Motor

- Max. stroke: 3000 mm
- Max. speed: 2000 mm/s
- Max. acceleration/
deceleration: 20000 mm/s²



Electric Actuator: High Rigidity Slider Type, Ball Screw Drive LEJS Series



- Low profile/Low center of gravity: Height dimension reduced by approx. 36% (Reduced by 32 mm)
- Max. work load: 85 kg
- Positioning repeatability: ± 0.01 mm
- Max. acceleration/deceleration: 20000 mm/s²

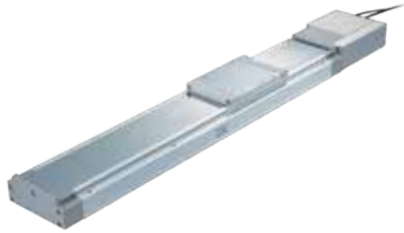


Electric Actuators

Electric Actuator: High Rigidity Slider Type, Belt Drive **LEJB Series**



- Max. stroke: 3000 mm
- Max. speed: 3000 mm/s
- Max. acceleration/deceleration: 20000 mm/s²



Electric Actuator: Low Profile Slider Type **LEM Series**



- Compact, Low profile
Table height: 28 mm
(For LEMC/H/HT, size 25)
- Can be connected to various types of guides.



Electric Actuator: Guide Rod Slider, Belt Drive **LEL Series**



- Low profile/Flat: Height 48 mm
- Profile reduced by side mounting of motor.
No interference with motor, even with large workpieces.
- Max. stroke: 1000 mm
- Transfer speed: 1000 mm/s



Electric Actuator: Rod Type Motor Top/Parallel, In-line Motor Type **LEY Series**



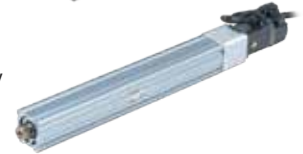
Step Motor (Servo/24 VDC), Servo Motor (24 VDC)

- Long stroke: Max. 500 mm
- Direct mounting: 3 directions
Bracket mounting: 3 types
- Auto switch mountable
- Speed control/
Positioning: Max. 64 points



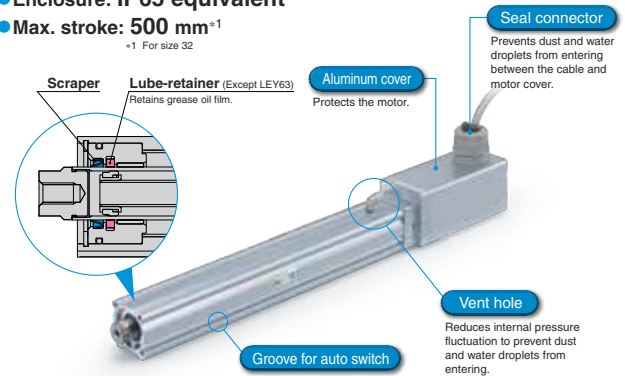
AC Servo Motor

- High-output motor (100/200/400 W)
- Improved high-speed transfer ability
- High-acceleration compatible
(5,000 mm/s²)



Dust-tight/Water-jet-proof (IP65 Equivalent) **LEY-X5/LEY63**□□□□□□P (Option)

- Enclosure: IP65 equivalent
- Max. stroke: 500 mm^{*1}



* When mounting vertically and using the product facing upwards in an environment where water is present, take necessary measures to prevent water from splashing on the rod cover, because water will accumulate on the rod seal due to the structure of the product.

Electric Actuator: Guide Rod Type Motor Top Mounting, In-line Motor Type **LEYG Series**



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

- Compact integrated guide rods, lateral load resistance, high non-rotating accuracy
- Lateral end load: 5 times more (Compared with rod type, size 25 and 100 mm stroke)
- Compatible with sliding bearing and ball bushing bearing
Compatible with moment load and stopper (sliding bearing)

AC Servo Motor

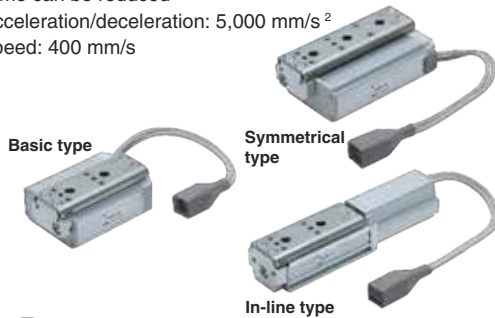
- High-output motor (100/200 W)
- Improved high-speed transfer ability
- High-acceleration/deceleration compatible (5,000 mm/s²)



Electric Slide Table LES/LESH Series

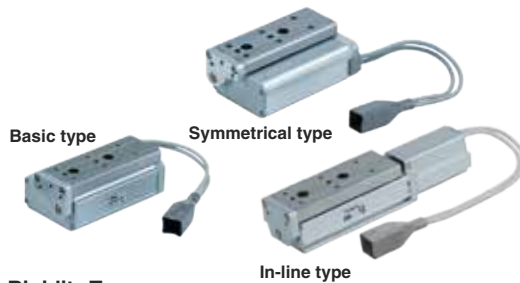


- Max. pushing force: 40.5 lbf [180 N]
- Positioning repeatability: ± 0.05 mm
- Cycle time can be reduced
Max. acceleration/deceleration: $5,000 \text{ mm/s}^2$
Max. speed: 400 mm/s



<Compact Type>

- Compact: Workpiece mounting height reduced by up to 12% compared with the LESH
- Lightweight: Reduced by up to 29% (Compared with the LESH16D-100)



<High Rigidity Type>

- Deflection: 0.016 mm (LESH16-50 Load: 5.6 lbf [25 N])
- Integrated guide rail and table. Uses a recirculating linear guide for high rigidity and high precision.

Electric Actuator: Miniature Type LEP Series



- Max. pushing force: 11.2 lbf [50 N]
- Positioning repeatability: ± 0.05 mm



<Rod Type>

- Compact and lightweight
W20.5 mm x H30 mm x L125.6 mm, Weight 240 g



<Slide Table Type>

- Compact and lightweight
W21 mm x H41 mm x L138.6 mm, Weight 290 g

Electric Rotary Table LER Series



- Rotation angle: 360° , 320° (310°), 180° , 90°
The value indicated in brackets shows the value for the LER10.
- Low profile: Height dimension 42 mm (LER10)
- Space saving: Built-in step motor
- Shock-less/High-speed actuation
Max. speed: $420^\circ/\text{sec}$ (7.33 rad/sec)
Max. acceleration/deceleration: $3000^\circ/\text{sec}^2$ (52.36 rad/sec^2)



Electric Gripper LEH Series



- With drop prevention function (Self-lock mechanism is provided for all series.)
- Power consumption is reduced by self-lock mechanism.
- With gripping check function
- Position, speed, and force can be set. (64 points)

LEHZ Series

Compact and lightweight
Various gripping forces



LEHZJ Series

With dust cover (Equivalent to IP50)
3 types of cover material (Finger portion only)



LEHF Series

Can hold various types of workpieces with a long stroke.



LEHS Series

Can hold round workpieces.



Electric Actuators



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



4 Axis Type



EtherNet/IP™
Type
JXC93 Series



Parallel I/O
Type
JXC73/83 Series

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 the LEM series

Pulse Input Type

LECPA Series



Fieldbus-compatible Network Controller/Gateway Unit

CC-Link
Direct Input Type*1
LECPMJ Series



EtherNet/IP™
Direct Input Type*2
JXC91 Series



DeviceNet™
Direct Input Type*2
JXCD1 Series



PROFINET™
Direct Input Type*2
JXCP1 Series



LEC-G Series



EtherNet/IP



AC Servo Motor*2

Pulse Input Type

LECSA Series
LECSB Series

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



LECSA Series LECSB Series

CC-Link
Direct Input Type
LECS Series



SSCNET III Type
LECSS Series



MECHATROLINK II Type

LECYM Series



MECHATROLINK III Type

LECYU Series



SSCNET III/H Type

LECSS-T Series



Trademark

EtherNet/IP™ is a trademark of ODVA. DeviceNet™ is a trademark of ODVA.

