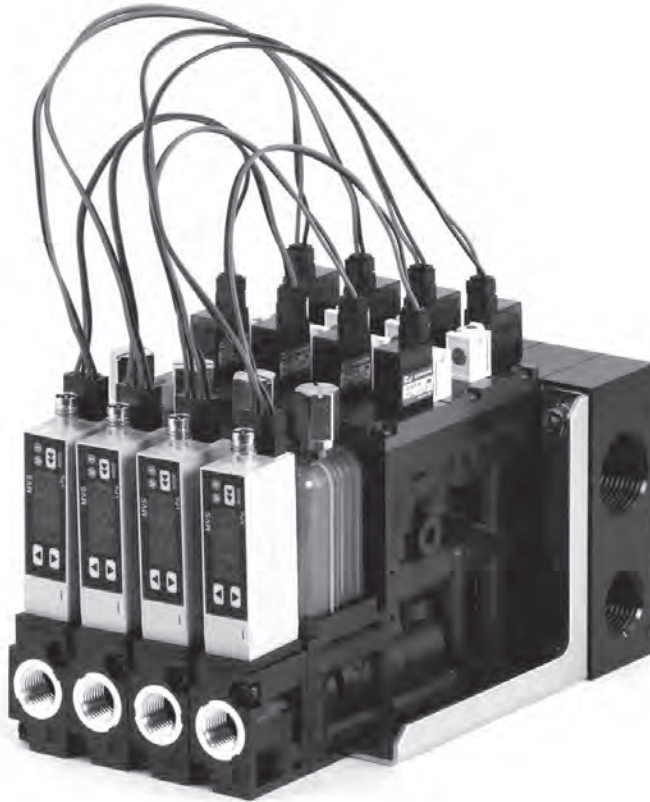
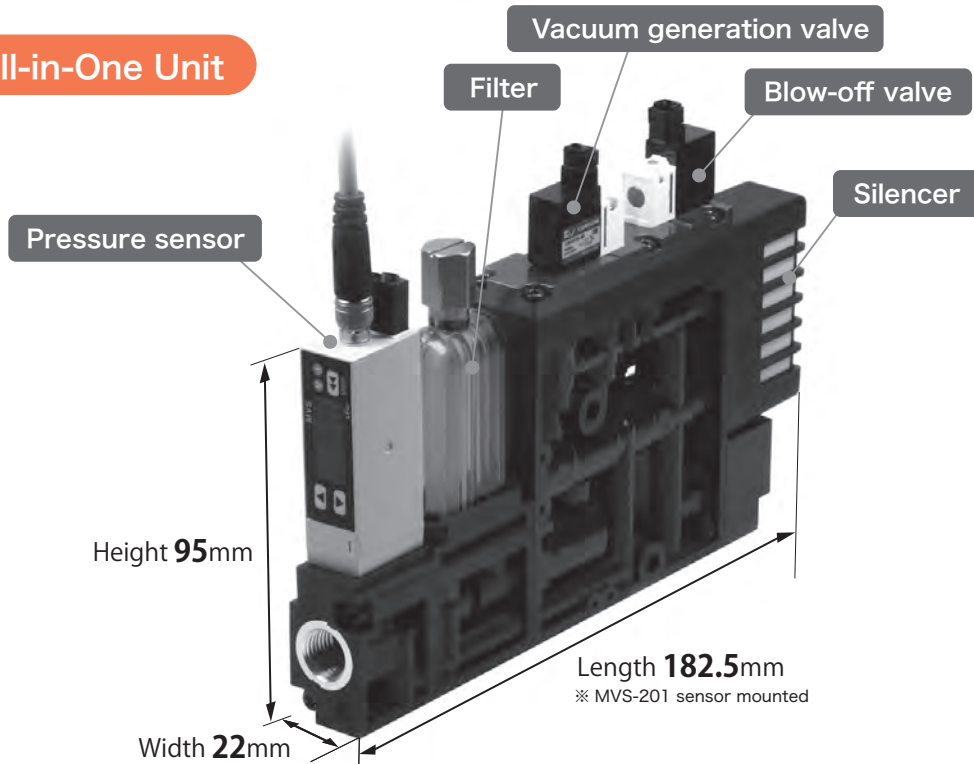


MC72 Series

High Vacuum Flow CONVUM



All-in-One Unit



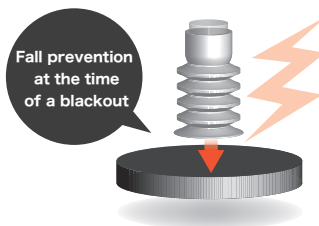
Flexible combinations are selectable

Customizable

- With sensor or not
- Digital display or not
- With check valve or not

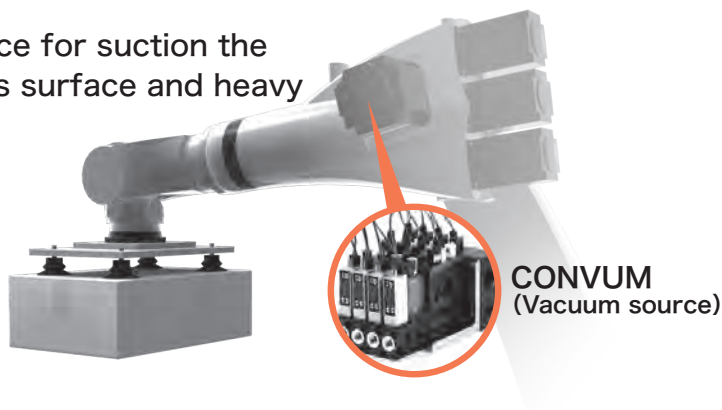
Holding workpiece at an emergency stop

- By mounting self-holding valve, it is possible to keep vacuum. It Prevents the workpiece from falling.



