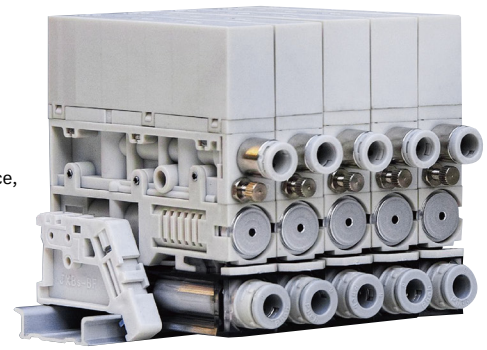
MZK Series Features

- 4 types of nozzle diameters, 24 combinations to meet the needs of different scenarios.
- Manifold assembly type, supports up to 12 units.
- 2-stage vacuum amplification structure, saves air supply, high vacuum, large flow type.
- Digital energy-saving type, reduces air consumption by over 30%.
- Various silencers available to meet noise environment requirements for different occasions.
- Built-in solenoid valve protection reduces external damage, improves contamination resistance, and extends solenoid valve service life.
- Supports bracket mounting or DIN rail mounting.
- Visible vacuum filter allows timely replacement based on requirements.
- Large flow vacuum release, select release flow according to different products.
- Supply pressure range: 0.3 - 0.6 Mpa.



Mode Code System

>Single Unit Vacuum Generator + Valve

MZK	A	10	K	5	A	–	06	–	06	–	B
	①	②	③	④	⑤		⑥		⑦		⑧

①Body, Silencer Exhaust Form

Code	Body	Silencer Exhaust Method
A	Single Unit	Built-in silencer exhaust (Note 1)
B	Single Unit	Port exhaust
G	Single Unit	External silencer exhaust

Note 1) For nozzle diameters 12 and 15, equipped with an exhaust port.

②Nozzle Diameter

Code	Nozzle Diameter
07	Ø0.7
10	Ø1.0
12	Ø1.2
15	Ø1.5

Note 2) Refer to P.005 for standard supply pressure for each nozzle diameter.

⑥ Vacuum Port

Code	Port Diameter
06	Ø6
08	Ø8

③Vacuum Valve, Release Valve Type

Marking	Vacuum Valve	Release Valve
	N.C.	N.C.
K	●	●

④Rated Voltage (Supply Valve, Release Valve)

Marking	Voltage
5	DC24V
6	DC12V

⑤ Digital Pressure Switch / Pressure Sensor Type

Marking	Type	Pressure Range [kpa]	Specifications	
			NPN	PNP
			2 Output	
A	Digital Pressure Switch	0~ -101	●	-
C			-	●
E		-100~100	●	-
H			-	●
P	Pressure Sensor	0~ -101	Analog Output 1-5V	
T		-100~100		
N	No vacuum pressure switch, pressure sensor			

Note: MZ series does not have power-off vacuum retention function (no check valve).

⑦Air Supply Port

Code	Port Diameter
06	Ø6mm

⑧ Options

Marking	Content
D	DIN rail mounting
B	Bracket mounting

■ Mode Code System

Manifold **T**ype **V**acuu**m** Generator **+** **V**alve

MZK | A ① | 10 ② | K ③ | 5 ④ | A ⑤ | – | 06 ⑥ | 12 ⑦ | – | 08 ⑧ | 2 ⑨ | – | B ⑩

①Body, Silencer Exhaust Form

Code	Body	Silencer Exhaust Method
A	Single Unit	Built-in silencer exhaust (Note 1)
B	Single Unit	Port exhaust
G	Single Unit	External silencer exhaust

Note 1) For nozzle diameters 12, 15, equipped with exhaust port.

② Nozzle Diameter

Code	Nozzle Diameter
07	Ø0.7
10	Ø1.0
12	Ø1.2
15	Ø1.5

Note 2) Refer to P.005 for standard supply pressure for each nozzle diameter.

⑥Vacuum Port

Code	Port Diameter
06	Ø6
08	Ø8

③Vacuum Valve, Release Valve Type

Marking	Vacuum Valve	Release Valve
	N.C.	N.C.
K	●	●

④Rated Voltage (Supply Valve, Release Valve)

Marking	Voltage
5	DC24V
6	DC12V

⑦Manifold Quantity

Code	Quantity
02	2
03	3
04	4
05	5
06	6
07	7
08	8
09	9
10	10
11	11
12	12

⑤Digital Pressure Switch / Pressure Sensor Type

Marking	Type	Pressure Range [kpa]	Specifications	
			NPN	PNP
			2 Output	
A	Digital Pressure Switch	0~ -101	●	-
C			-	●
E		-100~100	●	-
H			-	●
P	Pressure Sensor	0~ -101	Analog Output 1-5V	
T		-100~100		
N	No vacuum pressure switch, pressure sensor			

Note: M2 series does not have power-off vacuum retention function (no check valve).

⑧Air Supply Port

Code	Port Diameter
08	Ø8mm
10	Ø10mm

⑨ Manifold Supply Method

Code	Supply Method
None	Single-side supply
2	Both-side supply

Note: For single-side supply, supply direction is adjustable.

⑩Options

Marking	Content
D	DIN rail mounting
B	Bracket mounting

■ Mode Code System

Single Unit **V**acuu**m** Generator **+** **V**alve **+** Energy Saving Function

MZK | A ① | 10 ② | K ③ | 5 ④ | K ⑤ | – | 06 ⑥ | – | 06 ⑦ | – | B ⑧

①Body, Exhaust Form

Code	Body	Exhaust Method
A	Single Unit	Built-in silencer exhaust (Note 1)
B	Single Unit	Port exhaust
G	Single Unit	External silencer exhaust

Note 1) For nozzle diameters 12, 15, equipped with exhaust port.

②Nozzle Diamete

Code	Nozzle Diamete
07	Ø0.7
10	Ø1.0
12	Ø1.2
15	Ø1.5

Note 2) Refer to P.005 for standard supply pressure for each nozzle diameter.