Motorless Type

LE□ Series

- Your motor and driver can be used together!
- Manufacturers of compatible motors: 15 companies
Mitsubishi Electric Corporation, YASKAWA Electric Corporation, SANYO DENKI CO., LTD., OMRON Corporation, Panasonic Corporation, FANUC CORPORATION, NIDEC SANKYO CORPORATION, KEYENCE CORPORATION, FUJI ELECTRIC CO., LTD., ORIENTAL MOTOR Co., Ltd., FASTECH Co., Ltd., Rockwell Automation, Inc. (Allen-Bradley), Beckhoff Automation GmbH, Siemens AG, Delta Electronics, Inc.



Vacuum Equipment

Vacuum Unit ZK2 Series



- Digital pressure switch for vacuum with energy saving function cuts supply air when the pressure reaches the desired vacuum. Air consumption: 90% reduction
- Improved ejector efficiency: Suction flow increased by 50%
Air consumption reduced by 30%
(Compared to other SMC single stage ejectors)
- Compact/Lightweight: Volume 88 cm³ (28% reduction)
Weight 81 g (59% reduction)
- Nozzle size: $\phi 0.7$, $\phi 1.0$, $\phi 1.2$, $\phi 1.5$



Body Ported Type Vacuum Ejector ZH Series



- Compact and lightweight
Overall length: Max. 11% reduction (6.7 mm shorter)
Port height: Max. 25% reduction (9.1 mm shorter)
Weight: Max. 74% reduction (65.1 g lighter)
- 4 mounting types: Direct mounting, Standard bracket mounting, L-bracket mounting, DIN rail mounting



Vacuum Pad ZP3 Series



- Compact, Space saving, Overall shortened length.
- One-touch fitting and barb fitting for $\phi 2$ are available.
- Pad diameter: $\phi 1.5$ to $\phi 16$



Vacuum Pad ZP3E Series



- Stability of suction position, improved ease of removal
Dents and bumps on the adsorption surface expand the area which is in contact with the workpiece. Ribs reduce the inclinations during transport of workpiece.
- Reduced number of mounting screws (4 pcs. \rightarrow 1 pc.)
- Pad and metal parts can be disposed of separately.
- Pad diameter: $\phi 32$ to $\phi 125$



Compact, Short, Nozzle Pad ZP2 Series



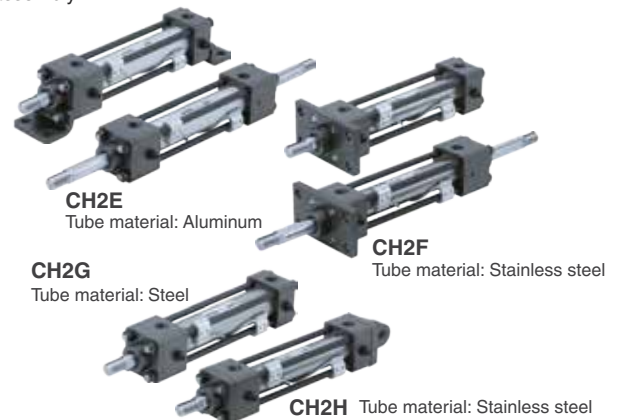
- Compact, Space saving
- Pad diameter: $\phi 0.8$ to $\phi 15$



Hydraulic Cylinders

JIS Standard Hydraulic Cylinder CH2/CHD2 Series

- Uses the cushion seal type cushion mechanism, reduces impact at the stroke end, improves durability
- Rod cover with block construction makes for easy disassembly and assembly.



Hydraulic Cylinders

Small Bore Hydraulic Cylinder

CHN Series

- Lightweight with a stainless steel tube and aluminum cover
- Uses the cushion seal system mechanism, reduces impact at the stroke end, improves durability
- Smaller cover section compared to tie-rod cylinders



Compact Hydraulic Cylinder

CHQ/CHDQ Series

- Lightweight, compact aluminum body
- It is possible to mount auto switches.
- Same longitudinal dimensions for cylinders with/without auto switches



Air-Hydro Booster Made to Order

Converts air pressure to hydraulic pressure for high-pressure hydraulic cylinder actuation.

- Generates 508 to 2031 psi [3.5 to 14 MPa] of hydraulic pressure with 73 psi [0.5 MPa] of air pressure.
- No hydraulic pump is required. High hydraulic pressure can easily be obtained.
- Hydraulic pressure can be steplessly controlled by only adjusting the air pressure using the regulator.
- No problems will occur due to temperature rise even under the condition of continuous pressurization.
- You can select from two types of pressurization methods (direct type and pre-load type) according to the application.
- No hydraulic unit is required.



Various Blow Equipment



2/3 Port Valves for Fluid Control

Direct Operated 2 Port Solenoid Valve

VX2 Series



- For air, medium vacuum, water, oil, steam (Can be used with heated water.)
 - Flow rate: 20% more flow*1
 - Height: 10% smaller*1
 - Weight: 30% lighter*1
 - Body material: Aluminum, Resin, C37, Stainless steel
 - With One-touch fittings (resin body) type is available.
 - Port size: 1/8 to 1/2, ø6 to ø12
- *1 Compared with SMC current model

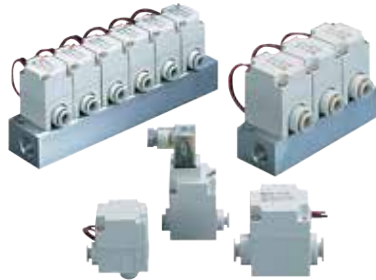


Pilot Operated 2 Port Solenoid Valve for Dry Air

VQ20/30 Series



- 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 enclosure (IP65) compatible with DIN terminal type.
- Application: Air-blow, Blow-off of workpiece, etc.



Pilot Operated 2 Port Solenoid Valve

VXD Series



- For air, water, heated water, oil, high-temperature oil
 - Body material: Aluminum, Resin, C37, Stainless steel, CAC408
 - With One-touch fittings (resin body) type is available.
 - Enclosure: IP65*1
 - Port size: ø10, ø12, ø3/8", 1/4 to 1, 32A to 50A
- *1 Electrical entry flat terminal type terminal is IP40.



Zero Differential Pressure Type Pilot Operated 2 Port Solenoid Valve

VXZ Series



- For air, water, heated water, oil, high-temperature oil
 - Body material: Aluminum, Resin, C37, Stainless steel
 - With One-touch fittings (resin body) type is available.
 - Enclosure: IP65
- *Electrical entry flat terminal type terminal is IP40.



Blow Guns

Blow Gun

VMG Series



- Reduction of 2000 m³ per annum is possible. (Energy saving)
- Pressure loss: 1% or less (Nozzle size: ø2.5)
- Available nozzle:

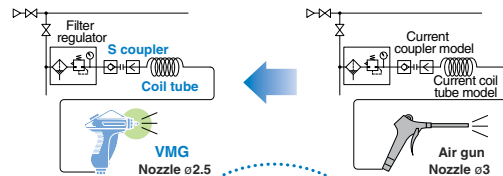


Male thread nozzle, High efficiency nozzle with male thread, Low noise nozzle with male thread, Copper extension nozzle



20% reduction in power consumption with the SMC "blow gun" + "S coupler" + "coil tube"

- Blow gun facilitates effective pressure use.
- Pressure loss of 1% or less (Nozzle size: ø2.5)



Reduced power consumption

Energy-saving Circuit

Impact pressure: 1.6 psi [0.011 MPa]
 (Distance: 100 mm)
 Blow time: 10 seconds (Frequency: 12 times/hour)
 Working hours: 10 hours/day (250 days/year)
 Total working hours: 8300 hours
 Compressor pressure: **73 psi [0.5MPa]**
 Air consumption:
9.07 scfm [257L/min (ANR)]

Power consumption by compressor
1.25 kW
 (\$1,556.25 /year)

\$385.95/year reduction

Current Circuit

Impact pressure: 1.6 psi [0.011 MPa]
 (Distance: 100 mm)
 Blow time: 10 seconds
 (Frequency: 12 times/hour)
 Working hours: 10 hours/day (250 days/year)
 Total working hours: 8300 hours
 Compressor pressure: 87 psi [0.6 MPa]
 Air consumption: 10.13 scfm [287 L/min (ANR)]

Power consumption by compressor
1.56 kW
 (\$1,942.20 /year)

Corresponding value: Electricity unit \$0.13/kWh

• For details, refer to the energy saving program and the Web Catalog.

