

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

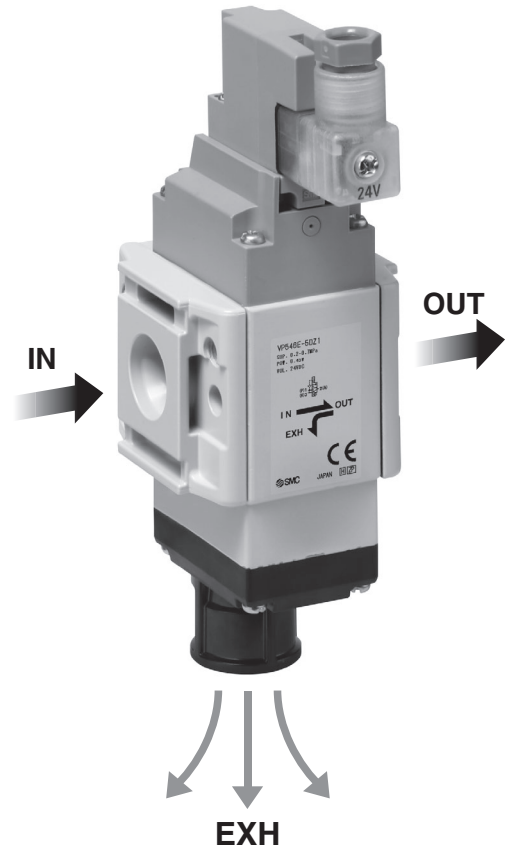
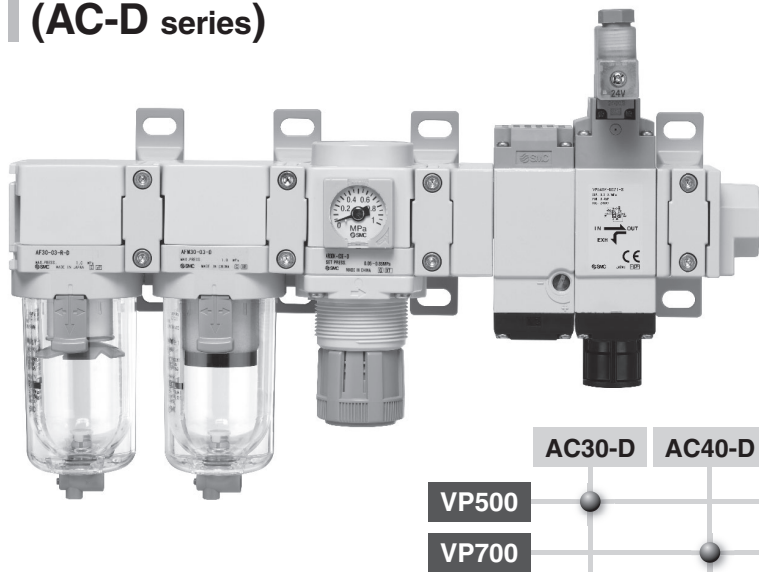


Flow rate characteristics Q [l/min (ANR)]

VP546E: 1729

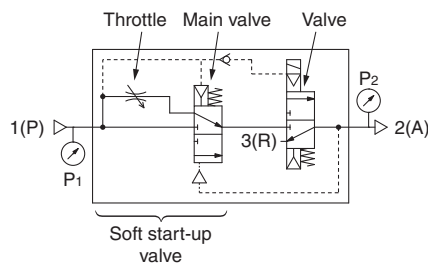
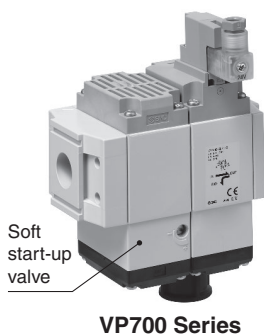
VP746E: 2985

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

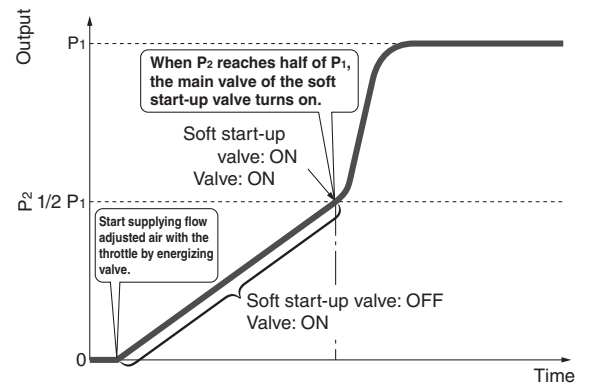


Allows for space saving and reduced piping labour.

