

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

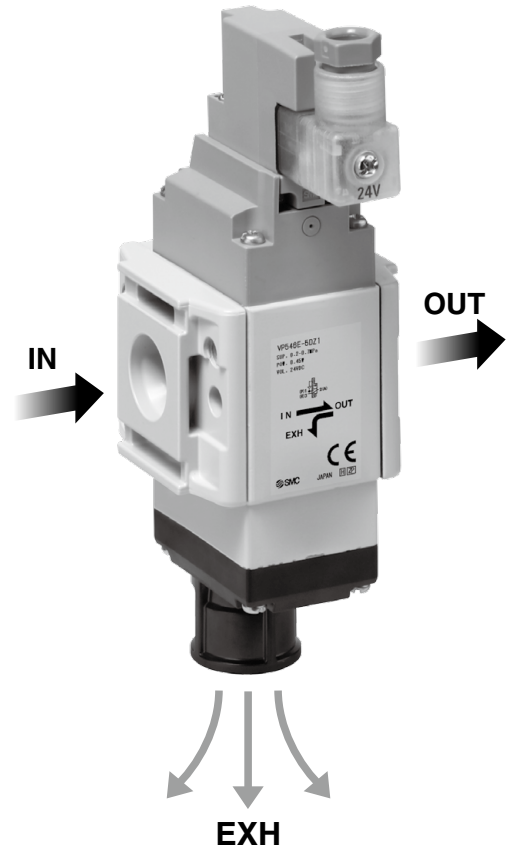
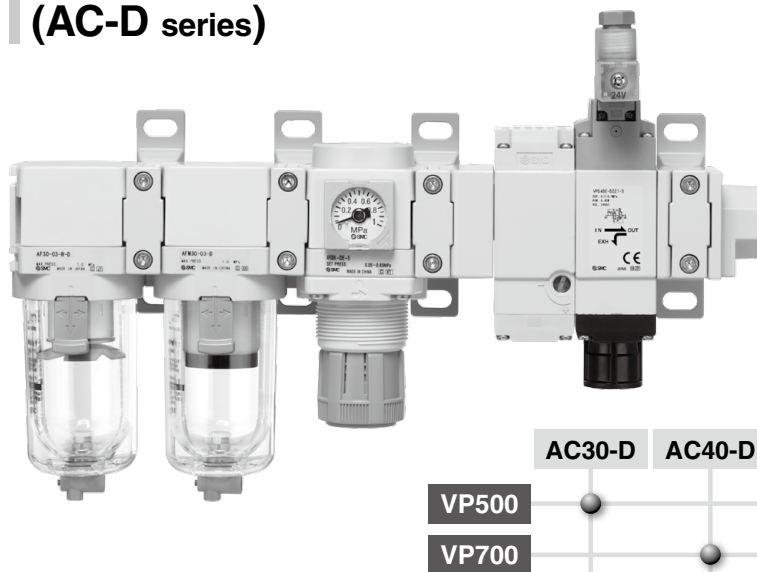


Flow rate characteristics C [$\text{dm}^3/(\text{s}\cdot\text{bar})$]

VP546E: 7.5

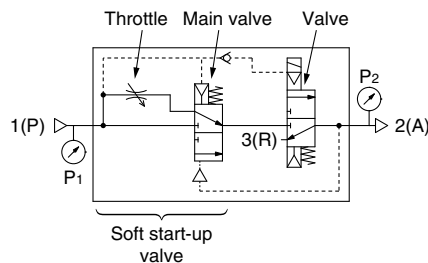
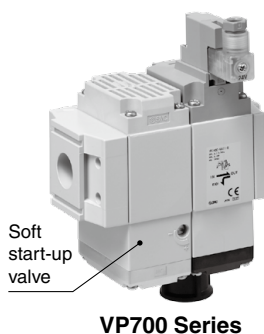
VP746E: 12.6

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

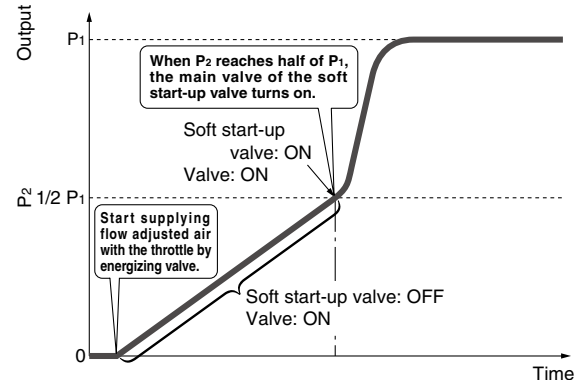


Allows for space saving and reduced piping labor.