③Supply Valve, Release Valve Combination

Marking	Supply Valve	Release Valve
	N.C.	N.C.
K	●	●

④Rated Voltage

Marking	Voltage
5	DC24V
6	DC12V

⑤Digital Pressure Switch / Pressure Sensor

Marking	Pressure Range [kpa]	Specifications	
		NPN	PNP
		1 output	
K	-100~100	●	-
R		-	●

⑥Vacuum Port

Marking	Port Diameter
06	Ø6
08	Ø8

⑦Air Supply Port

Code	Port Diameter
06	Ø6mm

⑧Options

Marking	Content
D	DIN rail mounting
B	Bracket mounting

■ Mode Code System

Manifold **T**ype **V**acuu**m** Generator **+** **V**alve **+** Energy Saving Function

MZK | A ① | 10 ② | K ③ | 5 ④ | K ⑤ | – | 06 ⑥ | 12 ⑦ | – | 08 ⑧ | 2 ⑨ | – | B ⑩

① Body, Silencer Exhaust Form

Code	Body	Silencer Exhaust Method
A	Single Unit	Built-in silencer exhaust (Note 1)
B	Single Unit	Port exhaust
G	Single Unit	External silencer exhaust

Note 1) For nozzle diameters 12, 15, equipped with exhaust port.

② Nozzle Diameter

Code	Nozzle Diamete
07	Ø0.7
10	Ø1.0
12	Ø1.2
15	Ø1.5

Note 2) Refer to P.003 for standard supply pressure for each nozzle diameter.

⑥Vacuum Port

Marking	Port Diameter
06	Ø6
08	Ø8

③Vacuum Valve, Release Valve Type

Marking	Vacuum Valve	Release Valve
	N.C.	N.C.
K	●	●

④ Rated Voltage (Supply Valve, Release Valve)

Marking	Voltage
5	DC24V
6	DC12V

⑦Manifold Quantity

Code	Quantity
02	2
03	3
04	4
05	5
06	6
07	7
08	8
09	9
10	10
11	11
12	12

⑤Digital Pressure Switch / Pressure Sensor

Marking	Pressure Range [kpa]	Specifications	
		NPN	PNP
		1 Output	
K	-100~100	●	-
R		-	●

⑧Air Supply Port

Code	Port Diameter
08	Ø8mm
10	Ø10mm

⑨Manifold Supply Method

Code	Supply Method
None	Single-side supply
2	Both-side supply

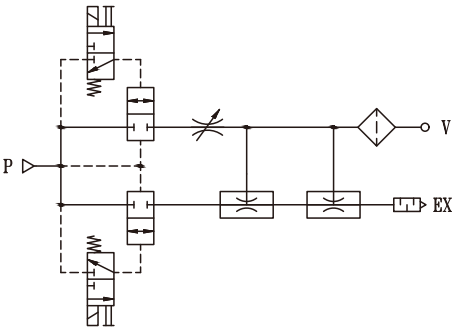
Note 1: For single-side supply, supply direction is adjustable.

⑩ Options

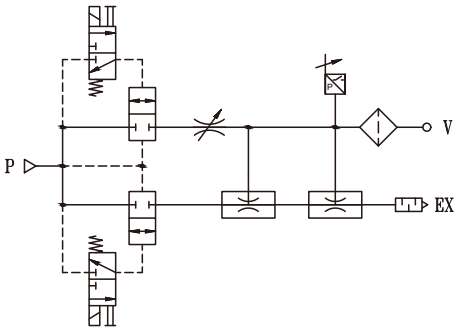
Code	Content
D	DIN rail mounting
B	Bracket mounting

Pneumatic Circuit Diagram

Without Pressure Switch

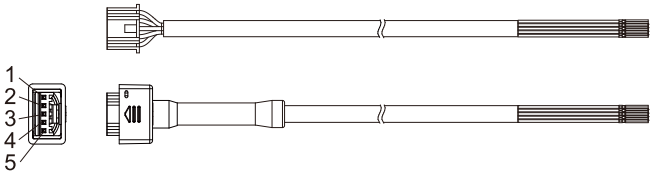


With Pressure Switch

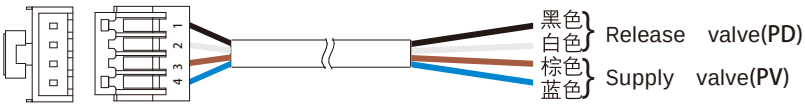


Digital Pressure Switch Wiring Diagram

Cable Connector Pin	Wiring Definition
1	DC (+) (Brown)
2	Analog Output (Orange)
3	OUT2 (White)
4	OUT1 (Black)
5	DC(-) (Blue)



Solenoid Valve Wiring Diagram



Specifications

General Specifications		
Operating Temperature Range(no conde	5~50℃	Energy-saving type pressure switch
Operating Fluid	Clean air	

Vacuum Filter Specifications	
Filtration Accuracy	30μm
Filtration Area	510mm²

Solenoid Valve Specifications				
Switching Method	Supply valve: N.C., Release valve: N.C.			
Valve Configuration	Pilot operated, two 3-port valves			
Operating Pressure Range	03~07MPa			
Valve Structure	Poppet valve			
Manual Operation	Push type			
Rated Voltage	DC24V,DC12V			
Power Consumption	0.5W			
Lead Wire	Conductor cross-section:02mm²			
	Insulator outer diameter:1.4mm			
Supply/Release Valve Wire Colors	Supply valve PV	+Brown	Release valve PD	+White
		-Blue		-Black

MZK Series Parameters

Mode		-kPa	MZK□07	MZK□10	MZK□12	MZK□15
Nozzle Diameter		[mm]	0.7	1.0	1.2	1.5
Max Suction Flow (Note 7)	Port Exhaust	[L/min(ANR)]	34	56	74	89
	Built-in Silencer Exhaust / Composite Exhaust	[L/min(ANR)]	29	44	61	67
	External Silencer Exhaust	[L/min(ANR)]	34	56	72	83
Air Consumption (Note 1)		[L/min(ANR)]	24	40	58	90
Maximum Vacuum Level (Note 1)		[kPa]	-91			
Supply Pressure Range (Note 2)		[MPa]	0.3~0.6(0.1~0.6)			
Standard Supply Pressure (Note 3)		[MPa]	0.35~0.45			0.4~0.5

Note 1) Value at standard supply pressure. Measured unde our company's test conditions. Varies with atmospheric pressure (altitude, etc.) and measurement method.
Note 2) For valveless type.
Note 3) For valveless type. For nozzle diameters 07-12, valved and valveless types are the same.