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



Output Pressure (P₂) 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



21-EU767-UK

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

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

Rated voltage

DC	5	24 VDC
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Electrical entry

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

Soft start-up function

—	None
S	With soft start-up function

Flow direction

—	Left to right
R	Right to left

Manual override

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

* Refer to the catalogue on <https://www.smc.eu> (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 **catalogue** on <https://www.smc.eu> (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

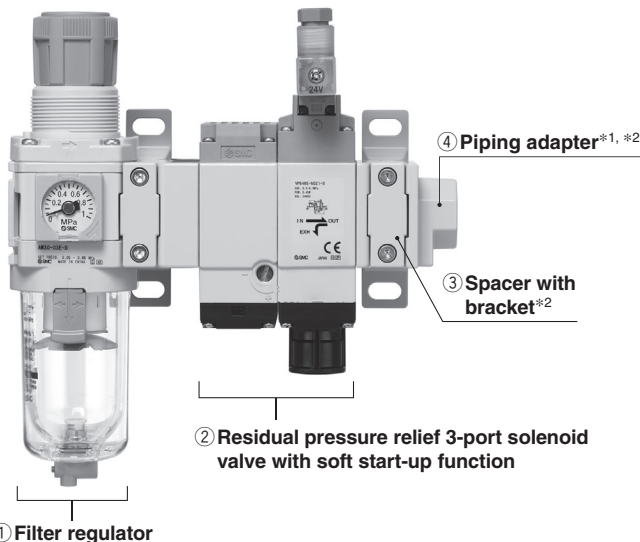
This system enables us to respond to your special needs (accessory assembly or the designing of a modular unit) as quickly as standard products.

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.

Assembly 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	Q [l/min (ANR)] ⁻¹	C [dm ³ /(s·bar)]	b	Cv	Q [l/min (ANR)] ⁻¹
VP546E(K)	G3/8	8.8	0.14	2	2040	7.5	0.13	1.7	1729
VP546E(K)-S	G3/8	6.6	0.07	1.5	1476	7.5	0.13	1.7	1729
VP746E(K)	G1/2	13.8	0.11	2.9	3149	12.6	0.18	2.9	2985
VP746E(K)-S	G1/2	10.5	0.12	2.3	2409	12.6	0.18	2.9	2985

*1 These values have been calculated according to ISO 6358 and indicate the flow rate under standard conditions with an inlet pressure of 0.6 MPa (relative pressure) and a pressure drop of 0.1 MPa.

VP546E/746E Series

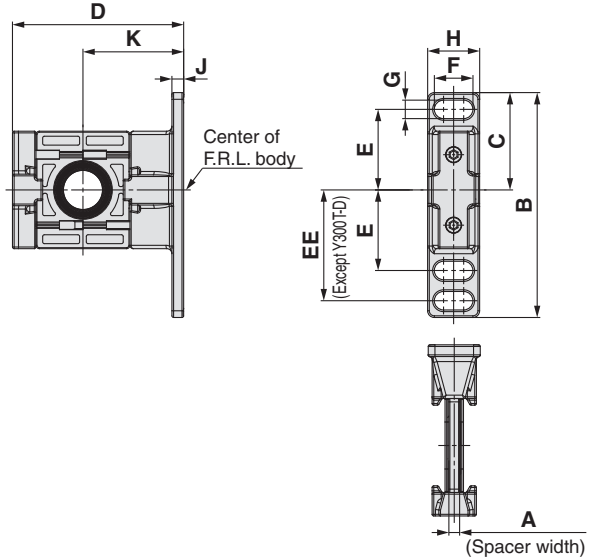
Spacer with Bracket

Y **300** T-D

① ②



Spacer with bracket (Y□T-D)



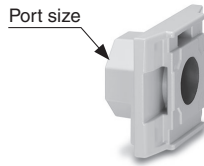
	Symbol	Description	①	
			Body size [Applicable AC size]	
			300 [AC30]	400 [AC40]
②	Bracket	T	Spacer with bracket	● ●

