NEW PRODUCTS GUIDE

Digest version **Vol. 1**

SMC

NP-E15-6A

5 Port Solenoid Valve

Plug Lead Type

Series S0700

Added body ported type!

CE RoHS

CAT.NAS11-109

For details, refer to the **WEB catalog** or the catalog of each product.

Body Ported NEW

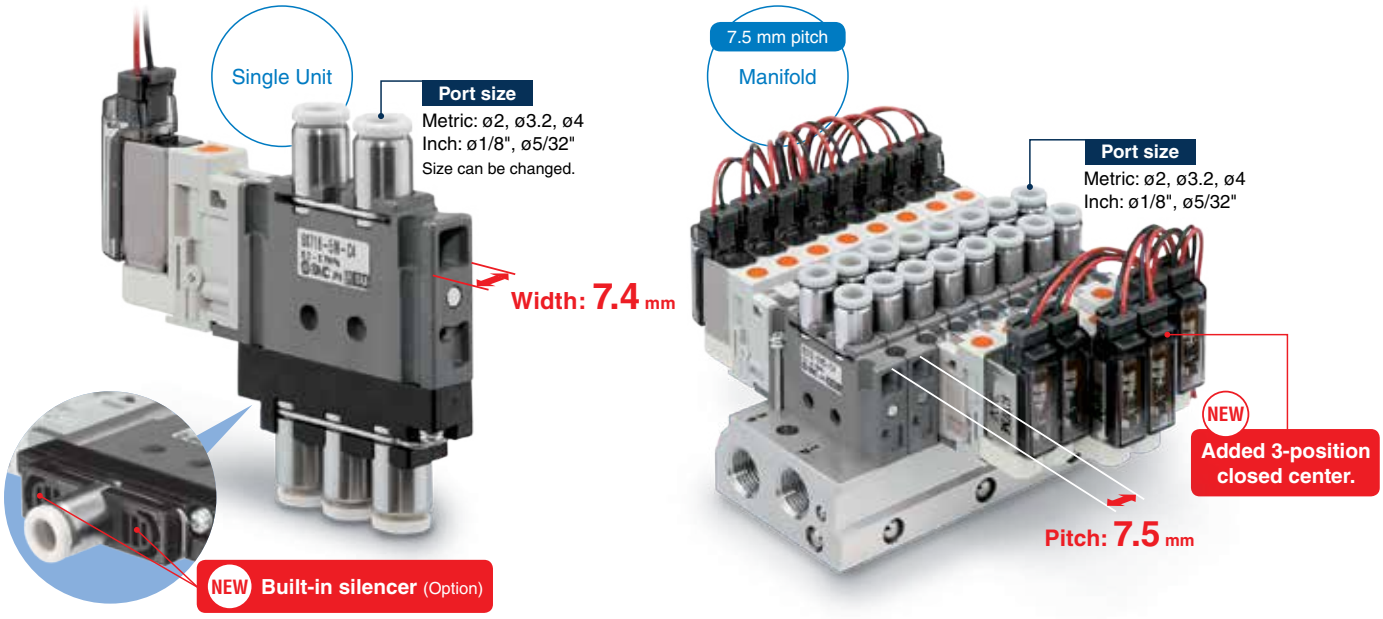
Flow-rate characteristics*

* For single/double solenoid

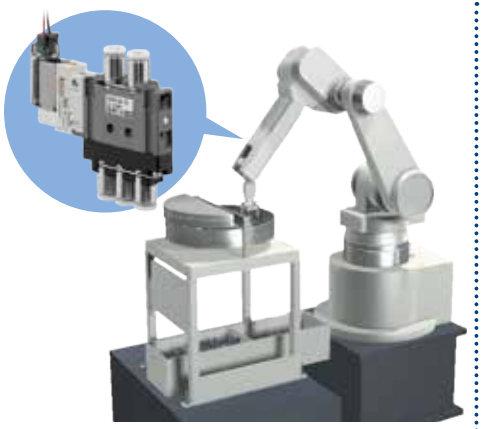
C[dm³/(s·bar)]: 0.6

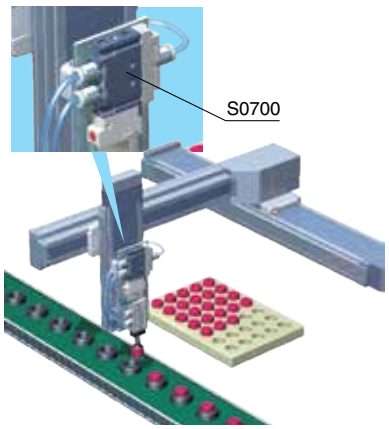
- Valve width: 7.4 mm
- Possible to drive cylinders : Up to ø32 (300 mm/s)
- Power consumption: 0.35 W
- Weight: 39 g*

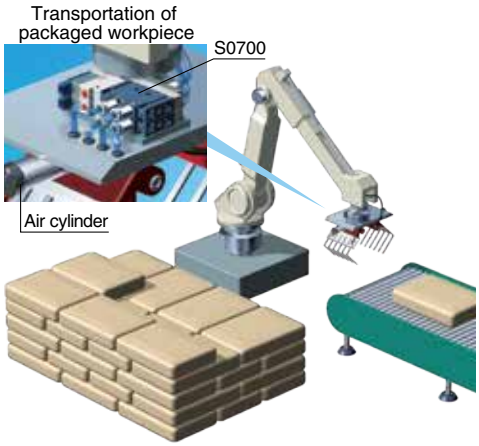
* Single solenoid, built-in silencer type



Applications







SMC

Plug-in

Vacuum Release Valve with Restrictor

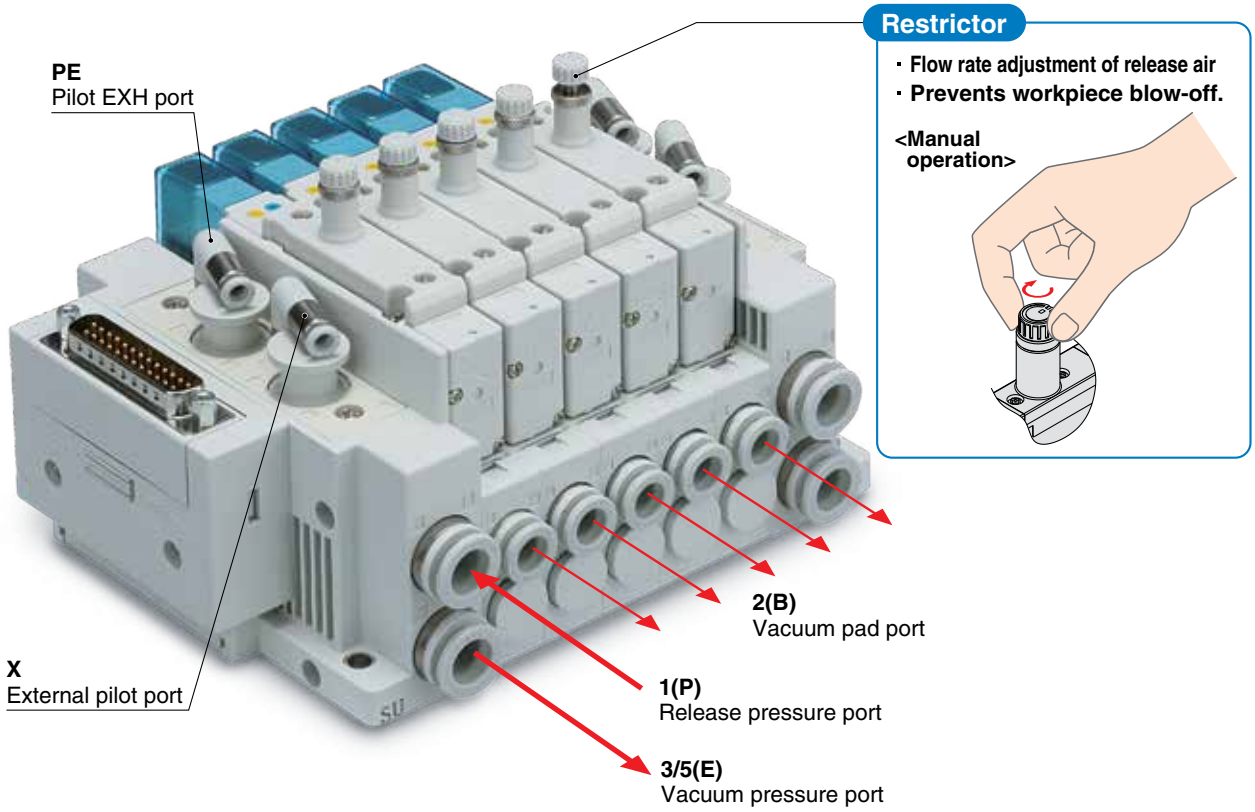
Only for External Pilot

Series $SY^{3}_{5}A\square R$

For details, refer to the **WEB catalog** or the catalog of each product.

14-E626

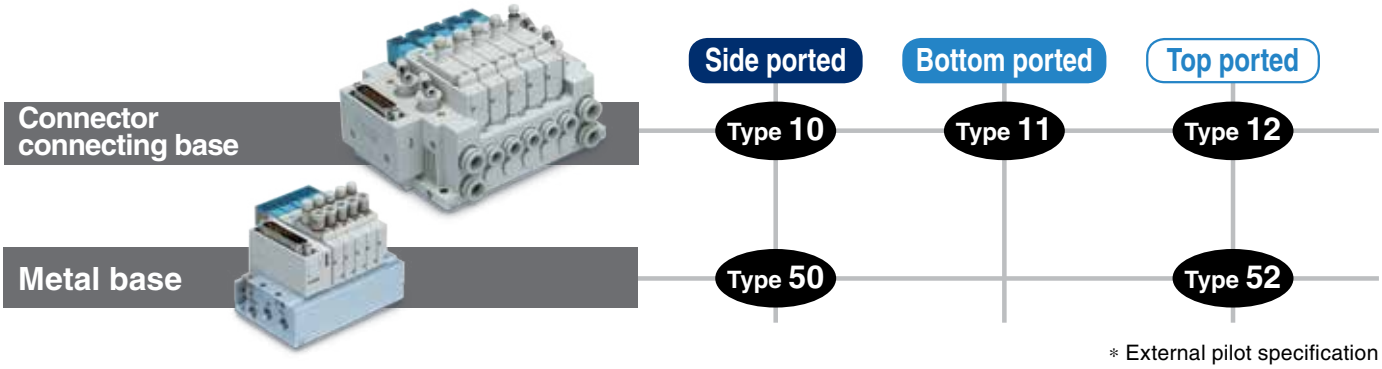
Vacuum suction and release can be controlled with a single valve!



Can be mounted on the same manifold with the standard valve.

∗ When the individual EXH spacer is used.

Mountable manifolds



∗ External pilot specification

Fieldbus System
(For Input/Output)
Series EX600

Dual port type SI Unit communication connector compatible with EtherNet/IP™ added!

For details, refer to the **WEB catalog** or the catalog of each product.

CAT.NAS02-24

Compatible Protocols

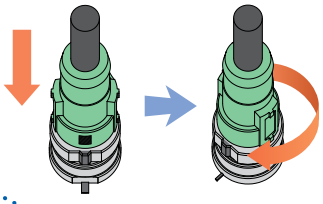
CC-Link V2 | DeviceNet | PROFIBUS | EtherNet/IP | EtherCAT | PROFINET

New Unit type added

Dual port SI Unit (EtherNet/IP™) product

- **Can be used for linear type or DLR type topology.**
- **Supports QuickConnect™ function.**
- **Status checks and settings can be performed on a web browser.**

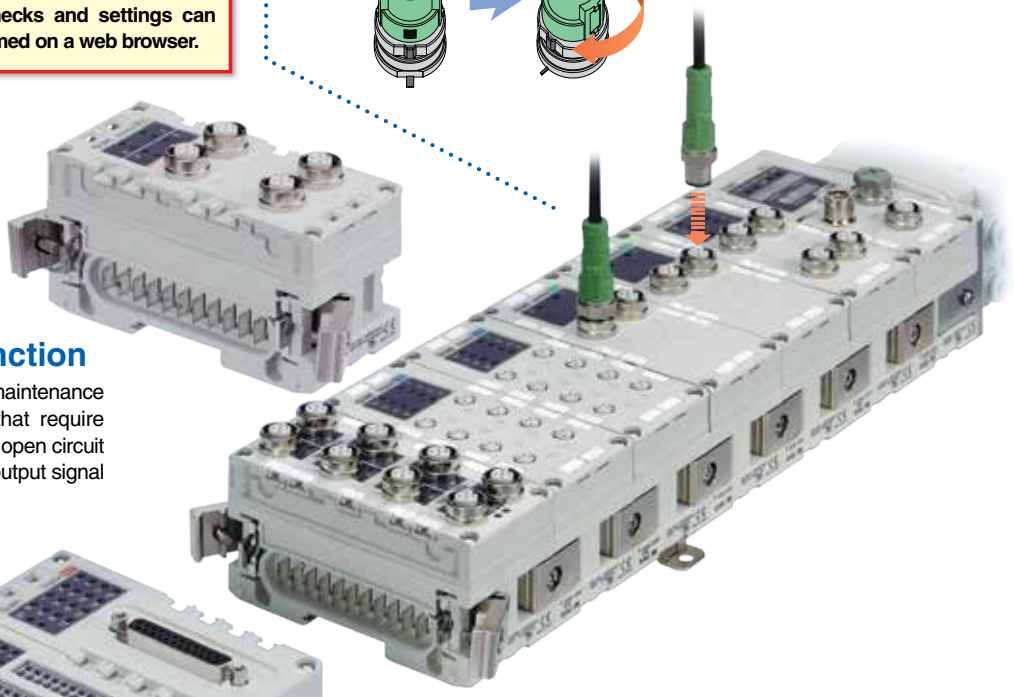
Reduction in wiring time with SPEEDCON (Phoenix Contact).
Just insert and make 1/2 rotation!



IP67

Note) Some products are IP40.

Handheld Terminal



Self Diagnosis Function

It is possible to ascertain the maintenance period and identify the parts that require maintenance, by an input/output open circuit detection function and an input/output signal ON/OFF counter function.
Also, the monitoring of input and output signals and the setting of parameters can be performed with a Handheld Terminal.

Max. 9 Units Note)
Can be connected in any order.

The Input Unit to connect input device such as an auto switch, pressure switch and flow switch, and the Output Unit to connect output device such as a solenoid valve, relay and indicator light can be connected in any order.

Note) Except SI Unit

Manifold Solenoid Valves

Series ***SY3000/5000/7000***

IP67

Series ***SV1000/2000/3000***

IP67

Series ***S0700***

IP40

Series ***VQC1000/2000/4000***

IP67

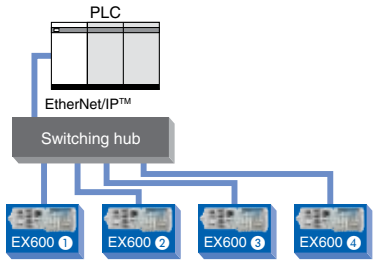
Note) The SY3000/5000/7000, S0700, and VQC1000/2000/4000 are not UL-compatible.

Latest EtherNet/IP™ Technology

The following functions are available for the dual port EtherNet/IP™ product (EX600-SEN3/4).

Added Compatible Topologies (connection configuration).

EX600-SEN1/2

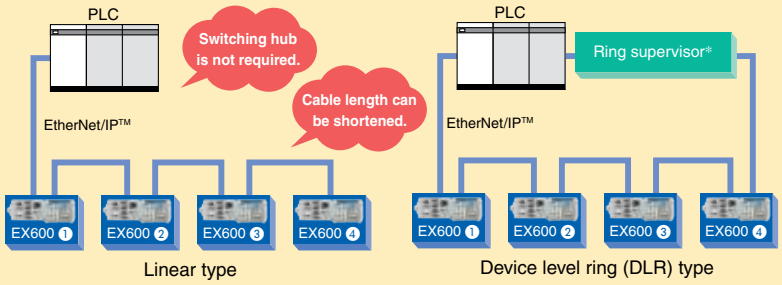


Star type

The current single port product (EX600-SEN1/2) was only for star topology.

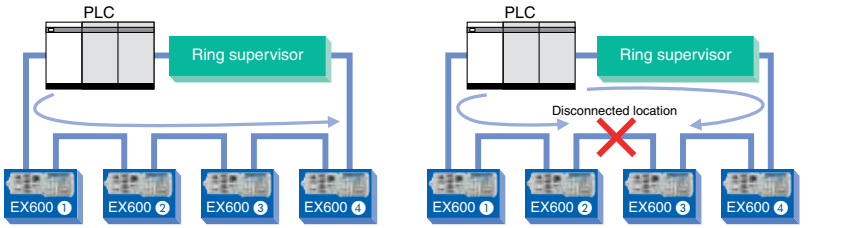
EX600-SEN3/4

The new dual port product (EX600-SEN3/4) is available for both the linear and device level ring topologies, in addition to the star type.



* One or more ring supervisors are required.

In the device level ring type, even though the communication cable is disconnected in one location, EtherNet/IP™ communication can be continued, and the disconnected portion can be specified by the ring supervisor.

