

# 3-Port Solenoid Valve Modular Type/ Residual Pressure Release Valve

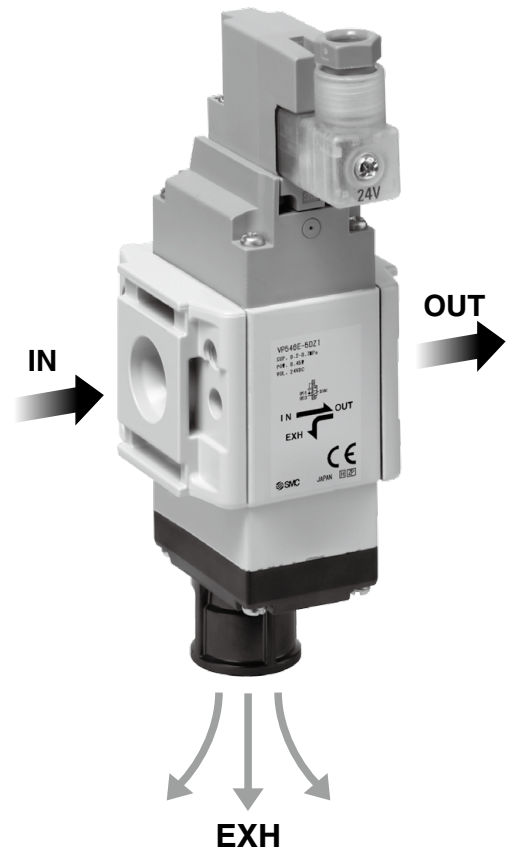
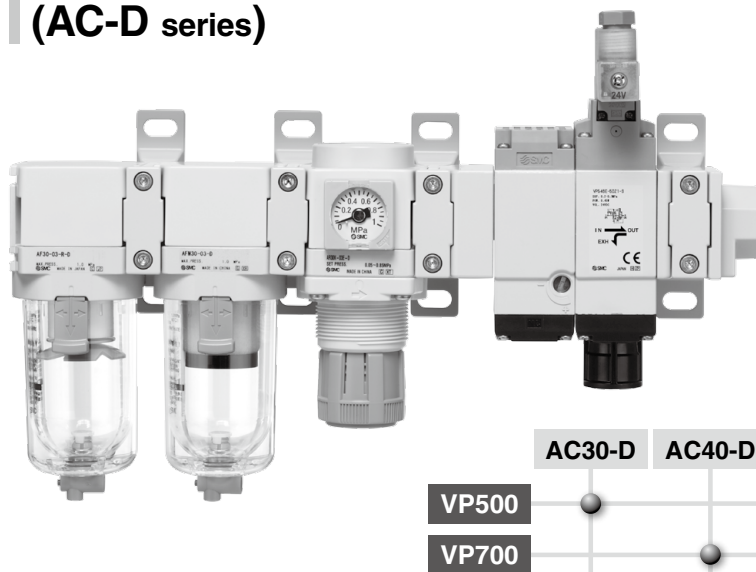


## Flow rate characteristics $C$ [dm<sup>3</sup>/(s·bar)]

VP546E: 7.5

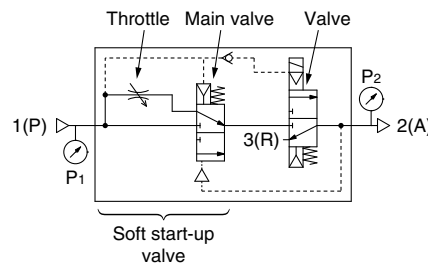
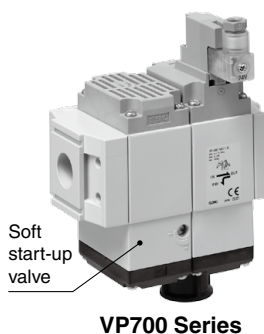
VP746E: 12.6

Can be connected to F.R.L. units  
(AC-D series)