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

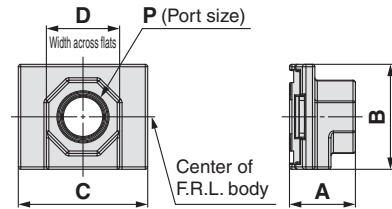
Piping Adapter: 3/8, 1/2

E **300** - □ **03** - D

① ② ③



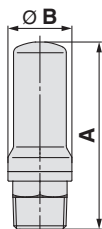
	Symbol	Description	①	
			Body size [Applicable AC size]	
			300 [AC30]	400 [AC40]
②	Pipe thread type	—	Rc	● ●
		N	NPT	● ●
		F	G	● ●
		+		
③	Port size	02	1/4	● ●
		03	3/8	● ●
		04	1/2	● ●
		06	3/4	— ●



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

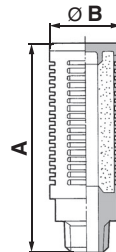
Compact resin type



[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

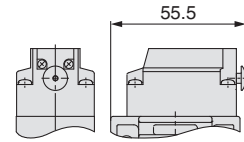
3-Port Solenoid Valve Modular Type/ Residual Pressure Release Valve **VP546E/746E Series**

Dimensions

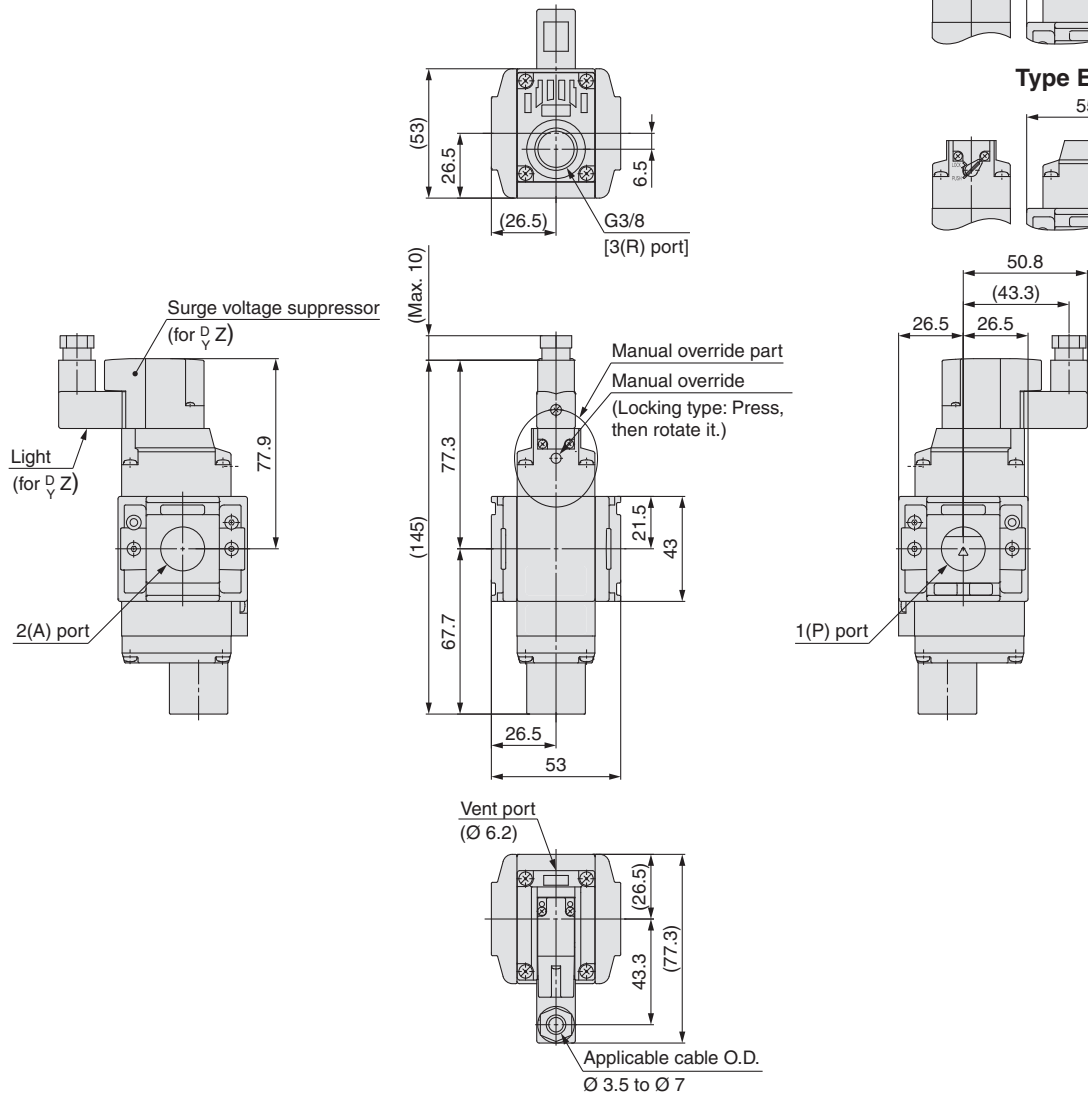
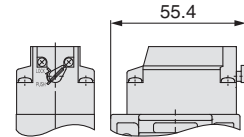
VP546E□-5□□□1-□