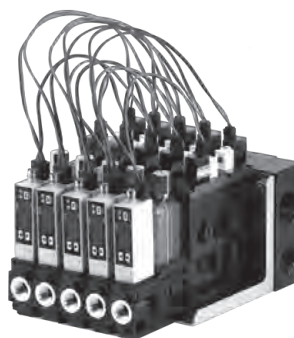
High vacuum flow type

- Applications: Best choice for suction the workpieces with porous surface and heavy workpieces

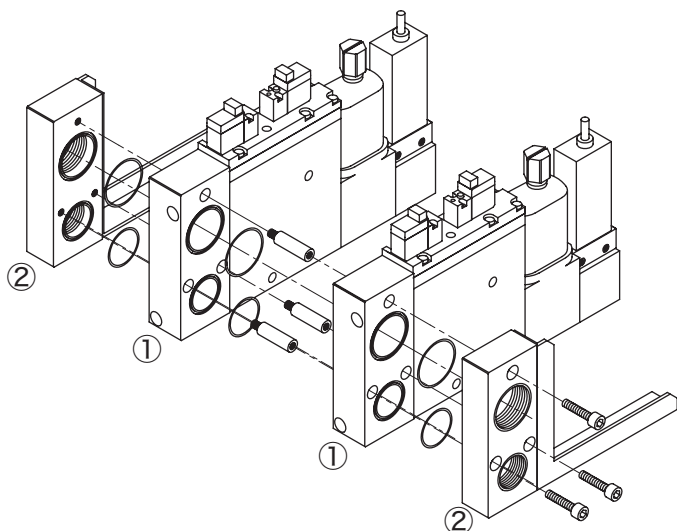


Can be mounted on manifold, up to 5 units

- Manifold make it possible to supply air intensively
- Differ specifications MC72 can be putted together according to various purposes



It's easy to increase the CONVUM unit because the manifold can be mounted from both sides.



The single unit can be changed to manifold unit with ① part and it's mounted to ② port to increase the number of units.

MC72 High Vacuum Flow CONVUM



How to Order

MC72 **M** **15** **H** **S** **VG** **C** **4** **B** **L** **R** **3**

In case of manifold

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪

① Body Type

S	Single unit	M	Manifold unit
			

② Nozzle Type

Symbol	Nozzle size [mm]
15	1.5
20	2.0
25	2.5

③ Maximum Vacuum Pressure [kPa]

Symbol	Type	Vacuum pressure
H	High vacuum type	-87
L	High flow type	-53

⑤ Pressure Sensor

Symbol	Sensor type	Pressure range [kPa]	Display	Switch output	Analog output	Input specifications
AB	MVS-030AB	-101~0	LED	NPN 1 output	N/A	N/A
VG	MPS-V23	-101~0	Digital	NPN 2 outputs	DC1~5V	N/A
21	MVS-201 ^{Note1,2}	-101~500	Digital	NPN 1 output	N/A	Sink
ZZ	Without sensor, without base/sensor can not be mounted afterwards					
ZS	Without sensor, with base/sensor can be mounted afterwards					

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

Note2) Please select check valve (select C or F in ⑥) in case of using energy-saving function.

※ Please consult with us for PNP output type.

⑨ Valve Connection

L	Lead wire with connector
---	--------------------------

⑩ Port Size

R	Rc1/4
N	NPT1/4-27 ★
G	G1/4 ★

★are made to order

⑪ Manifold

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

④ Rated Pressure [MPa]

S	0.5
R	0.35

※ ②③④ Applicable Models

②	③	④	
		S	R
15	H	○	○
	L	○	×
20	H	○	○
	L	○	×
25	H	○	×
	L	×	×

※ Specifications by Nozzle

Nozzle type	Rated pressure [MPa]	Maximum vacuum pressure [kPa]	Suction flow [L/min(ANR)]	Air consumption [L/min(ANR)]
15HS	0.5	-87	55	100
15LS		-53	90	
15HR	0.35	-87	46	180
20HS	0.5	-53	95	
20LS			130(110) ^{Note1}	
20HR	0.35	-87	80	
25HS	0.5	-87	140(120) ^{Note1}	265

Note1) Figure in () is when check valve option is selected.

⑥ Blow-off Valve/Check Valve/Filter

Symbol	Blow-off valve	Check valve	Filter
C	With	With	With
D	With	N/A	
E	N/A	N/A	
F	With	With	N/A
G	With	N/A	
Z	N/A	N/A	

⑦ Valve Voltage

Symbol	Voltage
4	DC24V

⑧ Vacuum Generation Valve Type

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

Note1) The energy-saving function of a sensor cannot work if the self-holding valve is selected.



