

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

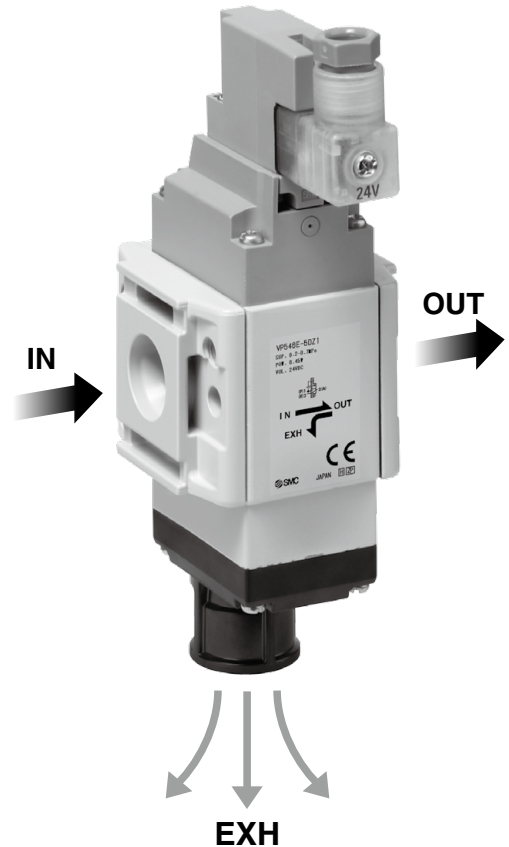
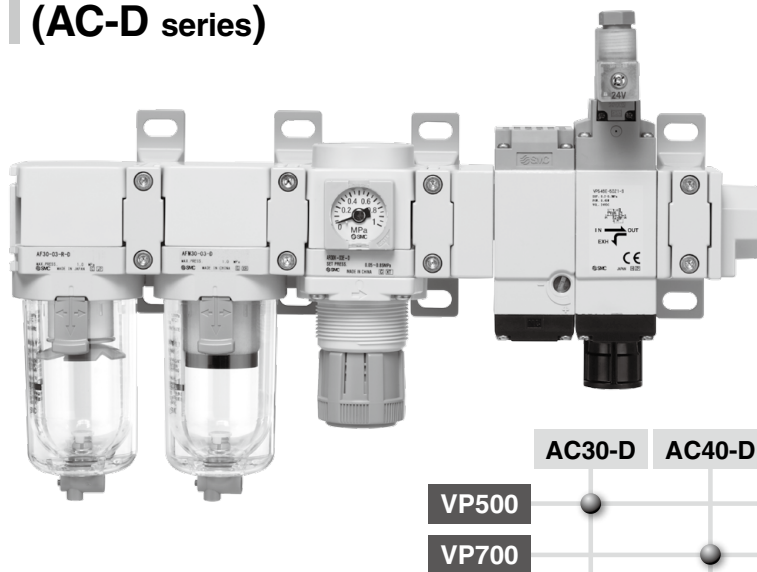


Flow rate characteristics C [dm³/(s·bar)]

VP546E: 7.5

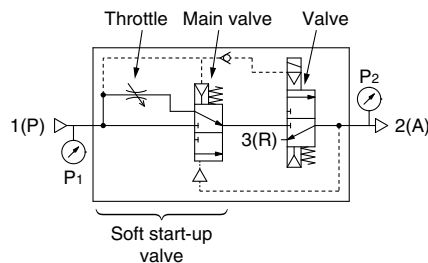
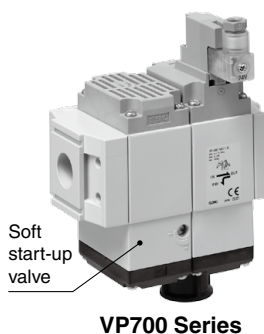
VP746E: 12.6

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

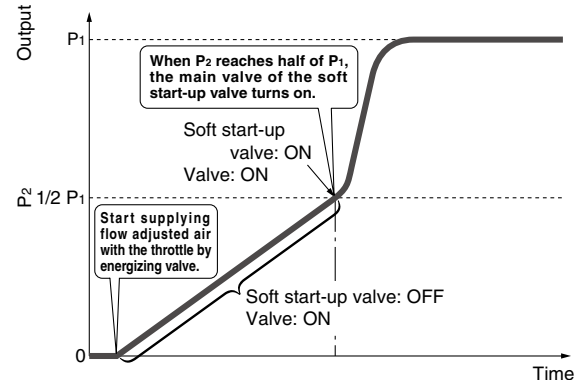


Allows for space saving and reduced piping labor.

