

OSHA Standard Compliant Pressure Relief 3-Port Valve with Locking Holes

Single Action

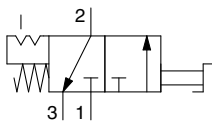
VHS20/30/40/50-D Series

Double Action

VHS20W/30W/40W/50W-D Series

RoHS

Symbol



How to Order



VHS **30** **03** - **D** -

1 2 3 4 5 6

Made to Order

(For details, refer to page 8.)

· Option/Semi-standard: Select one each for a to f.
· Option/Semi-standard symbol:
When more than one specification is required, indicate in alphanumeric order.
Example) VHS30-N03-BS-RZ-D

	Symbol	Description	1			
			Body size			
			20	30	40	50
2	Handle operation	Nil	●	●	●	●
		W	●	●	●	●
3	Pipe thread type	Nil	●	●	●	●
		N	●	●	●	●
		F	●	●	●	●
4	Port size	01	●	—	—	—
		02	●	●	●	—
		03	—	●	●	—
		04	—	—	●	—
		06	—	—	●	●
		10	—	—	—	●
5	a	Mounting	Nil	Without mounting option	●	●
		B	With bracket	●	●	●
	b	Silencer	Nil	Without silencer	●	●
		S	With built-in silencer (for EXH port)	●	●	●
6	c	Handle color	Nil	Red	●	●
		K	Black	●	●	●
	d	Handle material	Nil	Resin	●	●
		M	Metal	●	●	●
	e	Flow direction	Nil	Flow direction: Left to right	●	●
		R	Flow direction: Right to left	●	●	●
	f	Pressure unit	Nil	Product label in SI units: MPa	●	●
		Z*2	Product label in imperial units: psi	○*3	○*3	○*3

*1 The pipe thread type for the EXH port is G.

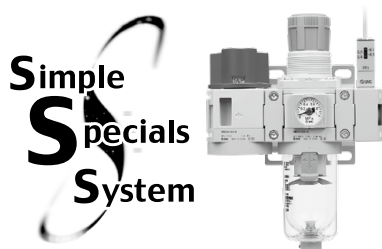
*2 For the pipe thread type: NPT only. This product is for overseas use only according to the New Measurement Act. (The SI unit type is provided for use in Japan.)

*3 ○: For the pipe thread type: NPT only

Simple Specials System

A system designed to respond quickly and easily to your special ordering needs

For modular connection units (shipped assembled), the simple specials system can be used.



Short lead times

This system enables us to respond to your special needs (additional machining, accessory assembly, or the designing of a modular unit) and deliver your personalized products as quickly as standard products.

Repeat orders

Once we receive a simple special part number from one of your previous orders, we will process the order, manufacture the product, and deliver it to you as quickly as possible.

Please contact your local sales representative for more details.



OSHA standard (Occupational Safety and Health Administration, U.S. Department of Labor)

For safety control, OSHA rule requires energy sources for certain equipment be turned off or disconnected and that the device either be locked or labelled with a warning tag.

Specifications

Standard Specifications

Model	VHS20-D	VHS30-D	VHS40-D	VHS40-06-D	VHS50-D
Applicable AC size	AC20-D	AC30-D	AC40-D	AC40-06-D	AC50-D AC60-D*1
Fluid	Air				
Ambient and fluid temperatures	-5 to 60°C (No freezing)				
Proof pressure	1.5 MPa				
Max. operating pressure	1.0 MPa				
Handle switching angle	90°				
Paint color	Handle: Red Body: White Body cover: White				
Weight	0.10 kg	0.18 kg	0.40 kg	0.43 kg	0.82 kg

*1 The VHS50 can be connected to the AC60.

