CKD

New Products

Dual 3 Port Solenoid Valve Integrated Manifold

MN3Q Series

New Product

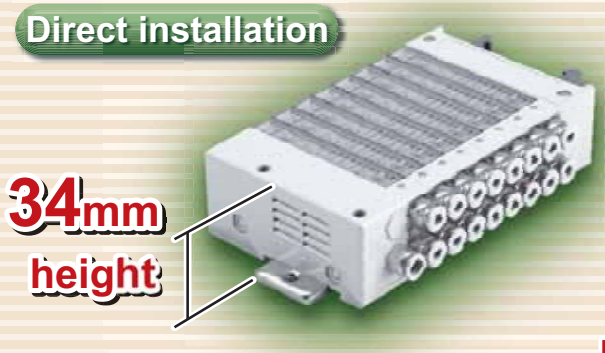
Reduced footprint!!

34mm height* realized!

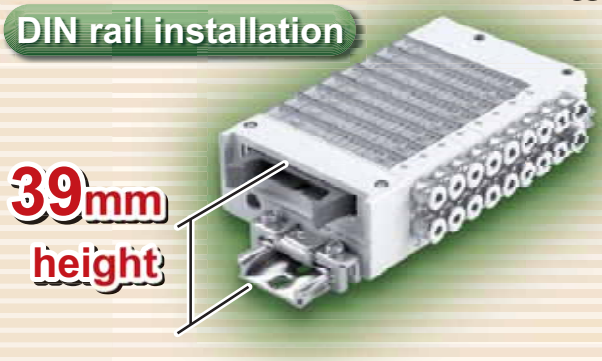
Installation in small spaces is available.

*Only for direct installation

Direct installation



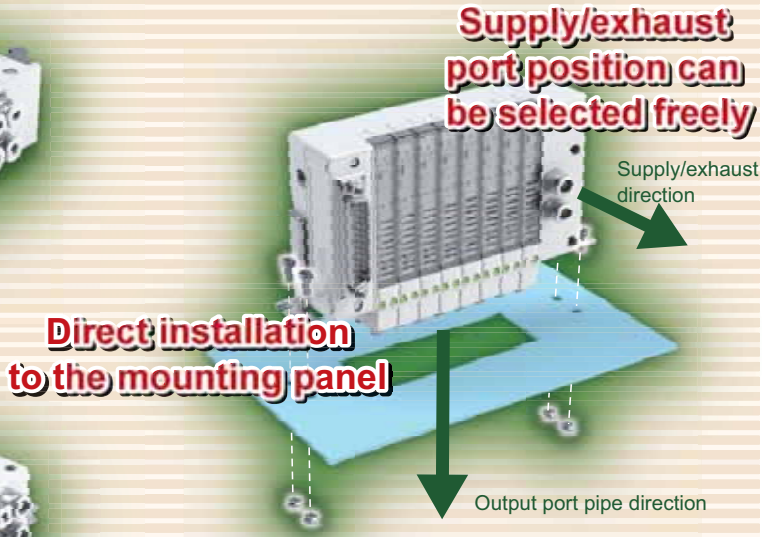
DIN rail installation



Panel mounting now possible*!

The supply/exhaust port position can be selected freely, increasing flexibility of piping.

*Custom order

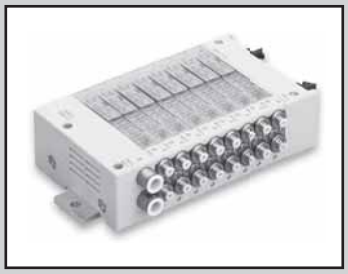


Selectable connection
Flat cable, D-subconnector

Two connector outlet directions, top or side is available.

⚠ Please read "Safety precautions" on page 6, as well as those listed in "General Catalog of Pneumatic Valves" (catalog No. CB-023SA) before use.

