

### Air Saving

Air consumption:

**35%**  
reduction



<Pulse Valve>

Air consumption:

**10%**  
reduction



<Multistage Ejector>

### Space Saving

Occupied volume:

**49%**  
reduction



<5-Port Solenoid Valve:  
Plug-in Type>

Height:

**43%**  
reduction



<Compact Speed Controller>

### Lightweight

Compact design,  
Applicable for robots

Weight:

**57%** reduction

<Square Compact Air Cylinder>



<Aluminum Rod Cylinder>

### Wireless System

**Usable even in welding  
environments**



Wireless Base Unit

Wireless Remote Unit

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# Space Saving

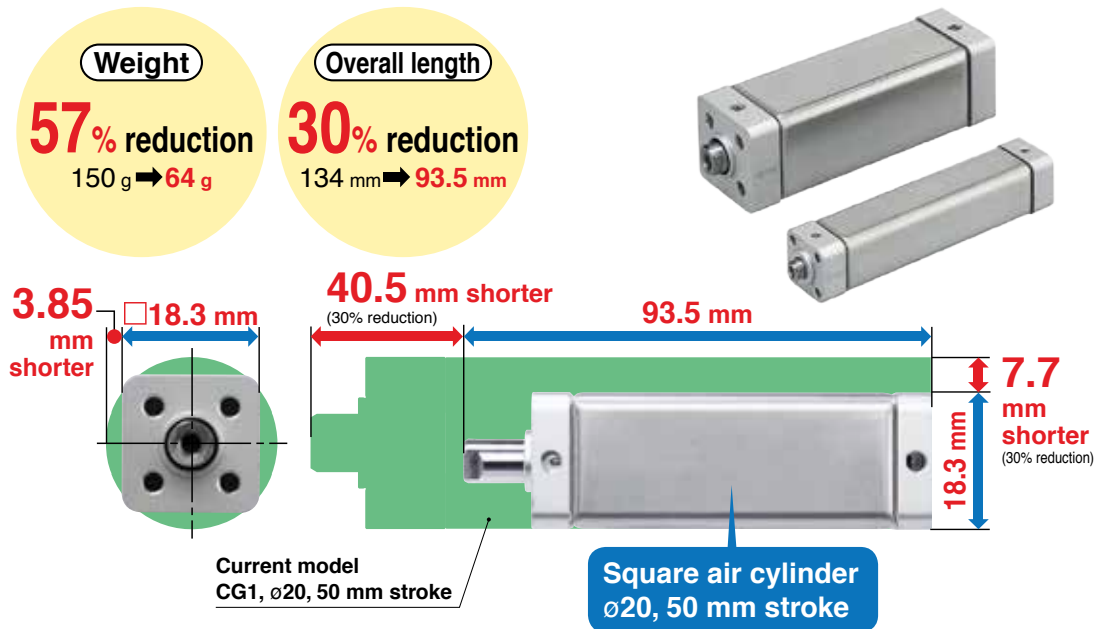
# Lightweight

## Square Air Cylinder

Equivalent:  $\phi 12$ ,  $\phi 16$ ,  $\phi 20$ ,  $\phi 25$ ,  $\phi 32$ ,  $\phi 40$

1 mm to 0.0393701 inches  
1 MPa to 145.038 psi

### Lightweight and compact due to its square piston shape



### Mounting Variations

Female thread on both covers	Male thread on rod cover	Male thread on both covers
Free mount		
Axial foot (outward)	Axial foot (inward)	Head side flange
Rod side flange	Clevis	

### Specifications

Bore size [mm]	$\phi 12$ equiv.	$\phi 16$ equiv.	$\phi 20$ equiv.	$\phi 25$ equiv.	$\phi 32$ equiv.	$\phi 40$ equiv.
Output at 0.5 MPa [N]	57	94	142	252	388	627
Max. operating pressure	0.7 MPa					
Piston speed	50 to 500 mm/s					
Cushion	Rubber bumper					
Non-rotating accuracy	$\pm 6.1^\circ$	$\pm 5.5^\circ$	$\pm 4.5^\circ$	$\pm 2.9^\circ$	$\pm 2.3^\circ$	$\pm 2.1^\circ$

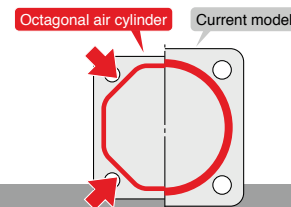
# Space Saving

# Lightweight

## Octagonal Air Cylinder

1 mm to 0.0393701 inches  
1 MPa to 145.038 psi

## Lightweight and compact due to its octagonal piston shape



Octagonal Tie-rod Air Cylinder

Bore size:  $\phi 32$ ,  $\phi 40$ ,  $\phi 50$ ,  $\phi 63$

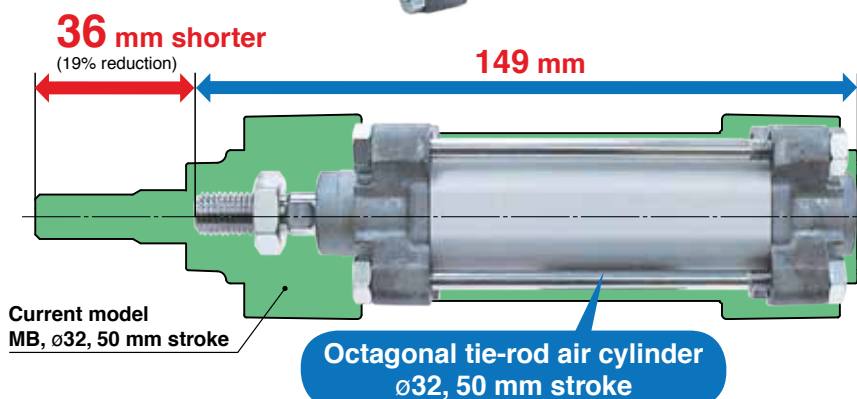
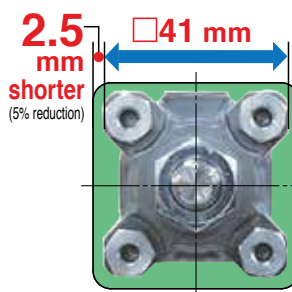
**Weight**

**36% reduction**  
480 g  $\Rightarrow$  306 g

**Overall length**

**19% reduction**  
185 mm  $\Rightarrow$  149 mm

\* The above values are for size 32.



