Related vacuum products

■ Vacuum component

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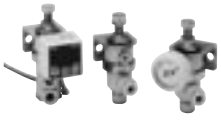
Series variation

Related vacuum products

(Position locking valve)

Series	Model no.	Port size		Remarks	Page
		Vacuum generator side	Workpiece side		
VSECV Series ・Separate circuit workpiece maintains vacuum even if workpiece deviates. ・This is applicable for vacuum pads. 	VSECV-M3	M3			422
	VSECV-M4	M4			
	VSECV-M5	M5			
	VSECV-M6	M6			
	VSECV-6A	R (c) 1/8			

(Compact vacuum regulator)

Series	Model no.	Port size		Remarks	Page
		ø6	ø8		
VSRVV Series ・Terminal pressure can be controlled in addition to main pressure. ・Select either a vacuum pressure switch with a digital indicator or a vacuum pressure gauge. 	VSRVV-*A*	○	○	Elbow (Output: male thread)	426
	VSRVV-*B*	○	○	Elbow (Supply: male thread)	
	VSRVV-*U*	○	○	Union type	

(Vacuum break unit)

Series	Model no.	Port size		Remarks	Page
		Vacuum generator side	Workpiece side		
VSLF Series ・Control vacuum break air while maintaining vacuum characteristics of vacuum ejector. ・Reduction of vacuum break time realized by vacuum break circuit relief function. 	VSLF-44	ø4	ø4		436
	VSLF-66	ø6	ø6		
	VSLF-46A	ø4	R1/8		
	VSLF-66A	ø6	R1/8		

(Vacuum filter)

●: Standard, ○: Option

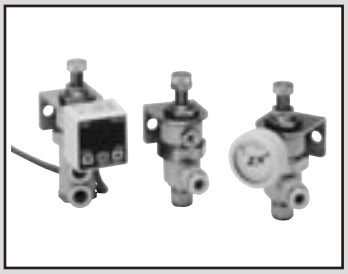
Series	Model no.	Port size						Remarks	Page
		M5	ø4	ø6	ø8	ø10	ø12		
VSFB Series Large volume union type ・Dust and water drops are eliminated with the cyclone effect and element. ・The entire dust case is removed with a single touch, preventing dust from scattering. 	VSFB-66			●				Filtration area: 20cm^2	440
	VSFB-88				●			Filtration area: 20cm^2	
	VSFB-1010					●		Filtration area: 20cm^2	
	VSFB-1212						●	Filtration area: 20cm^2	
VSFU Series Compact union type ・Tools are not required to replace or clean the element. ・In-line types are easily installed in piping. 	VSFU-1S	○	○	○				Filtration area: 2.8cm^2	
	VSFU-1L	○	○	○				Filtration area: 4.7cm^2	
	VSFU-2	○	○	○				Filtration area: 7.5cm^2	
	VSFU-3			○	○	○		Filtration area: 12.5cm^2	
VSFJ Series Compact socket type ・This is appropriate for discrete ejector, not integrating vacuum filter. 	VSFJ-44		●					Filtration area: 0.8cm^2	
	VSFJ-66			●				Filtration area: 1.1cm^2	

(Vacuum switch)

Series	Model no.	Port size					Remarks	Page
		M5	ø4	ø6	ø8	direct		
VSUS Series ・2 point output and analog output are available. ・Push-in joint, M5 female thread, or direct installation piping connection is available. 	VSUS-NW	○	○	○	○	○	NPN: 2 point output	448
	VSUS-NA	○	○	○	○	○	NPN: Analog output	
	VSUS-PW	○	○	○	○	○	PNP: 2 point output	
	VSUS-PA	○	○	○	○	○	PNP: Analog output	

(Air tweezers)

Series	Model no.	Pad diameter				Rubber Material	Holder shape	Page
		ø2	ø4	ø6	ø8			
VST Series ・Vacuum pad and ejector are integrated into a pen shape component. ・Appropriate for assembly, etc., of small part ・A package type is also available. 	VAT-A*N	○	○	○	○	Nitrile rubber	Type without valve	454
	VAT-A*S	○	○	○	○	Silicon rubber	Type without valve	
	VAT-B*N	○	○	○	○	Nitrile rubber	Valve integrated type	
	VAT-B*S	○	○	○	○	Silicon rubber	Valve integrated type	



Terminal pressure can be controlled in addition to main pressure.
Compact vacuum regulator

VSRVV Series

● Port size: ø6, ø8

JIS symbol 

RoHS

Features

■ Ideal for controlling the base pressure of compact vacuum pumps.