Nozzles for Blowing KN Series

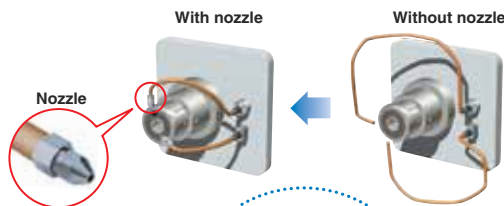
RoHS



Type	Nozzle size
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

Reduce air consumption with a small diameter nozzle.

• Blow circuit facilitates effective pressure use.



Reduced air consumption

Energy-saving Circuit

- Shorter copper tube with fewer bends
- Nozzle (ø2) installed at the end of the copper tube

Flow rate per nozzle

6.04 scfm
171 L/min (ANR)

Blow time: 2 sec.
Annual operating cycles: 900000

5130 m³/year (ANR)
(\$77/year)
(\$51.30/year reduction)

40%

Energy-saving model

Current Circuit

- Copper tube with many bends
- Direct air blow by copper tube

Flow rate per nozzle

10.1 scfm
285 L/min (ANR)

Blow time: 2 sec.
Annual operating cycles: 900000

8550 m³/year (ANR)
(\$128.30/year)

Current model

Corresponding value: Air unit \$ 0.13/scfm [1.5 JPY/m³(ANR)]

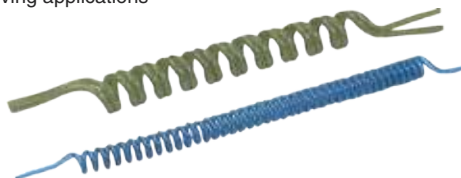
● For details, refer to the energy saving program and the Web Catalog.

■ Tubing

Polyurethane Coil Tubing TCU Series

RoHS

- Flexible
- Max. operating pressure: 116 psi 0.8 MPa (at 68°F [20°C])
- For moving applications



■ Flow Switches

2-Color Display Digital Flow Switch PFMB Series

CE cULus RoHS (Only 200 L type)

- Dry air, N₂
- Grease-free
- Integrated flow adjustment valve
- Compact, Space saving
- Enclosure: IP40



Series	Rated flow range cfm [L/min]
PFMB	0.07 to 7.06 [2 to 200]
	0.18 to 17.7 [5 to 500]
	0.35 to 35.3 [10 to 1000]
	0.71 to 70.6 [20 to 2000]

3-Color Display Digital Flow Switch PFMC Series

CE RoHS

- Dry air, N₂
- 3-color/2-screen display
- Expanded flow range: Wide range of flow measurement is possible with one product.
- Compact, Space saving
- Enclosure: IP65



Series	Rated flow range cfm[L/min]
PFMC	0.18 to 17.7 [5 to 500]
	0.35 to 35.3 [10 to 1000]
	0.71 to 70.6 [20 to 2000]



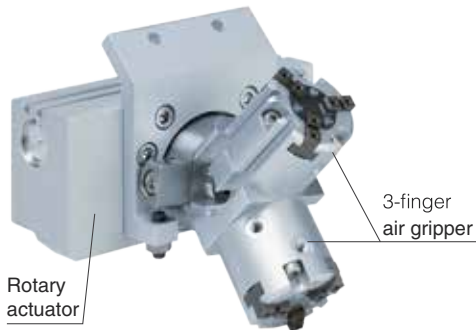
Other Equipment (Special)



Air Grippers

Air Gripper Reverse Unit Made to Order

- For workpiece transfer with gantry loaders
- For loading/unloading workpieces from equipment



Pressure Control Equipment

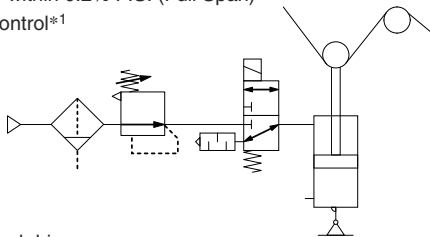
Precision Regulator RoHS IR1000-A/IR2000-A/IR3000-A Series

- Air consumption: Reduced by up to approx. 90% (Compared with the current model)
- High flow rate: Up to approx. twice (Compared with the current model)
- Lightweight: Reduced by up to approx. 27% (Compared with the current model)
- Sensitivity: 0.2% (Full span)
- Repeatability: $\pm 0.5\%$ (Full span)

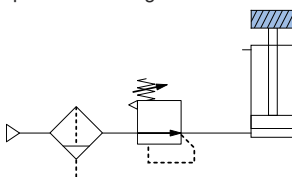


Application Example

Accurate pressure setting
Sensitivity within 0.2% F.S. (Full Span)
Tension control*1



Balance and drive
Accurate balance pressure setting *1



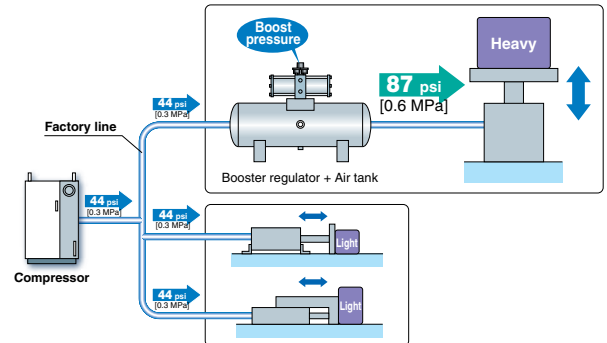
Limits pressure fluctuation when driving a cylinder, maintaining excellent static and dynamic balance.

*1 The set pressure may vary depending on the elapsed time and change in ambient temperature after pressure setting. If the setting value varies, adjust the pressure with the knob.

Booster Regulator

VBA Series RoHS

- Can increase factory air by a maximum of 200%. Power supply not required.
- It is possible to get a maximum of double pressure by connecting air with a factory line. (VBA11 A: maximum 4 times)



- Space-saving type that directly connects air tanks and booster regulators



Air Tank

VBAT Series RoHS

- Compact air tank that can be directly connected with a regulator
- Can be used as an independent tank.
- With a safety valve port (Option)



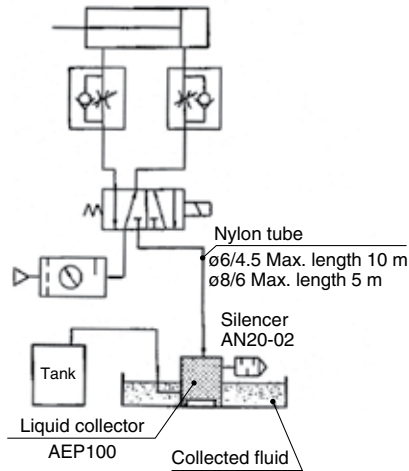
Lubrication Equipment

Liquid Collector: Exhaust Pressure Type AEP100 Series

- Collect and reuse the leaked lubricating oil or hydraulic fluid using exhaust pressure.
- Liquids are collected using only the exhausted air released from the switching valve. This leads to energy saving.
- Increase efficiency by eliminating the need to collect and wipe by hand.



Application Example

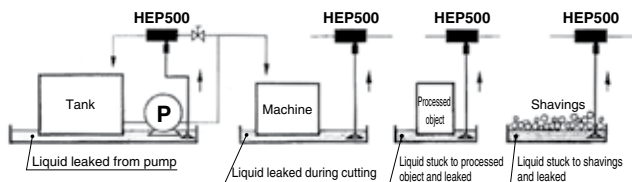


Liquid Collector: Ejector Type HEP500 Series

- Collects the leakage of expensive cutting and grinding oil.
- No need to collect the leaked liquid by hand.
- As it is possible to use the equipped pump, special driving force is not required.