Octagonal tie-rod air cylinder  
 $\phi 32$ , 50 mm stroke

Octagonal Compact Air Cylinder

Bore size:  $\phi 20$ ,  $\phi 25$ ,  $\phi 32$ ,  $\phi 40$

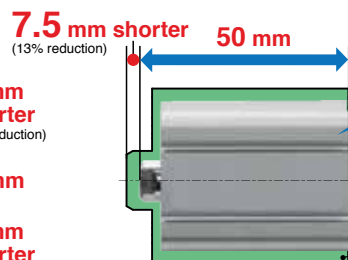
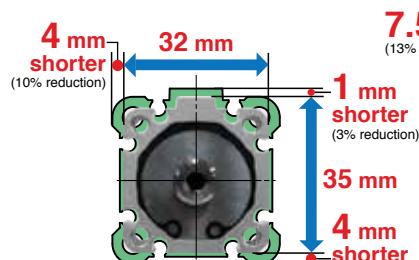
**Weight**

**49% reduction**  
179 g  $\Rightarrow$  92 g

**Overall length**

**13% reduction**  
57.5 mm  $\Rightarrow$  50 mm

\* The above values are for size 25.



Octagonal compact air cylinder  
 $\phi 25$ , 20 mm stroke

Current model  
CQS,  $\phi 25$ , 20 mm stroke

# Lightweight Aluminum Rod Cylinder

1 mm to 0.0393701 inches  
1 MPa to 145.038 psi

**Weight**  
**39% reduction**  
2793 g ➔ **1704 g**  
MGP ø50, 25 mm stroke

- **Special coating**
  - Reduces sliding resistance
  - Increases surface hardness

Aluminum rod  
+ Special coating



## CQ2 Series

Bore size: ø25, ø32, ø40, ø50, ø63

**Weight** Max. **20% lighter**

241 g ➔ **193 g**  
(Compared with the CQ2 series,  
ø32, 20 mm stroke)



[g]

Bore size [mm]	Current model (Steel rod)	Aluminum rod cylinder
ø25-20 mm stroke	180	➔ 159 (12% reduction)
ø32-20 mm stroke	241	➔ 193 (20% reduction)
ø40-20 mm stroke	333	➔ 278 (17% reduction)
ø50-20 mm stroke	521	➔ 434 (17% reduction)
ø63-20 mm stroke	703	➔ 617 (12% reduction)

## CM2 Series

Bore size: ø20, ø25, ø32, ø40

**Weight** Max. **20% lighter**

360 g ➔ **289 g**  
(Compared with the CM2 series,  
ø32, 50 mm stroke)



[g]

Bore size [mm]	Current model (Steel rod)	Aluminum rod cylinder
ø20-50 mm stroke	180	➔ 149 (17% reduction)
ø25-50 mm stroke	270	➔ 220 (19% reduction)
ø32-50 mm stroke	360	➔ 289 (20% reduction)
ø40-50 mm stroke	690	➔ 574 (17% reduction)

## MB Series

Bore size: ø32, ø40, ø50, ø63

**Weight** Max. **24% lighter**

1560 g ➔ **1188 g**  
(Compared with the MB series,  
ø50, 100 mm stroke)



[g]

Bore size [mm]	Current model (Steel rod)	Aluminum rod cylinder
ø32-100 mm stroke	660	➔ 543 (18% reduction)
ø40-100 mm stroke	910	➔ 703 (23% reduction)
ø50-100 mm stroke	1560	➔ 1188 (24% reduction)
ø63-100 mm stroke	1830	➔ 1457 (20% reduction)

## MGP Series

Bore size: ø25, ø32, ø40, ø50

**Weight** **39% lighter**

2793 g ➔ **1704 g**  
(Compared with the MGP  
series, ø50, 25 mm stroke)



[g]

Bore size [mm]	Current model (Steel rod)	Aluminum rod cylinder
ø25-20 mm stroke	844	➔ 595 (30% reduction)
ø32-25 mm stroke	1410	➔ 912 (35% reduction)
ø40-25 mm stroke	1641	➔ 1120 (32% reduction)
ø50-25 mm stroke	2793	➔ 1704 (39% reduction)

# Space Saving

## Solid State Auto Switch (Short Type)

Overall length

**32%** reduction

0.87in  $\Rightarrow$  **0.59in**  
(22mm  $\Rightarrow$  **15mm**)

Protrusion of auto switch from the actuator end surface reduced

Compact solid state auto switch

**0.27 in (7mm) shorter**  
**0.59in (15mm)** (32% reduction)

Standard product (D-M9□)

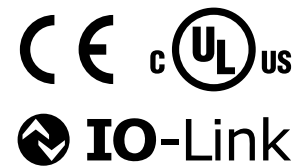




# Position Detection

## Actuator Position Sensor

**Detects the stroke position of the actuator.**



- Resolution: **0.00197in (0.05mm)**
- Repeatability: **0.00394in (0.1mm)**  
(When the non-rotating guide cylinder is used.)
- Direct mounting is possible.
- Direct wiring to input unit without amplifier

### Specifications

Analog output	Voltage output (0 to 10 V), Current output (4 to 20 mA)
Switch output	PNP output, NPN output
IO-Link	Version V1.1

Mountable from the top.