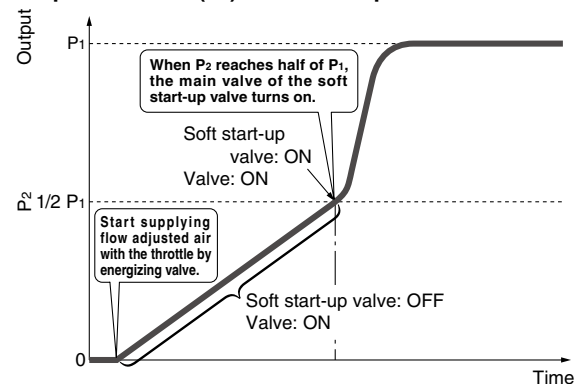


Allows for space saving and reduced piping labor.

A model with a soft start-up function is also available.



Output Pressure (P<sub>2</sub>) vs Time Graph



Power consumption: **0.35 W** (Without light)

Features a check valve built into the pilot flow path  
(Supports pilot pressure drops caused by pressure fluctuations on the inlet side)

## VP546E/746E Series



# VP546E/746E Series



## How to Order

**Modular Type** VP 5 46 E - 5 DZ □ 1 - R - □

### Series

5	VP500
7	VP700

### Solenoid valve type

E	Residual pressure relief 3-port solenoid valve
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### Soft start-up function

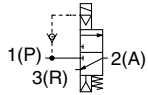
Nil	None
S	With soft start-up function

### Flow direction

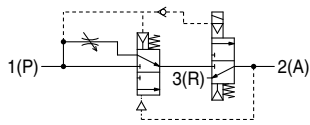
Nil	Left to right
R	Right to left

### Symbol

Residual pressure relief 3-port solenoid valve



With soft start-up function



### Rated voltage

DC	5	24 VDC
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### Electrical entry

DIN terminal		DIN (EN 175301-803C) terminal	
<b>D:</b> With connector	<b>DO:</b> Without connector	<b>Y:</b> With connector	<b>YO:</b> Without connector
<b>DZ:</b> With connector/With light/surge voltage suppressor		<b>YZ:</b> With connector/With light/surge voltage suppressor	

\* Refer to the **Web Catalog** (VP300/500 Low wattage specification) for details of the DIN terminal.

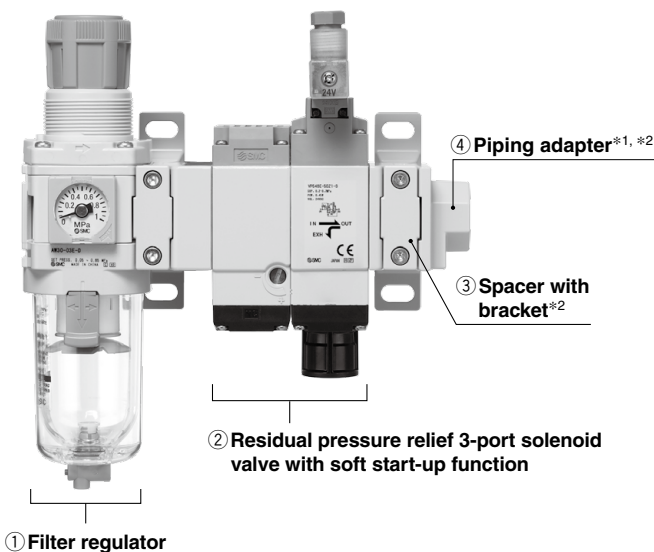
### Manual override

Nil: Non-locking push type	A: Non-locking push type (Manual)	E: Push-turn locking type (Manual)

### Caution

When using the surge voltage suppressor type, residual voltage will remain. For details, refer to the **Web Catalog** (VP300/500 Low wattage specification).

## Assembly Example



\*1 Connection threads are not available for the residual pressure relief 3-port solenoid valve. Order a piping adapter separately.

\*2 Refer to page 3 for details on the spacer with bracket and piping adapter.