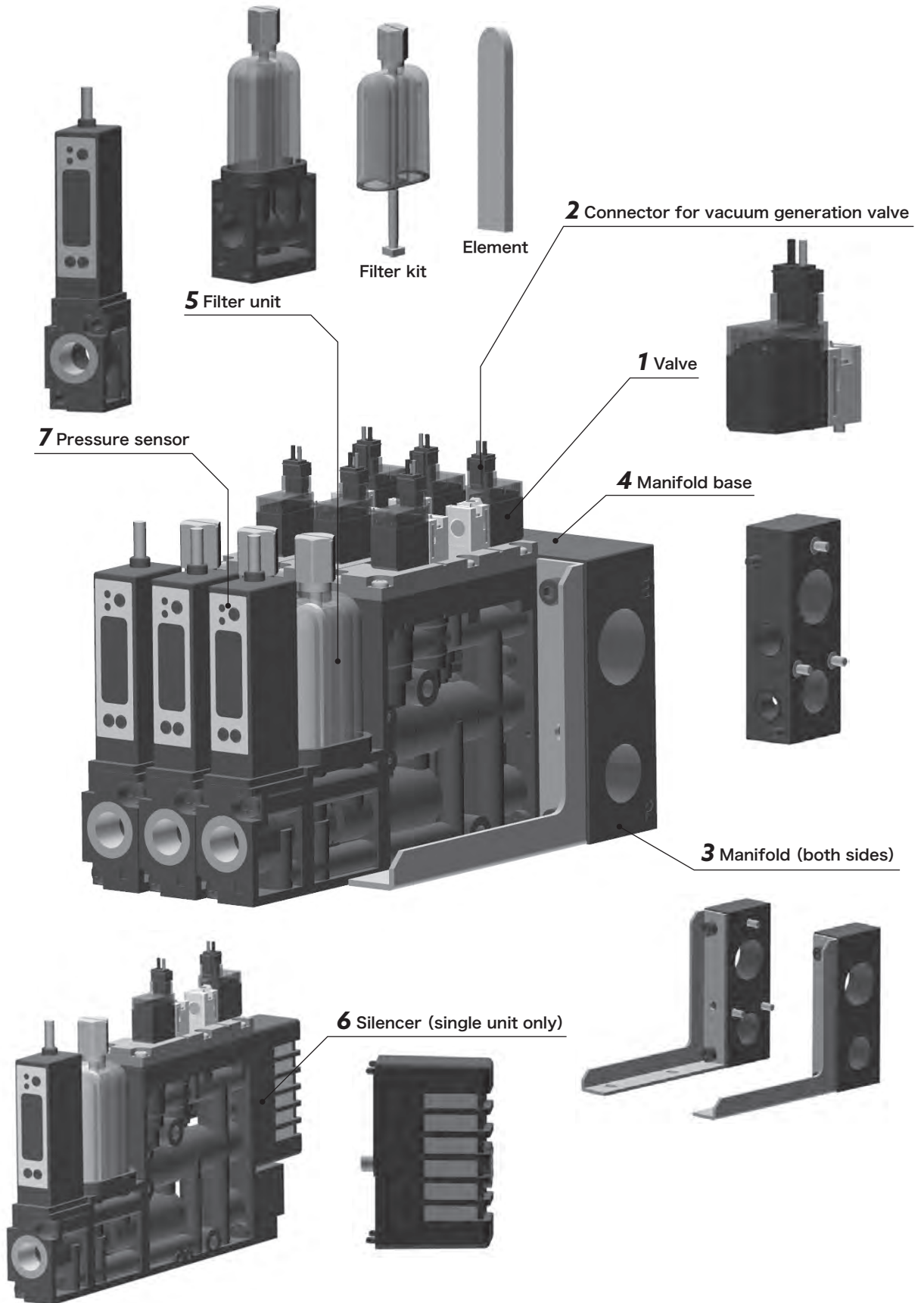
These model number below satisfy general needs and functions with product advantages. ※Please feel free to contact us.

Product code	Model number	Specifications			
		Nozzle size (mm)	Pressure sensor	Check valve	Filter
202700034	MC72S15HSZC4BLR	1.5	N/A	With	With
202700013	MC72S15HSABC4BLR	1.5	Electronic pressure sensor	With	With
202700004	MC72S15HSVGC4BLR	1.5	Digital	With	With
202700003	MC72S15HS21C4BLR	1.5	Digital, energy-saving	With	With
202700196	MC72S25HSZC4BLR	2.5	N/A	With	With
202700083	MC72S25HSABC4BLR	2.5	Electronic pressure sensor	With	With
202700026	MC72S25HSVGC4BLR	2.5	Digital	With	With
202700009	MC72S25HS21C4BLR	2.5	Digital, energy-saving	With	With



Maintenance Parts

01 CONVUM

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



1 Valve

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

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 Manifold (Both sides)

MC7 - MB **R**

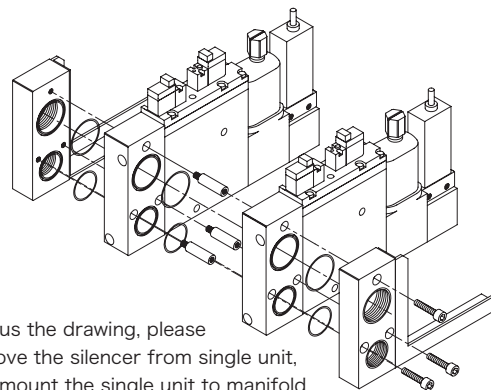
Air supply port

Symbol	Type
R	Rc1/2
N	1/2NPT
G	G1/2

4 Manifold base

MC7 - MB

※For change from single unit to manifold unit.
Mounting screws, spacer and O-ring are included



※Thus the drawing, please remove the silencer from single unit, and mount the single unit to manifold.

5 Filter

MC7 - **E**

U	Filter unit (with element and base)
F	Filter kit (with element)
E	Only element



6 Silencer (single unit only)
※Mounting screw is included

CVK - S



7 Pressure Sensor
※O ring and mounting screw are included

Model number	Specifications
MVS-030AB-MC72	Electronic, LED display
MPS-V23C-NGA-MC7	Digital display
MVS-201-MC72-A	Energy-saving, digital display (normally opened)
MVS-201-MC72-B	Energy-saving, digital display (normally closed)
MVS-201-MC72-W	Wire-saving, digital display (self-holding)

