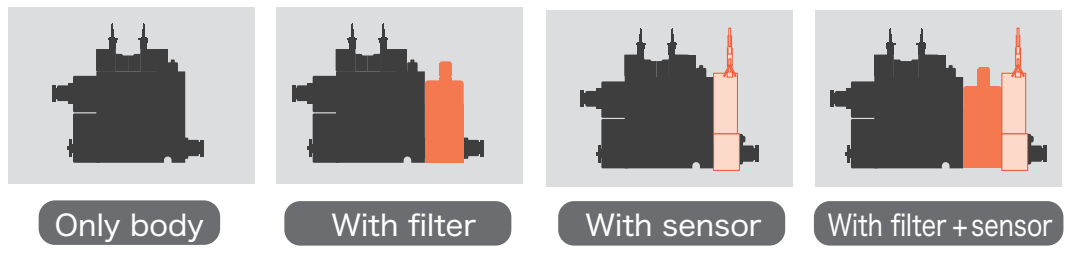


- SC1
- SC2
- SC3
- MC22
- MC72
- CCV
- MCV
- CV
- CVA2
- EC1
- MCA
- HDV
- HFV
- CVZ

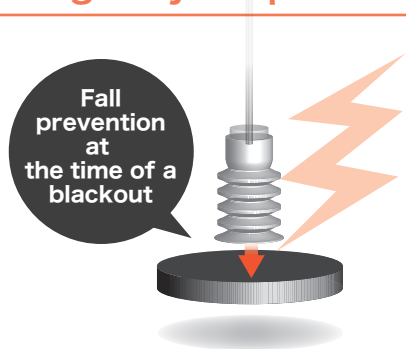
Can select the combination flexibly

Free selection of with or without sensor, filter



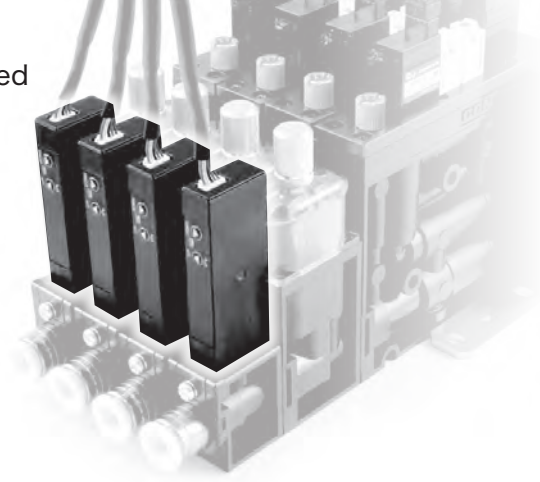
Holding workpiece at an emergency stop

With self-holding valve, it is possible to keep vacuum, and prevent the workpiece from falling.



Air consumption will be reduced

More than 50% of air consumption can be saved with the MPS-10 energy-saving sensor

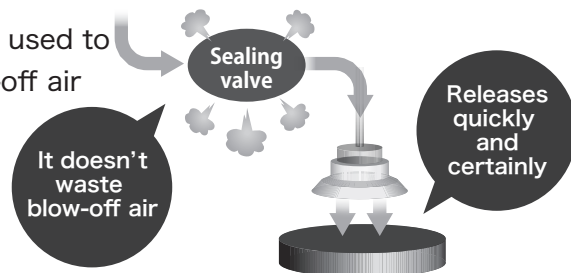


Detail of the sensor → P.567

Releases workpieces quickly and certainly

Mounted with the check valve that can be used to release workpieces without wasting blow-off air

※Max 200L/min (ANR)



It is operatable with supply pressure 0.25 MPa at the minimum multi-stage nozzle available

- Multi-stage nozzle can be selected
- Compact design, high suction flow



SC3 Medium Size Smart CONVUM

How to Order

SC3 M 10S V9N C F S A T 3
 ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

In case of manifold

① Body Type

S	Single unit
	
M	Manifold unit
	

② Nozzle Type

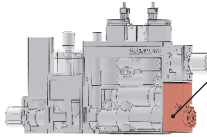
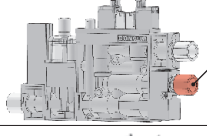

Symbol	Nozzle type	Nozzle size [mm]	Rated pressure [MPa]	Maximum vacuum pressure [kPa]	Suction flow [L/min (ANR)] ^{Note1}	Air consumption [L/min (ANR)]	
10S	Single	1.0	0.5	-90	23 (25)	48	
13S		1.3			38 (42)	74	
15S		1.5			57 (60)	100	
10L		1.0			-65	43 (45)	48
13L		1.3			-57	66 (78)	74
15L	1.5	-63	74 (90)	100			
10R	Multi-stage	1.0	0.25	-86	20 (21)	47	
13R		1.3	0.35		-88	30 (33)	70
15R		1.5			50 (54)	100	
07X	Multi-stage	0.7	0.5	-90	37 (48)	22	
10X		1.0			46 (56)	48	
15X		1.5			65 (88)	100	

Note1) With the silencer exhaust, () is with the individual exhaust.

⑤ Filter

F	With
Z	Without

⑥ Exhaust Type

S	Silencer exhaust		Silencer
P	Individual exhaust ^{Note1}		Exhaust port
C	Concentrated exhaust (in case of manifold) ^{Note2}		Exhaust port

Note1) When "T" selected in ⑧, the exhaust port will be Rc1/4.

Note2) Only "C" type available with manifold unit.

※ Please select check valve (select C or E in ④) when concentrated exhaust selected for manifold type and then it can prevent the air wraparounding to the vacuum port.

⑨ Manifold

(in case of manifold)

The number of maximum simultaneous operation for manifold type

Symbol	No. of stations
1	1 station
2	2 stations
3	3 stations
4	4 stations
5	5 stations

※ The number of maximum simultaneous operation is informed on right table.

Nozzle type	10S	13S	15S	10L	13L	15L	10R	13R	15R	07X	10X	15X
The number of maximum simultaneous operation	5 stations			4 stations	5 stations	2 stations	3 stations	5 stations				

Note1) The port on both sides: $\phi 8$

01 CONVUM

SC1

SC2

SC3

MC22

MC72

CCV

MCV

CV

CVA2

EC1

MCA

HDV

HFV

CVZ

③ Pressure Sensor

Symbol	Sensor type	Pressure range [kPa]	Display	Switch output	Analog output	Input specifications
V9N	MPS-V9	-101.3 ~ 0	Digital	NPN1 output	DC1 ~ 5 V	N/A
10N	MPS-10 ^{Note1,2}	-101 ~ 500	Digital	NPN1 output	DC1 ~ 5 V	Sink
ZZ	Without sensor					

Note1) Energy-saving pressure sensor (solenoid valve control function mode)

Note2) Please select check valve (select C or E in ④) in case of using energy-saving function.

※ Please consult with us for PNP output type.

④ Sealing Valve/Check Valve

Symbol	Sealing valve	Check valve
C	With	With
D	With	N/A
E	N/A	With

⑦ Vacuum Generation Valve Type

A	Normally opened
B	Normally closed
W	Self-holding ^{Note1}

Note1) The energy-saving function for the sensor doesn't work if the self-holding valve is selected.

⑧ Port Size

Symbol	Supply port ^{Note1}	Vacuum port
T	φ 8	φ 8
R	Rc1/4	Rc1/4
N	1/4-27NPT	1/4-27NPT
G	G1/4	G1/4

Note1) The "T" port will be Rc1/4 when manifold type selected.