Application Example



Large Flow Lubricator AL Series

- Individual lubrication
- Large flow type



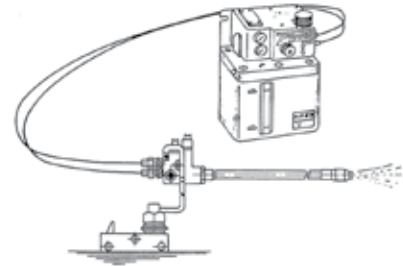
Series	Port size	Bowl capacity [cm ³]
AL800/900	1 1/4, 1 1/2, 2	440, 1000

Mist Spray Unit LMU Series

- Intermittent spray to cutting and press gear chains, etc.

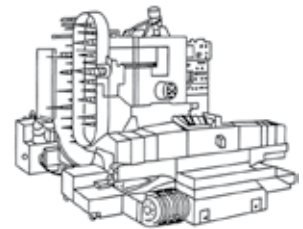
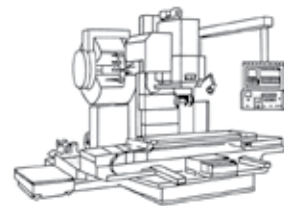


Application Examples



Standing type machining center
(Drilling center)

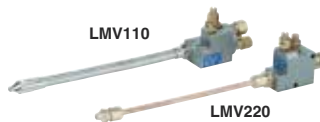
Horizontal machining center



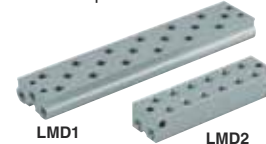
<Related Products>

Mixing Valve/LMV Series

Magnet Holder/LMH Series



Branch Pipe/LMD Series



Impulse Lubricator ALIP Series

- Supplies a set volume of oil just before the lubrication point. It is possible to lubricate a constant volume of oil to circuits that are difficult for oil to reach, or places with little air consumption.



Series	Type	Port size	Feeding volume/cycle [cm ³]
ALIP	Pressure type	1/8	0 to 0.04
ALT10	Oil tank	Air: 1/8 Oil: 1/4	Tank capacity: 160 cm ³
ALT20	Oil tank	Air: 1/8 Oil: 1/4	Tank capacity: 1000 cm ³

Process Pumps

Process Pump/Double Acting Pump PA Series

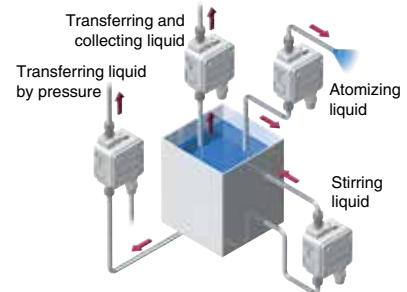


Series	Actuation	Discharge [L/min]	Wetted part material
PA3□□0	Automatically operated	1 to 20	ADC12 (Aluminum) SCS14 (Stainless steel)
PA3□13	Air operated	0.1 to 12	ADC12 (Aluminum) SCS14 (Stainless steel)
PA5□□0	Automatically operated	5 to 45	ADC12 (Aluminum) SCS14 (Stainless steel)
PA5□13	Air operated	1 to 24	ADC12 (Aluminum) SCS14 (Stainless steel)

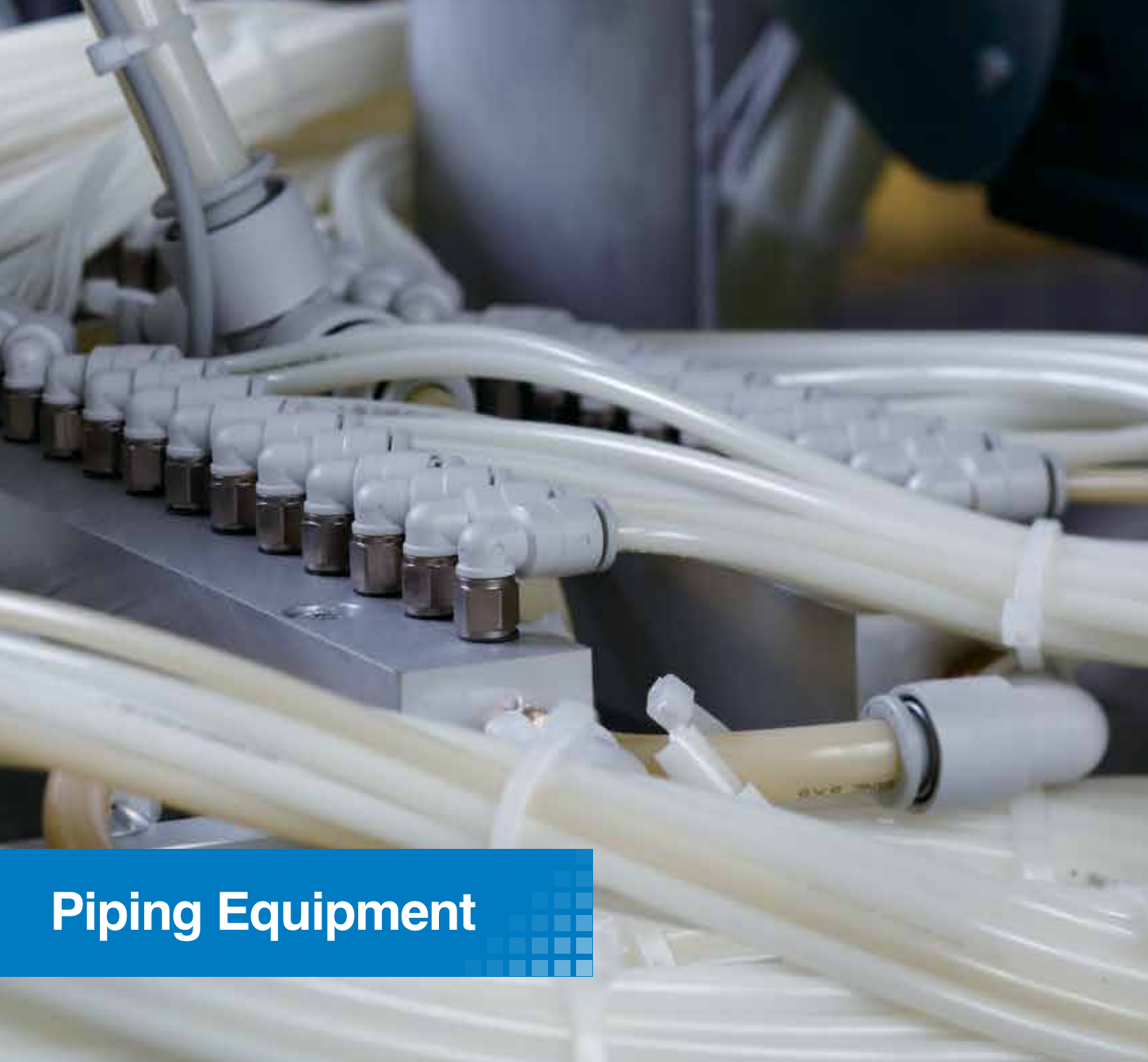
Process Pump/Single Acting Pump PB Series



Application Example



Series	Actuation	Discharge [mL/min]	Wetted part material
PB1011A	Built-in solenoid valve	8 to 2000	Polypropylene Stainless steel 316
PB1013A	Air operated	8 to 1000	Polypropylene Stainless steel 316
PB1313A	Air operated	8 to 1000	New PFA (Fluororesin)



Piping Equipment



Fittings

S Couplers

KK Series



- Fluid: Air, Water
- Applicable tubing O.D.: $\phi 3.2$ to $\phi 16$
- Applicable hose I.D./O.D.: 5/8 to 11/16
- Port size: M5, R1/8 to 3/4, Rc1/8 to 1/2



S Couplers

KK130 Series

- C factor: Increased by 34% (Thread R1/4 type, compared to the current model*1)
- Plug insertion force: Reduced by 22% (4.5 lbf [20 N]) (Compared to the current model*1 at 73 psi [0.5 MPa])
- Lightweight: Reduced by 14% (12 g) (Compared to the current model*1)
- Fluid: Air
- Applicable tubing O.D.: $\phi 6$ to $\phi 12$, $\phi 1/4$ " to $\phi 1/2$ "
- Applicable hose I.D./O.D.: 5/8 to 11/16
- Hose nominal: 6 (1/4") to 12 (1/2")
- Port size: (R, Rc, NPT) 1/8 to 1/2