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



Output Pressure (P_2) 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



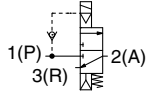
How to Order

Modular Type

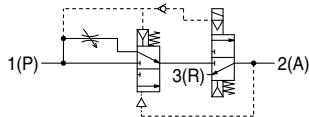
VP 5 46 E [] - 5 DZ [] 1 - R - []

Symbol

Residual pressure relief 3-port solenoid valve



With soft start-up function



Series

5	VP500
7	VP700

Solenoid valve type

E	Residual pressure relief 3-port solenoid valve
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Pressure specifications

Nil	Standard (0.7 MPa)
K	High pressure (1.0 MPa)

Rated voltage

DC	
5	24 VDC

Electrical entry

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

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

Soft start-up function

Nil	None
S	With soft start-up function

Flow direction

Nil	Left to right
R	Right to left

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).
- Connection threads are not available for the residual pressure relief 3-port solenoid valve. Order a piping adapter and spacer with bracket separately.

Simple Specials System

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



Short lead times

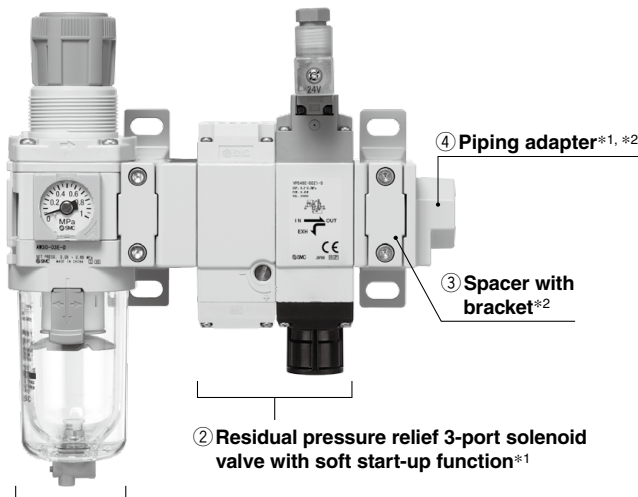
This system enables us to respond to your special needs (accessory assembly or the designing of a modular unit) as quickly as standard products.

Please contact your local sales representative for more details.

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.

Simple Specials Combination 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 Combinations (Refer to page 3.)

*1 Connection threads are not available for the residual pressure relief 3-port solenoid valve. Select a piping adapter.
*2 Refer to page 3 for details on the spacer with bracket and piping adapter.

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

Specifications

Fluid	Air	
Type of actuation	N.C.	
Pressure specifications	Standard	High pressure
Internal pilot operating pressure range [MPa]	0.2 to 0.7	0.2 to 1.0
Operating and ambient temperatures [°C]	-10 to 50 (No freezing)	
Max. operating frequency*1 [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*2 [m/s ²]	150/30	
Enclosure	IP65	

*1 Excludes the type with a soft start-up function

*2 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	Pressure specifications	Response time [ms] (at 0.5 MPa)*1		Weight [g]
		Without light/surge voltage suppressor	With light/surge voltage suppressor	
VP546E	Standard (0.2 to 0.7 MPa)	38	38	331 (With soft start-up function: 588)
	High pressure (0.2 to 1.0 MPa)	56	56	
VP746E	Standard (0.2 to 0.7 MPa)	56	56	676 (With soft start-up function: 1194)
	High pressure (0.2 to 1.0 MPa)	80	80	

*1 Based on dynamic performance test, JIS B 8419-2010 (Coil temperature: 20°C, at rated voltage)

