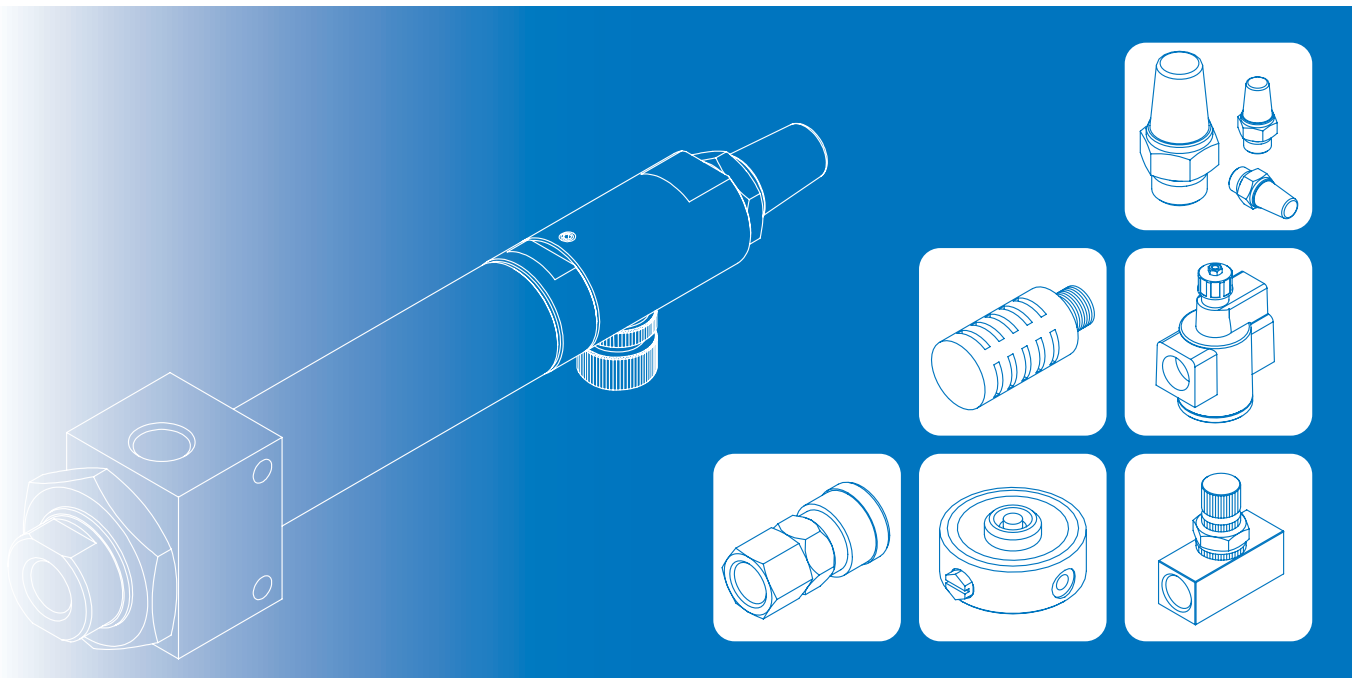


AUXILIARY EQUIPMENT



	EXHAUST CLEANER	
MEF300	.....	7-2
	SILENCER	
MSR*	PLASTIC SILENCER	7-2
MSLE	PLASTIC SILENCER	7-3
MSL	BRASS SILENCER	7-4
	CHECK VALVE	
MJBV	.....	7-4
	SILENCER THROTTLE VALVE	
MSLC2	.....	7-4
	FLOW CONTROL VALVE	
MSC	100	7-5
	201	7-6
	300	7-7
	500 / 600	7-8
	QUICK EXHAUST VALVE	
MVQE	.....	7-9
	SHUTTLE VALVE	
MVAS	.....	7-11
	SENSOR SWITCH	
RDC	.....	7-12
	CABLE WITH CONNECTOR	
M8	M83R-F	7-14
M12	M125R-WB	7-15
	M124D-SMW	7-16
	M124R-FA	7-17
	M124R-MD / RJD	7-18

	CONNECTOR	
M8	M83C-M	7-19
M12	M124A-SF	7-20
	M124C-MA / MD.....	7-21
	PU TUBE	
UM	.....	7-22
UML	.....	7-23
	STAINLESS FITTING	
MNS*	.....	7-24
	COUPLER	
MS*	SOCKET	7-25
MP*	PLUG	7-26
	JET COOLER	
MJC	.....	7-27
	VACUUM GENERATOR	
MVVA	.....	7-30
	MULTISTAGE VACUUM PUMP	
MZL	112	7-35
	212	7-38
	NO CONTACT TRANSFER	
MHPSC	.....	7-40



Order example

MSR01W — S

MODEL

01: R1/8
02: R1/4
03: R3/8

Blank: Black
W: White

S: S type
B: B type



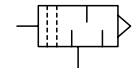
Order example

MEF300 — 03

MODEL

03: Rc3/8

Symbol

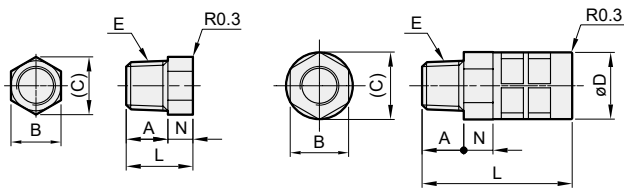


Specification

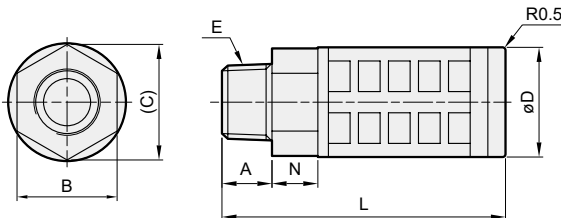
Model	MSR*
Medium	Air
Operating pressure range	0~0.9 MPa
Ambient temperature	0~+60°C

MSR01-S

MSR02-S



MSR*-B



MSR*-*

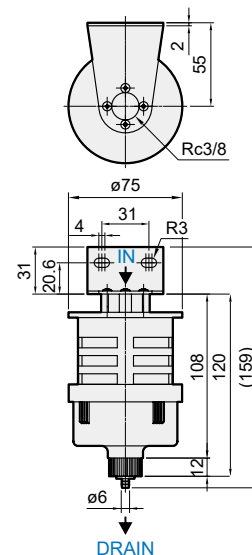
Model	Code Port size	A	B	C	D	E	L	N
MSR01-S	R1/8	10	10	11.5	—	R1/8	16	6
MSR01-B	R1/8	7	14	16.2	16	R1/8	33	7
MSR02-S	R1/4	10	14	16.2	16	R1/4	36	7
MSR02-B	R1/4	10	17	19.6	20.3	R1/4	63	8.5
MSR03-B	R3/8	12	24	26.2	26.3	R3/8	67.5	11

Specification

Model	MEF300
Port size	Rc3/8
Medium	Air
Operating pressure range	0~0.9 MPa
Filter element	6 μm
Ambient temperature	0~+60°C

Features

- The MEF300 can remove oil mist and dust in exhaust air for keeping environment clean.





Order example

MSLE — 01 — 70

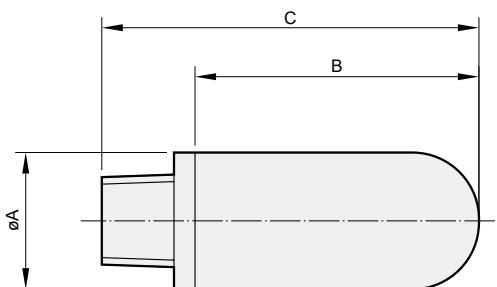
MODEL

PORT SIZE

PORE SIZE

- 01: R1/8
- 02: R1/4
- 03: R3/8
- 04: R1/2
- 06: R3/4
- 06D: R3/4 (Double layer)
- 08: R1

70: 70 μ



Features

- Porous polyethylene moulded body allows high flow with low noise.
- Wide range of connecting threads available to screw into exhaust port of control valve.
- High noise reduction.

■ Significant noise reduction & high air flow

With double layer design, significant noise reduction and high air flow can be achieved at the same time.

■ Easy installation

With different adapter, silencers screw directly to the exhaust port.

■ High working pressures

Working pressures up to 1 MPa.

■ Chemical resistance

High chemical resistance & Rust free.

■ Maintenance free

Oil and water are not able to affect polyethylene silencers.

Specification

Model	MSLE
Medium	Air
Operating pressure	1 MPa
Ambient temperature	0~+60°C

Model	Code Port size	A	B	C
MSLE-01	R1/8	15.6	27.3	37.3
MSLE-02	R1/4	19	30.5	43.3
MSLE-03	R3/8	25	53	69
MSLE-04	R1/2	25	62.5	78.5
MSLE-06	R3/4	38	108.4	132.4
MSLE-06D	R3/4	50	107	127
MSLE-08	R1	50	107	139

- MSLE-04-70 means a R1/2 silencer with 70 μ porous body.
- MSLE-06D-70 means a R3/4 double layer silencer with 70 μ porous body.
- Port size out of specification is also available.

MSL / MSLC2 / MJBV series



BRASS SILENCER / SILENCER THROTTLE VALVE / CHECK VALVE

mindman



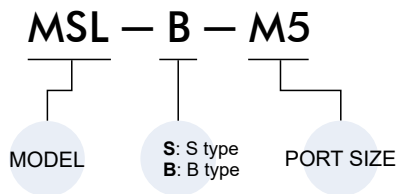
MSL-B

Model	A	CH	D1	D2	F	H	L	N
MSL-B-M5	M5	8	5	4	5	19	12	3
MSL-B-01	R1/8	12	8	7	6	24	14	4
MSL-B-02	R1/4	16	12	10	8	30	18	4
MSL-B-03	R3/8	18	14	11	9	35	21	5
MSL-B-04	R1/2	24	19	15	10	44	28	6
MSL-B-06	R3/4	30	25	20	10	50	32	8
MSL-B-08	R1	36	30	25	12	62	43	8

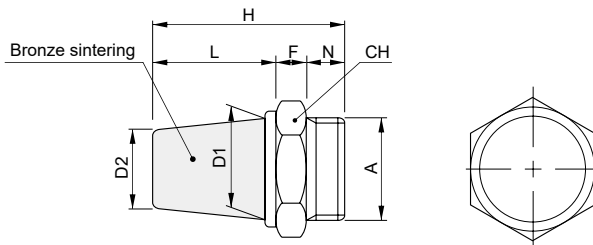
MSL-S

Model	A	CH	F	L	N
MSL-S-M5	M5	8	5	9.5	3
MSL-S-01	R1/8	12	6	12	4
MSL-S-02	R1/4	17	8	15	4
MSL-S-03	R3/8	19	9	17	5
MSL-S-04	R1/2	24	10	18.5	6
MSL-S-06	R3/4	30	10	21	8
MSL-S-08	R1	36	12	23	8

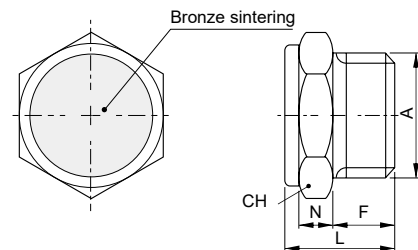
Order example



MSL-B

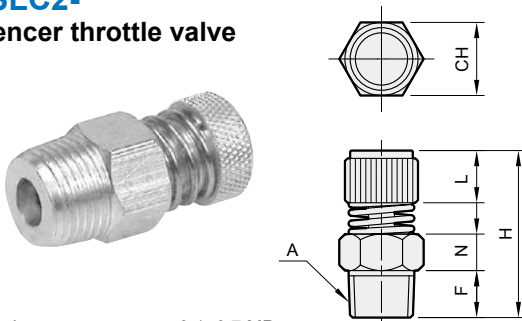


MSL-S



MSLC2-*

Silencer throttle valve

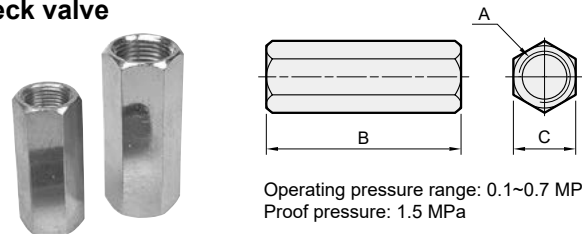


Operating pressure range: 0.1~0.7 MPa
Proof pressure: 1.5 MPa

Model	A	CH	F	H		L	N
				Min.	Max.		
MSLC2-01	R1/8	12	6	28	30	9	7
MSLC2-02	R1/4	14	9	31	35	10	7
MSLC2-03	R3/8	19	10	35.5	39	10	10
MSLC2-04	R1/2	22	10	36.5	40	10	10

MJBV-*

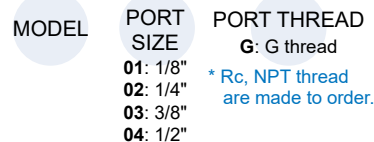
Check valve



Operating pressure range: 0.1~0.7 MPa
Proof pressure: 1.5 MPa

Order example

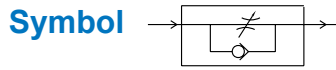
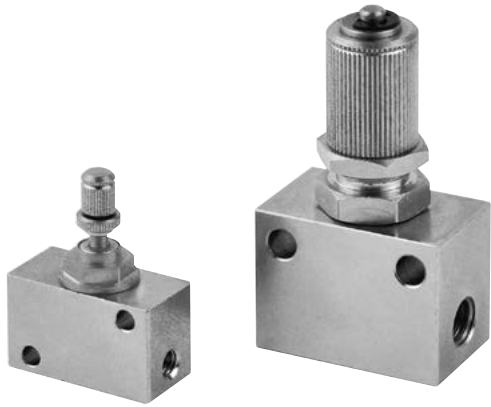
MJBV — 01 — □



Model	A	B	C
MJBV-01	G1/8"	41	14
MJBV-02	G1/4"	50	16
MJBV-03	G3/8"	52	21
MJBV-04	G1/2"	62.5	25

MSC100 series

FLOW CONTROL VALVE



Specification

Model	MSC100	
Bore No.	M3	M5
Port size	M3×0.5	M5×0.8
Medium	Air	
Operating pressure range	0.1~0.7 MPa	
Proof pressure	1 MPa	
Ambient temperature	-5~+60°C (No freezing)	
Flow (l/min) (*)	Free flow	20
	Controlled flow	20
Number of needle rotations	6	8
Weight	3 g	34 g

* Supply pressure: 0.5 MPa, Temperature: 20°C

* Do not use MSC series flow control valve as a shutoff valve where zero leakage is required, slight leakage is permitted for MSC series.

Order example

MSC100 — M5

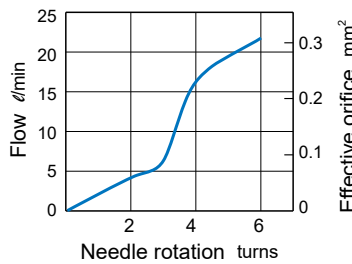
MODEL

PORT SIZE

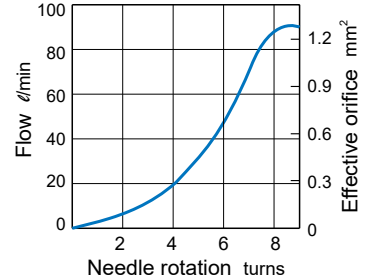
M3: M3×0.5
M5: M5×0.8

Flow features

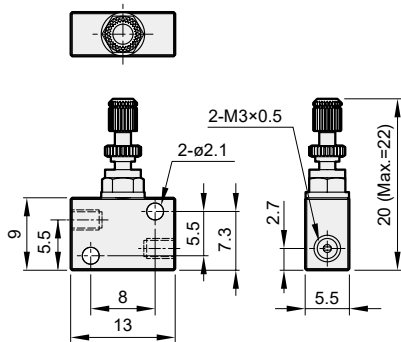
MSC100-M3



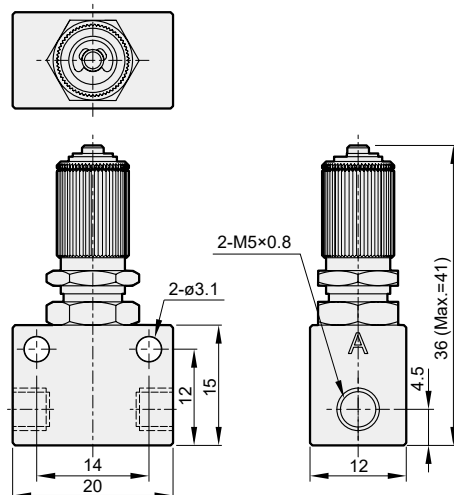
MSC100-M5

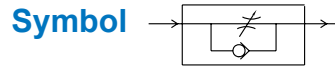


MSC100-M3



MSC100-M5





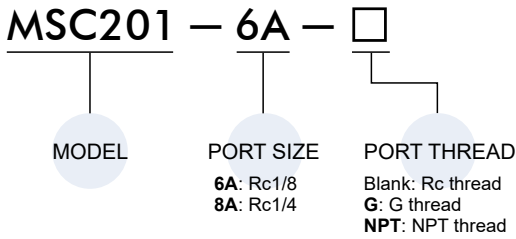
Specification

Model	MSC201	
Bore No.	6A	8A
Port size	Rc1/8	Rc1/4
Medium	Air	
Operating pressure range	0~1 MPa	
Proof pressure	1.5 MPa	
Ambient temperature	-5~+60°C (No freezing)	
Flow (ℓ/min) (*)	Free flow	110
	Controlled flow	180
Number of needle rotations	8	
Weight	66 g	

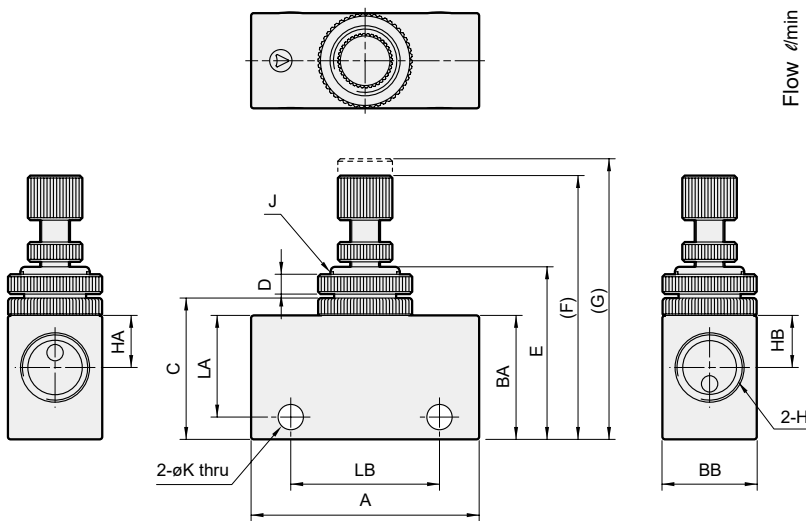
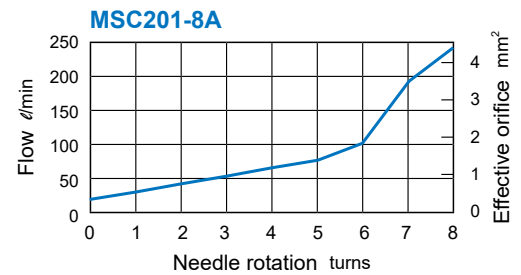
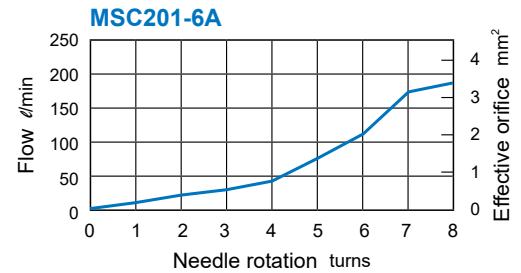
* Supply pressure: 0.5 MPa, Temperature: 20°C

* Do not use MSC series flow control valve as a shutoff valve where zero leakage is required, slight leakage is permitted for MSC series.