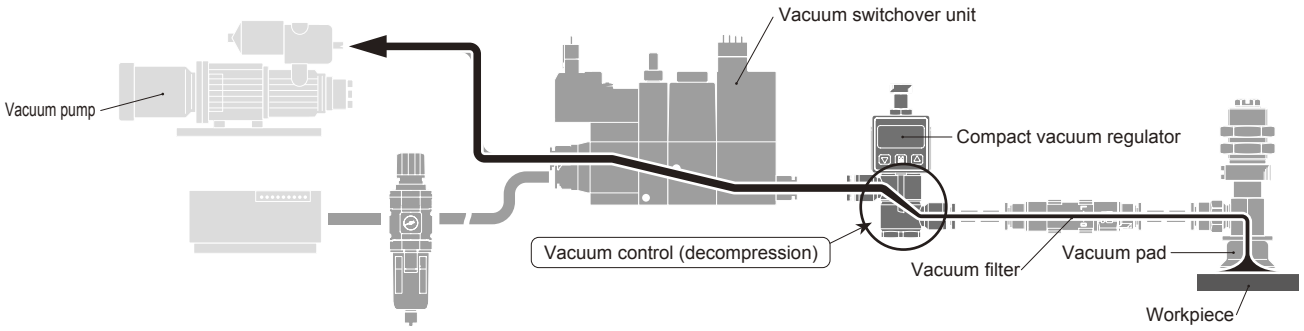
■ When installed between the vacuum valve and vacuum pad, the pressure of each pad is controlled.

■ A female screw (A) directly connected to the vacuum pump vacuum port is available.

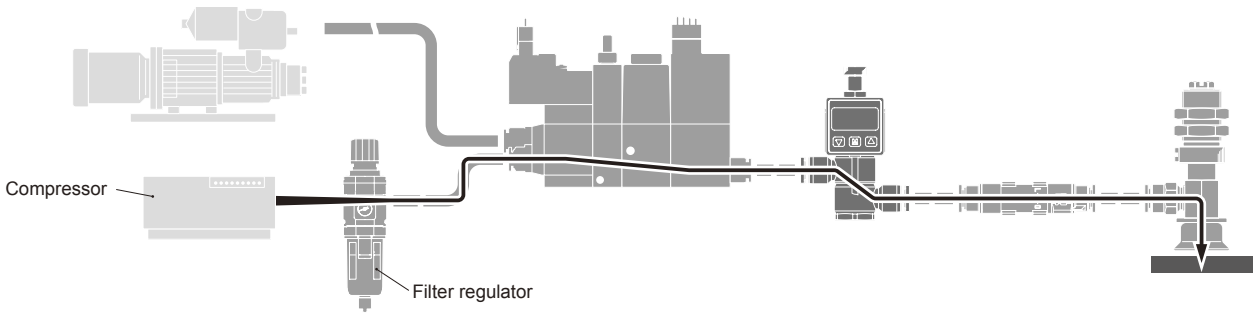
■ The male screw (B) is directly installed on a pad diameter ø150, ø200 holder, and used to control pressure.

Example of piping

● Vacuum supply



● Vacuum break



Specifications of regulator

Descriptions	VSRVV		
Pressure display	Without pressure gauge	Vacuum switch with large digital display	Pressure gauge for ø30
Working fluid	Air		
Working pressure range kPa	-100 to 100		-100 to 0
Set pressure range kPa	-100 to -1.3		
Suction flow ℓ/min. (ANR)	30		
Ambient temperature range °C	0 to 50		0 to 40

Specifications of vacuum switch with large digital display

Descriptions		Pressure switch	
Power supply		12 to 24 VDC ± 10% ripple P-P 10% or less	
Current consumption		40mA or less	
Working pressure range		-100 to 100kPa	
Withstanding pressure		500kPa	
Storage temperature range		-20 to 70°C (atmospheric pressure, humidity 60% RH or less)	
Operating temperature range		-10 to 50°C (no freezing)	
Operation humidity range		35 to 85% RH (no freezing)	
Protective structure		IEC standards IP40 or equivalent	
Pressure display	Number of display	4 times/sec.	
	Responsiveness	Variable, approximate 5, 25, 250m･sec depending on digital filter setting	
	Display precision	±1% F.S.	
	Temperature characteristics	±3%F.S. (0 to 50°C, reference temperature: 25°C)	
	Monitor	Rated over	Blinking display (110% and over of rated pressure)
		Detection range over	Negative pressure "-L-", positive pressure "-H-" blinking display (A/D transform over)
		Output overload detection	"E1" blinking display/overload detection side output light blinking
	Zero adjustment		Pressure display by panel SW operation/zero clear
		Monitor of mis-adjustment	Monitors zero adjustment when residual pressure exceeding ±0.06 Pr is applied, and blinks air warning "E2." Released with panel switching.
	Resolution	1 digit	
	Pressure display element	21/2 digit, red LED character height: 11mm	
	Rated display range	Refer to display range in below table. (The unit setting is selected from the following units using panel operations)	
Switch output	Output no.	2 point output (SW1, SW2)	
	Output method	NPN open collector	
	Switch capacity	30 VDC 100mA or less	
	Residual voltage	1.2V max. (load current: 100mA)	
	Pressure setting method	By panel switch operation.	
	Set pressure range	-110 to 110 digits (decimal point follows display range given below)	
	Operating indication	LED (SW1, SW2: red) lighting (output: ON)	
	Repeatability	±0.3F.S.	
	Precision	±0.5F.S. (0 to 50°C, reference temperature: 25°C)	
	Responsiveness	Variable approximate 5, 25, 250m/sec depending on digital filter setting	
	Setting hysteresis	0 to 30digits (variable by panel switch operation)	
	Overload protection	2 point output (SW 1, SW 2) OFF (overload current: approx. 200mA and over)	