Flow Rate Characteristics

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

VP546E/746E Series

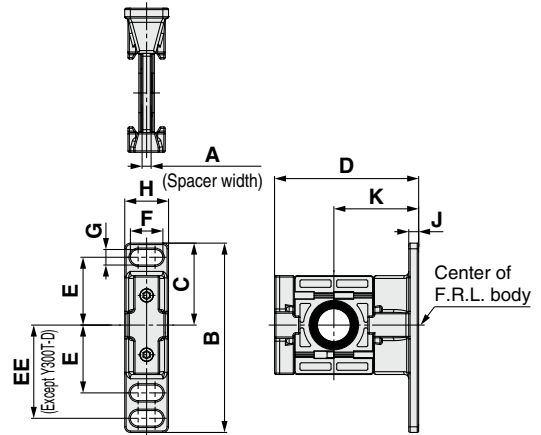
Spacer with Bracket

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	

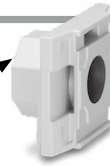


Model	A	B	C	D	E	EE	F	G	H	J	K	Applicable size
Y300T-D	4.2	85	42.5	67.5	35	—	14	7	20	6	41	AC30-D
Y400T-D	5.2	115	50	85.5	40	55	18	9	26	7	50	AC40-D

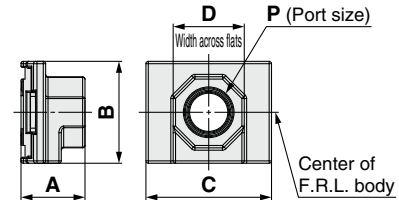
Piping Adapter

E **300** - □ **03** - D
 ① ② ③

Port size



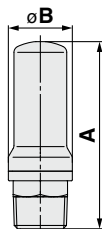
	Symbol	Description	①		
			Body size [Applicable AC size]		
			300 [AC30]	400 [AC40]	
②	Pipe thread type	Nil	Rc	●	●
		N	NPT	●	●
		F	G	●	●
		+			
③	Port size	02	1/4	●	●
		03	3/8	●	●
		04	1/2	●	●
		06	3/4	—	●



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

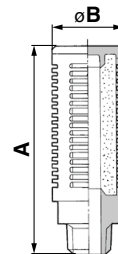
Compact resin type



[mm]

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

High noise reduction type



[mm]

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

Applicable Combinations/Attachment Combinations

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

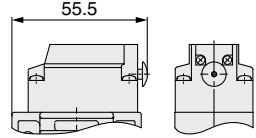
3-Port Solenoid Valve Modular Type/ Residual Pressure Release Valve **VP546E/746E Series**

