



Valve Mounted Cylinder

Series CV/MVGQ

ø10, ø12, ø16, ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100

Variations

Series	Action	Standard variations					Bore size (mm)	Page
		Built-in magnet	With air cushion	With One-touch fittings	With auto switch	With strong scraper		
Series CVJ5 	Double acting	●			●		10 16	3.5-6
Series CVJ3 	Single acting (Spring return) (Spring extend)	●			●		10 16	3.5-12
Series CVM5/CVM5K 	Double acting	●		●	●	●	20 25 32 40	3.5-18 3.5-29
Series CVM3/CVM3K 	Single acting (Spring return) (Spring extend)	●		●	●		20 25 32 40	3.5-34 3.5-47
	Non-rotating rod	●		●	●			
Series CV3/CV3K 	Double acting	●	●		●	●	40, 50 63, 80 100	3.5-52
	Non-rotating rod	●	●		●	●	40, 50 63	3.5-63
Series CVS1/CVS1K 	Double acting	●	●		●	●	40, 50 63, 80 100	3.5-67
	Non-rotating rod	●	●		●	●	40, 50 63	3.5-77
Series MVGQ 	Double acting	●			●		12, 16 20, 25 32, 40 50, 63 80, 100	3.5-81 3.5-86 3.5-92

- CL
- MLGC
- CNA
- CB
- CV/MVG**
- CXW
- CXS
- CXT
- MX
- MXU
- MXS
- MXQ
- MXF
- MXW
- MPX
- MG
- MGP
- MGQ
- MGG
- MGC
- MGF
- CY1
- MY1

Made to order specifications

Refer to p.5.4-1 for made to order specifications.

Valve Mounted Cylinder Series CV/Common Precautions

Be sure to read before handling.
Applicable series: CVJ5, CVJ3

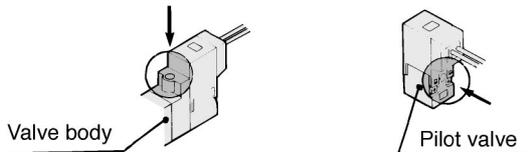
Manual Operation

⚠ Warning

- Manual overrides are provided on two locations, one on the pilot valve, and the other on the valve body. Operate either one to effect manual operation.

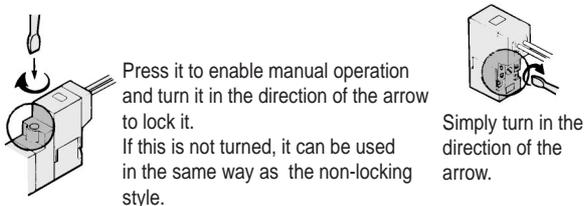
■ Non-locking push style

Push in the direction the arrow indicates.



■ Push-locking slotted style

Press it to enable manual operation and turn it in the direction of the arrow to lock it. If this is not turned, it can be used in the same way as the non-locking style.



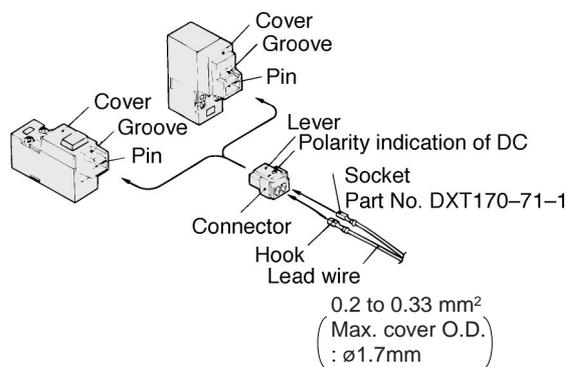
Since the devices in connection are operated by manual override, make sure that there is no danger.

Plug Connector

⚠ Caution

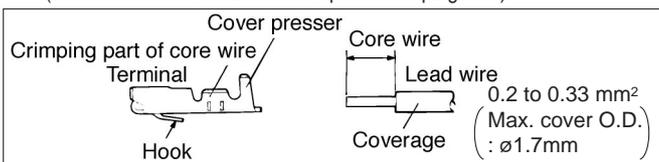
① Connector installation and removal

- To install the connector, squeeze the lever and the connector body with your fingers, slide the connector straight over the pin, and lock it in place by pushing the tab of the lever into the groove in the cover.
- To remove the connector, press the lever with your thumb to disengage the tab from the groove, and pull the connector straight out.