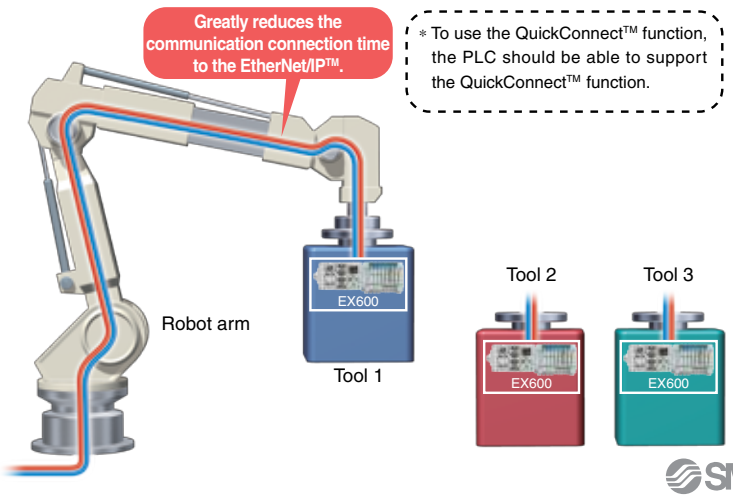


QuickConnect™ Function Available

From Power ON to communication connection

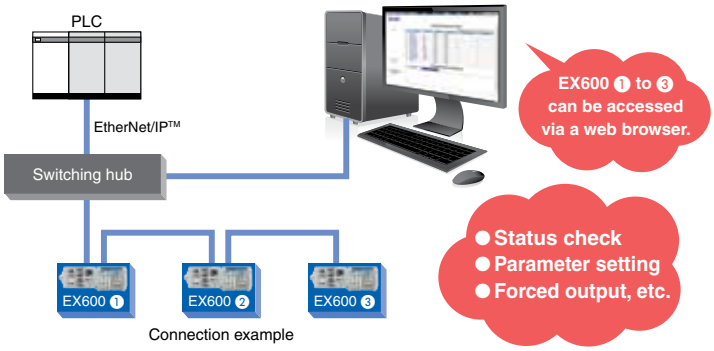
10 sec. → Approx. 0.5 sec.

In the case of a tool changer, it takes about 10 seconds for the communication to be connected in common EtherNet/IP™ products, after the power of the device installed on the tool is turned ON. Since the QuickConnect™ function* is available in the EX600-SEN3/4, the communication can be connected in about 0.5 seconds.



Built-in Web Server Function

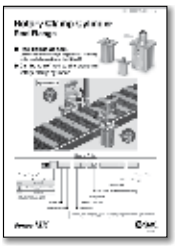
The EX600-SEN3/4 has a built-in web server function, which enables status checks, parameter settings and forced output of the EX600 using general-purpose web browsers, such as Internet Explorer. Start-up of the system and maintenance can be performed efficiently.



Rotary Clamp Cylinder
Rod Flange

Series MK
Rod flange newly added.

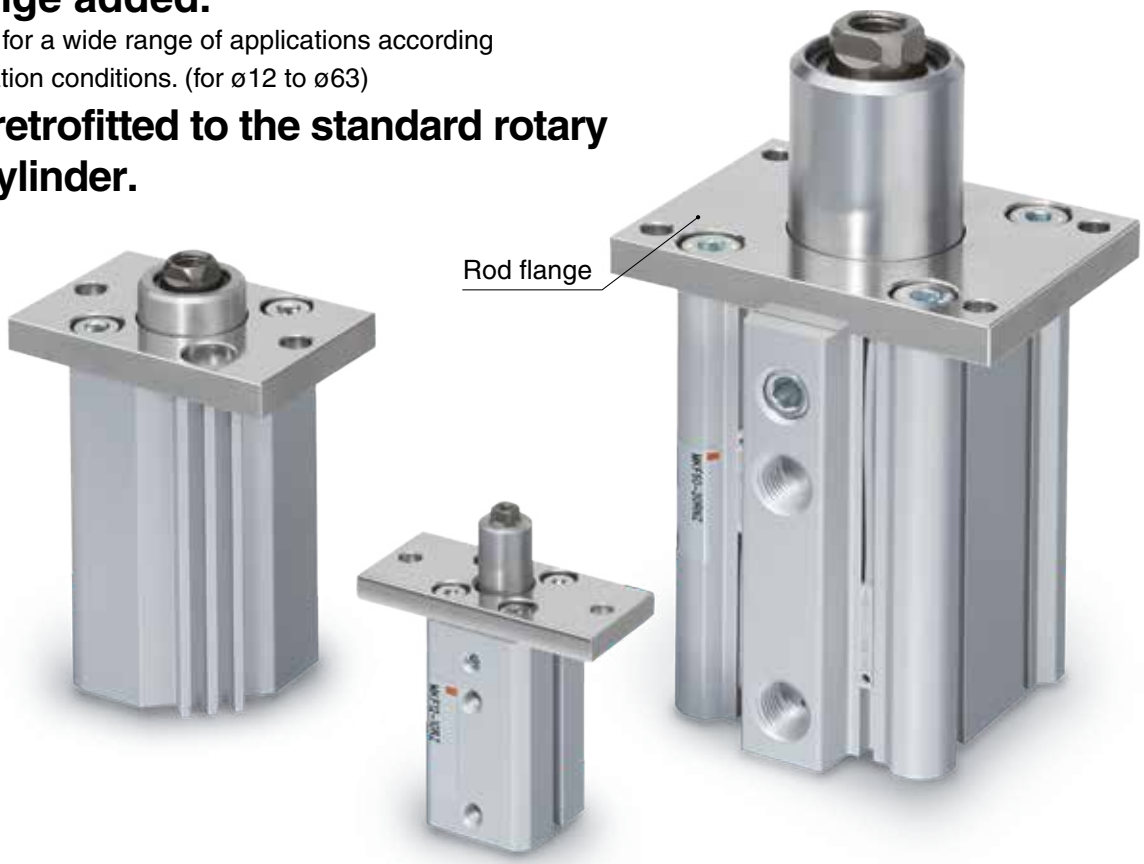
For details, refer to the **WEB catalog** or the catalog of each product.

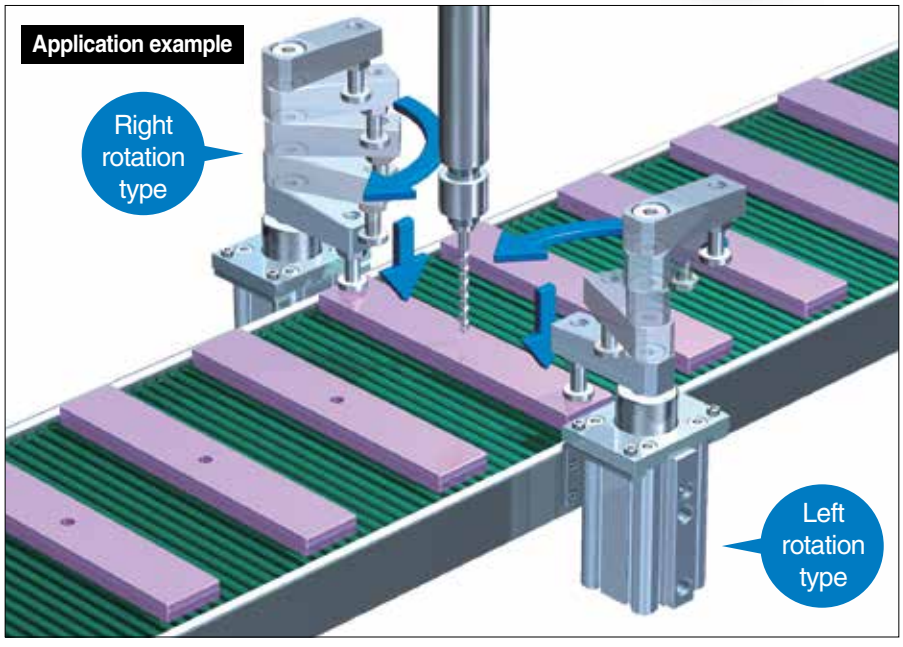


14-E637

Rod flange added.
Can be used for a wide range of applications according to the installation conditions. (for ø12 to ø63)

Can be retrofitted to the standard rotary clamp cylinder.

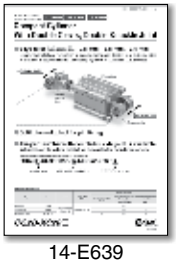




Double Clevis Width
Double Knuckle Width

12.5 mm **16.5 mm** **19.5 mm**

Compact Cylinder
With Double Clevis, Double Knuckle Joint
CQ2D-XC26□



For details, refer to the **WEB catalog** or the catalog of each product.

14-E639

3 types of double clevis width double knuckle width
12.5 mm, 16.5 mm, 19.5 mm

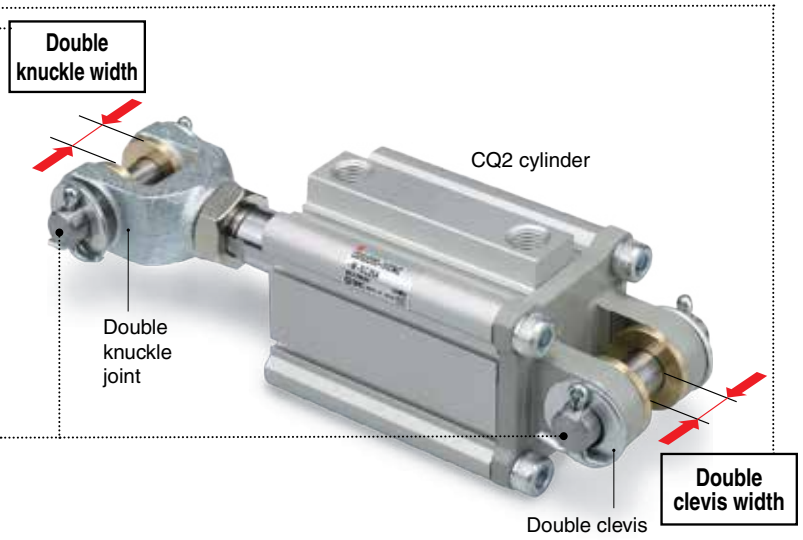
Lighter installation, reduction in design labor and design in a suitable size

A product lineup similar to the clamp cylinder CK□ 1 and CLK2 series

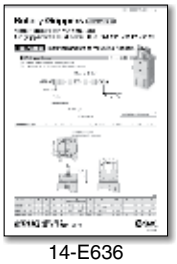
The part number with double knuckle joint is available.

Not necessary to order a bracket for the applicable cylinder separately

Split pins adopted for pin fixing



Rotary Grippers
Series MRHQ
Finger options added.
Air gripper with dust cover added.



For details, refer to the **WEB catalog** or the catalog of each product.

14-E636

Flat type fingers

MRHQ-X50

Through-holes in opening/ closing direction

MRHQ-X51

Air gripper with dust cover

MRHQ-X111/X112/X113

Regulator

Series IR1200-A/2200-A/3200-A

RoHS

For details, refer to the **WEB catalog** or the catalog of each product.

CAT.NAS60-24

Air consumption Air bleed "0" has been achieved!

Lightweight

Reduced by up to approx. 27%*

[kg]

NEW IR	Current model	Series
0.13	0.14	IR1200-A
0.23	0.30	IR2200-A
0.47	0.64	IR3200-A

* Compared with the current IR1000/2000/3000

High flow rate

Up to approx. twice*

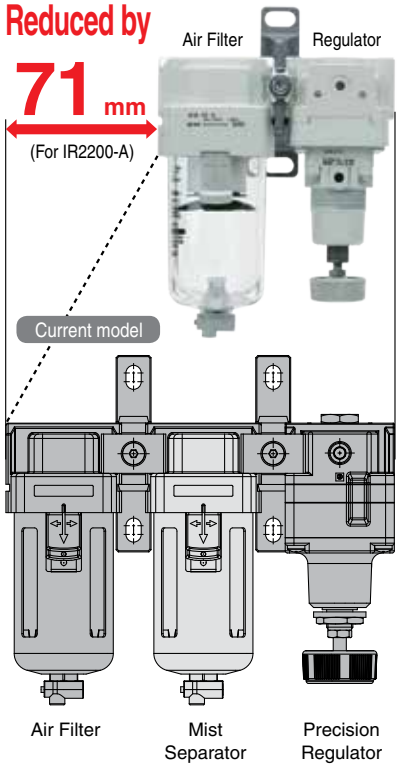
scfm [L/min (ANR)]

NEW IR	Current model	Series
25.4 [720]	11.3 [320]	IR1200-A
67.1 [1900]	33.2 [940]	IR2200-A
177 [5000]	141 [4000]	IR3200-A

* Compared with the current IR1000/2000/3000

Space saving

New structure without fixed throttle does not require a mist separator.



SMC

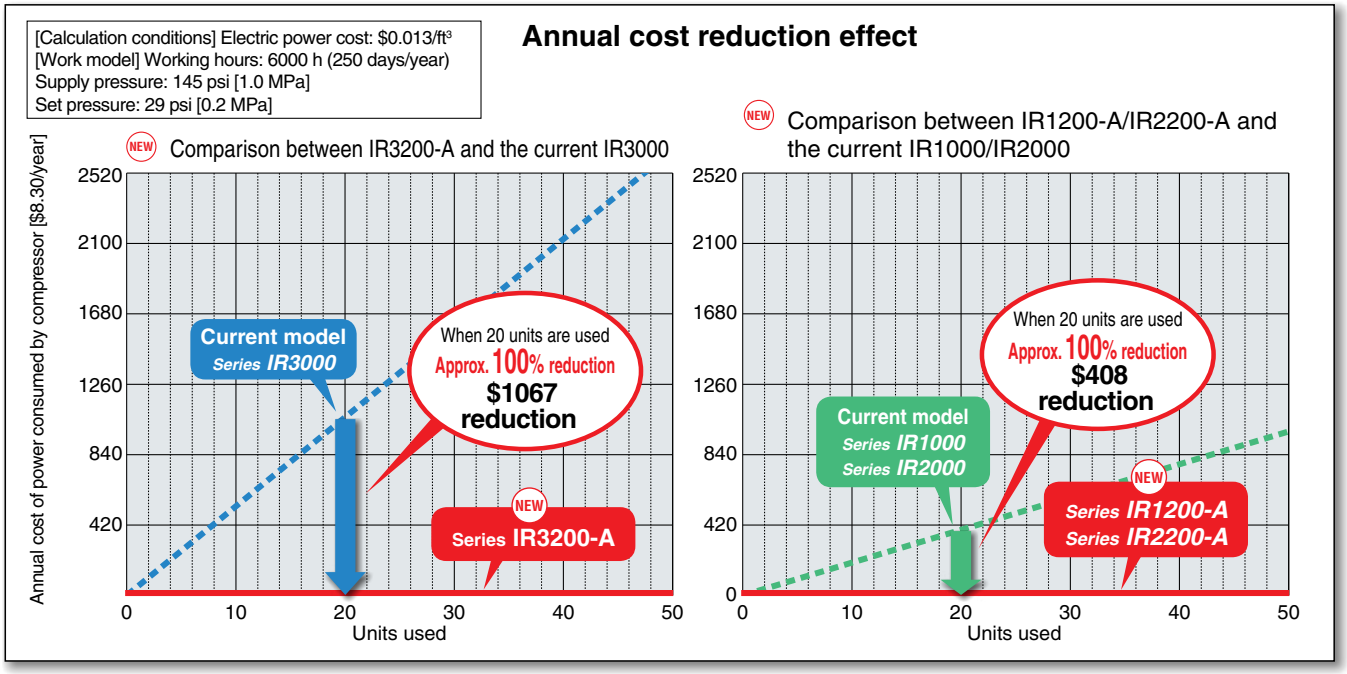
Reduction in air consumption

Air consumption is reduced with a new original structure.

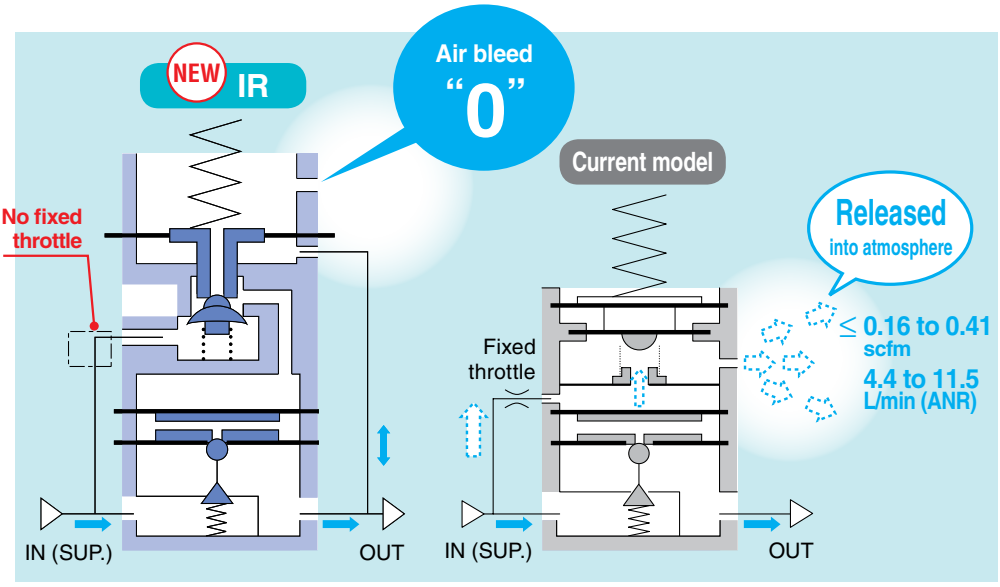
With this new original structure, running costs are reduced.