Order example



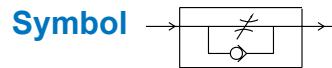
Flow features



Code Model	A	BB	BA	C	D	E	F	G	H	HA	HB	J	K	LA	LB	
MSC201	6A	46	19.2	25	28.5	4	34.8	50.5	54.8	Rc1/8	10	11.5	M14×1.0	4.5	20.5	30
	8A	46	19.2	25	28.5	4	34.8	50.5	54.8	Rc1/4	10.5	10.5	M14×1.0	4.5	20.5	30

MSC300 series

FLOW CONTROL VALVE



Specification

Model	MSC300	
Bore No.	10A	15A
Port size	Rc3/8	Rc1/2
Medium	Air	
Operating pressure range	0~1 MPa	
Proof pressure	1.5 MPa	
Ambient temperature	-5~+60°C (No freezing)	
Flow (l/min) (*)	Free flow	300
	Controlled flow	500
Number of needle rotations	8	
Weight	130 g	

* Supply pressure: 0.5 MPa, Temperature: 20°C

* Do not use MSC series flow control valve as a shutoff valve where zero leakage is required, slight leakage is permitted for MSC series.

Order example

MSC300 – 10A – G

MODEL

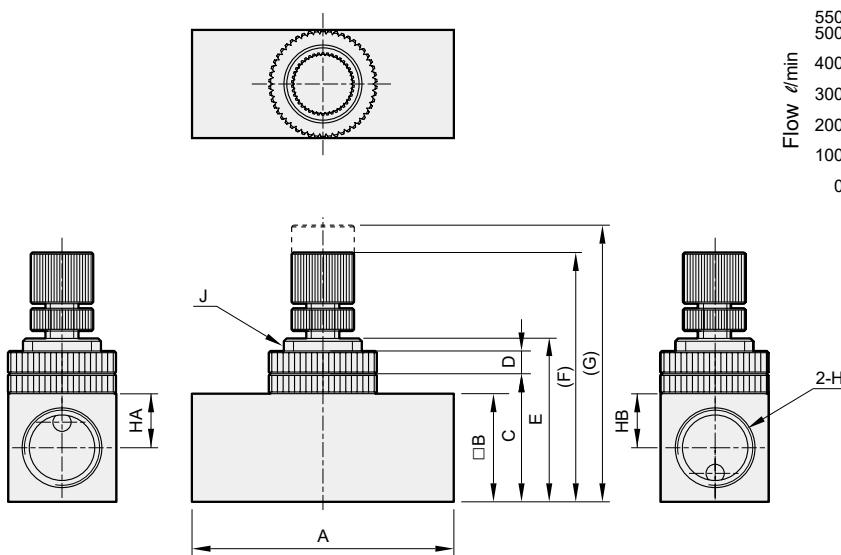
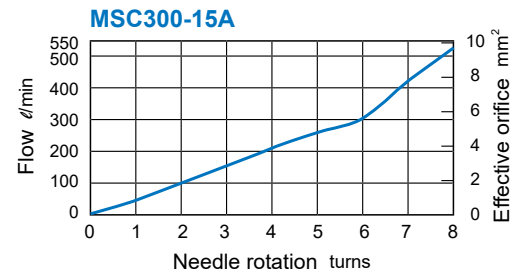
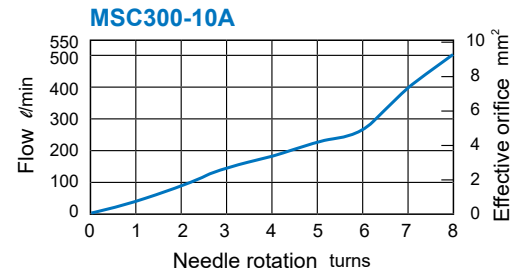
PORT SIZE

10A: Rc3/8
15A: Rc1/2

PORT THREAD

Blank: Rc thread
G: G thread
NPT: NPT thread

Flow features



Code Model	A	B	C	D	E	F	G	H	HA	HB	J	
MSC300	10A	56	25.4	30	4	37	53.7	62.5	Rc3/8	13.8	13.8	M18×1.0
	15A	56	25.4	30	4	37	53.7	62.5	Rc1/2	12.7	12.7	M18×1.0

MSC500 / 600 series

FLOW CONTROL VALVE

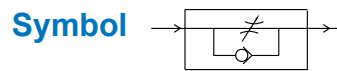


Mindman



Specification

Model	MSC500		MSC600		
Bore No.	15A	20A	20A	25A	
Port size	Rc1/2	Rc3/4	Rc3/4	Rc1	
Medium	Air				
Operating pressure range	0~1 MPa				
Proof pressure	1.5 MPa				
Ambient temperature	-5~+60°C (No freezing)				
Effective orifice (mm ²) (*)	Free flow	106	123	151	258
	Controlled flow	116	154	164	230
Weight	406 g	400 g	767 g	721 g	



* Supply pressure: 0.5 MPa, Temperature: 20°C

Order example

MSC500 – 20A – G

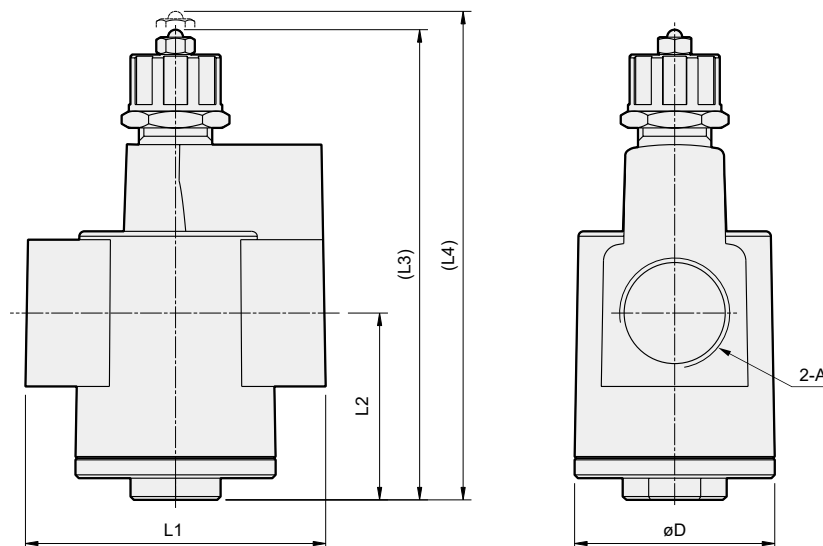
MODEL

PORT SIZE

PORT THREAD

15A: Rc1/2
20A: Rc3/4
25A: Rc1

Blank: Rc thread
G: G thread
NPT: NPT thread



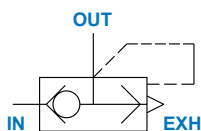
Code Model	A	D	L1	L2	L3	L4	
MSC500	15A	Rc1/2	48	74	43	105	115
	20A	Rc3/4	48	74	43	105	115
MSC600	20A	Rc3/4	60	90	56	148	158
	25A	Rc1	60	90	56	148	158

MVQE series

QUICK EXHAUST VALVE



Symbol



Order example

MVQE300 – 10A – G

MODEL

STYLE

0: Lip (6A-15A)
1: Diaphragm (10A-25A)

PORT THREAD

Blank: Rc thread
G: G thread
NPT: NPT thread

BODY SIZE

1: 1/8
3: 3/8
4: 1/2
5: 3/4

PORT SIZE

Port size	Applicable series
6A Rc1/8	MVQE100
8A Rc1/4	MVQE300
10A Rc3/8	MVQE300, MVQE301
15A Rc1/2	MVQE301, MVQE400
20A Rc3/4	MVQE501
25A Rc1	

Features

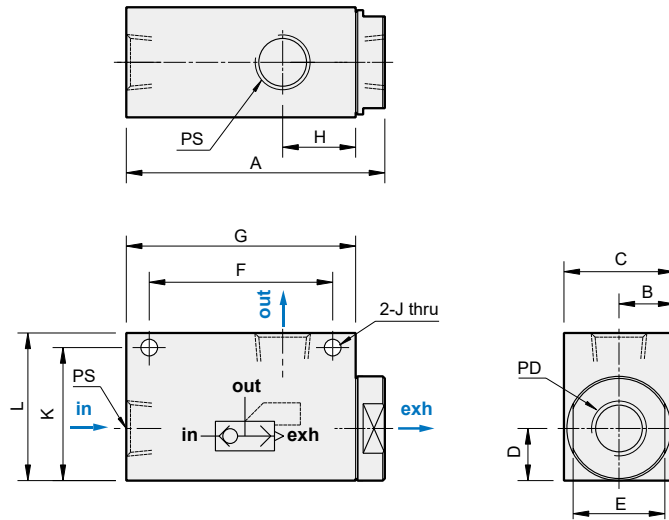
- This unit makes it possible to achieve increased piston speeds on the exhaust stroke with single acting and double acting cylinders.

Specification

Model	MVQE
Medium	Air
Operating pressure range	0.1~1 MPa
Proof pressure	1.5 MPa
Ambient temperature	-5~+60°C (No freezing)

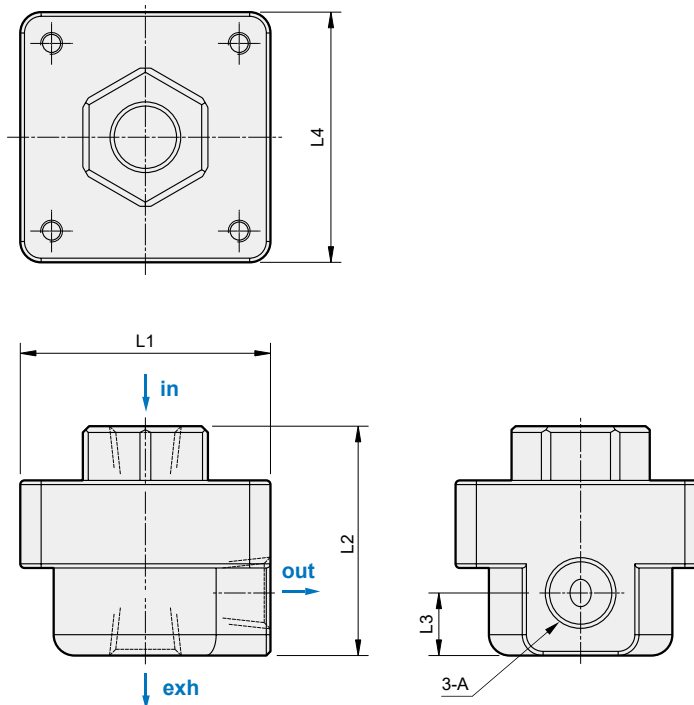
Model	Port size	Effective orifice(mm ²)		Weight
		IN→OUT	OUT→EXH	
MVQE-100-6A	Rc1/8	9	19	40 g
MVQE-300-8A	Rc1/4	24	31	100 g
MVQE-300-10A	Rc3/8	25	33	80 g
MVQE-301-10A	Rc3/8	60	70	230 g
MVQE-301-15A	Rc1/2	110	110	212 g
MVQE-400-15A	Rc1/2	46	46	240 g
MVQE-501-20A	Rc3/4	135	180	765 g
MVQE-501-25A	Rc1	176	187	695 g

MVQE100/300/400



Code Model	A	B	C	D	E	F	G	H	J	K	L	PS	PD	
MVQE100 6A	40	8.25	16.5	9	14	26	35	12	ø3.4	22.6	26	Rc1/8	Rc1/8	
MVQE300	8A	62	13.2	26.4	13	22	45	55	17.5	ø4	29.5	35.4	Rc1/4	Rc3/8
	10A	62	13.2	26.4	13	22	45	55	17.5	ø4	29.5	35.4	Rc3/8	Rc1/8
MVQE400 15A	69	20	40	20	36	51	62	20	ø4	46	52	Rc1/2	Rc1/2	

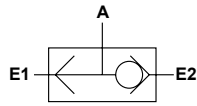
MVQE301/501



Code Model	A	L1	L2	L3	L4	
MVQE301	10A	Rc3/8	60	55	15	60
	15A	Rc1/2	60	55	15	60
MVQE501	20A	Rc3/4	90	82.5	23	90
	25A	Rc1	90	82.5	23	90



Symbol



Features

- This valve has two input inlets(E1,E2) and can be controlled in different position.
First activated position can get through to output signal(A).

Specification

Model	MVAS	
Bore No.	6A	8A
Port size	Rc1/8	Rc1/4
Medium	Air	
Operating pressure range	0.1~1 MPa	
Proof pressure	1.5 MPa	
Effective orifice	11.5 mm ²	30.5 mm ²
Ambient temperature	-15~+60°C (No freezing)	
Weight	43 g	119 g

Order example

MVAS — 6A — G

MODEL

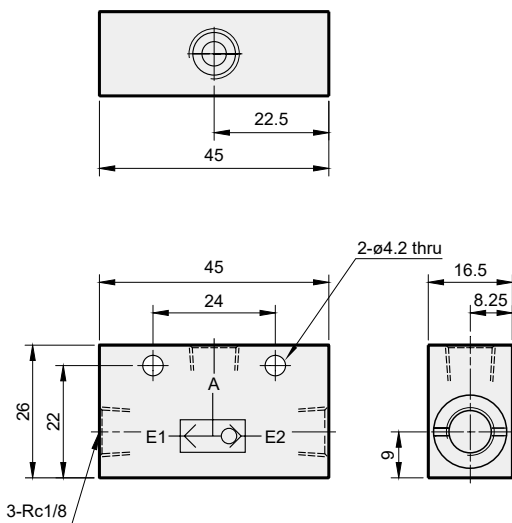
PORT SIZE

PORT THREAD

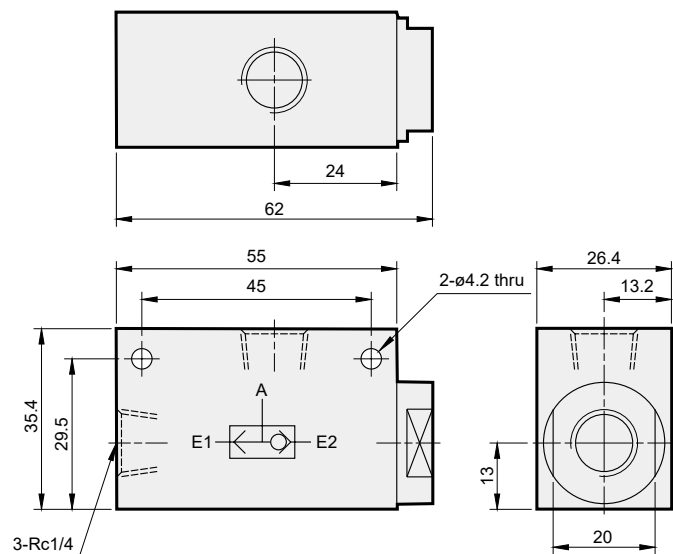
6A: Rc1/8
8A: Rc1/4

Blank: Rc thread
G: G thread
NPT: NPT thread

MVAS-6A



MVAS-8A





Order example

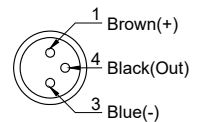
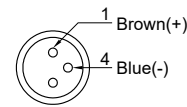
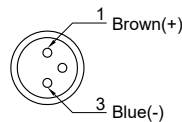
RDC V — □

Model	Auto switch type	Wire length
RDC: Non-contact RQC: NPN & PNP configurations*	Blank: Straight cable V: Angle cable	2M: L=2000mm QD: M8, 3 Pin connector EQD: M8, 3 Pin connector (Only for RDC)

* Selects the mode based on NPN or PNP wiring configuration. Always turn off power before wiring; never work on live wires.