Display magnification (unit)	Pressure range (rated display range)
X 1 (kPa)	-100 to 100
X 1 (MPa)	-
X 0.75 (cmHg)	-75 to 75
X 0.01 (bar)	-1.00 to 1.00
X 0.145 (psi)	-14.5 to 14.5

Specifications of pressure gauge for vacuum

Descriptions	Pressure gauge for vacuum
Pressure display range kPa	-100 to 0
Pressure display precision	5%F.S. (25°C)

How to order

● Compact vacuum regulator

VSRVV - 6 U V - B

Ⓐ Port size

Ⓑ Shape (flow direction)

Ⓒ Pressure display

Ⓓ Bracket

Symbol	Descriptions
Ⓐ Port size	
6	ø6 push-in joint
8	ø8 push-in joint
Ⓑ Shape (flow direction) Note 1, Note 2	
A	Elbow A type ··· Vacuum pump direct mount type
B	Elbow B type ··· Vacuum pad (ø150 to ø200) direct mount type
U	Union type
Ⓒ Pressure display	
G	With pressure display (ø30 pressure gauge for vacuum)
V	With pressure display (vacuum switch with large digital display)
M	None (M5 x 0.8 male thread)
Ⓓ Bracket Note 1	
Blank	None
B	With bracket

⚠ Note on model no. selection

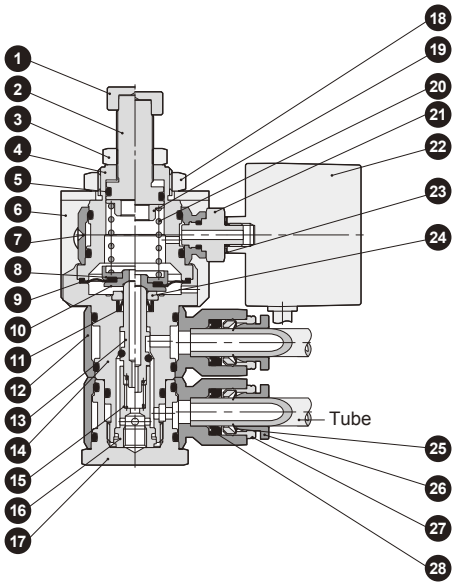
Note 1: When Ⓑ is U, blank is selected for Ⓓ. (When U is selected, the bracket is provided as a standard)
Note 2: The dimensions of elbow A and elbow B are the same, but these cannot be interchanged later.

● Dedicated part model no.