Flow Rate Characteristics

Model	Port size		Flow rate characteristics*1					
			IN → OUT			OUT → EXH		
	IN, OUT	EXH	C (dm³/s-bar)	b	Cv	C (dm³/s-bar)	b	Cv
VHS20-D	1/8	1/8	4.0	0.41	1.1	3.7	0.42	1.1
	1/4		5.8	0.31	1.4	3.8	0.42	1.1
VHS30-D	1/4	1/4	8.8	0.44	2.4	8.0	0.46	2.3
	3/8		14.1	0.28	3.5	7.8	0.46	2.2
VHS40-D	1/4	3/8	9.5	0.49	2.8	13.3	0.47	3.6
	3/8		17.2	0.47	4.8	13.6	0.47	3.7
	1/2		26.7	0.29	6.3	13.4	0.43	3.7
VHS40-06-D	3/4	1/2	34.0	0.22	7.6	16.1	0.41	4.4
VHS50-D	3/4	1/2	45.0	0.26	10.6	23.0	0.49	6.4
	1		53.3	0.36	13.5	22.8	0.49	6.3

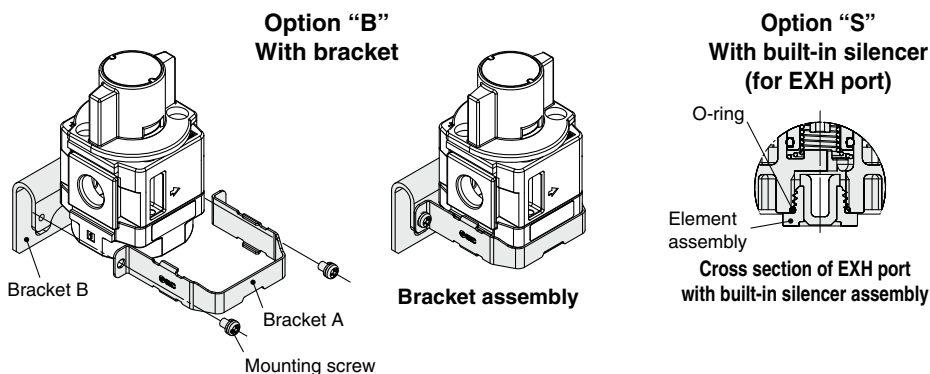
*1 The flow rate characteristics of this product have variations.

Option/Part Nos.

Optional specifications	Model				
	VHS20-D	VHS30-D	VHS40-D	VHS40-06-D	VHS50-D
Bracket assembly*1	VHS24P-180AS	VHS34P-180AS	VHS44P-180AS	VHS44P-180AS	VHS54P-180AS
Silencer assembly*2	VHS24P-190AS	VHS34P-190AS	VHS44P-190AS	VHS54P-190AS	VHS54P-190AS