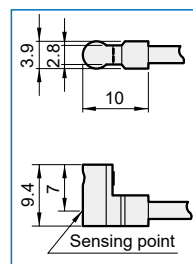
Wiring of the QD

- 2 wire QD wiring
- 2 wire EQD wiring
- 3 wire QD wiring

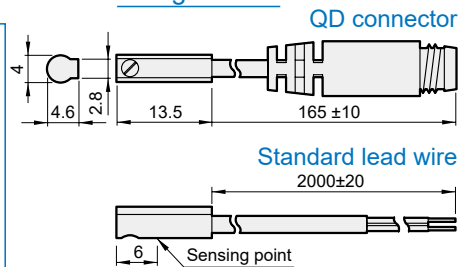


Dimension

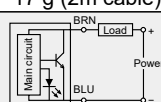
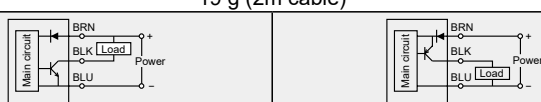
Angle cable



Straight cable



Specification

Model	RDC / RDCV	RQC / RQCV
Wiring method	2 wire	3 wire
Switching logic	Normally open	
Switch Type	Non-contact	NPN current sinking / PNP current sourcing
Operating voltage	5~30V DC	
Switching current	50mA max.	80mA max.
Contact rating(*1)	1.5W max.	2.4W max.
Current consumption (*5)	—	2mA @24V DC max.
Voltage drop (*5)	4.0V@50mA max.	1.2V @ 80mA max.
Leakage current (*5)	0.1mA max.	0.01mA max.
Magnet requirement (*5,6)	40~1000 Gauss	
Indicator	Red LED	
Cable	ø2.6, 27AWG, Black, PVC	
Operating Frequency	1000 Hz	
Temperature range	-10~+70°C (No freezing)	
Shock (*2)	50G	
Vibration (*3)	9G	
Enclosure classification	IEC 60529 IP67	
Protection circuit (*4,7)	3, 4, 5	2, 3, 4
Weight	17 g (2m cable)	19 g (2m cable)
Connect diagram		

*1. Warning: Never exceed rating (watt=voltage×amperage). Permanent damage to sensor will occur.

*2. Sin wave / X.Y.Z. 3 directions / 3 times each direction / 11ms each time.

*3. Double amplitude 1.5mm / 10Hz~55Hz~10Hz(Sweep 1min) / X.Y.Z. 3 directions / 1 hour each time.

*4. 1=None / 2=Short-circuit / 3=Power source reverse polarity / 4=Surge suppression / 5=Sensor thermal protection.

*5. It bases on conditions of voltage 24V DC, ambient temp. 25°C and cable 2M length. Voltage drop increases in pace with cable length.

*6. Measuring standard target : ø15.5 × ø8 × 5t (Anisotropy rubber magnet)

*7. The LED will flash when short-circuit or sensor thermal protection is ON.

*8. Please turn off the power before installing or changing the output contact, and ensure the load is installed according to the wiring diagram to prevent abnormal operation or product malfunction.

*9. Caution for safety 

SENSOR SWITCH

Assembling style

Cylinder model
MAM*, MCJQ3, MCJQ3-3, MCKJQ3, MCJU, MCFA2, MCFB, MCMJP, MCGS2, MCGM2, MCDJ, MGT*-32~63, MCSS2, MCSQ2, MCSF-5, MCSH2, MCRPM-20~40, MCRPMD-10, MCRPMS, MSBE, MCRJ-S, MCRC, MCKC2, MCHB2, MCHCJ, MCHC2, MCHD, MCHH, MCHX, MCHG2, MCHA2, MCHY2, METI, MEQI, MEGT, MEJQ, MESF2, MESBE
Direct mounting

Model	Tube I.D.	Holder	Tie rod
MCQA	40	DT7-1	ø7.1
	50		
	63		
	80	DT7-3	ø10.8
	100		
125			
MCQN	150	DT7-1	ø15
	40		
	50		
	63		
	80		
MCQV3 MCBQV3	100	DT7-2	ø8.9
	40		
	50		
	63	DT7-1	ø5.3
	80		
MCQV3L	100	DT7-1	ø7.1
	125		
MCQV	63	DT7-3	ø10.8
	80		
	200		
MCBQV	125	DT7-2	ø15
DT7-* 			

Model	Tube I.D.	Holder with band
MCMA	16	BKC-1 (Not applicable for Angle cable(V))
	20	
	25	
	32	
	40	
MCMB MCMBR*	20	
	25	
	32	
	40	
MCKMB	20	
	25	
	32	
MCMBL	40	
	32	
	40	
MCM I	8	Mounting steps
	10	
	12	
	16	
	20	
	25	
	32	
	40	
MCBMI MGTK/ B/ U	20	
	25	
MCMIS	10	
	12	
	16	
	20	
	25	
MCKMI	16	
	20	
	25	
MCMJ	6	
	10	
	16	
MCCG MCCN	20	
	25	
	32	
	40	
	50	
	63	
MCCH	25	
	32	
MCKA	40	

M83R-F series



CABLE WITH CONNECTOR / M8 (MALE) – M8 (FEMALE)

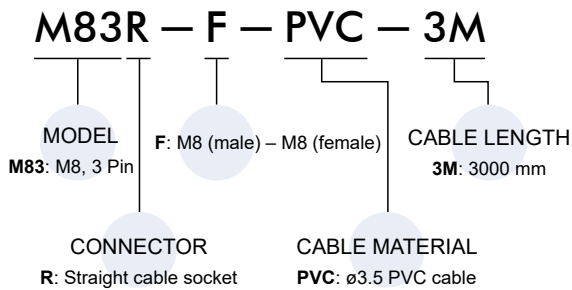
mindman



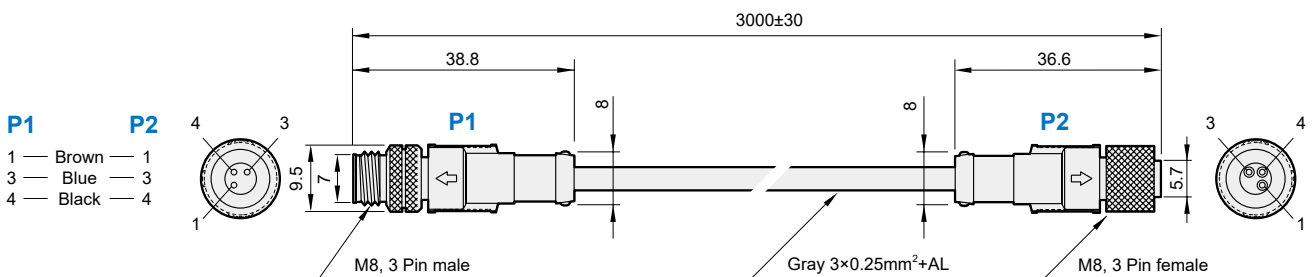
Specification

Model	M83R-F	
Male / Female pin out		
Number of contacts	3	3
Rated voltage	125V DC/AC	
Rated current	3A	
Contact material	Brass (Au plating)	
Contact bearer material	PVC	
Housing color	Gray	
Cable material	ø3.5, PVC	
Cable color	Gray	
Temperature	-20°C~+60°C (No freezing)	
Cable conductor	0.25mm ² / 24AWG	
Protection class of contact	IP 67	

Order example



Dimension



M125R-WB series

CABLE WITH CONNECTOR / M12 (FEMALE) – LEAD WIRE



mindman

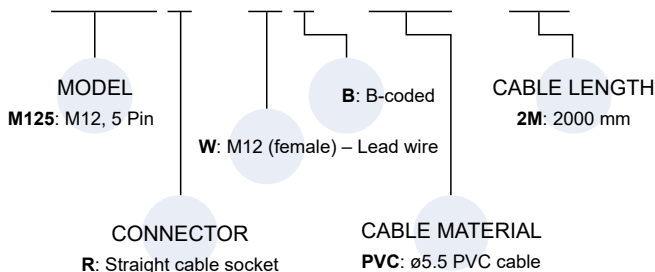


Specification

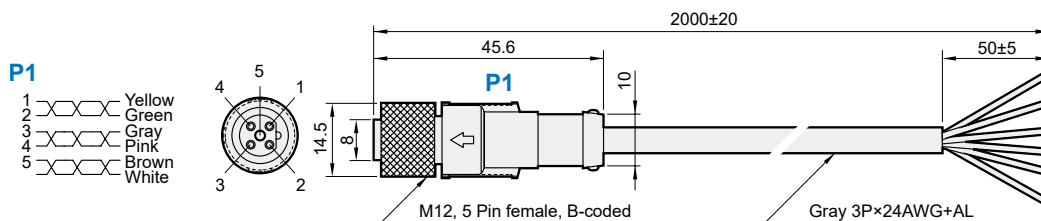
Model	M125R-WB
Female pin out	
Number of contacts	5
Rated voltage	125V DC/AC
Rated current	3A
Contact material	Brass (Au plating)
Contact bearer material	PVC
Housing color	Gray
Cable material	ø5.5, PVC
Cable color	Gray
Temperature	-20°C~+60°C (No freezing)
Cable conductor	0.25mm ² / 24AWG
Protection class of contact	IP 67

Order example

M125R – WB – PVC – 2M



Dimension

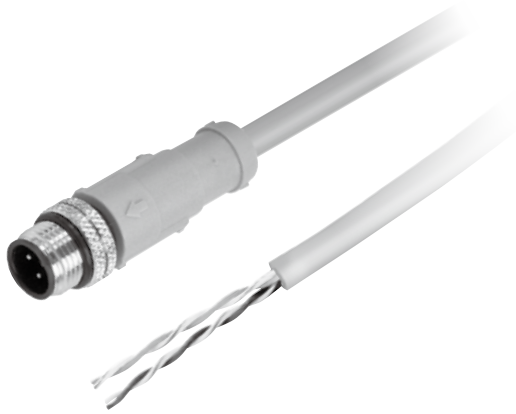


M124D-SMW series



CABLE WITH CONNECTOR / M12 (MALE) – LEAD WIRE

mindman

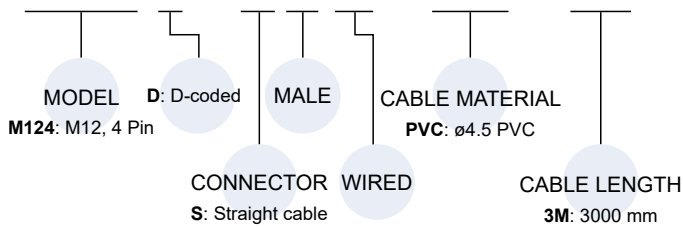


Specification

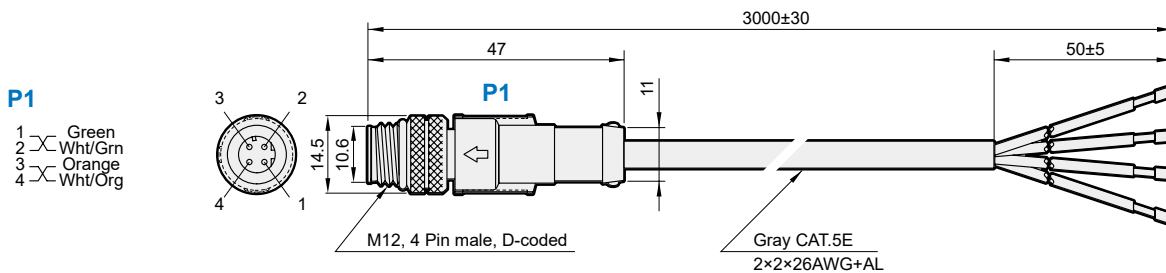
Model	M124D-SMW
Female pin out	
Number of contacts	4
Rated voltage	250V DC/AC
Rated current	1A
Contact material	Brass (Au plating)
Contact bearer material	PVC
Housing color	Gray
Cable material	ø4.5, PVC
Cable color	Gray
Temperature	-20°C~+60°C (No freezing)
Cable conductor	26AWG
Protection class of contact	IP 67

Order example

M124 D – S M W – PVC – 3M



Dimension



M124R-FA series



CABLE WITH CONNECTOR / M12 (MALE) – M12 (FEMALE)

mindman

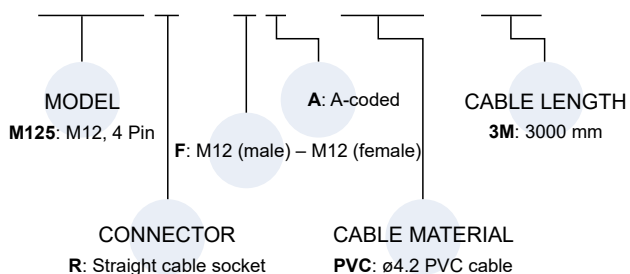


Specification

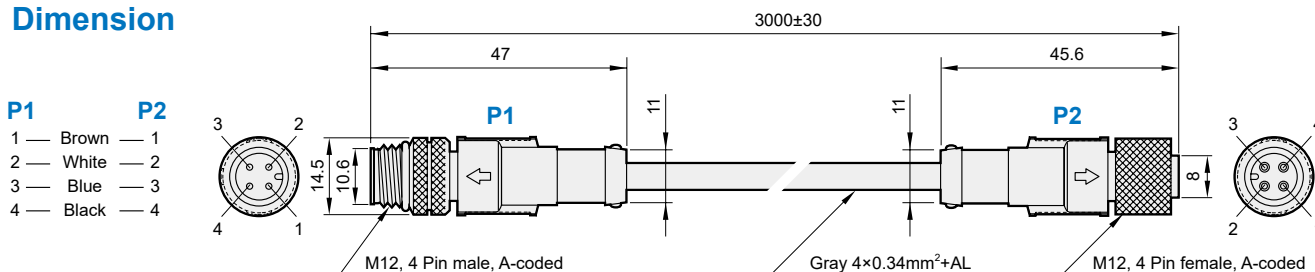
Model	M124R-FA	
Female pin out		
Number of contacts	4	4
Rated voltage	125V DC/AC	
Rated current	3A	
Contact material	Brass (Au plating)	
Contact bearer material	PVC	
Housing color	Gray	
Cable material	ø4.2, PVC	
Cable color	Gray	
Temperature	-20°C~+60°C (No freezing)	
Cable conductor	0.34mm ² / 22AWG	
Protection class of contact	IP 67	

Order example

M124R – FA – PVC – 3M



Dimension



M124R-*D series

COMMUNICATION CABLE (EtherNet/IP)

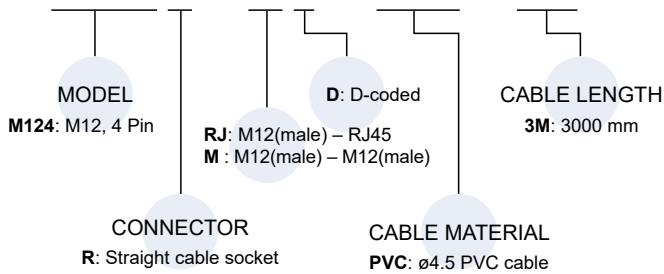


Specification

Model	M124R-RJD		M124R-MD	
Female pin out				
Number of contacts	4	8	4	4
Rated voltage	30V DC/AC			
Rated current	0.5A			
Contact material	Brass (Au plating)			
Contact bearer material	PVC			
Housing color	Gray			
Cable material	ø4.5, PVC			
Cable color	Gray			
Temperature	-20°C~+60°C (No freezing)			
Cable conductor	0.14mm ² / 26AWG			
Protection class of contact	IP67	IP20	IP67	

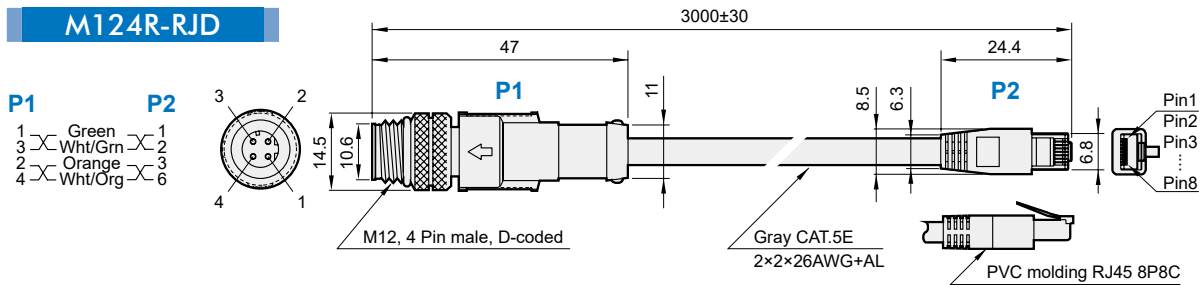
Order example

M124R — RJD — PVC — 3M

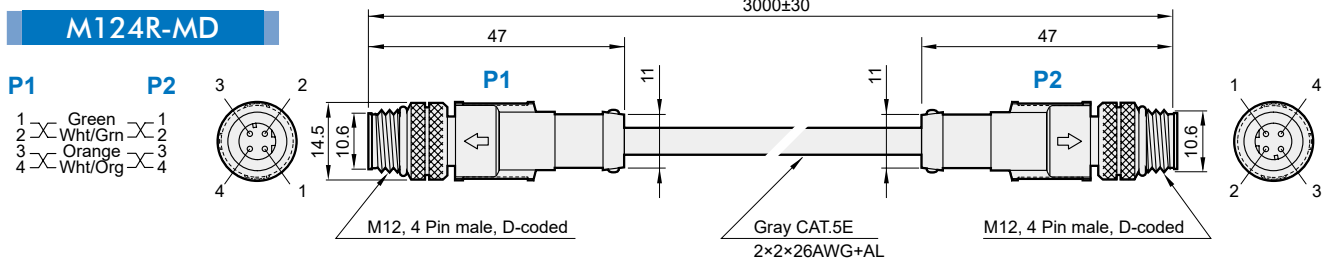


Dimension

M124R-RJD



M124R-MD



M83C-M series

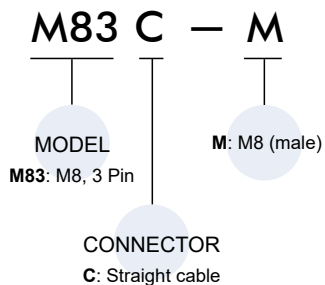
CONNECTOR / M8 (MALE)