・Bracket

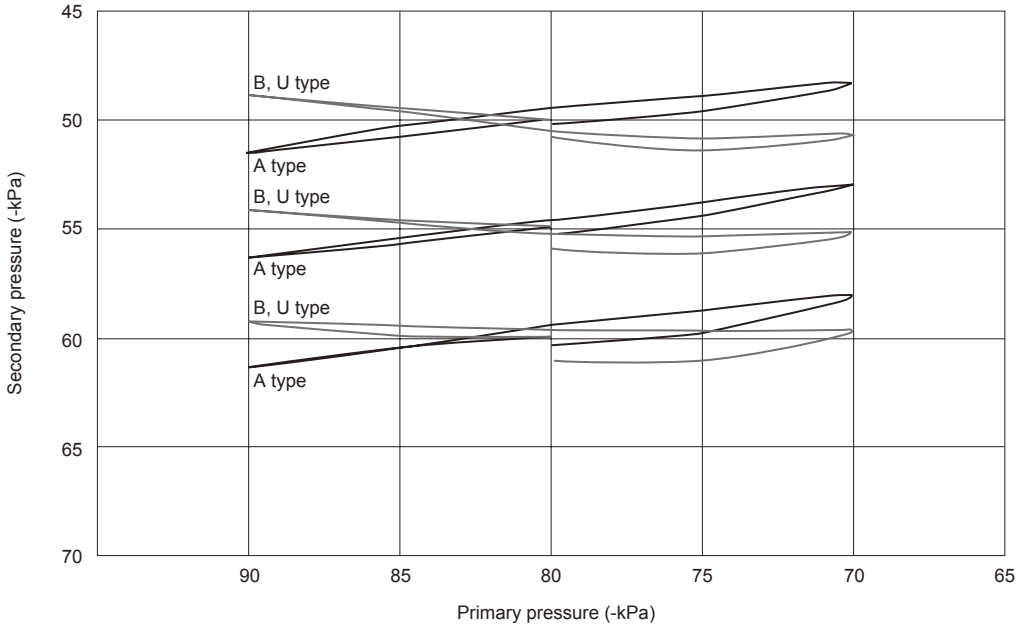
VSRVV-B

Internal structure and parts list

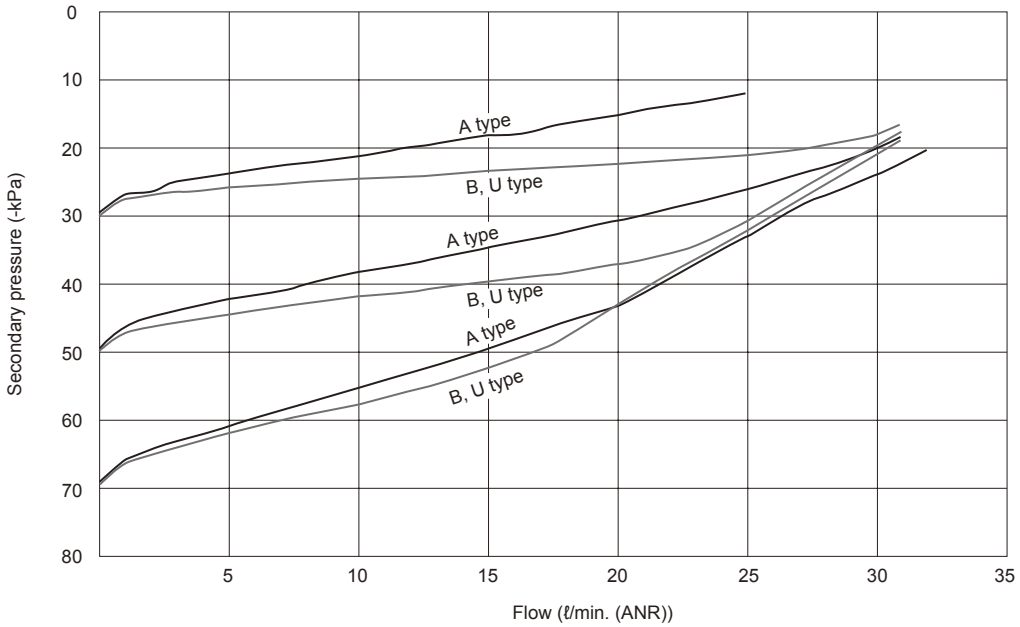


No.	Parts name	Material
1	Knob	Brass, electroless nickeling
2	Pressure adjustment screw	Brass, electroless nickeling
3	Lock nut	Brass, electroless nickeling
4	Bonnet	Brass, electroless nickeling
5	O ring	NBR
6	Bracket	Brass, electroless nickeling
7	Bleed port	PBT
8	Center disk A	Aluminum
9	Diaphragm	NBR
10	Center disk B	Aluminum
11	Rod packing seal	NBR
12	Resin	PBT
13	Valve	Brass, electroless nickeling
14	Metal	Brass, electroless nickeling
15	Valve spring	Stainless steel
16	Sleeve	Brass, electroless nickeling
17	Plug	Brass, electroless nickeling
18	Lock nut	Brass, electroless nickeling
19	Spring guide	Brass, electroless nickeling
20	Pressure adjusting spring	Piano wire
21	Gauge port	Brass, electroless nickeling
22	Pressure sensor	-
23	Gasket	SUS304, NBR
24	Sealant bush	Brass, electroless nickeling
25	Lock jaw	Stainless steel
26	Release ring	POM
27	Guide ring	Brass, electroless nickeling
28	Rubber sleeve	NBR