CKD Corporation
CC-1066A



Reduced wiring block manifold
Direct acting 3-port valve

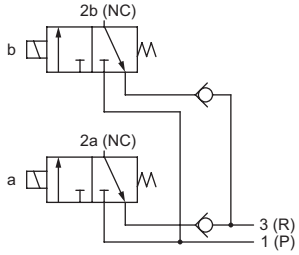
MN3Q Series

●Applicable cylinder bore: Ø4 to Ø16

RoHS

JIS symbol

●Dual 3 port valve integrated



JIS symbol

Main valve specifications

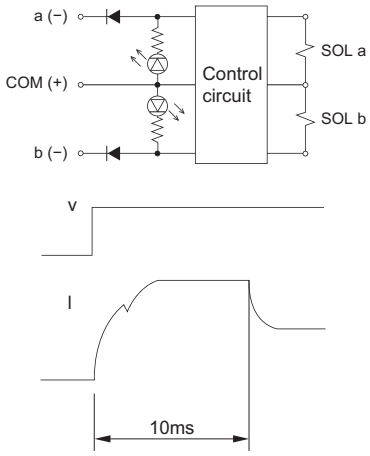
Descriptions	
Actuation/valve structure	Direct-acting poppet valve
Working fluid	Compressed air
Working pressure range MPa	0.2 to 0.6
Effective sectional area mm^2	0.55 (C: 0.11 dm^3/sbar)
Response time ms	5 or less
Ambient temperature/fluid temperature °C	5 to 50
Protective structure	IP40 equivalent
Vibration/impact m/s^2	50 or less/300 or less
Working environment	Not suitable for use in areas containing corrosive gas

Electric specifications

Descriptions		
Rated voltage DCV		24 ± 10%
Starting current (0.01sec) A		0.092
Holding current A		0.025
Power consumption W	Operation	2.2
	Stand-by	0.6
Heat proof class		B
Surge protective circuit		w/Surge suppressor
Indicator		LED

Electric specifications

Ex) Plus common

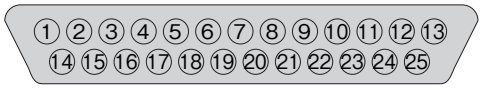


In this solenoid valve, the current limit circuit is integrated into the valve block, thus lowering the amount of electric current when the coil is in adhesive holding. There is a polarity, so please select a model based on the specifications.
Install this valve such that vibration and impact do not exceed specifications.

Wiring specifications

T30∗
D-subconnector

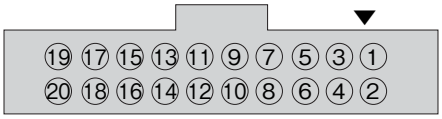
Connector pin No.



Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13
Valve No.	1a	2a	3a	4a	5a	6a	7a	8a	9a	10a	11a	12a	COM
Pin No.	14	15	16	17	18	19	20	21	22	23	24	25	
Valve No.	1b	2b	3b	4b	5b	6b	7b	8b	9b	10b	11b	12b	

T51∗
20-pin
Flat cable

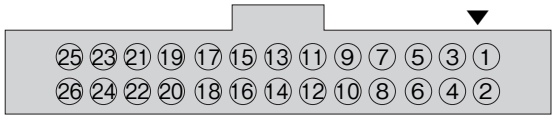
Connector pin No.



Pin No.	19	17	15	13	11	9	7	5	3	1
Valve No.	COM	9a	8a	7a	6a	5a	4a	3a	2a	1a
Pin No.	20	18	16	14	12	10	8	6	4	2
Valve No.	COM	9b	8b	7b	6b	5b	4b	3b	2b	1b

T53∗
26-pin
Flat cable

Connector pin No.



Pin No.	25	23	21	19	17	15	13	11	9	7	5	3	1
Valve No.	COM	12a	11a	10a	9a	8a	7a	6a	5a	4a	3a	2a	1a
Pin No.	26	24	22	20	18	16	14	12	10	8	6	4	2
Valve No.	COM	12b	11b	10b	9b	8b	7b	6b	5b	4b	3b	2b	1b

The manifold stations are counted as station 1, station 2, station 3, etc. starting from the wiring block side.
The counting direction on the left specifications is opposite that on the right specifications.

How to order

●Discrete valve block

N 3Q0 66 0 - C4 - M F — 3

●Block manifold

M N 3Q0 66 0 - C4 - M T53U PN - 8 - 3

Ⓐ Mounting method
Ⓑ Solenoid position
Ⓒ Port size
Ⓓ Manual override
Note 2
Ⓔ Wiring method
Note 3
Ⓕ Option
Ⓖ Station number