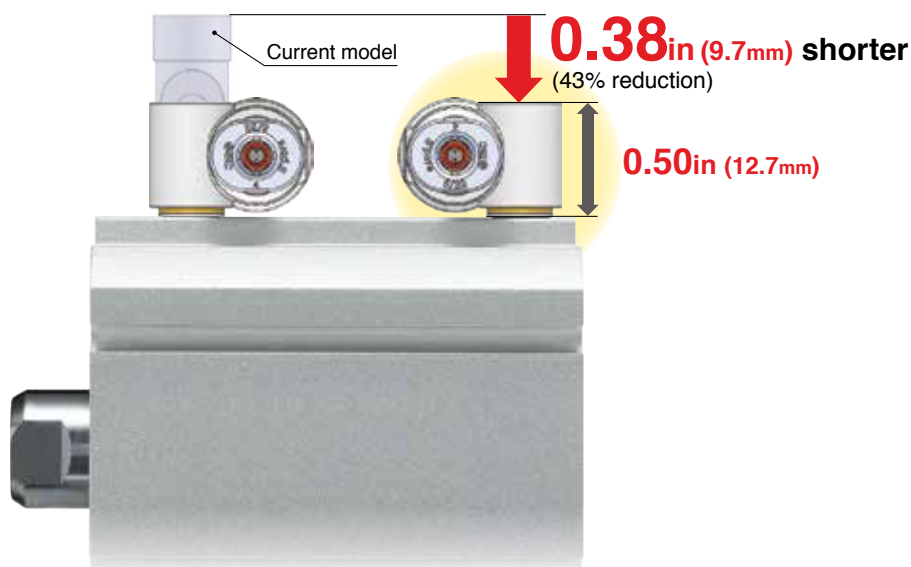


# Space Saving Compact Speed Controller

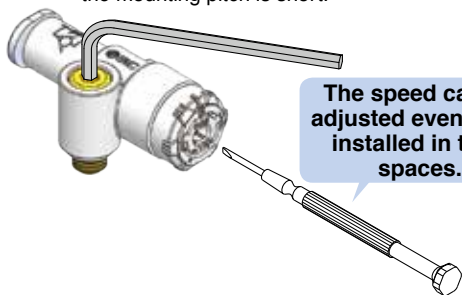
Height

**43% reduction**

0.87in → **0.5in**  
(22mm → **12.7mm**)

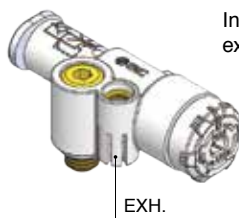


Mounting is easy even when the mounting pitch is short.

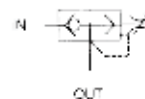


## Compact Speed Exhaust Controller JASV Series


Integrated quick exhaust valve and exhaust throttle valve



Symbol



## Series Variations

Model	Port size	Applicable tubing O.D.					
		Metric size (R, G)			Inch size (UNF, NPT)		
		3.2	4	6	1/8"	5/32"	1/4"
 <b>JAS Series</b>	M3 x 0.5	●	●	—	—	—	—
	M5 x 0.8	●	●	●	—	—	—
<b>JASV Series</b>	10-32UNF	—	—	—	●	●	—
	1/8	—	●	●	—	●	●



# Space Saving

# Lightweight

## Compact Rotary Actuator (Vane Type)

Size: 10, 15, 20, 30, 40

1 mm to 0.0393701 inches  
1 g to 0.035274 oz

Weight

**38% reduction**

349 g → **216 g**

For size 30

Overall length

**41% reduction**

118 mm → **70 mm**

For size 30



Features a compact body with a built-in  
**angle adjuster unit** and **auto switch unit**

(Size 20, 30, 40)

**Can be adjusted  
without  
disassembling**

Angle adjustment bolt

Auto switch

Compact rotary actuator  
Size 30

**70 mm**

Current model  
CRB2, Size 30

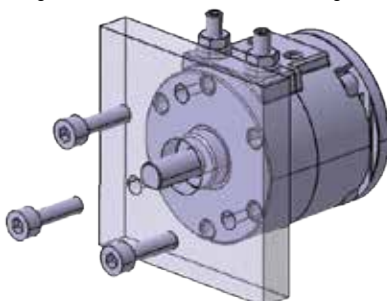
Angle  
adjuster  
unit

**48 mm  
shorter  
(41% reduction)**

Switch unit

**Interchangeability**

Mounting and shaft dimensions are interchangeable.