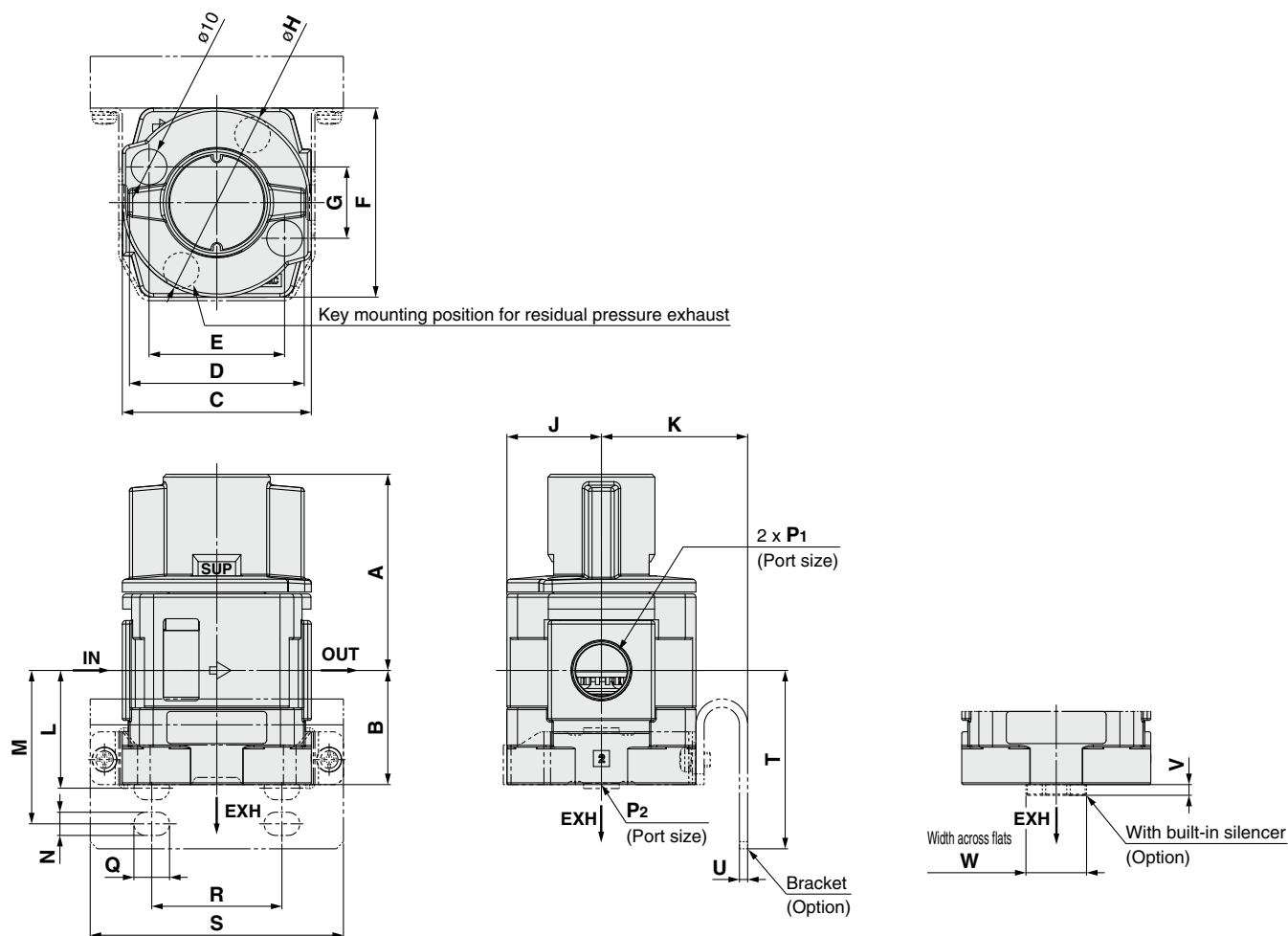
*1 The assembly consists of a bracket A/B and 2 mounting screws.

*2 The assembly consists of the element assembly and an O-ring.



VHS20/30/40/50-D Series

Dimensions



Dimensions

[mm]

Model	Standard specifications											
	P ₁	P ₂	A		B	C	D	E	F	G	H	J
			Single	Double								
VHS20-D	1/8, 1/4	1/8	48.5	51.7	23	40	37	28	42	17.5	40	21
VHS30-D	1/4, 3/8	1/4	55	58.2	32	53	49	38	53	20	53	26.5
VHS40-D	1/4, 3/8, 1/2	3/8	69.7	73.9	41.3	70	63	52	71	29	70	35.5
VHS40-06-D	3/4	1/2	71.7	75.9	43.3	75	63	52	71	29	70	35.5
VHS50-D	3/4, 1	1/2	86.5	90.7	44.5	90	80	72	90	33	90	45

Model	Options specifications										
	With bracket									With silencer	
	K	L	M	N	Q	R	S	T	U	V	W
VHS20-D	30	25.3	34	5.4	8.4	27	60	40	2.3	3	13
VHS30-D	41	33	43	6.5	10	36.5	71	50	2.3	3	17
VHS40-D	50	44	57	8.5	19	43.5	88	66	2.3	3	21
VHS40-06-D	50	46	59	8.5	19	43.5	88	68	2.3	4	27
VHS50-D	70	60	—	11	27.5	49.5	113	71	3.2	4	27