■ Noise Value (Reference)

Item \ Mode		MZK□07	MZK□10	MZK□12	MZK□15
Noise Value [dB(A)]	MZK(G) High-efficiency Silencer Exhaust	46	55	63	69
	MZKA (Silencer Exhaust)	59	66	75	76

Measured value under our company's test conditions (not a guaranteed value).

■ Digital Pressure Switch Specifications

Specification Table		KP93 (Energy-saving)	KP92V-□	KP92C-□
Rated Pressure Range		-0.100~1.000MPa	0.0~-101.0kPa	-100.0~-100.0kPa
Set Pressure Range		-0.105~1.000MPa	10.0~-105.0kPa	-105.0~-105.0kPa
Withstand Pressure		500kPa		
Applicable Gas		Air, non-corrosive, non-flammable		
Pressure Unit Minimum Setting	kPa	0.1		
	kgf/cm²	0.001		
	bar	0.001		
	psi	0.01		
	inHg	0.1		
	mmHg	1		
Control Input		NPN type Low-level accurate input (SPST or electronic contact) Voltage: 0.4V DC or less, input time 10ms or more. PNP type Low-level accurate input (SPST or electronic contact) Voltage: 20~24V DC, input time 10ms or more.	-	
Supply Voltage		12 to 24V DC ±10%, ripple (P-P) 10% or less		
Current		⩽40mA(no load)		
Switch Output	Output mode	NPN or PNP output	2 NPN or 2 PNP output	
	Max load current	125mA		
	Supply Voltage	24V DC		
	Internal voltage drop	⩽1.5V		
Response Time		⩽2.5ms (Anti-malfunction function: 25ms, 100ms, 250ms, 1000ms, 1500ms selectable)		
Output Short Circuit Protection		Yes		
Linear Analog Output	Output voltage	1~5V±2.5% F.S. (at rated pressure range)		
	Output impedance	approx. 1KΩ		
	Linearity	±1% F.S.		
Display		3½digit LED 7-segment display (red)		
Operation Indicator Light		OUT1 green / OUT2 red		
Repeatability		Approx. 0.2 seconds		
Display Accuracy		±2% F.S. ±1 digit (at ambient temperature: 25±3°C)		
Repeatability		±2% F.S. ±1 digit		
Environmental Resistance	Protection class	IP40		
	Ambient Temperature	Operation: 0~50°C, Storage: 10~60°C (no condensation or freezing)		
	Ambient Humidity	Operation and storage: 35~85% RH (no condensation)		
	Withstand Voltage	1000V AC for 1 minute (between lead wire and plastic case)		
	Insulation Resistance	50MΩ or more (500V DC) (between lead wire and plastic case)		
	Vibration Resistance	Vibration resistance: 1.5 mm compound amplitude, frequency swept from 10 Hz to 150 Hz and back to 10 Hz per minute, for 2 hours each in the X, Y, and Z axes.		
	Shock Resistance	980m/s² (100G) X,Y,Z, directions, 3 times each		
Temperature Characteristics		±2% F.S. relative to reference temperature 25°C (within temperature range 0~50°C)		
Wire Specifications		Oil-resistant PVC wire(0.15mm²)		
Weight		Approx. 55g (including 2m cable)		
Solenoid Drive Max Current, Voltage		200mA @24V DC Max	-	
Short Circuit Protection Function		Vacuum valve switch (V-SOL): Yes, Release valve switch (D-SOL): No	-	
Operation Output Indicator Light		out: Green, V-SOL: Control input, Red vacuum mark	-	

■ Output Circuit Wiring Diagram

1.Model Specification **D**escription

KP93 — 01 — L

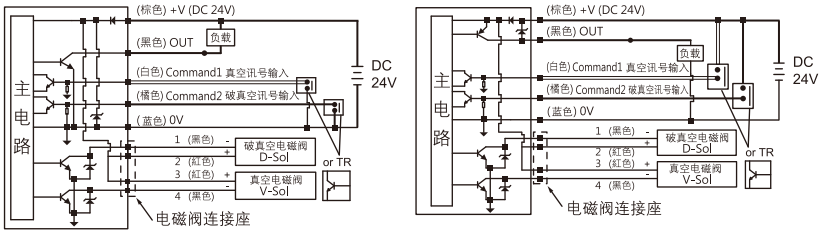
①输出类型

01	NPN Output
03	PNP Output

②接口类型

空白	无Port
L	90度接气口Port

2.输出电路接线图



KP93-01-□ NPN Output

KP93-03-□ PNP Output

3.KP93 Output Operation **M**ode

The energy-saving control operation and set values preset on the switch body are as follows. operation shown below is normal, continue using in this state. Using vacuum pressure as an example:

OUT Operation

Switch turns ON when pressure exceeds set value (P-1).

Switch turns OFF when pressure drops from set value (P-1) by the hysteresis value (H-1) or more.

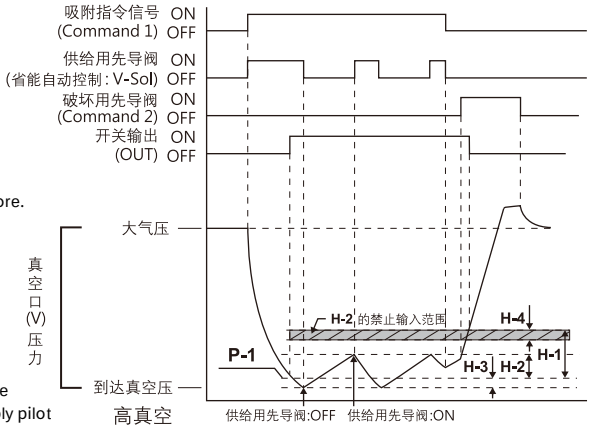
Factory setting: (P-1): -70.0 kPa (H-1): 10.0 kPa.