Pressure characteristics diagram

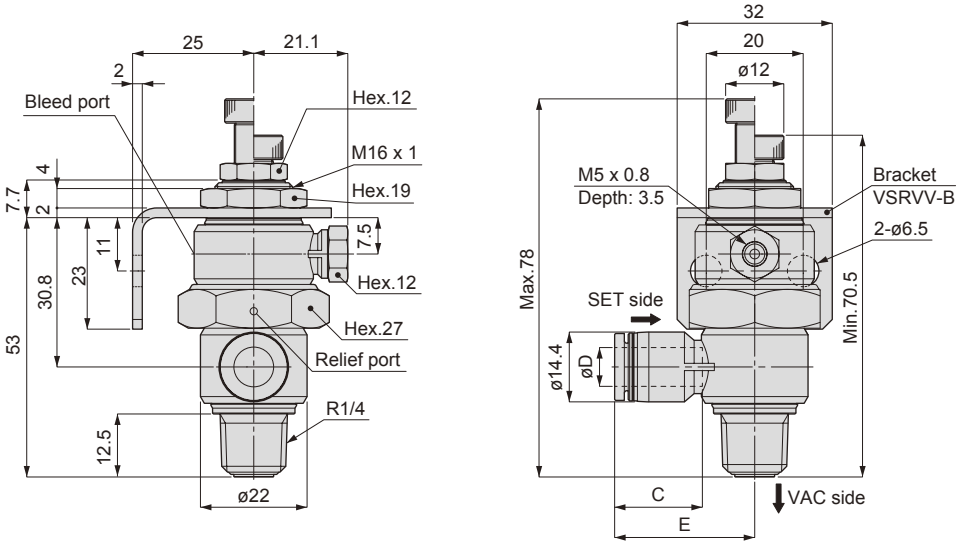


Flow characteristics diagram



Dimensions

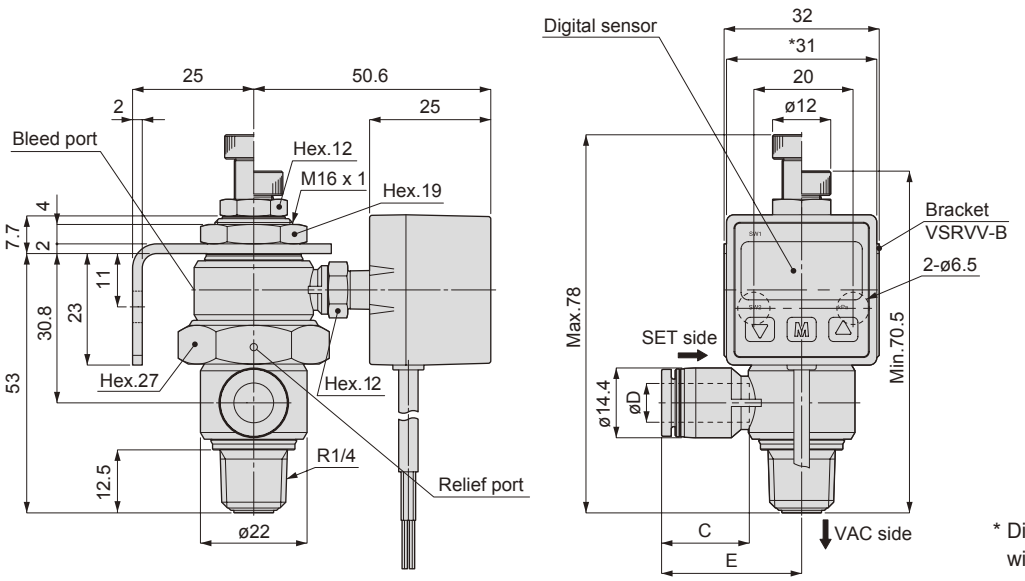
● Vacuum pump direct mount type without pressure display VSRVV-*AM



* Dimensions at left are for the type with bracket.

Model no.	Applicable tube outer diameter øD	C	E	Weight (g)
VSRVV-6AM-*	6	17	29	127
VSRVV-8AM-*	8	18.1	28.9	128

● Vacuum pump direct mount type with pressure display VSRVV-*AV

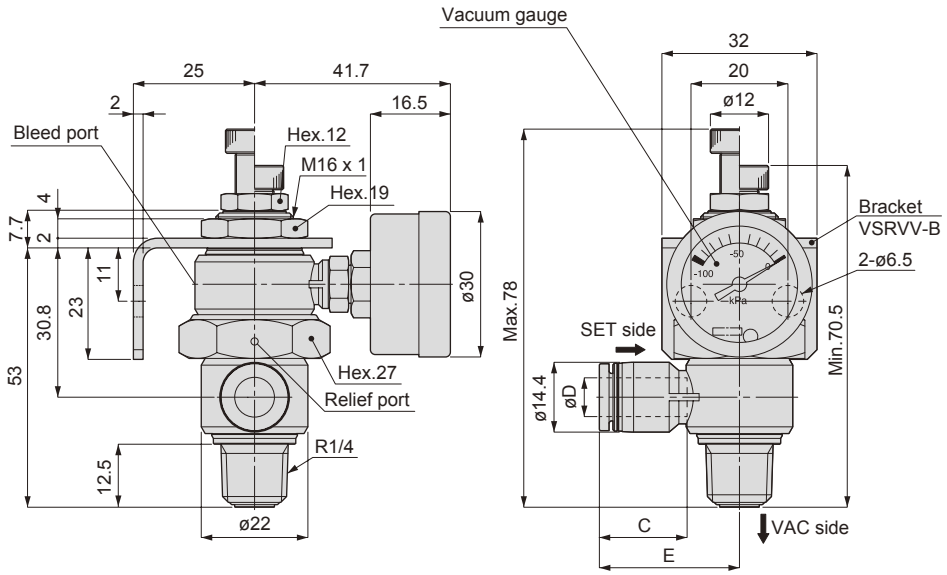


* Dimensions at left are for the type with bracket.