*1 Current model: KK13 series



S Couplers: Stainless steel 304

KKA Series



- Fluid: Air, Water
- Port size: (R, Rc) 1/8 to 11/2



One-touch Fittings

KQ2 Series



- Fluid: Air, Water
- Applicable tubing O.D.: $\phi 2$ to $\phi 16$, $\phi 1/8$ " to $\phi 1/2$ "



Metal One-touch Fittings

KQB2 Series



- Fluid: Air, Water
- Applicable tubing O.D.: $\phi 3.2$ to $\phi 16$, $\phi 1/8$ " to $\phi 1/2$ "



Insert Fittings

KF Series

- Fluid: Air, Steam (Brass sleeve)
Air, Water (Resin sleeve)
- Applicable tubing O.D.: $\phi 4$ to $\phi 12$



Brass sleeve

Resin sleeve

Self-align Fittings

H/DL/L/LL Series



- Fluid: Air
- Applicable tubing O.D.: $\phi 4$ to $\phi 12$



Stainless Steel 316 One-touch Fittings

KQG2 Series



- Fluid: Air, Water, Steam
- Applicable tubing O.D.: $\phi 3.2$ to $\phi 16$, $\phi 1/8$ " to $\phi 1/2$ "



Stainless Steel 316 Insert Fittings

KFG2 Series



- Fluid: Air, Water, Steam
- Applicable tubing O.D.: $\phi 4$ to $\phi 16$, $\phi 1/8$ " to $\phi 1/2$ "



Tubing

Polyurethane Tubing TU/TIUB Series



- Fluid: Air, Water
- Tubing O.D.: $\varnothing 2$ to $\varnothing 16$, $\varnothing 1/8"$ to $\varnothing 1/2"$



Color Variations*1: 29 colors



*1 Please contact SMC for the TIUB.

Wear Resistant Tubing

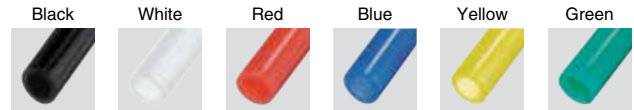
TUZ Series



- Fluid: Air, Water
- Tubing O.D.: $\varnothing 2$ to $\varnothing 16$
- Abrasion: Approx. 1/3 (Compared with SMC polyurethane tubing TU series)



Color Variations



Flame Resistant (Equivalent to UL-94 Standard V-0) FR Soft Nylon Tubing

TRS Series



- Fluid: Air, Water
- Tubing O.D.: $\varnothing 6$ to $\varnothing 12$



Color Variations



Flame Resistant (Equivalent to UL-94 Standard V-0)

FR Double Layer Tubing

TRB Series



- Fluid: Air, Water
- Tubing O.D.: $\varnothing 6$ to $\varnothing 12$

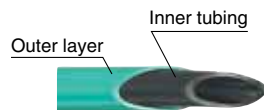
Flame Resistant (Equivalent to UL-94 Standard V-0)

FR Double Layer Polyurethane Tubing

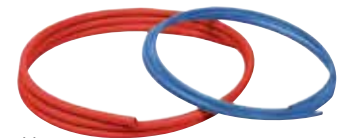
TRBU Series



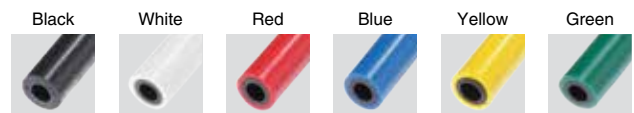
- Fluid: Air, Water
- Tubing O.D.: $\varnothing 6$ to $\varnothing 12$



Sectional view of FR double layer tubing



Color Variations

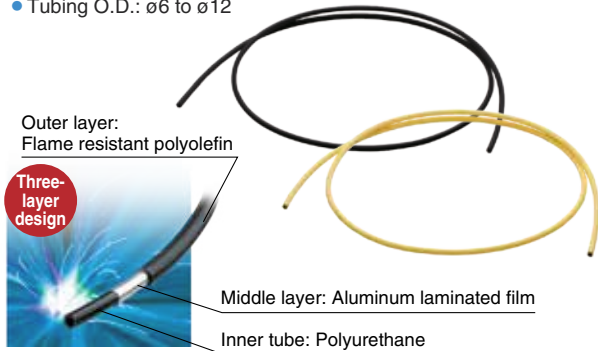


* Note that the tube colors are samples.

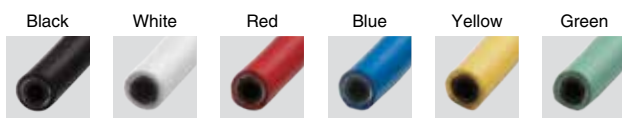
Flame Resistant (Equivalent to UL-94 Standard V-0) FR Three-layer Polyurethane Tubing **TRTU Series**

RoHS

- Fluid: Air, Water
- Tubing O.D.: $\phi 6$ to $\phi 12$



Color Variations



Fluoropolymer Tubing (Super PFA) **TL/TIL Series**

RoHS

- Applicable tubing O.D.
Metric size: $\phi 4$, $\phi 6$, $\phi 8$, $\phi 10$, $\phi 12$, $\phi 19$
Inch size: $\phi 1/8$ ", $\phi 3/16$ ", $\phi 1/4$ ", $\phi 3/8$ ", $\phi 1/2$ ", $\phi 3/4$ ", $\phi 1$ "
 - Max. operating pressure: 145 psi [1.0 MPa] (at 68°F [20°C])*1
 - Max. operating temperature: 500°F [260°C] (This may vary according to operating pressure.)
- *1 This may vary according to size.



* Note that the tube colors are samples.

Flow Control Equipment Speed Controller with One-touch Fittings Push-lock Type **AS Series**

RoHS

- Easy to lock push-lock type
 - Larger knob
 - Improved tube insertion/removal
Insertion force: Max. 30% (1.8 lbf [8 N]) reduction
Removal force: Max. 20% (1.1 lbf [5 N]) reduction*1
- *1 Tube pull-out strength is ensured to be equivalent to current model.

Elbow type/Universal type

In-line type



Speed Controller with Indicator **AS-FS Series**

RoHS

- Applicable tubing O.D.: $\phi 2$ to $\phi 16$ (Metric), $\phi 1/8$ " to $\phi 1/2$ " (Inch)
- Numerical indication of knob rotation for flow rate reduces flow setting time and setting errors! The value can be controlled via the indicator window.

Elbow type/Universal type

In-line type



Dual Speed Controller **ASD Series**

RoHS

- Applicable tubing O.D.: $\phi 4$ to $\phi 12$ (Metric), $\phi 1/8$ " to $\phi 3/8$ " (Inch)
- Enables bi-directional flow control with a speed controller (Meter-in and meter-out)
- Prevents cylinders from lurching