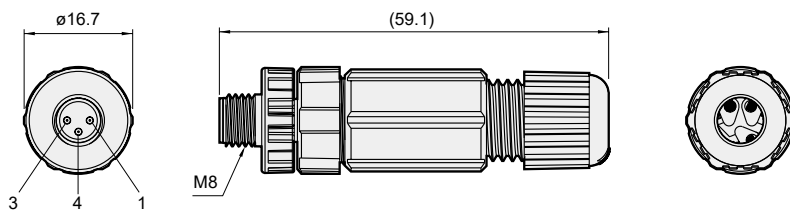
Specification

Model	M83C-M
Male pin out	
Number of contacts	3
Rated voltage	60V DC/AC
Rated current	5A
Temperature	-40°C~+105°C (No freezing)
Protection class of contact	IP 67
Suitable for AWG	20~26AWG
Seals for cable OD	ø4.5 mm ~ ø6.5 mm
Housing material	Nylon

Order example



Dimension



M124A-SF series

CONNECTOR / M12(FEMALE)



mindman

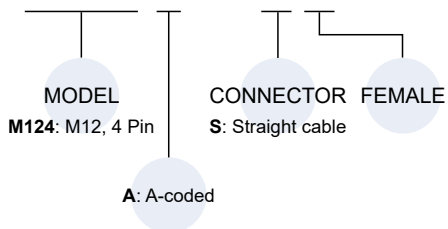


Specification

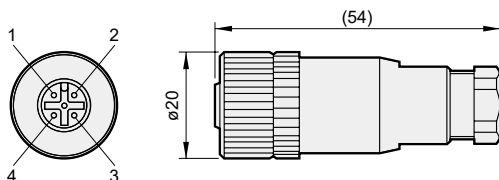
Model	M124A-SF
Male pin out	
Number of contacts	4
Code	A
Rated voltage	250V DC/AC
Rated current	4A
Temperature	-25°C~+80°C (No freezing)
Protection class of contact	IP 67
Suitable for AWG	22AWG
Seals for cable OD	ø5.5 mm
Housing material	Nylon

Order example

M124 A – S F



Dimensions



M124C-M* series

CONNECTOR / M12(MALE)

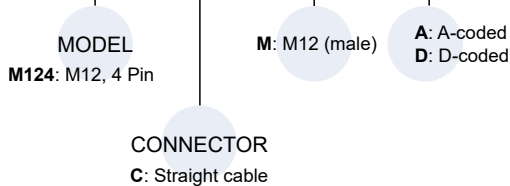


Specification

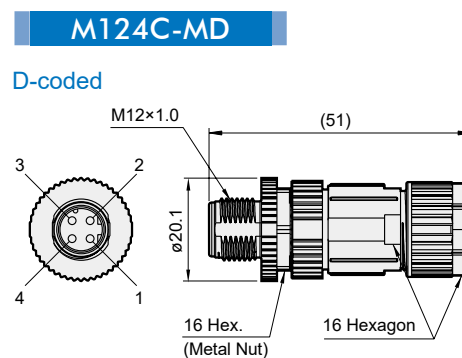
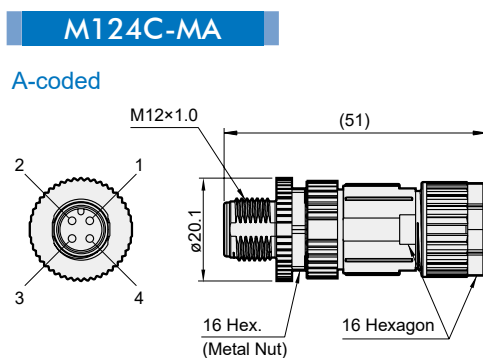
Model	M124C-MA	M124C-MD
Male pin out		
Number of contacts	4	4
Code	A	D
Rated voltage	250V DC/AC	
Rated current	4A	
Temperature	-40°C~+105°C (No freezing)	
Protection class of contact	IP 67	
Suitable for AWG	22AWG	
Seals for cable OD	ø4 mm ~ ø8 mm	
Housing material	Nylon	

Order example

M124 C — M D



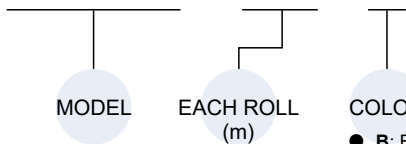
Dimensions





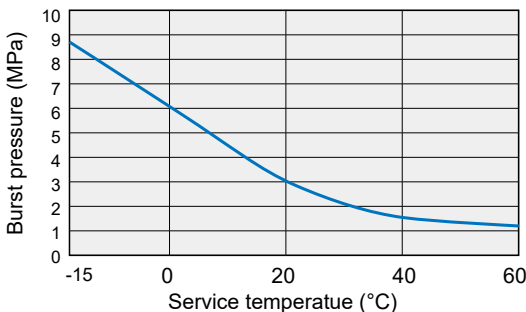
Order example

UM0425 – 100 – B



- B: Black
- BU: Blue
- CB: Transparent blue
- O: Orange
- G: Green
- Y: Yellow
- R: Red
- T: Transparent

Burst pressure curve (Reference value)



Specification

Model	UM*
Medium	Air
Max. operating pressure	116 psi (0.8 MPa)(65%RH at 20°C) (*1)
Working vacuum	-29.5in.Hg (-100 kPa)
Ambient temperature	-5~+140°F(-15~+60°C) (No freezing)

* 1. Max. operating pressure is the value at 65% RH at 20°C. When using on other temperatures, please take enough safety value judging from the burst pressure curve on the left. When the tube is applied to moving parts with vibration and bend, the temperature might rise due to self-heat generation due to molecule heat generation and lead to breakage of the tube.

Mindman brand PU tube

Model	ID×OD (mm)	Each roll (m)	Available color
UM0425	2.5×4	100	B, BU, CB, O, G, Y, R, T
UM0640	4×6	100	B, BU, CB, O, G, Y, R, T
UM0850	5×8	100	B, BU, CB, O, G, Y, R, T
UM1065	6.5×10	100	B, BU, CB, O, G, Y, R, T
UM1280	8×12	100	B, BU, CB, O, G, Y, R, T

Available color

- Black(B), ● Blue(BU), ● Transparent blue(CB), ● Orange(O), ● Green(G), ● Yellow(Y), ● Red(R), ○ Transparent(T)

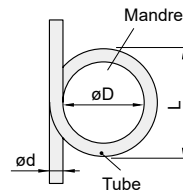
Measurement of minimum bending radius and minimum mounting radius

Model	Min.bending radius (mm)	Min.mounting radius (mm)	Weight (g/m)
UM0425	10	15	9
UM0640	15	23	19
UM0850	15	23	36
UM1065	20	30	54
UM1280	30	45	74

Minimum bending radius (JIS method)

JIS method (based on JIS B8381)

The mandrel radius is measured when the tube is tightly wound around mandrel (round bar) and the deforming ratio becomes 25%. Measurement condition: 20°C, 65%RH



$$N = 1 - \frac{L - D}{2d} \times 100$$

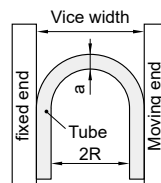
N=deforming ratio (%) standard value less than 25%

d=Tube diameter (mm)

L=Measurement amount (mm)

D=Mandrel diameter (mm)

Minimum mounting radius (Vice method)



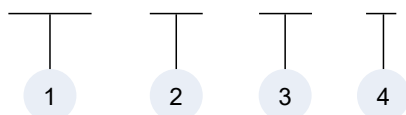
- Fix the tube as shown on the left and bring moving end close to fixed end gradually.

- Measure R when "a" dimension deforms 25% from initial value.



Order example

UML - 06 - 10 - B



1. Name of tube

2. Tube dia.

Code	03	04	06	08	10	12
O.D. (mm)	ø3	ø4	ø6	ø8	ø10	ø12

3. Tube length before coiling

Code	1	2	3	5	7	10	14	20
Dimension(m)	1	2	3	5	7	10	14	20
Tube O.D.	ø3mm	○	○	○	○	○	○	○
	ø4mm		○	○	○	○	○	○
	ø6mm		○	○	○	○	○	○
	ø8mm			○	○	○	○	○
	ø10mm				○	○	○	○
	ø12mm				○	○	○	○

* Overall length of tube before coiling. The length after coiling refer to 'L'.

4. Tube color

△Make to order product

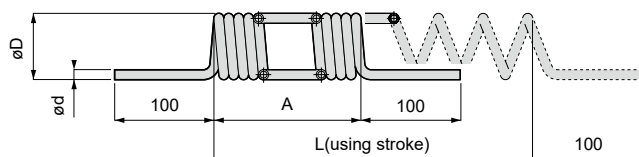
Code	B	R	O	YB	Y
Color	●	●	●	●	●
	Black	Red	Orange	Ocher	Yellow
UML	○	△	△	△	△
Code	G	BU	CB	C	W
Color	●	●	●	○	○
	Green	Blue	Clean blue	Transparent	Milky white
UML	△	△	△	△	△

Specification

Model	UML
Medium	Air
Operating pressure range	0.8 MPa (20°C 65%RH) *1,2
Working vacuum	-100 kPa
Ambient temperature	-15~+60°C (No freezing)

- *1. The value of max. operating pressure is measured at 20°C and 65%RH. When Tubes are used in different conditions, consider a safety ratio of the pressure with an enough margin, referring to Burst Pressure Curve.
- *2. When Tubes are frequently swung and bent, there is a possibility of generating heat between molecules and damaging the products.

UML Polyurethane coiling tube



Model	ød	A	øD	L
UML03-1	3	70	16	210
UML03-2	3	150	16	450
UML03-3	3	230	16	700
UML03-5	3	390	16	1200
UML04-2	4	120	24	360
UML04-3	4	180	24	540
UML04-5	4	350	24	1100
UML04-7	4	480	24	1500
UML04-10	4	700	24	2100
UML04-14	4	1040	24	3200
UML04-20	4	1450	24	4400
UML06-2	6	160	30	500
UML06-3	6	230	30	700
UML06-5	6	430	30	1300
UML06-7	6	620	30	1900
UML06-10	6	910	30	2800
UML06-14	6	1300	30	3900
UML06-20	6	1850	30	5600
UML08-3	8	250	42	750
UML08-5	8	390	42	1200
UML08-7	8	540	42	1700
UML08-10	8	770	42	2400
UML08-14	8	1045	42	3200
UML08-20	8	1550	42	4700
UML10-5	10	330	58	1000
UML10-7	10	470	58	1400
UML10-10	10	680	58	2100
UML10-14	10	970	58	3000
UML10-20	10	1380	58	4200
UML12-5	12	310	72	1000
UML12-7	12	450	72	1400
UML12-10	12	660	72	2000
UML12-14	12	920	72	2800
UML12-20	12	1320	72	4000



Features

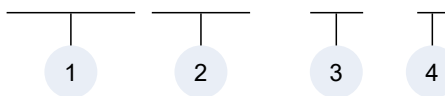
- All materials are made of SUS304 / SUS316, which is highly resistant to corrosion, making this series suitable for not only chemical industries but also for airtight special environments (Medical, semiconductor, food, etc.)
- The tube insert part is tightened by a cap nut, ensuring a tight and stable tube.

Specification

Model	MNS*
Medium	Air, water
Max. pressure range	Depending on service range of tube
Working vacuum	-29.8in.Hg (-100 kPa)
Ambient temperature	Depending on service range of tube

Order example

MNSC 0425 – 01 – S



1. Model

2. Tube dia. (øO.D. / øI.D.) mm

Code	0420	0425	0640	0860	1080	1290	1210
O.D.	ø4	ø4	ø6	ø8	ø10	ø12	ø12
I.D.	ø2	ø2.5	ø4	ø6	ø8	ø9	ø10



Code	1/4	5/16	3/8	1/2
O.D.	ø6.35	ø7.94	ø9.53	ø12.7
I.D.	ø4.57	ø6	ø6.99	ø9.56



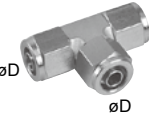
3. Thread size

Code	01	02	03	04
R	R1/8	R1/4	R3/8	R1/2
Rc	Rc1/8	Rc1/4	Rc3/8	Rc1/2

4. Material

Code	–	S
Material	SUS304	SUS316

MNSC	MNSL
Straight	Elbow
	
Model MNSC øD-R	Model MNSL øD-R
MNSC0420-01	MNSL0420-01
MNSC0420-02	MNSL0420-02
MNSC0425-01	MNSL0425-01
MNSC0425-02	MNSL0425-02
MNSC0640-01	MNSL0640-01
MNSC0640-02	MNSL0640-02
MNSC0640-03	MNSL0640-03
MNSC0860-01	MNSL0860-01
MNSC0860-02	MNSL0860-02
MNSC1080-02	MNSL1080-02
MNSC1080-03	MNSL1080-03
MNSC1080-04	MNSL1080-04
MNSC1290-02	MNSL1290-02
MNSC1290-03	MNSL1290-03
MNSC1290-04	MNSL1290-04
MNSC1210-02	MNSL1210-02
MNSC1210-03	MNSL1210-03
MNSC1210-04	MNSL1210-04
MNSC1/4-01	MNSL1/4-01
MNSC1/4-02	MNSL1/4-02
MNSC1/4-03	MNSL1/4-03
MNSC5/16-01	MNSL5/16-01
MNSC5/16-02	MNSL5/16-02
MNSC5/16-03	MNSL5/16-03
MNSC3/8-02	MNSL3/8-02
MNSC3/8-03	MNSL3/8-03
MNSC3/8-04	MNSL3/8-04
MNSC1/2-02	MNSL1/2-02
MNSC1/2-03	MNSL1/2-03
MNSC1/2-04	MNSL1/2-04

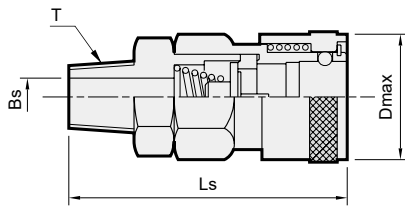
MNSU	MNSV	MNSE
Union straight	Union elbow	Union tee
		
Model MNSU øD	Model MNSV øD	Model MNSE øD
MNSU0420	MNSV0420	MNSE0420
MNSU0425	MNSV0425	MNSE0425
MNSU0640	MNSV0640	MNSE0640
MNSU0860	MNSV0860	MNSE0860
MNSU1080	MNSV1080	MNSE1080
MNSU1290	MNSV1290	MNSE1290
MNSU1/4	MNSV1/4	MNSE1/4
MNSU5/16	MNSV5/16	MNSE5/16
MNSU3/8	MNSV3/8	MNSE3/8
MNSU1/2	MNSV1/2	MNSE1/2



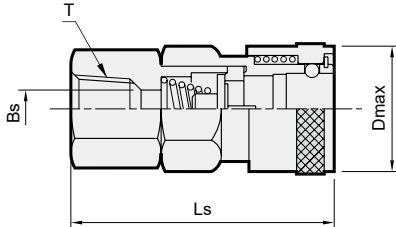
MSM

MSM-A (one touch type)

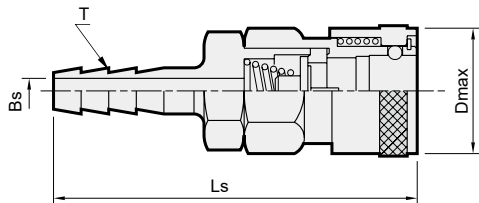
MSM (Male screw)



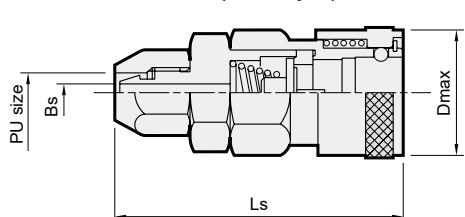
MSF (Female screw)



MSH (Hose screw)

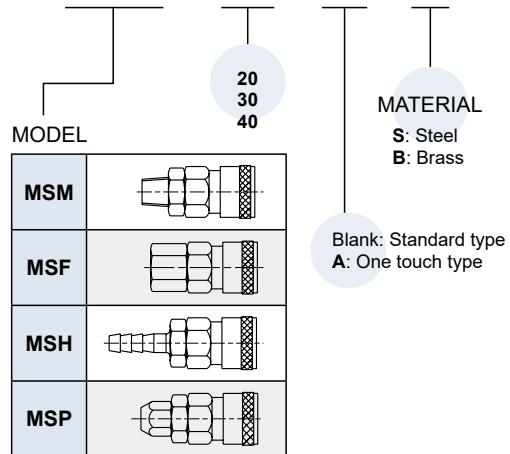


MSP (Nut style)



Order example

MSM - 20 - A - S



MATERIAL
S: Steel
B: Brass

Blank: Standard type
A: One touch type

Model	Screw size T	Dimension (mm)			Weight (g)	
		Bs	D _{max}	Ls	Steel	Brass
MSM-20	R1/4	ø7.5	ø25	55.5	95	104
MSM-30	R3/8	ø7.5	ø25	57.5	100	109
MSM-40	R1/2	ø9	ø25	59.5	110	117

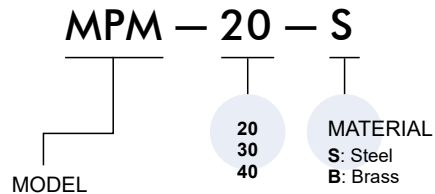
Model	Screw size T	Dimension (mm)			Weight (g)	
		Bs	D _{max}	Ls	Steel	Brass
MSF-20	Rc1/4	ø7.5	ø25	52.5	104	110
MSF-30	Rc3/8	ø7.5	ø25	54.5	103	111
MSF-40	Rc1/2	ø9	ø25	54.5	122	131