# Space Saving

# Lightweight

## Compact Rotary Actuator (Rack & Pinion Type)

Size: 10, 15, 20, 30, 40

1 mm to 0.0393701 inches  
1 g to 0.035274 oz

**Weight**

**29% reduction**

700 g → **500 g**

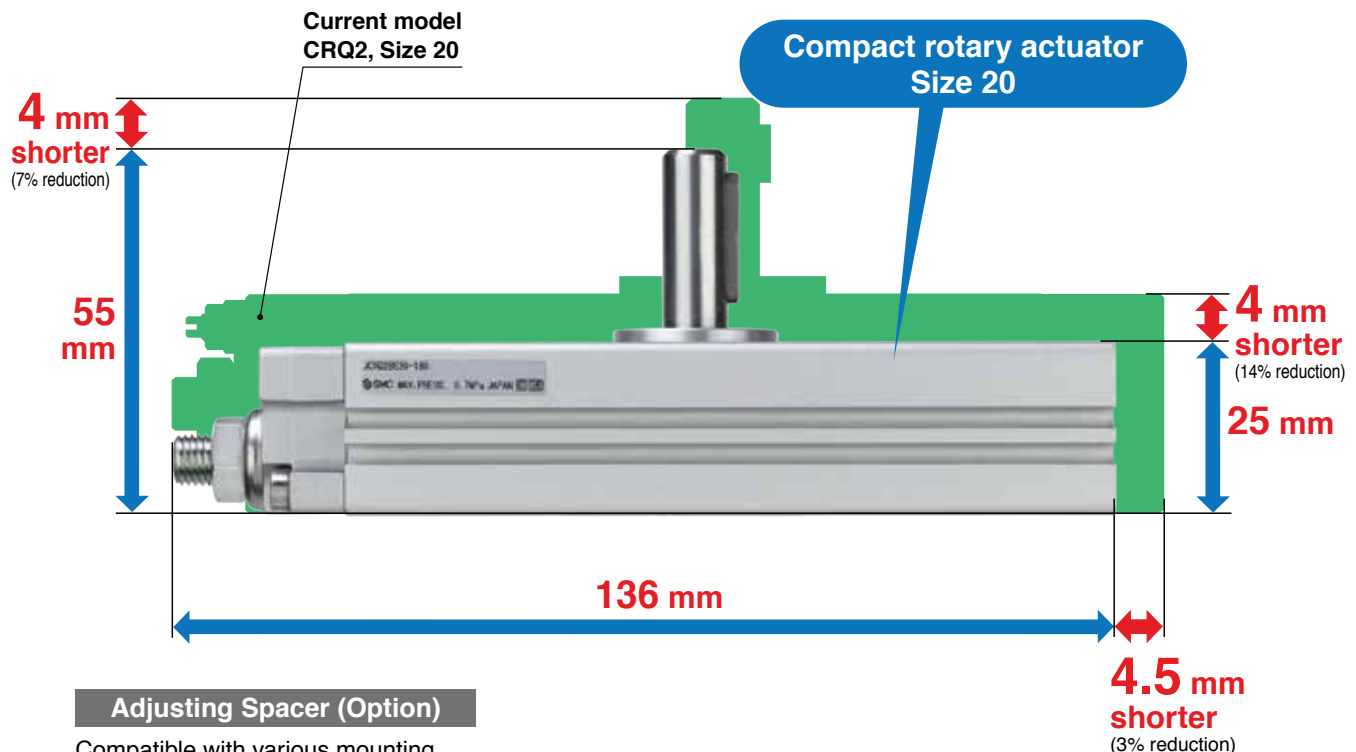
For size 20

**Height**

**7% reduction**

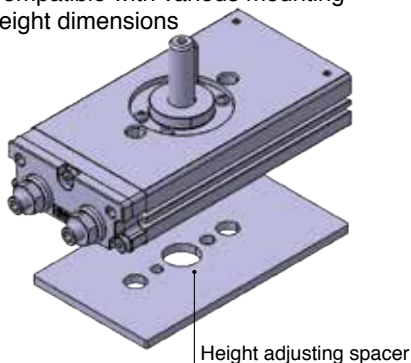
59 mm → **55 mm**

For size 20



**Adjusting Spacer (Option)**

Compatible with various mounting height dimensions



# Space Saving

# Lightweight

## Compact Rotary Table (Rack & Pinion Type)

Size: 10, 20, 30, 40

1 mm to 0.0393701 inches  
1 g to 0.035274 oz

**Weight**

**32% reduction**

940 g → **640 g**

For size 20

**Height**

**28% reduction**

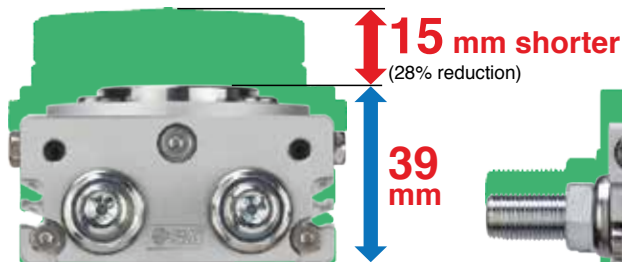
54 mm → **39 mm**

For size 20

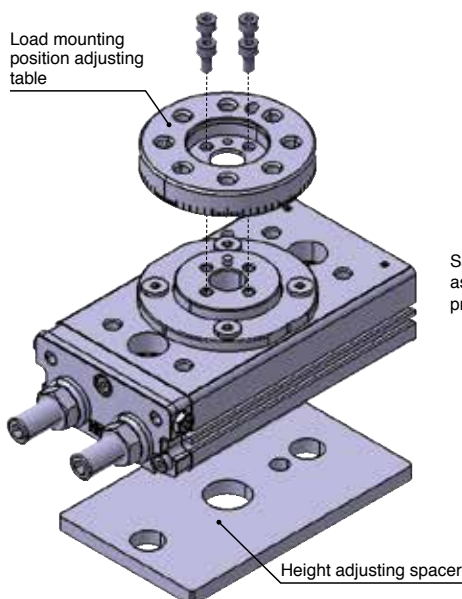


Current model  
MSQ, Size 20

Compact rotary table  
Size 20

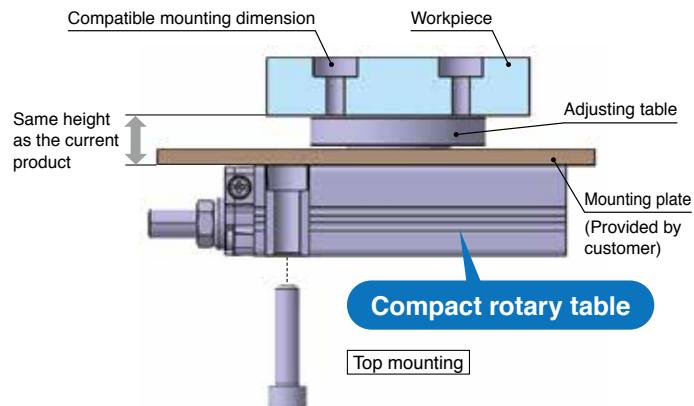


### Adjusting Table/Spacer (Option)



#### Interchangeability

- Workpiece mounting dimensions
- Height between body and table face



**Air Saving**

**Space Saving**

**Lightweight**

## Compact Air Gripper

ø8, ø12, ø16, ø20

1 mm to 0.0393701 inches  
1 g to 0.035274 oz