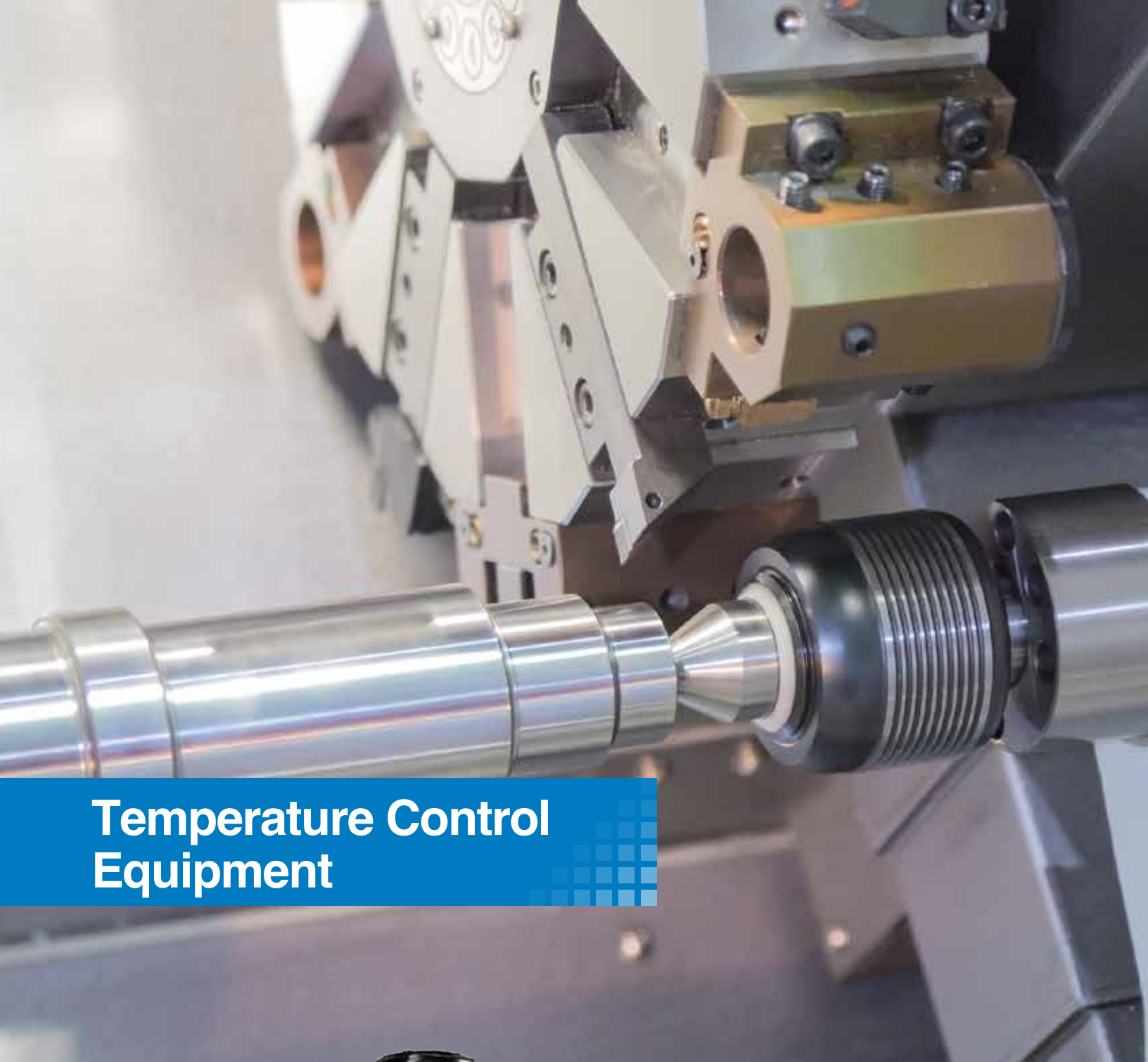


Speed Controller with Pilot Check Valve **ASP Series**

RoHS

- Applicable tubing O.D.: $\phi 6$ to $\phi 12$ (Metric), $\phi 1/4$ " to $\phi 1/2$ " (Inch)
- Integrated pilot check valve and speed controller.
- Realizes momentary intermediate stoppage of a cylinder and is able to adjust the speed control of it.





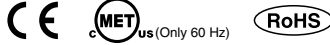
Temperature Control Equipment



Temperature Control Equipment

Thermo-chiller: Standard Type

HRS Series

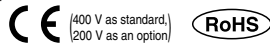


- With this chiller, cooling water can be obtained anywhere it is necessary because of easy installation and easy operation.
- For a wide range of applications such as laser machine tools, etc.
- Compact: W377 x H615 x D500 mm, 40 kg (HRS012/018/024)
- Timer function, Low liquid level protection, Power failure auto-restart, Anti-freezing function, etc.
- Self diagnosis function
- Ideal for overseas models (Single-phase 200 to 230 VAC, Single-phase 100, 115 VAC)



Thermo-chiller: Standard Type

HRS090 Series

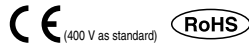


- Compact and lightweight: 136 kg (Air-cooled type)
- Cooling capacity: 9 kW
- Temperature stability: $\pm 0.9^{\circ}\text{F}$ [$\pm 0.5^{\circ}\text{C}$]
- Set temperature range: 41 to 95°F [5 to 35°C]
- Max. ambient temperature: 113°F [45°C]
- Power supply: 3-phase 200 to 230 VAC, 380 to 415 VAC



Thermo-chiller: Standard Type

HRS100/150 Series



- No heater required, as circulating fluid is heated using heat exhausted by refrigerating circuit.
- Compatible with power supplies in Europe, Asia, Oceania, North, Central, and South America
- Low-noise design: 70 dB(A)
- Outdoor installation: IPX4
- Compact, Space saving



Application Examples

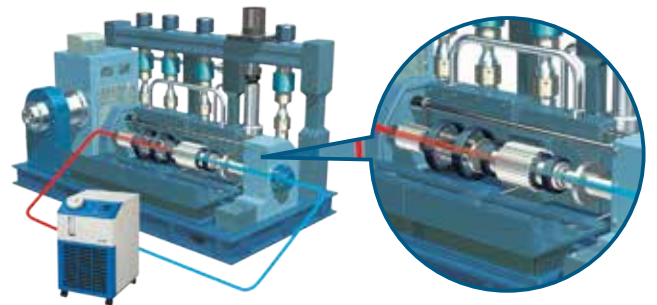
Cooling of built-in motors

The use of water with a high efficiency ratio increases the cooling effect.



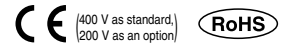
Cooling of ball screws

The cooling efficiency of hollow ball screws can be increased.



Thermo-chiller: Inverter Type

HRSH090 Series



- Power consumption reduced by 53%
Complete with energy-saving triple inverter!
- Cooling capacity: 9.5 kW (Air-cooled), 11.0 kW (Water-cooled)
- Temperature stability: $\pm 0.18^{\circ}\text{F}$ [$\pm 0.1^{\circ}\text{C}$]
- Set temperature range: 41 to 104°F [5 to 40°C]



Thermo-chiller: Inverter Type

HRSH Series

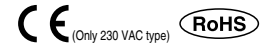


- Complete with energy-saving triple inverter!
- Outdoor installation, Splashproof type (IPX4)
- Max. ambient temperature: 113°F [45°C]
- Temperature stability: $\pm 0.18^{\circ}\text{F}$ [$\pm 0.1^{\circ}\text{C}$] (when a load is stable)
- Space saving and lightweight: 280 kg (25 kW type)