Symbol	Descriptions	MF	Discrete component
Ⓐ Mounting method			
N	DIN rail mounting	●	
T	Direct mounting (limited to 4/8/12 stations) (Note 1)	●	
Ⓑ Solenoid position			
66	Direct-acting 3-port NC valve Double mounting	●	●
Ⓒ Port size			
C18	Ø1.8 push-in fitting - side (Compatible tube UP-9402, EH-5802)	●	●
CL18	Ø1.8 push-in fitting - up (Compatible tube UP-9402, EH-5802)	●	●
CD18	Ø1.8 push-in fitting - down (Compatible tube UP-9402, EH-5802)	●	●
C3	Ø3 push-in fitting - side	●	●
CL3	Ø3 push-in fitting - up	●	●
CD3	Ø3 push-in fitting - down	●	●
C4	Ø4 push-in fitting - side	●	●
CL4	Ø4 push-in fitting - up	●	●
CD4	Ø4 push-in fitting - down	●	●
M5	M5 female thread (w/non-rotating)	●	●
CX	Mixed push-in fitting	●	
Ⓓ Manual override			
Blank	w/o Manual override	●	●
M	Non-locking manual override	●	●
Ⓔ Wiring method			
T30	25-pin D-subconnector Horizontal type left specification (lock screw: M2.6) 12 stations	●	
T30R	25-pin D-subconnector Horizontal type right specification (lock screw: M2.6) 12 stations	●	
T30U	25-pin D-subconnector Upturned type left specification (lock screw: M2.6) 12 stations	●	
T30UR	25-pin D-subconnector Upturned type right specification (lock screw: M2.6) 12 stations	●	
T51	20-pin flat cable connector Horizontal type left specification 9 stations	●	
T51R	20-pin flat cable connector Horizontal type right specification 9 stations	●	
T51U	20-pin flat cable connector Upturned type left specification 9 stations	●	
T51UR	20-pin flat cable connector Upturned type right specification 9 stations	●	
T53	26-pin flat cable connector Horizontal type left specification 12 stations	●	
T53R	26-pin flat cable connector Horizontal type right specification 12 stations	●	
T53U	26-pin flat cable connector Upturned type left specification 12 stations	●	
T53UR	26-pin flat cable connector Upturned type right specification 12 stations	●	
TX	Wiring block mix (Note 4)	●	
Blank	Reduced wiring valve block		●
Ⓕ Option			
Blank	None	●	●
P	Minus common (Note 5)	●	●
N	w/o Exhaust check valve	●	●
F	Integrated output port filter (Note 6)	●	●
Ⓖ Station number			
1	1 station	●	
to	to		
24	24 stations (Note 7)		

⚠ Note on model no. selection

Note 1: Valve blocks are only compatible with 4, 8, and 12 stations. The supply/exhaust block is station 1. Not compatible with wiring block mix TX.
Note 2: With and without manual override types cannot be mixed.
Note 3: The D-subconnector and flat cable connector do not rotate, so please select according to the specifications.
Note 4: The manifold specifications assign one on each side, left and right.
Note 5: The standard type is plus common. Please select based on the specifications of the output device (e.g. PLC).
Note 6: A filter to prevent the entry of foreign matter is integrated into the P-port of the supply/exhaust block.
Note 7: Depends on wiring method used.
Note 8: The silencer (SLW-H6) cannot be assembled in manifolds with manual overrides with a selected port size 6.
Note 9: In the case of a dual-side cable TX, the atmospheric release type cannot be selected. Also, in the case of an atmospheric release type supply/exhaust block, please select atmospheric release end blocks.

Peripheral block model no. (This information is for full manifold set orders. If ordering only parts, please contact CKD.)

●Discrete supply/exhaust block

N3Q0 - Q - U 6L X

Ⓐ Piping locations
Ⓑ Port size
Ⓒ Exhaust

Symbol	Descriptions
Ⓐ Piping locations	
Blank	Output port side (Note 8)
U	Top side
Ⓑ Port size	
6	P/R port: Ø6 push-in fitting (straight type)
6L	P/R port: Ø6 push-in fitting (elbow type)
6D	P/R port: Ø6 push-in fitting (down-facing elbow type)
Ⓒ Exhaust	
Blank	Common exhaust
X	Atmospheric release (exhaust through end block) (Note 9)