VHS20/30/40/50-D Series

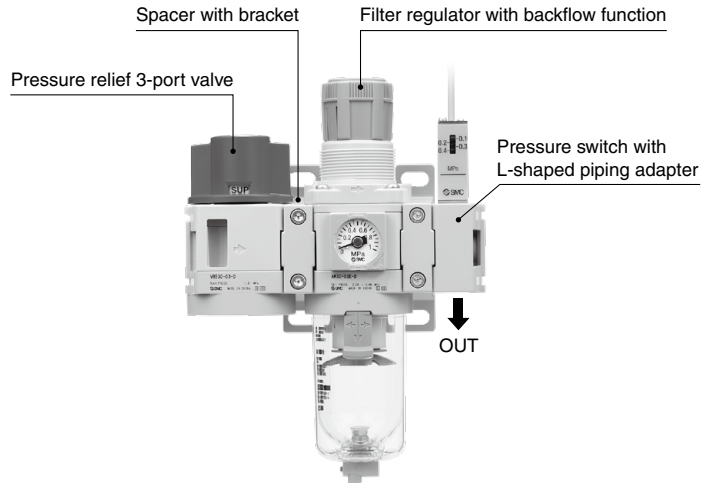
Modular Connection Example

Please note that products do not come assembled. They should be ordered separately and assembled by the customer.

For modular connection units (shipped assembled), the simple specials system can be used. For details, refer to page 3.

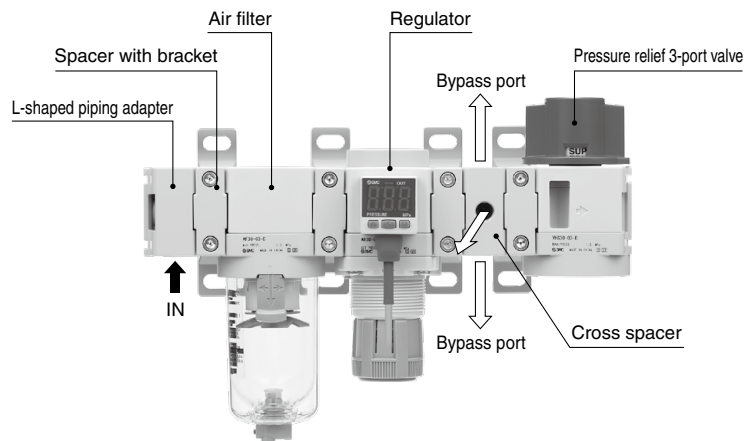
Combination example ①

Pressure relief 3-port valve VHS30-03-D — 1 pc.
 Spacer with bracket Y300T-D — 2 pcs.
 Filter regulator with backflow function AW30K-03E-D — 1 pc.
 Pressure switch with L-shaped piping adapter IS10L-30-03-D — 1 pc.



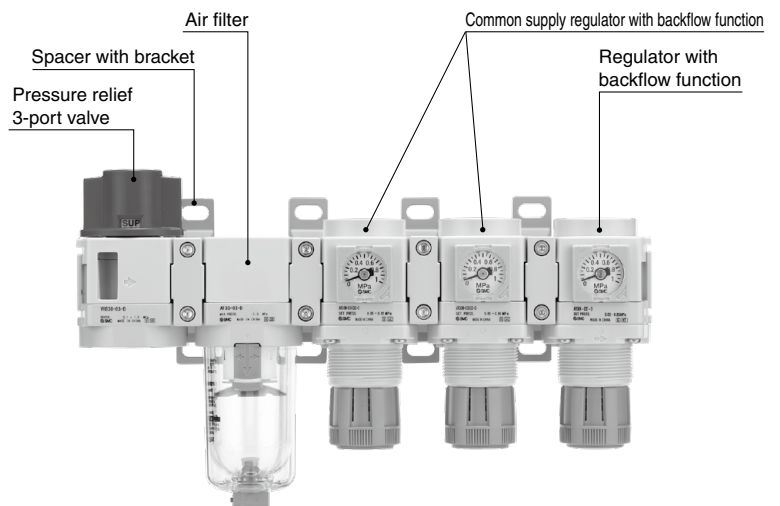
Combination example ②

L-shaped piping adapter E300L-03-D — 1 pc.
 Spacer with bracket Y300T-D — 4 pcs.
 Air filter AF30-03-D — 1 pc.
 Regulator AR30-03E1-D — 1 pc.
 Cross spacer Y34-03-D — 1 pc.
 Pressure relief 3-port valve VHS30-03-D — 1 pc.