Details of manual override part
(for manual operation)

Type A



Type E



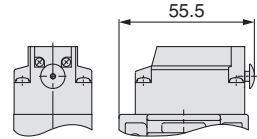
VP546E/746E Series

Dimensions

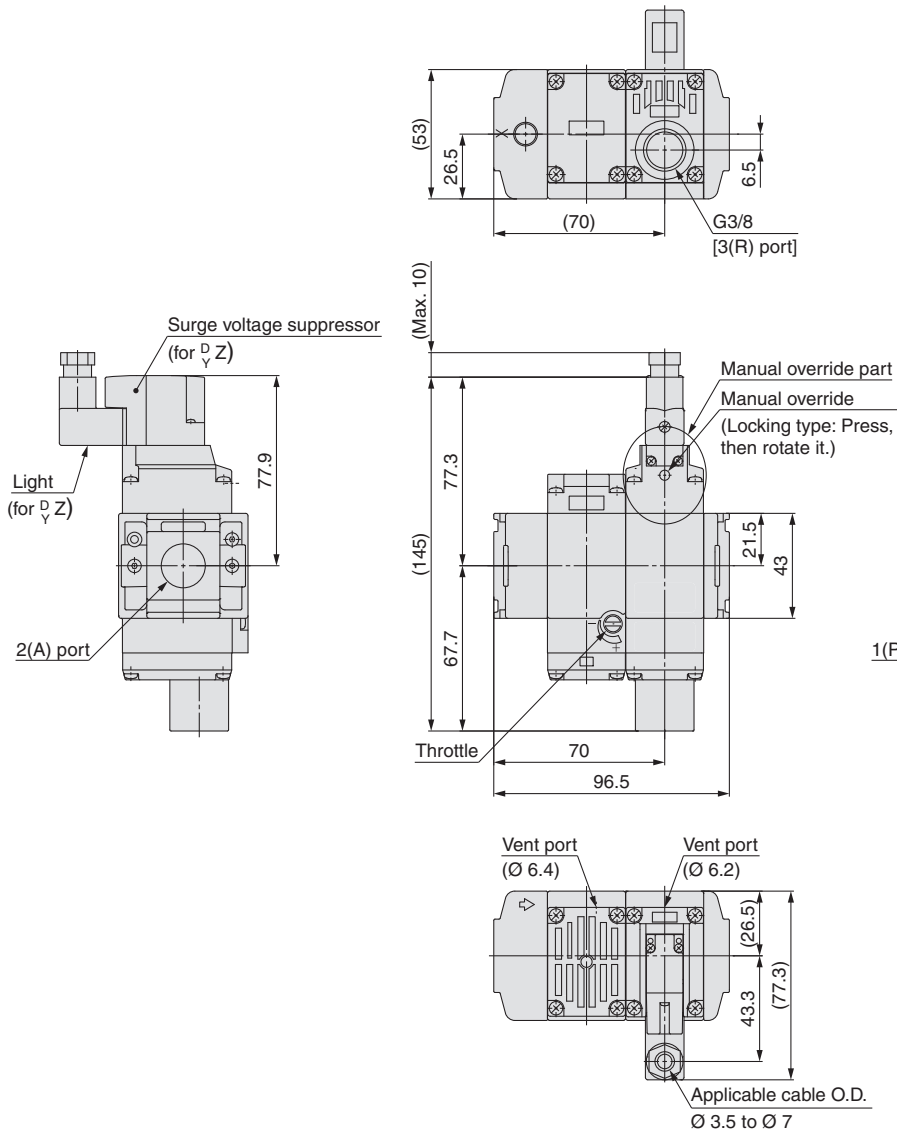
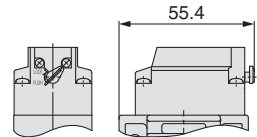
VP546E□-5□□□1-□-S