[Calculation conditions] Electric power cost: $0.013/ft³
[Work model] Working hours: 6000 h (250 days/year)
Supply pressure: 145 psi [1.0 MPa]
Set pressure: 29 psi [0.2 MPa]

Annual cost reduction effect



No fixed throttle in the new design.



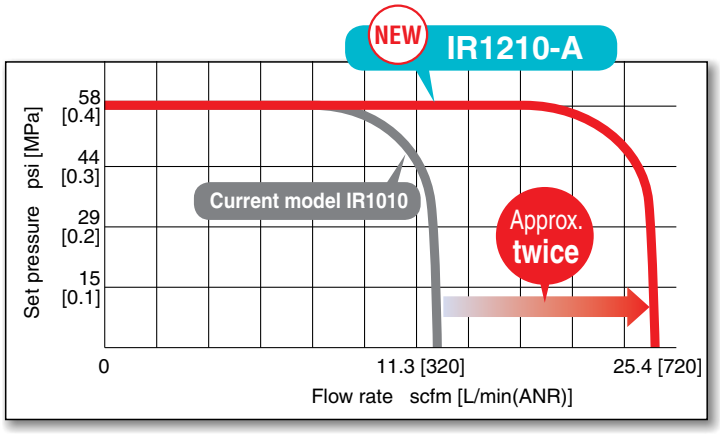
* Poor quality of air may cause operation failure. Select a model that is suitable for the desired air cleanliness by referring to "Air Preparation Equipment Model Selection Guide" (Best Pneumatics No. 5) for air quality.

Flow rate: Up to approx. twice

(Compared to the current SMC product) scfm [L/min(ANR)]

NEW IR	Current model	Series
25.4 [720]	11.3 [320]	IR1200-A
67.1 [1900]	33.2 [940]	IR2200-A
177 [5000]	141[4000]	IR3200-A

Supply pressure: 102 psi [0.7 MPa]



Supply pressure: 102 psi [0.7 MPa]

Precision Regulator

Series IR1000-A/2000-A/3000-A

RoHS

For details, refer to the **WEB catalog** or the catalog of each product.

CAT.NAS60-22

Air consumption

Reduced by up to approx. 90%*

scfm [L/min(ANR)]

NEW IR	Current model	Series
1 or less	0.16 [4.4]	IR1000-A/IR2000-A
1 or less	0.41 [11.5]	IR3000-A

* Compared with the current IR1000/2000/3000

High flow rate

Up to approx. twice*

scfm [L/min(ANR)]

NEW IR	Current model	Series
25.4 [720]	11.3 [320]	IR1000-A
67.1 [1900]	33.2 [940]	IR2000-A

* Compared with the current IR1000/2000

Lightweight

Reduced by up to approx. 27%*

[kg]

NEW IR	Current model	Series
0.13	0.14	IR1000-A
0.23	0.30	IR2000-A
0.47	0.64	IR3000-A

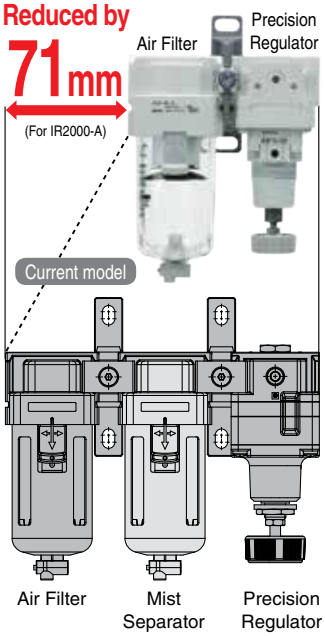
* Compared with the current IR1000/2000/3000

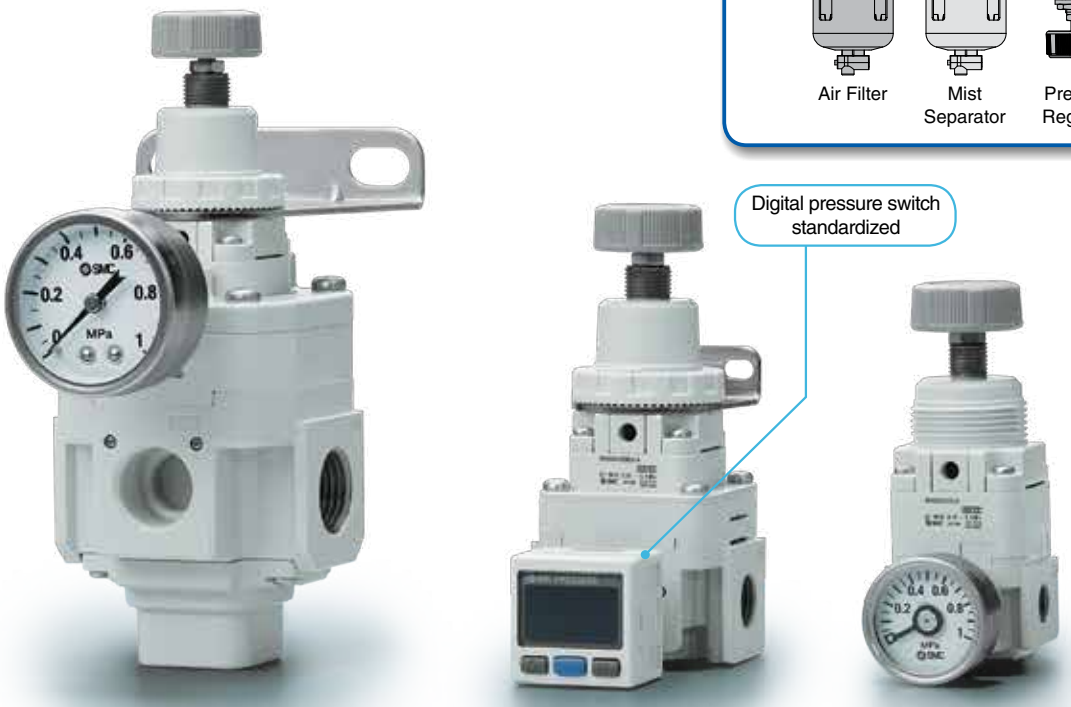
Sensitivity: 0.2% (Full span)

Repeatability: ±0.5% (Full span)

Space saving

New structure without fixed throttle does not require a mist separator.





SMC

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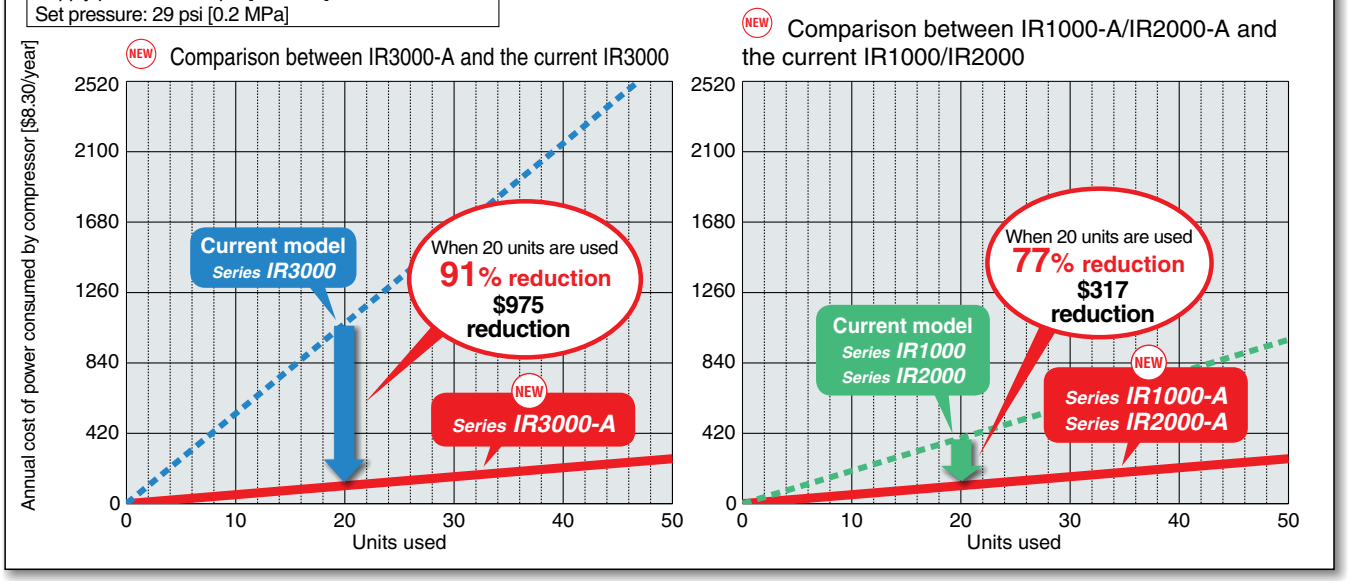
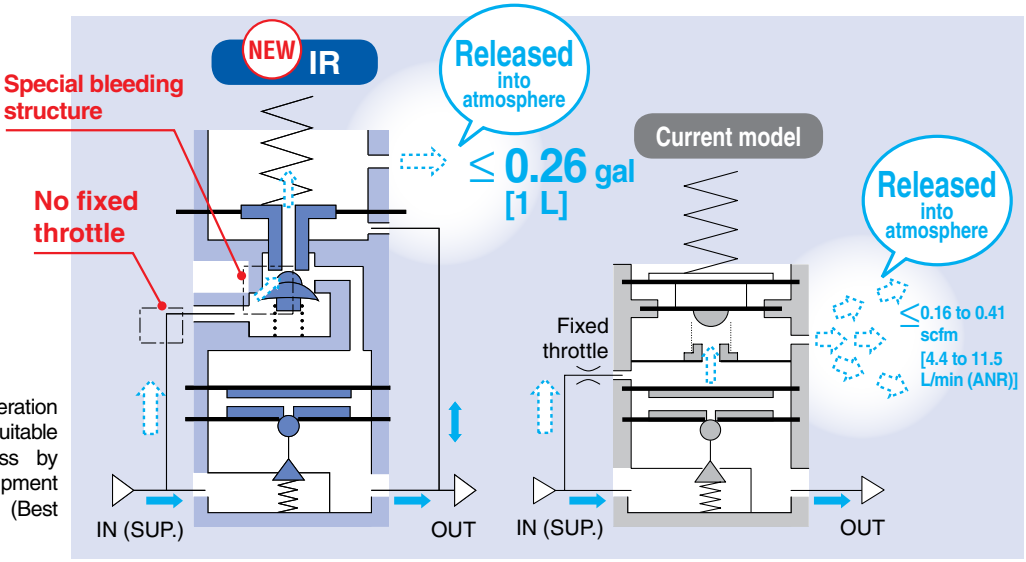
[Calculation conditions] Electric power cost: $0.013/ft³
[Work model] Working hours: 6000 h (250 days/year)
Supply pressure: 145 psi [1.0 MPa]
Set pressure: 29 psi [0.2 MPa]

Annual cost reduction effect



No fixed throttle in the new design.



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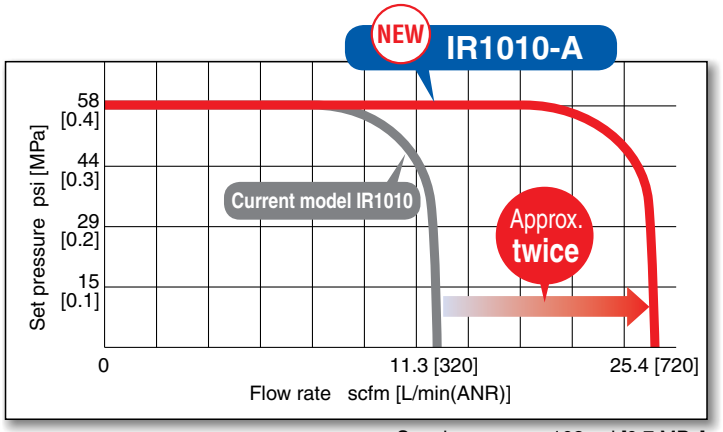
Flow rate: Up to approx. twice

(Compared to the current SMC product) scfm [L/min(ANR)]

NEW IR	Current model	Series
25.4 [720]	11.3 [320]	IR1000-A
67.1 [1900]	33.2 [940]	IR2000-A

Supply pressure: 102 psi [0.7 MPa]



Supply pressure: 102 psi [0.7 MPa]

3-Color Display
Digital Flow Switch
<Applicable fluid> Dry air, N_2
Series PFMC

CE RoHS

IP65

For details, refer to the **WEB catalog** or the catalog of each product.

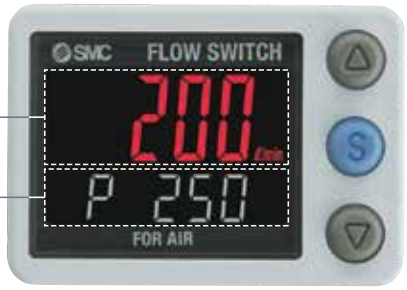
CAT.NAS100-115

3-color/2-screen display*

* 2-row display of main screen and sub screen

Instantaneous flow rate (Main screen)

Set value (Sub screen)



■ Accumulated value

■ Peak/Bottom value

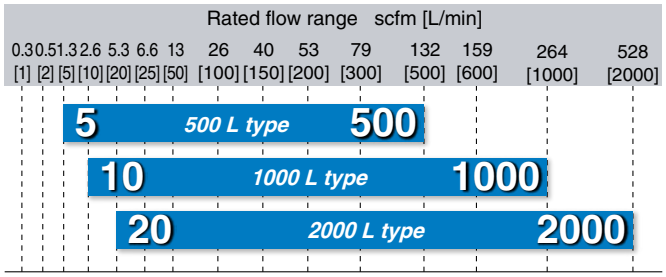
■ Line name

Expanded flow range

Wide range of flow measurement with one product

Flow ratio* **100:1**

* Rated flow ratio is 10: 1 for current PF2A.



Setting resolution **0.26 gal/min [1 L/min]**

Current PF2A: 1.32 gal/min [5 L/min]

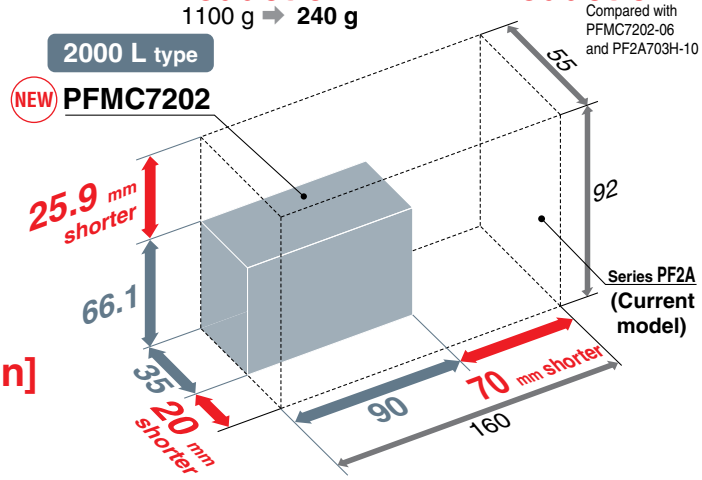
Compact, Space saving

Compared with the current PF2A,

Weight **78% reduction**
1100 g ➡ **240 g**

Mounting space **74% reduction**

Compared with PFMC7202-06 and PF2A703H-10



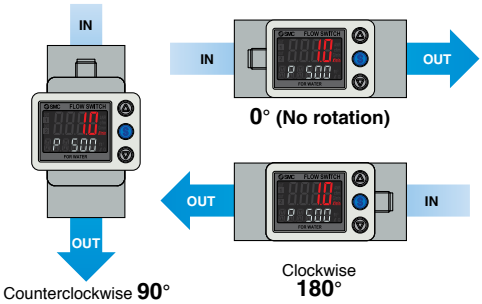
SMC

Rotary display

Display can be rotated in increments of 45° to suit the installation conditions.
Easy operation, improved visibility.

Counterclockwise **90°**
Clockwise **225°**

Installation example

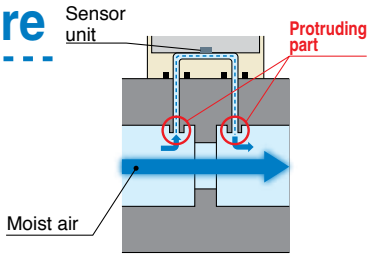


Functions

- Output operation
- Display color
- Reference condition
- Setting of response time
- Display mode
- Selection of display on sub screen
- External input function
- Accumulated value hold
- Forced output function
- Analog output free range function
- Selection of display OFF mode
- Peak/Bottom value display
- Keylock function
- Error display function
- Orientation correction function

Bypass structure

Bypass structure with protruding part at the main piping, reduces the contact of moist air with the sensor, reducing degradation of the sensor and maintaining accuracy.