Dimensions

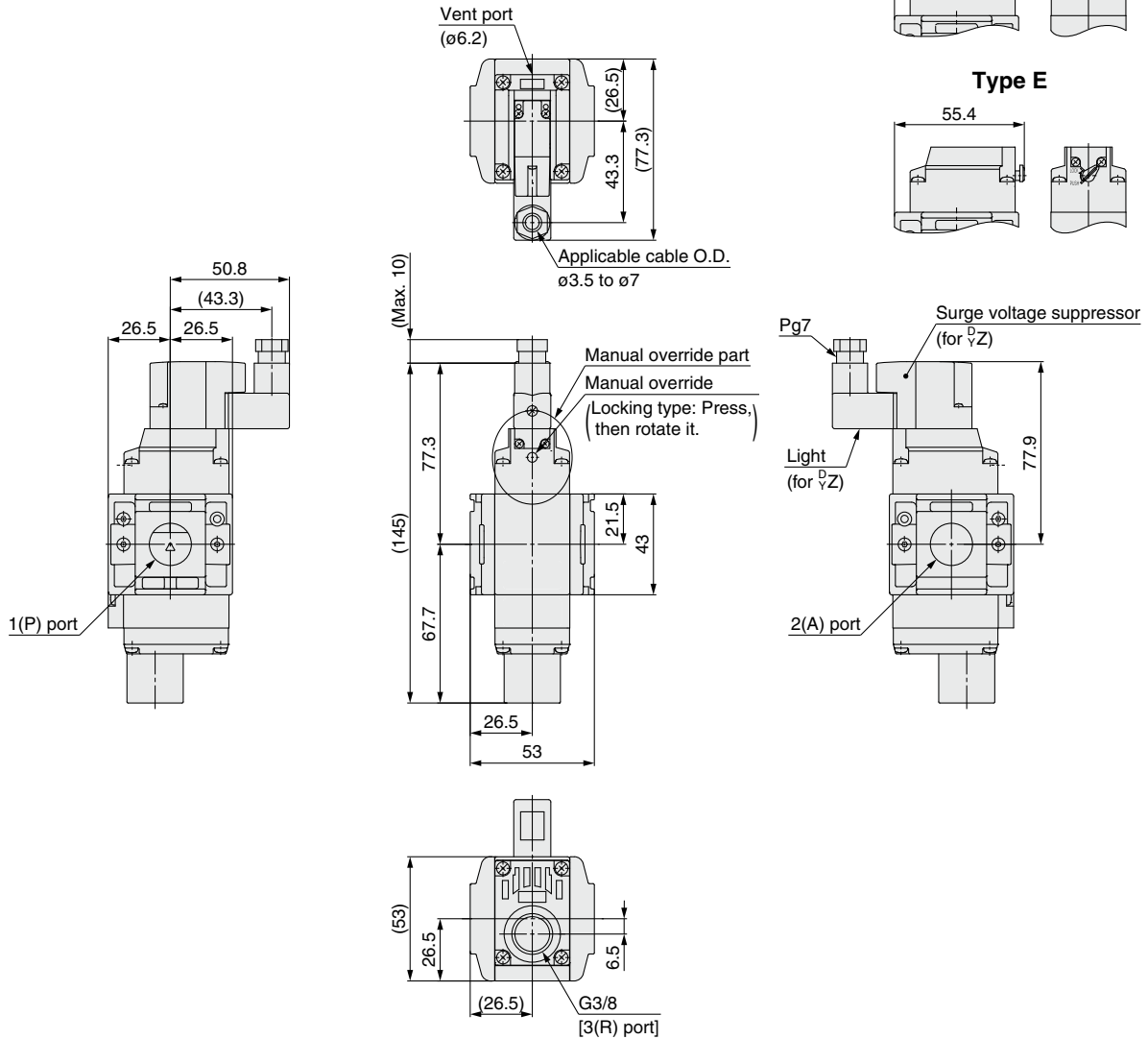
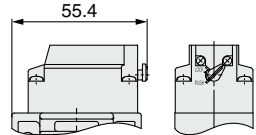
VP546E□-5□□□1-□

Details of manual override part
(for manual operation)