V-Sol Operation

Based on the suction command signal, the supply pilot valve (V-Sol) opens, vacuum is drawn, and suction starts.

When vacuum reaches the set value (P-1 - H-3: supply pilot valve signal OFF point), the supply pilot valve turns OFF.

When vacuum decreases and reaches the suction switch ON point (P-1 + H-2: supply pilot valve signal ON point), the supply pilot valve opens again to maintain vacuum. Thereafter, the supply pilot valve repeats ON/OFF.



■ Output Circuit Wiring Diagram

1.Model Specification **D**escription

KP92 C — 010

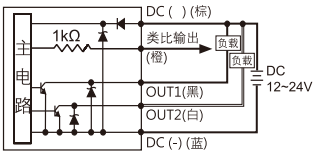
①压力类型

C	连成压(-105.0~1050kPa)
V	负压(10.0~105.0kPa)

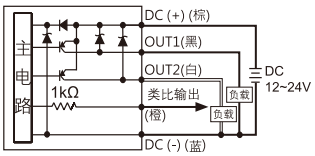
②输出类型

010	2NPNoutput + Analog output (1-5V) (0.6-5V for positive pressure only)
030	2PNPoutput + Analog output (1-5V) (0.6-5V for positive pressure only)

2.Output **C**ircuit **W**iring **D**iagram

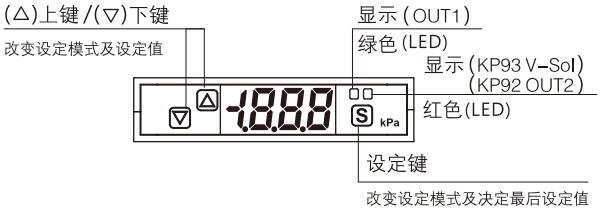


KP92□-010
2NPN+output + Analog output (1-5V)
(0.6-5V for positive pressure only)



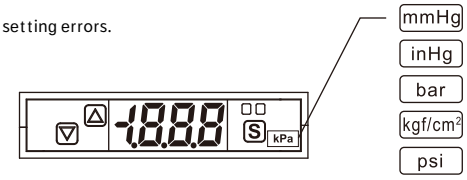
KP92□-030
2PNP+output + Analog output (1-5V)
(0.6-5V for positive pressure only)

3.Panel Description



4.Pressure Unit **L**abel

When the pressure unit used is set to something other than kPa, please take the pressure unit sticker included in the product package and apply the selected sticker in the location shown below to prevent pressure unit misuse and setting errors.

