



KOGANEI

VALVES GENERAL CATALOG

MANUAL VALVES, MECHANICAL VALVES INDEX

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Product Range Variation

Characteristics (Diaphragm Type)

- **Reliable operation.**
Using a diaphragm type which enables quick and sharp switching peculiar to the type. The valve seat is also reliable.
- **Trouble free structure.**
An extremely simple structure and a poppet-type seat method ensure free from scoring or scuffing even if a certain amount of dust intrudes inside.
Moreover, it will not stick even after being left unused for long periods.
- **Can be used without lubrication.**
No sliding parts, and lubrication is unnecessary.
And no breakdown problems due to inadequate lubrication.
- **Any mounting direction is acceptable.**
The structure ensures operations without a hitch, no matter what the mounting direction is.
- **Compact and lightweight.**
An original compact design, and a light aluminum alloy body.

Manual valves (push button type)



- Nuts are used for compact mounting on panels. (125P, 125HO type)
- Can also maintain the pressed-down state. (125HO type).
- A vacuum valve with non-leakage structure is also available.

Applications

- ON/OFF for pilot air.
- Operation for single acting air cylinders and air grippers.
- Filling or exhausting of air tank.
- ON/OFF for air supply (125HO).
- ON/OFF for air jet and air blowing.

Manual valves (lever-operated type 2-, 3-port)

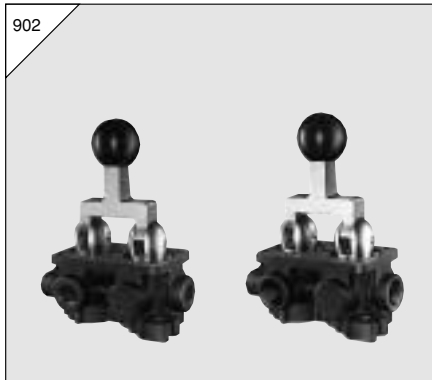


- Nuts are used for compact mounting on panels. (125V)
- A vacuum valve with non-leakage structure is also available.

Applications

- ON/OFF for pilot air.
- Operation for single acting air cylinders and air gripper.
- Filling or exhausting of air tank.
- ON/OFF for air supply.
- ON/OFF for air jet and air blowing.

Manual valves (lever-operated type 3-position, 5-port)



- Operation of double acting air cylinder and air gripper (In the neutral state, the air cylinder and air gripper are in free position, and can be operated manually).
- A vacuum valve with non-leakage structure is also available.

Applications

- Switching of pilot air.
- Switching of air supply.

Manual valves

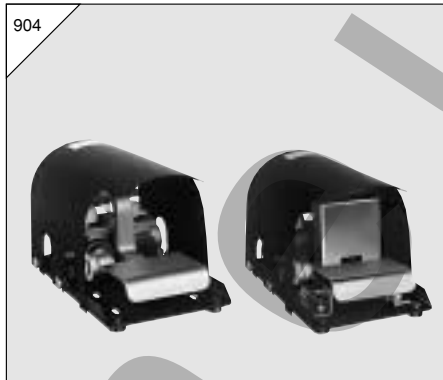


- Slide valve structure, and manually switched 4-port valve.
- Rotary type (swing lever) for reliable switching.

Applications

- For switching air cylinder.

Foot valves



- A holding mechanism maintains the unit in an operating state, which can then be released by pushing down a foot-operated latch located behind the pedal. (250FL, 250-4FL, 25034FL)

Applications

- Operation for double acting air cylinders and air grippers.
- ON/OFF for pilot air. (Double air-piloted valve)

Mechanical valves (ball-cam type)



- Nuts are used for compact mounting on panels (125B).
- A vacuum valve with non-leakage structure is also available.

Applications

- ON/OFF for pilot air.
- Operation for single acting air cylinders and air gripper.
- Filling or exhausting of air tank.
- ON/OFF for air jet and air blowing.

Mechanical valves (roller-cam type)

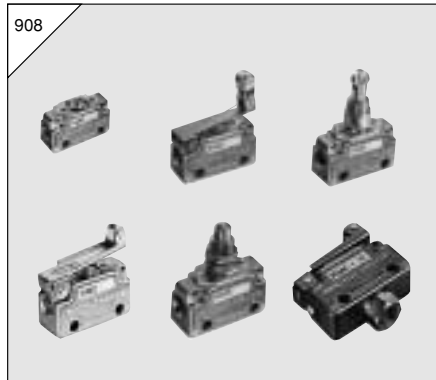


- Robust structure capable of withstanding severe operation.
Offers smooth pilot air switching.

Applications

- ON/OFF for pilot air.
- Operation for single acting air cylinders and air gripper.
- Filling or exhausting of air tank.
- ON/OFF for air jet.

Micro valves



- Both normally closed and normally open types are available for 2-port and 3-port valves, to ensure application of all types of pneumatic signals.
- Virtually no change in operational force from low to high pressure range.
- No neutral position means smooth switching between the A port and R port.

Applications

- Confirms operations in pneumatic control circuits.
- Switches air pressure signals.
- Operation of air cylinder.
- Filling or exhausting of air tank.

Manual Valves

Push Button Type

Symbol

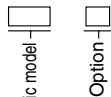
Spring return				Spring return with holding mechanism			
2-port		3-port		2-port		3-port	
NC	NO	NC	NO	NC	NO	NC	NO
(Normally closed)	(Normally open)	(Normally closed)	(Normally open)	(Normally closed)	(Normally open)	(Normally closed)	(Normally open)
125P-2 250P-2 2503P-2	125P-2-11 250P-2-11 2503P-2-11	125P 250P 2503P	125P-11 250P-11 2503P-11	125HO-2 125HO-2-11	125HO-2 125HO-2-11	125HO 125HO-11	125HO-11

Specifications

Item	Operation method	Spring return			Spring return with holding mechanism
		125P	250P	2503P	
Port size	Basic model	Rc1/8	Rc1/4	Rc3/8	Rc1/8
Media		Air			
Operating pressure range	MPa (kgf/cm ²)	0~0.9 {0~9.2}			
Proof pressure	MPa (kgf/cm ²)	1.35 {13.8}			
Operating temperature range (atmosphere and media)	°C	5~60			
Effective area	mm ²	5.5	15	5.5	
Flow coefficient	Cv	0.27	0.76	0.27	
Valve stroke	mm	0.8	1.6	0.8	
Lubrication		Not required			
Mass	kg	0.10	0.20	0.25	0.10
Option	Order code	2-port2 Normally open11 With lock nuts for panel mounting22	2-port2 Normally open11	2-port2 Normally open11	2-port2 Normally open11 With lock nuts for panel mounting22

Remark: Conversion to psi., 1MPa=145psi., 1kgf/cm²=14.2psi., e.g. 0.9MPa=131psi.