●Discrete end block

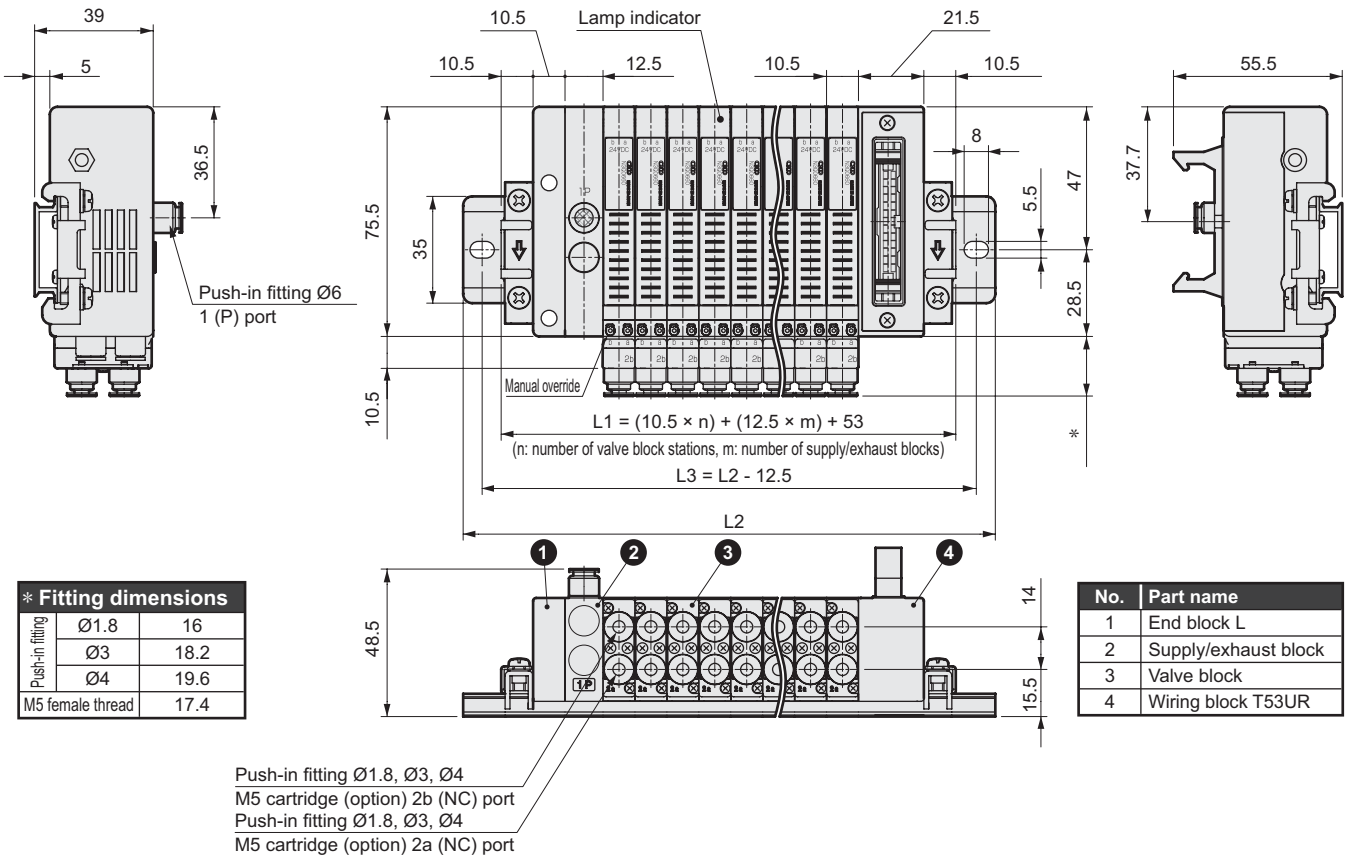
N3Q0 - EX L

Ⓐ Type
Ⓑ Installation position

Symbol	Descriptions
Ⓐ Type	
E	Common exhaust
EX	Atmospheric release (w/silencer)
Ⓑ Installation position	
L	Left-side mounting
R	Right-side mounting

Dimensions

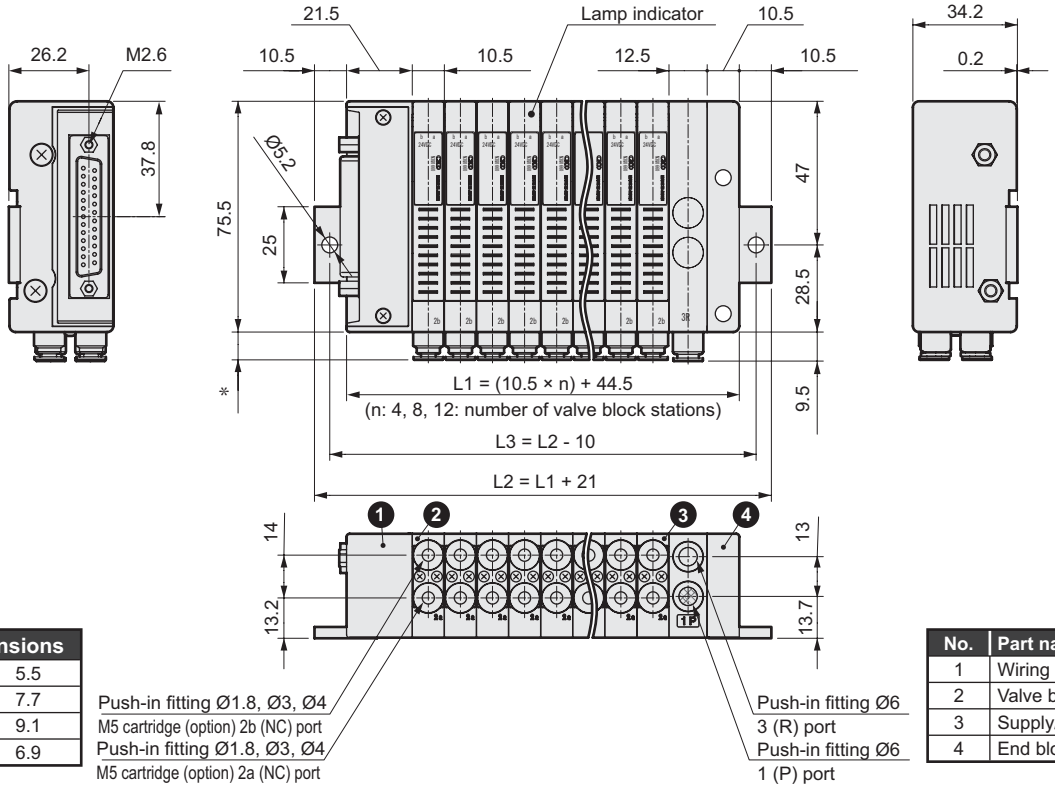
●DIN rail mount (w/ manual override)
MN3Q0660-∗-MT53UR∗-∗-3