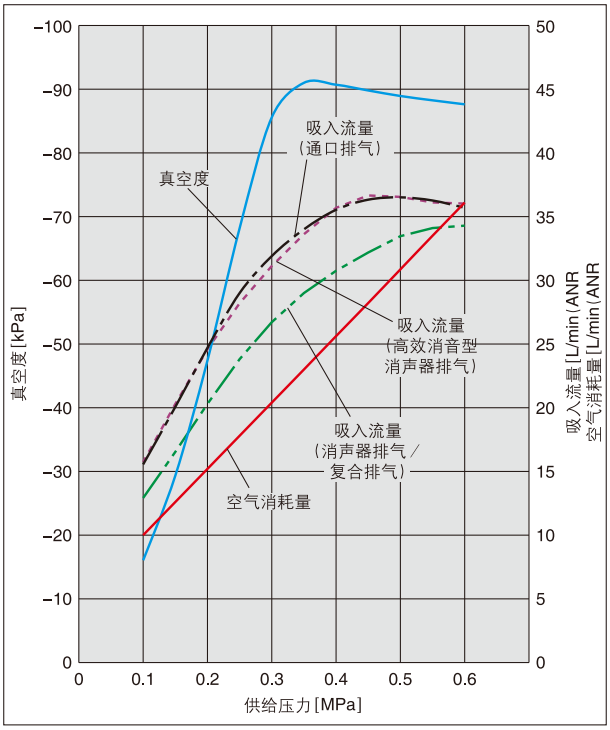


■ Vacuum Characteristics

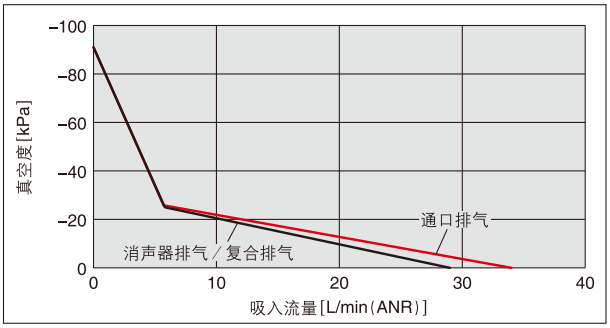
标准供气条件下的流量特性

MZK□07

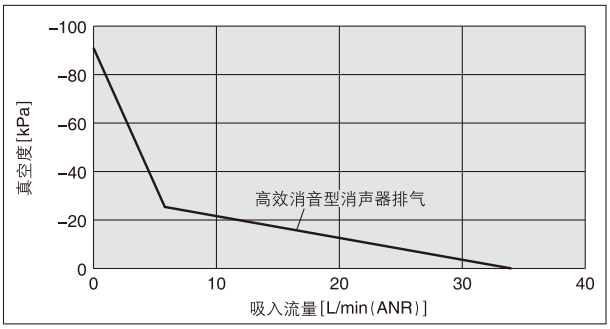
排气特性



Flow Characteristics

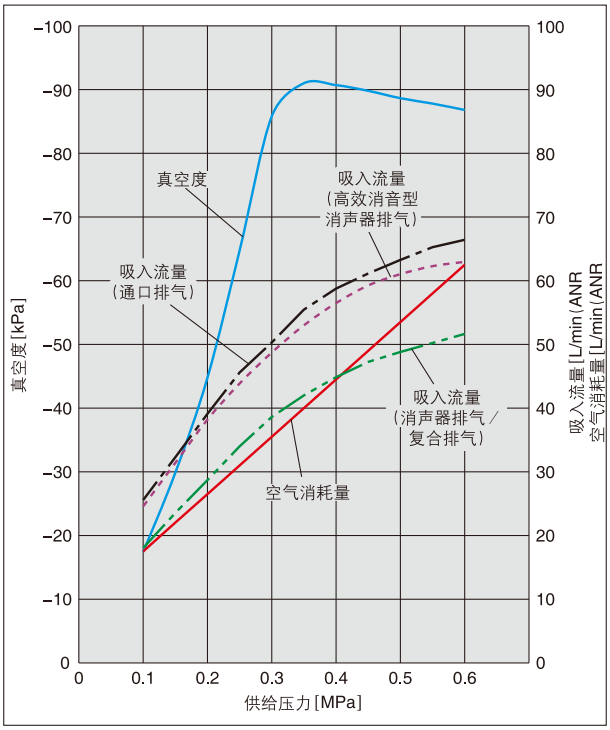


流量特性

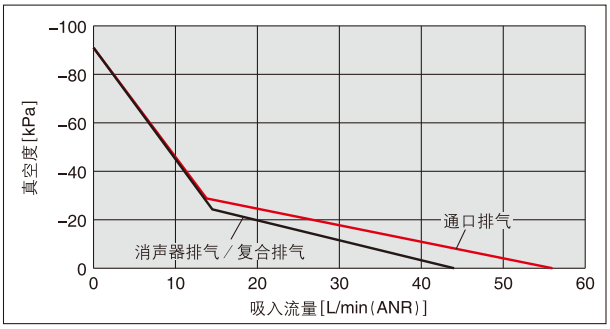


MZK□10

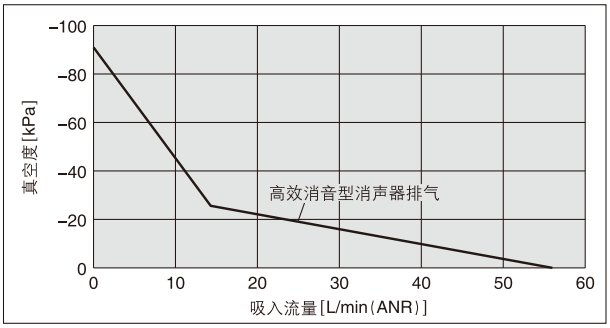
排气特性



流量特性



流量特性

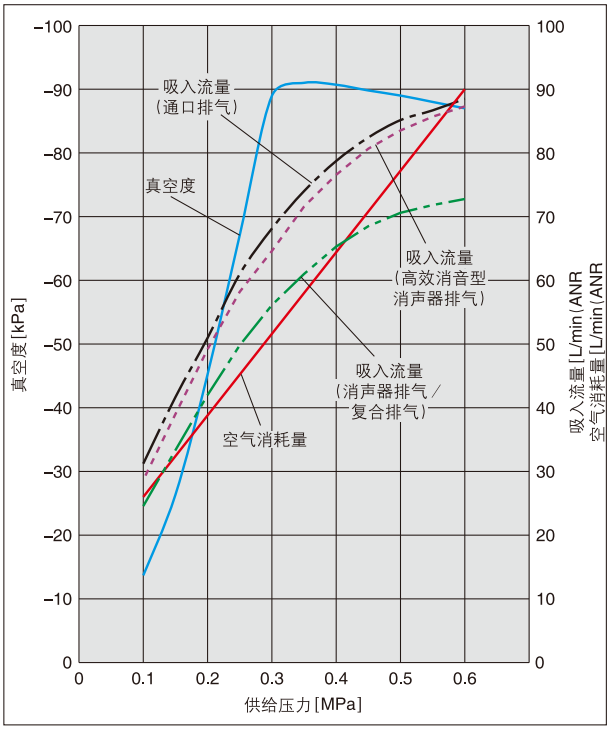


■ Vacuum Characteristics

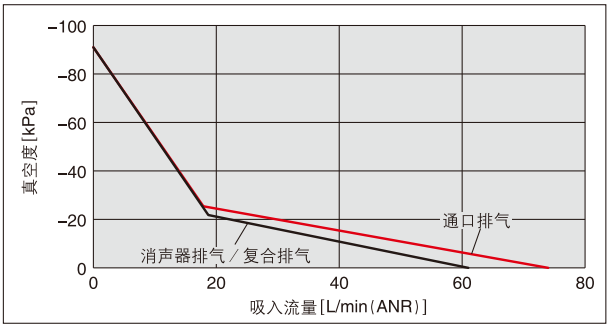
标准供气条件下的流量特性

MZK□12

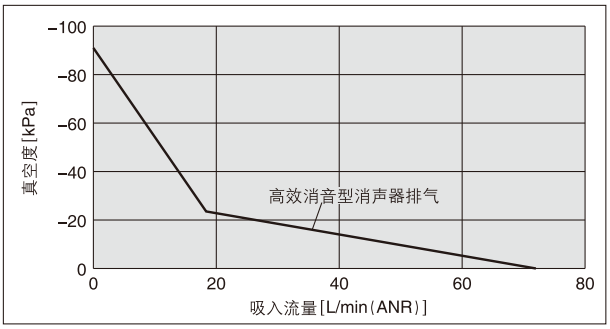
排气特性



Flow Characteristics

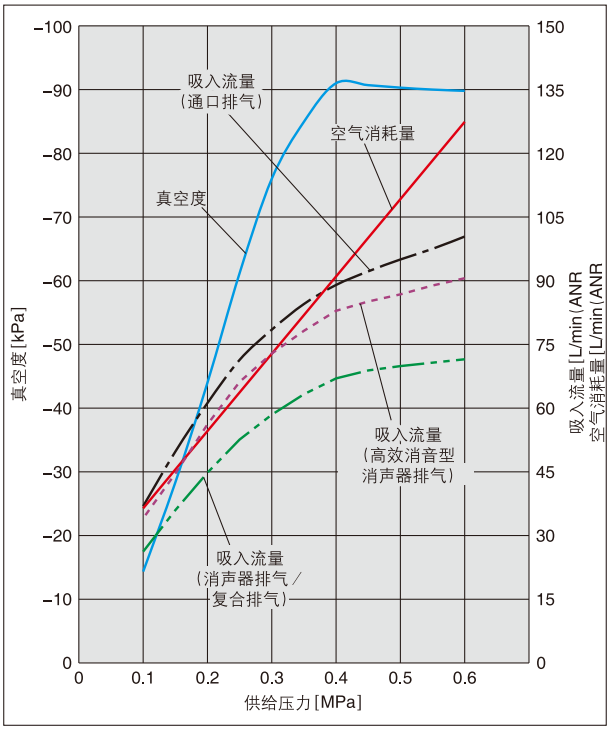


Flow Characteristics

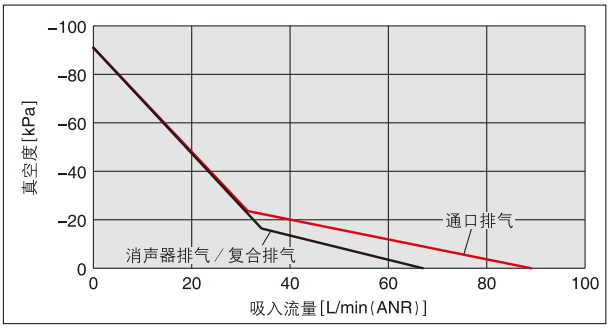


MZK□15

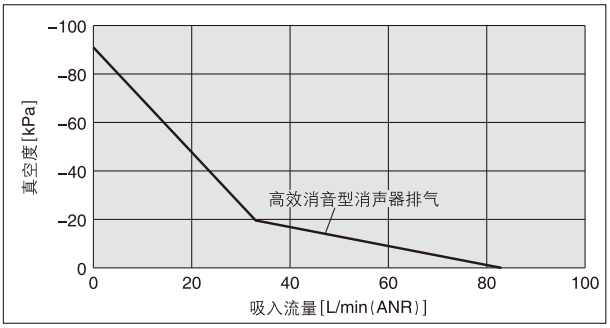