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

Please contact your local sales representative for more details.

### Ordering Example

- ① Filter regulator AW30-03E-D ..... 1 pc.
- ② Residual pressure relief 3-port solenoid valve with soft start-up function VP546E-5DZ1-S ..... 1 pc.
- ③ Spacer with bracket Y300T-D ..... 2 pcs.
- ④ Piping adapter E300-03-D ..... 1 pc.

### Applicable Combinations/Attachment Part Nos. (Refer to page 3)

Residual pressure relief 3-port solenoid valve	Air combination	Spacer with bracket	Piping adapter	Silencer
<b>VP546E</b>	AC30□-D	Y300T-D	E300-□03-D	AN30-03 AN302-03
<b>VP746E</b>	AC40□-D	Y400T-D	E400-□04-D	AN40-04 AN402-04

# 3-Port Solenoid Valve Modular Type/ Residual Pressure Release Valve **VP546E/746E Series**

## Specifications

Fluid	Air
Type of actuation	N.C.
Internal pilot operating pressure range [MPa]	0.2 to 0.7
Operating and ambient temperatures [°C]	-10 to 50 (No freezing)
Max. operating frequency [Hz]	5
Manual override	Non-locking push type Non-locking push type (Manual) Push-turn locking type (Manual)
Pilot exhaust	Individual exhaust
Lubrication	Not required
Mounting orientation	Unrestricted
Impact/Vibration resistance*1 [m/s <sup>2</sup> ]	150/30
Enclosure	IP65

\*1 Impact resistance: No malfunction occurred when it is tested in the axial direction and at the right angles to the main valve and armature in both energized and de-energized states every once for each condition. (Values at the initial period)

Vibration resistance: No malfunction occurred in a one-sweep test between 45 and 2000 Hz. The test was performed at both energized and de-energized states in the axial direction and at the right angles to the main valve and armature. (Values at the initial period)

\* This valve is a large flow rate pilot-operated solenoid valve. If the operating pressure falls below 0.2 MPa due to a pressure drop caused by insufficient air supply, it may not be able to switch properly.

## Solenoid Specifications

Electrical entry	DIN terminal (D) DIN terminal (Y) <EN 175301-803C>	
	D, Y	
Coil rated voltage [V]	DC	24
Allowable voltage fluctuation	±10% of the rated voltage	
Power consumption [W]	DC	Standard
		0.35 (With light: 0.45)
Surge voltage suppressor	Varistor	
Indicator light	LED	

## Response Time/Weight

Model	Response time [ms] (at 0.5 MPa)	Weight [g]
VP546E	38	331 (With soft start-up function: 588)
VP746E	56	676 (With soft start-up function: 1194)

## Flow Rate Characteristics

Model	Port size EXH.	Flow rate characteristics					
		1 → 2 (P → A)			2 → 3 (A → R)		
		C [dm <sup>3</sup> /(s·bar)]	b	Cv	C [dm <sup>3</sup> /(s·bar)]	b	Cv
VP546E	G3/8	8.8	0.14	2	7.5	0.13	1.7
VP546E-S	G3/8	6.6	0.07	1.5	7.5	0.13	1.7
VP746E	G1/2	13.8	0.11	2.9	12.6	0.18	2.9
VP746E-S	G1/2	10.5	0.12	2.3	12.6	0.18	2.9