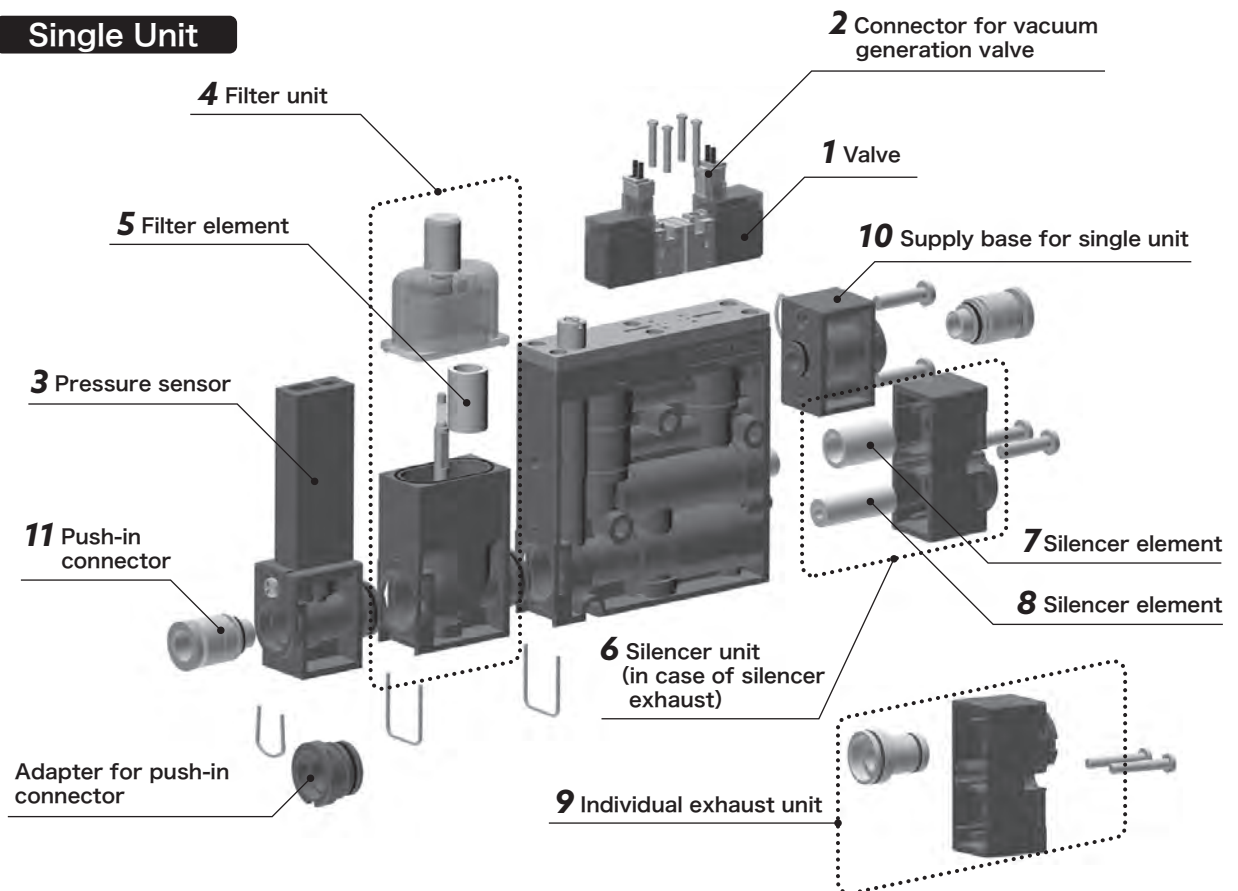
These model number below satisfy general needs and functions with product advantages.

※Please feel free to contact us.

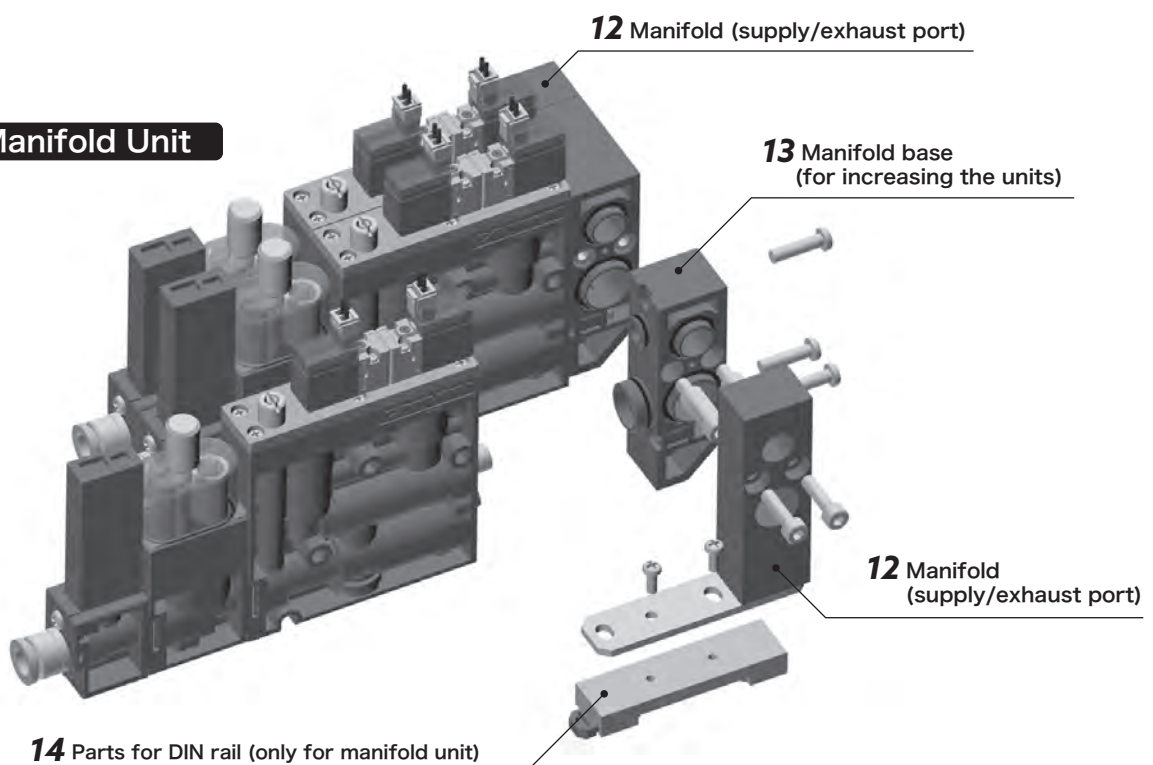
Product code	Model number	Specifications						
		Nozzle size (mm)	Pressure sensor	Check valve	Sealing valve	Filter	Eshhaust	Vacuum generation valve type
204100581	SC3S10SZZCFSBT	1.0	N/A	With	With	With	Silencer	Normally closed
204108501	SC3S15XZZCFSBT	Multi-stage/1.5	N/A	With	With	With	Silencer	Normally closed
204100005	SC3S10SV9NCFSBT	1.0	Digital	With	With	With	Silencer	Normally closed
204107925	SC3S15XV9NCFSBT	Multi-stage/1.5	Digital	With	With	With	Silencer	Normally closed
204100293	SC3S10S10NCFSBT	1.0	Digital, energy-saving	With	With	With	Silencer	Normally closed
204108213	SC3S15X10NCFSBT	Multi-stage/1.5	Digital, energy-saving	With	With	With	Silencer	Normally closed

Maintenance Parts

Single Unit





Manifold Unit



01
CONVUM

- SC1
- SC2
- SC3**
- MC22
- MC72
- CCV
- MCV
- CV
- CVA2
- EC1
- MCA
- HDV
- HFV
- CVZ

1 Valve

CKV010-4E Common for vacuum generation and blow-off	
※ Lead wire length 300mm ※ Gasket and mounting screw are included	
LV290-4E Self-holding type	
※ Lead wire length 300mm ※ Gasket and mounting screw are included	

2 Connector for Vacuum Generation Valve
※With lead wire

CA **2** - V4 - **6**

Applicable valve

2	CKV010-4E
3	LV290-4E

Lead wire length (mm)

Blank	300
6	600
10	1000
20	2000 ^{Note1}
30	3000 ^{Note2}

Note1,2) CKV010-4E only

3 Pressure Sensor
※O ring and mounting screw are included

Model number	Specifications
MPS-V9N-SC3	Digital display
MPS-10N-SC3-A	Energy-saving, digital display (normally opened, sink input)
MPS-10N-SC3-S	Energy-saving, digital display (normally closed, sink input)
MPS-10N-SC3-W	Wire-saving, digital display (self-holding, sink input)

4 Filter Unit **5 Filter Element**

SC3 - FU

FU	Filter unit (body, with element)
FE	Filter element (only element)

6 Silencer Unit ※Single unit only **7 8 Silencer Element** ※Single unit only **9 Individual Exhaust Unit**

SC3 - SU01

Symbol	Specifications	Applicable nozzle
SU01	Silencer unit (body, with element)	13L,13R,15S,15L,15R,07X,10X,15X
SU02	Silencer unit (body, with element)	10S,10L,10R,13S
SU03	The parts required when change from individual exhaust to silencer exhaust	All type
SE01	Silencer element (only element) ⑦ only	13L,13R,15S,15L,15R,07X,10X,15X
SE02	Silencer element (only element) ⑦ and ⑧	10S,10L,10R,13S
PU	Individual exhaust unit (without push-in connector)	All type

10 Supply Base for Single Unit
※With mounting screw, without push-in connector

SC3-PS

※The part required when use manifold unit as single unit.