Response time

Can be selected from **50** msec. (0.05 sec.)/ **0.5** sec./ **1.0** sec./ **2.0** sec.

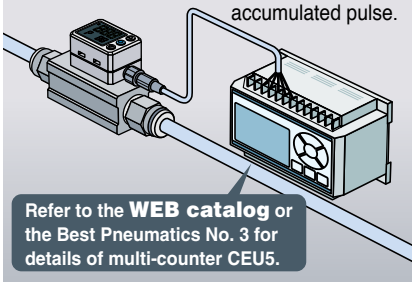
Response time can be set depending on application.

Grease-free

Applications

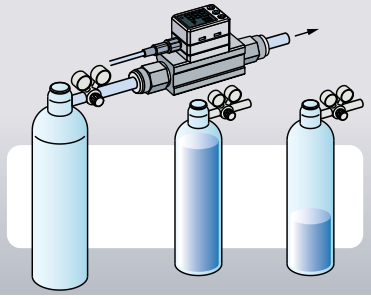
■ **Flow control of equipment, main line and branch line**

Remote control is possible with accumulated pulse.



Refer to the **WEB catalog** or the Best Pneumatics No. 3 for details of multi-counter CEU5.

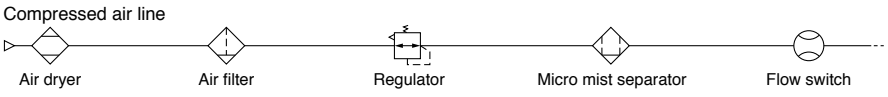
■ **Accumulated indication shows the operating flow rate or residual amount (of N_2 etc.) in a gas cylinder.**



■ **Flow control of the air for spray painting**

Note) The product is not designed to be explosion proof.

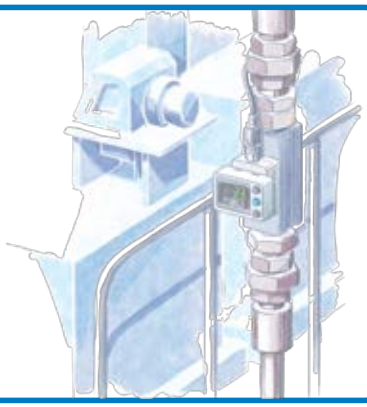
Example of recommended pneumatic circuit



Digital flow switch to save energy!

Flow control is necessary for promoting energy saving in any application.
Saving energy starts from numerical control of the flow consumption of equipment and lines and clarification of the purpose and effect.

- Digital display allows visualization.
- 3-color/2-screen display, Improved visibility
- Remote control is possible with accumulated pulse.



2-Color Display
Digital Flow Switch
<Applicable fluid> Dry air, N^2
Series PFMB
Added 2000 L type.

(Only 200 L type)

For details, refer to the **WEB catalog** or the catalog of each product.

CAT.NAS100-95

Expanded flow range!

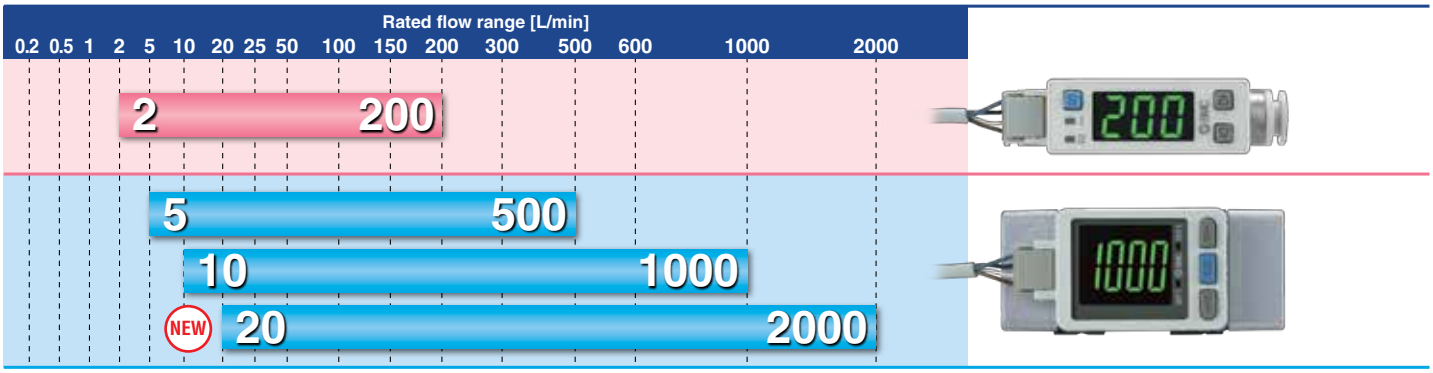
Wide range of flow measurement with one product

Flow ratio* **100:1**

* Rated flow ratio is 10: 1 for current PF2A.

Setting resolution: 0.26 gal/min [1 L/min]

Current PF2A: 1.3 g/min [5 L/min] (200 L: 0.53 g/min [2 L/min)



1L/min = 0.04 scfm [200L/min = 7.06 scfm, 500L/min = 17.66 scfm, 1000L/min 35.31 scfm, 2000L/min = 70.62 scfm]

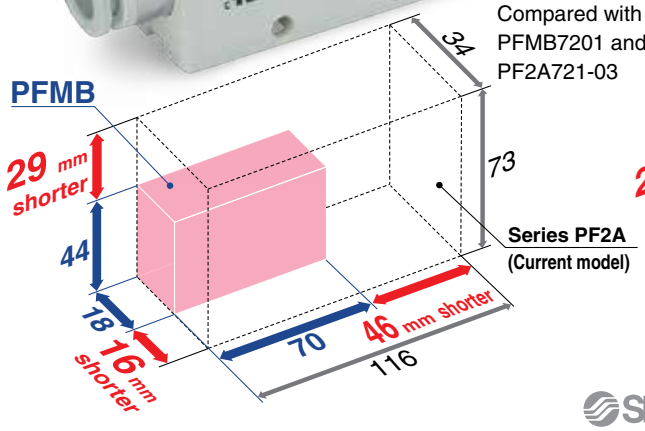
Compact, Space saving

Compared with the current PF2A,

Weight Approx. **76% reduction** 290 g ➡ **70 g**

Mounting space Approx. **81% reduction**

200 L type

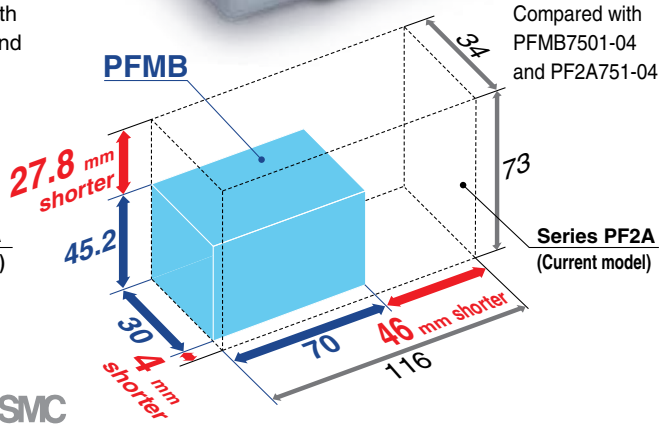


Compared with the current PF2A,

Weight Approx. **66% reduction** 290 g ➡ **100 g**

Mounting space Approx. **67% reduction**

500 L/1000 L/ 2000 L type

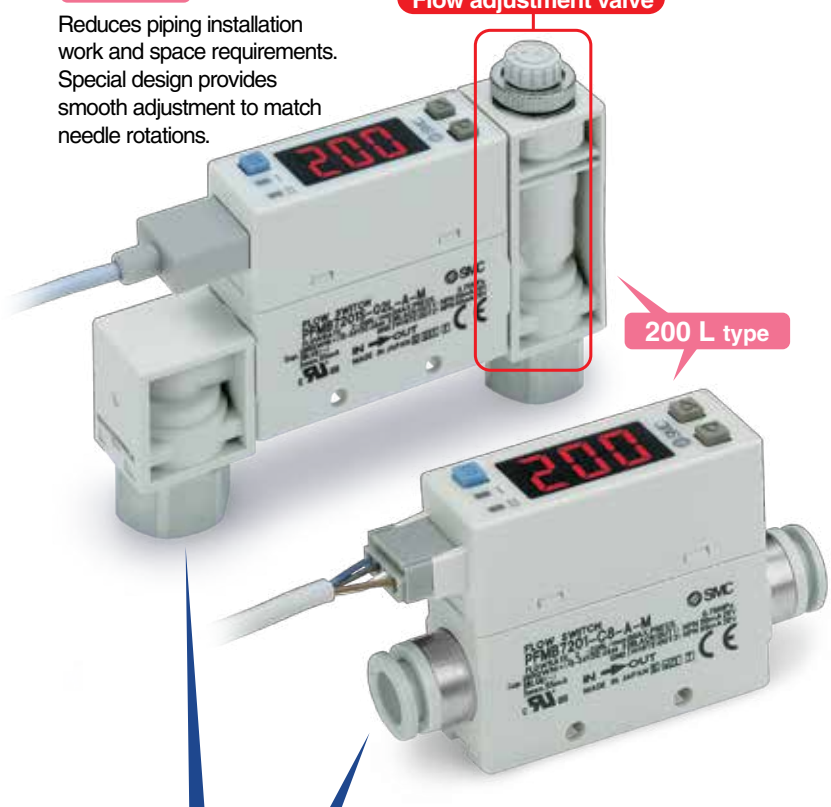


SMC

Flow adjustment valve is integrated.

200 L type

Reduces piping installation work and space requirements. Special design provides smooth adjustment to match needle rotations.



500 L/1000 L/2000 L type

Response time

Can be selected from

50 msec. (0.05 sec.)/ **0.1** sec./
0.5 sec./ **1.0** sec./ **2.0** sec.

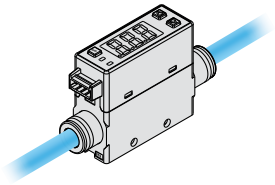
Response time can be set depending on application.

Grease-free

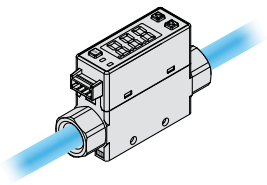
Piping variations 200 L type

Straight

One-touch fitting ø8

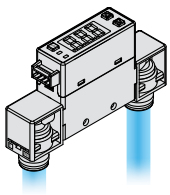


Female thread Rc, NPT, G 1/4

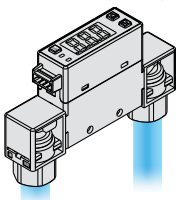


Bottom

One-touch fitting ø8



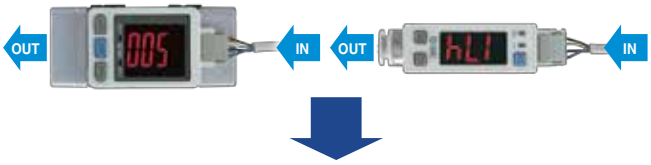
Female thread Rc, NPT, G 1/4



Reversible display

When the switch is used upside down, the orientation of the display can be rotated to make it easier to read.

When display is upside down.



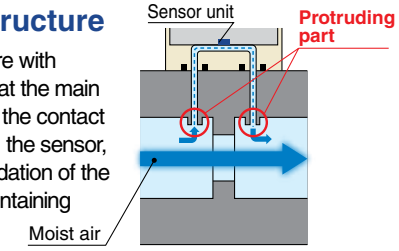
With a reversible display function
(Can be set with the reversible display mode.)

◎Functions

- Output operation
- Display color
- Reference condition
- Response time
- Display mode
- External input function
- Accumulated value hold
- Forced output function
- Analog output free range function
- Display OFF mode
- Peak/Bottom value display
- Keylock function
- Error display function
- Orientation correction function
- Reversible display mode
- Reset to the default settings.
- Setting of security code

Bypass structure

Bypass structure with protruding part at the main piping, reduces the contact of moist air with the sensor, reducing degradation of the sensor and maintaining accuracy.



Pressure Sensor for General Fluids

Series PSE570

CE RoHS

For details, refer to the **WEB catalog** or the catalog of each product.

NP-E14-13

Proof pressure **435psi [3MPa]*** * For PSE570

<Twice as compared with the PSE560>

Withstand voltage **500 VAC**

<Twice as compared with the PSE560>

Enclosure: IP65

Port size (With M5 female thread): R1/8,1/4

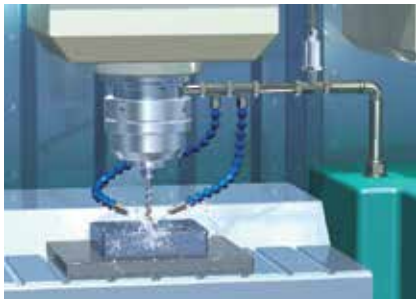
Adopted M12 connector.

Materials of parts in contact with fluid

Piping port*	**C3604 + Nickel plating**
Pressure sensor*	**Al_2O_3 (Alumina 96%)**
O-ring	**FKM + Grease**

* Stainless steel 316L is used for the PSE560. For details, refer to the **WEB catalog** or the Best Pneumatics No. 6.

Application examples



Liquid coolant pressure control

Discharge pressure control for compressor

Variations

Series	Rated pressure range				Proof pressure
	0	14.5 psi [100 kPa]	73 psi [500 kPa]	145 psi [1 MPa]	
PSE570	**0**			**145 psi [1MPa]**	**435 psi [3.0 MPa]**
PSE574	**0**		**73 psi [500 kPa]**		**218 psi [1.5 MPa]**

Fan Type Ionizer

Series IZF

CE RoHS

For details, refer to the **WEB catalog** or the catalog of each product.

CAT.NAS100-113

Thinnest and Fastest

Thickness **40** mm

Rapid static neutralization **0.5** seconds

Slim design

[mm]

Model	Thickness (Depth)	Width	Height
IZF21	40	104	155
IZF31		144	195

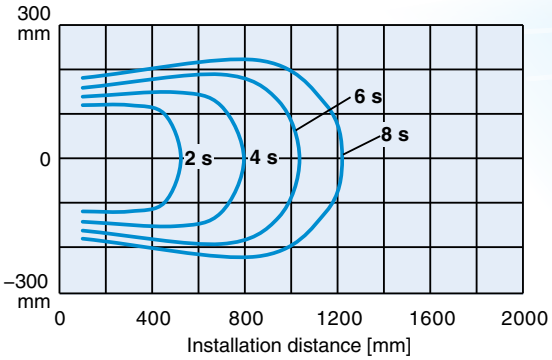
Offset voltage

(Ion balance): ±5 V

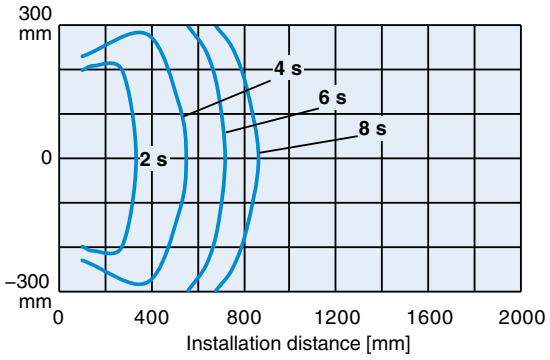
Extensive static neutralization

▶ Refer to page 24 for flow rate adjustment and the description below for angle adjustment of the adjustable louver.

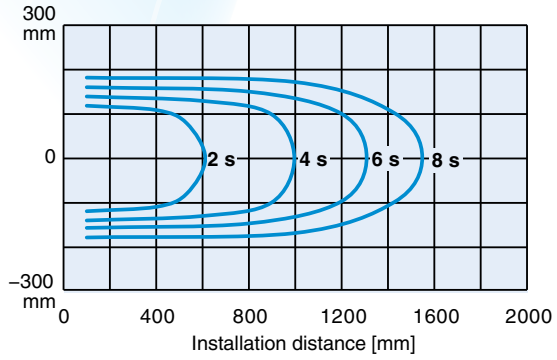
At maximum flow rate



At maximum flow rate, with adjustable louver/largest angle

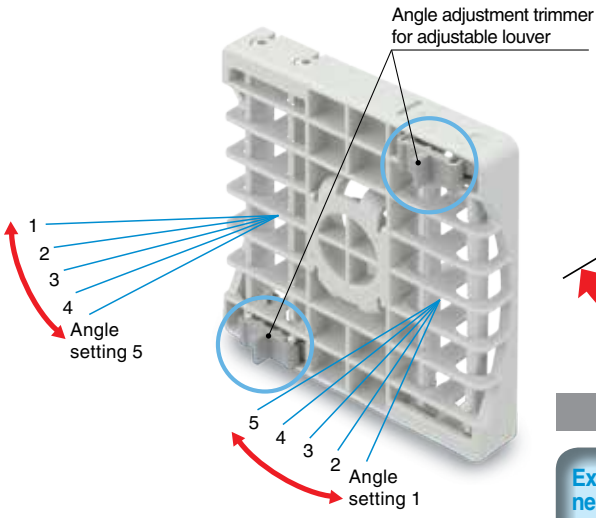


At maximum flow rate, with adjustable louver/smallest angle

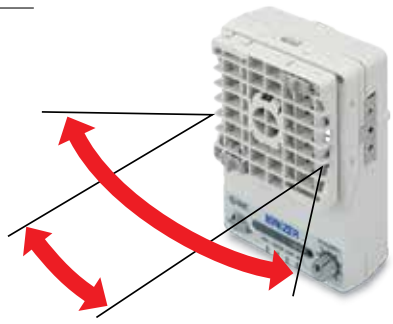


Extensive static neutralization area can be covered with adjustable louver.