∗ Fitting dimensions		
Push-in fitting	Ø1.8	16
	Ø3	18.2
	Ø4	19.6
M5 female thread		17.4

No.	Part name
1	End block L
2	Supply/exhaust block
3	Valve block
4	Wiring block T53UR

●Direct mount (w/o manual override)
MT3Q0660-∗-T30∗-∗-3



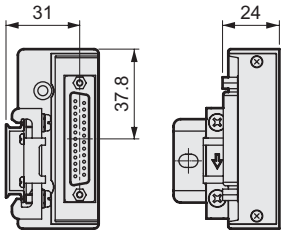
∗ Fitting dimensions		
Push-in fitting	Ø1.8	5.5
	Ø3	7.7
	Ø4	9.1
M5 female thread		6.9

No.	Part name
1	Wiring block T30
2	Valve block
3	Supply/exhaust block
4	End block R

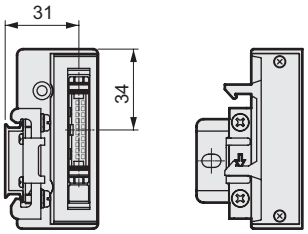
Dimensions

Wiring block

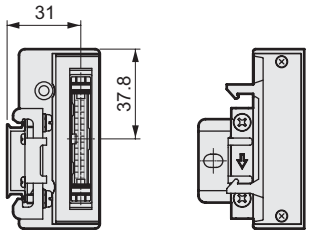
●D-subconnector T30 (R)



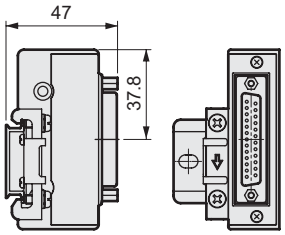
●20-pin flat cable connector T51 (R)



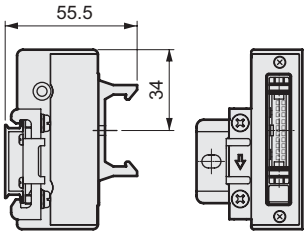
●26-pin flat cable connector T53 (R)



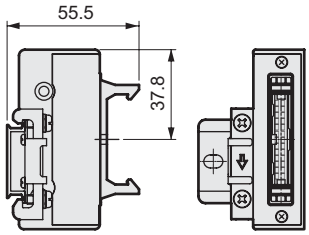
●D-subconnector T30U (R)



●20-pin flat cable connector T51U (R)



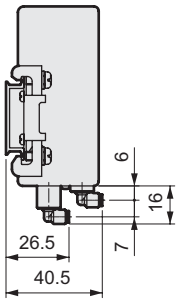
●26-pin flat cable connector T53U (R)



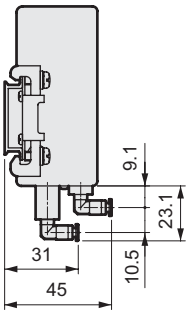
Valve block

●Push-in fitting L (upward)

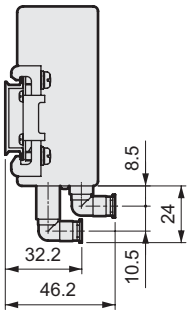
• Ø1.8 (CL18)



• Ø3 (CL3)

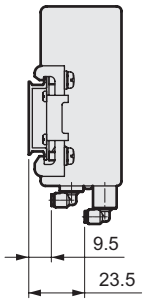


• Ø4 (CL4)

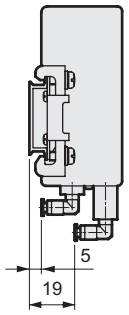


●Push-in fitting L (down-facing)