11 Push-in Connector

SC3 - T - A

Connector size		Adapter	
T	φ8	Blank	N/A
R	Rc1/4	A	With
N	1/4-27NPT	※The adapter is necessary to mount the push-in connector for the unit without sensor and filter.	
G	G1/4		

12 Manifold (Supply/Exhaust Port)
※2 per set, mounting screws are included

SC3 - MB - R

Port screw size

R	Rc1/4
N	1/4-27NPT
G	G1/4

14 Parts for DIN rail (only for manifold unit)
※2 per set, mounting screws are included

SC3-DIN

13 Manifold Base (for increasing the units)
※Mounting screw, adapter are included

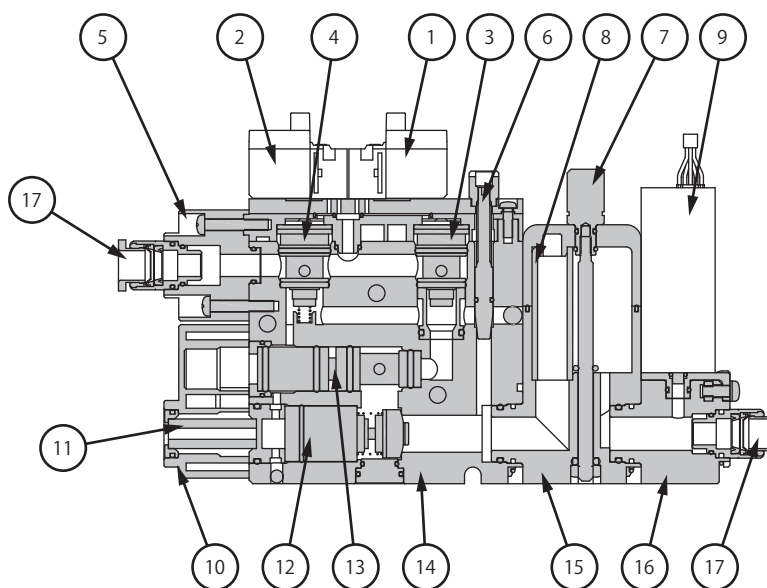
SC3-MB

15 Connector Cable for MPS-10 Sensor and Valve

MPS - 10 - VC - SC3 - W

Blank	Normally opened, Normally closed
W	Self-holding

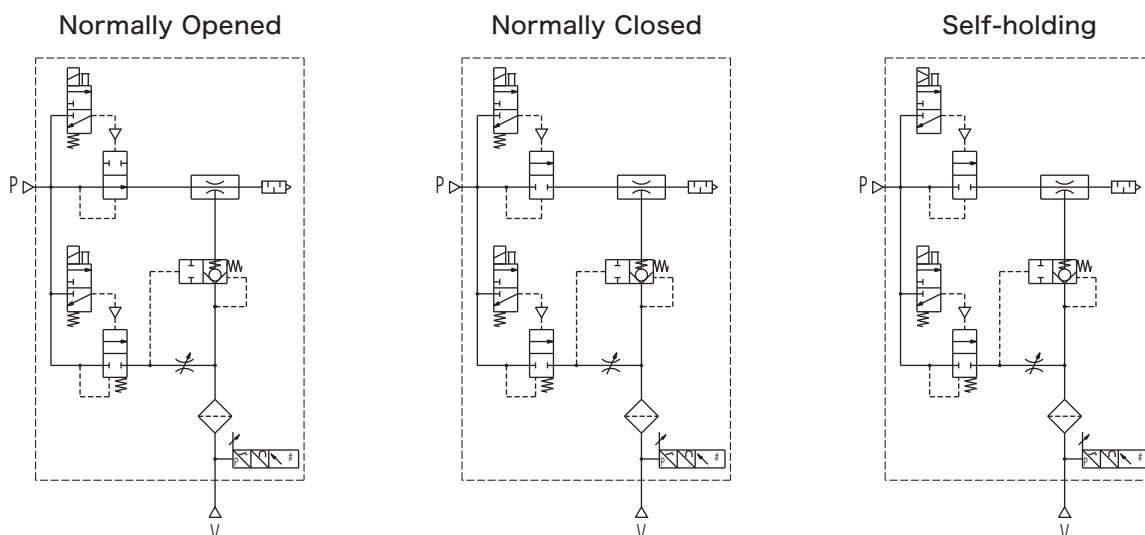
Construction



Component Parts

No.	Parts name	Material
1	Vacuum generation valve	-
2	Blow-off valve	-
3	Vacuum generation poppet valve	Aluminum, SUS, FKM, NBR
4	Blow-off poppet valve	Aluminum, SUS, FKM, NBR
5	Supply port	PA, NBR
6	Blow-off flow adjustment needle	Aluminum, SUS, FKM
7	Filter	PA,aluminum, SUS, NBR
8	Filter element	PVF
9	Pressure sensor	-
10	Silencer	PA, SUS
11	Silencer element	PVF
12	Check valve	Aluminum, SUS, FKM, NBR
13	Nozzle kit	PA,aluminum, FKM, NBR
14	Body	PA, SUS, NBR
15	Filter base	PA, FKM
16	Sensor base	PA, NBR
17	Push-in connector	-

Symbol



CONVUM Specifications

Description \ Model number		Unit	10S	13S	15S	10L	13L	15L	10R	13R	15R	07X	10X	15X
Nozzle type			Single									Multi-stage		
Nozzle size		mm	1.0	1.3	1.5	1.0	1.3	1.5	1.0	1.3	1.5	0.7	1.0	1.5
Fluid			Non-lubricated compressed air											
Ambient temperature		°C	0~55(No Freezing)											
Operating pressure range		MPa	0.2~0.6											
Vacuum generation valve type			Normally opened (A)/normally closed (B)/self-holding (W)											
Filter element filtration		μm	150											
Filter filtration area		mm ²	1071											
Rated pressure		MPa	0.5						0.25	0.35		0.5		
Maximum vacuum pressure		kPa	-90	-89	-91	-65	-57	-63	-86	-88	-90			
Suction flow	Silencer exhaust	L/min(ANR)	23	38	57	43	66	74	20	30	50	37	46	65
	Individual exhaust	L/min(ANR)	25	42	60	45	78	90	21	33	54	48	56	88
Blow-off flow		L/min(ANR)	200(With sealing valve)											
Air consumption		L/min(ANR)	48	74	100	48	74	100	47	70	100	22	48	100

Valve Specifications

Description \ Model number		Unit	CKV010-4E	LV290-4E
Valve structures			3 port, direct operated poppet valve	
Rated voltage		V	DC24	
Allowable voltage fluctuation		%	±10	
Power consumption (current value)	Vacuum generation	W(mA)	1(42)	
	Vacuum suspension		1.3(54) 1.5(63)	
Minimum energization time		ms	-	
Insulation type			Class B	
Manual override operation			Non-lock	N/A
Display/surge killer			LED/diode	
Lead wire			Lead wire with connector(300mm)	
Weight (with lead wire)		g	15.3	19.5

Pressure Sensor Specifications

Description \ Model number		Unit	MPS-V9N-SC3	MPS-10N-SC3-A/S/W
Fluid			Air (vacuum), non-corrosive gas, non-flammable gas	
Diaphragm			Silicon diaphragm	
Rated pressure range		kPa	-101.3~0	-101~500
Setting pressure range		kPa	-101.3~10	-101~500
Withstand pressure		MPa	0.3	0.8
Ambient temperature range		°C	0~50(No freezing)	
Ambient humidity range		%RH	35~85(No condensation)	
Power supply voltage		V	DC12~24±10%, ripple(Vp-p)5% or less	DC24±10%, ripple(Vp-p)5% or less
Current consumption		mA	40	50 <small>(not include the driven current for valve)</small>
Switch output	Type		NPN open collector 1 output	
	Maximum load current	mA	125	
Analog output			DC1~5V(±0.1) linearity1% F.S. output impedance1kΩ	
Digital input(suction/blow off command)			- Non-contact 1 input: 0V or 24V(more than 1msec)	
Repeatability		%	±0.2F.S. 1 digit or less	±0.3F.S. 1 digit or less
Temperature characteristic		%	Less than±2F.S. (At standard temperature 25°C, range0~50°C)	
Response time		ms	1.5 or less	
Hysteresis			Variable	
Display	Digital		4-digital, 7-segment, red color LED	
	Operation		OUT:red color LED (ON lighting)	Output ON/OFF:red color LED Vacuum generation valve ON/ OFF:green color LED
Display/set resolution		kPa	0.1	1
Protection	Reverse-current protection		With	
	Overvoltage protection		With	
	Output short circuit protection		With	
	IP class		IP40	
Vibration resistance			10~55Hz, total amplitude 1.5mm, 50m/s ² 2 hours each direction of XYZ	
Shock resistance		m/s ²	980, 3 times each direction of XYZ 100, 3 times each direction of XYZ	
Electrical connection			Connector	
Cable			5 lead wires, 24AWG, UL AWM 20276, 1000mm ^{Note1}	
Connector			Maker:JST model :GHR-05V-S	

Note1)The white wire in cable of MPS-9 is not connected.