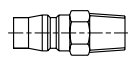
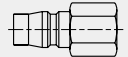
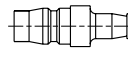
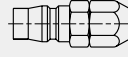
Model	Hose size T	Dimension (mm)			Weight (g)	
		Bs	D _{max}	Ls	Steel	Brass
MSH-20	5/16"Hose	ø5	ø25	72.5	95	104
MSH-30	3/8"Hose	ø7.5	ø25	76.5	100	106
MSH-40	1/2"Hose	ø9	Hex 26/30	78.5	110	117

Model	PU size ID×OD (mm)	Dimension (mm)			Weight (g)	
		Bs	D _{max}	Ls	Steel	Brass
MSP-20	5×8	ø4	ø25	56.5	100	106
MSP-30	6.5×10	ø5	ø26	58	110	116
MSP-40	8×12	ø6	ø26	59	110	116

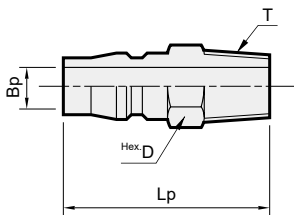


Order example

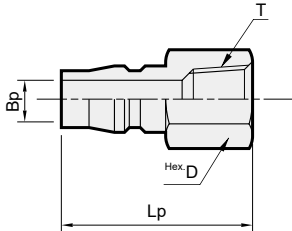


MPM	
MPF	
MPH	
MPP	

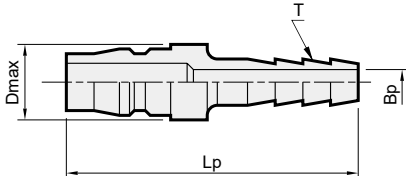
MPM (Male screw)



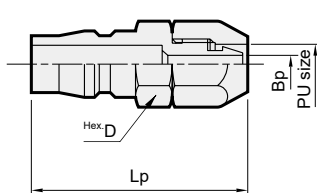
MPF (Female screw)



MPH (Hose screw)



MPP (Nut style)



Model	Screw size T	Dimension (mm)			Weight (g)	
		Bp	Hex. D	Lp	Steel	Brass
MPM-20	R1/4	ø7.5	Hex. 14/16.2	41	25	27
MPM-30	R3/8	ø7.5	Hex. 17/19.6	43	40	45
MPM-40	R1/2	ø7.5	Hex. 21/24.2	46	65	70

Model	Screw size T	Dimension (mm)			Weight (g)	
		Bp	Hex. D	Lp	Steel	Brass
MPF-20	Rc1/4	ø7.5	Hex. 17/19.6	38	30	32
MPF-30	Rc3/8	ø7.5	Hex. 21/24.2	41	45	48
MPF-40	Rc1/2	ø7.5	Hex. 26/30	43	65	70

Model	Hose size T	Dimension (mm)			Weight (g)	
		Bp	D max.	Lp	Steel	Brass
MPH-20	5/16"Hose	ø5	ø16	58	27	29
MPH-30	3/8"Hose	ø7.5	ø16	62	35	38
MPH-40	1/2"Hose	ø7.5	ø18	64	50	55

Model	PU size ID×OD (mm)	Dimension (mm)			Weight (g)	
		Bp	Hex. D	Lp	Steel	Brass
MPP-20	5×8	ø4	Hex. 14/16.2	42.5	30	33
MPP-30	6.5×10	ø5	Hex. 16/18.2	44.5	40	43
MPP-40	8×12	ø6	Hex. 17/19.2	45	40	43

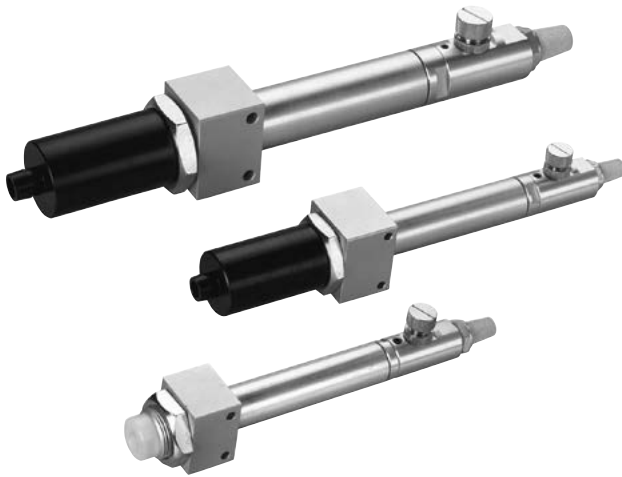
1 Compressed air supply only

2 No electricity

3 Long life

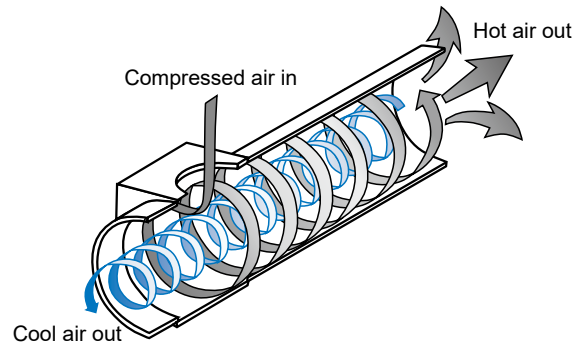
4 User friendly

5 Two models



Features

- Jet out cooler air maximum 60°C(max. temp. drop) lower than the inlet air only by supplying compressed air.
- Uses the theory of vortex, no moving parts are used in the construction, hence long life sustainability.
- Does not require coolant or an electrical source, utilises the high speed flow of compressed air for generating cool air from hot air. Ideal for applications where rapid cooling is required, (ie) Spot Welding.
- Can produce consistent supply of cool air even when the supply in is 40 Degrees C. By changing air consumption you can simply change the cooling temperature.



Order example

MJC – 150K – S – □

MODEL
MJC-150K
MJC-300K
MJC-450K
MJC-600K

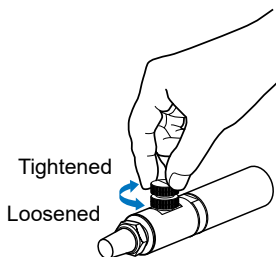
ACCESSORY
Blank: Standard type
S: Silencer
Decrease 8-12dB
(Based on the flow rate)

PORT THREAD
Blank: Rc thread
G: G thread
NPT: NPT thread

Cool air adjustment

Temperature drop 60°C

- Rapid temperature drop.
- Panel mounting option available.
- Can be fitted with silencer on cold side, thus reducing noise.
- Can be piped on the hot side.



Adj. screw(up)
Adj. nut (down)

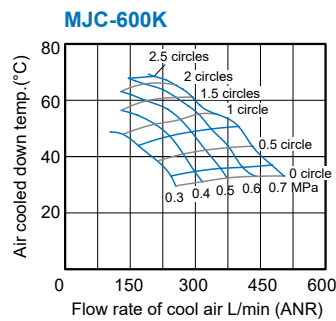
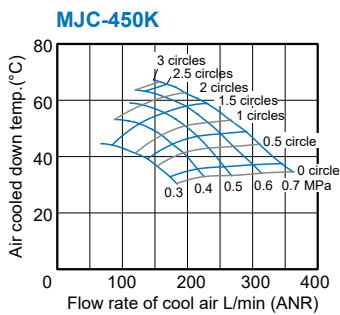
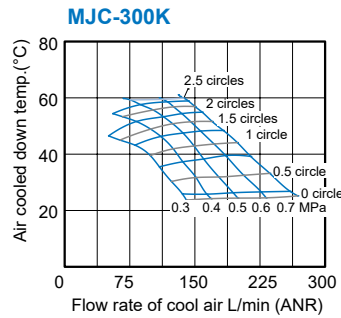
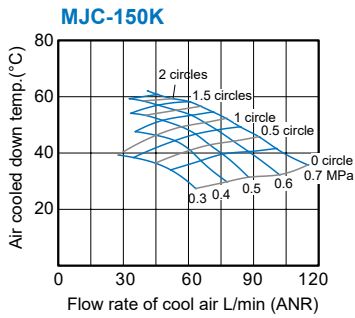
* When the adj. screw has set,
lock the adj. nut.

Specification

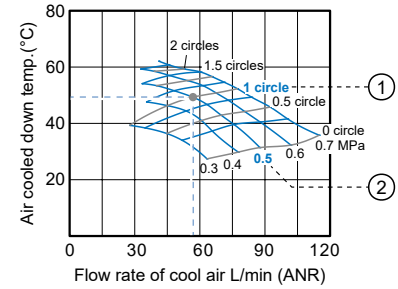
Model	Working pressure (MPa)	Max. temp. drop (°C)	Cool air out port	Weight (kg)
MJC-150K	0.3~0.7	60	Rc1/8	0.25
MJC-300K	0.3~0.7	60	Rc1/4	0.30
MJC-450K	0.3~0.7	60	Rc3/8	0.60
MJC-600K	0.3~0.7	60	Rc3/8	0.60

*The max. temp. drop is the difference in temp. between the input and the output.

Temperature drop of cool air



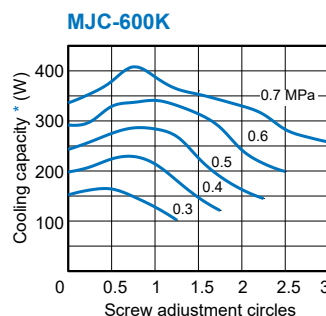
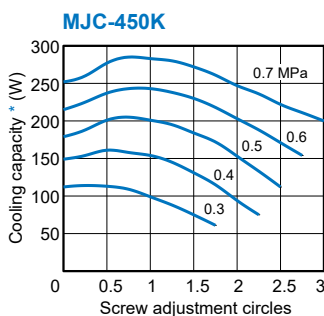
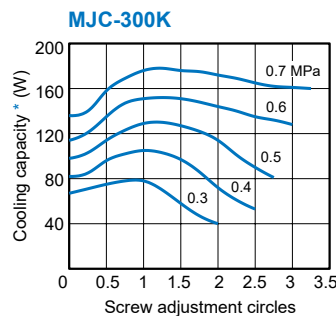
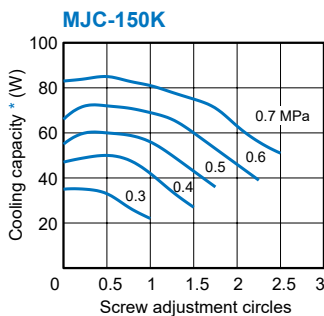
Graph description (MJC-150K)



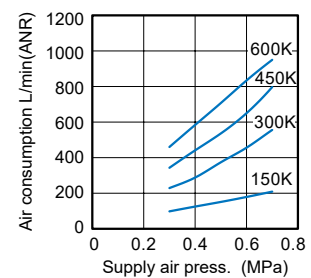
Cold air flow rate & temperature drop

1. One time of rotating the adjust screw from tightening condition.
2. Temperature drop is around 48°C under the condition of air pressure = 0.5 MPa and cold air flow rate = 58 L/min(ANR)

Cooling capacity * The heat quantity which is able to be absorbed (cooling).

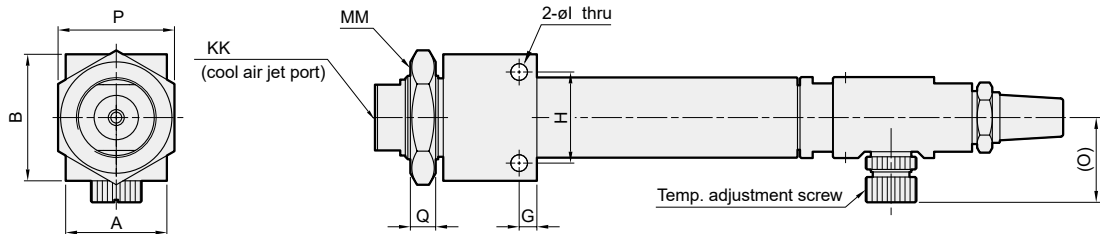
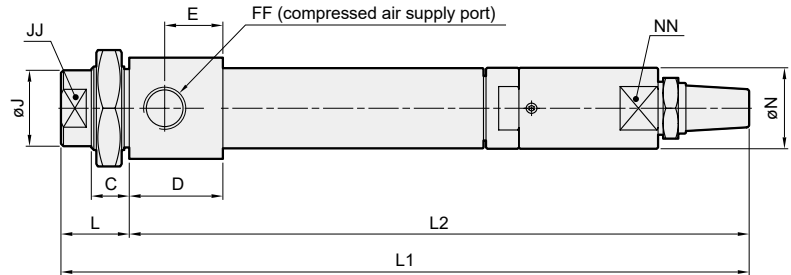
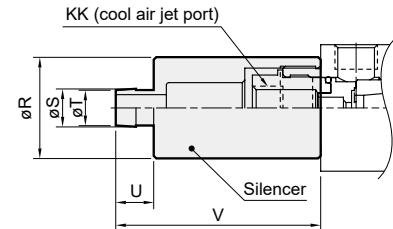


Air consumption



MJC-*K

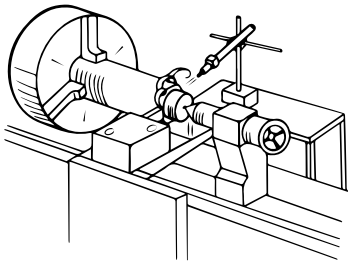
Silencer (option)



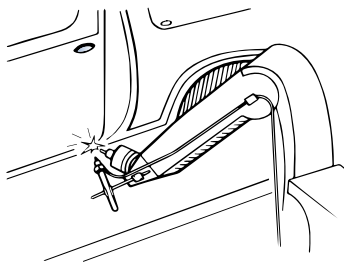
Code Model	A	B	C	D	E	FF	G	H	I	J	JJ	KK	L	L1	L2	MM	N	NN	O	P	Q	R	S	T	U	V
150K	30	35	13	24	15	Rc1/8	5	24	4.5	20	17	Rc1/8	21	198	177	M24×1.5	20	18	22	32	7	30	11	10	10	60
300K	35	40	15	28	17	Rc1/4	5	30	4.5	22	19	Rc1/4	23	204	181	M27×1.5	22	19	22	36	7	32	13	12	10	63
450K / 600K	40	50	15	37	23	Rc3/8	7	36	6.6	30	26	Rc3/8	27	272	245	M33×1.5	32	27	31	46	10	40	15	14	15	81

Application

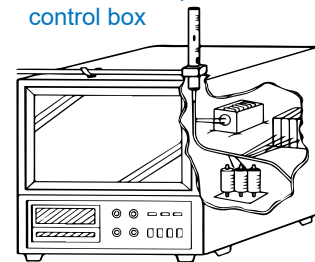
Plastic machining cool



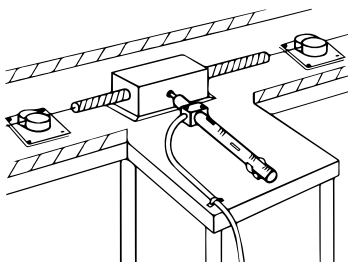
Spot welding cool



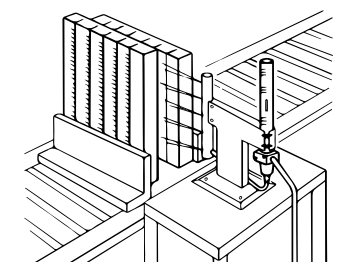
Monitoring camera case cool and dust-proof inside control box



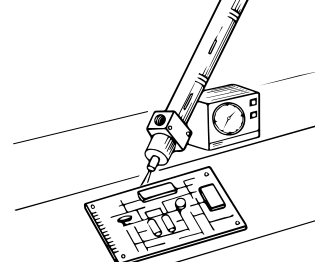
Wire cut harden



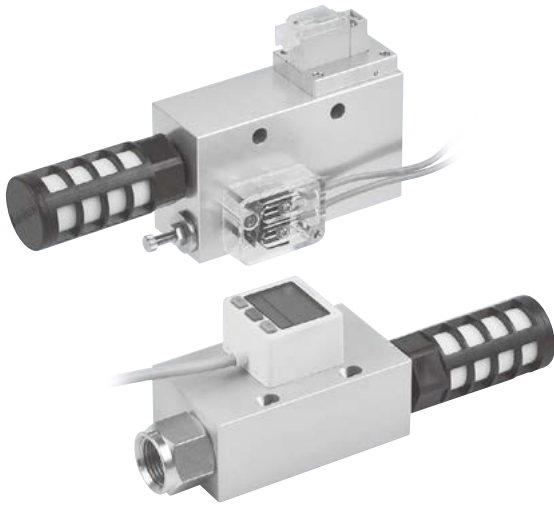
Adherent quick cool



Welding quick cool



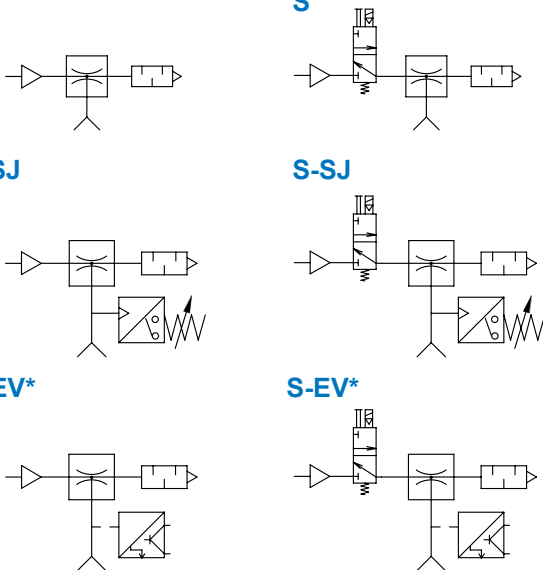
- ⚠ Please use filter and pressure regulator when piping.
- ⚠ To prevent freezing at low temperatures, please use it with an air dryer.