Details of manual override part
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Type A



Type E



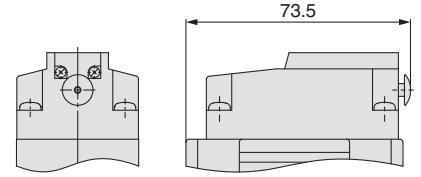
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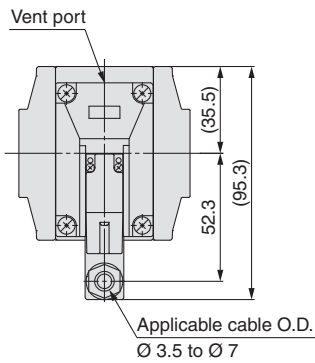
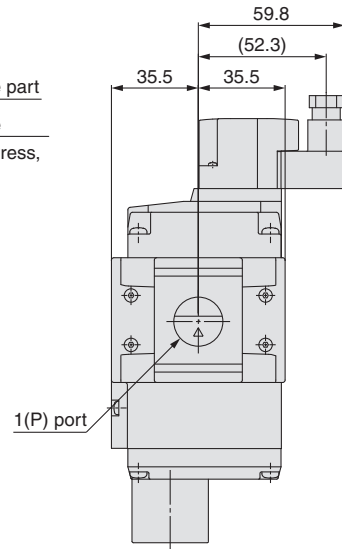
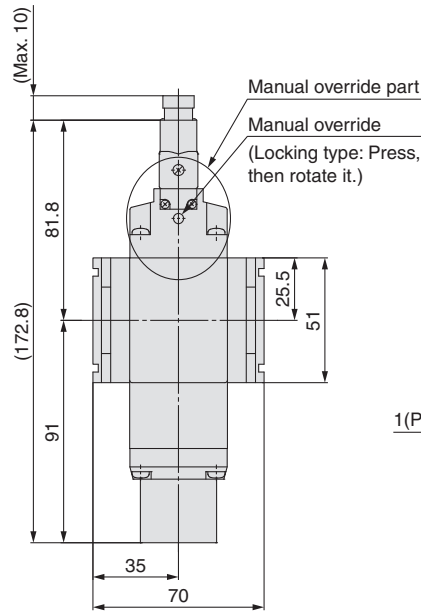
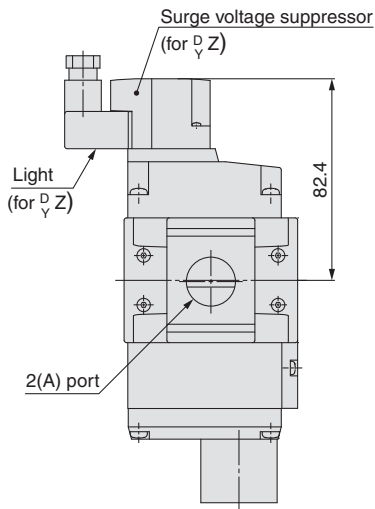
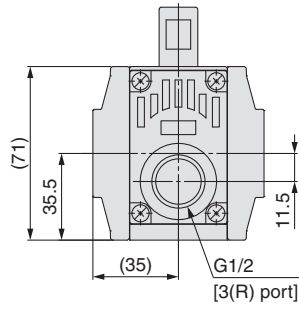
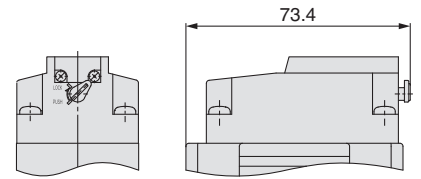
VP746E□-5□□□1-□

Details of manual override part
(for manual operation)