Type A



Type E



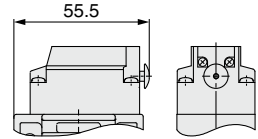
VP546E/746E Series

Dimensions

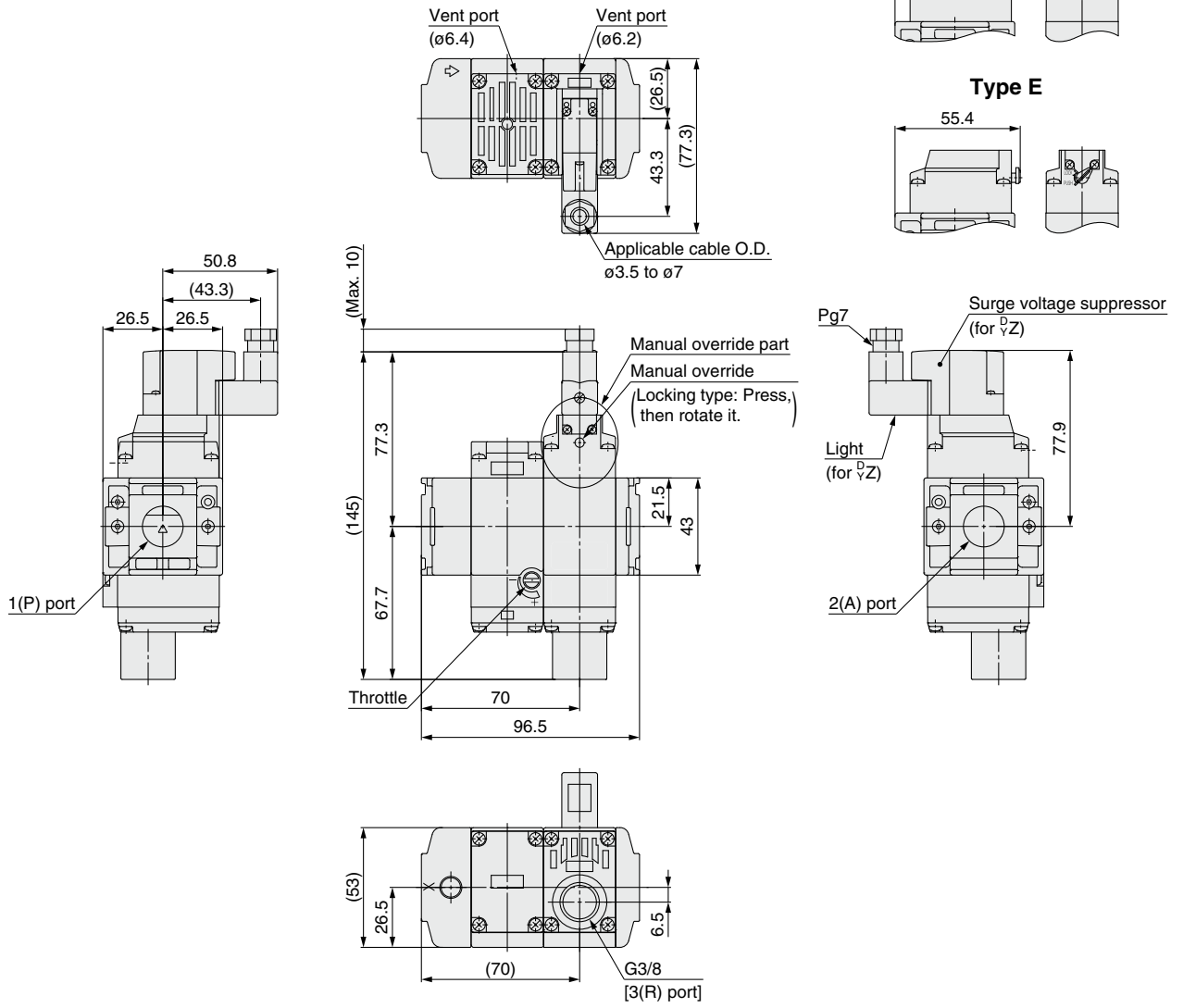
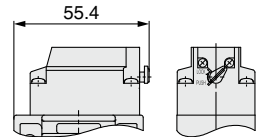
VP546E□-5□□□1-□-S

Details of manual override part (for manual operation)