Specification

Model	MVVA					
Nozzle dia. (mm)	1.0	1.5	2.0	2.5	3.0	
Port size	Refer to dimensions [link]					
Medium	Air					
Operating pressure range	0.1~0.6 MPa					
Ambient temperature	0~+60°C (No freezing)					
Final vacuum	-91.8 kPa (-690mmHg)					
Suction flow (ℓ/min)	32	63	130	160	225	
Air consumption (ℓ/min)	76	100	185	265	385	
Supply pressure	0.5 MPa					
Lubricator	Not required					
Weight (g)	Standard	84	126	294	672	787
	SJ type	110	158	321	-	-
	EV type	162	197	353	-	-

Symbol



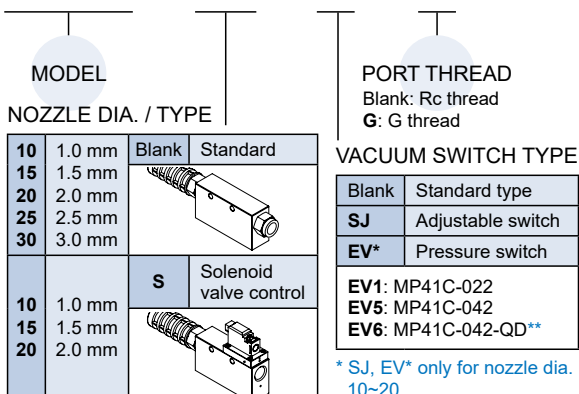
Model	MVVA-S			
Nozzle dia. (mm)	1.0	1.5	2.0	
Port size	Refer to dimensions [link]			
Medium	Air			
Operating pressure range	0.15~0.6 MPa			
Ambient temperature	0~+60°C (No freezing)			
Final vacuum	-91.8 kPa (-690mmHg)			
Suction flow (ℓ/min)	21	65	99	
Air consumption (ℓ/min)	50	142	187	
Supply pressure	0.5 MPa			
Lubricator	Not required			
Solenoid valve	MVDY-100-3E1-DC24-SR (wire length 500mm) [link]			
Weight (g)	S type	117	150	368
	S-SJ type	178	204	400
	S-EV type	186	226	427

* The rated pressure of the generator in the specifications is the value when the generator is activated. Please consider the pressure drop and ensure the specification value; if it does not meet specifications, it may cause noise, unstable characteristics, and malfunction of the sensor at a certain pressure. If this happens, please reset the rated pressure.

* The range of noise will change due to air pressure.

Order example

MVVA - 10S - SJ - G



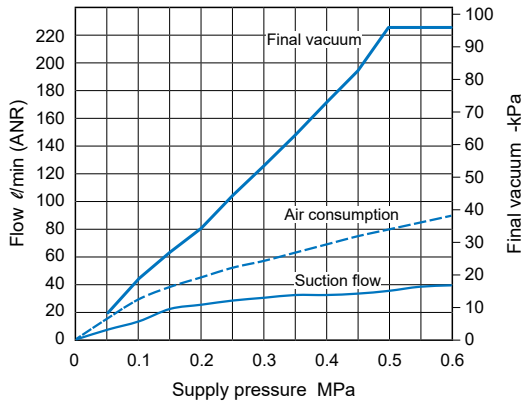
Vacuum switch

Model	SJ	EV*
Medium	Air	
Pressure setting range (kPa / mm Hg)	-20.0 ~ -53 (-150 ~ -400)	-100 ~ 100 (-757.5 ~ 757.5)
Proof pressure (MPa)	0.5	0.3
Ambient temperature	0~+60°C (No freezing)	-10~+50°C (No freezing)
Ambient humidity	35~+85%RH (No condensation)	
Switch type	Reed switch, N.O	PNP, NPN open collector
Rated voltage	AC125V, AC250V	DC12~24V ±10%
Max load current (A)	5	0.125
Repeatability	±5.3 kPa	≤±0.2% F.S. ±1 digit
Hysteresis (kPa)	4.0~13.3	-
Cable length (mm)	400	2000

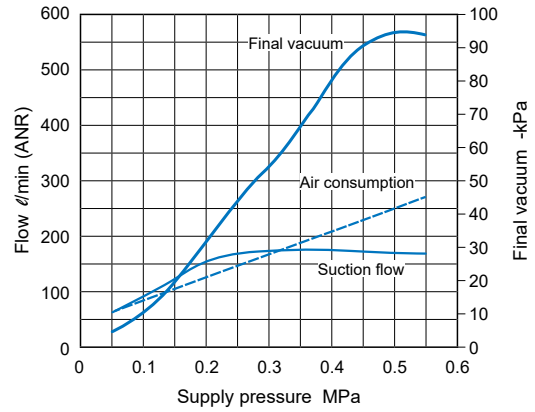
* For the detailed specifications of EV* type (MP41) [\[link\]](#).

Vacuum characteristics

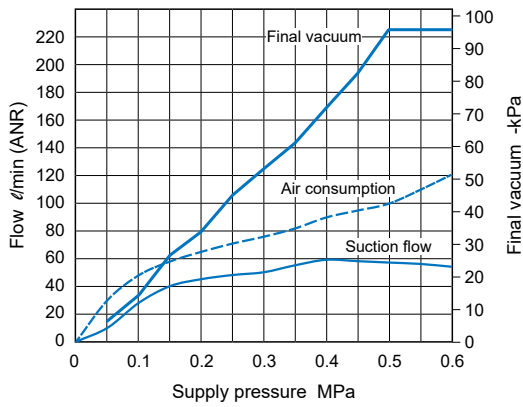
MVVA-10



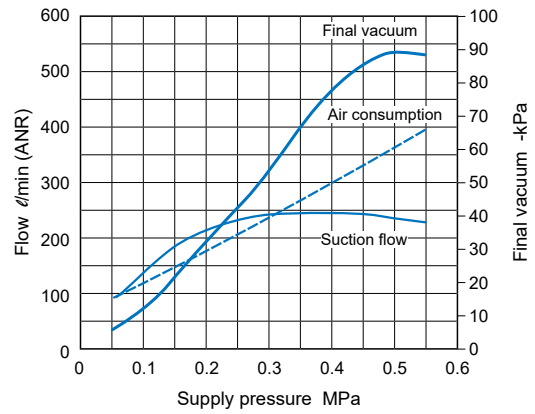
MVVA-25



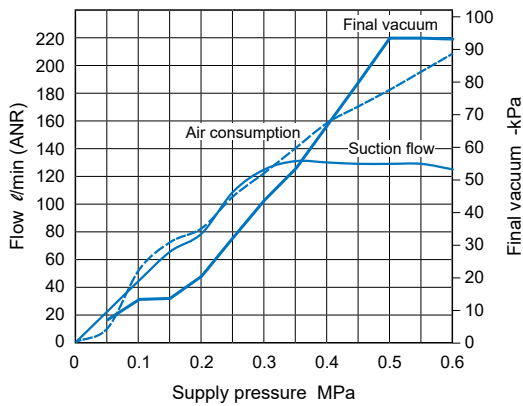
MVVA-15



MVVA-30

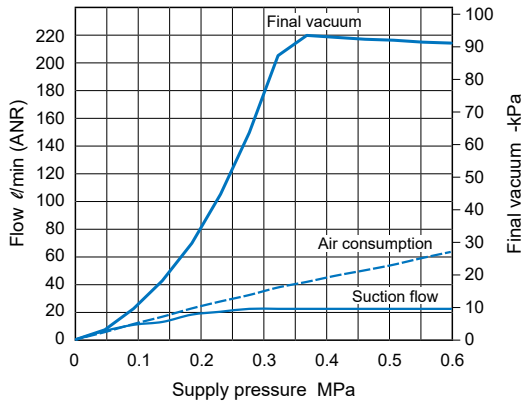


MVVA-20

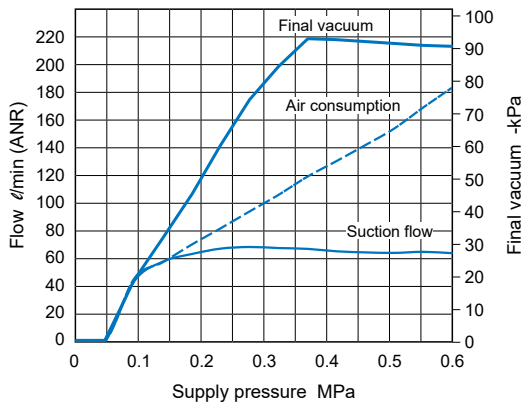


Vacuum characteristics

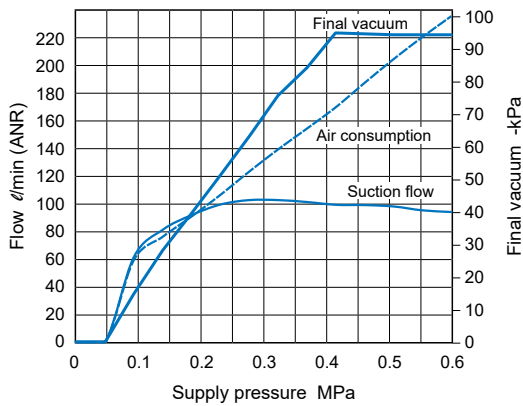
MVVA-10S



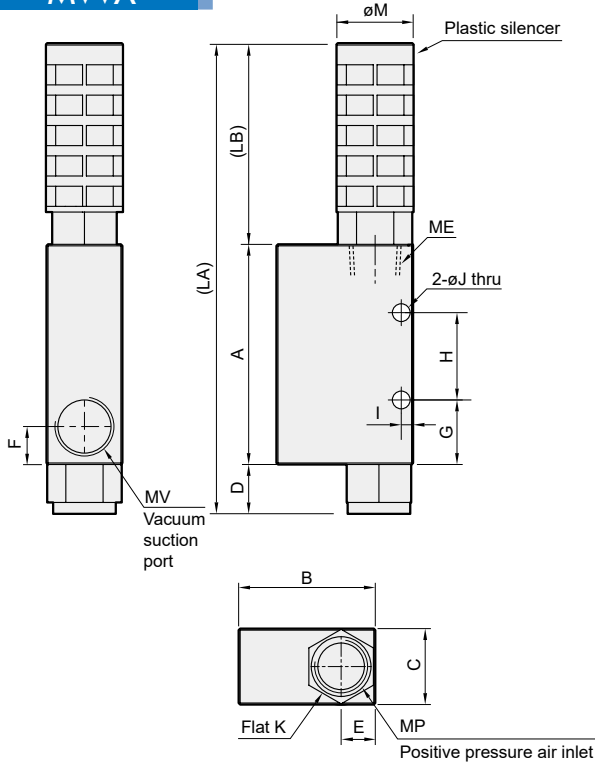
MVVA-15S



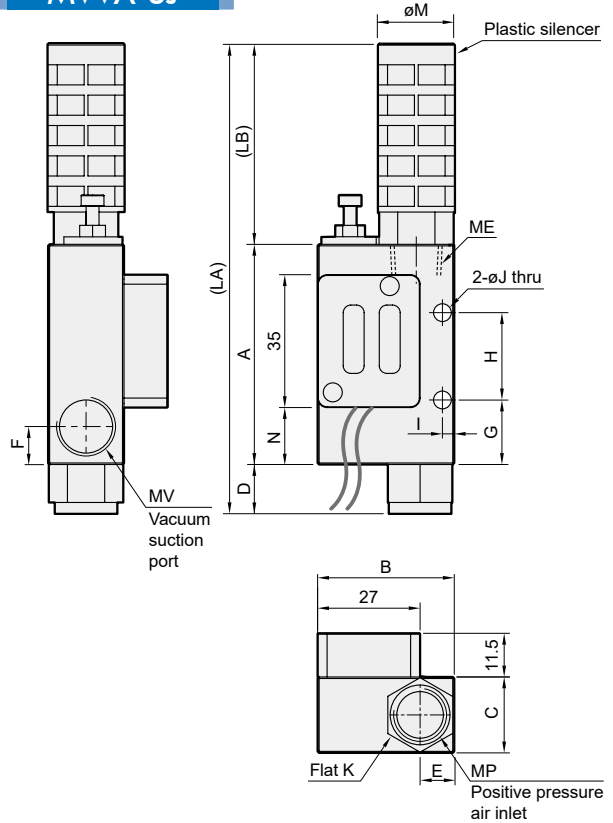
MVVA-20S



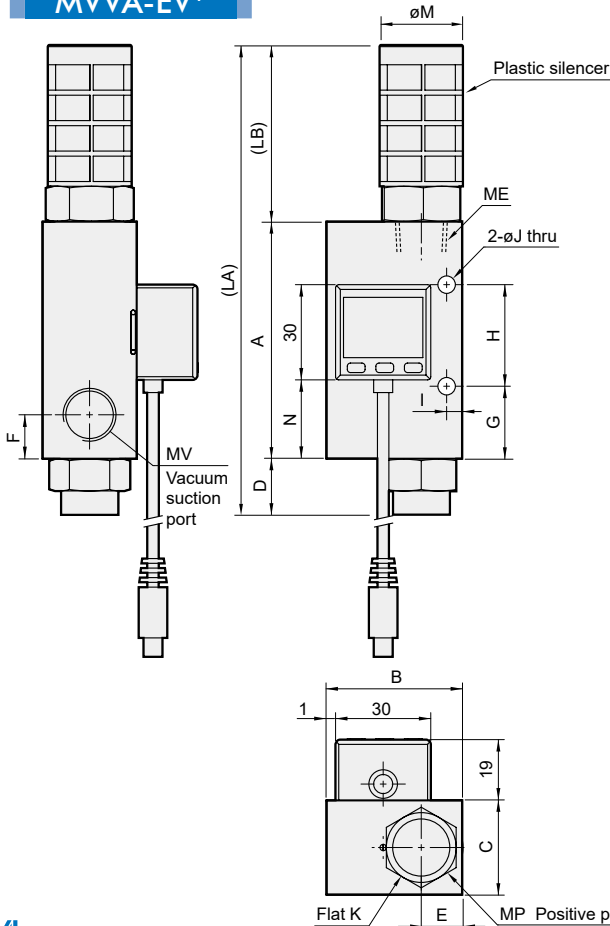
MVVA



MVVA-SJ



MVVA-EV*

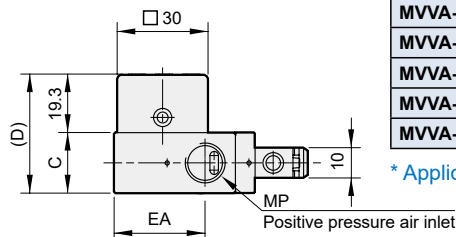
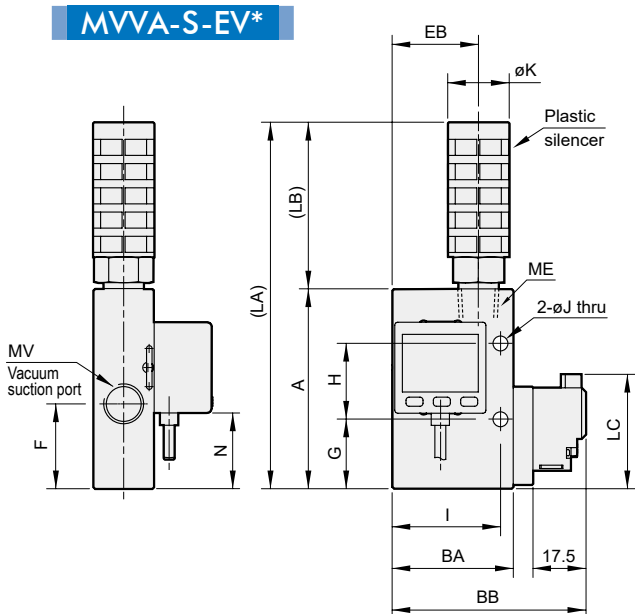
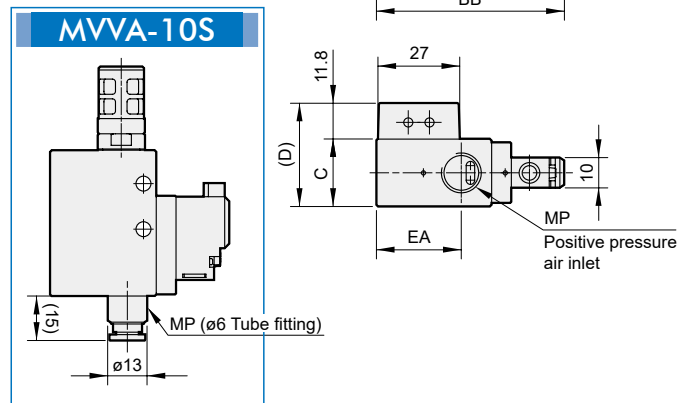
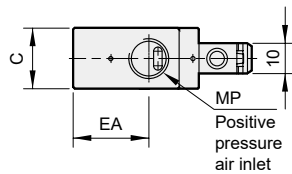
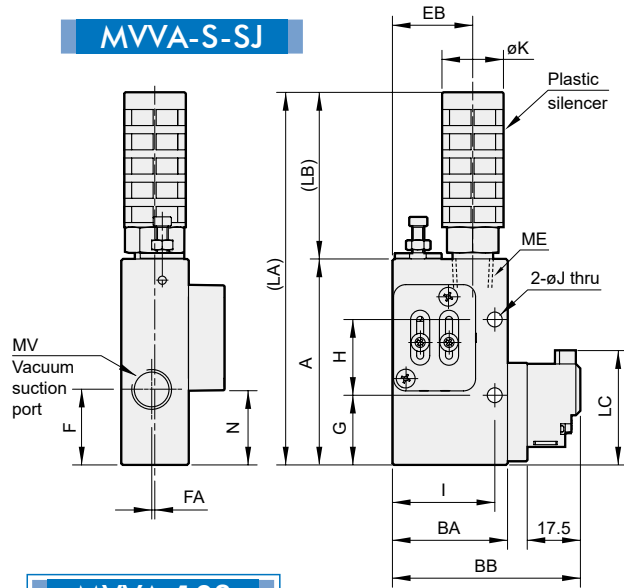
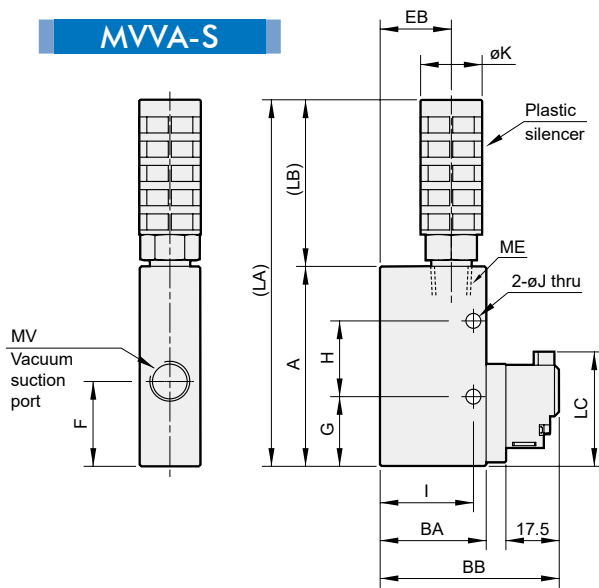