Order Code

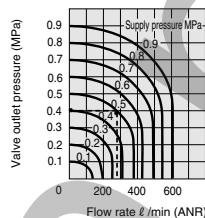


Examples:
125P-2-11-22
250P
2503P-11

Basic model		Option	
Basic model	Port size	Code	Specifications
125P	Rc1/8	Blank	3-port, normally closed
250P	Rc1/4	2	2-port
2503P	Rc3/8	11	Normally open
125HO	Rc1/8 (with holding mechanism)	22	With lock nuts for panel mounting (125P, 125HO only)

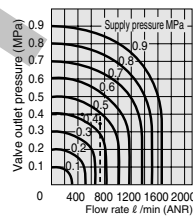
Flow Rate

125 series



How to read the graph
If supply pressure is 0.5MPa and flow rate is 275 l/min (ANR), the valve outlet pressure becomes 0.4MPa.

250 series



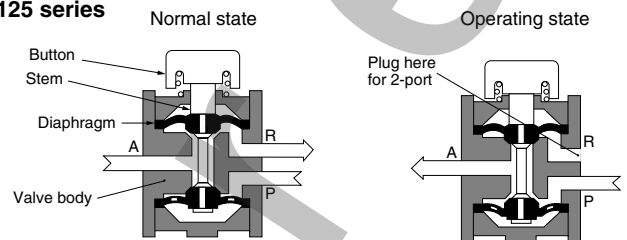
How to read the graph
If supply pressure is 0.5MPa and flow rate is 740 l/min (ANR), the valve outlet pressure becomes 0.4MPa.

Button Pushing Down Force

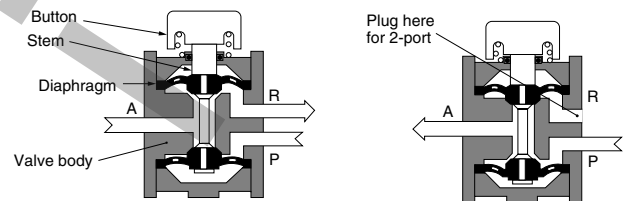
Main pressure MPa		0	0.2	0.4	0.6	0.8
Model	Normally closed					
	Normally open					
125P	Normally closed	14.7	21.6	28.4	36.3	43.2
	Normally open		30.4	44.1	58.8	72.6
125HO	Normally closed	6.9	14.7	21.6	28.4	36.3
	Normally open		21.6	36.3	50.0	58.8
250P	Normally closed	26.5	44.1	64.7	88.2	116.7
	Normally open		42.2	53.0	65.7	85.3

Inner Construction, Major Parts and Materials

125 series



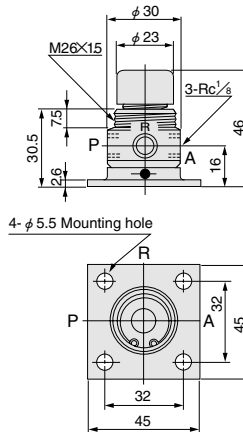
250, 2503 series



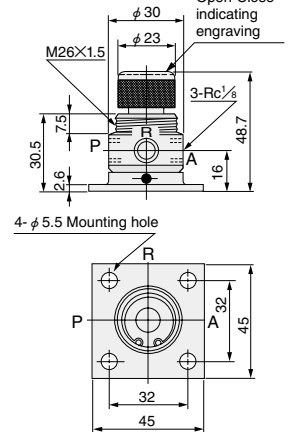
Parts	Materials
Body	Aluminum alloy (anodized)
Stem	Brass
Diaphragm	Synthetic rubber
Button	Nylon (125HO: Steel)

Dimensions (Unit mm)

125P



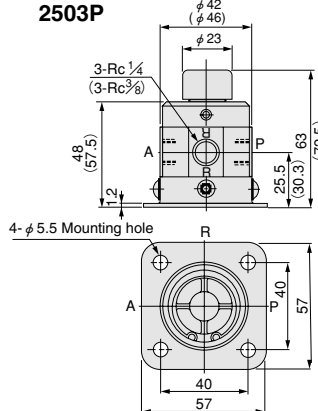
125HO



Note: For the normally open type, the exhaust port (R) is on the opposite side.

Note: For the normally open type, the exhaust port (R) is on the opposite side.

250P 2503P



Notes: 1. For the normally open type, the exhaust port (R) is on the opposite side.
2. Dimensions in parentheses () are for the 2503P.

Manual Valves

Lever-operated Type 2-, 3-port

Symbol

2-port NC/NO (both normally closed and normally open)	3-port NC/NO (both normally closed and normally open)
125V-2 250V-2 2503V-2	125V 250V 2503V

Specifications

Item	Basic model	125V	250V	2503V
Port size		Rc1/8	Rc1/4	Rc3/8
Media		Air		
Operating pressure range	MPa {kgf/cm ² }	0~0.9 {0~9.2}		
Proof pressure	MPa {kgf/cm ² }	1.35 {13.8}		
Operating temperature range (atmosphere and media)	°C	5~60		
Effective area	mm ²	5.5	15	
Flow rate coefficient	Cv	0.27	0.76	
Valve stroke	mm	0.8	1.6	
Lubrication		Not required		
Mass	kg	0.11	0.24	0.29
Option	2-port2 With lock nuts for panel mounting22	2-port2		
.....Order code				

Remark: Conversion to psi., 1MPa=145psi., 1kgf/cm²=14.2psi., e.g. 0.9MPa=131psi.

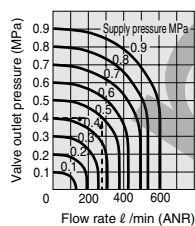
Order Code

Basic model	Option
Basic model	Code
125V	Blank
250V	2
2503V	22
	With lock nuts for panel mounting 125V only

Examples:
125V-2-22
250V
2503V-2

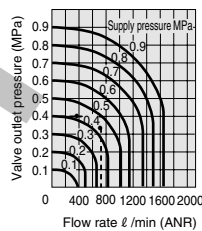
Flow Rate

125 series



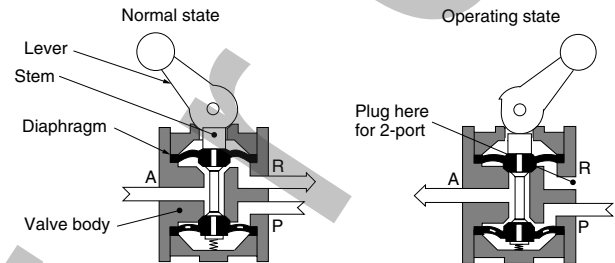
How to read the graph
If supply pressure is 0.5MPa and flow rate is 275 l/min (ANR), the valve outlet pressure becomes 0.4MPa.

250 series
2503 series



How to read the graph
If supply pressure is 0.5MPa and flow rate is 740 l/min (ANR), the valve outlet pressure becomes 0.4MPa.