8 Connector Cable for MVS-201 Sensor and Valve

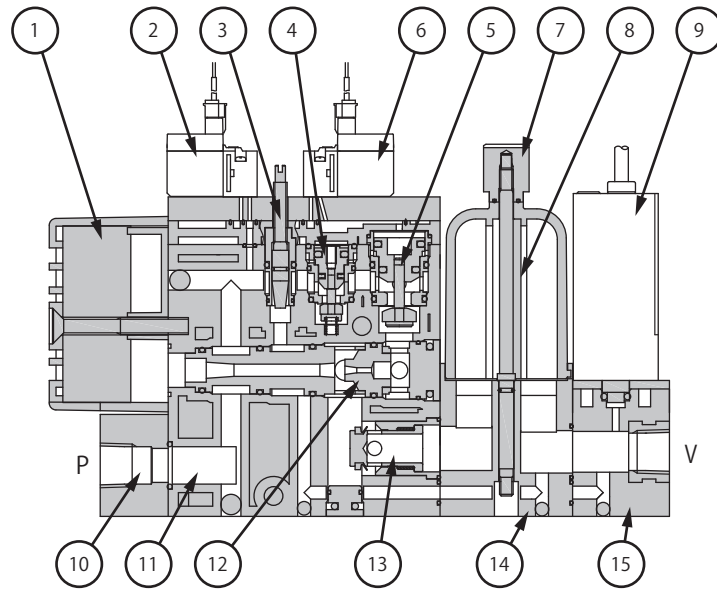
CVK2 - C201 - **W**

Blank	Normally opened, normally closed
W	Self-holding

MC72 High Vacuum Flow CONVUM

CONVUM High Vacuum Flow CONVUM

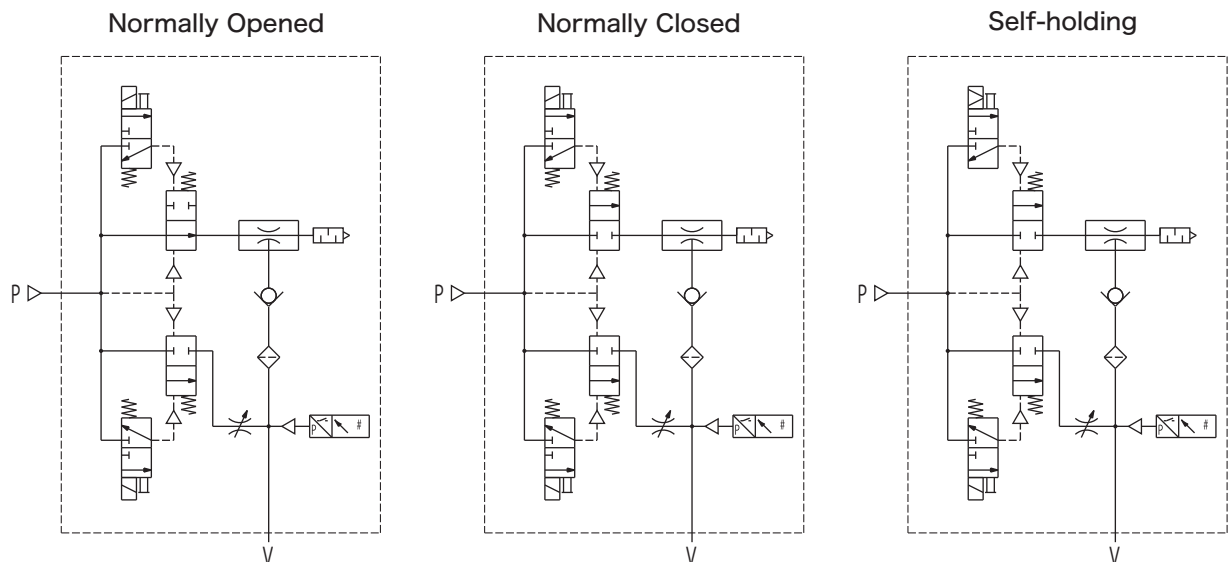
Construction



Component Parts

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

Symbol



CONVUM Specifications

Description \ Model number	Unit	MC72 □ 15			MC72 □ 20			MC72 □ 25
		HS	LS	HR	HS	LS	HR	HS
Nozzle size	mm	1.5			2.0			2.5
Fluid		Non-lubricated compressed air						
Ambient temperature	°C	0~60 (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	130						
Filter filtration area	mm ²	560						
Rated pressure	MPa	0.5	0.35	0.5	0.35	0.5		
Maximum vacuum pressure	kPa	-87	-53	-87	-53	-87		
Suction flow	L/min (ANR)	55	90	46	95	130 (110) Note1	80	140 (120) Note1
Blow-off flow	L/min (ANR)	100						
Air consumption	L/min (ANR)	100			180			265

Note1) Figure in () is when check valve option is selected.

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 (current value)	W (mA)	1 (42)	1.3 (54) 1.5 (63)
Minimum energization time		ms	-	30
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	MVS-030AB-MC7	MPS-V23C-NGA-MC7	MVS-201-MC72-A/B/W
Fluid			Air (vacuum), non-corrosive gas, non-flammable gas		
Diaphragm			Silicon diaphragm		
Rated pressure range		kPa	-101~0	-101~0	-101~500
Setting pressure range		kPa	-101.2~-2.7	-101.3~10	-101~500
Withstand pressure		MPa	0.5	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)10% or less	DC12~24±10%, ripple(Vp-p)10% or less	DC24±10%, ripple(Vp-p) 5% or less ^{Note1}
Current consumption		mA	20	55 or less	45 (not include the driven current for valve)
Switch output	Type		NPN open collector 1 output	NPN open collector 2 outputs	NPN open collector 1 output
	Maximum load current	mA	80	80	125
Analog output			-	DC1~5V(±0.1) linearity1% F.S. output impedance1kΩ	-
Digital input (suction/blow off command)			-	-	Non-contact 1 input (more than 1msec)
Repeatability		%	±3F.S.	±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, range 0~50°C)		
Response time		ms	2 or less		2.5 or less
Hysteresis			0.1~0.5kPa		Variable
Display	Digital		-	3 1/2 digital, 7-segment, red color LED	3-digital, 7-segment, red color LED
	Operation		Red color LED (ON lighting)	OUT1: green color LED (ON lighting), OUT2: red color LED (ON lighting)	Output ON/OFF: red color LED Vacuum generation valve ON/OFF: green color LED
Protection	Reverse-current protection			With	
	Overvoltage protection			With	
	Output short circuit protection			With	
	IP class			IP40	
Vibration resistance			10~150Hz, total amplitude 1.5mm, 50m/s ² 2 hours each direction of XYZ	10~55Hz, total amplitude 1.5mm, 50m/s ² 2 hours each direction of XYZ	10~150Hz, 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		
Electrical connection			Grommet		
Cable			φ4 3 lead wires X 0.15mm ² 2m	φ4 0.15mm ² 5 lead wires 2m	φ4 0.3mm ² 4 lead wires 2m

Note 1) It must be consistent with the solenoid valve drive voltage.