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



Output Pressure (P_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**

Series

5	VP500
7	VP700

Solenoid valve type

E	Residual pressure relief 3-port solenoid valve
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Rated voltage

DC	5	24 VDC
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Flow direction

Nil	Left to right
R	Right to left

Soft start-up function

Nil	None
S	With soft start-up function

Manual override

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

Electrical entry

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

Symbol

Residual pressure relief 3-port solenoid valve

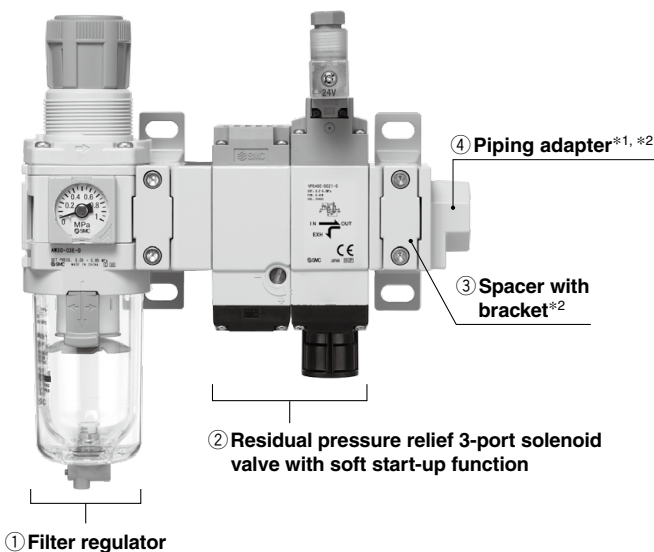
With soft start-up function

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

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
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**

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 ²]	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 ³ /(s·bar)]	b	Cv	C [dm ³ /(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

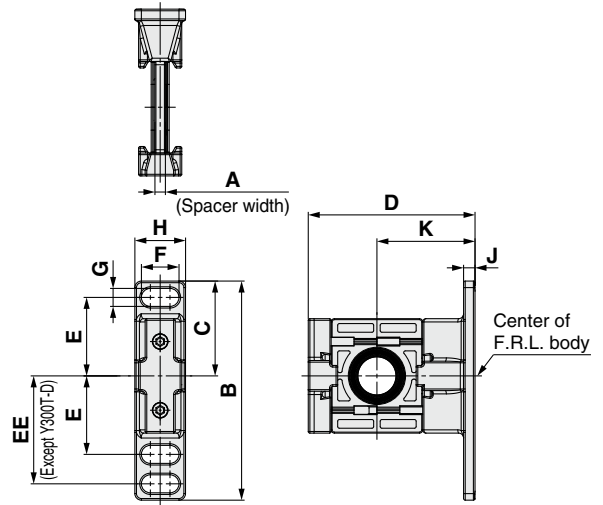
Y **300** T-D

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	

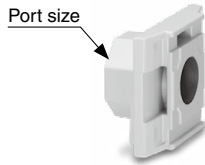


Model	A	B	C	D	E	EE	F	G	H	J	K	Applicable size
Y300T-D	4.2	85	42.5	67.5	35	—	14	7	20	6	41	AC30-D
Y400T-D	5.2	115	50	85.5	40	55	18	9	26	7	50	AC40-D

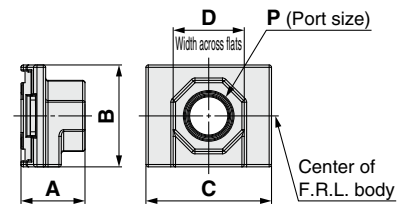
Piping Adapter: 3/8, 1/2

E **300** - □ **03** - D

① ② ③



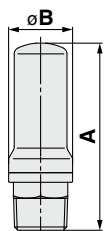
	Symbol	Description	①		
			Body size [Applicable AC size]		
			300 [AC30]	400 [AC40]	
②	Pipe thread type	Nil	Rc	●	●
		N	NPT	●	●
		F	G	●	●
			+		
③	Port size	02	1/4	●	●
		03	3/8	●	●
		04	1/2	●	●
		06	3/4	—	●