Type A



Type E



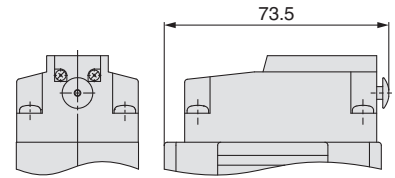
VP546E/746E Series

Dimensions

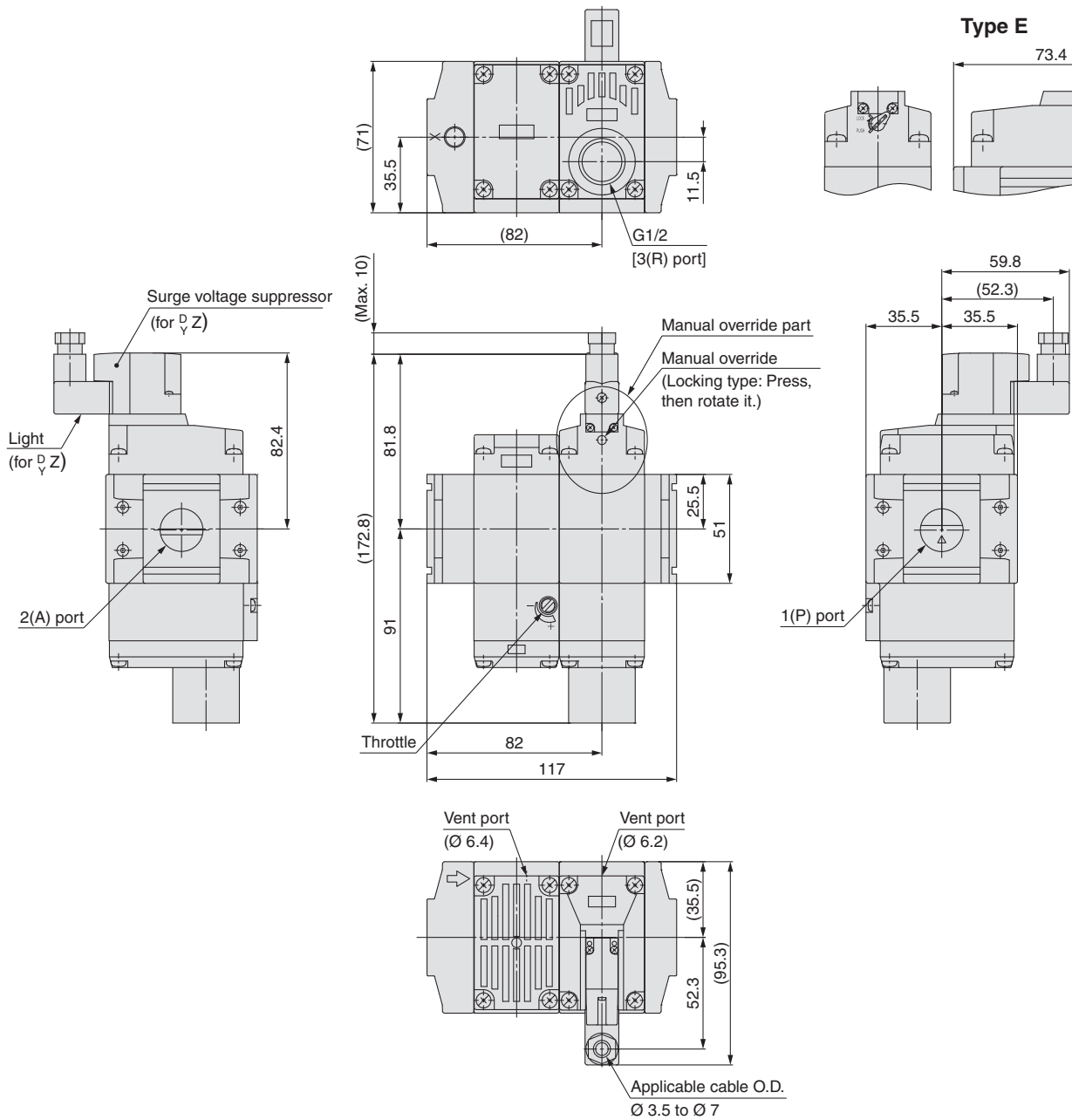
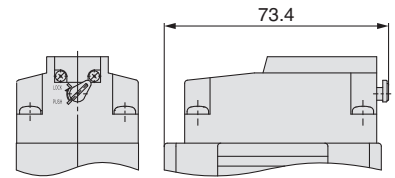
VP746E□-5□□□1-□-S

Details of manual override part
(for manual operation)

Type A



Type E





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