Weight (g)

		Specifications								
Single Unit	Vacuum generation valve type	Sensor	With filter			Without filter				
			Blow-off Valve/check valve							
				C	D	E	F	G	Z	
Single	Normally opened	N/A (ZZ)	383	371	362	312	300	291		
		N/A (ZS)	375	363	354	304	292	283		
		With MVS-AB	388	376	367	317	305	296		
		With MPS-V23	397	385	376	326	314	305		
		With MVS-201	397	385	376	326	314	305		
	Self-holding	N/A (ZZ)	386	374	365	315	303	294		
		N/A (ZS)	378	366	357	307	295	286		
		With MVS-AB	391	379	370	320	308	299		
		With MPS-V23	400	388	379	329	317	308		
		With MVS-201	400	388	379	329	317	308		
Single unit for manifold	Normally opened	N/A (ZZ)	518	505	496	446	434	425		
		N/A (ZS)	510	497	488	438	426	417		
		With MVS-AB	523	510	501	451	439	430		
		With MPS-V23	532	519	510	460	448	439		
		With MVS-201	532	519	510	460	448	439		
	Self-holding	N/A (ZZ)	521	508	499	449	437	428		
		N/A (ZS)	513	500	491	441	429	420		
		With MVS-AB	526	513	504	454	442	433		
		With MPS-V23	535	522	513	463	451	442		
		With MVS-201	535	522	513	463	451	442		

No. of station	1~5 stations
Weight	388

Calculation of Weight for Manifold Type

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

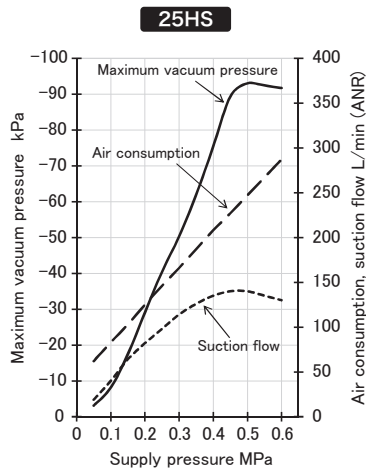
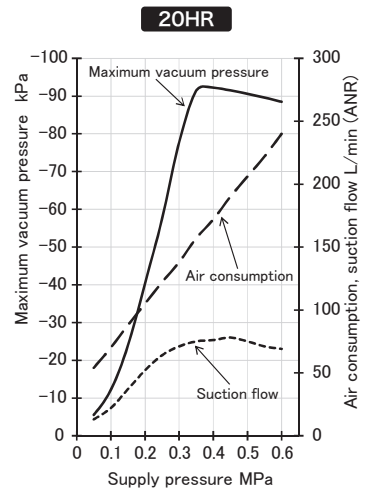
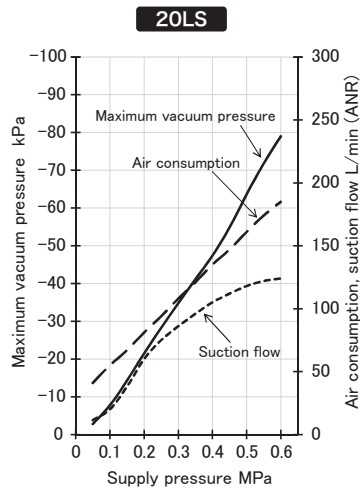
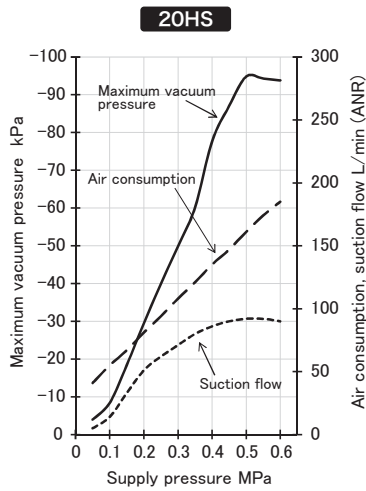
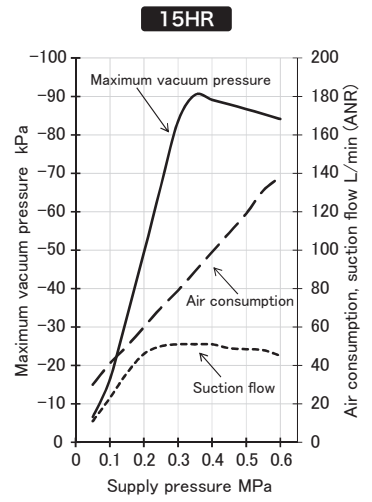
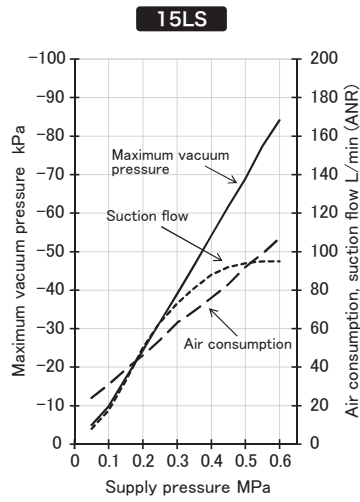
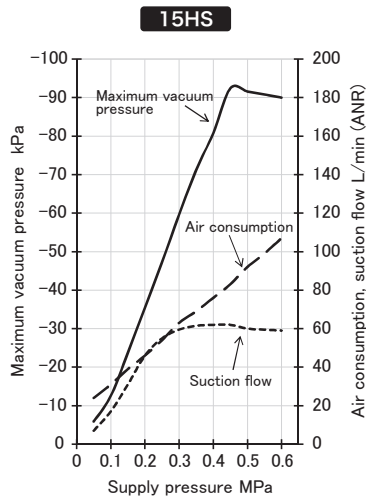
Example 1) 5 stations manifold with self-holding valve,