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

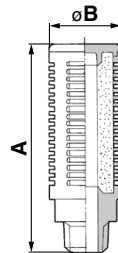
Silencer

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

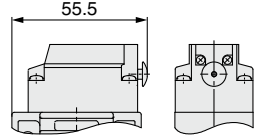
3-Port Solenoid Valve Modular Type/ Residual Pressure Release Valve **VP546E/746E Series**

Dimensions

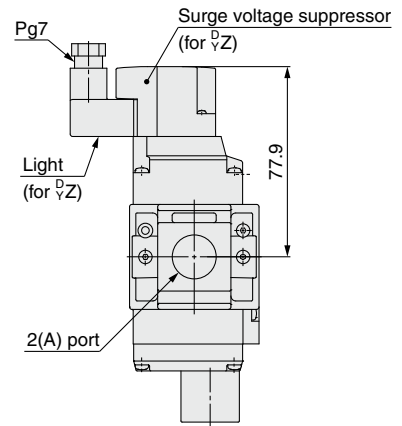
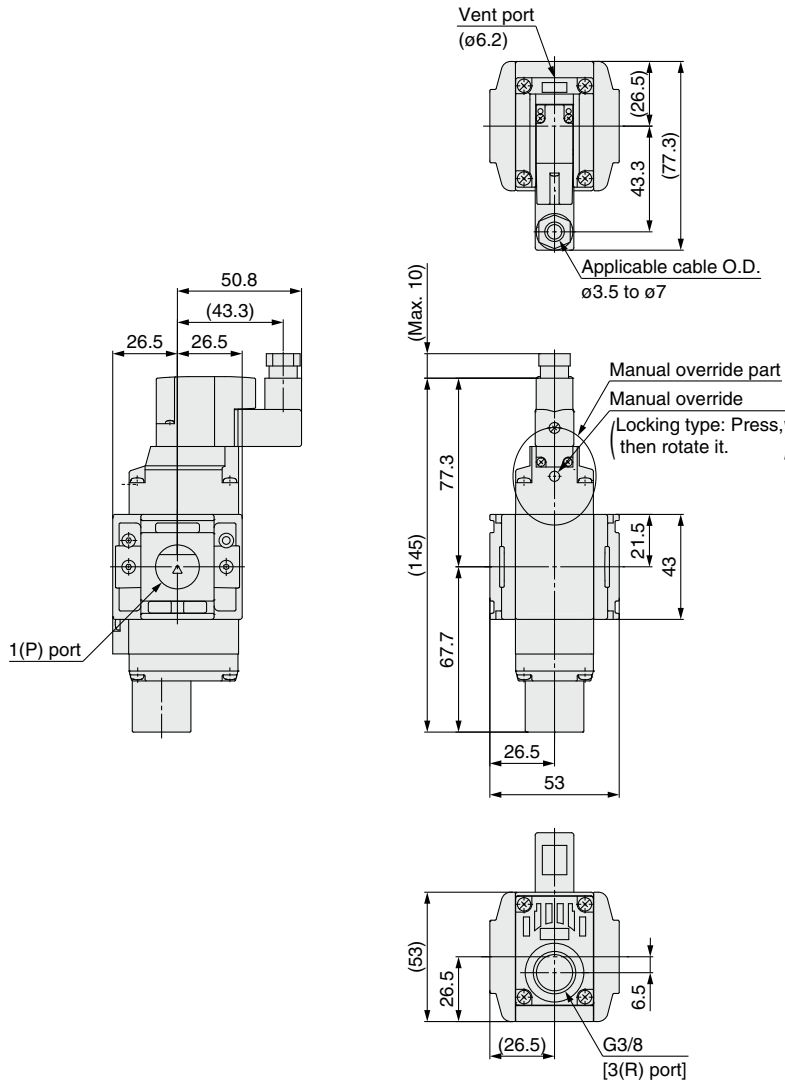
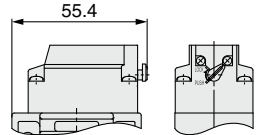
VP546E-5□□□1-□

Details of manual override part
(for manual operation)