# VP546E/746E Series

## Spacer with Bracket

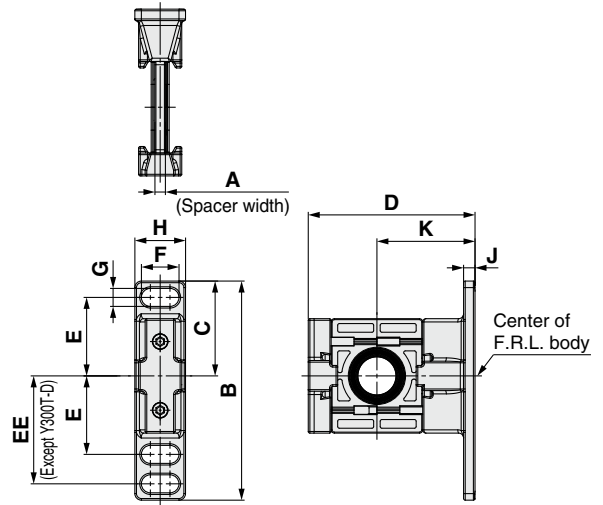
Y **300** T-D

①      ②



Spacer with bracket (Y□T-D)

	Symbol	Description	①	
			Body size [Applicable AC size]	
			300 [AC30]	400 [AC40]
②	Bracket	T	Spacer with bracket	●      ●

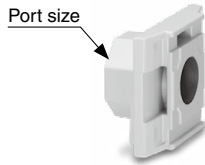


Model	A	B	C	D	E	EE	F	G	H	J	K	Applicable size
Y300T-D	4.2	85	42.5	67.5	35	—	14	7	20	6	41	AC30-D
Y400T-D	5.2	115	50	85.5	40	55	18	9	26	7	50	AC40-D

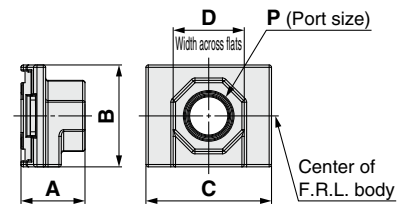
## Piping Adapter: 3/8, 1/2

E **300** - □ **03** - D

①      ②      ③



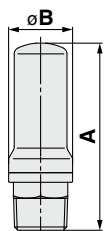
	Symbol	Description	①	
			Body size [Applicable AC size]	
			300 [AC30]	400 [AC40]
②	Pipe thread type	Nil	Rc	●      ●
		N	NPT	●      ●
		F	G	●      ●
		+		
③	Port size	02	1/4	●      ●
		03	3/8	●      ●
		04	1/2	●      ●
		06	3/4	—      ●



Model	P	A	B	C	D	Applicable AC size
E300-D	1/4, 3/8, 1/2	27	43	53	30	AC30-D
E400-D	1/4, 3/8, 1/2, 3/4	30	51	71	36	AC40-D

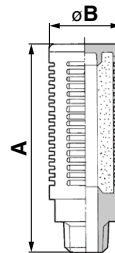
## Silencer

### Compact resin type



Model	Port size R	A	B
AN30-03	3/8	58.5	20
AN40-04	1/2	68	24

### High noise reduction type



Model	Port size R	A	B
AN302-03	3/8	84	28
AN402-04	1/2	95	34

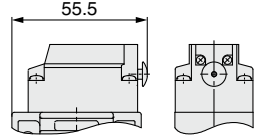
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## Dimensions