Weight (g)

Specifications						
Single unit	Vacuum generation valve type	Filter	Sensor	Sealing valve/check valve		
				C	D	E
Single	Normally opened/ Normally closed	With	N/A	227	224	227
			With MPS-V9	247	244	247
			With MPS-10	249	246	249
		N/A	N/A	189	186	189
			With MPS-V9	209	206	209
			With MPS-10	211	208	211
	Self-holding	With	N/A	230	227	230
			With MPS-V9	250	247	250
			With MPS-10	252	249	252
		N/A	N/A	192	189	192
			With MPS-V9	212	209	212
			With MPS-10	214	211	214
Single for manifold	Normally opened/ Normally closed	With	N/A	235	-	235
			With MPS-V9	255	-	255
			With MPS-10	257	-	257
		N/A	N/A	197	-	197
			With MPS-V9	217	-	217
			With MPS-10	219	-	219
	Self-holding	With	N/A	238	-	238
			With MPS-V9	258	-	258
			With MPS-10	260	-	260
		N/A	N/A	200	-	200
			With MPS-V9	220	-	220
			With MPS-10	222	-	222

•Manifold Base

Stations	1~5stations
Weight	150

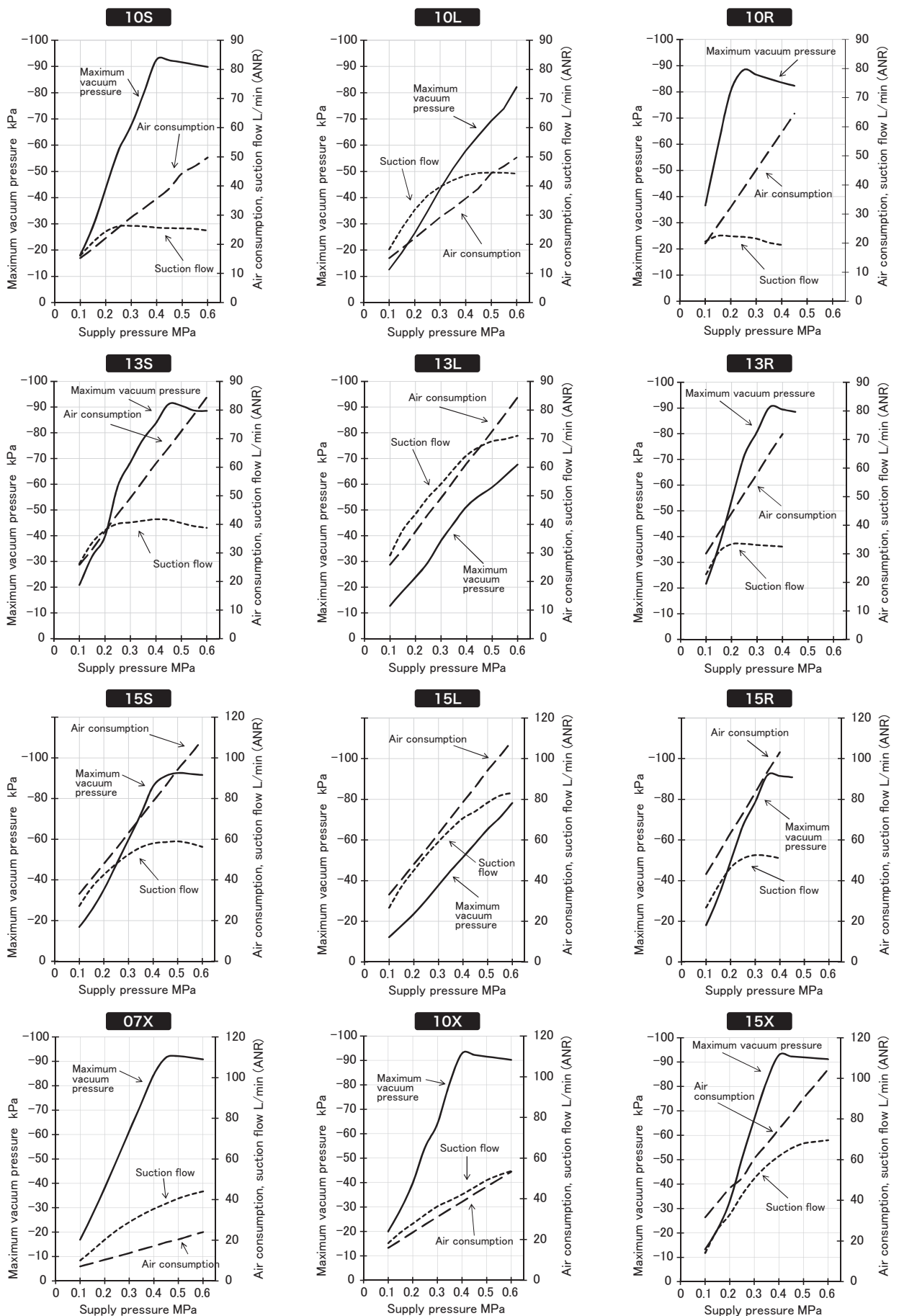
Calculation of Weight for Manifold Type

Single unit for manifold weight×No. of stations+manifold base

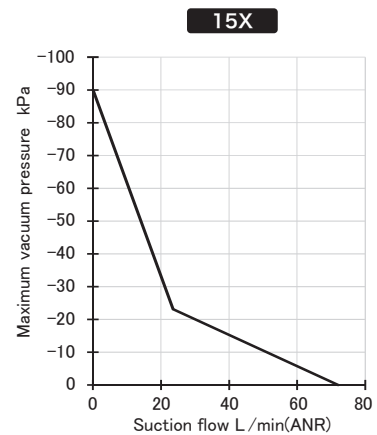
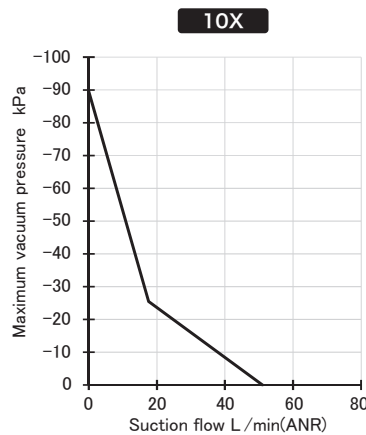
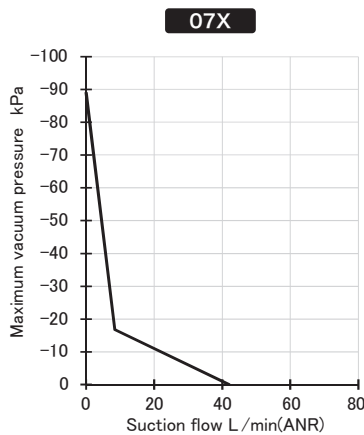
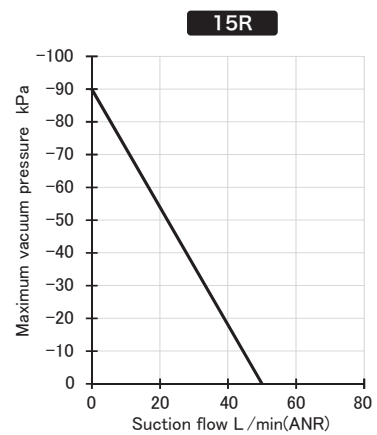
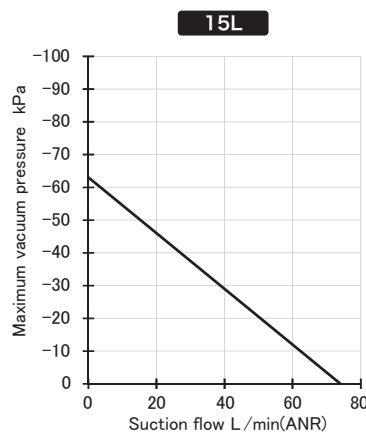
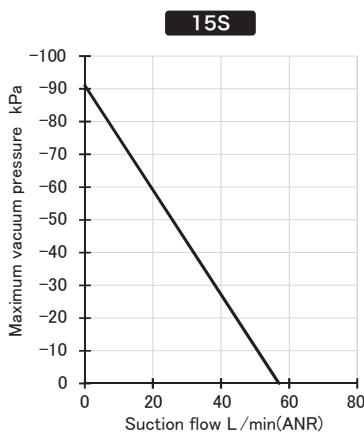
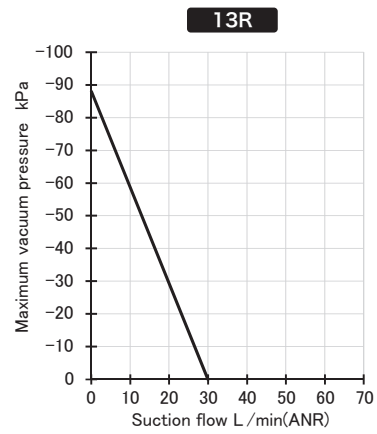
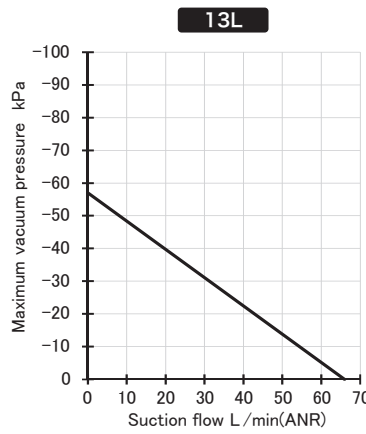
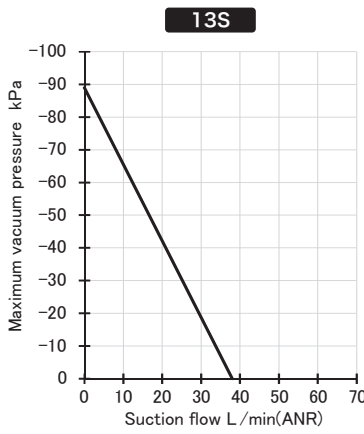
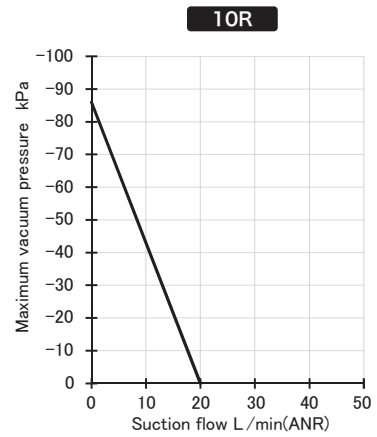
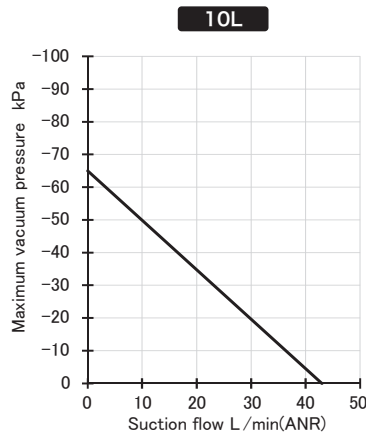
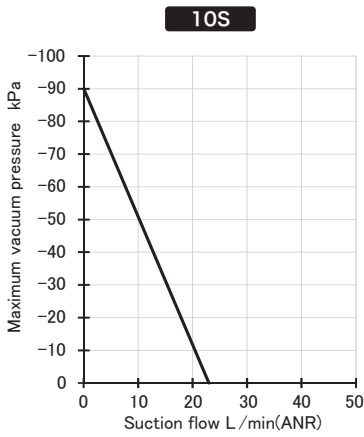
Example 1) 5 stations manifold with self-holding valve, MPS-9 sensor, filter, and sealing valve and check valve
 $258 \times 5 + 150 = 1,440\text{g}$