MPS-23sensor, filter, blow-off valve and check valve
535×5+388= 3,063g

Example 2) 4 stations manifold with normally closed valve, without sensor (ZZ), with filter and blow-off valve, without check valve

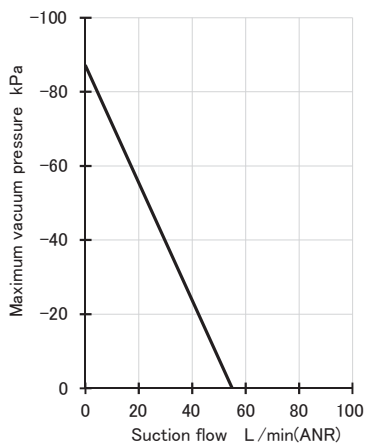
505×4+388= 2,408g

Performance Charts

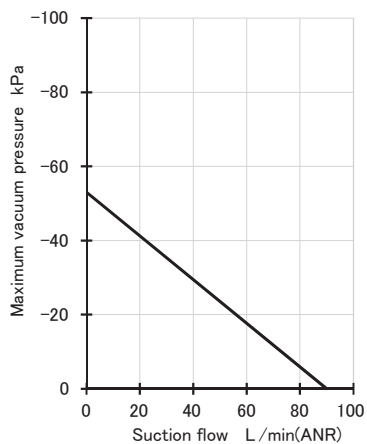


Suction Flow / Vacuum Pressure Characteristics

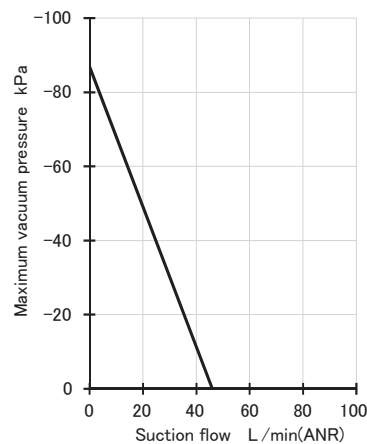
15HS



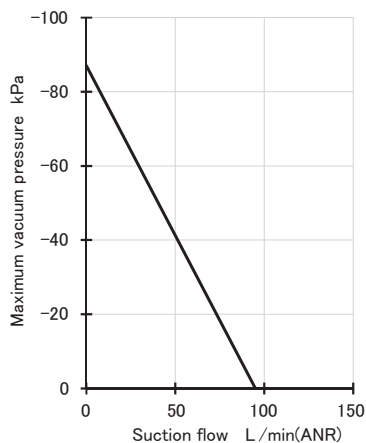
15LS



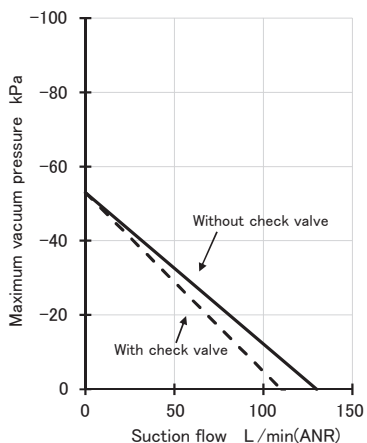
15HR



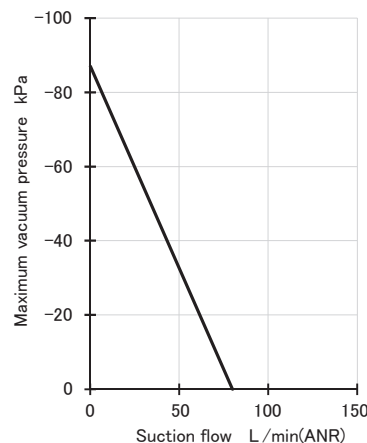
20HS



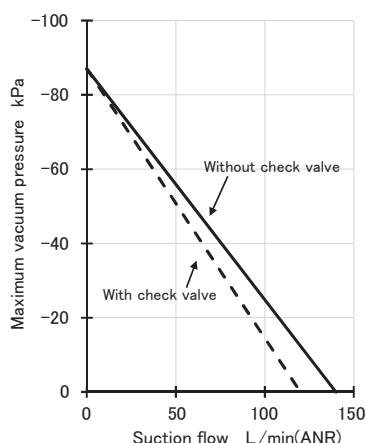
20LS