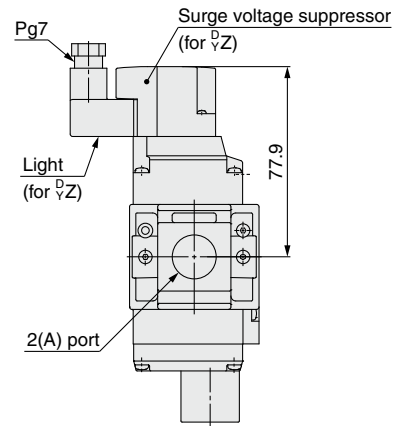
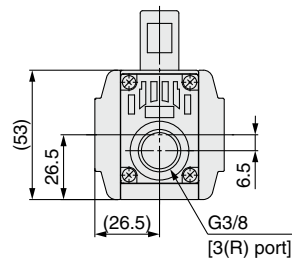
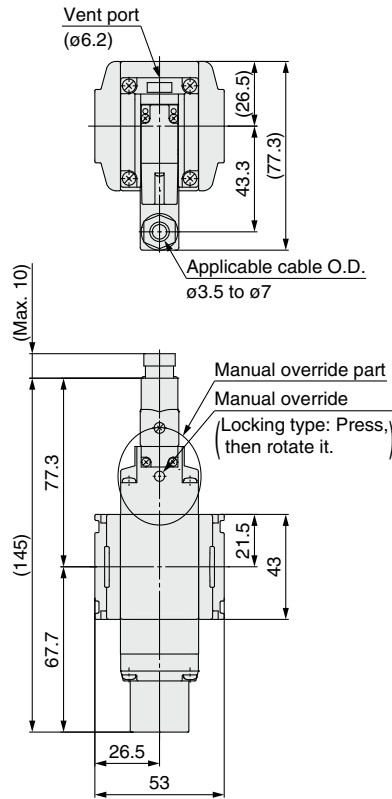
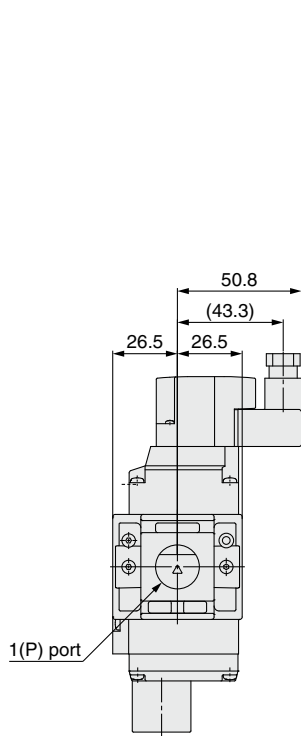
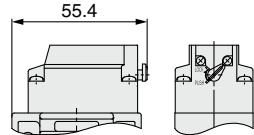
VP546E-5□□□1-□

Details of manual override part  