Example 2) 4 stations manifold with normally closed valve, without sensor, with filter, check valve, and without sealing valve
 $235 \times 4 + 150 = 1,090\text{g}$

Performance Charts



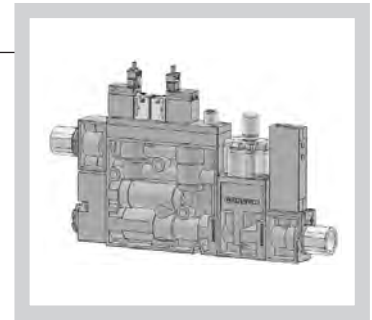
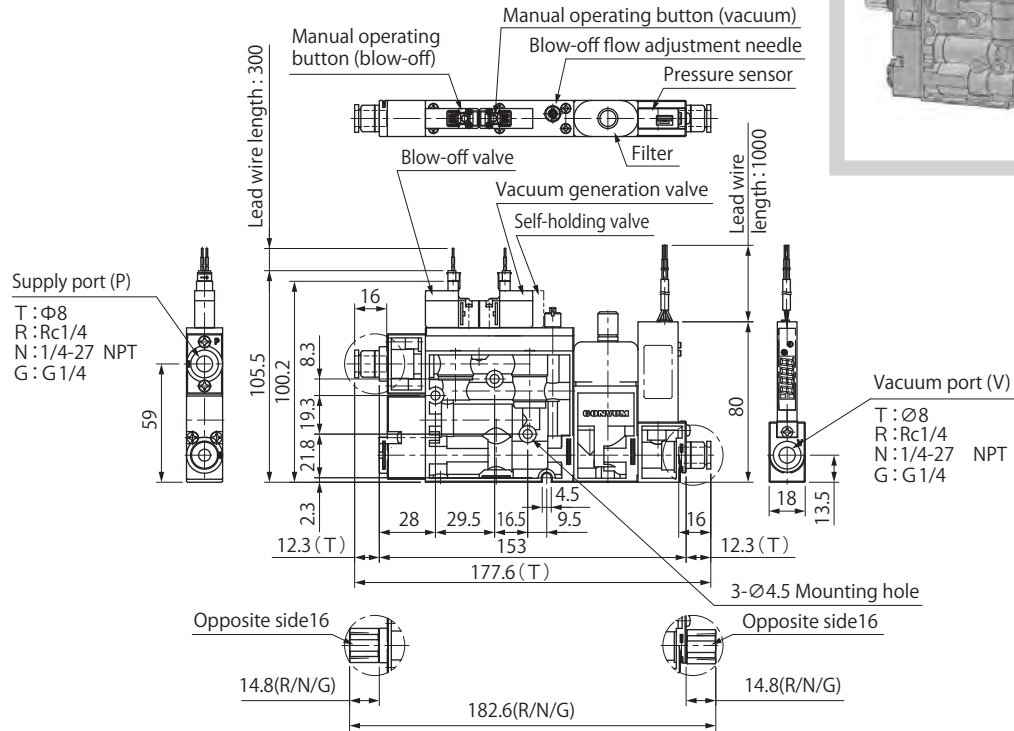
Suction Flow / Vacuum Pressure Characteristics (silencer exhaust)



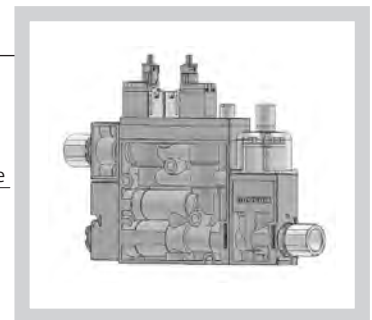
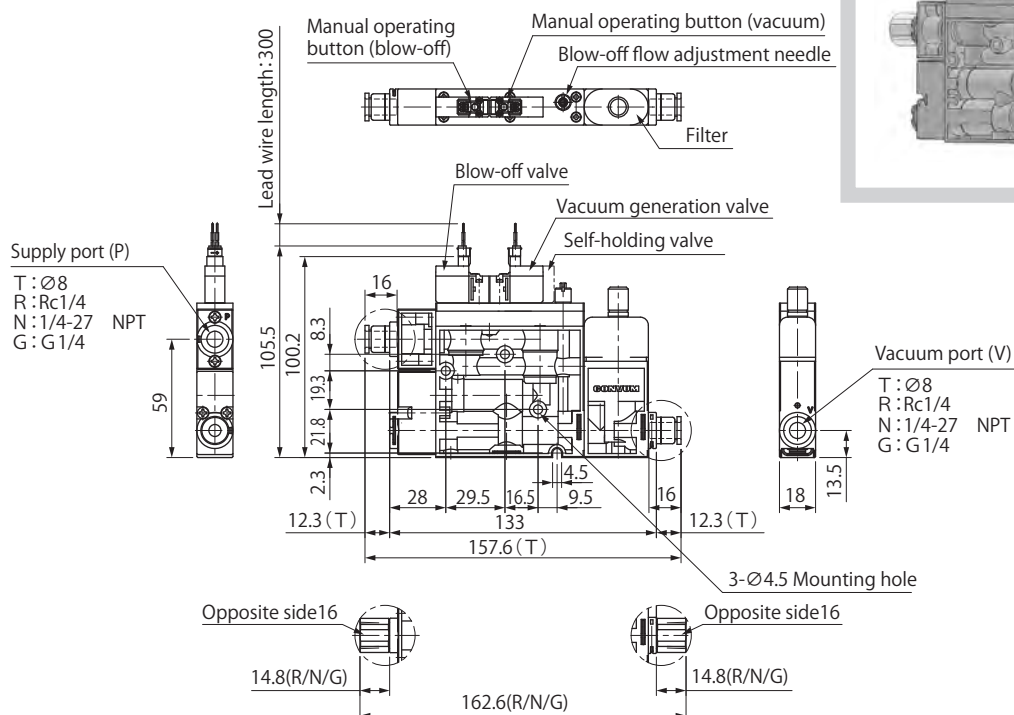
Dimensions

(mm)

Single Unit/Silencer Exhaust (with sensor, filter)