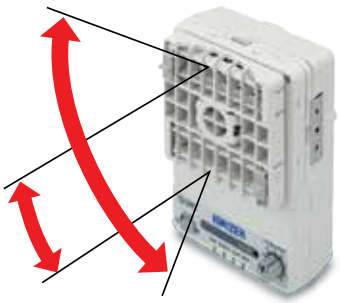
Option



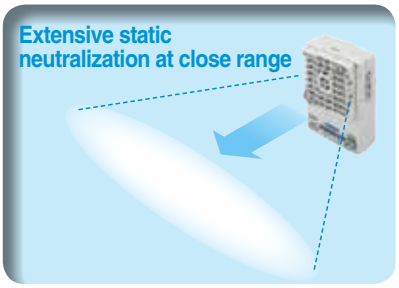
Adjustable in 5-stages from wide to narrow angle

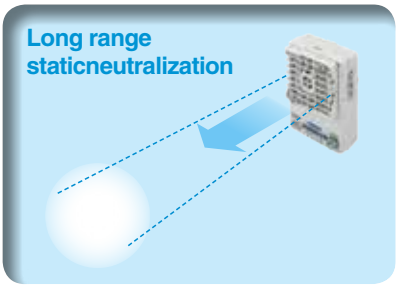


90-degree rotation mounting available (Adjustable in a vertical direction)



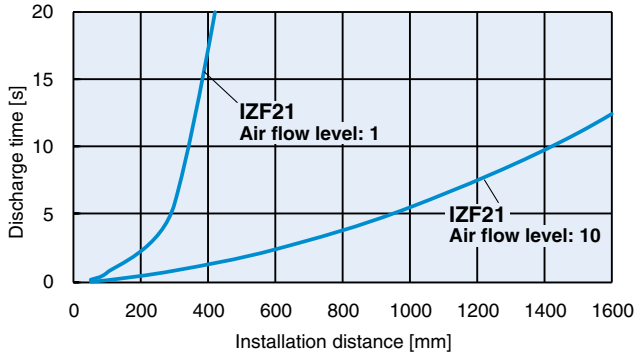
Application Examples

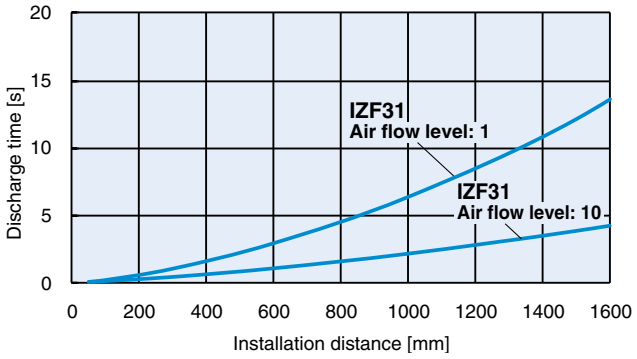




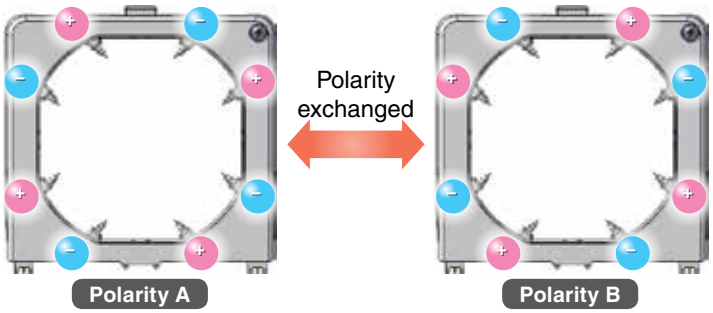
Rapid static neutralization

Installation distance and discharge time (Discharge time from 1000 V to 100 V)





The emitters life is almost doubled with averaging function.



Averaging Function

The life of the emitters is almost doubled* by switching the polarity of the applied high voltage every time the power is supplied hence averaging the wear level of the emitters.

* Compared with the IZF10.

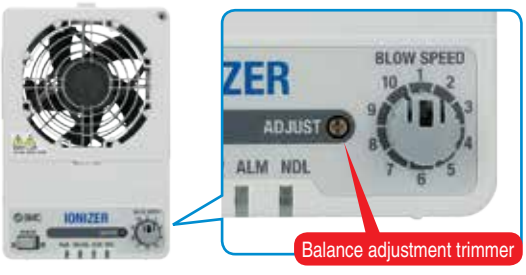
Built-in sensor constantly monitors offset voltage.

Automatic balance adjustment function achieves stable offset voltage and reduces adjustment time.

Automatic adjustment — Prevents reduction of offset voltage performance due to emitters contamination when the ionizer is used for a long period of time.

Manual adjustment — Corrects offset voltage displacement due to the installation environment.

Constantly monitors offset voltage by use of a sensor. Prevents reduction of offset voltage performance due to emitters contamination when the ionizer is used for a long period of time. Balance adjustment trimmer can provide offset voltage adjustment suitable for the installation environment.

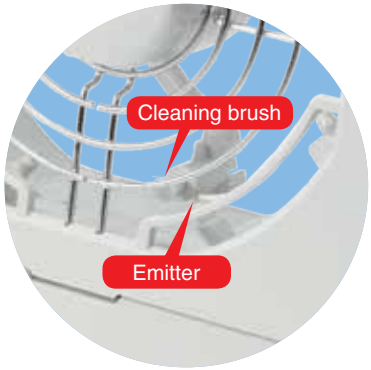


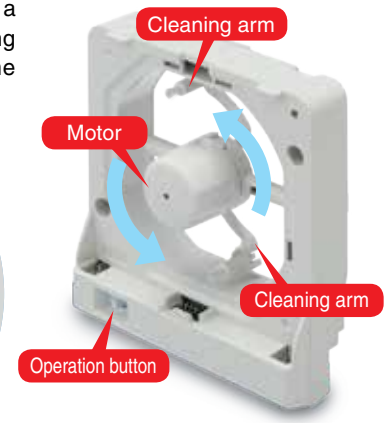
Emitter contamination can be reduced by automatic cleaning function.

Option

Cleaning arms are installed inside. Emitter cleaning is started by external input or operation button.

The emitter points are cleaned with a brush by the motor driven rotating cleaning arms, which reduces the emitters' contamination.

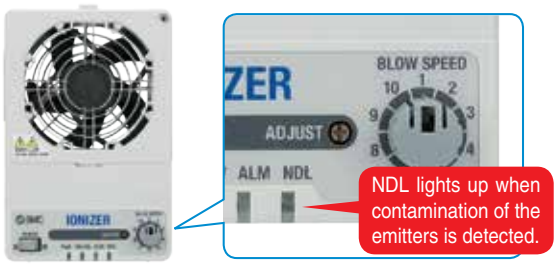




Automatic cleaning unit

Contamination of the emitters can be detected.

Emitter contamination level is constantly monitored.
When maintenance is required, the user is alerted by a signal output and the LED turning ON.



Emitter cartridge is easily replaceable. (No tools are required.)

Emitter cartridge

Emitter cartridge

Emitter cartridge drop prevention

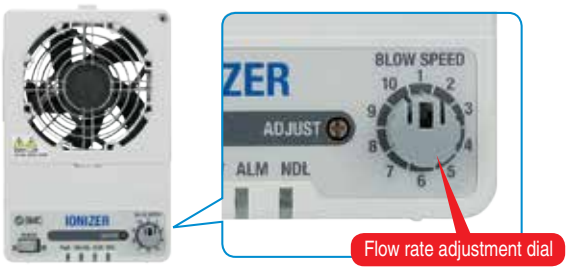
Emitter cartridge retaining screw
M3 x 12 1 pc. (Provided by customer)

Related equipment

Cleaning kit
IZS30-M2

Flow Rate Adjustment Function

Flow rate is adjustable in 1 0 steps using the flow rate adjustment dial. The flow rate adjustment dial is removable to prevent unexpected changes of adjustment.



Flow Rate Adjustment Range ft³/min [m³/min]

Model	Flow rate adjustment level									
	1	2	3	4	5	6	7	8	9	10
IZF21	14 [0.4]	18 [0.5]	21 [0.6]	25 [0.7]	28 [0.8]	32 [0.9]	39 [1.1]	49 [1.4]	60 [1.7]	64 [1.8]
IZF31	46 [1.3]	60 [1.7]	67 [1.9]	81 [2.3]	88 [2.5]	95 [2.7]	113 [3.2]	131 [3.7]	148 [4.2]	155 [4.4]

7 types of alarms are provided.

1 Power supply failure

2 Incorrect high voltage

3 Fan motor failure

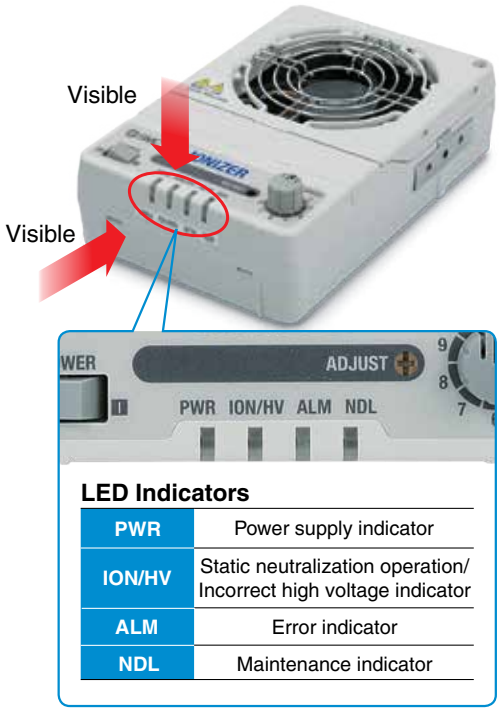
4 CPU failure

5 Maintenance warning

6 Emitter cartridge mounting failure

7 Automatic cleaning ailure

LED indicator can be checked from 2 directions!



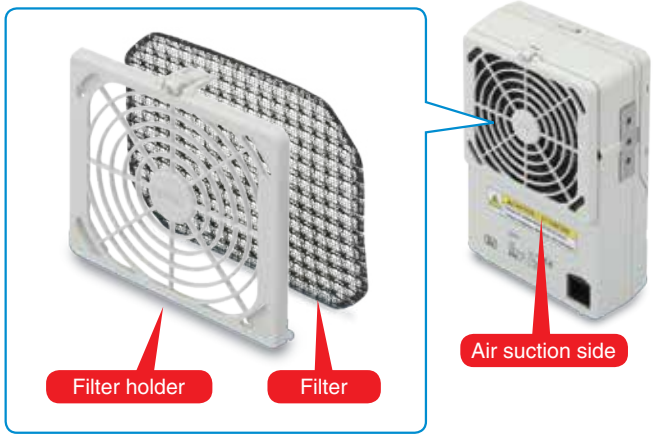
LED Indicators

PWR	Power supply indicator
ION/HV	Static neutralization operation/ Incorrect high voltage indicator
ALM	Error indicator
NDL	Maintenance indicator

Filter

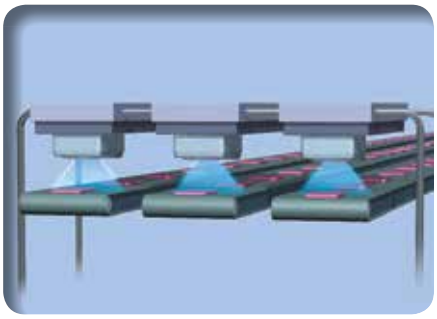
Option

Prevents ingress of lint and foreign matter to the motor and possibility of short-circuit between emitters!

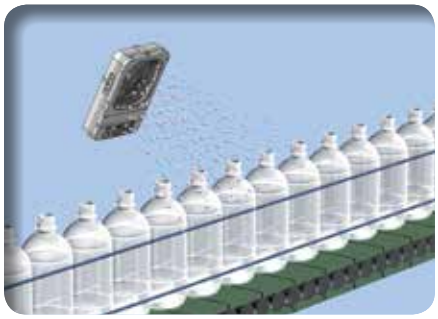


Application Examples

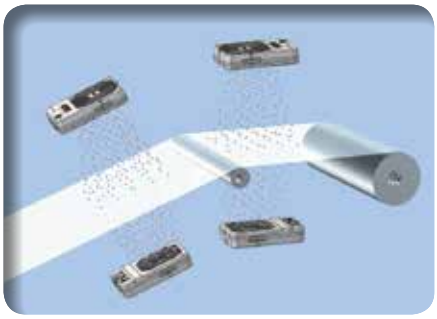
Static neutralization on a conveyor
Static neutralization in a narrow space



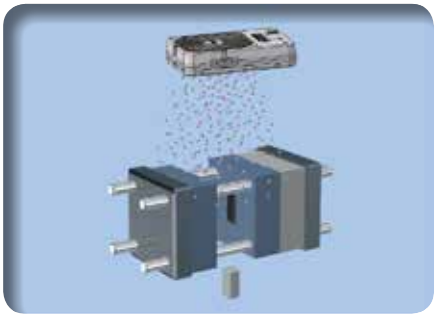
Neutralizing static electricity on PET bottles
Trip-resistance during conveying/
Prevents adhesion of dust.



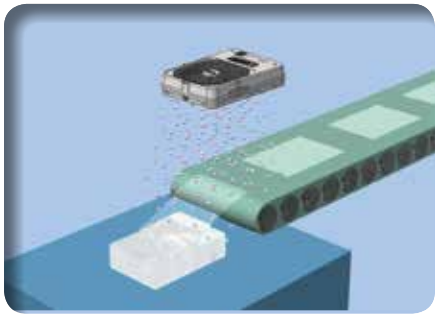
Neutralizing static electricity from films
Prevents winding failure./Prevents adhesion of dust.



Neutralizing static electricity on molded goods
Improves detachability of molded goods from a die.

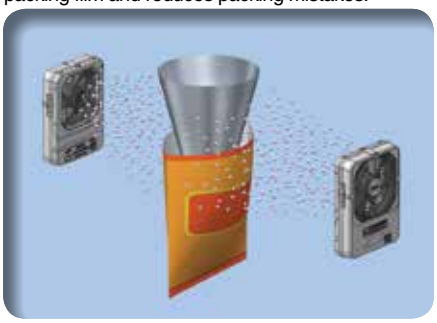


Neutralizing static electricity on film molded goods
Sticking and scattering prevention on a conveyor

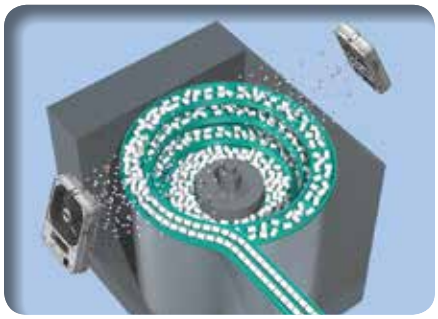


Static neutralization on packaging materials made from polystyrene foam.
Darkening due to dust adhesion prevented

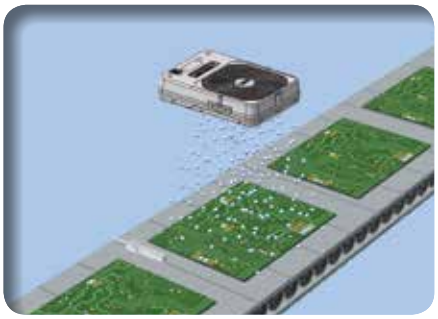
Neutralizing static electricity from packing films
Prevents the filled substance from adhering to the packing film and reduces packing mistakes.



Neutralizing static electricity from parts feeder
Prevents clogging.



Neutralizing static electricity on an electric substrate
Prevents element disruption due to discharge, and adhesion of dust.



Compact fan type with simple functions *Series* *IZF10*

- Compact design (H x W x D): 80 mm x 110 mm x 39 mm
- Weight: 280 g
- 2 types of fans available
  - ◎Rapid static neutralizing fan: Discharge time (Static neutralization time)
    1.5 s (When neutralizing static electricity from 1000 V to 100 V at a distance of 300 mm from the workpiece (front surface))
  - ◎Low-noise fan: 48 dB(A) (Measured at a distance of 300 mm from the workpiece),
    Rapid static neutralizing fan: 57 dB(A)
- Offset voltage (Ion balance)*: ±13 V
- With alarm
  Incorrect high voltage, Emitter dirt detection

∗ Based on ANSI/ESD-STM3.1-2006 standards

Ionizer/Nozzle Type
IZN10-X367

Nozzles with right angles added.