Type A



Type E



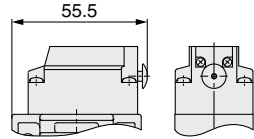
VP546E/746E Series

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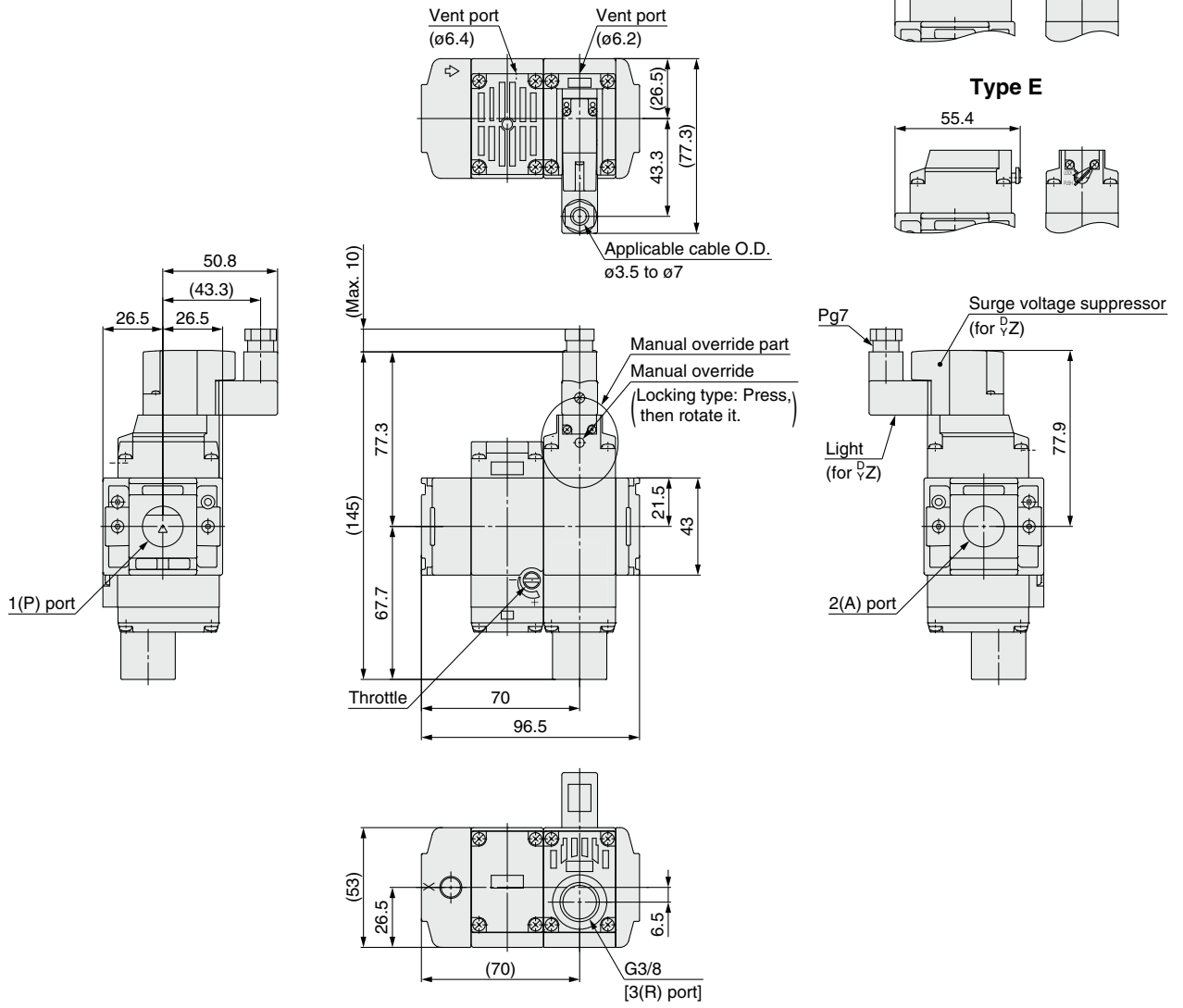
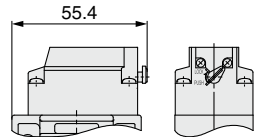
VP546E-5□□□1-□-S

Details of manual override part (for manual operation)