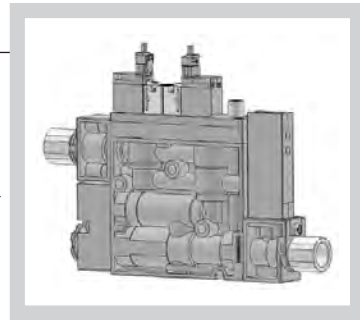
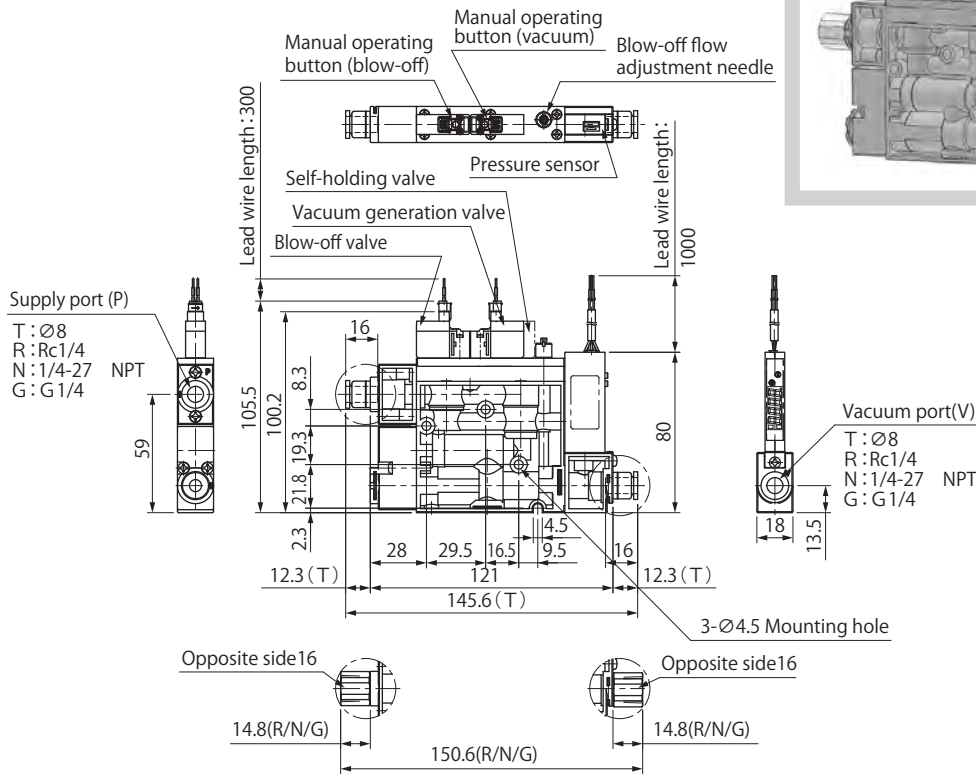
Single Unit/Silencer Exhaust (without sensor, with filter)



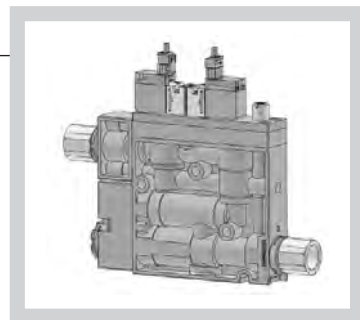
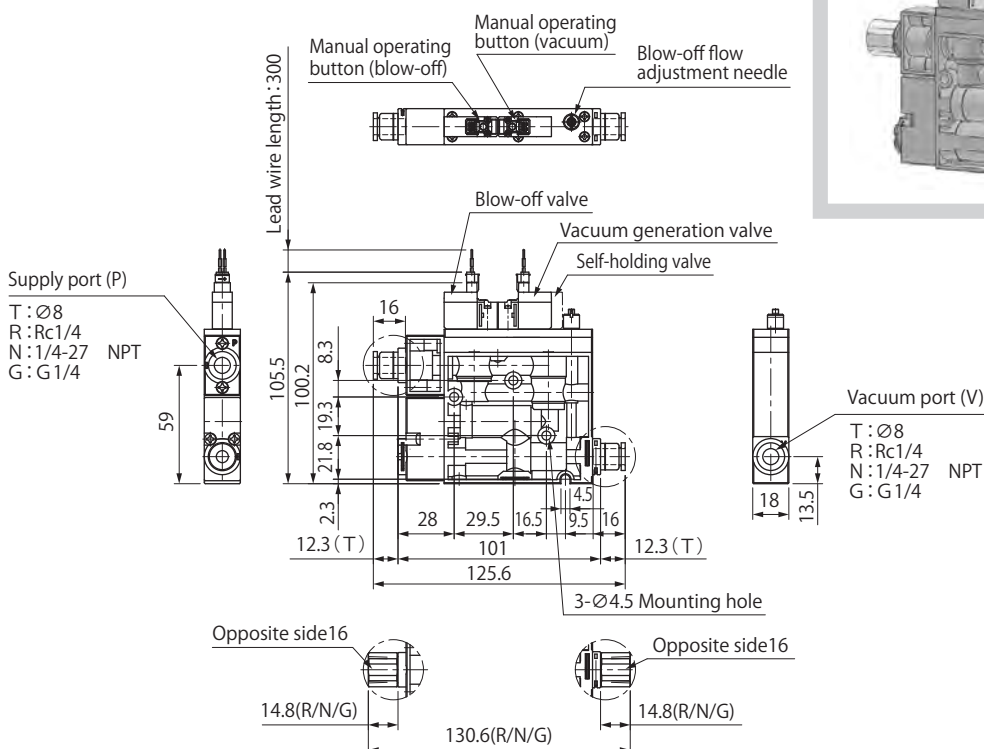
Dimensions

(mm)

Single Unit/Silencer Exhaust)
(with sensor, without filter)



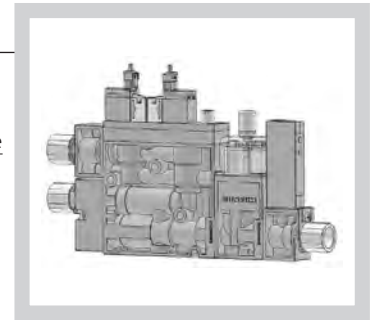
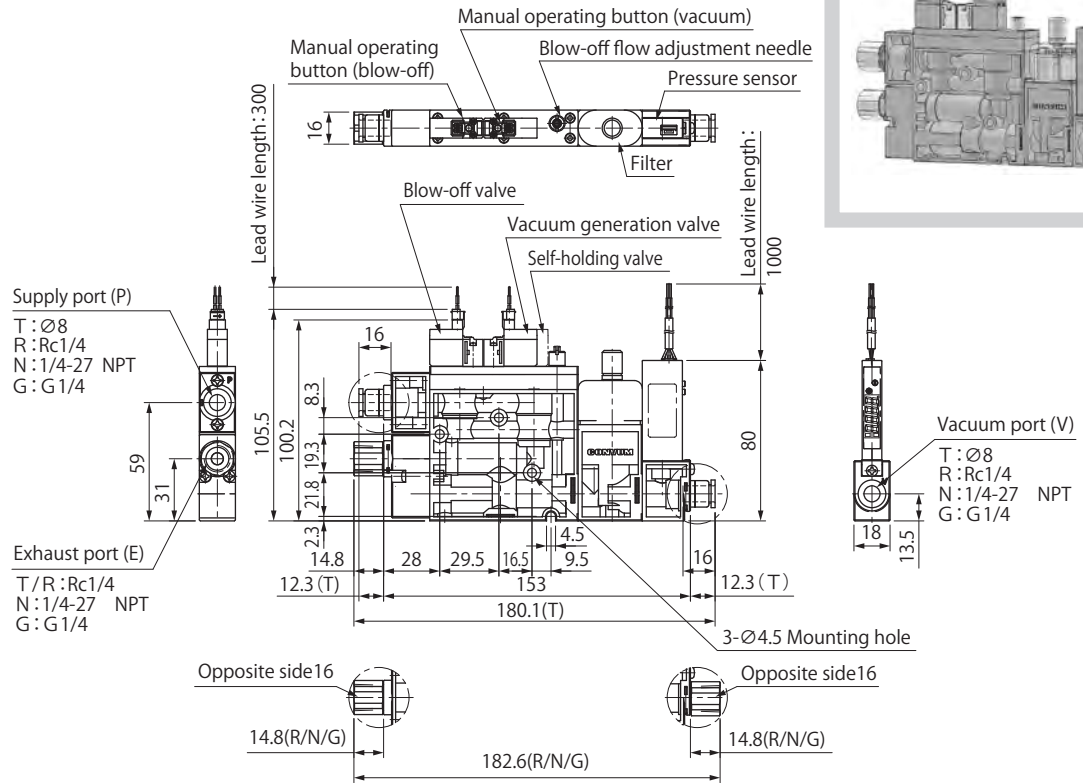
Single Unit/Silencer Exhaust)
(without sensor, filter)