For details, refer to the **WEB catalog** or the catalog of each product.

14-E625

●Slim design

●2 types of nozzles

∗ Installation distance: 100 mm

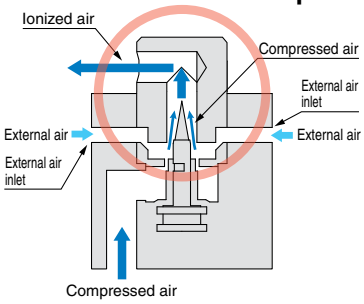
Energy saving static neutralization nozzle with right angles

Short range static neutralization, Design focuses on offset voltage.

Offset voltage: Within ±10 V*

Increases air blow flow rate by external air intake

Static neutralization is possible with minimal air consumption.



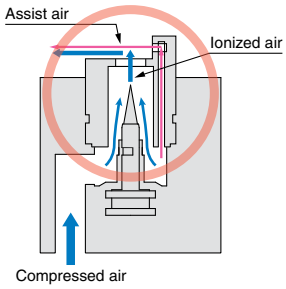
High flow rate nozzle with right angles

Long range static neutralization and dust removal

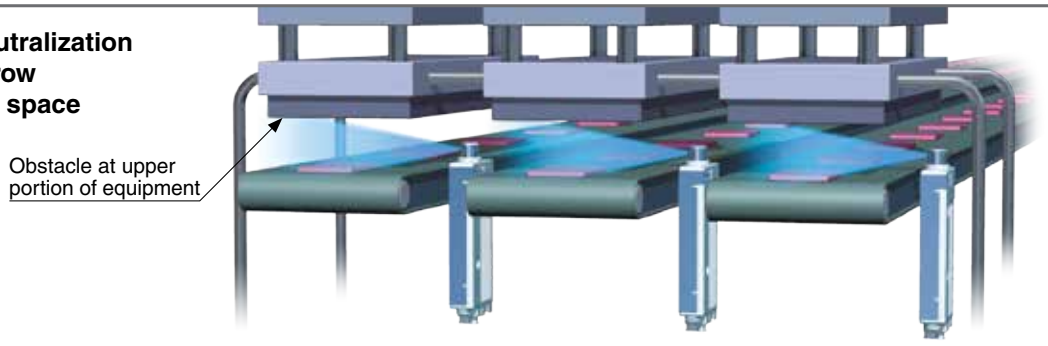
Ionized air assisted by the compressed air

- Improved dust removal performance by the energy of compressed air.
- Suitable for static neutralization at a long distance (max. 500 mm).

Offset voltage: Within ±30 V*

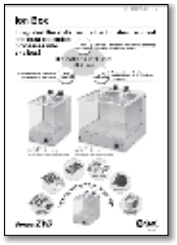


Static neutralization from narrow conveyor space



Ion Box

Series ZVB



For details, refer to the **WEB catalog** or the catalog of each product.

14-E633

Integrated the static neutralization, dust removal and dust collection processes into one box!

Static neutralization

Adopted a dedicated ionizer with improved static neutralization efficiency.

3 functions in 1 unit!
All in one

Blow nozzle with improved dust removal efficiency

Dust removal

Dust collection

Pneumatic dust collector enables quick dust collection response.

A4 size [ZVB20]
210 x 297 mm (Dimensions)
202 x 212 mm (Static neutralization space)

A3 size [ZVB40]
400 x 384 mm (Dimensions)
392 x 298 mm (Static neutralization space)

SMC

Improved the static neutralization and dust removal efficiency with a separate ion blow and air blow structure!

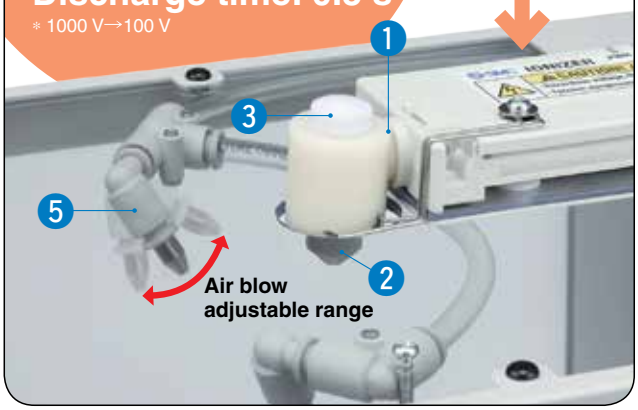
Ionizer

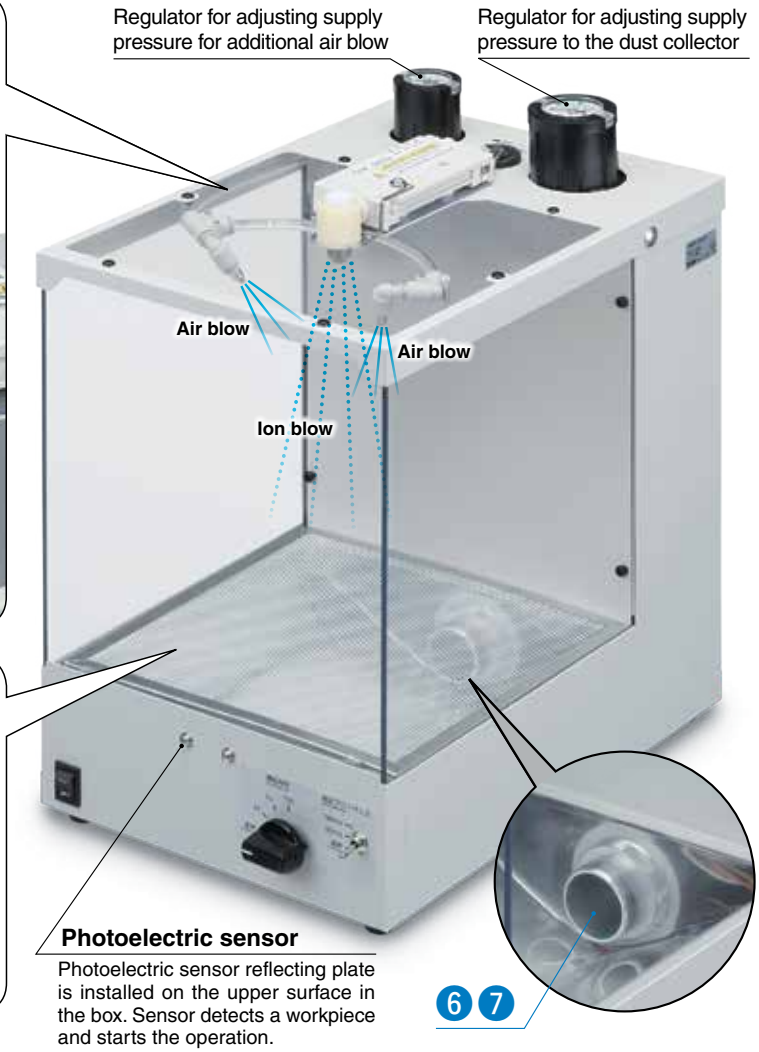
Offset voltage: ±10 V

∗ Static neutralization distance: 100 mm

Discharge time: 0.3 s

∗ 1000 V→100 V





4 Secured a large static neutralization space.

Reduced the dust collector space using a pneumatic dust collector (vacuum flow), to secure the static neutralization space to the utmost.

[mm]

Model	Size	Static neutralization space (Width x Depth)
ZVB20	A4	202 x 212
ZVB40	A3	392 x 298

Photoelectric sensor

Photoelectric sensor reflecting plate is installed on the upper surface in the box. Sensor detects a workpiece and starts the operation.

Static neutralization

1 Minimized attenuation of ion

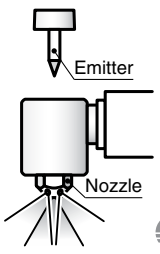
Separate ion blow/air blow structure. Reduced the attenuation of the ion by an air blow.

2 Adopted a nozzle that neutralizes static electricity in a wide range.

Adopted a diffusion type nozzle for the ionizer, so that ionized air reaches all corners of the box. Supports an extensive range of large workpieces.

3 Easy maintenance of emitter

Since the emitter can be removed easily, replacement and cleaning can also be performed easily.



Dust removal

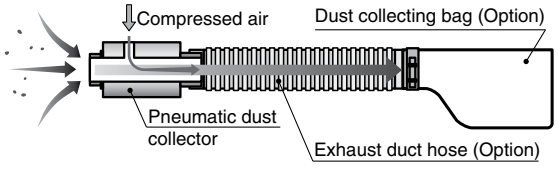
5 Nozzle dedicated for the blow without impairing the generation efficiency of the ion

Equipped with an additional air blow nozzle only for dust removal. Besides the ionized air, the angle and flow rate of the air blow can be adjusted (Optional). The pressure can also be adjusted with an additional air blow pressure regulator installed on the back side of the body.

Dust collection

6 Adopted a maintenance-free pneumatic dust collector.

Since a built-in pneumatic dust collector blows the sucked in dust to the exhaust port by the power of compressed air, dust will not remain inside the dust collector. The maintenance-free dust collector without a drive unit also reduces the risks of malfunction.



7 Quick dust collection response

The pneumatic dust collector starts collecting dust immediately after the built-in solenoid valve is opened.
Reduces the cycle time with a quick response, from the input of an electrical signal to the start of suction.

Angle Seat Valve
Air Operated Type
Series VXB

Steam
* Can be used with air and water.

RoHS

For details, refer to the **WEB catalog** or the catalog of each product.

CAT.NAS70-54

Low pressure loss due to angle seat structure!
Reduced leakage with rubber seal!

Long service life

3 million cycles* (Steam)

5 million cycles* (Air)

* Based on SMC's test condition

Low leakage

0.6 in³/min

(10 cm³/min)* or less

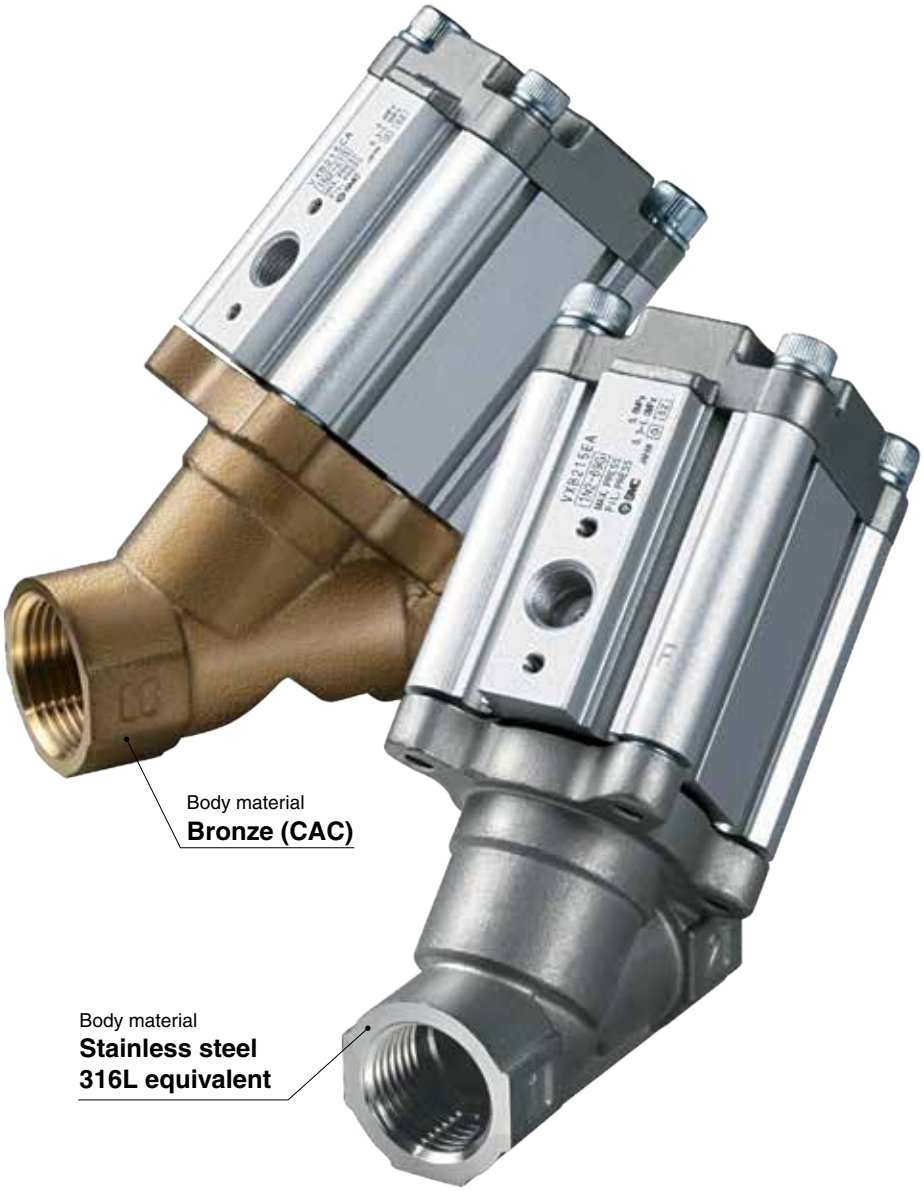
* With air

Space saving

Height

100 mm*

* Port size: 3/8



SMC

Long service life

Steam **3 million cycles***

Air **5 million cycles***

* Based on SMC's test condition

2 Squeeze seal with scraper function
Scraper function added to the seal to shut off fluid leakage

3 Resin scraper
Scraper function during the main valve stroke

4 Protective seal
Prevents foreign matter from entering the squeeze seal when the valve is open.

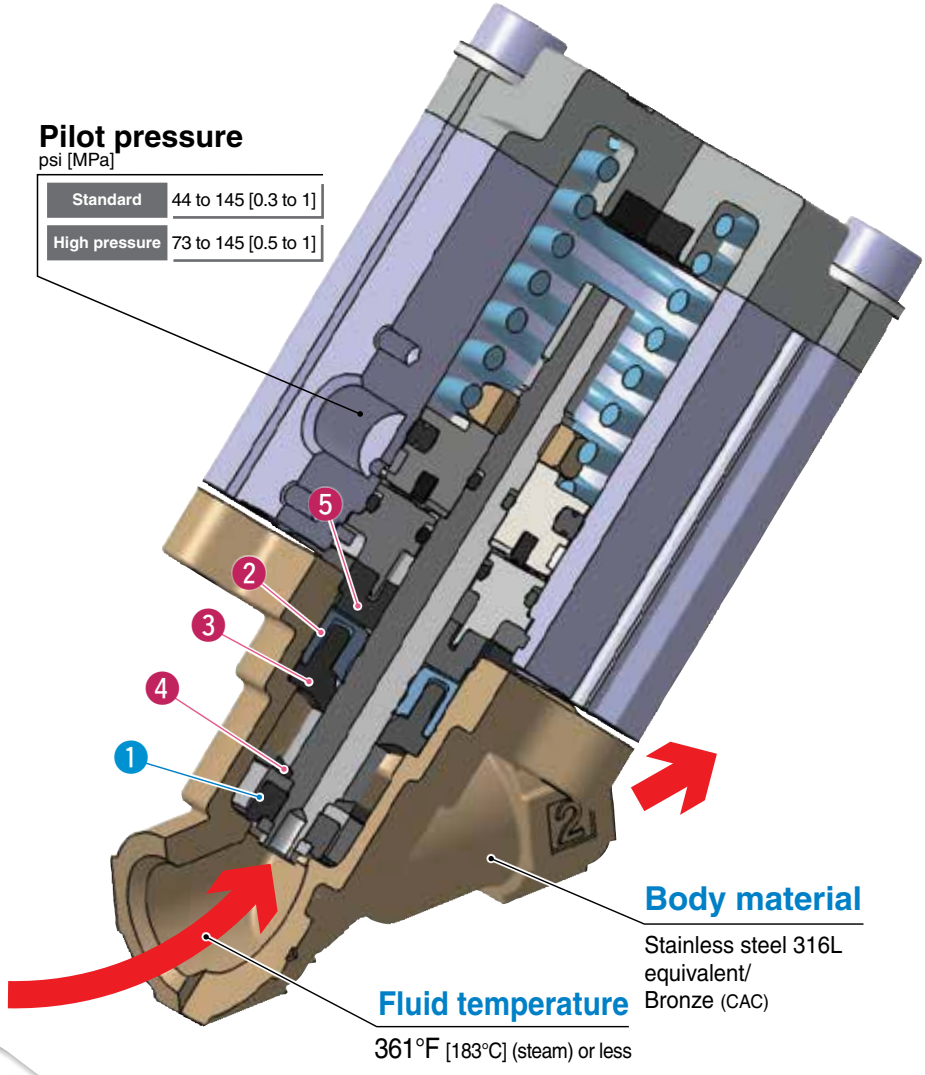
5 Guide bushing
Prevents misalignment and lengthens the squeeze seal life.