Model no.	Applicable tube outer diameter øD	C	E	Weight (g)
VSRVV-6AV-*	6	17	29	193
VSRVV-8AV-*	8	18.1	28.9	193

Dimensions

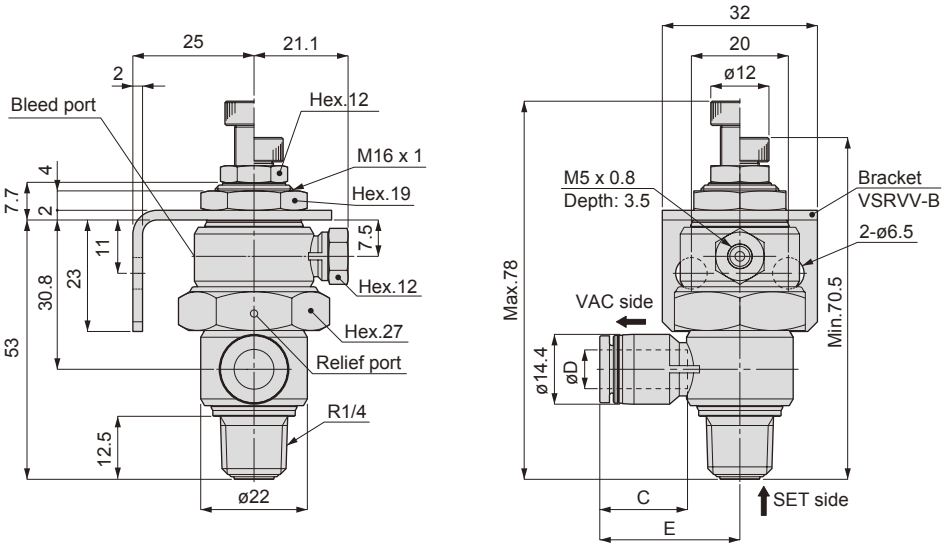
● Vacuum pump direct mount type with pressure display (ø30) VSRVV-*AV



* Dimensions at left are for the type with bracket.

Model no.	Applicable tube outer diameter øD	C	E	Weight (g)
VSRVV-6AG-*	6	17	29	156
VSRVV-8AG-*	8	18.1	28.9	156

● Vacuum pad direct mount type without pressure display VSRVV-*BM

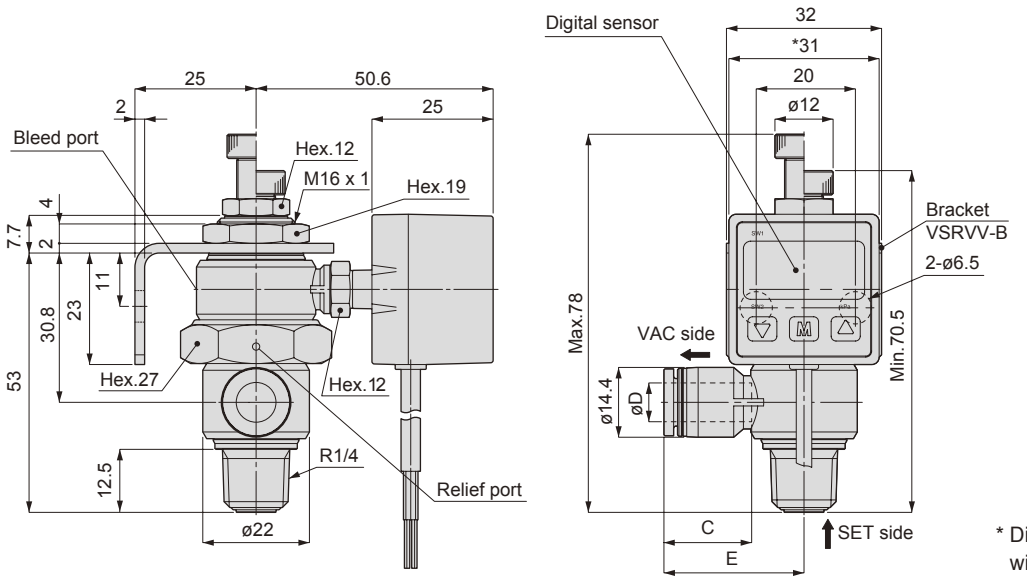


* Dimensions at left are for the type with bracket.

Model no.	Applicable tube outer diameter øD	C	E	Weight (g)
VSRVV-6BM-*	6	17	29	127
VSRVV-8BM-*	8	18.1	28.9	128