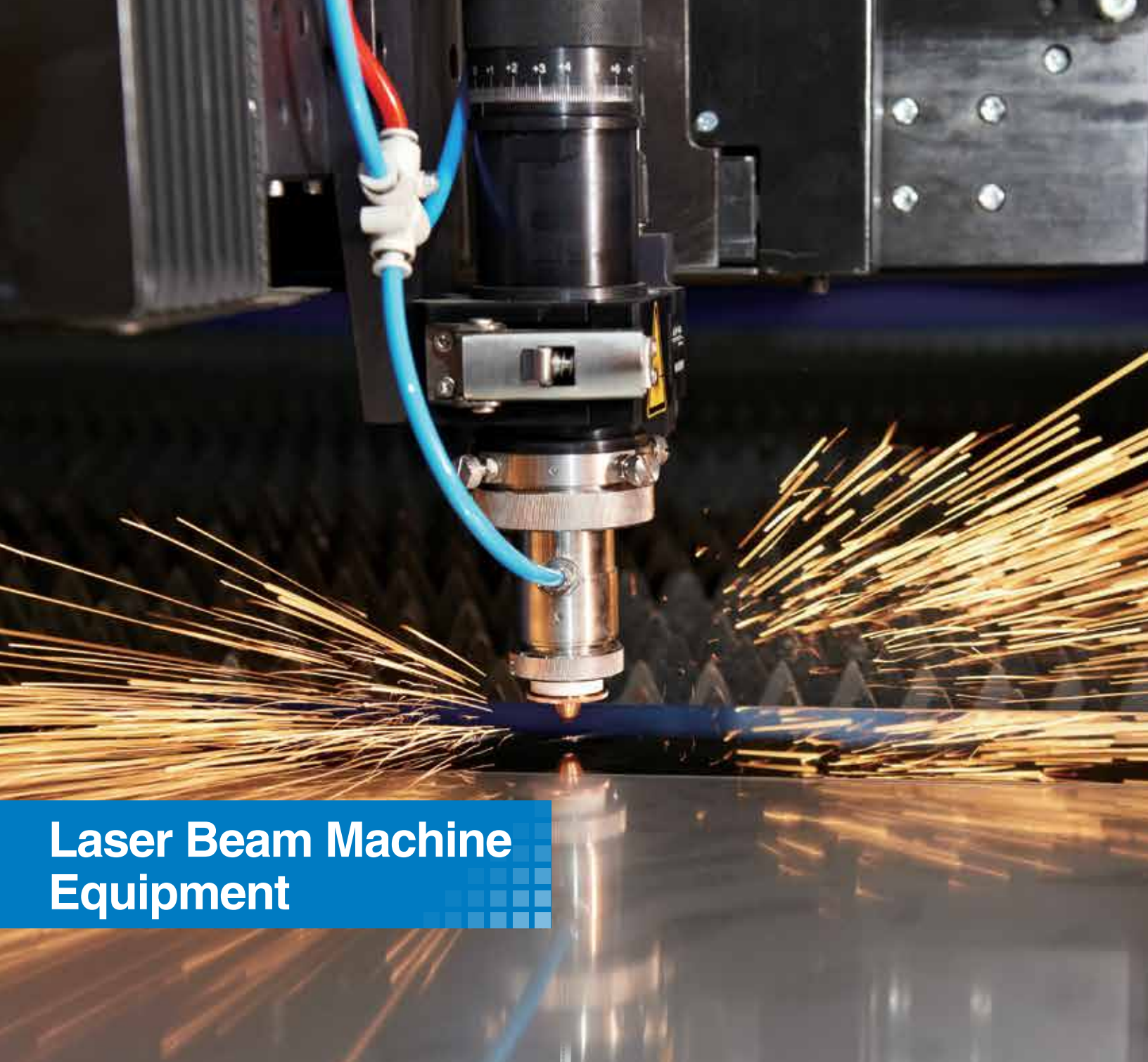
Thermo-chiller: Basic Type

HRSE Series



- Complete with energy-saving triple control!
Reduces power consumption by 33%
- Compact and lightweight: 32 kg (100 VAC)
- Maintenance free: Magnet pump
- Low-noise design: 55 dB(A)





Laser Beam Machine Equipment



2/3 Port Valves for Fluid Control

Direct Operated 2 Port Solenoid Valve

VX2 Series



- For air, medium vacuum, water, oil, steam (Can be used with heated water.)
 - Flow rate: 20% more flow*1
 - Height: 10% smaller*1
 - Weight: 30% lighter*1
 - Body material: Aluminum, Resin, C37, Stainless steel
 - With One-touch fittings (resin body) type is available.
 - Port size: 1/8 to 1/2, $\phi 6$ to $\phi 12$
- *1 Compared with SMC current model



Please contact SMC in regards to the use of special fluids (O₂, N₂) in laser beam machines, etc.

725 psi [5.0 MPa] Pilot Operated 2/3 Port Solenoid Valve & Check Valve

VCH/VCHC Series

- Service life: 10 million cycles
- Uses a polyurethane elastomer poppet in the valve seat
- Improved durability under high-pressure environments



Direct Operated Regulator for 870 psi [6.0 MPa] (Relieving Type)

VCHR Series

- Service life: 10 million times
- Improved durability in high-pressure environments using a polyurethane elastomer poppet
- Improved durability using a metal seal type relief valve
- Uses special fluoroelastomer seals for sliding parts
- Stable unattached response, not easily affected by pressure



Series	VCHR
Model	VCHR30/40
Type	Direct operated regulator (Relieving type)
Port size	G3/4, 1, 1 1/2
Max. operating pressure	870 psi [6.0 MPa]
Set pressure range	73 to 725 psi [0.5 to 5.0 MPa]

Pressure Control Equipment

725 psi [5.0 MPa] Maximum Supply Pressure

High Pressure Electro-Pneumatic Regulator

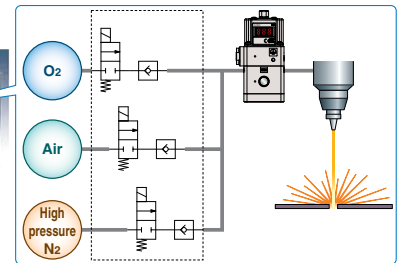
ITVX Series



- Stepless control of air pressure proportional to an electrical signal
- Max. supply pressure: 725 psi [5.0 MPa]
- Set pressure range: 1.45 to 435 psi [0.01 to 3.0 MPa]
- Max. flow rate: 10.6 scfm [3000 L/min (ANR)]
- Fluid: Air, N₂, O₂, Ar
- Wetted parts: Fluorine grease



Application Example



Flow Control Equipment/ Related Equipment

Check Valve AK Series

- Oil-free compatible (Please contact SMC separately.)



Type	Series	Port size	Applicable tubing O.D.	
			Metric size	Inch size
In-line type	AK2000/AK4000 AK6000	1/8 to 1	—	—
Straight type	AKH	—	ø4 to ø12	ø5/32" to ø1/2"
Male connector type	AKH	M5 to 1/2	ø4 to ø12	ø5/32" to ø1/2"
Bushing type	AKB	1/8 to 1/2	—	—
Made to order for air/water	<ul style="list-style-type: none"> Body material: Brass INA-14-290/ XTO-674-□□ Body material: Stainless steel INA-14-□ Rubber material: NBR/ FKM/CR High temperature, low temperature Low cracking 	1/8 to 1/2	—	—

Also compatible with O₂ (Available as special order). Please contact SMC separately.

Fittings & Tubing

Fluoropolymer Tubing (Super PFA) TL/TIL Series



- Applicable tubing O.D.
Metric size: ø4, ø6, ø8, ø10, ø12, ø19
Inch size: ø1/8", ø3/16", ø1/4", ø3/8", ø1/2", ø3/4", ø1"
 - Max. operating pressure: 145 psi [1.0 MPa] (at 68°F [20°C])*¹
 - Max. operating temperature: 500°F [260°C] (This may vary according to operating pressure.)
- *1 This may vary according to size.



Flame Resistant (Equivalent to UL-94 Standard V-0) FR Soft Nylon Tubing

TRS Series



- Fluid: Air, Water
- Tubing O.D.: ø6 to ø12



Color Variations



Flame Resistant (Equivalent to UL-94 Standard V-0) FR Double Layer Tubing

TRB Series



- Fluid: Air, Water
- Tubing O.D.: ø6 to ø12

Flame Resistant (Equivalent to UL-94 Standard V-0) FR Double Layer Polyurethane Tubing

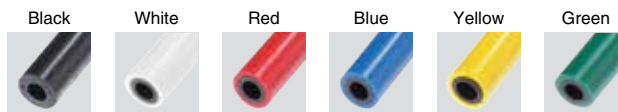
TRBU Series



- Fluid: Air, Water
- Tubing O.D.: ø6 to ø12



Color Variations

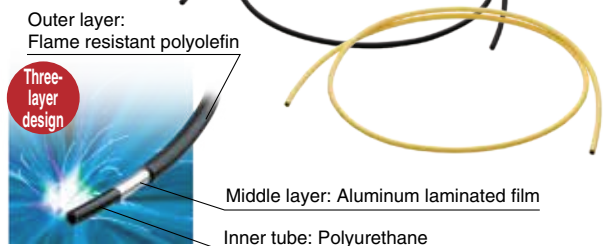


Flame Resistant (Equivalent to UL-94 Standard V-0) FR Three-layer Polyurethane Tubing

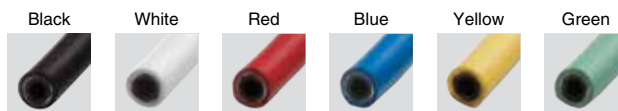
TRTU Series



- Fluid: Air, Water
- Tubing O.D.: ø6 to ø12



Color Variations

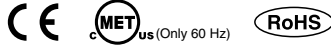


* Note that the tube colors are samples.