排气特性



Flow Characteristics

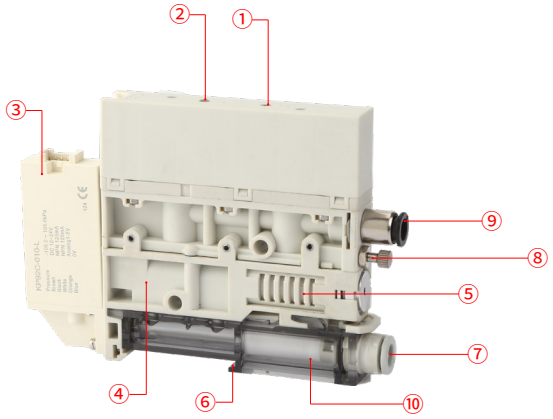


Flow Characteristics



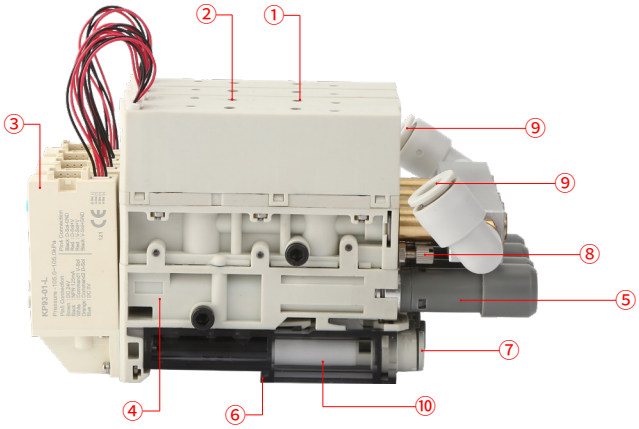
■ Single Unit Functional Diagram

Functional Diagram					
①	Release solenoid valve	②	Vacuum solenoid valve	③	Digital pressure switch
④	Vacuum Generator	⑤	Silencer	⑥	DIN mounting clip
⑦	Vacuum port	⑧	Release flow control valve	⑨	Air supply port
⑩	Vacuum filter	⑪	-	⑫	-



■ Manifold Type Functional Diagram

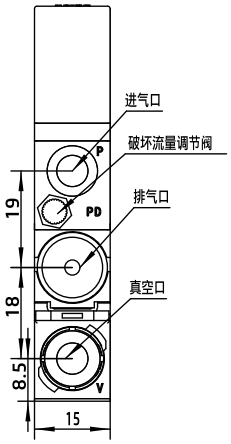
Functional Diagram					
①	Release solenoid valve	②	Vacuum solenoid valve	③	Digital pressure switch
④	Vacuum Generator	⑤	Silencer	⑥	DIN mounting clip
⑦	Vacuum port	⑧	Release flow control valve	⑨	Air supply port
⑩	Vacuum filter	⑪	-	⑫	-