Code Model	A	B	C	D	E	F	G	H	I	J	K	LA
MVVA-10	55	34	15.5	10	9	8	13	18	3	4.3	14	91
MVVA-10-SJ	55	34	15.5	10	9	8	13	18	3	4.3	14	91
MVVA-10-EV*	55	40	16	10	9	8	13	18	3	4.3	14	91
MVVA-15	58	36	20	13	10.5	10	17	23	3.5	4.3	17	126
MVVA-15-SJ	58	36	20	13	10	10	17	23	3.5	4.3	17	126
MVVA-15-EV*	58	39	20	13	10.5	10	17	23	3.5	4.3	17	126
MVVA-20	75	43	29.5	18	13	14	23	32	5	5.5	22	151.8
MVVA-20-SJ	75	43	29.5	18	13	14	23	32	5	5.5	22	151.8
MVVA-20-EV*	75	43	29.5	18	13	14	23	32	5	5.5	22	151.8
MVVA-25	100	60	40	17	20	16	20	50	5.5	6	28	235.5
MVVA-30	115	60	40	20	20	20	33	50	5.5	6	30	235.5

Applicable silencer

Code Model	LB	M	ME	MP	MV	N	Silencer
MVVA-10(S)	26	16	Rc1/8	Rc1/8	Rc1/8	-	MSR01-B
MVVA-10(S)-SJ	26	16	Rc1/8	Rc1/8	Rc1/8	10.5	MSR01-B
MVVA-10(S)-EV*	26	16	Rc1/8	Rc1/8	Rc1/8	20	MSR01-B
MVVA-15(S)	55	20.3	Rc1/4	Rc1/4	Rc1/4	-	MSR02-B
MVVA-15(S)-SJ	55	20.3	Rc1/4	Rc1/4	Rc1/4	14	MSR02-B
MVVA-15(S)-EV*	55	20.3	Rc1/4	Rc1/4	Rc1/4	20	MSR02-B
MVVA-20(S)	58.8	26.3	Rc3/8	Rc3/8	Rc3/8	-	MSR03-B
MVVA-20(S)-SJ	58.8	26.3	Rc3/8	Rc3/8	Rc3/8	30.5	MSR03-B
MVVA-20(S)-EV*	58.8	26.3	Rc3/8	Rc3/8	Rc3/8	25	MSR03-B
MVVA-25	118.5	38	Rc3/4	Rc3/8	Rc1/2	-	MSLE-06
MVVA-30	118.5	38	Rc3/4	Rc1/2	Rc3/4	-	MSLE-06

* Silencer specifications



Code Model	A	BA	BB	C	D	EA	EB	F	FA	G	H
MVVA-10S	48	35	59	16	-	25.5	23.5	25	-	22	15
MVVA-10S-SJ	68	36	60	16	27.8	26.5	24.5	24	1	22	25
MVVA-10S-EV*	48	40	64	16	35.3	30.5	28.5	29	-	22	15
MVVA-15S	66	35	59	20	-	25	23.5	28	-	23	24
MVVA-15S-SJ	68	38	62	22	34.8	28	26.5	25	1.2	23	24
MVVA-15S-EV*	66	40	64	20	39.3	30	28.5	28	-	23	24
MVVA-20S	85	50	74	29.5	-	36.5	32	33.5	-	28	32
MVVA-20S-SJ	85	50	74	29.5	41.3	36.5	32	33.5	-	28	32
MVVA-20S-EV*	85	50	74	29.5	48.8	36.5	32	33.5	-	28	32

Code Model	I	J	K	LA	LB	LC	N	ME	MP	MV
MVVA-10S	30.8	4.3	16	94	31	37.2	-	Rc1/8	ø6	Rc1/8
MVVA-10S-SJ	31.8	4.3	16	114	31	37.2	24.5	Rc1/8	ø6	Rc1/8
MVVA-10S-EV*	35.8	4.3	16	96	31	37.2	2.5	Rc1/8	ø6	Rc1/8
MVVA-15S	30.8	4.3	20.3	121	55	37.9	-	Rc1/4	Rc1/4	Rc1/4
MVVA-15S-SJ	33.8	4.3	20.3	123	55	37.9	24.5	Rc1/4	Rc1/4	Rc1/4
MVVA-15S-EV*	35.8	4.3	20.3	121	55	37.9	25	Rc1/4	Rc1/4	Rc1/4
MVVA-20S	43	6	26.3	144	58.8	40.7	-	Rc3/8	Rc3/8	Rc3/8
MVVA-20S-SJ	43	6	26.3	144	58.8	40.7	40.5	Rc3/8	Rc3/8	Rc3/8
MVVA-20S-EV*	43	6	26.3	144	58.8	40.7	21	Rc3/8	Rc3/8	Rc3/8

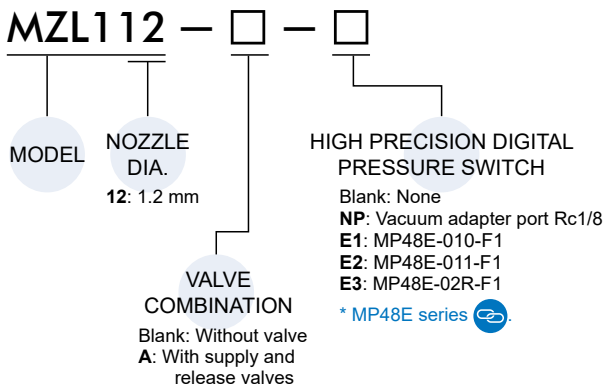
* Applicable silencer please refer to the previous page.

MZL112 series

MULTISTAGE VACUUM PUMP



Order example



Features

- Adopt 3-stage cartridge, enhancing vacuum flow and saving air consumption.
- Optional solenoid valve and vacuum pressure switch.
- Internal vacuum filter and vacuum silencer. The filter element is replaceable.
- A variety of installation directions are available.

Specification

Model	MZL112
Nozzle dia.	1.2 mm
Max. suction flow	100 ℓ/min
Air consumption	63 ℓ/min
Max. vacuum pressure	-84 kPa
Max. operating pressure	0.7 MPa
Supply pressure range	0.2~0.5 MPa
Standard supply pressure	0.4 MPa
Operating temperature range	+5~+50°C
Noise	70 decibel
Weight	450 g

Supply / Release valve specifications

Type of valve actuation	Internal pilot type N.C.
Operating pressure range	0.2~0.5 MPa
Ambient and fluid temperature	+5~+50°C (No freezing)
Response time (for 0.5 MPa)	25ms or less
Max. operating frequency	5Hz
Manual operation	Push and swing lock type (operate with a screwdriver)
Pilot exhaust type	Pilot valve individual exhaust type, Main valve / Pilot valve common exhaust.
Rated voltage	DC24V
Lead wire	L plug connector, lead wire length 0.3m
Lubrication	Not required
Mounting position	Unrestricted
Impact / Vibration resistance	150 / 30 m/s ²
Enclosure	Dust proof

* Without indicator light and surge voltage suppressor.

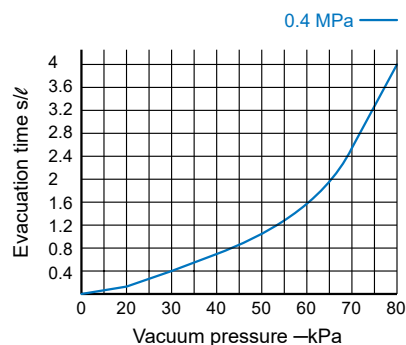
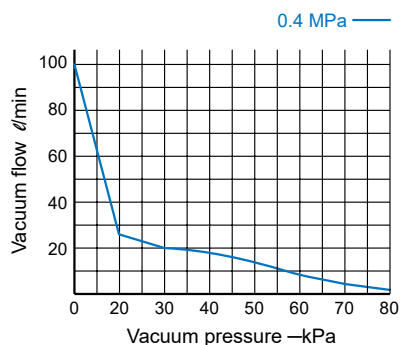
Vacuum flow(ℓ/min) at different vacuum levels (-kPa)

Supply pressure	Air consumption	Vacuum flow(ℓ/min) at different vacuum levels (-kPa)										Max. vacuum level
		0	10	20	30	40	50	60	70	80		
0.4 MPa	63 ℓ/min	100	65	26	20	18.5	13	8	5	2.8	-84 kPa	
		0	10	20	30	40	50	60	70	80		

Evacuation time(s/ ℓ) to reach different vacuum levels (-kPa)

Supply pressure	Air consumption	Evacuation time(s/ ℓ) to reach different vacuum levels (-kPa)										Max. vacuum level
		10	20	30	40	50	60	70	80			
0.4 MPa	63 ℓ/min	0.05	0.17	0.4	0.67	1.07	1.63	2.46	3.9	-84 kPa		
		10	20	30	40	50	60	70	80			

Vacuum characteristics



MZL112 Dimensions

MULTISTAGE VACUUM PUMP



Solenoid Valve

Process Valve

Pilot & Mechanical Valve

Air Treatment Unit

Pressure Switch

Compressed Air Dryer

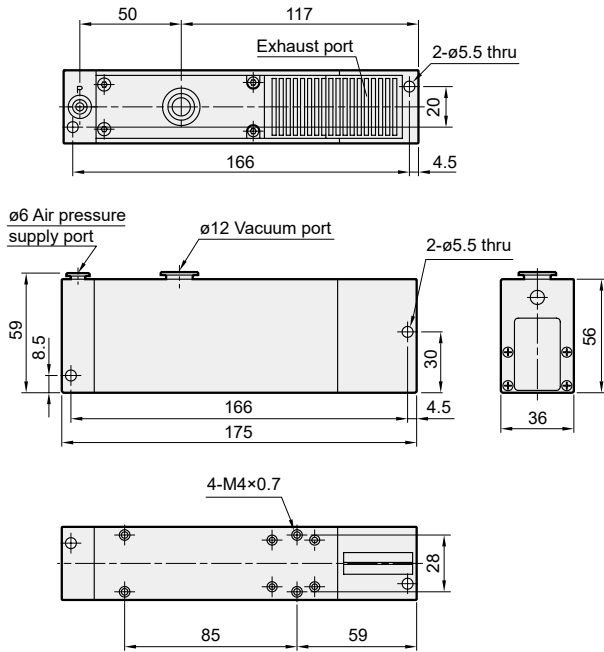
Auxiliary Equipment

PISCO®

PLC Control System

MZL112

Standard

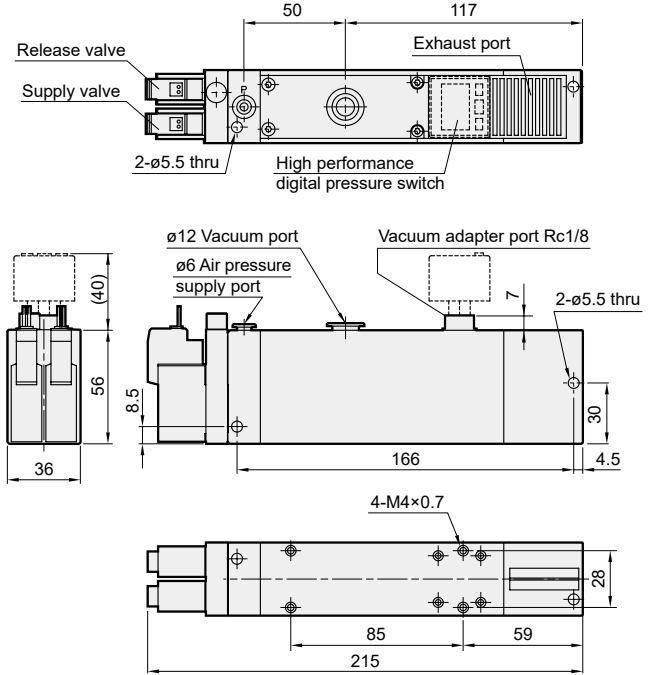


MZL112-A-NP

Vacuum adapter port

MZL112-A-E*

With high performance digital pressure switch

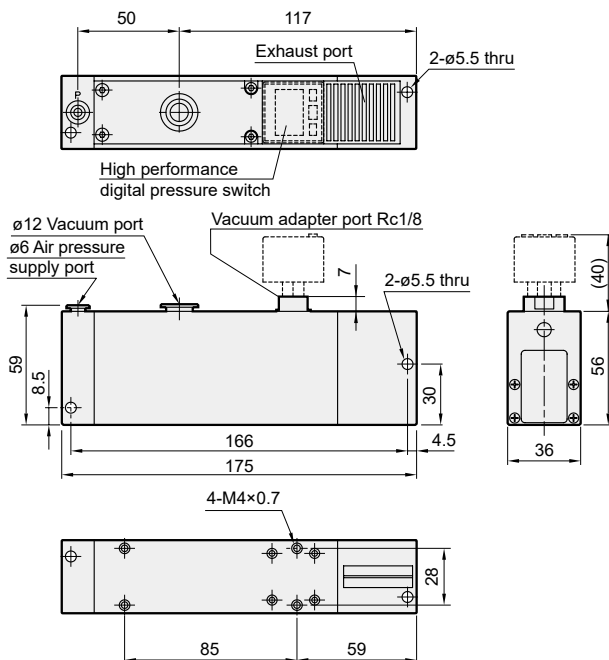


MZL112-NP

Vacuum adapter port

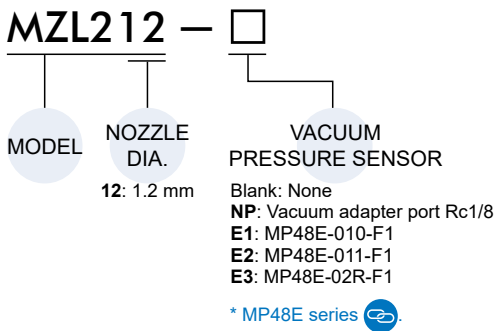
MZL112-E*

With high performance digital pressure switch





Order example



Features

- Adopt 3-stage cartridge, enhancing vacuum flow and saving air consumption.
- Optional solenoid valve and vacuum pressure switch.
- Internal vacuum filter and vacuum silencer. The filter element is replaceable.
- A variety of installation directions are available.