Low leakage

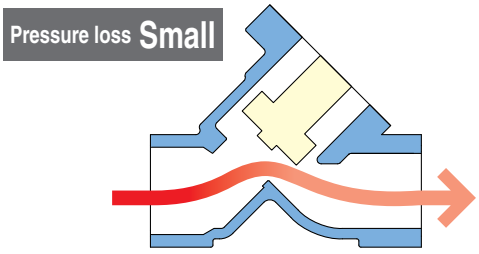
Internal leakage **0.6 in³/min (10 cm³/min)* or less**

* With air

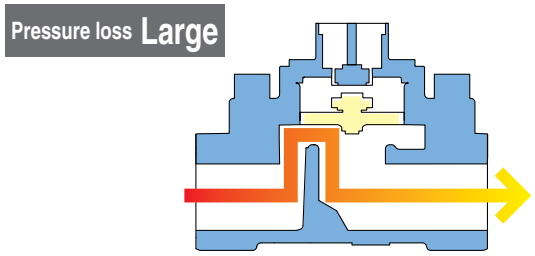
1 Rubber seal
Special FKM with high sealing performance



Low pressure loss



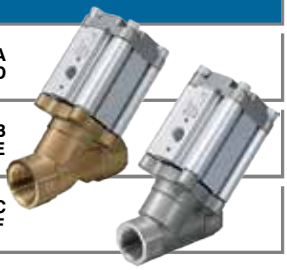
Angle seat structure



Current structure

Variations

Model	Orifice diameter	Cv	Port size	Max. operating pressure		Body material	Fluid
				Standard	High pressure		
VXB215$^{A}_{D}$	11	3.5	3/8 (10A)	145 psi [1 MPa]	232 psi [1.6 MPa]	Stainless steel 316L equivalent, Bronze (CAC)	Steam * Can be used with air and water.
VXB215$^{B}_{E}$	14	5.4	1/2 (15A)	87 psi [0.6 MPa]	174 psi [1.2 MPa]		
VXB215$^{C}_{F}$	18	7.6	3/4 (20A)	58 psi [0.4 MPa]	87 psi [0.6 MPa]		



Coolant Valve

0.5 MPa **1.0 MPa** **1.6 MPa**

Series SGC

1 1/4 (32A) to 2 (50A) added.

IP65 compliant
For pilot valve V116

CE RoHS

For details, refer to the **WEB catalog** or the catalog of each product.

CAT.ES70-32

Flow rate

Cv (For 73 psi [0.5 MPa] specification)

Variations

Series	Cv (kv) 5 10 20 30 40 70	Port size
SGC2	6.5 (5.6)	3/8 (10A), 1/2 (15A)
SGC3	11.8 (10.1)	3/4 (20A)
SGC4	18.3 (15.7)	1 (25A)
NEW SGC5	28 (24)	1 1/4 (32A)
NEW SGC6	43 (36.9)	1 1/2 (40A)
NEW SGC7	70 (60)	2 (50A)

Service life: 5 million cycles or more

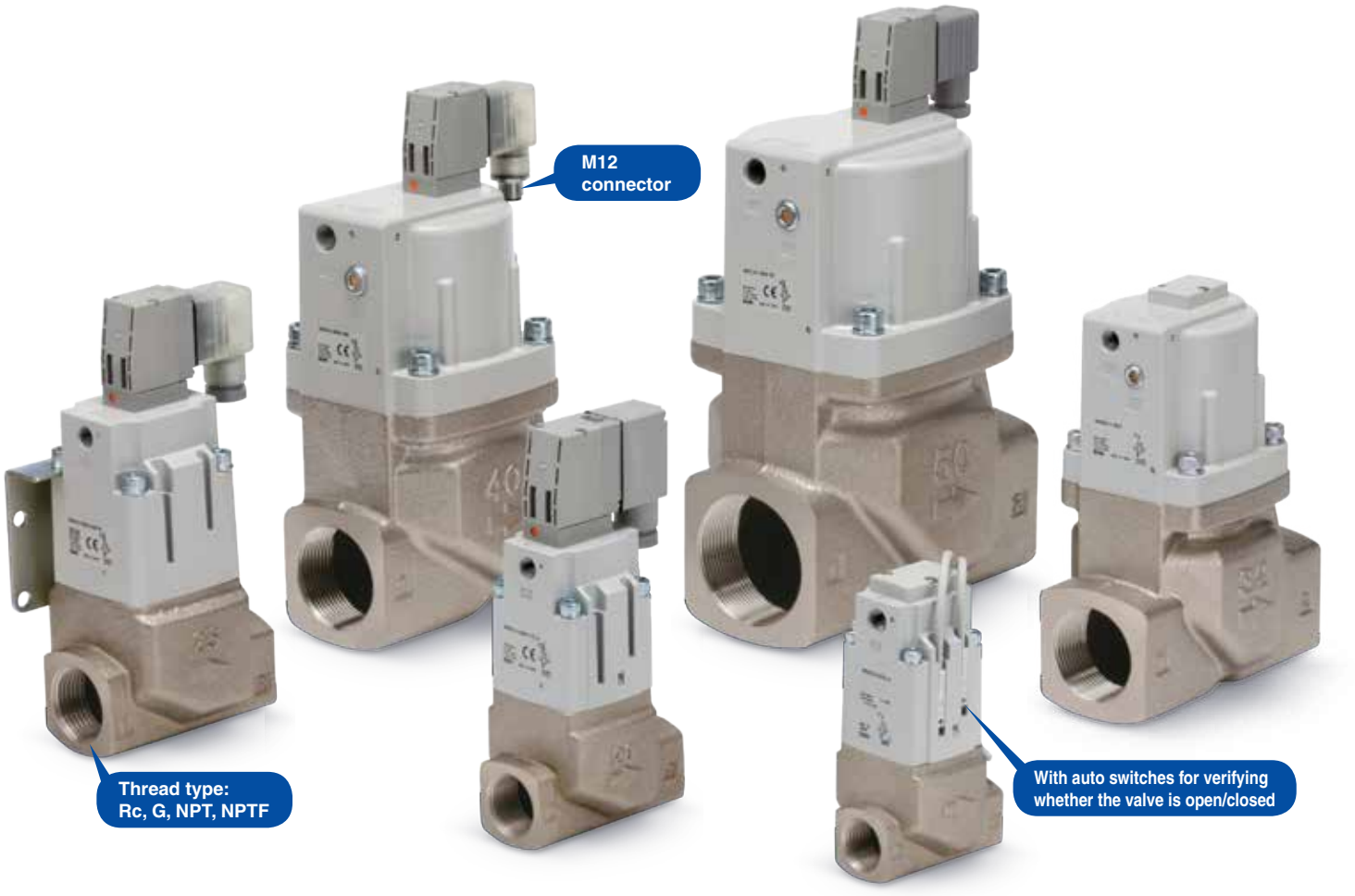
(For the SGC2, 3, 4, based on SMC's test condition)

Power consumption: 0.35 W*/1.8W*

* For 24 VDC

Water hammer: Reduced by 30%*

* Compared to current model, VNC series
* For 0.35 W type, SGC2 to 7



(For Air Operated Type)

Dry bearings

Prevents the shaft, which is a sliding part, from vibrating and helps to extend the service life of the rubber components and improves the seal performance of the main valve.

Squeeze seal

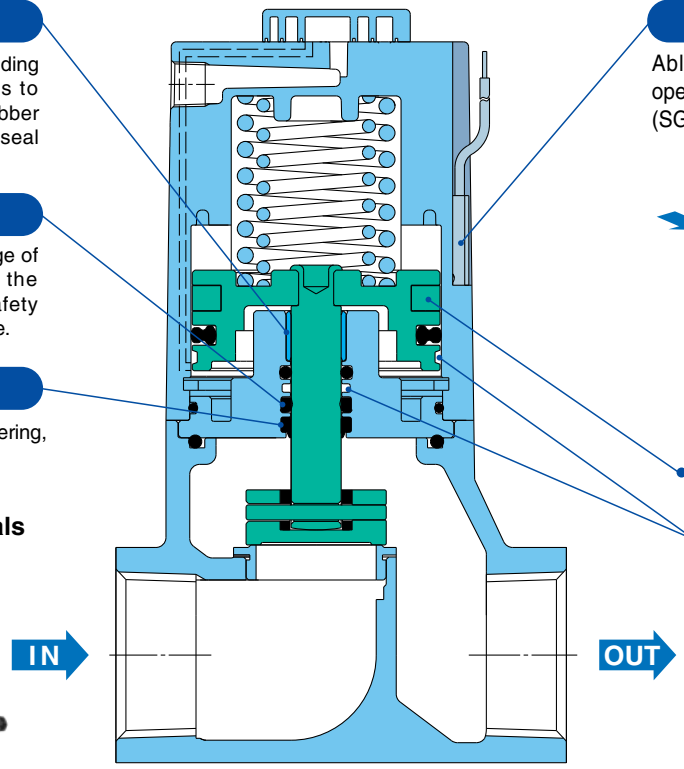
Completely shuts off the leakage of liquid coolant and increases the scraper effects. These two safety designs result in a dual advantage.

Scraper

Prevents foreign matter from entering, while the main valve is activated.

- **Choice of seal materials**

NBR, FKM



Auto switch

Able to confirm whether the valve is open/closed. Mountable on the 2 sides. (SGC2, 3, 4 only)

- **Magnet** (SGC2, 3, 4 only)

Grease channel

Prevents the loss of grease and helps to extend the service life.

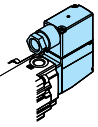
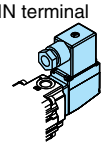
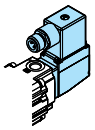
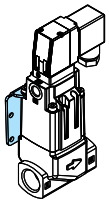
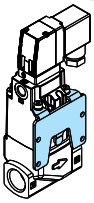
0.35 W type　　1.8 W type

For External Pilot Solenoid Type

Type	SGC2	SGC3	SGC4	SGC5	SGC6	SGC7
0.35 W type Note 1)	●	●	●	●	●	●
1.8 W type Note 1) 2)	∗	∗	∗	●	●	●

Note 1) For DC voltage
Note 2) The response time is equivalent to the VNC series.
∗ Made to Order

Variations (Common specifications for external pilot solenoid type and air operated type)

Series	Port size	Thread type	Type of actuation	Operating pressure range psi [MPa]	Cv	kv	Electrical entry (For external pilot solenoid type)	Bracket
SGC2	3/8 (10A)	Rc G(ISO1179-1) NPT NPTF	N.C./N.O.	73 [0.5]	4.6	3.9	• Conduit terminal  • DIN terminal  • M12 connector 	• Bracket on the left side  • Bracket on the right side 
				145 [1]	3.5	3		
				232 [1.6]	1.25	1.1		
	1/2 (15A)			73 [0.5]	6.5	5.6		
				145 [1]	4.8	4.1		
				232 [1.6]	2.7	2.3		
SGC3	3/4 (20A)			73 [0.5]	11.8	10.1		
				145 [1]	7.1	6.1		
				232 [1.6]	4.5	3.9		
SGC4	1 (25A)			73 [0.5]	18.3	15.7		
				145 [1]	11.0	9.4		
				232 [1.6]	7.3	6.3		
NEW SGC5	1 1/4 (32A)			73 [0.5]	28	24		—
				145 [1]	20	17.1		
NEW SGC6	1 1/2 (40A)			73 [0.5]	43	36.9		
				145 [1]	30	25.7		
NEW SGC7	2 (50A)			73 [0.5]	70	60		
				145 [1]	48	41.1		

Peltier-Type Chiller **Air-cooled**

(UL Standards)

Thermo-con/Rack Mount Type

Series HECR

Added cooling capacity 800 W, 1 kW!

CAT.NAS40-61
For details, refer to the **WEB catalog** or the catalog of each product.

Good space utilization

Mountable in a 19-inch rack

Saves space by mounting multiple equipment together in a rack.

Temperature stability

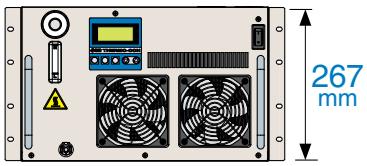
±0.018 to 0.054°F
[±0.01 to 0.03°C]

Set temperature range

50 to 140°F
[10 to 60°C]

Space saving design with reduced height

HECR002 (200 W)



NEW HECR008 (800 W)
HECR010 (1 kW)

Cooling capacity

200 W, NEW 800 W, NEW 1 kW

Energy saving design

400 W
(HECR008/HECR010 with 500 W load)

Low-noise design

54 dB
(HECR008/HECR010 with 500 W load)

HECR002

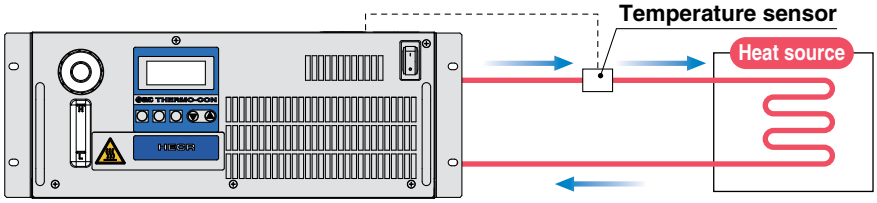
NEW HECR008
HECR010

Can precisely control the temperature of a heat source or process fluid.

Precisely control the temperature of the circulating fluid by using the Peltier device.
Refrigerant-free and environmentally friendly.

Learning control function (Temperature control by external temperature sensor)

This function adjusts the fluid temperature to the set value with an automatic offset setting. Set the external temperature sensor at the circulating fluid inlet located just in front of the heat source, which allows the thermo-con to sample the fluid temperature. This function is effective when automatically adjusting for heat exhaust from piping etc.



If the external temperature sensor is installed directly on the heat source, the learning control function may not work property due to large heat volume or large temperature difference. Be sure to install the sensor at the circulating fluid inlet.

Simple operation

❶ Turn the power ON.
❷ Press the (SEL) key, and adjust the temperature setting with the (▼)(▲) keys.
❸ Press the (RET) key to complete.

Low vibration, Low noise

Less vibration and noise with no moving parts such as a compressor.
For HECR008/010, noise is reduced by suppressing the number of fan rotations when the cooling load is low.

Variations

Series	Cooling capacity	Heating capacity	Cooling method	Temperature stability	Power supply	Circulating fluid	Options	International standards
Thermo-con/ Rack Mount Type HECR002 	200 W	600 W	Peltier-type air-cooled	±0.018 to 0.054°F [±0.01 to 0.03°C]	Single-phase 100 to 240 VAC (50/60 Hz)	Tap water Ethylene glycol 20%	With Feet and No Rack Mounting Brackets With Flow Switch	CE cMETus (UL Standards)
Thermo-con/ Rack Mount Type HECR008 	800 W	1.4 kW						
Thermo-con/ Rack Mount Type HECR010 	1 kW	2 kW			Single-phase 200 to 240 VAC (50/60 Hz)			

Circulating Fluid Temperature Controller

Thermo-chiller Standard Type

Series HRS090

Cooling capacity 9 kW added

to the standard type HRS series.

RoHS

15-E646

For details, refer to the **WEB catalog** or the catalog of each product.

- **Cooling capacity: 9 kW**
- **Temperature stability: ±0.9°F [0.5°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**

★: Newly added

Series		Temperature stability °F [°C]	Set temperature range °F [°C]	Cooling capacity [kW]												Environment	International standards
				1.2	1.8	2.4	3	5	6	9	10	15	20	25	28		
	**HRSE Basic type**	±3.6 [±2.0]	50 to 86 [10 to 30]	●	●	●										Indoor use	CE (Only 230 VAC type)
	**HRS Standard type**	±0.18 [±0.1]	41 to 104 [5 to 40]	●	●	●	●	●	●							Indoor use	CE (Except 9 kW) (Except 9 kW, only 60 Hz)
		±0.9 [±0.5]	41 to 95 [5 to 35]							★							
	**HRS100/150 Standard type**	±1.8 [±1.0]	41 to 95 [5 to 35]								●	●				Outdoor installation IPX4	CE (400 V as standard)
	**HRSH090 Inverter type**	±0.18 [±0.1]	41 to 104 [5 to 40]							●						Indoor use	CE (400 V as standard) (Only 200 V as an option)
	**HRSH Inverter type**	±0.18 [±0.1]	41 to 95 [5 to 35]								●	●	●	●	●	Outdoor installation IPX4	CE (400 V as standard, 200 V as an option) (Only 200 V as an option)

Circulating Fluid Temperature Controller

Thermo-chiller Basic Type

Series HRSE

Power supply 230 VAC,
CE marked product added!