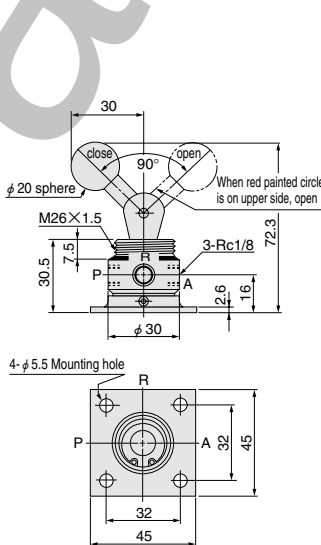
Inner Construction, Major Parts and Materials



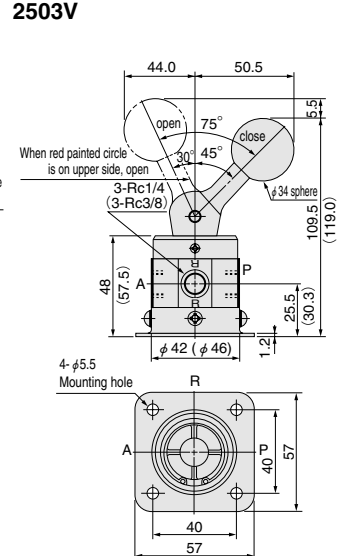
Parts	Materials
Body	Aluminum alloy (anodized)
Stem	Brass
Diaphragm	Synthetic rubber

Dimensions (Unit mm)

125V



250V
2503V



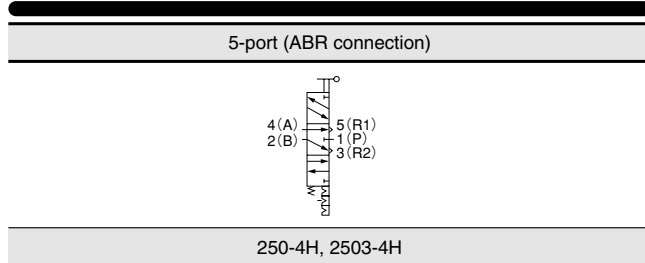
Notes: 1. While the 125V lever position is located on the P port side in the normal state, it can be adjusted up to 360°.

2. Dimensions in parentheses () are for the 2503V.

Manual Valves

Lever-operated Type 3-position, 5-port

Symbol

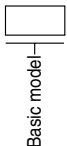


Specifications

Item	Basic model	250-4H	2503-4H
Port size		Rc1/4	Rc3/8
Media		Air	
Operating pressure range MPa (kgf/cm ²)		0.1 ~ 0.9 {0 ~ 9.2}	
Proof pressure MPa (kgf/cm ²)		1.35 {13.8}	
Operating temperature range (atmosphere and media) °C		5 ~ 60	
Effective area mm ²		15	
Flow rate coefficient Cv		0.76	
Valve stroke mm		1.6	
Lubrication		Not required	
Mass kg		0.6	

Remark: Conversion to psi., 1MPa=145psi., 1kgf/cm²=14.2psi., e.g. 0.1MPa=14.5psi.

Order Code

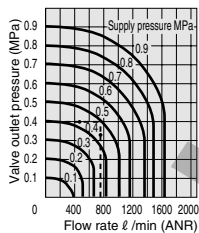


Basic model

Basic model	Port size
250-4H	Rc1/4
2503-4H	Rc3/8

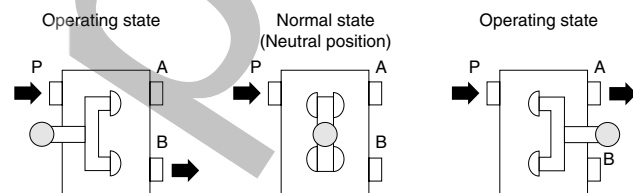
Examples:
250-4H
2503-4H

Flow Rate

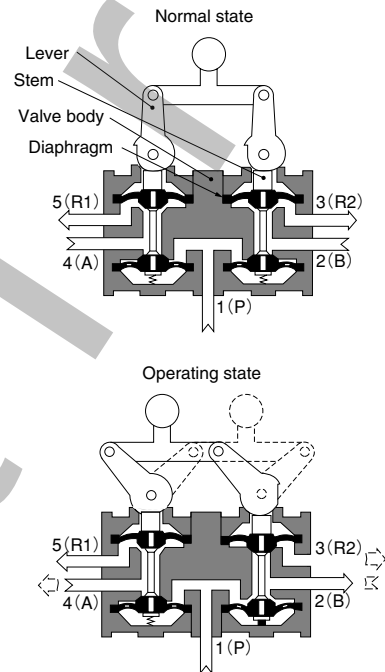


How to read the graph
If supply pressure is 0.5MPa and flow rate is 740 l/min (ANR), the valve outlet pressure becomes 0.4MPa.

Lever Position and Air Flow

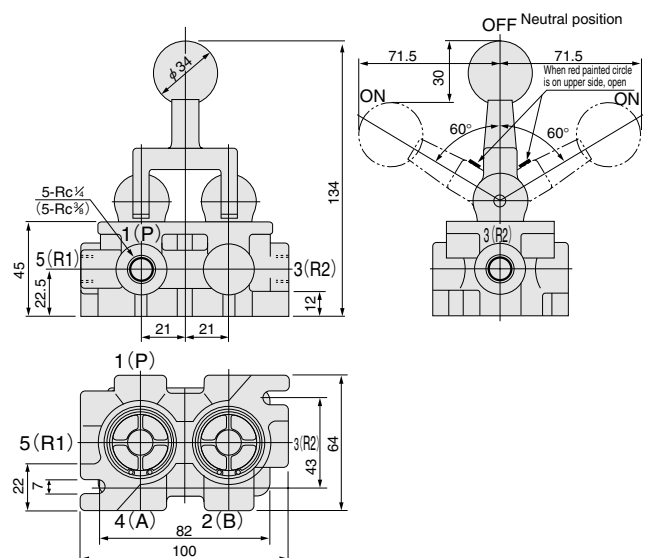


Inner Construction, Major Parts and Materials



Parts	Materials
Body	Aluminum alloy (anodized)
Stem	Brass
Diaphragm	Synthetic rubber

Dimensions (Unit mm)



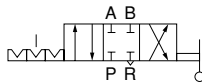
Manual Valves

400HV Series

Features

- Optimum for air cylinder operation switching.
- Slide valve structure, and manually switched 4-port valve.
- Rotary type (swing lever) for reliable switching.