Temperature Control Equipment

Thermo-chiller: Standard Type

HRS Series



- 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 tools, etc.
- Compact: W377 x H615 x D500, 40 kg
- Timer function, Low liquid level protection, Power failure auto-restart, Anti-freezing function, etc.
- Self diagnosis function
- Ideal for overseas models (Single-phase 200 to 230 VAC, Single-phase 100, 115 VAC)



Series	HRS
Set temperature range	41 to 104°F [5 to 40°C]
Max. cooling capacity	5.9 kW
Temperature stability	±0.18°F [±0.1°C]
Cooling method	Air-cooled refrigeration, Water-cooled refrigeration
Circulating fluid	Tap water, Ethylene glycol aqueous solution

Thermo-chiller: Inverter Type

HRSH Series



- Complete with energy-saving triple inverter!
- Outdoor installation, Splashproof type (IPX4)
- Max. ambient temperature: 113°F [45°C]
- Temperature stability: ±0.18°F [±0.1°C] (when a load is stable)
- Space saving and lightweight: 280 kg (25 kW type)



Series	HRSH
Set temperature range	41 to 95°F [5 to 35°C]
Max. cooling capacity	25 kW
Temperature stability	±0.18°F [±0.1°C]
Cooling method	Air-cooled refrigeration, Water-cooled refrigeration
Circulating fluid	Tap water, Deionized water, Ethylene glycol aqueous solution

Air Preparation Equipment

Membrane Air Dryer

IDG□A/IDG Series

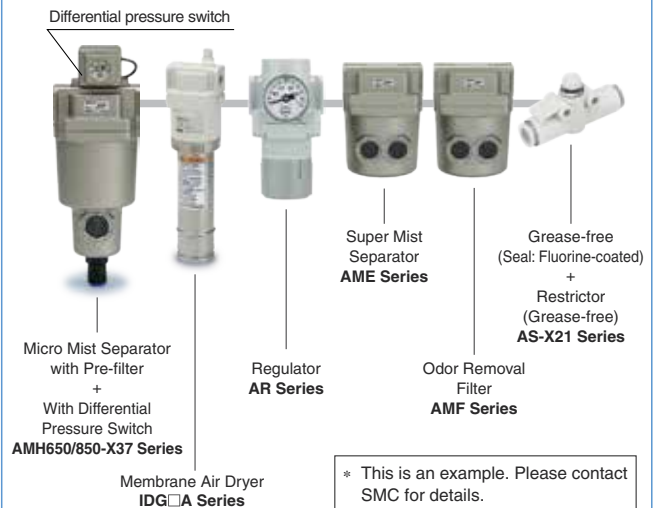


- It is possible to easily supply dry air using the hollow fiber membrane.
- Non-fluorocarbon
- Power supply not required.
- Compatible with low dew points (-76°F [-60°C])
- No vibration or heat discharge.
- With a dew point indicator



<Example of System>

Air purge applied continuously where laser beam passes through (light path)



Global Service Network

SMC has established a wide spread global network of locations in all major countries of the Americas, Europe, and Asia/Oceania as well as emerging countries such as Brazil, Russia, India, and China, showing our active commitment to the world market. SMC supports this global network with a stable supply chain of global products, a high level of technical service, and a solid communication network to meet our customers' needs and expectations.

With 400 sales offices in 83 countries worldwide, our sales force of over 7,951 maintains close communication with customers.



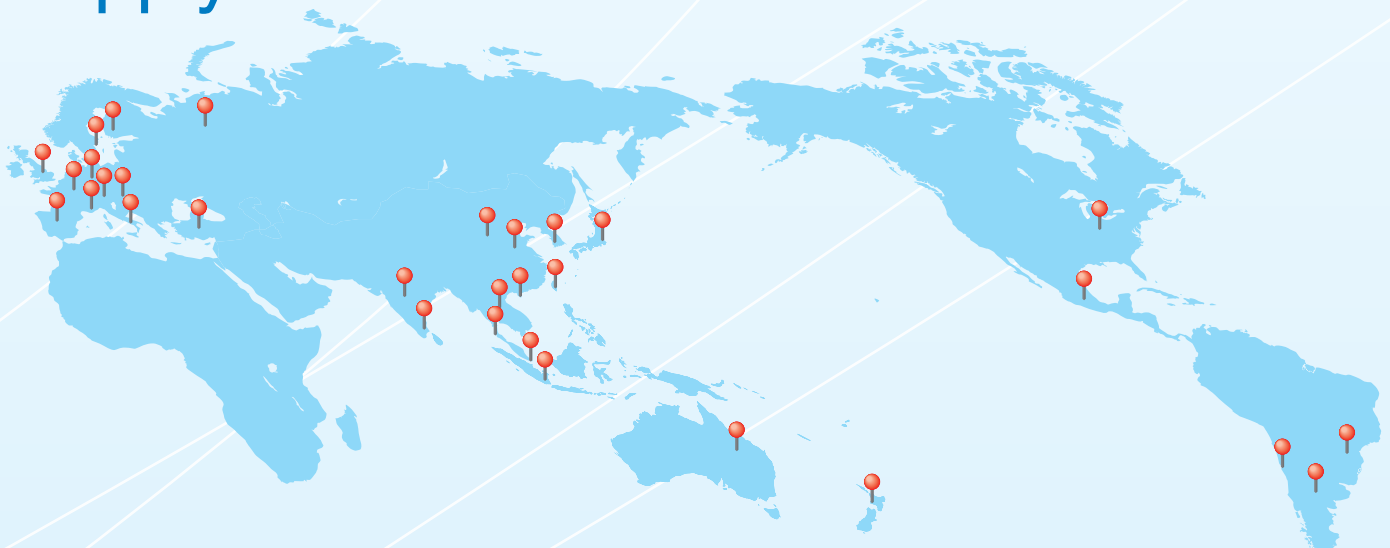
Technical Development

A global engineering network of technical centers has been opened in the United States, Europe, and China, together with Japan.



Production and Supply

Our product line offers 12,000 basic models with over 700,000 variations. Global production facilities provide a stable supply of products to customers in all markets.



Sales & Communication Network



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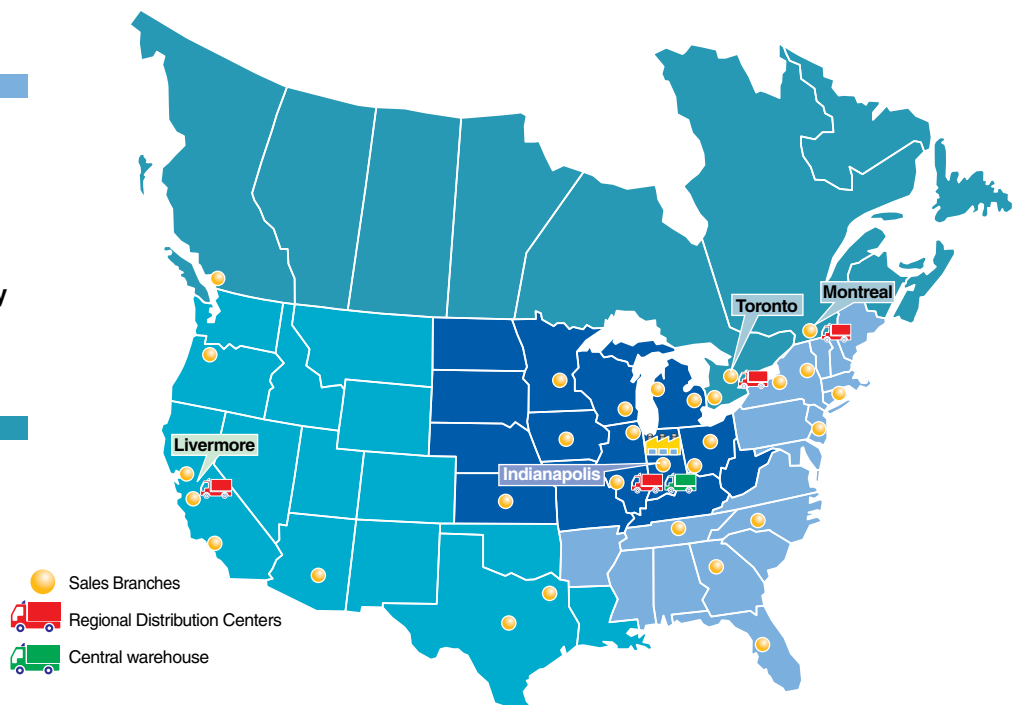
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