Specification

Model	MZL212
Nozzle dia.	1.2 mm × 2
Max. suction flow	200 ℓ/min
Air consumption	126 ℓ/min
Max. vacuum pressure	-84 kPa
Max. operating pressure	0.7 MPa
Supply pressure range	0.2~0.5 MPa
Standard supply pressure	0.4 MPa
Operating temperature range	+5~+50°C
Noise	77 decibel
Weight	700 g

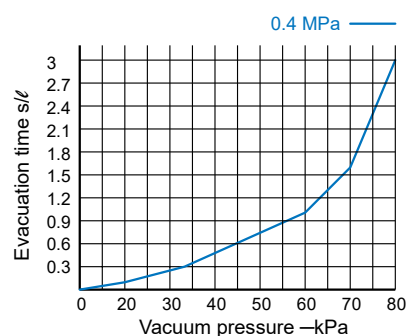
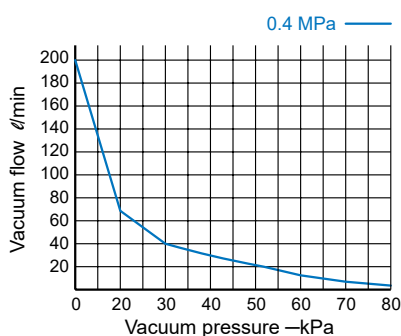
Vacuum flow(ℓ/min) at different vacuum levels (-kPa)

Supply pressure	Air consumption	Vacuum flow(ℓ/min) at different vacuum levels (-kPa)										Max. vacuum level
		0	10	20	30	40	50	60	70	80		
0.4 MPa	126 ℓ/min	200	150	52	40	30	25	15	8	3	-84 kPa	
		0	10	20	30	40	50	60	70	80		

Evacuation time(s/ℓ) to reach different vacuum levels (-kPa)

Supply pressure	Air consumption	Evacuation time(s/ℓ) to reach different vacuum levels (-kPa)										Max. vacuum level
		10	20	30	40	50	60	70	80			
0.4 MPa	126 ℓ/min	0.02	0.08	0.25	0.42	0.65	0.98	1.52	2.46	-84 kPa		
		10	20	30	40	50	60	70	80			

Vacuum characteristics



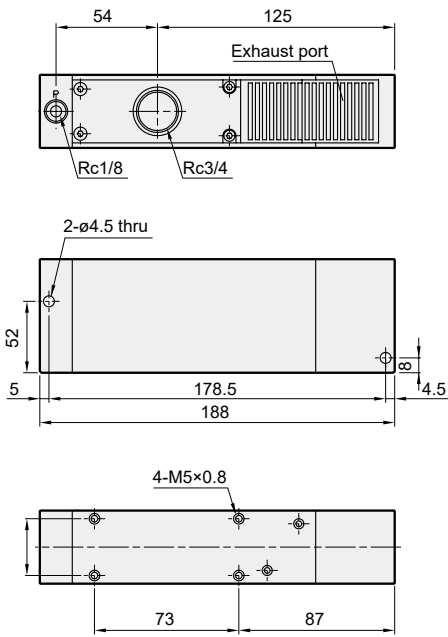
MZL212 Dimensions

MULTISTAGE VACUUM PUMP



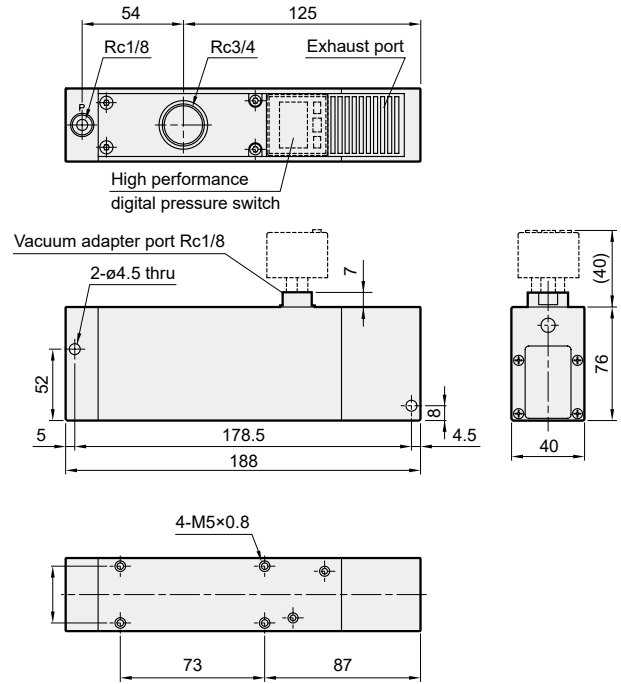
MZL212

Standard



MZL212-NP

Vacuum adapter port



MZL212-E*

With high performance digital pressure switch

Solenoid Valve

Process Valve

Pilot & Mechanical Valve

Air Treatment Unit

Pressure Switch

Compressed Air Dryer

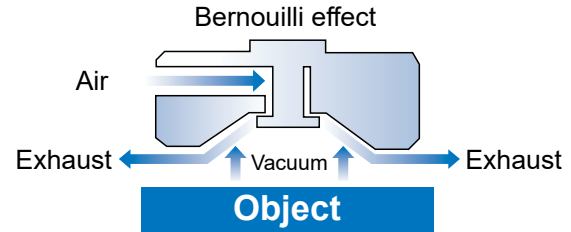
Auxiliary Equipment

PISCO®

PLC Control System



Principle



The principle of these prehension is based on the exploitation of the Bernoulli effect. A positive pressure is applied through form adequate (Insert + curve). The exhaust of this air goes through of low pressure and gets a vacuum aspiring any kind of object.

Order example

MHPSC – 20 – CD

MODEL

SIZE

20
30
40
60

TYPE

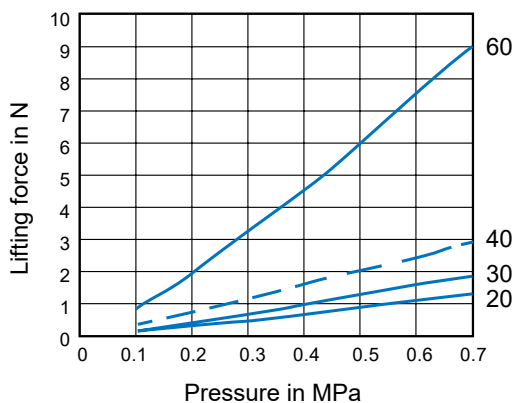
CD: For CD or DVD
(Only with size 40)
CI: With 3 rubber absorber
U: Smooth surface
(Only with size 40)

Specification

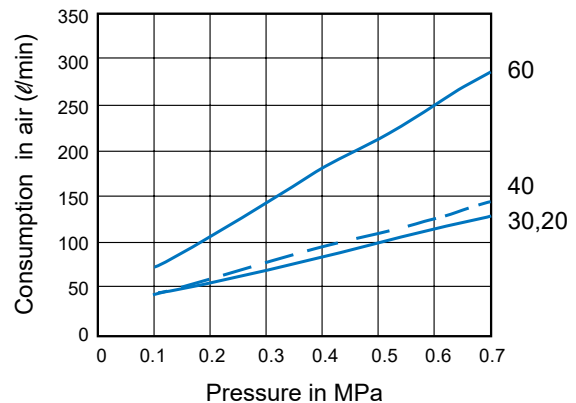
Model	MHPSC			
Size	20	30	40	60
Port size	M3	M5	M5	M5
Medium	Dry air filter 40 μ			
Consumption in air (*) l/min	100	100	110	210
Lifting force (*) in N	0.9	1.3	2	6
Operating pressure range	0.2~0.7 MPa			
Ambient temperature	+5~+60°C			
Level of noise	25dB			
Material	Aluminum A5056 and stainless steel			
Weight	10 g	30 g	54 g	124 g

* Indicative value for sizes 20 and 30: Pressure of 0.5 MPa with an air supply by tube $\varnothing 2,5 \times 4$ length: 1m. for sizes 40 and 60: Pressure of 0.5 MPa with an air supply by tube $\varnothing 4 \times 6$ length: 1m.

Lifting force

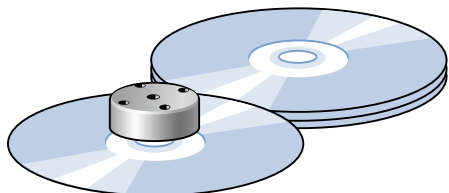


Consumption in air

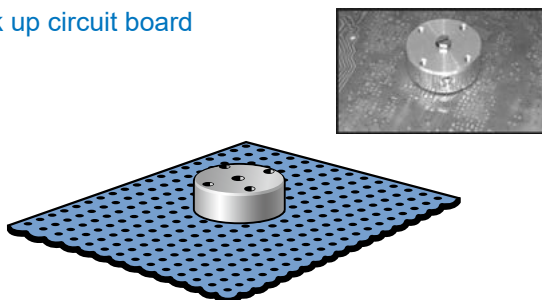


NO CONTACT TRANSFER

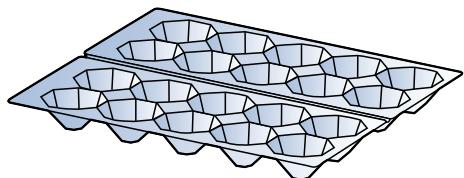
- Transfer disc, CD, DVD



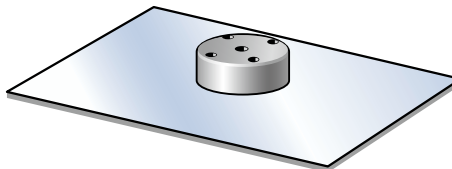
- Pick up circuit board



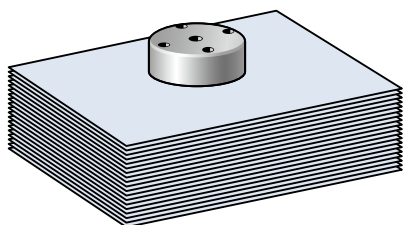
- Eggs or fruits packaging



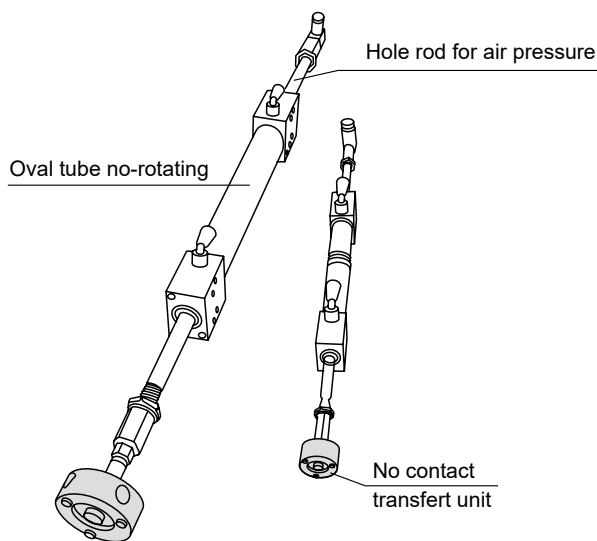
- Glass sheet leave
(no mark on the face)



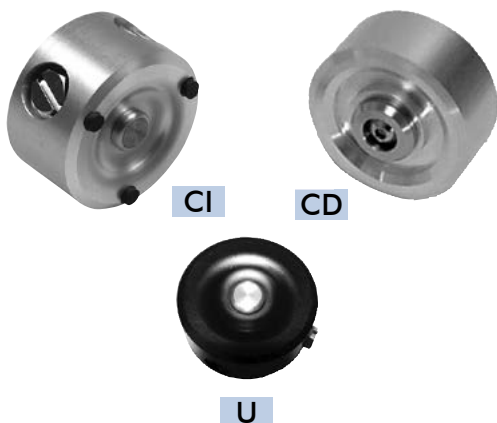
- Paper sheet with small thickness.
(Transfer sheet by sheet)



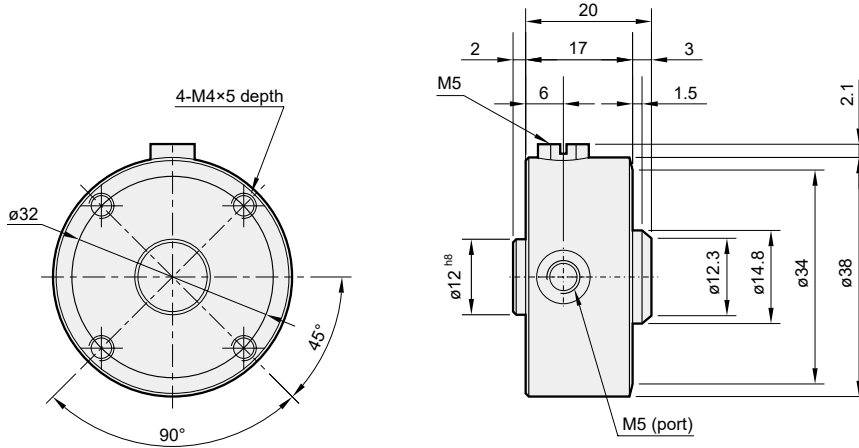
- Handling of object on concave or convex surface. Handling of biscuit, wafer, paste, pastry making, membrane, sponge, textile, mirror, etc...



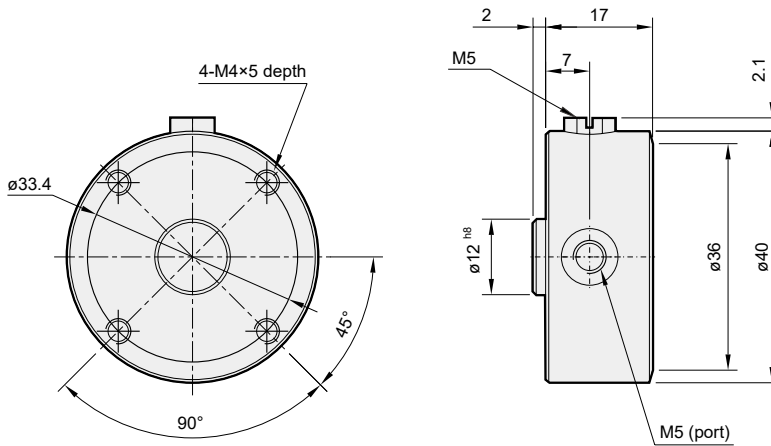
Type



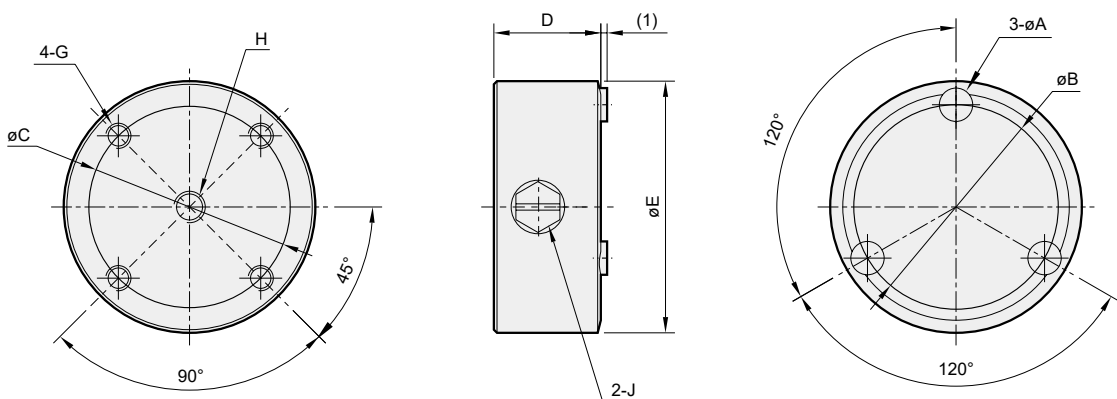
MHPSC-40CD Using for CD ro DVD (with centering part)



MHPSC-40U Smooth surface with treatment



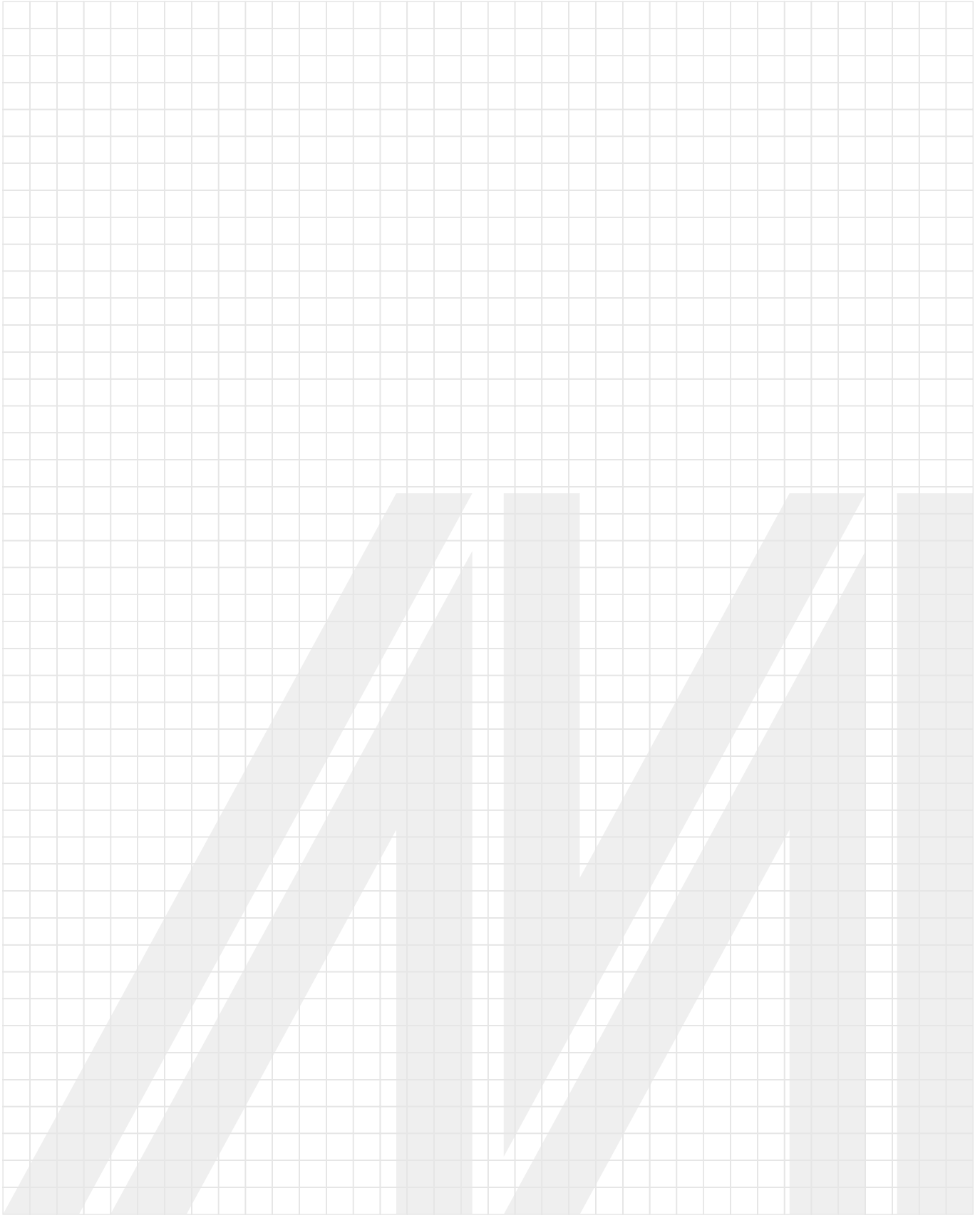
MHPSC-**CI Prehensor with three points of contact



Code Model	A	B	C	D	E	G	H	J
20	2.2	16.6	14	12	20	M4x5	M3	Plug M3
30	3.4	24.4	22	17	30	M4x10	M5	Plug M5
40	5.3	32.5	32	17	40	M4x10	M5	Plug M5
60	5.3	48.8	44	17	60	M4x10	M5	Plug M5

MEMO

NOTE



Solenoid Valve

Process Valve

Pilot & Mechanical Valve

Air Treatment Unit

Pressure Switch

Compressed Air Dryer

Auxiliary Equipment

PISCO®

PLC Control System