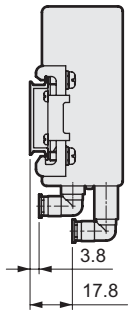
• Ø1.8 (CD18)



• Ø3 (CD3)



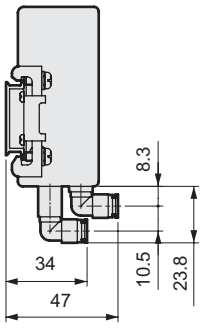
• Ø4 (CD4)



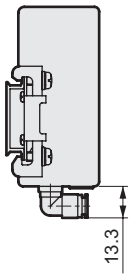
Supply/exhaust block

●Ø6 push-in fitting Output port side Elbow type

• 6L (common exhaust)

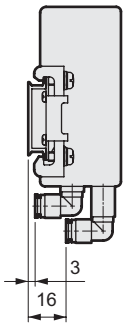


• 6LX (atmospheric release)

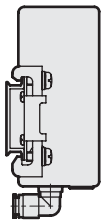


●Ø6 push-in fitting Output port side Elbow type Down-facing

• 6D (common exhaust)

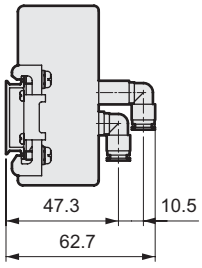


• 6DX (atmospheric release)

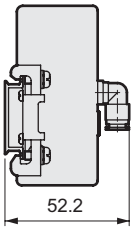


●Ø6 push-in fitting Top side Elbow type

• U6L (common exhaust)

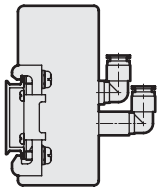


• U6LX (atmospheric release)



●Ø6 push-in fitting Top side Elbow type Rear-facing

• U6D (common exhaust)



Safety precautions

Always read this section before starting use.
Please read the handling precautions and the safety precautions listed in "General Catalog of Pneumatic Valves" (catalog No. CB-023SA).

⚠WARNING

■Design and selection

●About the check valve

The check valve is designed to block the backpressure from neighboring air devices etc. It does not have the structure to be able to maintain a continuous seal, therefore do not use it for any purpose other than as a backpressure blocker.

⚠CAUTION

■Design and selection

●About the surge suppressor

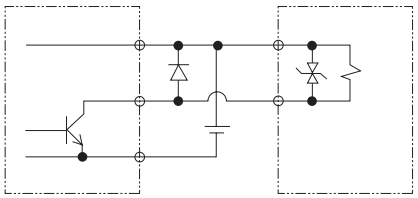
■The surge suppressor integrated with the solenoid valve is used to protect the output contact for that solenoid valve drive. There is no protection for the other peripheral devices, and devices could be damaged or malfunction by the surge. Surge generated by other devices could be absorbed and cause damage such as burning. Care must be taken for points below.

(1) The surge suppressor functions to limit a solenoid valve's surge voltage, which can reach several hundred volts, to a lower voltage level that the output contact can withstand. Depending on the type of output circuit being used, this may be inadequate and cause damage or malfunction. Check in advance whether the surge suppressor can be used with the surge voltage limit of the solenoid valve in use by confirming the output device's withstand pressure, circuit structure, and by the degree of return delay time.
If necessary, use other surge countermeasures. In addition, surge suppressors suppress the reverse voltage surges generated when the power is turned off to the levels below.

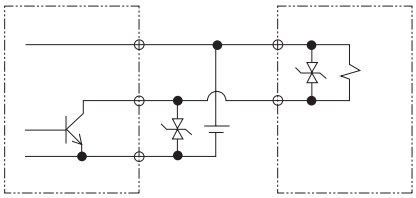
Specified voltage	Reverse voltage when the power is turned off
12VDC	About 27V
24VDC	About 47V

(2) When using an NPN type output unit, the voltage given in the above table plus a surge voltage equivalent to the power voltage could be applied on the output transistor. In this case increase the contact protection circuits.

<Output transistor protection circuit - Installation example 1>



<Output transistor protection circuit - Installation example 2>



(3) If other devices or solenoid valves are connected in parallel to the solenoid valve, reverse voltage surges generated when the solenoid valve is off are applied to these devices as well. Even when using the solenoid valve with a 24VDC surge suppressor, the surge's negative voltage could reach several tens of volts depending on the model. This reverse polarity voltage could damage devices connected in parallel or cause them to malfunction. Avoid parallel connection of devices with low resistance to reverse polarity voltages (e. g. , LED indicators).
When driving several solenoid valves in parallel, the surge from other solenoid valves could enter the surge suppressor of one solenoid valve with a surge suppressor. Depending on the amperage, that surge suppressor could burn.
When driving several solenoid valves with surge suppressors in parallel, surge current could concentrate at the surge suppressor with the lowest limit voltage and likewise burn. Even if the solenoid valve type is the same, the surge suppressor's limit voltage can differ, and in the worst case, could result in burning. Avoid driving several solenoid valves in parallel.