(for manual operation)

Type A



Type E



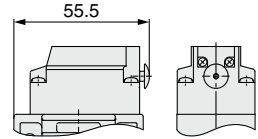
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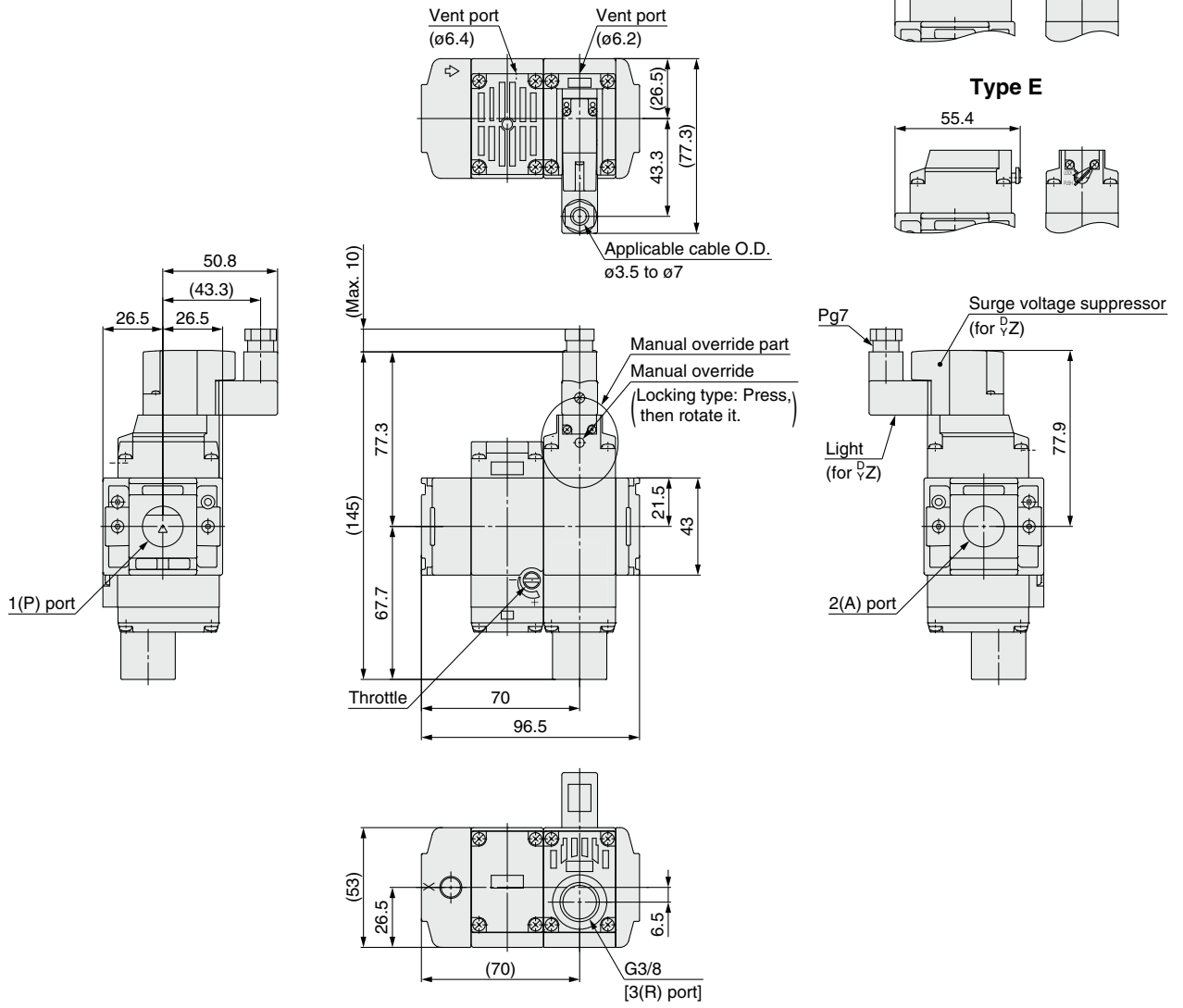
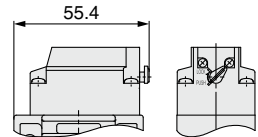
VP546E-5□□□1-□-S