Type A



Type E



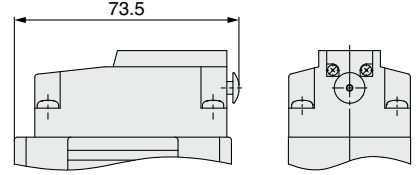
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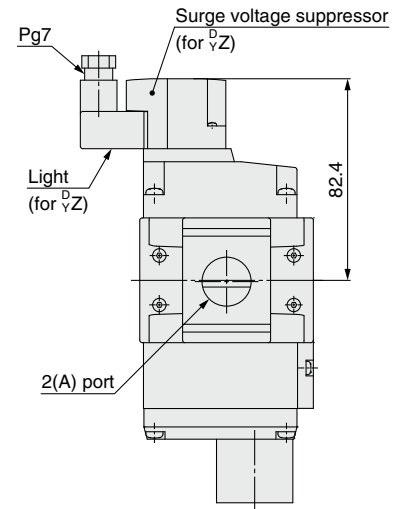
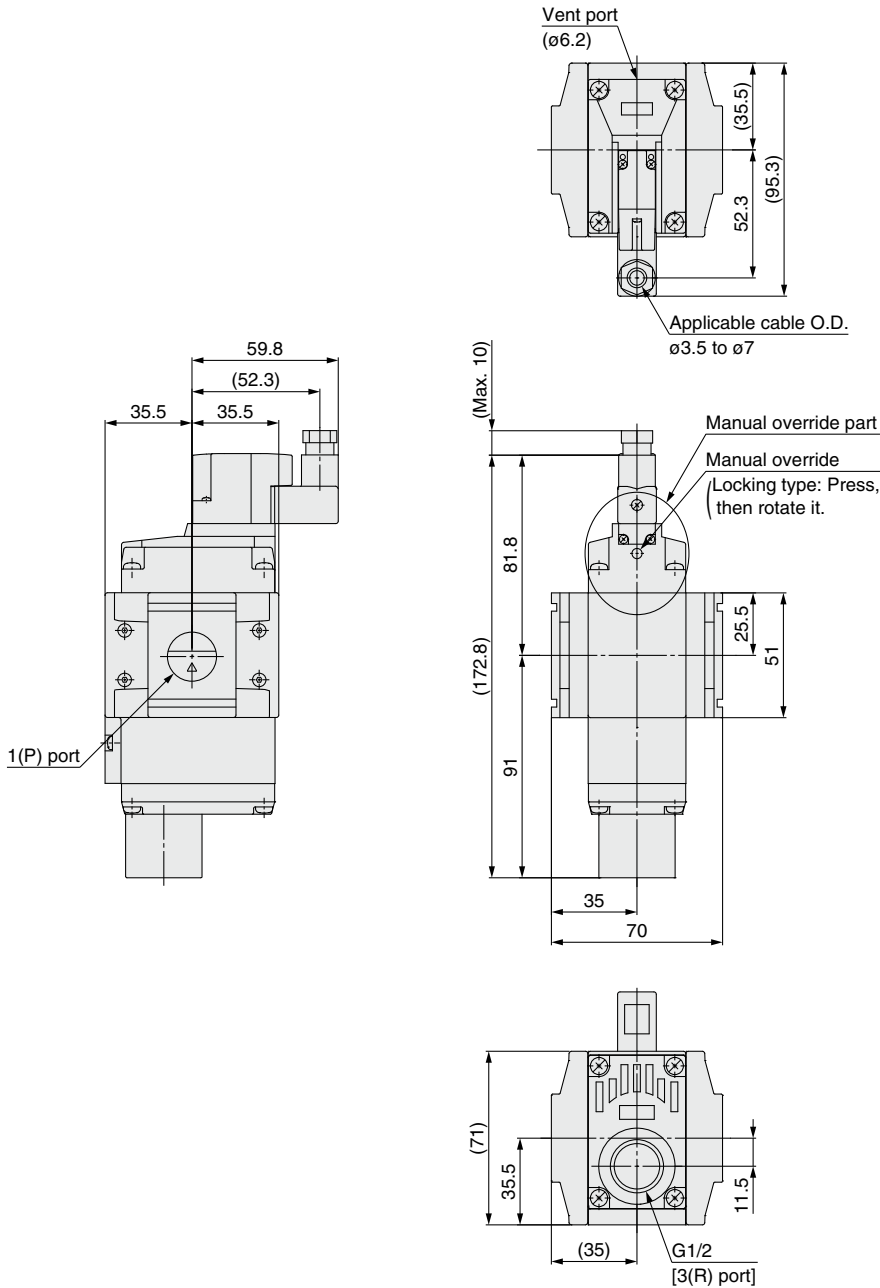
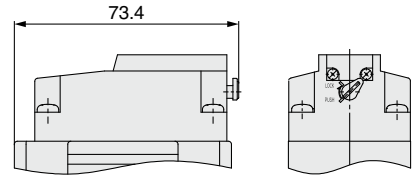
VP746E□-5□□□1-□

Details of manual override part
(for manual operation)