20HR



25HS



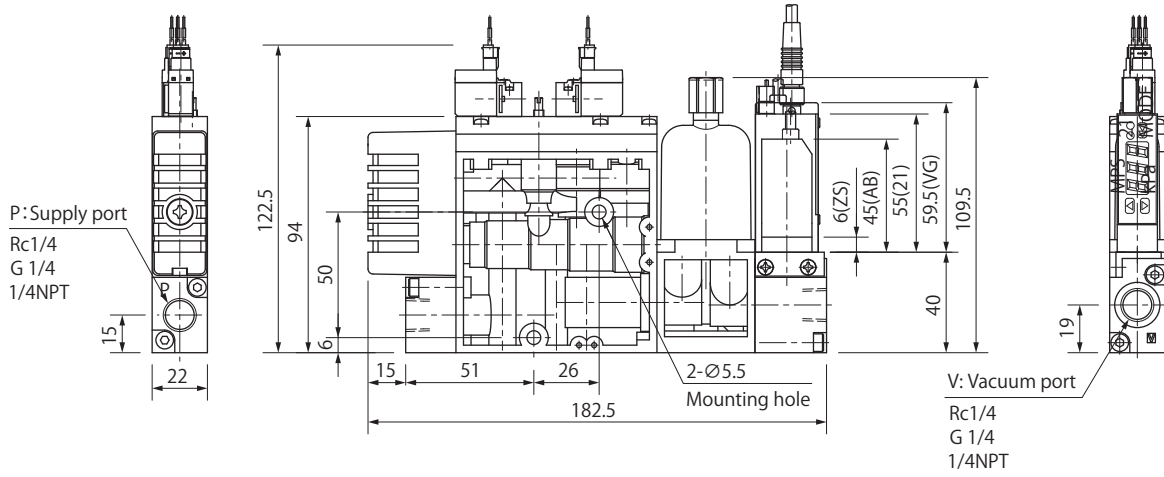
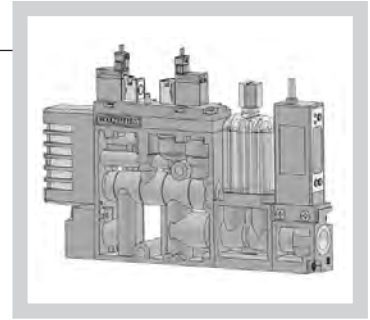
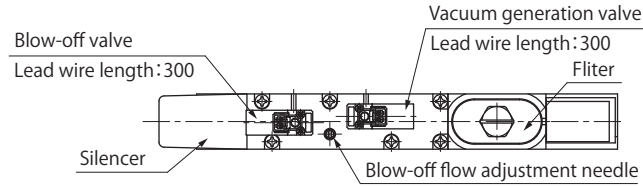
MC72 High Vacuum Flow CONVUM

CONVUM High Vacuum Flow CONVUM

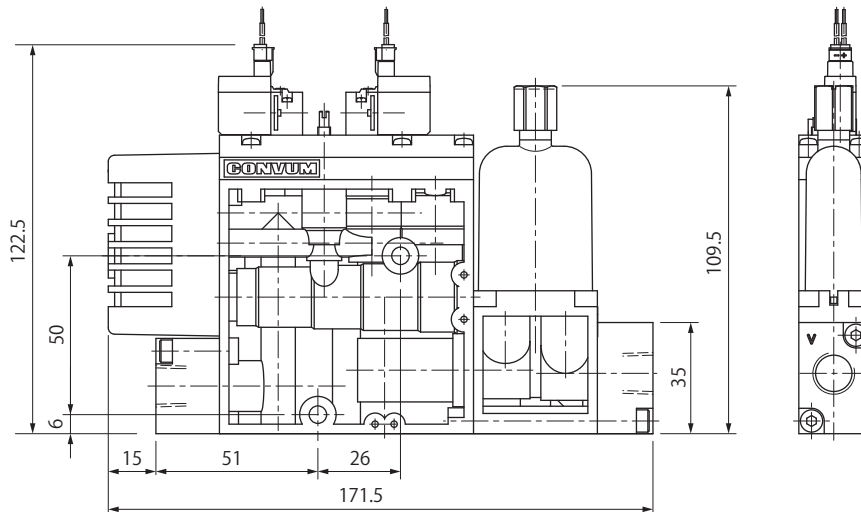
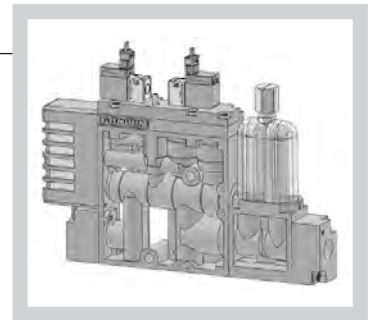
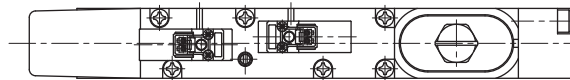
Dimensions

(mm)

Single Unit (with sensor, filter unit)



Single Unit (without sensor)



01
CONVUM

SC1

SC2

SC3

MC22

MC72

CCV

MCV

CV

CVA2

EC1

MCA

HDV

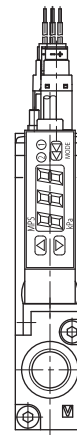
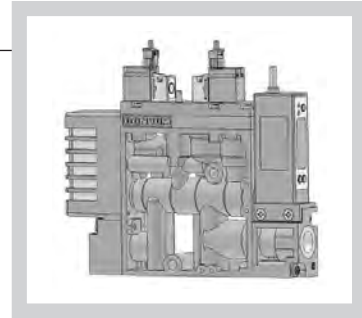
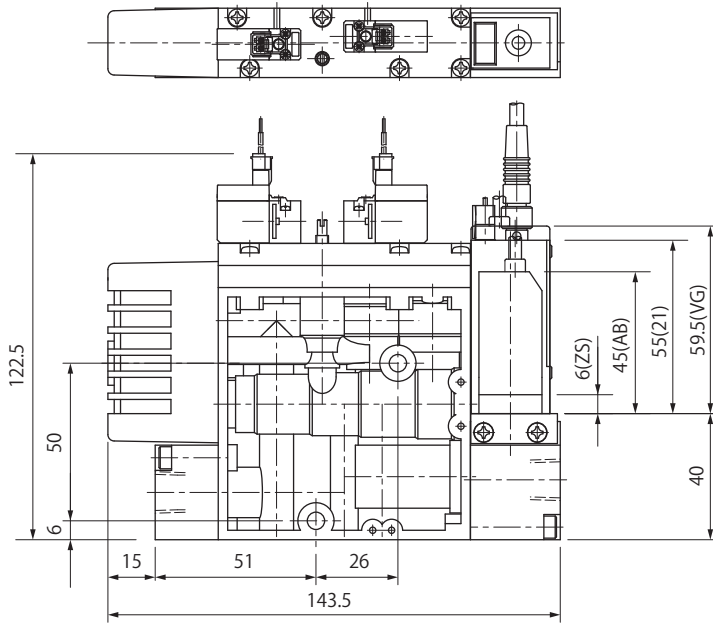
HFV