Symbol



Order Code

400HV


Port size
02—Rc1/4
03—Rc3/8
04—Rc1/2

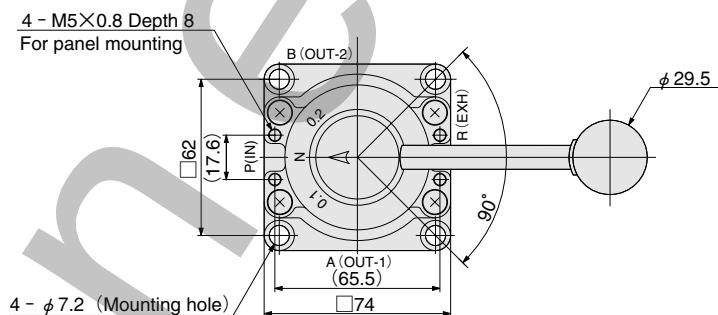
Manual valves

Specifications

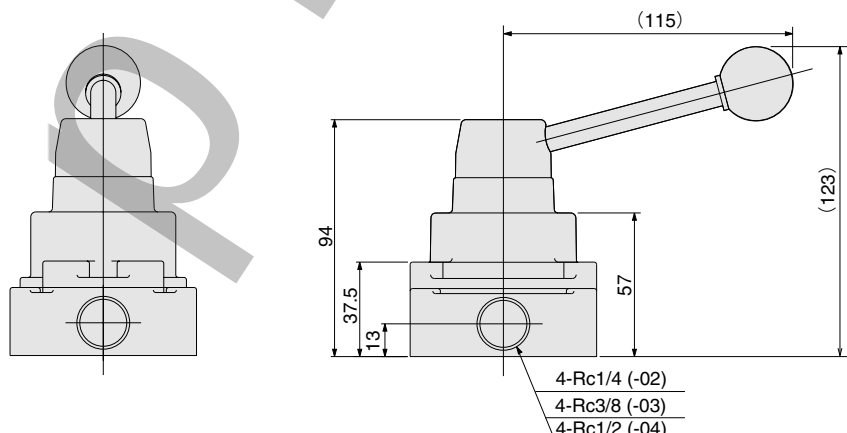
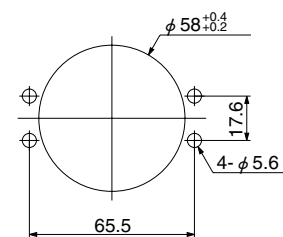
Item	Model	400HV-02	400HV-03	400HV-04
Media		Air		
Valve function		4-port, 3-position		
Operation method		Direct acting		
Effective area	mm ²	26		
Port size		Rc1/4	Rc3/8	Rc1/2
Operating pressure range	MPa {kgf/cm ² }	0~0.97 {0~9.9}		
Proof pressure	MPa {kgf/cm ² }	1.47 {15.0}		
Operating temperature range	°C	5~60		
Angle of lever operation		90°		
Mounting direction		Any		
Mass	g	800		

Remark: Conversion to psi., 1MPa=145psi., 1kgf/cm²=14.2psi., e.g. 0.97MPa=141psi.

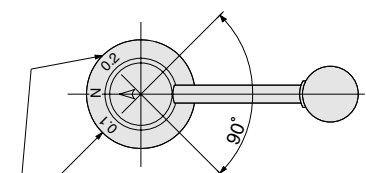
Dimensions (Scale 1/3, Unit mm)



- Detailed diagram for machining panel mounting holes



Handling precautions



The air flow in switching is described by the figure which the arrow indicator on selector handle shows.

For O.1 : P (IN) → A (OUT-1)
 For O.2 : P (IN) → B (OUT-2)

Foot Valves

2-, 3-port

Symbol

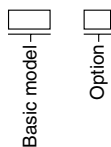
Spring return				Spring return with holding mechanism			
2-port		3-port		2-port		3-port	
NC (Normally closed)	NO (Normally open)	NC (Normally closed)	NO (Normally open)	NC (Normally closed)	NO (Normally open)	NC (Normally closed)	NO (Normally open)
250F-2	250F-2-11	250F	250F-11	250FL-2	250FL-2-11	250FL	250FL-11

Specifications

Operation method		Spring return	Spring return with holding mechanism
Basic model		250F	250FL
Port size		Rc1/4	Rc1/4
Media		Air	
Operating pressure range	MPa {kgf/cm ² }	0~0.9 {0~9.2}	
Proof pressure	MPa {kgf/cm ² }	1.35 {13.8}	
Operating temperature range (atmosphere and media)	°C	5~60	
Effective area	mm ²	15	
Flow rate coefficient	Cv	0.76	
Valve stroke	mm	1.6	
Lubrication		Not required	
Mass	kg	1.0	1.6
Option		2-port-2 Normally open --11	
.....-Order code			

Remark: Conversion to psi., 1MPa=145psi., 1kgf/cm²=14.2psi., e.g. 0.9MPa=131psi.

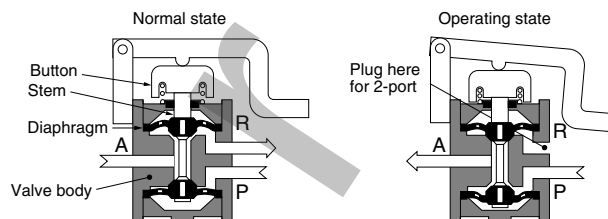
Order Code



Examples:
250F
250FL-2-11

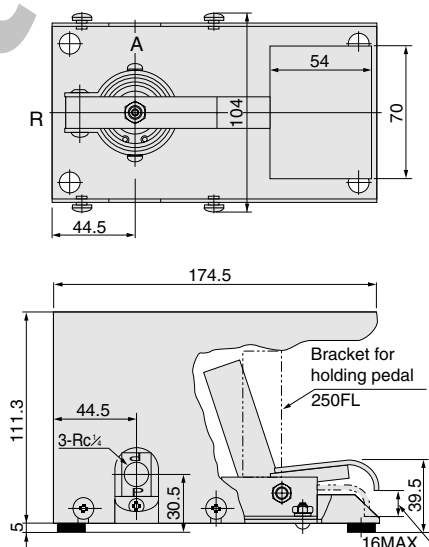
Basic model		Option	
Basic model	Operation method	Code	Specifications
250F	Spring return	Blank	3-port
250FL	Spring return with holding mechanism	2	2-port
		11	Normally open

Inner Construction, Major Parts and Materials



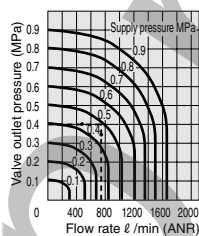
Parts	Materials
Body	Aluminum alloy (anodized)
Stem	Brass
Diaphragm	Synthetic rubber
Cover, pedal	Steel

Dimensions (Unit mm)



Note: In case of 250F and 250FL, normally open, P port and A port are on the opposite side.

Flow Rate



How to read the graph
If supply pressure is 0.5MPa and flow rate is 740 l/min (ANR), the valve outlet pressure becomes 0.4MPa.

Pedal Pushing Down Force

Main pressure MPa		0	0.2	0.4	0.6	0.8
Model						
250F	Normally closed	5.9	9.8	13.7	18.6	25.5
250FL	Normally open	5.9	8.8	11.8	14.7	18.6

Foot Valves

5-port

Symbol

Spring return	Spring return with holding mechanism
	
250-4F 2503-4F	250-4FL 2503-4FL

Specifications

Item	Operation method	Spring return		Spring return with holding mechanism	
	Basic model	250-4F	2503-4F	250-4FL	2503-4FL
Port size		Rc1/4	Rc3/8	Rc1/4	Rc3/8
Media		Air			
Operating pressure range	MPa (kgf/cm ²)	0~0.9 {0~9.2}			
Proof pressure	MPa (kgf/cm ²)	1.35 {13.8}			
Operating temperature range (atmosphere and media)	°C	5~60			
Effective area	mm ²	15			
Flow rate coefficient	Cv	0.76			
Valve stroke	mm	1.6			
Lubrication		Not required			
Mass	kg	1.6		1.7	

Remark: Conversion to psi., 1MPa=145psi., 1kgf/cm²=14.2psi., e.g. 0.9MPa=131psi.