**Weight**

**46% reduction**

235 g → **127 g**

**Height**

**28% reduction**

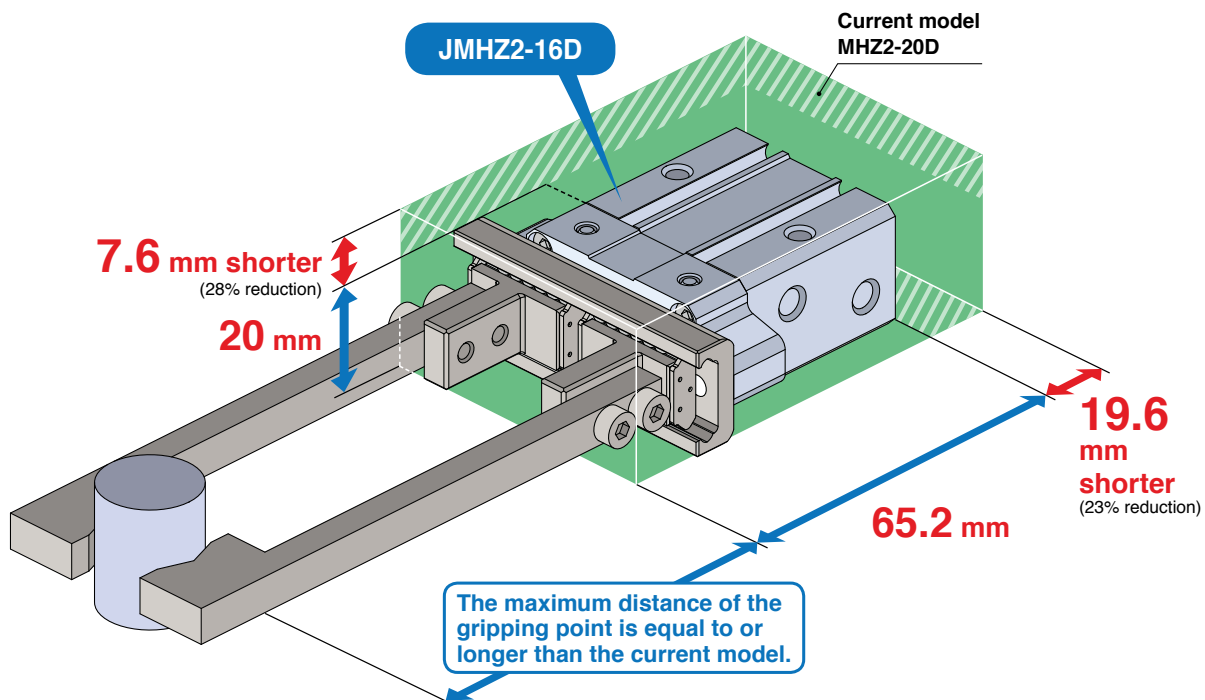
27.6 mm → **20 mm**

**Overall length**

**23% reduction**

84.8 mm → **65.2 mm**

Thanks to downsizing (Size 20 → 16),  
**Air saving,**  
**Compact, Lightweight**



# Lightweight

# Space Saving

## 5-Port Solenoid Valve (Plug-in Type)

1 mm to 0.0393701 inches  
1 g to 0.035274 oz  
1 kg to 35.274 oz  
1 cm<sup>3</sup> to 0.033814 fl oz

**Weight**

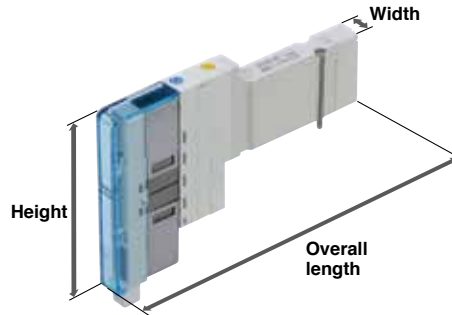
**64% reduction**

67 g → **24 g**  
(JSY1000)











**Occupied volume**

**51% reduction**

47 cm<sup>3</sup> → **23 cm<sup>3</sup>**  
(JSY1000)



### Single Unit

	Series	Space saving				Lightweight		Cv factor	Sonic conductance C [dm³/(s·bar)]
		Width [mm]	Overall length [mm]	Height [mm]	Volume [cm³]	Weight [g]			
No.1	JSY1000	6.4	74	47.7	23  51% reduction	24  64% reduction	0.26	1.0	
	VQ1000 (Current model)	10	86	54.4	47	67	0.26 	1.0 	
No.2	JSY3000	10	92	56.6	52  48% reduction	54  46% reduction	0.7	2.7	
	VQ2000 (Current model)	15.5	114	56.6	100	100	0.7 	2.7 	
No.3	JSY5000	15	116	56.6	98  41% reduction	91  60% reduction	1.5	6.6	
	VQ4000 (Current model)	24.6	140	47.9	165	230	1.5	6.6	