CVZ

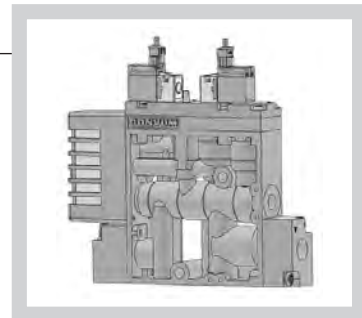
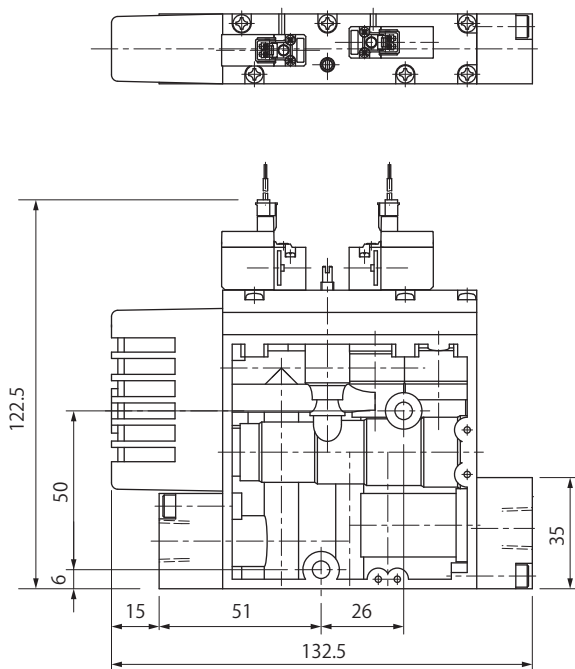
Dimensions

(mm)

Single Unit
(without filter unit)



Single Unit
(without sensor, filter unit)



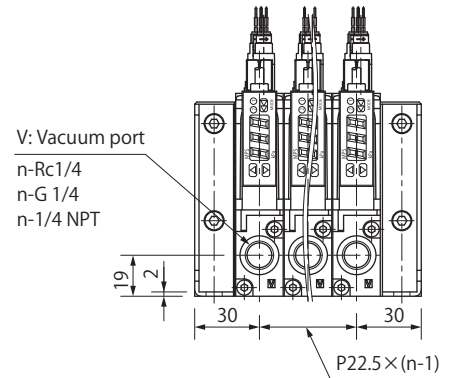
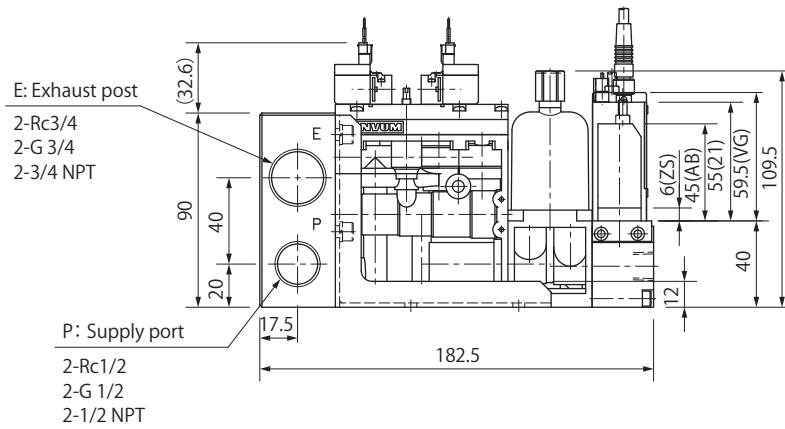
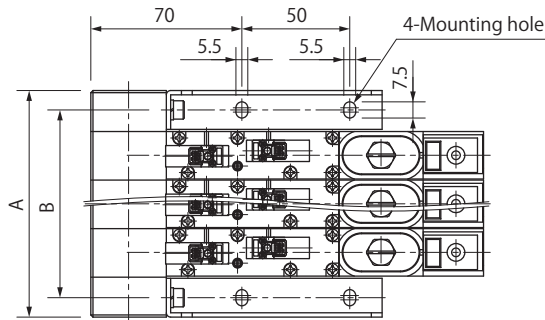
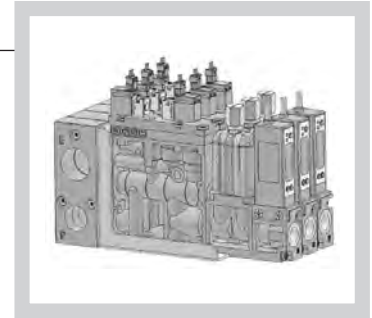
MC72 High Vacuum Flow CONVUM

Dimensions

(mm)

Manifold Unit

n (No. of units)	1	2	3	4	5
A	60	82.5	105	127.5	150
B	42	64.5	87	109.5	132



E: Exhaust post
2-Rc3/4
2-G 3/4
2-3/4 NPT

P: Supply port
2-Rc1/2
2-G 1/2
2-1/2 NPT

V: Vacuum port
n-Rc1/4
n-G 1/4
n-1/4 NPT

P22.5 × (n-1)

01
CONVUM

SC1

SC2

SC3

MC22

MC72

CCV

MCV

CV

CVA2

EC1

MCA

HDV

HFV

CVZ