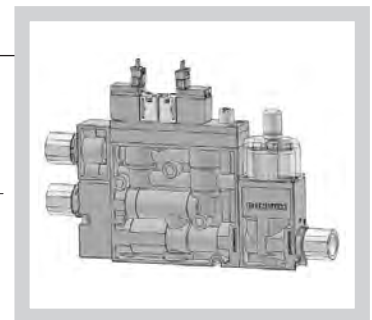
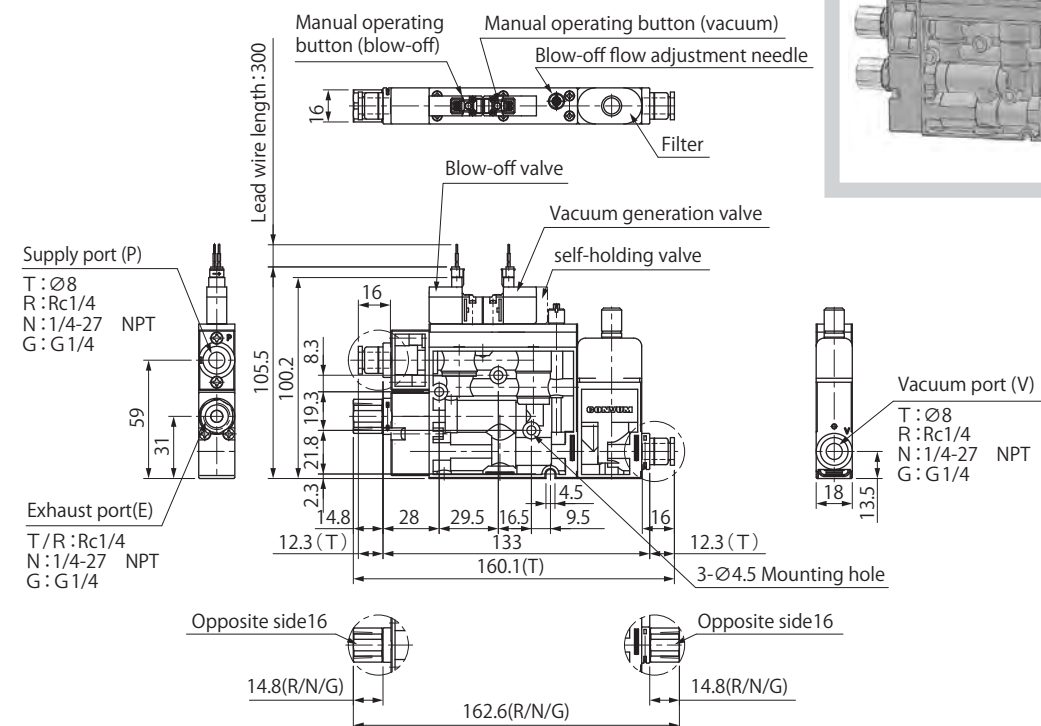
Dimensions

(mm)

Single Unit/Individual Exhaust (with sensor, filter)



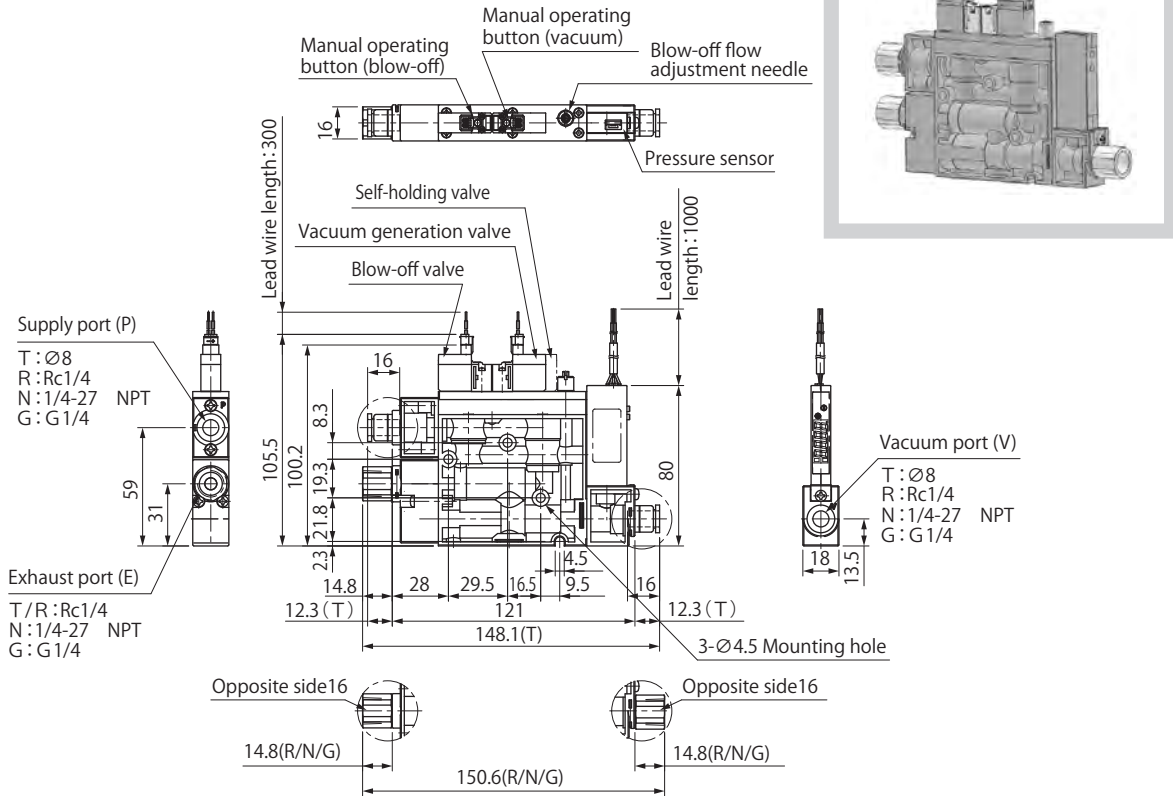
Single Unit/Individual Exhaust (without sensor, with filter)



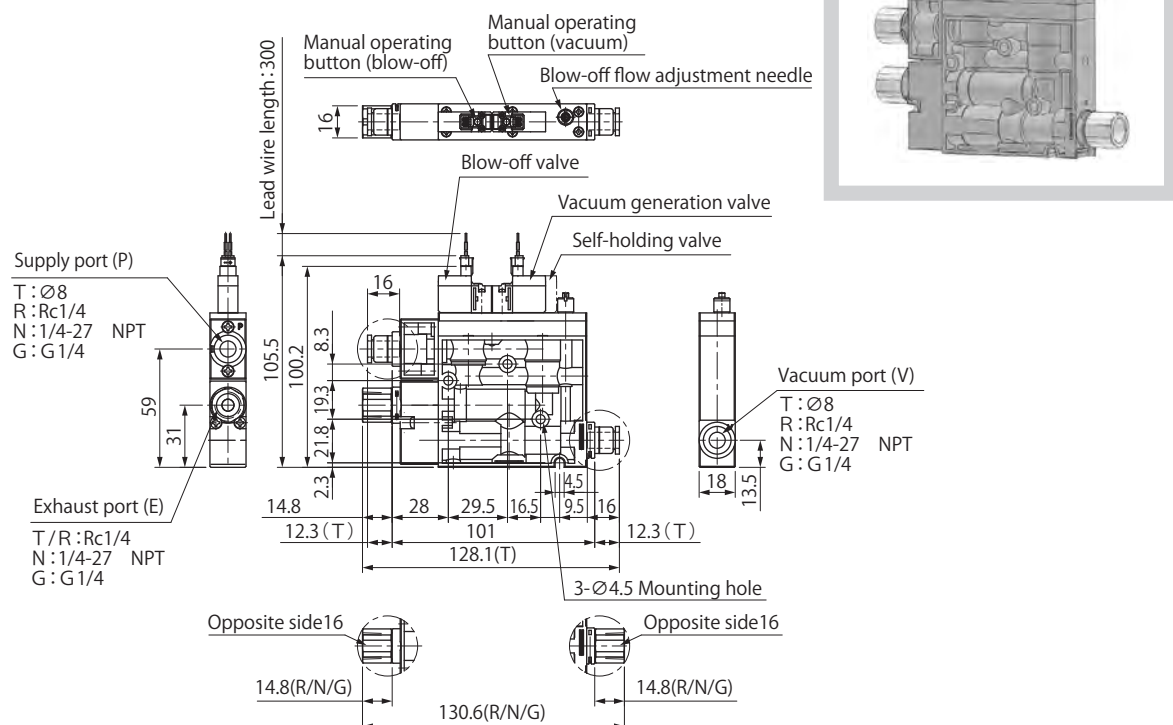
Dimensions

(mm)

Single Unit/Individual Exhaust
(with sensor, without filter)



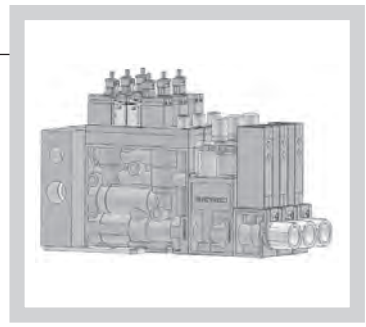
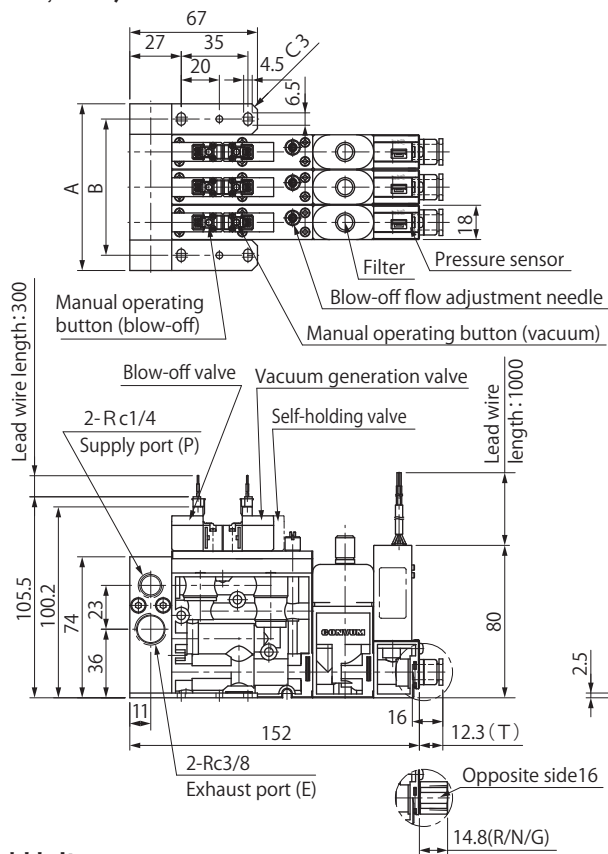
Single Unit/Individual Exhaust
(without sensor, filter)