(4) The surge suppressor integrated in the solenoid valve often short-circuits if damaged by overvoltage or overcurrent from a source other than the solenoid valve. Therefore, if a large current is flowing when output is on after the surge suppressor is damaged, the output circuit or solenoid valve could be damaged or ignite. Do not keep power on when damaged.
Provide an overcurrent protection circuit on the power and/or drive circuit, or use a power supply with overcurrent protection so that a large current does not flow continuously.

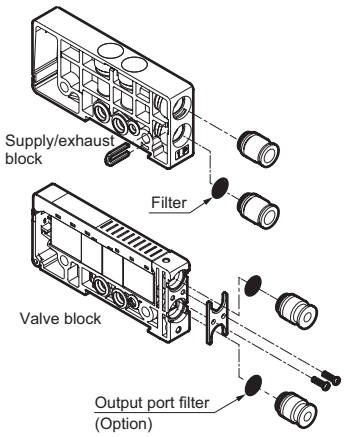
●About polarity

This solenoid valve has a polarity. Thus, select a model based on the specifications of the output unit you are currently using.

■Installation and adjustment

●About manifold installation

Incorrect installation using the DIN rail-mount method could cause the manifold to fall off or be damaged. If the manifold weighs more than 1 kg or more, is in an environment in which vibration or impact occurs, affix the DIN rail onto the seating plane at 50 to 100 mm intervals and confirm that there are no problems with the installation before use.



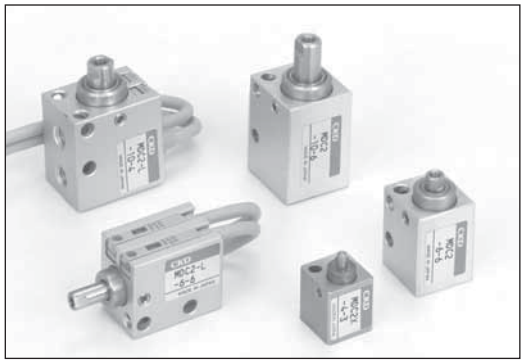
■During use and maintenance

■A port filter is used to prevent foreign materials from entering and causing problems in a manifold (mesh pore size: Ø0.3mm). This is not for improving the quality of compressed air, so read the warnings and the cautions on the introductory pages of "General Catalog of Pneumatic Valves (No. CB-023SA)" very well before installation and/or adjustment. Do not remove or force the port filter. The filter could deform and result in problems.
If contaminants or foreign materials are found on the filter surface, use a light air blowing, or tweezers, etc to remove them.

Related products

Small Direct Mounting Cylinder MDC2 Series

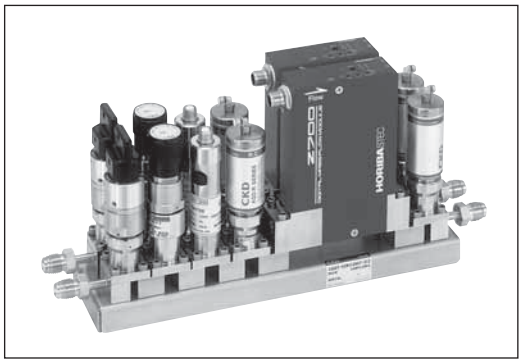
Catalog No. CB-029SA



- Direct installation
  Square body enables direct installation. There are two installation surfaces.
- Space-saving design
  The total length and external dimensions have been reduced dramatically, and it can be saved installation spaces.
- Socket and spigot provided at rod side.
  Socket and spigot at rod metal enable easy alignment.
- Variation
  Double acting/single acting, extend/retract type can be selected according to application.
- Switch available
  Maniature reed/ proximity switch can be installed.

Integrated Gas Supply System IAGD Series

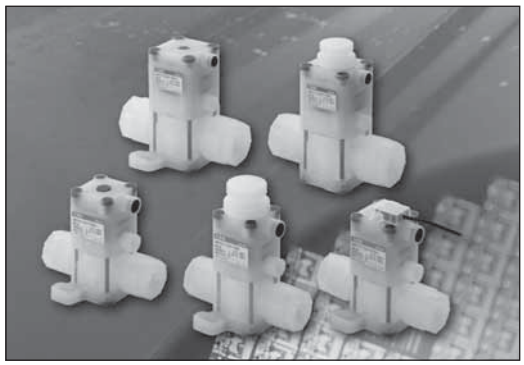
Catalog No. CB-035A



- Reduced volume dramatically
  The volume is less 50% than conventional types.
- Improved interchangeability
  The volume and dead volume are reduced, it makes interchangeability improved.
- Easy maintenance
  One way workability and bolt installation make maintenance easier.
- Compact
  The footprint is less 50% than conventional types.
- Increased corrosion resistance.
  Realized by removing welding sections (or areas)