Type A



Type E



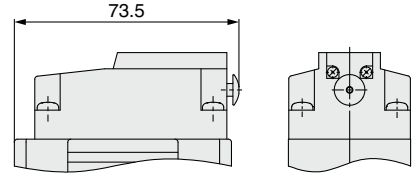
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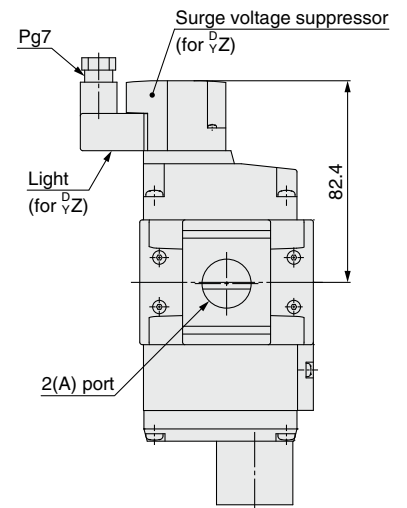
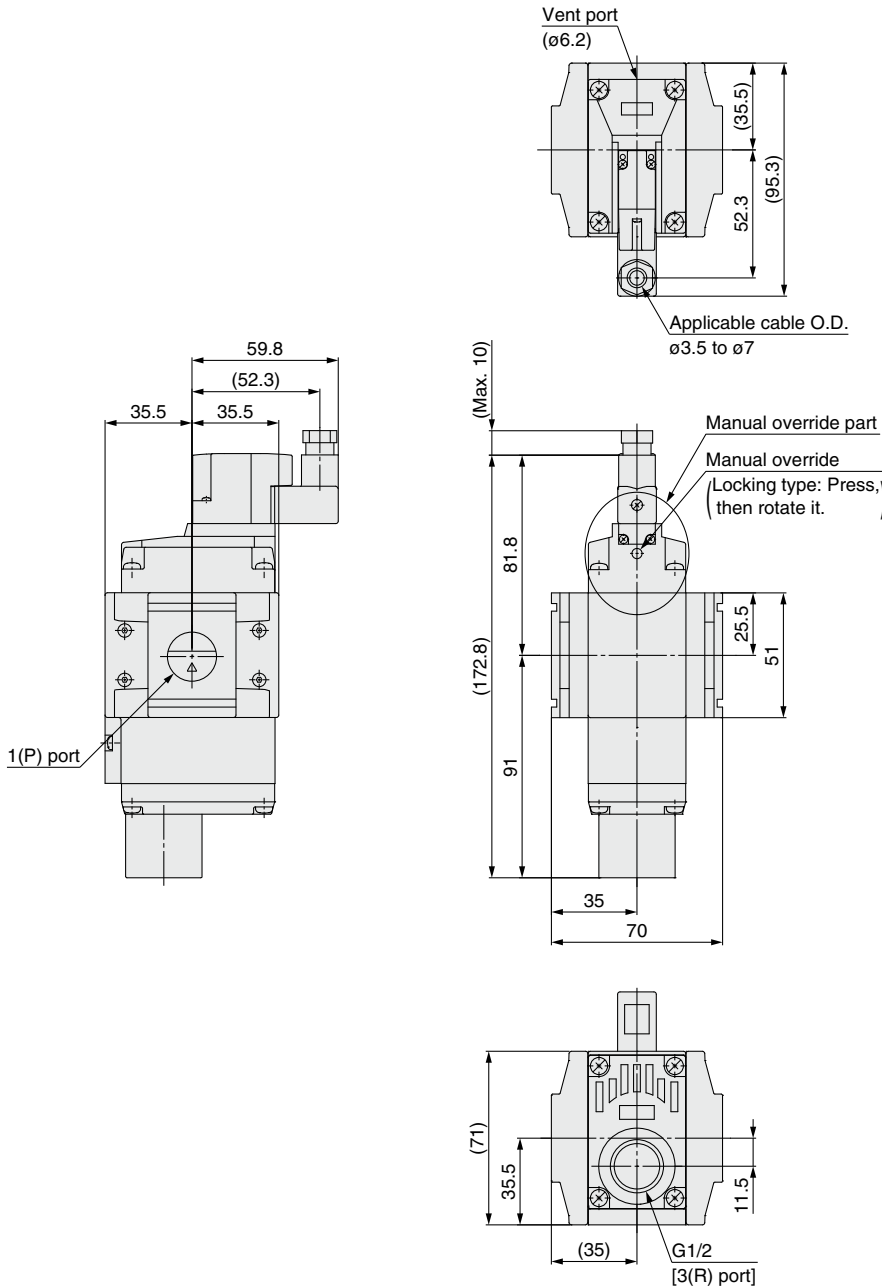
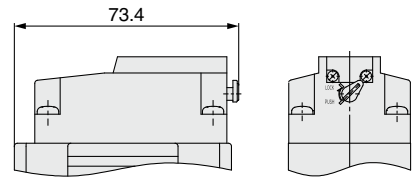
VP746E-5□□□1-□

Details of manual override part
(for manual operation)