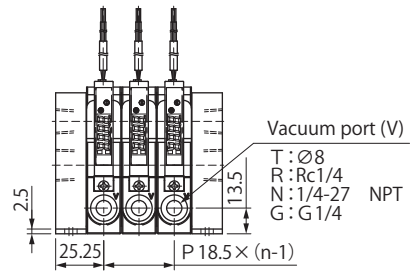
Dimensions

(mm)

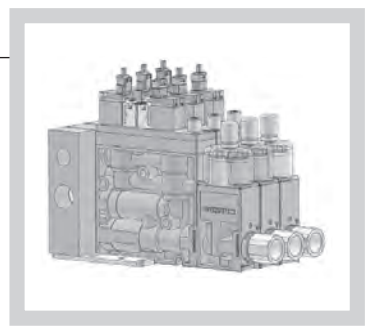
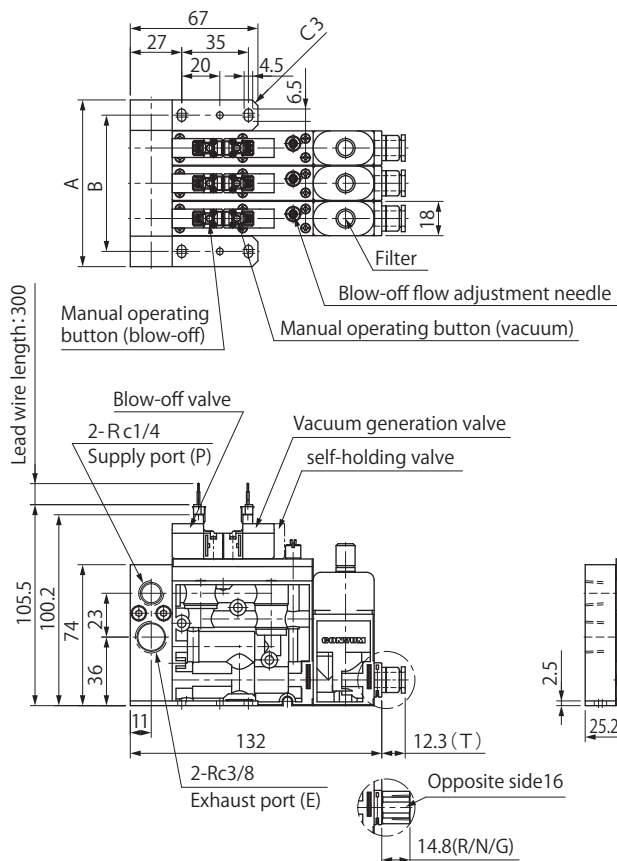
Manifold Unit (With sensor, filter)



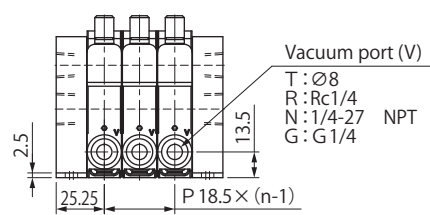
n (No. of units)	1	2	3	4	5
A	50.5	69.0	87.5	106.0	124.5
B	34.5	53.0	71.5	90.0	108.5



Manifold Unit (without sensor, with filter)



n (No. of units)	1	2	3	4	5
A	50.5	69.0	87.5	106.0	124.5
B	34.5	53.0	71.5	90.0	108.5

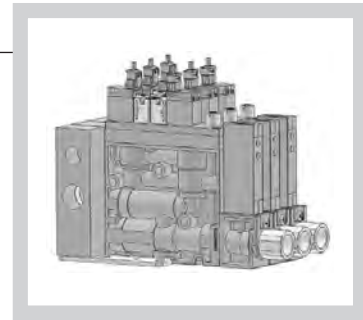
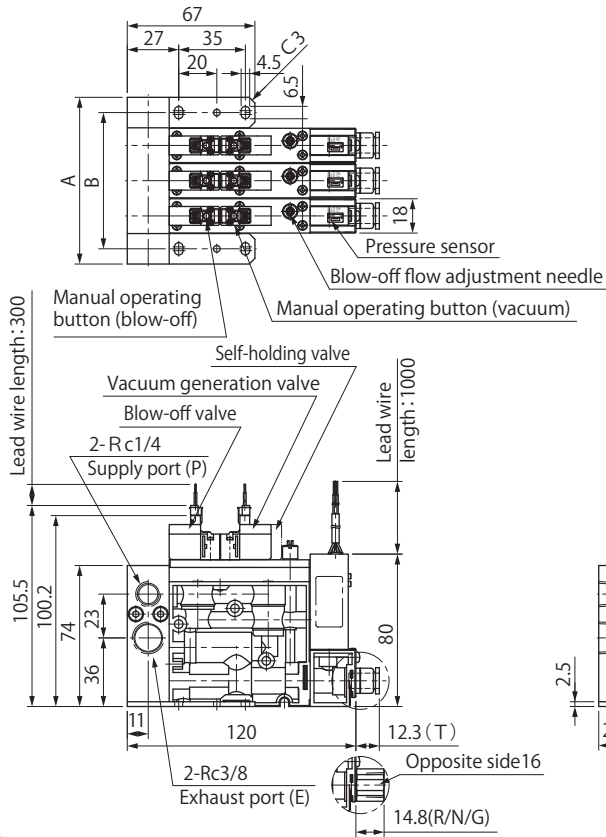


Dimensions

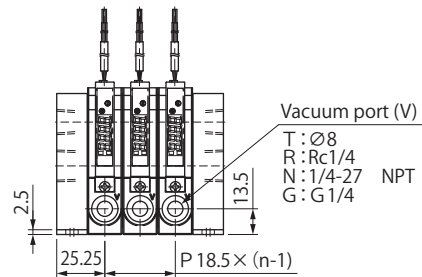
(mm)

Manifold Unit

(with sensor, without filter)

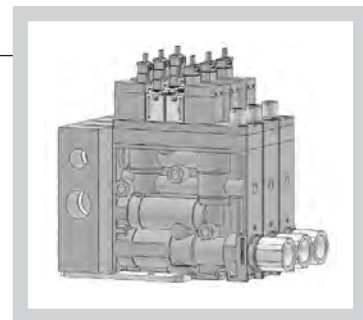
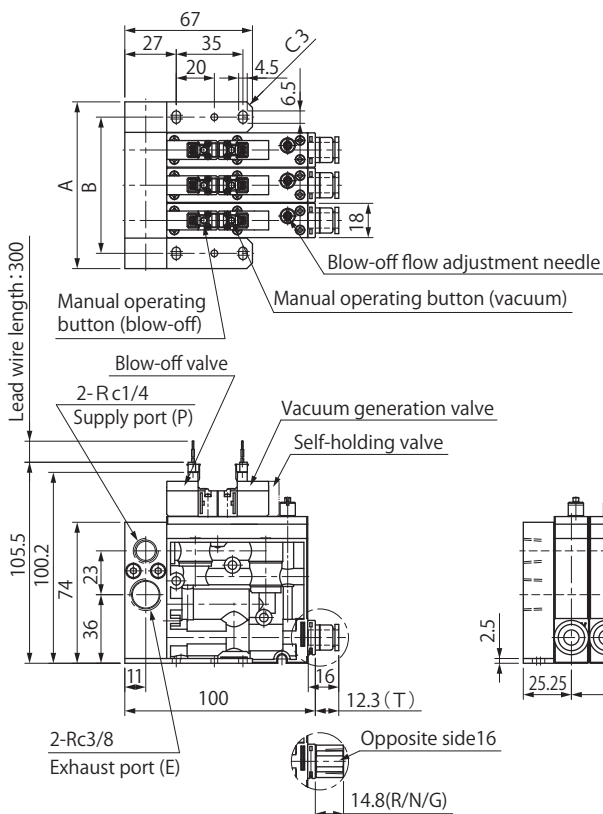


n (No. of units)	1	2	3	4	5
A	50.5	69.0	87.5	106.0	124.5
B	34.5	53.0	71.5	90.0	108.5



Manifold Unit

(without sensor, filter)



n (No. of units)	1	2	3	4	5
A	50.5	69.0	87.5	106.0	124.5
B	34.5	53.0	71.5	90.0	108.5