Dimensions

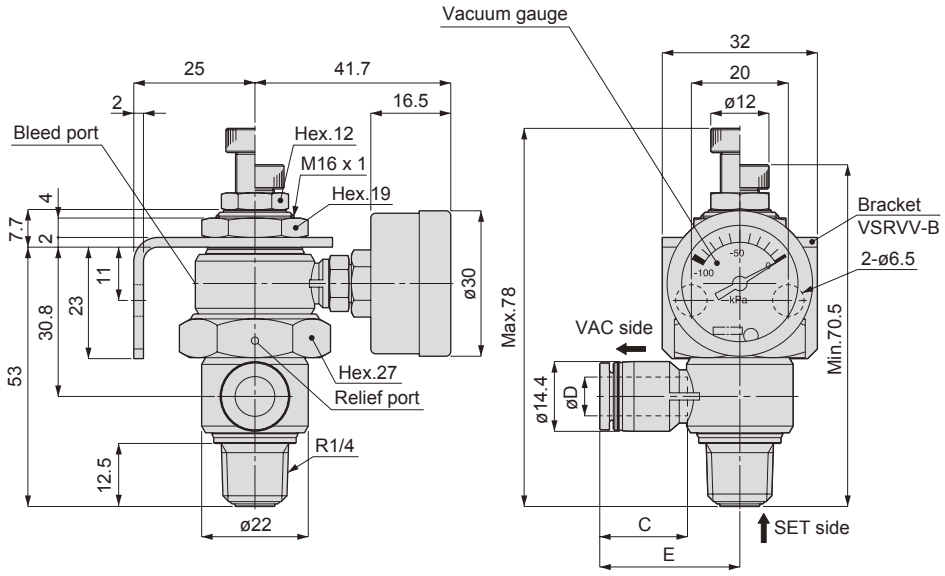
● Vacuum pad direct mount type with pressure display VSRVV-*BV



* Dimensions at left are for the type with bracket.

Model no.	Applicable tube outer diameter øD	C	E	Weight (g)
VSRVV-6BV-*	6	17	29	193
VSRVV-8BV-*	8	18.1	28.9	193

● Vacuum pad direct mount type with pressure display (ø30) VSRVV-*BG

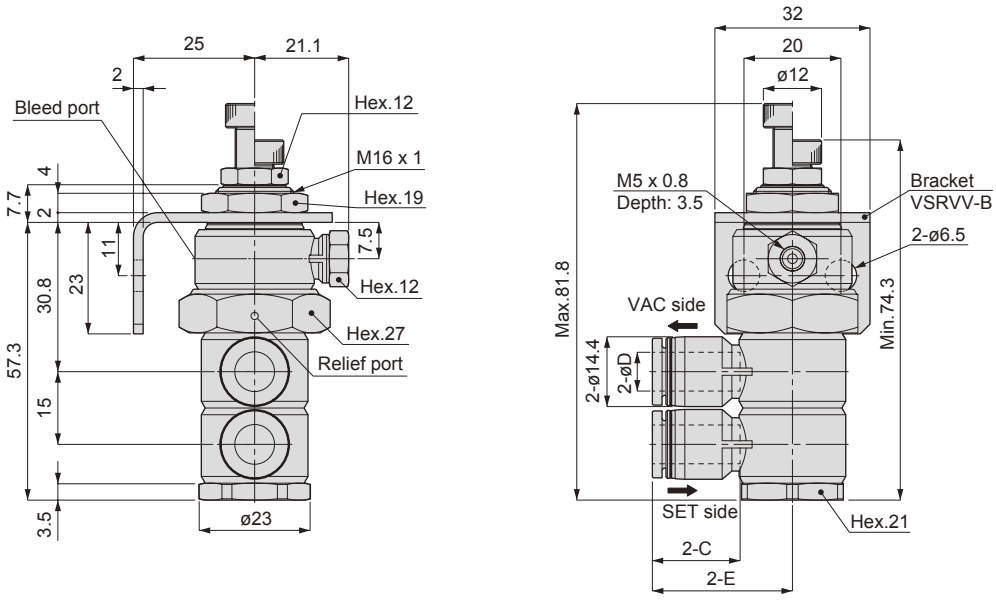


* Dimensions at left are for the type with bracket.

Model no.	Applicable tube outer diameter øD	C	E	Weight (g)
VSRVV-6BG-*	6	17	29	156
VSRVV-8BG-*	8	18.1	28.9	156