Flow rate  
**2.7** times

Flow rate  
**2.1** times

**Weight**

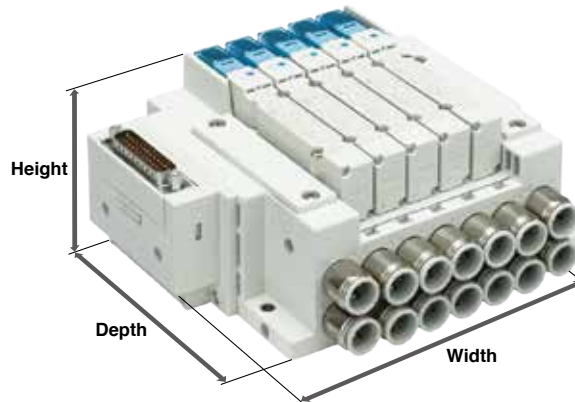
**59% reduction**

3.7 kg → **1.5 kg**  
(JSY5000)

**Occupied volume**

**49% reduction**

3180 cm<sup>3</sup> → **1610 cm<sup>3</sup>**  
(JSY5000)



### 5-Station Manifold

	Series	Space saving				Lightweight		Cv factor	Sonic conductance C [dm³/(s·bar)]
		Width [mm]	Depth [mm]	Height [mm]	Volume [cm³]	Weight [g]			
No.1	JSY1000	109	78	60	510	460	0.26	1.0	
	VQ1000 (Current model)	115	94	64	690	650	0.26	1.0	
No.2	JSY3000	128	98	66	830	770	0.7	2.7	
	VQ2000 (Current model)	153	120	74	1360	1140	0.7	2.7	
No.3	JSY5000	171	129	73	1610	1500	1.5	6.6	
	VQ4000 (Current model)	201	163	97	3180	3700	1.5	6.6	

Flow rate  
**2.7** times

Flow rate  
**2.1** times

Weight includes the valves (for 5 stations).

# Lightweight Space Saving

## Compact Manifold (Built-in Silencer)

1 mm to 0.0393701 inches

### Weight

**21% reduction**  
604 g → **477 g**

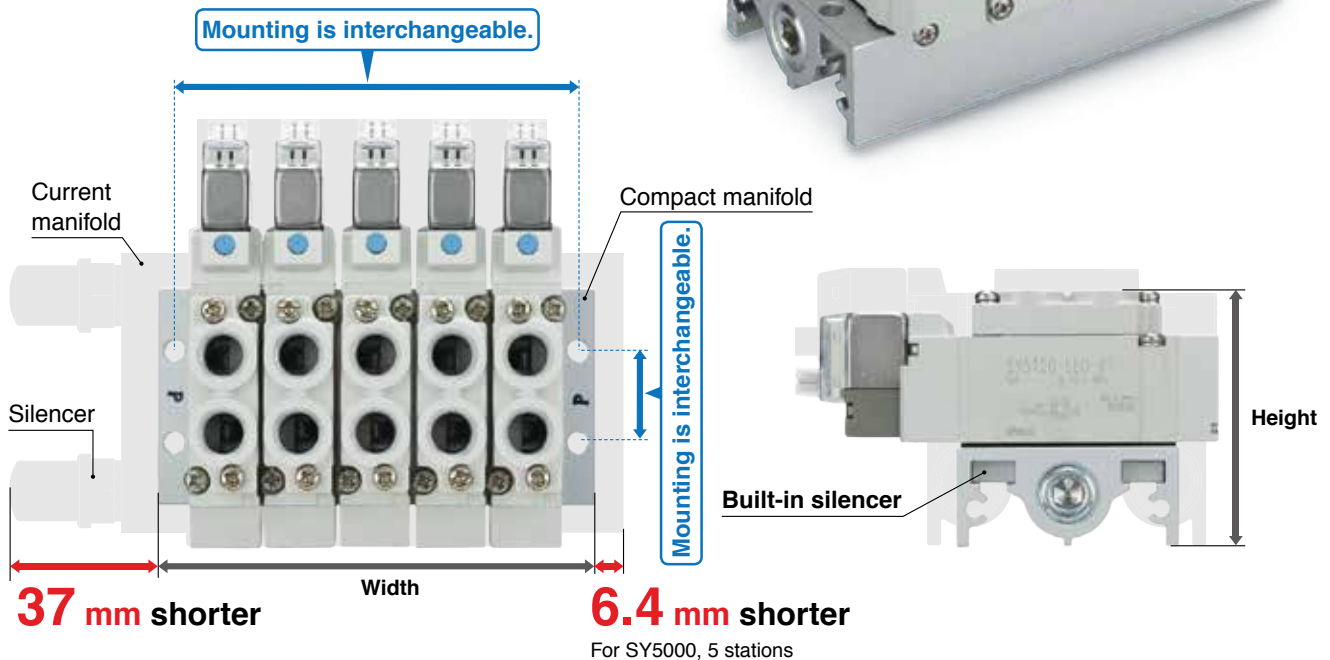
### Occupied volume

**34% reduction**  
675 mm<sup>3</sup> → **443 mm<sup>3</sup>**

### Height

**9% reduction**  
59.5 mm → **54.2 mm**

\* SY5000, 5 stations,  
With 2 silencers



**Not affected by back pressure due to its individual exhaust manifold**



# Wireless System

**Applicable to places with a lot of electrical noise**  
(Usable even in welding environments)

## Noise resistance

Uses the 2.4 GHz ISM frequency band  
Frequency hops every 5 ms

## High-speed connection

From power supply ON to start of  
communication: **Min. 250 ms\*1**

\*1 For wireless remote

## Communication response

Signal response time: **5 ms**

## Communication cables not required

Reduced wiring work, space, and cost  
Minimized disconnection risk

## Number of I/O points

Max. 1280 inputs/1280 outputs  
(Registration and communication of up to 127 remote  
units is possible.)