② Crimping the lead wire into the socket

- Peel approximately 3.2 to 3.7mm of insulation from the tip of the lead wire, make sure that the ends of the core wire are even, insert the wire into the socket, and crimp it with a crimping tool. At this time, make sure that the insulation of the lead wire does not enter the area in which the core wire is crimped. (Contact SMC for details on the special crimping tool.)



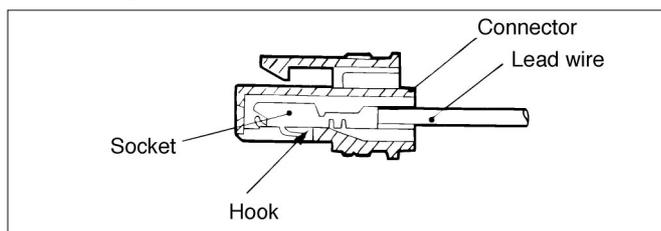
③ Installation and removal of the sockets containing lead wires

• Installation:

Insert the sockets into the square holes of the connector (marked ⊕ and ⊖, respectively), pinch the lead wires to push them in entirely, allowing the hook on each socket to engage with the seat of the connector, thus locking the socket in place. (Because the hook is open, it locks automatically when the socket is pushed in.) Then, lightly pull on the lead wires to verify that the sockets have been properly locked.

• Removal:

To pull the sockets out of the connector, use a rod with a small tip (approximately 1mm) to press the hook of the socket and pull the lead wire out. To reuse the socket, expand the hook outward.



Surge Voltage Suppressor

⚠ Caution

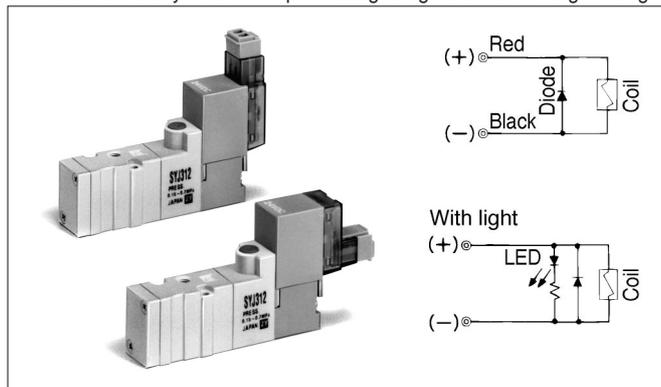
For DC:

Connect the wires by matching their polarities to the ⊕ and ⊖ marks. Be very careful to not interchange the polarities as this could cause the diodes or the switching elements to burn.

If the lead wires are connected beforehand, the red wire is ⊕, and the black wire is ⊖.

For AC:

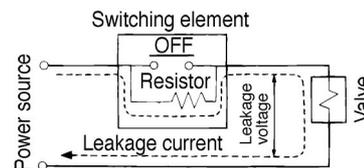
A rectifier assembly is used for preventing the generation of surge voltage.



Leakage Voltage

⚠ Caution

Be aware that there is an increase in the leakage voltage particularly if a C-R element (surge voltage protector) is used for protecting the switching element, because the leakage current flows through the C-R element.



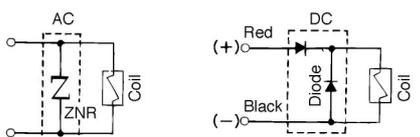
The residual leakage voltage must be kept as follows:
With a DC coil, 3% of the rated voltage or below
With an AC coil, 8% of the rated voltage or below.