Combination example ③

Pressure relief 3-port valve VHS30-03-D — 1 pc.
 Spacer with bracket Y300T-D — 4 pcs.
 Air filter AF30-03-D — 1 pc.
 Common supply regulator with backflow function AR30MK-0302E-D — 2 pcs.
 Regulator with backflow function AR30K-03E-D — 1 pc.



VHS20/30/40/50-D Series

Accessories Sold Separately (for Individual Parts)

Spacer/Spacer with Bracket

Y 300 - D

① ②

		Symbol	Description	① Body size [Applicable VHS size]				
				200 [VHS20]	300 [VHS30]	400 [VHS40]	500 [VHS40-06]	600 [VHS50]
②	Bracket	Nil	Spacer	●	●	●	●	●
		T	Spacer with bracket	●	●	●	●	●

Spacer
(Y□-D)



Spacer with bracket
(Y□T-D)



Standard Specifications

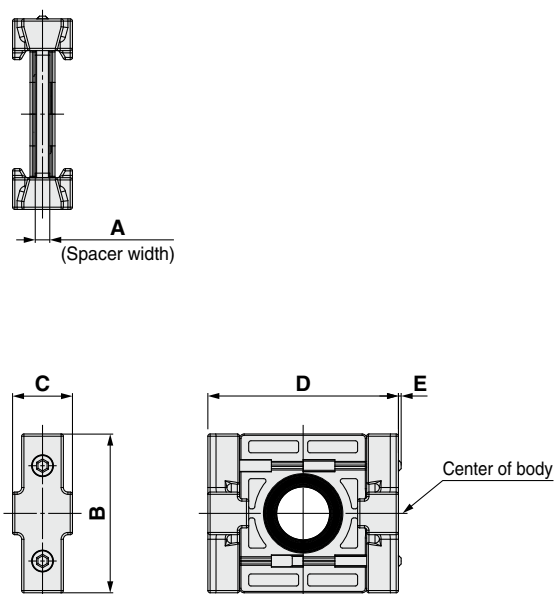
Fluid	Air
Ambient and fluid temperatures	-5 to 60°C (No freezing)
Proof pressure	1.5 MPa
Max. operating pressure	1.0 MPa

Replacement Parts

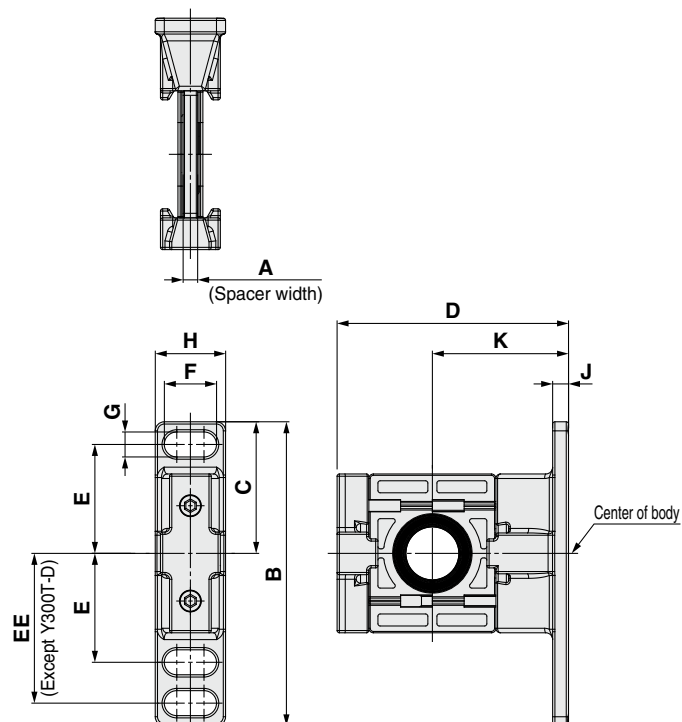
Description	Material	Part number				
		Y200-D Y200T-D	Y300-D Y300T-D	Y400-D Y400T-D	Y500-D Y500T-D	Y600-D Y600T-D
Seal	HNBR	Y220P-050S	Y320P-050S	Y420P-050S	Y520P-050S	Y620P-050S