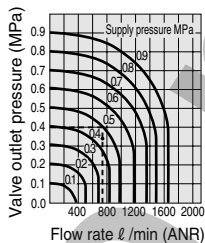
Order Code

Basic model

Basic model	Specifications
250-4F	Rc 1/4 Spring return
250-4FL	Rc 1/4 Spring return with holding mechanism
2503-4F	Rc3/8 Spring return
2503-4FL	Rc 3/8 Spring return with holding mechanism

Examples:
250-4F
2503-4FL

Flow Rate

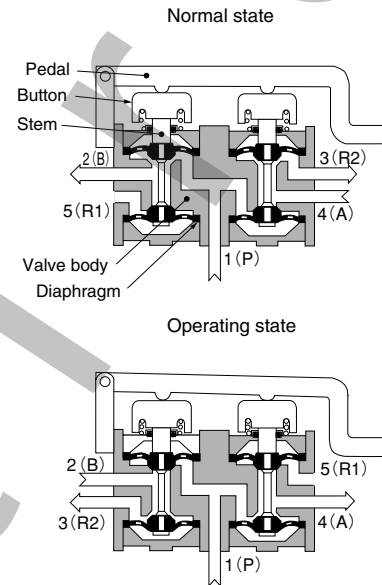


How to read the graph
If supply pressure is 0.5MPa and flow rate is 740 l/min (ANR), the valve outlet pressure becomes 0.4MPa.

Pedal Pushing Down Force

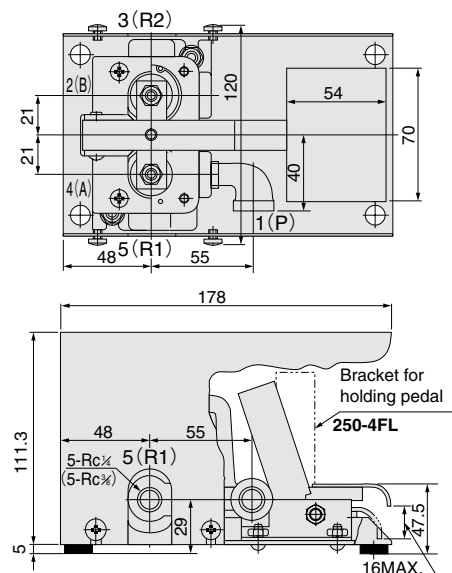
Main pressure MPa	0	0.2	0.4	0.6	0.8
Model					
250-4F					
2503-4F	10.8	17.7	25.5	33.3	44.1
250-4FL					
2503-4FL					

Inner Construction, Major Parts and Materials



Parts	Materials
Body	Aluminum alloy (anodized)
Stem	Brass
Diaphragm	Synthetic rubber
Cover, pedal	Steel

Dimensions (Unit mm)



Mechanical Valves

Ball-cam Type

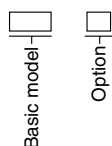
Symbol

2-port		3-port	
NC (Normally closed)	NO (Normally open)	NC (Normally closed)	NO (Normally open)
			
125B-2 250B-2 2503B-2	125B-2-11	125B 250B 2503B	125B-11

Specifications

Basic model Item	125B	250B	2503B
Port size	Rc1/8	Rc1/4	Rc3/8
Media	Air		
Operating pressure range MPa [kgf/cm ²]	0~0.9 {0~9.2}		
Proof pressure MPa [kgf/cm ²]	1.35 {13.8}		
Operating temperature range (atmosphere and media) °C	5~60		
Effective area mm ²	5.5	15	
Flow rate coefficient Cv	0.27	0.76	
Valve stroke mm	0.8	1.6	
Lubrication	Not required		
Mass kg	0.11	0.21	0.26

Option	2-port-2	
.....Order code	Normally open-11	2-port-2
	With lock nuts for-20	

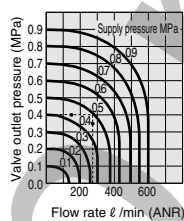
Order Code

Basic model		Option	
Basic model	Port size	Code	Specifications
125B	Rc1/8	Blank	3-port
250B	Rc1/4		Normally closed
2503B	Rc3/8	2	2-port
		11	Normally open (125B only)
		22	125B With lock nuts for panel mounting

Examples:
125B-2-11-22
250B

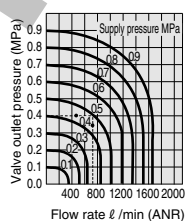
Flow Rate

125 series



How to read the graph
If supply pressure is 0.5MPa and flow rate is 275 ℓ /min (ANR), the valve outlet pressure becomes 0.4MPa.

250 series
2503 series

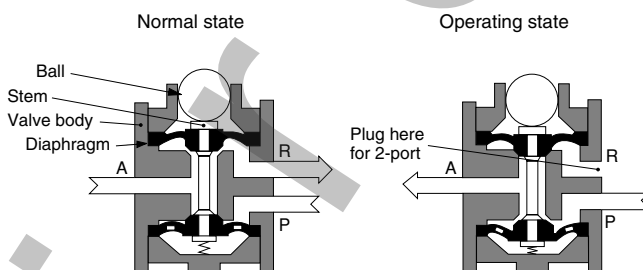


How to read the graph
If supply pressure is 0.5MPa and flow rate is 740 ℓ /min (ANR), the valve outlet pressure becomes 0.4MPa.

Ball Pushing Down Force

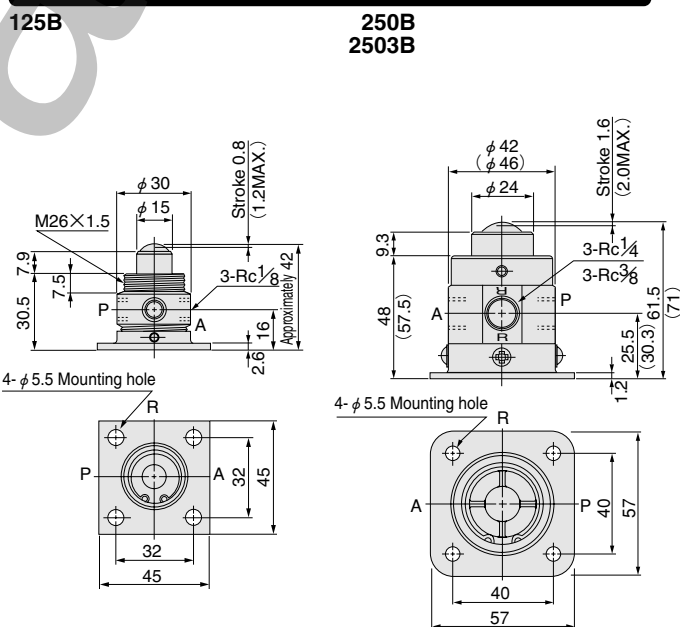
Main pressure		0	0.2	0.4	0.6	0.8
Model	MPa					
125B	Normally closed	16.7	24.5	32.4	40.2	48.1
	Normally open		30.4	50.0	71.6	86.3
250B	Normally closed	17.5	36.3	55.9	78.5	104.0

Inner Construction, Major Parts and Materials



Parts	Materials
Body	Aluminum alloy (anodized)
Stem	Brass
Diaphragm	Synthetic rubber
Ball	Steel

Dimensions (Unit mm)



Note: For the normally open type, the exhaust port (R) is on the opposite side.