### Details of manual override part (for manual operation)

#### Type A



#### Type E



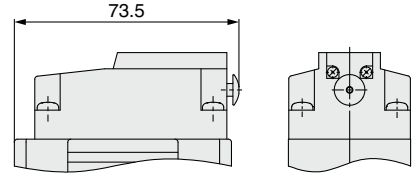
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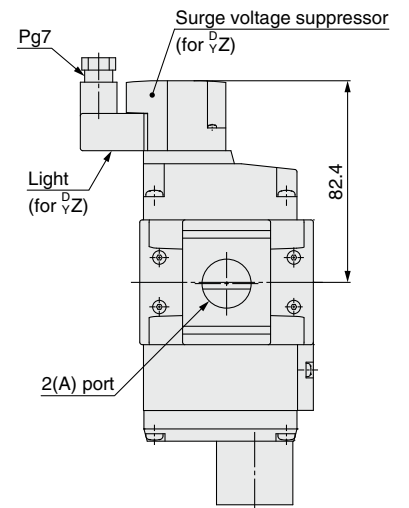
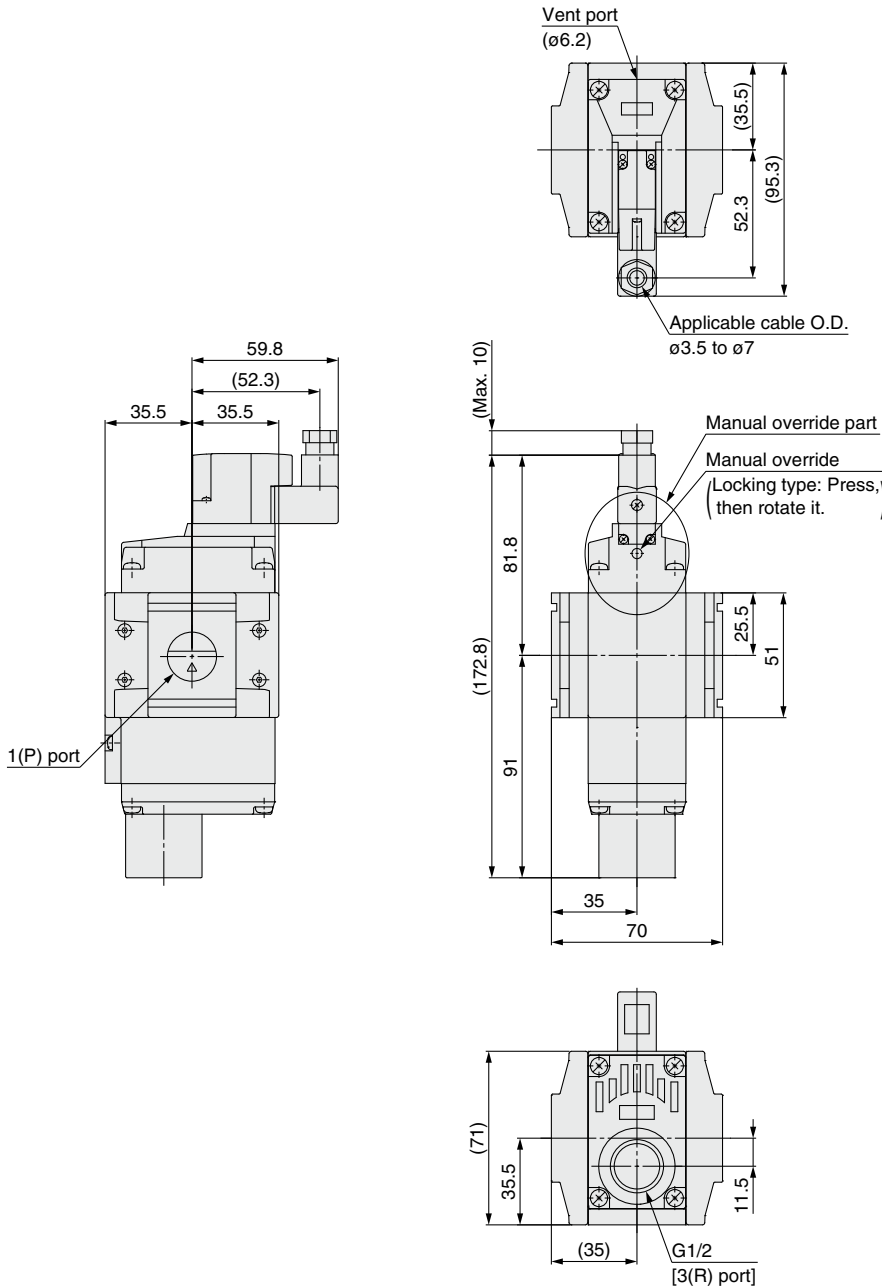
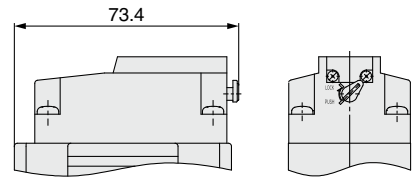
VP746E-5□□□1-□

Details of manual override part  
(for manual operation)