Dimensions

Spacer



Spacer with bracket



Part no.	A	B	C	D	E	Applicable model
Y200-D	3.2	35	13.2	42	0.6	VHS20-D
Y300-D	4.2	43	16.2	53	—	VHS30-D
Y400-D	5.2	51	19.2	71	—	VHS40-D
Y500-D	5.2	54	21.2	71	—	VHS40-06-D
Y600-D	6.2	64	27.2	90	—	VHS50-D

Part no.	A	B	C	D	E	EE	F	G	H	J	K	Applicable model
Y200T-D	3.2	67	29	51	24	33	11.5	5.5	15.5	3.5	30	VHS20-D
Y300T-D	4.2	85	42.5	67.5	35	—	14	7	20	6	41	VHS30-D
Y400T-D	5.2	115	50	85.5	40	55	18	9	26	7	50	VHS40-D
Y500T-D	5.2	115	50	85.5	40	55	18	9	26	7	50	VHS40-06-D
Y600T-D	6.2	140	60	115	50	70	20	11	31.2	8	70	VHS50-D

VHS20/30/40/50-D Series

Made to Order

Please contact SMC for detailed dimensions, specifications, and delivery times.



① Body Color: Red + Flame Resistant

The body color is red. Flame resistant resin is used for the exterior parts.

VHS 30 - 03 - - - D - X1

1
2
3
4
5
6

• Red body + Flame resistant

· Option/Semi-standard: Select one each for **a** to **f**.
 · Option/Semi-standard symbol: When more than one specification is required, indicate in alphanumeric order.
 Example) VHS30-N03-BS-RZ-D-X1

		Symbol	Description	1					
				Body size					
				20	30	40	50		
2	Handle operation	Nil	Single action	●	●	●	●		
		W	Double action	●	●	●	●		
+									
3	Pipe thread type	Nil	Rc*1	●	●	●	●		
		N	NPT	●	●	●	●		
		F	G	●	●	●	●		
+									
4	Port size	01	1/8	●	—	—	—		
		02	1/4	●	●	●	—		
		03	3/8	—	●	●	—		
		04	1/2	—	—	●	—		
		06	3/4	—	—	●	●		
		10	1	—	—	—	●		
+									
5	Option	a	Mounting	Nil	Without mounting option	●	●	●	●
				B	With bracket	●	●	●	●
+									
b	Silencer	Nil	Without silencer	●	●	●	●		
		S	With built-in silencer (for EXH port)	●	●	●	●		
+									
6	Semi-standard	c	Handle color	Nil	Red	●	●	●	●
				K	Black	●	●	●	●
		+							
		d	Handle material	Nil	Resin	●	●	●	●
				M	Metal	●	●	●	●
		+							
		e	Flow direction	Nil	Flow direction: Left to right	●	●	●	●
				R	Flow direction: Right to left	●	●	●	●
		+							
		f	Pressure unit	Nil	Product label in SI units: MPa	●	●	●	●
Z*2	Product label in imperial units: psi			○*3	○*3	○*3	○*3		

*1 The pipe thread type for the EXH port is G.

*2 For the pipe thread type: NPT only. This product is for overseas use only according to the New Measurement Act. (The SI unit type is provided for use in Japan.)