Air-Operated Valve for Chemical Liquids AMD3*3 AMD4*3 Series

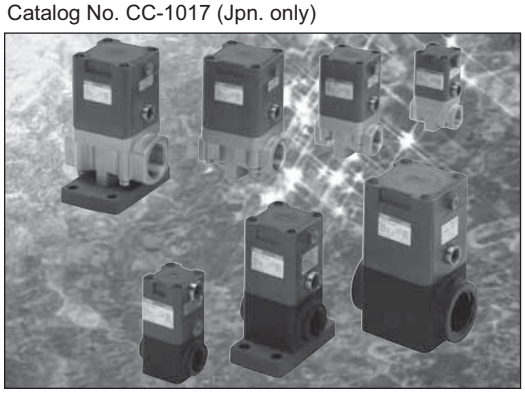
Catalog No. CC-1015A



- Rich options (Supporting various use cases)
  Actuator options : indicator, flow adjustment, sensors
  Body options : normal, by-pass
- Supporting various chemical liquids as standard
- Significantly wider range of working pressure
  The new sealing structure has enhanced the working pressure range compared to conventional products.
- Significantly wider range of working fluid temperature
- Corner installation saves spaces

Clean Cylinder Valve LAD Series

Catalog No. CC-1017 (Jpn. only)



- Particle reduction
  Particles are greatly reduced through the use of resin construction for all wet areas and assembly in specialized environments
- Enhanced usability for port thread
  Free selection and connection of pipes based on application.
- Flow path with low pressure loss
  A flow path design that greatly reduces pressure loss also greatly increases the effective sectional area. It also contributes to saving energy
- Selectable body material
  Select between stainless steel or PPS body material based on intended use

MN3Q Series
Manifold specifications

M□3Q0660—□—□—□—3

Product	Model no.	Layout position 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	Quantity
Wiring block	N3Q0-T																																				
	N3Q0-T R																																				
∗1 Wiring block mix (TX) T∗∗R wire end point																																				
Valve block	N3Q0660-																																				
	N3Q0660-																																				
	N3Q0660-																																				
	N3Q0660-																																				
	N3Q0660-																																				
Supply/ exhaust block	N3Q0-Q-																																				
	N3Q0-Q-																																				
End block	N3Q0-E L																																				
	N3Q0-E R																																				

Rail installation
L2 =_____

Blank plug (for push-in fittings)
Ø1.8 Ø4 Ø6

Cable w/ D-subconnector
N4T-CABLE-D0□-□

Silencer (for push-in fittings)
Ø6

Push-in fitting tube removal tool
Not required □ (tick)

Preparing the manifold specifications

- Complete from the left end, with the piping port facing forward, regardless of the wiring block method. (Indicate the block type selected from the block part components and the layout instructions.)
- Indicate the total number of blocks designated in the required quantity on the right of the table.
- Indicate the quantity for required accessories.
- Indicate the mounting rail length. (Indicate in increments 12.5 mm only when a length other than the standard length is required.)

∗1 ● When selecting a wiring block mix (TX), please indicate the position of the last valve block station in the wiring block's right specifications (T∗∗R).
(Ex: For a manifold with 16 stations, which has the first 10 on the left side, and the remaining 6 installed on the right side of the wiring block (T∗∗R), indicate the valve block position counted 6th from the right with a mark (●) in the "∗1 Wiring block mix (TX) T∗∗R wire end point" row)

Obtaining the mounting rail length

Obtain the mounting rail length and pitch based on the manifold length (L1) with the following calculation formula.
The rail length obtained here is the standard length, and does not need to be indicated in the specifications.

- Manifold length L1

If using a left or right side wiring block, L1 = (10.5 × Valve block Quantity [ ]) + (12.5 × Supply/exhaust block [ ]) + 53

If using a left and right side wiring block (TX), L1 = (10.5 × Valve block Quantity [ ]) + (12.5 × Supply/exhaust block [ ]) + 64

- Mounting rail length L2 = L2' × 12.5

$$L2' = \frac{L1 + 25}{12.5}$$ →Calculate an integer by rounding up decimal point: rail mounting pitch, L3 = L2 – 12.5

If the goods and their replicas, or the technology and software in this catalog are to be exported, laws require the exporter to make sure they will never be used for the development or the manufacture of weapons for mass destruction.

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