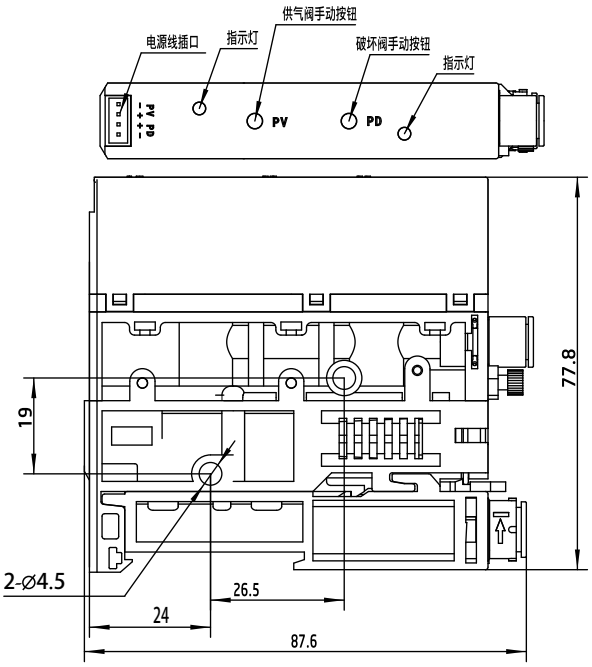


■ Dimensions

Without **P**ressure Switch, **B**uilt-in Silencer, **P**ort Exhaust

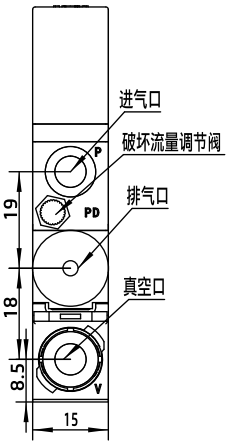
MZKA(B)□□□□-□-□

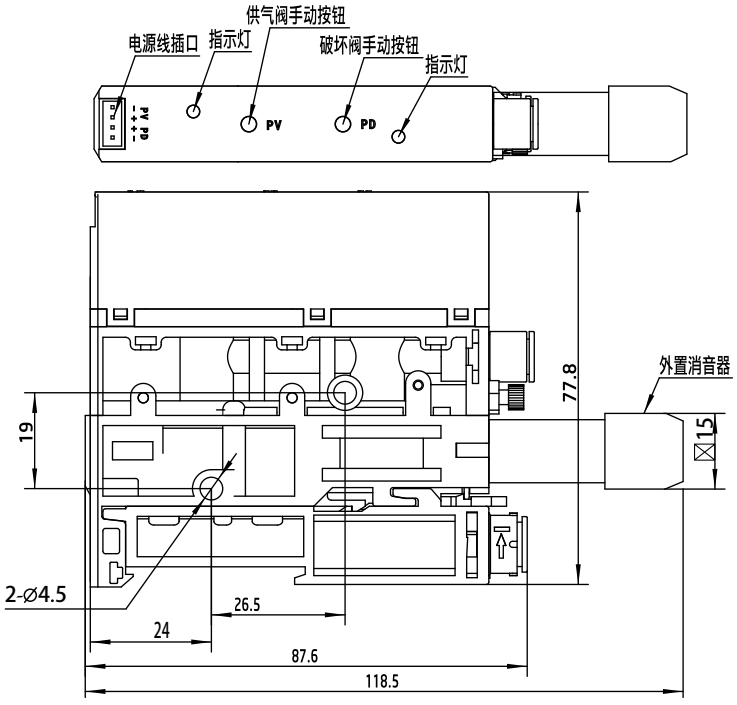




Without **P**ressure Switch, External Silencer Exhaust

MZKAG□□□□-□-□





V Port Type

Metric Size	06	Ø6
	08	Ø8

P Port Type

Metric Size	06	Ø6

※1消声器排气的场合,从两侧面的沟槽排气(请务必开放单侧)。
※2通口排气的场合,从快换接头排气。
※3先导压力排气和真空发生器的排气为集中排气
※4托架安装时的尺寸,请参考P.10
※5喷嘴口径12、15带排气口。
※6高消音型消声器外壳组件的型号及维护请参见说明书。

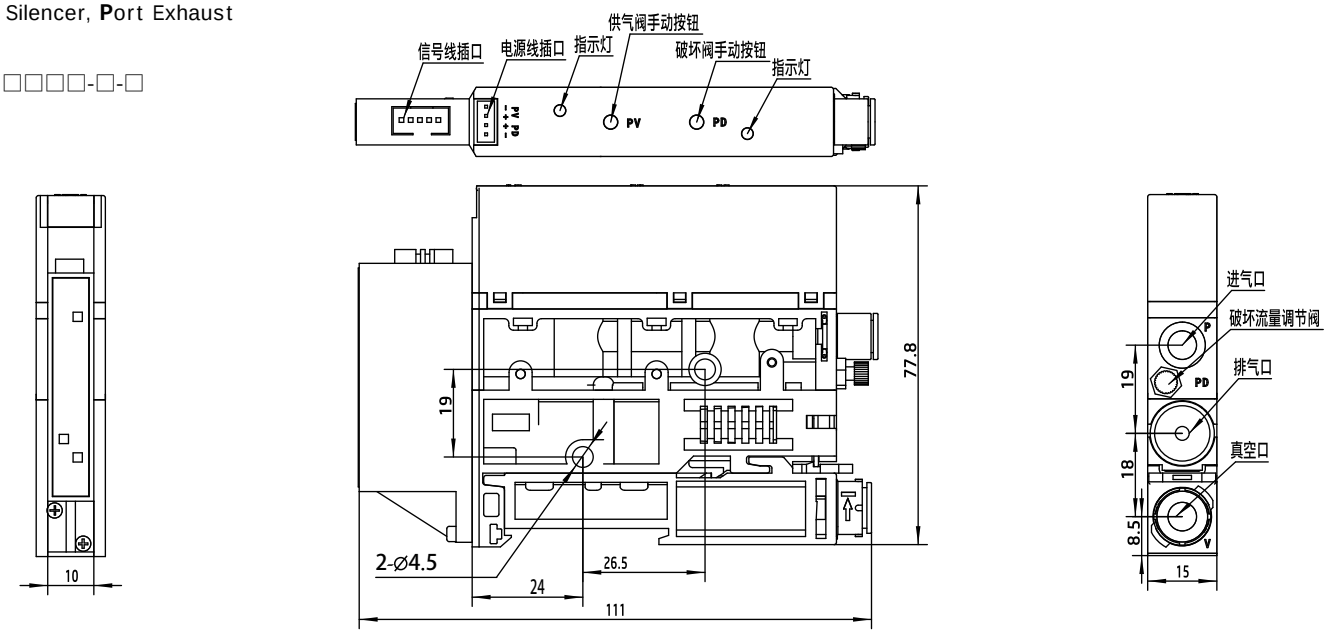
※1 For silencer exhaust, exhaust is from the grooves on both sides (please ensure one side is open).
※2 For port exhaust, exhaust is from the quick-fitting connector.
※3 Pilot pressure exhaust and vacuum ejector exhaust are centralized exhaust.
※4 For dimensions when using bracket mounting, refer to P.10.
※5 Nozzle diameters 12, 15 come with an exhaust port.
※6 Refer to the instruction manual for the model and maintenance of the high-silencer type silencer casing assembly.