*3 ○: For the pipe thread type: NPT only

VHS20/30/40/50-D Series

② High-Pressure Specification

Can be used in pressure ranges that go up to 2.0 MPa

VHS **30** - **03** - **M** - D - X425

① ② ③ ④ ⑤

• High-pressure specification (2.0 MPa)

• Option/Semi-standard: Select one each for a to f.
• Option/Semi-standard symbol: When more than one specification is required, indicate in alphanumeric order.
Example) VHS30-N03-BT-KMRZ-D-X425



High-pressure silencer (Option)

		Symbol	Description	①			
				Body size			
				30	40		
②	Pipe thread type	Nil	Rc*1	●	●		
		N	NPT	●	●		
		F	G	●	●		
+							
③	Port size	02	1/4	●	●		
		03	3/8	●	●		
		04	1/2	—	●		
+							
④	Option	a	Mounting	Nil	Without mounting option	●	●
				B	With bracket	●	●
+							
		b	Silencer	Nil	Without silencer	●	●
				T	With built-in silencer (for EXH port)	●	●
+							
⑤	Semi-standard	c	Handle color	Nil	Red	●	●
				K	Black	●	●
		+					
		d	Handle material*2	M	Metal	●	●
		+					
		e	Flow direction	Nil	Flow direction: Left to right	●	●
				R	Flow direction: Right to left	●	●
		+					
		f	Pressure unit	Nil	Product label in SI units: MPa	●	●
				Z*3	Product label in imperial units: psi	○*4	○*4

*1 The pipe thread type for the EXH port is G.

*2 The handle material for the high-pressure specification is metal. Be sure to select the semi-standard option "M."

*3 For the pipe thread type: NPT only. This product is for overseas use only according to the New Measurement Act. (The SI unit type is provided for use in Japan.)

*4 ○: For the pipe thread type: NPT only

Specifications

Fluid	Air
Ambient and fluid temperatures	-5 to 60°C (No freezing)
Proof pressure	3.0 MPa
Max. operating pressure	2.0 MPa

Flow rate characteristics

Model	Port size		Flow rate characteristics*1					
			IN→OUT			OUT→EXH		
			C (dm³/s·bar)	b	Cv	C (dm³/s·bar)	b	Cv
VHS30-D-X425	1/4	1/4	7.3	0.49	2.1	4.8	0.50	1.4
	3/8		11.1	0.34	2.7	5.0	0.51	1.4
VHS40-D-X425	1/4	3/8	8.3	0.58	2.7	9.9	0.29	2.4
	3/8		16.0	0.50	4.6	11.5	0.30	2.8
	1/2		20.0	0.41	5.3	11.9	0.33	3.0

*1 The flow rate characteristics of this product have variations.

Assembly/Usage Precautions

- Be sure to connect a silencer to the EXH port to reduce the amount of noise caused by the exhaust.
- The built-in silencer (standard specification option) cannot be used with the high-pressure specification.



High-pressure silencer assembly

VHS **34** P - 190AS - X425

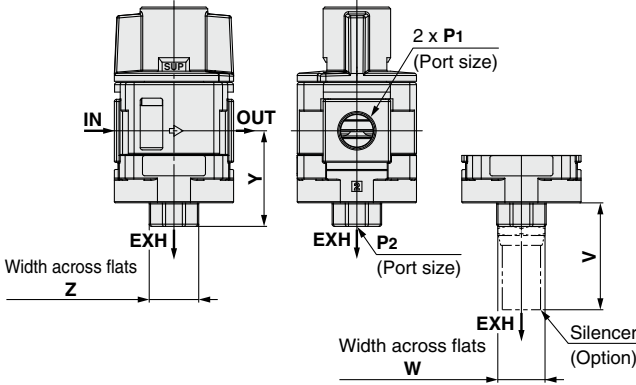
• Body size

34	For size 30
44	For size 40

• High-pressure specification (2.0 MPa)

②High-Pressure Specification

Dimensions (Dimensions other than those below are the same as those of the standard type.)



Model	High-pressure specification				With built-in silencer	
	P ₁	P ₂	Y	Z	V	W
VHS30-D-X425	1/4, 3/8	1/4	42.5	22	47.5	21
VHS40-D-X425	1/4, 3/8, 1/2	3/8	52	24	47.7	21