Type A



Type E



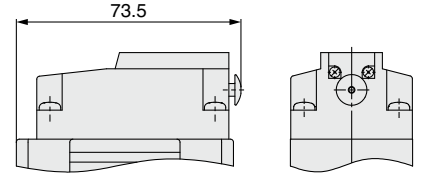
VP546E/746E Series

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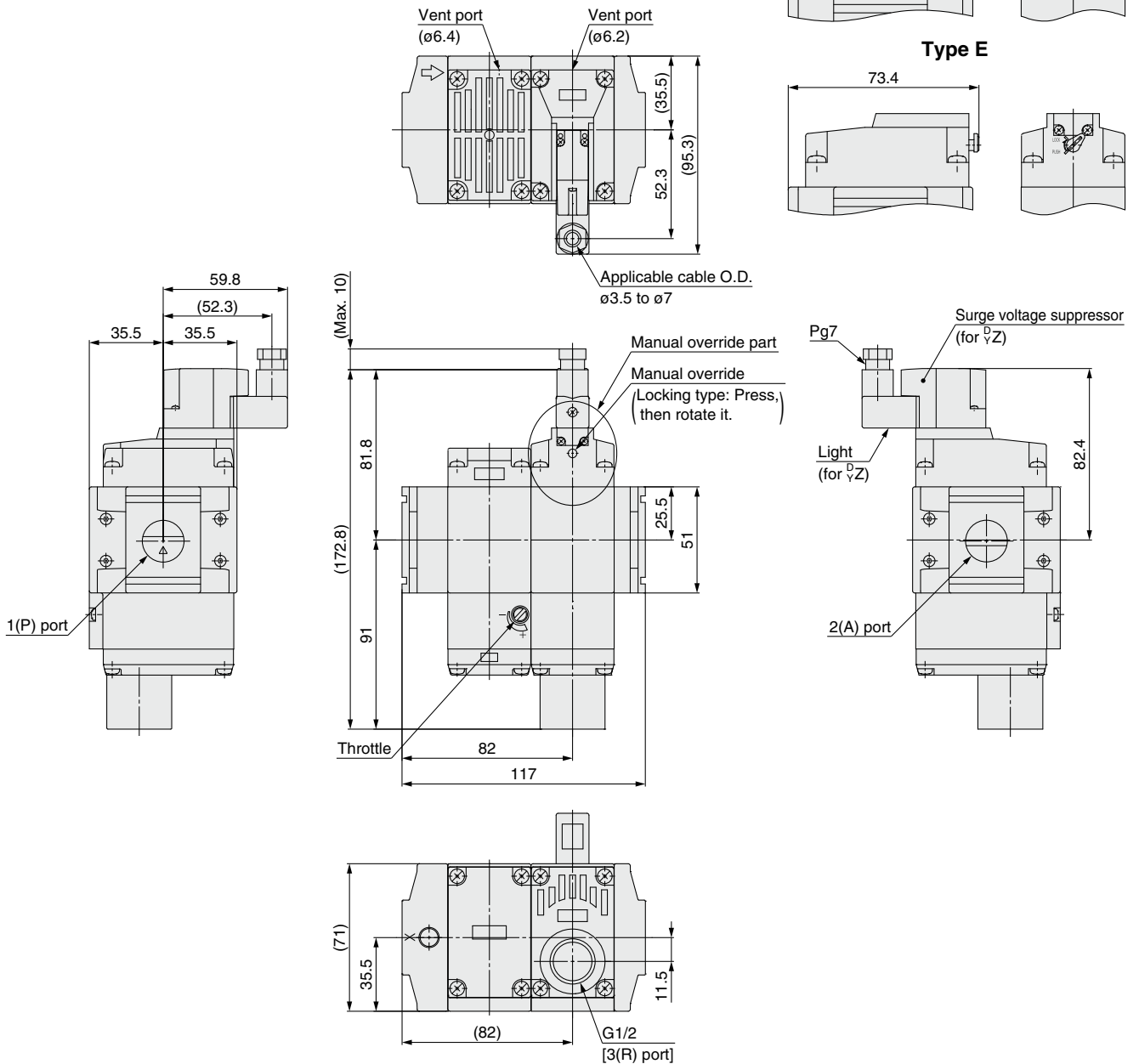
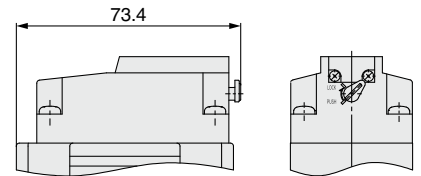
VP746E□-5□□□1-□-S

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.