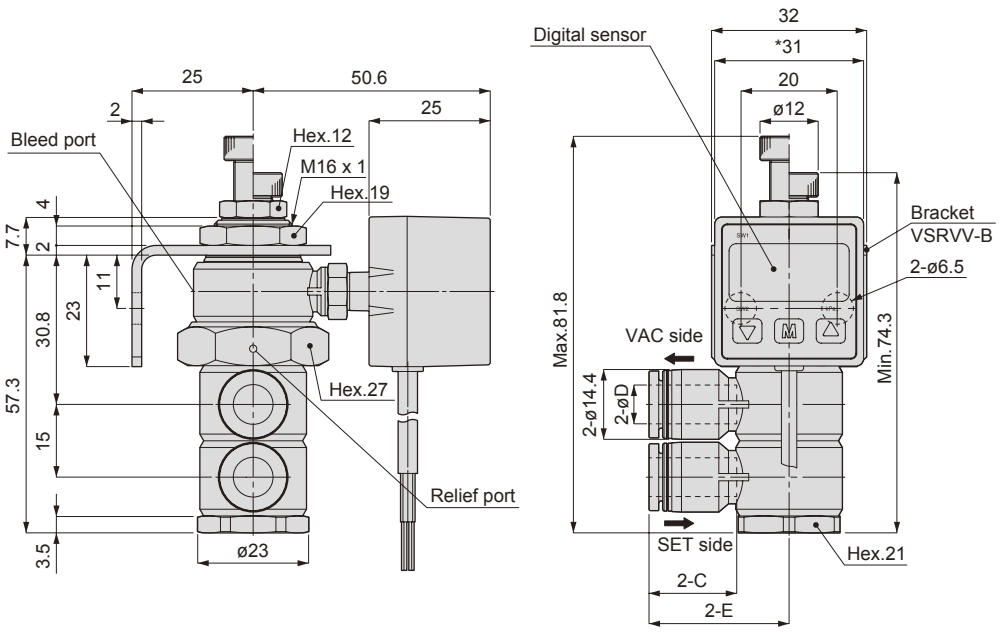
Dimensions

● Union type without pressure display VSRVV-*UM



Model no.	Applicable tube outer diameter øD	C	E	Weight (g)
VSRVV-6UM	6	17	29	180
VSRVV-8UM	8	18.1	28.9	181

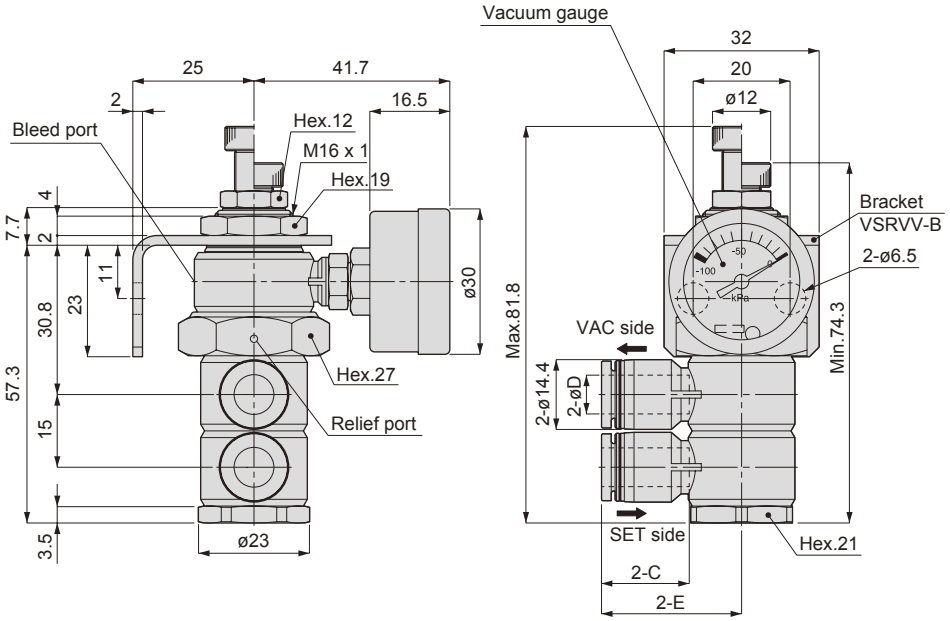
● Union type with pressure display VSRVV-*UV



Model no.	Applicable tube outer diameter øD	C	E	Weight (g)
VSRVV-6UV	6	17	29	246
VSRVV-8UV	8	18.1	28.9	247

Dimensions

● Union type with pressure display VSRVV-*UG



Model no.	Applicable tube outer diameter øD	C	E	Weight (g)
VSRVV-6UG	6	17	29	209
VSRVV-8UG	8	18.1	28.9	210

Safety precautions

WARNING

- When applying positive pressure to the regulator, do not use the ø30 pressure gauge. Use the pressure switch with a large digital display when using positive pressure. Application of excessive positive pressure could result in device damage.

- Before using, see the instruction manual for the vacuum source, and conduct sufficient tests.

CAUTION

- Do not apply an excessive load or impact on the pressure gauge, pressure switch, or gauge port. The device may be damaged or display accuracy may be compromised.

- Use proper holding and fixing when installing the product. When using a screw, use a wrench on the hexagon side (opposite : 27 mm) and tighten. Installing on a different member could result in damage.

- When installing a gauge or pipe, etc., on the gauge port, use a wrench on the gauge port hexagon side (opposite : 12 mm) and tighten. When installing on an M5 × 0.8 port, see the recommended tighten torque table and tighten. The device could be damaged or display accuracy be compromised because of leaks.

Table Recommended tightening torque

Thread size	Tightening torque
M5 x 0.8mm	1.0 to 1.5N·m

- If dirt or particles could be sucked in, attach a vacuum filter to the vacuum regulator pressure adjustment side (workpiece side). Operation could fail if foreign matter is sucked in.

- Do not plug the bleed port or relief port. Secondary pressure could become unstable.

- When applying positive pressure to the regulator, air will flow out from the bleed port. Care must be taken for use in clean room.

- When applying break air, set product considering leakage amount from bleed port.

- Do not use pressure gauge where pressure fluctuation is large.