Type A



Type E



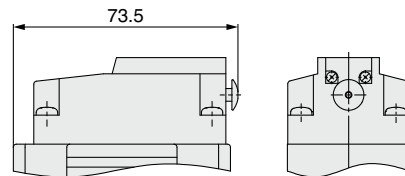
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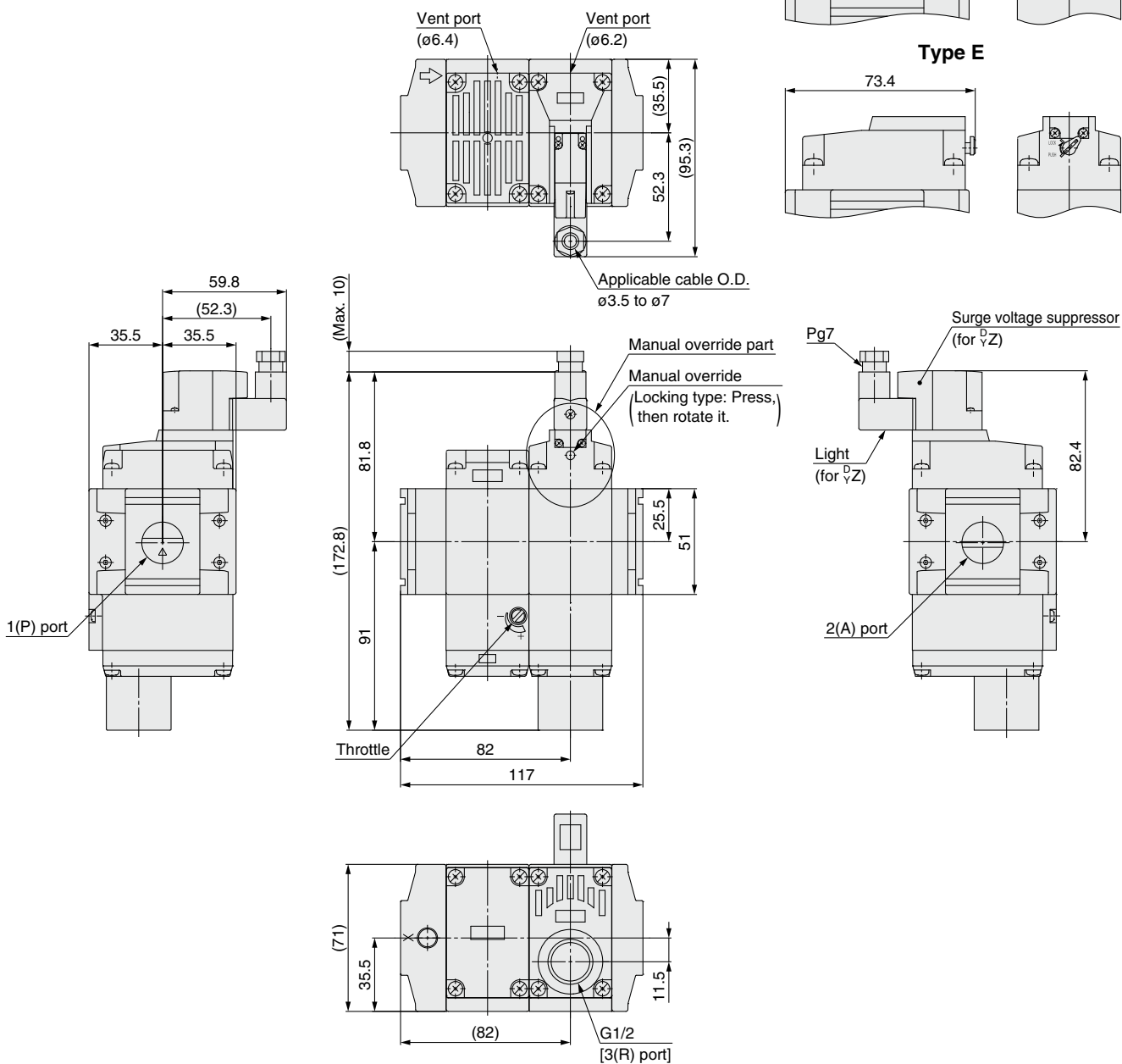
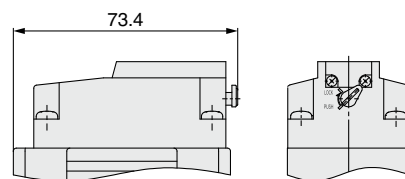
VP746E-5□□□1-□-S

Details of manual override part  
(for manual operation)

Type A



Type E



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