Type A



Type E



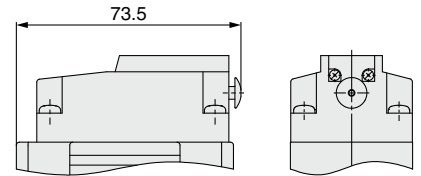
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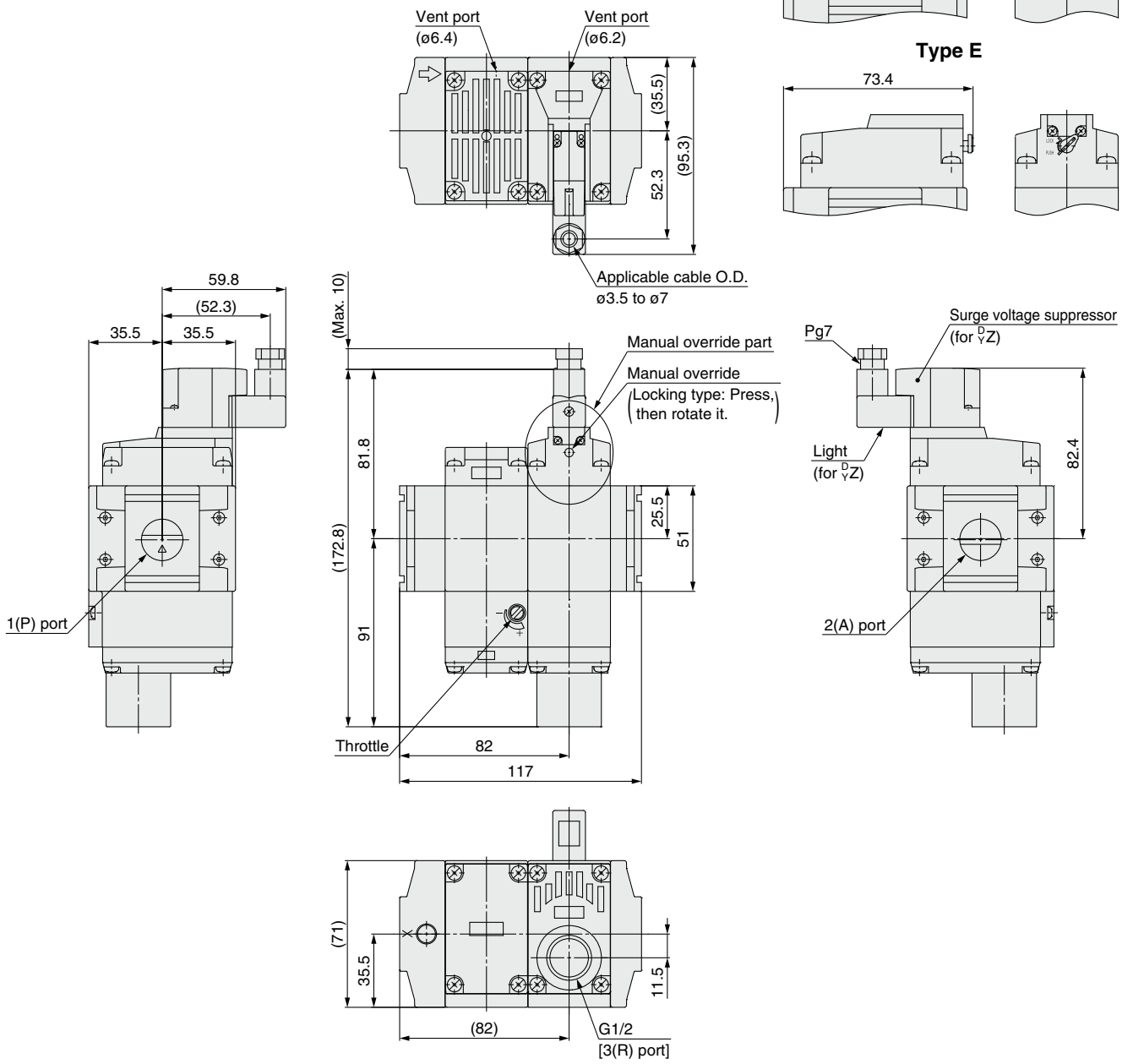
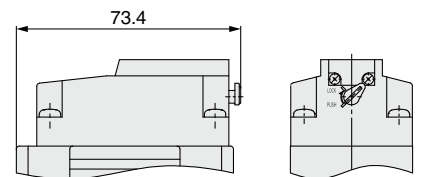
VP746E-5□□□1-□-S

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.