■ Dimensions

With **P**ressure Switch **(**with Energy Saving Function**)**,

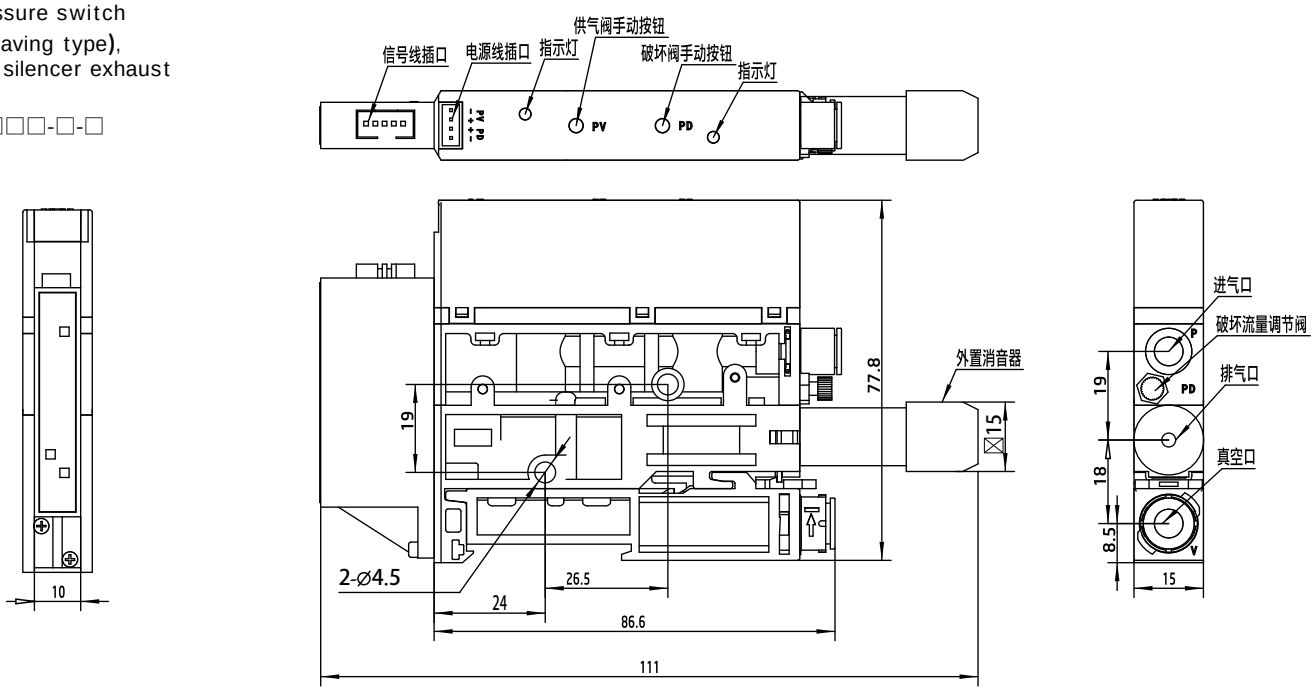
Built-in Silencer, **P**ort Exhaust

MZKA(B)□□□□-□-□



With pressure switch
(energy-saving type**)**,
external silencer exhaust

MZKG□□□□-□-□



V Port Type

Metric Size	06	Ø6
	08	Ø8

P Port Type

Metric Size	06	Ø6

※1消声器排气的场合,从两侧面的沟槽排气(请务必开放单侧)。
※2通口排气的场合,从快换接头排气。
※3先导压力排气和真空发生器的排气为集中排气
※4托架安装时的尺寸,请参考P.10
※5喷嘴口径12、15带排气口。
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※1 For silencer exhaust, exhaust is from the grooves on both sides (please ensure one side is open).
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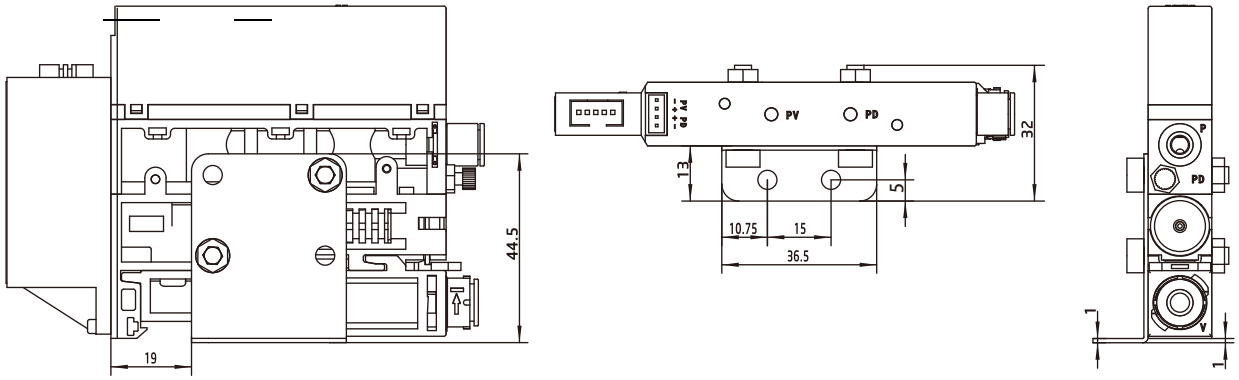
※5 Nozzle diameters 12, 15 come with an exhaust port.
※6 Refer to the instruction manual for the model and maintenance of the high-silencer type silencer casing assembly.

■ Dimensions

单体带托架、带压力开关　Single Unit with Bracket, with Pressure Switch



MD-01高消音型消音器　MD-01 High Silencer Type Silencer