Mechanical Valves

Roller-cam Type

Symbol

Roller-cam				One way roller-cam			
2-port		3-port		2-port		3-port	
NC (Normally closed)	NO (Normally open)	NC (Normally closed)	NO (Normally open)	NC (Normally closed)	NO (Normally open)	NC (Normally closed)	NO (Normally open)
125MC-2 250C-2 2503C-2	125MC-2-11 250C-2-11 2503C-2-11	125MC 250C 2503C	125MC-11 250C-11 2503C-11	125MOC-2 250MOC-2-11 2503MOC-2	125MOC-2-11 250MOC-2-11 2503MOC-2-11	125MOC 250MOC 2503MOC	125MOC-11 250MOC-11 2503MOC-11

Specifications

Item	Basic model	125MC	125MOC	250C	2503C
Operation method		Roller-cam (Steel roller)	One way roller-cam (Steel roller)	Roller-cam (Nylon roller)	
Port size		Rc1/8		Rc1/4	Rc3/8
Media		Air			
Operating pressure range	MPa {kgf/cm ² }	0~0.9 {0~9.2}			
Proof pressure	MPa {kgf/cm ² }	1.35 {13.8}			
Operating temperature range (atmosphere and media)	°C	5~60			
Effective area	mm ²	5.5		15	
Flow rate coefficient	Cv	0.27		0.76	
Valve stroke	mm	0.8		1.6	
Lubrication		Not required			
Mass	kg	0.15		0.30	0.35
Option Order code		2-port ····· -2 Normally open · -11			

Remark: Conversion to psi., 1MPa=145psi., 1kgf/cm²=14.2psi., e.g. 0.9MPa=131psi.

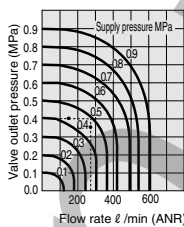
Order Code

Basic model	Basic model		Option	
	Basic model	Specifications	Code	Specifications
	125MC	Rc1/8 Roller-cam	Blank	3-port Normally closed
	125MOC	Rc 1/8 One way roller-cam	2	2-port
	250C	Rc1/4 Roller-cam	11	Normally open
	2503C	Rc3/8 Roller-cam		

Examples:
125MC-2-11
2503C

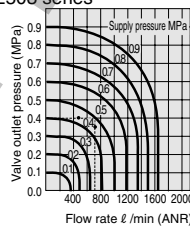
Flow Rate

125 series



How to read the graph
If supply pressure is 0.5MPa and flow rate is 275 l/min (ANR), the valve outlet pressure becomes 0.4MPa.

250 series
2503 series



How to read the graph
If supply pressure is 0.5MPa and flow rate is 740 l/min (ANR), the valve outlet pressure becomes 0.4MPa.

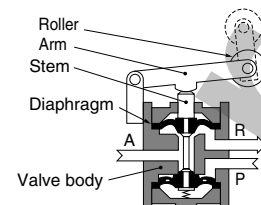
Roller Pushing Down Force

Main pressure MPa		0	0.2	0.4	0.6	0.8
Model						
125MC	Normally closed	12.8	15.7	19.6	24.5	29.4
	Normally open		14.7	17.7	22.6	26.5
125MOC	Normally closed	10.8	13.7	18.6	22.6	26.5
	Normally open		12.8	15.7	19.6	23.5
250C	Normally closed	12.8	19.6	28.4	38.3	54.9
2503C	Normally open			24.5	30.4	39.2

Inner Construction, Major Parts and Materials

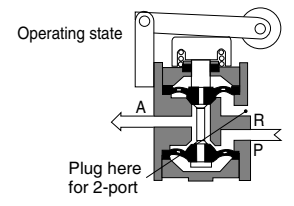
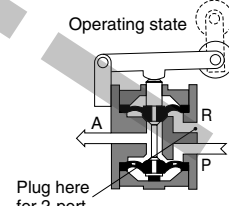
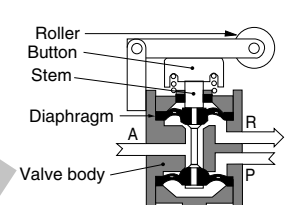
125 series

Normal state



250 series
2503 series

Normal state

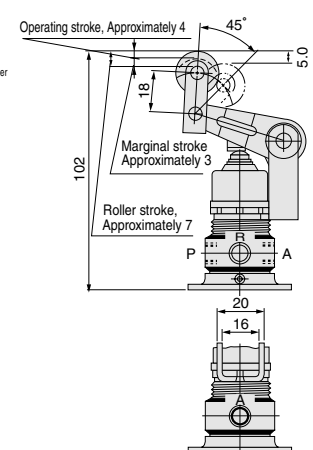
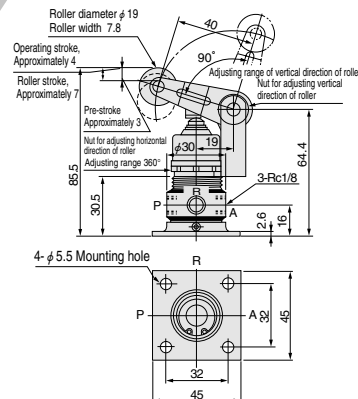


Parts	Materials
Body	Aluminum alloy (anodized)
Stem	Brass
Diaphragm	Synthetic rubber
Roller	125 series: Steel 250, 2503 series: Nylon

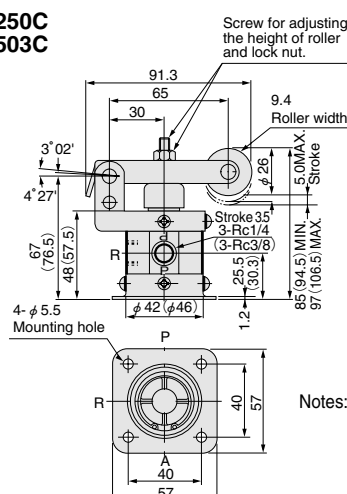
Dimensions (Unit mm)

125MC

125MOC



250C
2503C



Note: Not specified dimensions are the same as for the 125MC.

Notes: 1. Dimensions in parentheses () are for the 2503C.
2. For the normally open type, the exhaust port (R) is on the opposite side.

Micro Valves

Specifications

Port size	Rc1/8 (P, A), ϕ 2 2 places (R)
Media	Air
Operating pressure range MPa {kgf/cm ² }	0~0.9 {0~9.2}
Proof pressure MPa {kgf/cm ² }	1.35 {13.8}
Operating temperature range (atmosphere and media) °C	0~60
Effective area mm ²	1.8
Flow rate coefficient Cv	0.08
Valve stroke mm	Approximately 1.5 (For details, see attached table.)
Lubrication	Required (Recommended Turbine oil Class 1 (ISO VG32))
Mass g	90 (KMP type), 100 (KMC type), 130 (KMR type)
Option Order code	2-port-2 Normally open-11 With R port fitting-60

Remark: Conversion to psi., 1MPa=145psi., 1kgf/cm²=14.2psi., e.g. 0.9MPa=131psi.