## Compatible protocol

**EtherNet/IP™**



Material handling robot



Wireless base

Wireless remote

Spot welding

Wireless remote






Wireless base unit

Wireless remote unit

### Countries in which wireless is supported

This product cannot be used in countries where wireless is not supported.

Country	Standard
Japan	 (Construction Type Certification)
EU*1	 (CE marking/RE Directive)
USA	 (FCC)

\*1 Austria, Belgium, Bulgaria, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, U.K., Turkey

# Space Saving

# Lightweight

## Direct Operated 2-Port Valve

### Energy saving

**Power consumption: 14% reduction**  
(Compared to the current model)

**Coil force: 10% increase**  
(Compared to the current model)

A new solenoid has been developed in pursuit of optimal magnetic efficiency.

### Long service life

**Life: 10 million cycles or more**

AC full wave rectified coils prevent buzzing phenomenon.

Now with a longer service life.

### High corrosion resistance

Stainless steel body is available as standard.

### Space saving

**Valve height: 13% reduction**  
(Compared to the current model)

A new solenoid with a more compact body.

### Lightweight, Large flow rate

**Weight: 17% reduction**  
(Compared to the current model)

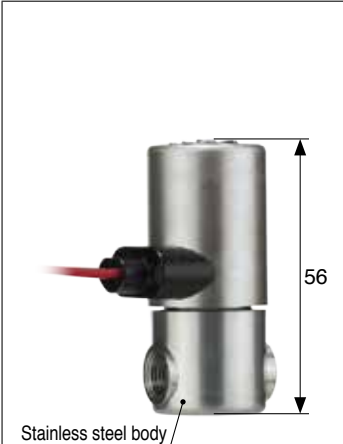

The thin and lightweight body made by a unique stainless steel press manufacturing method ensures strength equivalent to or greater than current brass products.

**Flow rate: 10% increase**  
(Compared to the current model)

A larger flow rate can now be achieved through the optimization of the orifice diameter and valve stroke.



\* JSX22 series

			
Series	JSX21	JSX22	JSX23
Power consumption	3.3 w	6 w	9 w
Weight	5.99657 oz (170g)	13.4041 oz (380g)	16.9315 oz (480g)

#### Coil rotation structure

#### Electrical entry

Grommet, DIN terminal, Conduit

#### Voltage variations

24, 48, 100, 110, 120, 200, 220, 230, 240 VAC,  
12, 24 VDC, and other special voltages



Grommet



DIN terminal



Conduit

# Air Saving

## Pulse Valve (Valve for Dust Collectors)

Can hold a high peak pressure with a large flow even when operated at low air consumption

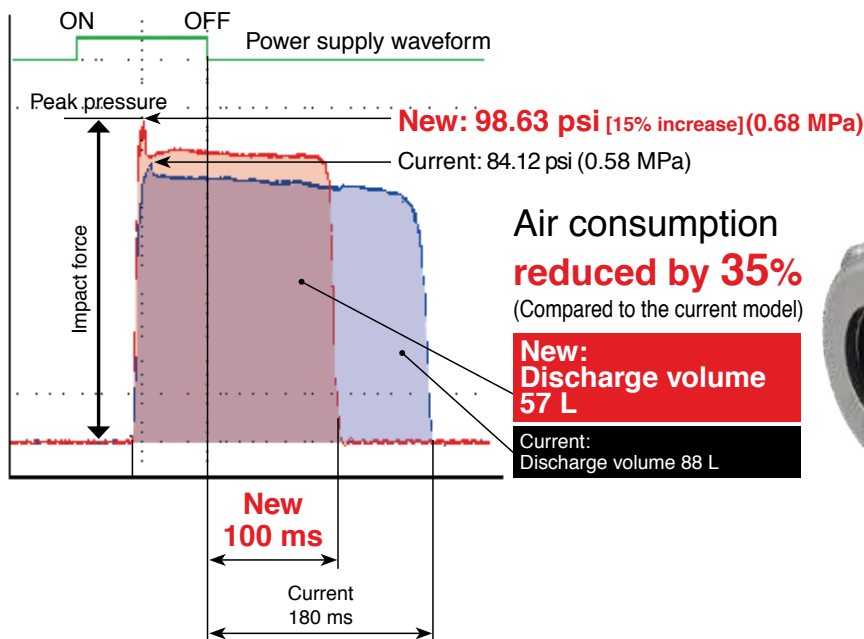
■ Peak pressure: **15% increase**

(Compared to the current model)

■ OFF response time: **44% reduction**

(Compared to the current model)

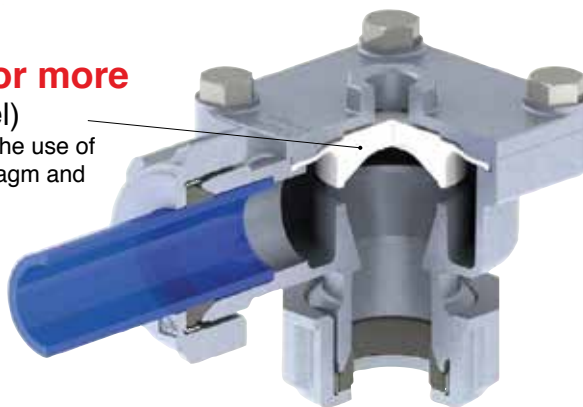
### Outlet pressure waveform (20A)



■ Life: **10 million cycles or more**

(10 times that of the current model)

Longer service life can be achieved through the use of an integrated high-strength elastomer diaphragm and springless structure.