CE RoHS
(Only 230 VAC type)

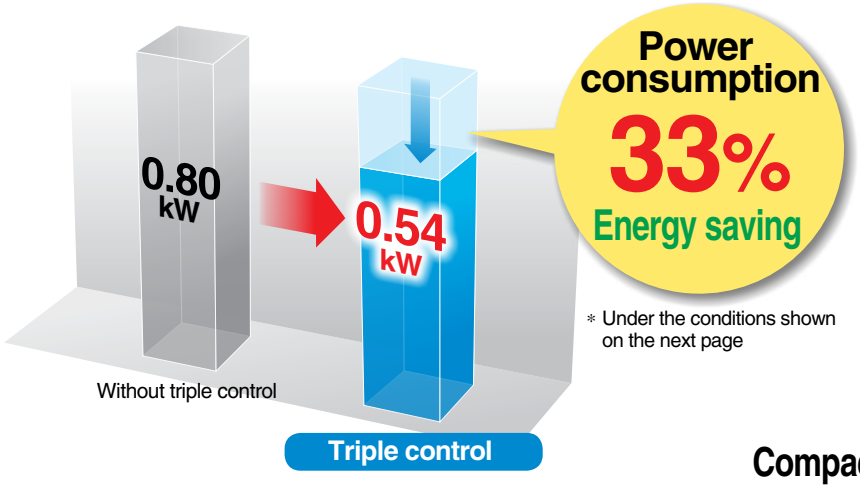
For details, refer to the **WEB catalog** or the catalog of each product.

CAT.NAS40-58

Large energy saving by triple control!

Compressor Fan Valve

Triple control



Power consumption 33% Energy saving

* Under the conditions shown on the next page

- **Compressor ON/OFF**
- **Air-cooled condenser fan**
- **Electronic valve control**

Compact/Lightweight 70.5 lbs (32 kg) (100 VAC)

- **Cooling capacity 1.2, 1.6, 2.2 kW**
- **Max. ambient temperature 104°F (40°C)** (200 VAC)
- **Set temperature range 50 to 86°F (10 to 30°C)**
- **Temperature stability ±3.6°F (±2.0°C)**
- **Maintenance free Magnet pump**
- **Low-noise design 55 dB(A)**
- **Power supply 100/200 VAC 50/60 Hz**
  New 230 VAC 50/60 Hz

Motorless Type

Electric Actuators

RoHS

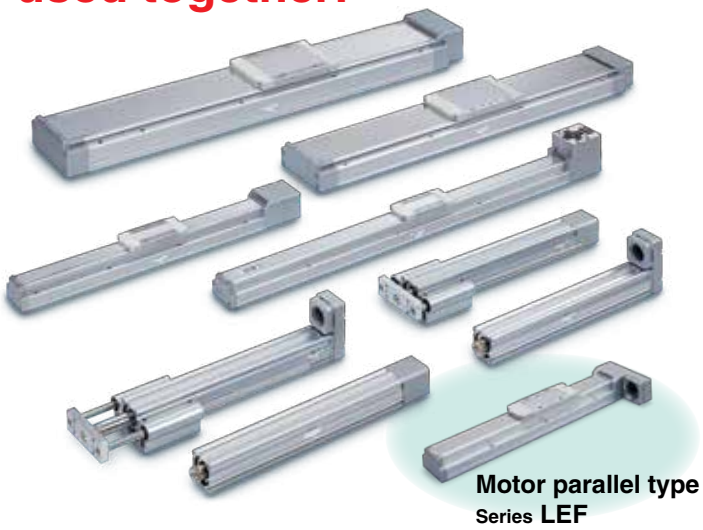
CAT.NAS100-111

Series LE□

For details, refer to the **WEB catalog** or the catalog of each product.

Your motor and driver can be used together! Manufacturers of compatible motors: 14 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.
FASTECH Co., Ltd.	Rockwell Automation, Inc. (Allen-Bradley)
Beckhoff Automation GmbH	Siemens AG
NEW Delta Electronics, Inc.	



Motor parallel type
Series LEF

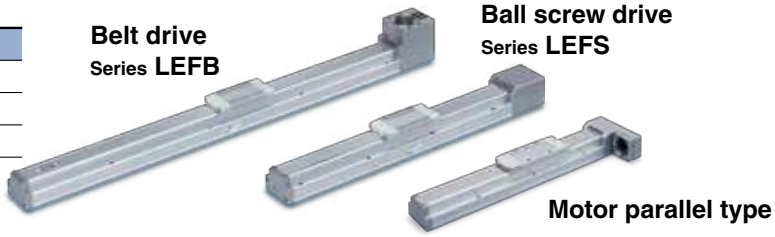
Slider Type Series LEF

Ball Screw Drive/Series LEFS

Size	Stroke
25	50 to 800
32	50 to 1000
40	150 to 1200

Belt Drive/Series LEFB

Size	Stroke
25	300 to 2000
32	300 to 2500
40	300 to 3000



Belt drive
Series LEFB

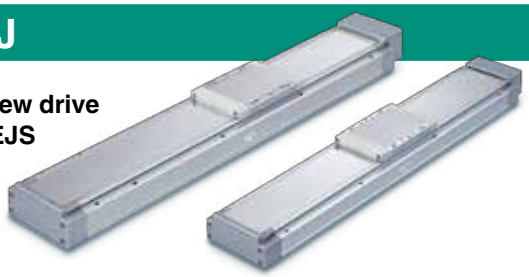
Ball screw drive
Series LEFS

Motor parallel type

High Rigidity Slider Type Series LEJ

Ball Screw Drive/Series LEJS

Size	Stroke
40	200 to 1200
63	300 to 1500



Ball screw drive
Series LEJS

Rod Type Series LEY

Size	Stroke
25	30 to 400
32	30 to 500
63	100 to 800

Guide Rod Type Series LEYG

Size	Stroke
25	30 to 300
32	

Vacuum Pad with Ejector

RoHS

Pad Diameter: ø63, ø80

Series ZHP

For details, refer to the **WEB catalog** or the catalog of each product.

14-E632

Ejector and pad are integrated. Space saving and reduced piping labor!

Bellows type with groove

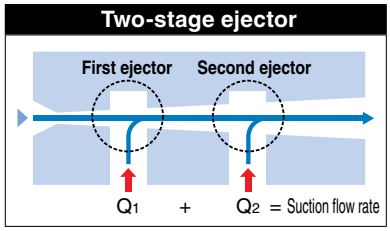
Flat type with groove

Two-stage ejector

More efficient ejector

Suction flow rate **50% increased**[*1] Air consumption **30% reduced**[*1]

∗ 1) Compared with SMC single stage ejector

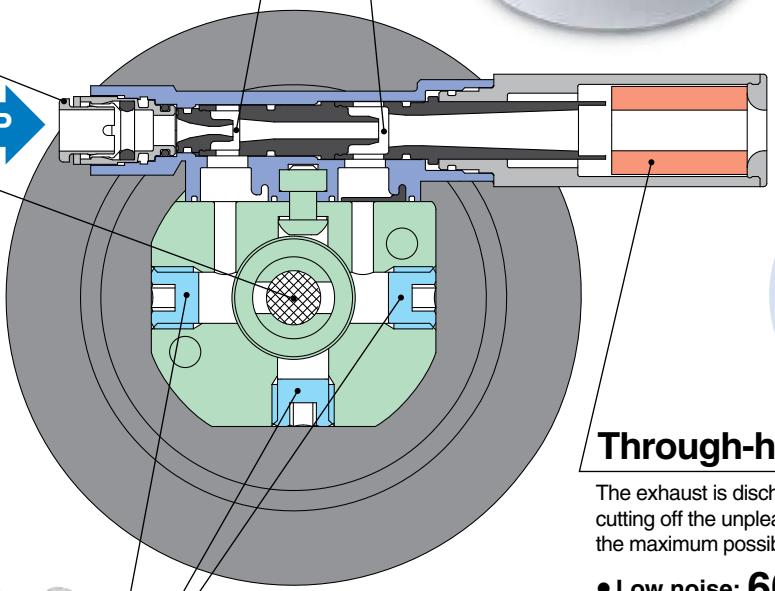


With One-touch fitting

Metric: ø4, ø6
Inch: ø5/32", ø1/4"

Strainer

Prevents entry of foreign matter at the pad suction port.



Through-hole silencer

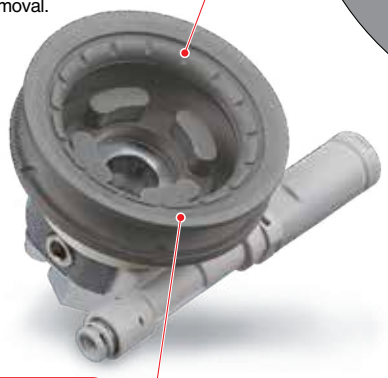
The exhaust is discharged directly to atmosphere, cutting off the unpleasant frequency while exhibiting the maximum possible vacuum performance.

- **Low noise: 60 dB(A)**
  (Exhaust noise when the nozzle diameter is ø0.7)
- **Structure designed to minimize clogging**

Improved ease of removal[*2]

With groove

Dents and bumps on the adsorption surface prevent the workpiece from sticking to it. This facilitates easy removal.



Shot-blasted

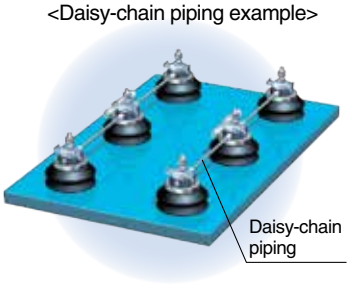
Micro-dents and bumps are formed on the adsorption surface. Workpieces can be removed easily.

∗2 Compared with current ZP series

Port/For Vacuum release, Pressure sensor, Daisy-chain piping

With ejector Without ejector

Daisy-chain vacuum piping is possible.
<Daisy-chain piping example>



Vacuum Pad

Flat Type With Groove | **Bellows Type** With Groove

ø32, ø40, ø50, ø63, ø80, ø100, ø125

Series ZP3E

RoHS

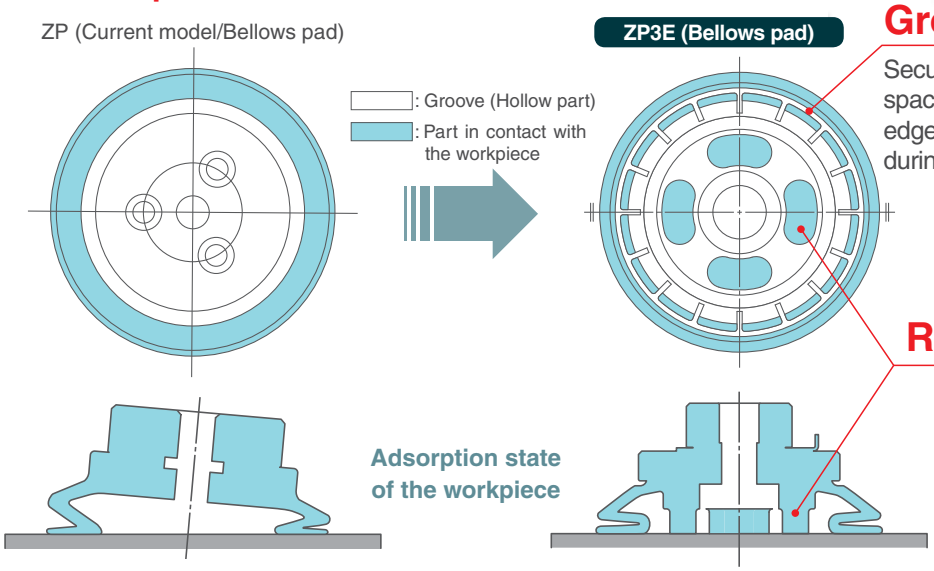
For details, refer to the **WEB catalog** or the catalog of each product.

CAT.NAS100-112

Stability of suction position

Groove and rib formed to adsorb with entire surface

- **Dents and bumps on the adsorption surface expands the area which is in contact with the workpiece.**
- **Ribs reduce the inclinations during transport of workpiece.**



Groove

Secures the interior space, up to the edge of the pad, during adsorption.

Rib

Improved ease of removal

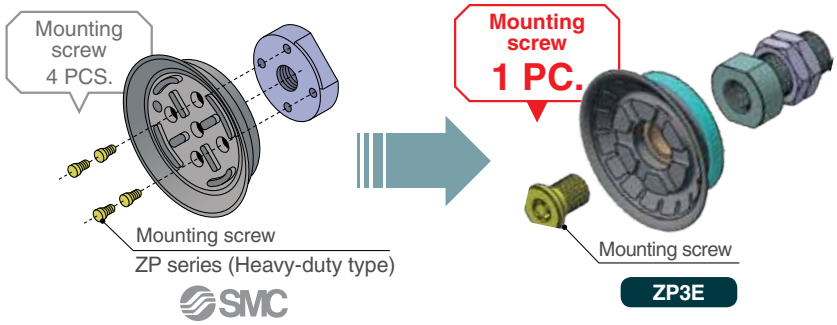
With groove

Dents and bumps on the adsorption surface prevent the workpiece from sticking to it. This facilitates easy removal.

Shot-blasted

Micro-dents and bumps are formed on the adsorption surface. Workpieces can be removed easily.

The number of mounting screws reduced

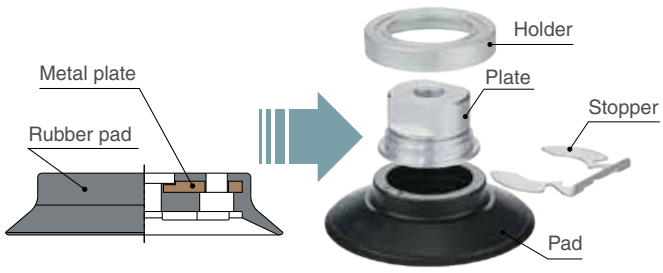


SMC

Can be disposed of separately.

The rubber pad and metal part can be separated.

The metal parts and rubber parts can be separated completely.

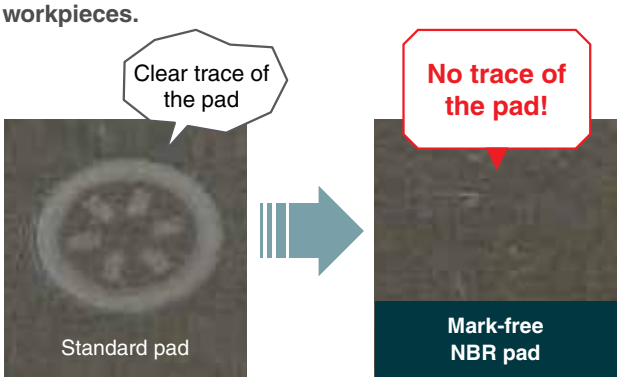


ZP series (Heavy-duty type)

ZP3E

Mark-free

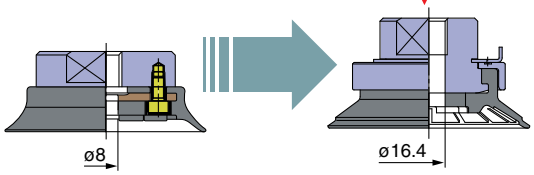
For use where adsorption marks must not be left on workpieces.



Suction flow rate increased

Applicable to workpieces with a large suction flow rate and high permeability, and vacuum blow

Double suction port size
(Pad diameter: ø63, ø80 Compared with the ZP series)



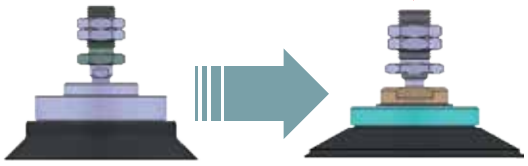
	ZP (Current model)		ZP3E	
Pad diameter	Suction port	Area [mm²]	Suction port	Area [mm²]
ø32	—	—	ø8.4	55.4
ø40	ø6	28.3		
ø50				
ø63	ø8	50.2	ø16.4	211
ø80				
ø100	ø10	78.52		
ø125				

Ball joint type pad weight reduced

Weight reduced by up to 290 g

Weight reduced by changing the internal structure and materials

* The pad material when weight was measured is NBR.



	ZP2/Flat type	ZP3E/Flat type with groove
Pad diameter	Weight [g]	Weight [g]
ø32	—	56
ø40	91	57
ø50	110	75
ø63	230	150
ø80	270	160
ø100	430	190
ø125	560	270

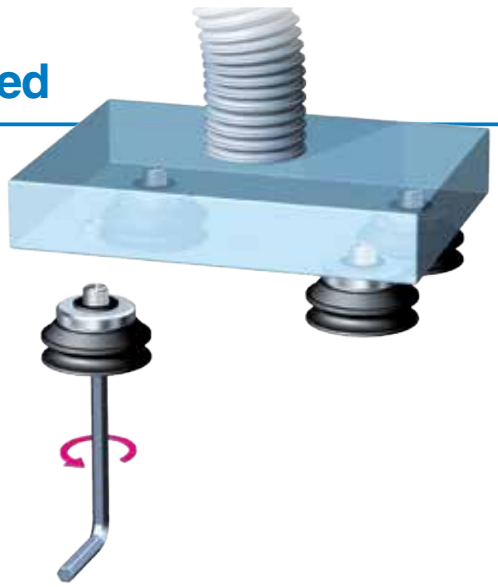
Direct mounting with male thread added

Direct mounting

- **Reduced in height**
- **Easy mounting with tightening with a hexagonal wrench**

Standard type Ball joint type

ZP3E



NEW PRODUCTS GUIDE

⚠ **Safety Instructions**	Be sure to read the “Handling Precautions for SMC Products” (M-E03-3) and “Operation Manual” before use.

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