Order Code

KM				
Operation method	Number of ports	Valve function	R port fitting	

Operation method

Code	Operation method
P	Pin plunger
C	Roller-cam
O	One way roller-cam
S	Straight plunger
R	Roller plunger

Number of ports

Code	Number of ports
Blank	3
2	2

R port fitting

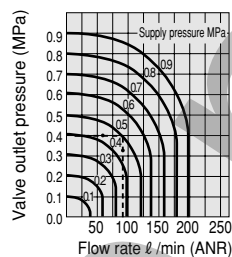
Code	R port fitting
Blank	—
60	With fitting

Valve function

Code	Number of ports
Blank	NC (normally closed)
11	NO (normally open)

Note : When using as a divider valve, specify as "normally open, with R port fitting (-11-60)."
Avoid using the normally closed type as a divider valve.

Flow Rate



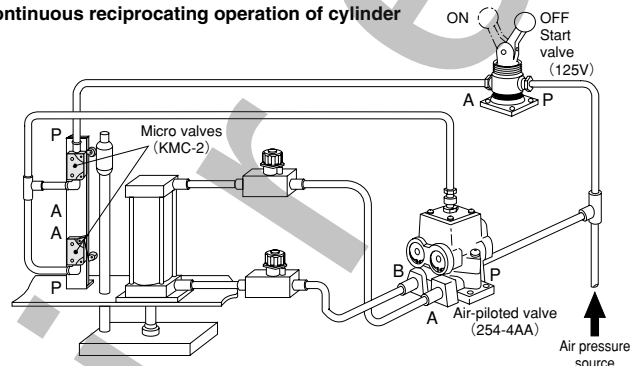
How to read the graph
If supply pressure is 0.5MPa and flow rate is 85 l/min (ANR), the valve outlet pressure becomes 0.4MPa.

Time Required for Switching

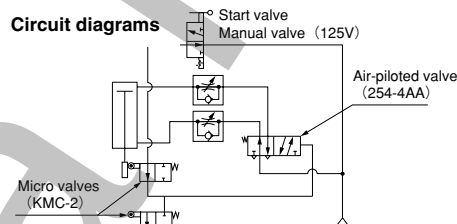
Model and state of air-piloted valves		Switching time s
254-4A	ON (Switching P→A)	0.07
	OFF (Switching P→B)	0.20
375-4A	ON (Switching P→A)	0.09
501-4A	OFF (Switching P→B)	0.23
750-4A	ON (Switching P→A)	0.16
	OFF (Switching P→B)	0.25
1000-4A	ON (Switching P→A)	0.25
1250-4A	OFF (Switching P→B)	0.42

Application example

Continuous reciprocating operation of cylinder

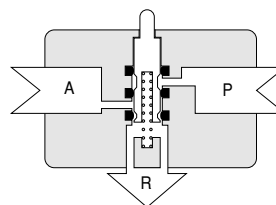


Circuit diagrams

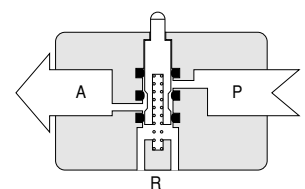


Inner Construction, Major Parts and Materials

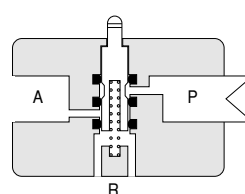
3-port, normally closed type (normal state)



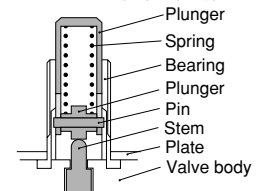
3-port, normally open type (normal state)



2-port, normally closed type (normal state)

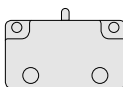
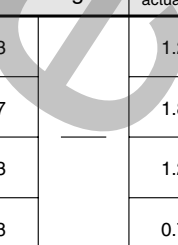
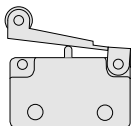
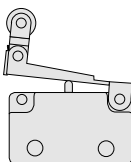
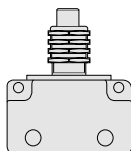
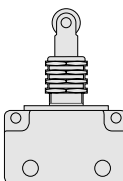


Structure of straight plunger type



Parts	Materials
Body	Zinc die-cast
Stem	Stainless steel
Seal O ring	Synthetic rubber
Roller	Stainless steel

Model and Valve Stroke

Type	Shape	Model	Function		Operating force N When air pressure 0.9MPa (9.2 kgf/cm²)	Valve stroke mm			
						Stroke until actuating		Allowable stroke after actuating	Total stroke
Pin plunger type		KMP-2	2-port	Normally closed (NC)	24.5	1.3		1.2	2.5
		(KMP-2-11)		Normally open (NO)		0.7		1.8	
		KMP	3-port	Normally closed (NC)		1.3		1.2	
		KMP-11		Normally open (NO)		1.8		0.7	
Roller-cam type		KMC-2	2-port	Normally closed (NC)	12.8	2.7	"The lever is in horizontal position" can be used as the guide for full actuating.	2.3	5.0
		(KMC-2-11)		Normally open (NO)		1.5		3.5	
		KMC	3-port	Normally closed (NC)		2.7		2.3	
		KMC-11		Normally open (NO)		3.8		1.2	
One way roller-cam type		KMO-2	2-port	Normally closed (NC)	12.8	2.7	"The lever is in horizontal position" can be used as the guide for full actuating.	2.3	5.0
		(KMO-2-11)		Normally open (NO)		1.5		3.5	
		KMO	3-port	Normally closed (NC)		2.7		2.3	
		KMO-11		Normally open (NO)		3.8		1.2	
Straight plunger type		KMS-2	2-port	Normally closed (NC)	24.5	2.0	Plunger backlash (Approximately 1mm) is not included.	3.5	5.5
		(KMS-2-11)		Normally open (NO)		1.0		4.5	
		KMS	3-port	Normally closed (NC)		2.0		3.5	
		KMS-11		Normally open (NO)		3.0		2.5	
Roller plunger type		KMR-2	2-port	Normally closed (NC)	24.5	2.0	Plunger backlash (Approximately 1mm) is not included.	3.5	5.5
		(KMR-2-11)		Normally open (NO)		1.0		4.5	
		KMR	3-port	Normally closed (NC)		2.0		3.5	
		KMR-11		Normally open (NO)		3.0		2.5	

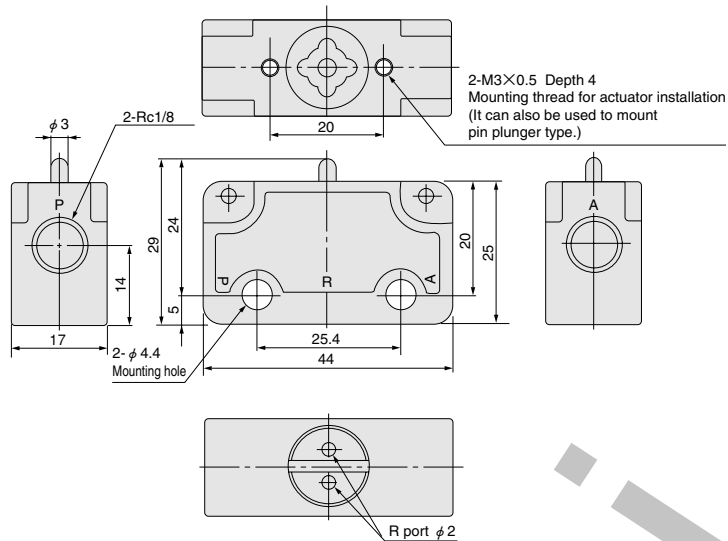
Notes: 1. Models in parentheses () are made to order items.