Former

New

■ Cv (20A) **9.5 → 18** (1.8 times)

The optimized orifice diameter and main valve structure with less pressure loss improve flow rate characteristics.

# Air Saving Multistage Ejector

# Lightweight

Air consumption

**10% reduction**

63 L/min (ANR)

→ **57 L/min (ANR)**

Weight

**60% reduction**

450 oz → **180 oz**

(450 g → **180 g**)



Vacuum pressure **-12.18 psi**  
(-84 kPa)

Suction flow rate **3.53 cfm (ANR)**  
(100 L/min (ANR))

## Variations

With valve

Digital pressure switch  
for vacuum

With vacuum pressure  
gauge

Vacuum port adapter

Port exhaust





# Global Manufacturing, Distribution and Service Network

## Worldwide Subsidiaries

### EUROPE

**AUSTRIA**  
SMC Pneumatik GmbH (Austria)

**BELGIUM**  
SMC Pneumatics N.V./S.A.

**BULGARIA**  
SMC Industrial Automation Bulgaria EOOD

**CROATIA**  
SMC Industrijska Automatika d.o.o.

**CZECH REPUBLIC**  
SMC Industrial Automation CZ s.r.o.

**DENMARK**  
SMC Pneumatik A/S

**ESTONIA**  
SMC Pneumatics Estonia

**FINLAND**  
SMC Pneumatics Finland OY

**FRANCE**  
SMC Pneumatique S.A.

**GERMANY**  
SMC Pneumatik GmbH

**GREECE**  
SMC Hellas EPE

**HUNGARY**  
SMC Hungary Ipari Automatizálási Kft.

**IRELAND**  
SMC Pneumatics (Ireland) Ltd.

**ITALY**  
SMC Italia S.p.A.

**KAZAKHSTAN**  
LLP "SMC Kazakhstan"

**LATVIA**  
SMC Pneumatics Latvia SIA

**LITHUANIA**  
UAB "SMC Pneumatics"

**NETHERLANDS**  
SMC Pneumatics B.V.

**NORWAY**  
SMC Pneumatics Norway AS

**POLAND**  
SMC Industrial Automation Polska Sp. z o.o.

**ROMANIA**  
SMC Romania S.r.l.

**RUSSIA**  
SMC Pneumatik LLC.

**SLOVAKIA**  
SMC Priemyselná Automatizácia, Spol s.r.o.

**SLOVENIA**  
SMC Industrijska Avtomatika d.o.o.

**SPAIN / PORTUGAL**  
SMC España, S.A.

**SWEDEN**  
SMC Pneumatics Sweden AB

**SWITZERLAND**  
SMC Pneumatik AG

**TURKEY**  
SMC Pnömatik Sanayi Ticaret ve Servis A.Ş.

**UK**  
SMC Pneumatics (U.K.) Ltd.

### ASIA / OCEANIA

**AUSTRALIA**  
SMC Pneumatics (Australia) Pty. Ltd.

**CHINA**  
SMC (China) Co., Ltd.  
SMC Pneumatics (Guangzhou) Ltd.

**HONG KONG**  
SMC Pneumatics (Hong kong) Ltd.

**INDIA**  
SMC Pneumatics (India) Pvt. Ltd.

**INDONESIA**  
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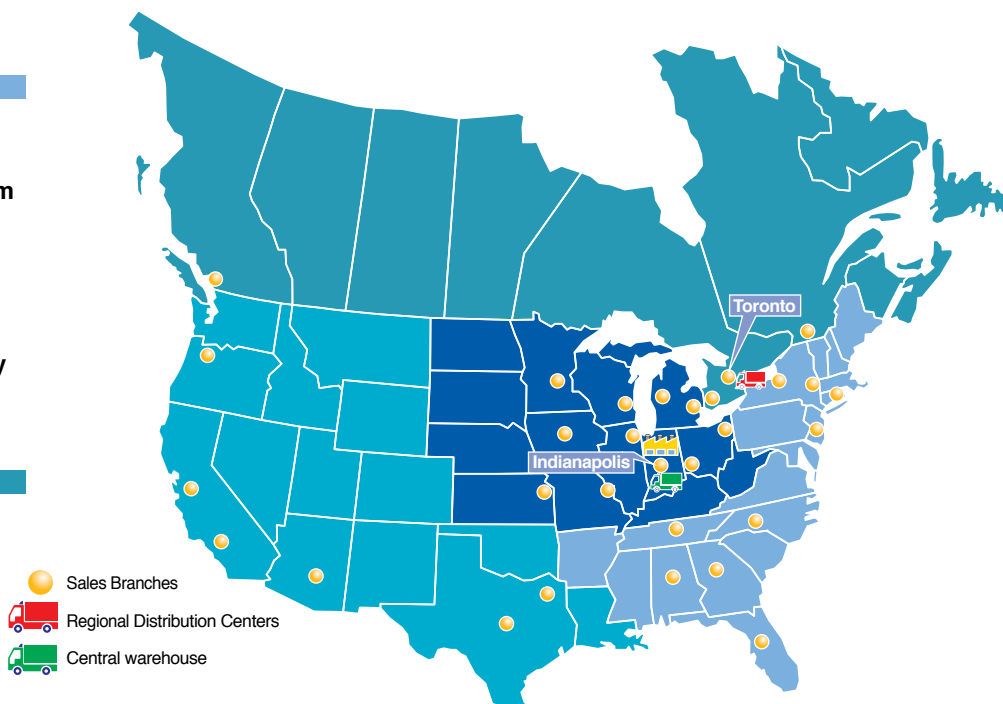
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