2. The "stroke until actuating" means the movement which occurs from free position until $P \leftrightarrow A$ is at the maximum flow rate, for normally closed type 2-, 3-port. And for normally open type 2-port, it means the stroke which occurs until $P \leftrightarrow A$ is closed, while for normally open type 3-port, the stroke which occurs until $A \leftrightarrow R$ is at the maximum flow rate.

Dimensions (Unit mm)

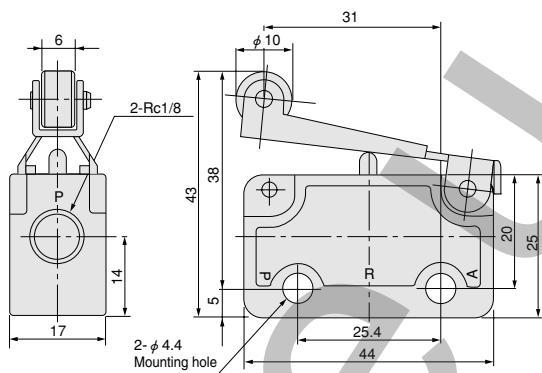
Pin plunger type (basic type)

KMP-2
KMP
KMP-11



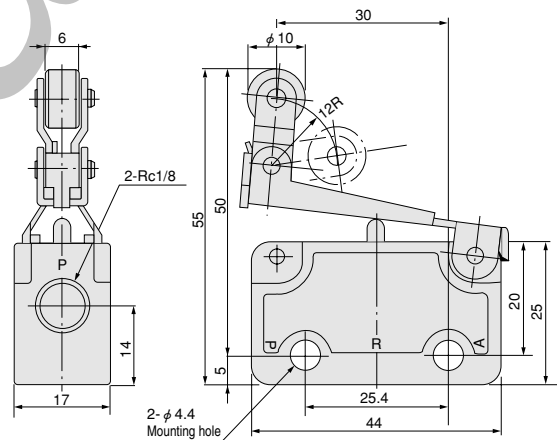
Roller-cam type

KMC-2
KMC
KMC-11



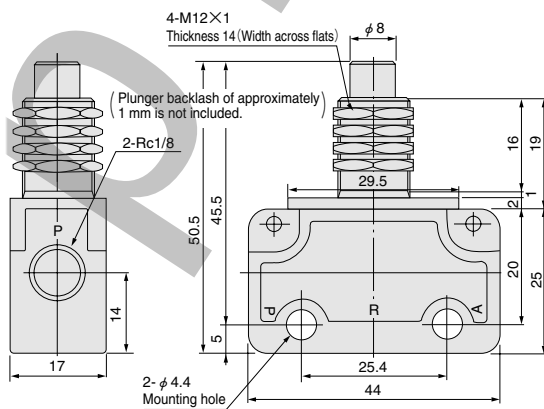
One way roller-cam type

KMO-2
KMO
KMO-11



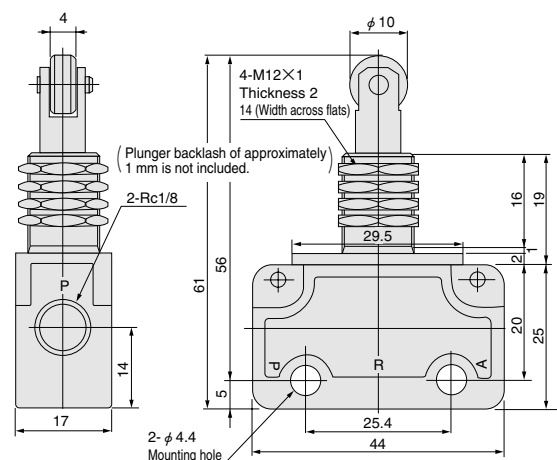
Straight plunger type

KMS-2
KMS
KMS-11



Roller plunger type

KMR-2
KMR
KMR-11

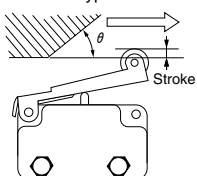


Handling Instructions and Precautions of Micro Valves

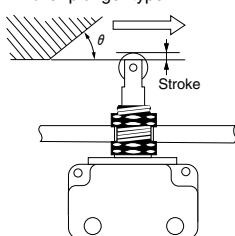
Micro valve mounting overview, and cam and dog shapes

- While normal mounting requires two mounting holes of $\phi 4.4$ on the body, use the neck for mounting when not using the roller plunger type for "pushed by load application".
- Since the exhaust hole is on the bottom surface of the valve body, leave a clearance of about 1mm to avoid restricting exhaust.
- Always use the straight plunger type for "pushed by load application".
- While the cam and dog shapes normally set θ at about 30° , θ should be set even smaller when the speed reaches 500mm/s or more.
- For the valve stroke, see the table on p. 909.

Roller-cam type



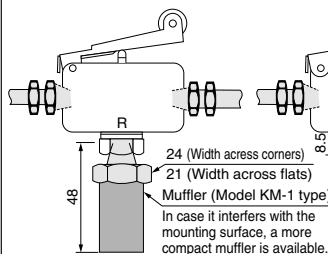
Roller plunger type



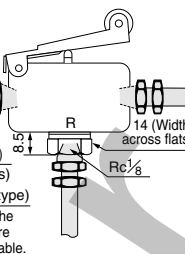
How to use units with exhaust (R) port fittings

For a product with a special fitting (Rc1/8) on the R port, a muffler can be mounted to the R port, or piping can be attached to exhaust in the outside.

When attaching a muffler on the R port



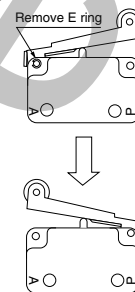
When piping on the R port



Note: Avoid over-tightening the R port fitting. For piping work, use a spanner to hold the fitting and prevent it from rotating.

Instruction for cam lever facing changes

The cam acting direction of the roller cam type (KMC) and one-way roller cam type (KMO) can be changed for use according to the piping.



Lubrication

For this micro valve, use Turbine Oil Class 1 (ISO VG32). Depending on the piping conditions (length, height), etc., oil may fail to reach the micro valve. If oil is failing to reach it, consider supplying turbine oil into the piping at periodic intervals.

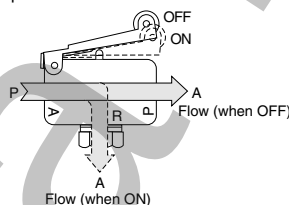
Dust protection

Use appropriate protection when using the micro valve in locations subject to heavy dust, powder, or metal chips, etc.

How to use as a divider valve

The 3-port, normally open type can be used as a divider valve.

Let air in from the A port, to flow toward the P port when OFF and toward the R port when ON.



Notes: 1. Avoid using the normally closed type as a divider valve. 2. When using as a divider valve, the Order Code is "11-60". Example: Roller cam type divider valve KMC-11-60

Micro Valve Parts Configuration

The micro valve is composed of the parts shown in the diagram below. The valve functions can differ depending on the shape of the stem, as shown in the diagram.

An identification mark is found on the top of the stem.