Applicable series: CVM5, CVM3, MVGQ

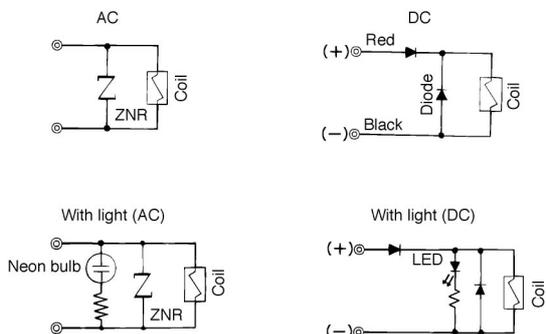
Light and Surge Voltage Suppressor

⚠ Caution

Grommet

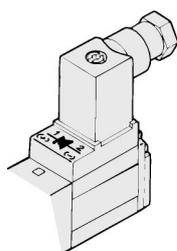


L/M plug connector

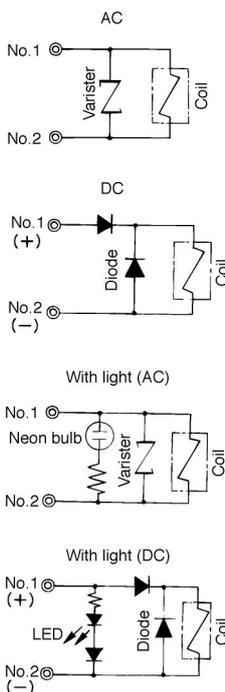
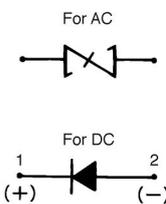


In the case of DC wiring, connect the wires by matching their polarities to the ⊕ and ⊖ marks. If the lead wires are connected beforehand, the red wire is ⊕, and the black wire is ⊖.

DIN connector



* Marking



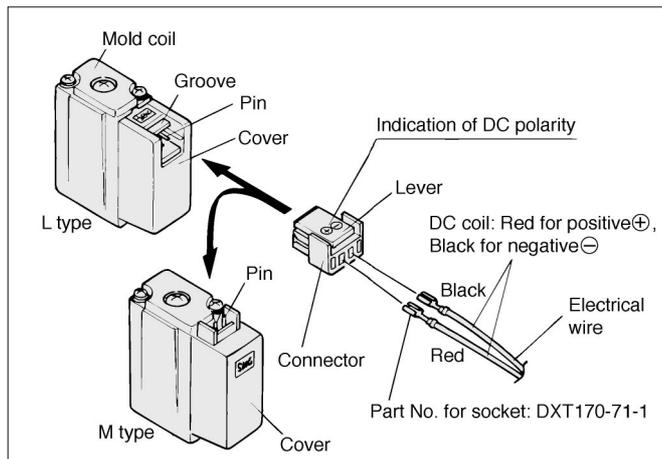
In the case of DC wiring, connect terminal No. 1 of the connector to the positive ⊕ side, and terminal No. 2 to the negative ⊖ side. (Refer to the marks on the terminal board.)

Plug Connector

⚠ Caution

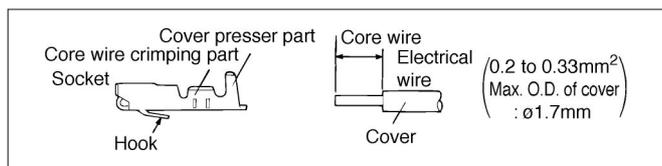
① **Connector installation and removal**

- To install the connector, squeeze the lever and the connector body with your fingers, slide the connector straight over the pin, and lock it in place by pushing the tab of the lever into the groove in the cover.
- To remove the connector, press the lever with your thumb to disengage the tab from the groove, and pull the connector straight out.



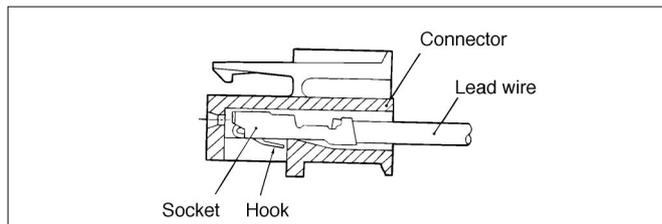
② **Crimping the lead wire into the socket**

- Peel approximately 3.2 to 3.7mm of insulation from the tip of the lead wire, make sure that the ends of the core wire are even, insert the wire into the socket, and crimp it with a crimping tool. At this time, make sure that the insulation of the lead wire does not enter the area in which the core wire is crimped. Use a special crimping tool. (Crimping tool: model number DX170-75-1)



③ **Installation and removal of the sockets containing lead wires**

- **Installation:**
Insert the sockets into the square holes of the connector (marked ⊕ and ⊖, respectively), then pinch the lead wires to push them in entirely, allowing the hook on each socket to engage with the seat of the connector, thus locking the socket in place. (Because the hook is open, it locks automatically when the socket is pushed in.) Then, lightly pull on the lead wires to verify that the sockets have been properly locked.
- **Removal:**
To pull the sockets out of the connector, use a rod with a small end (approximately 1mm) to press the hook of the socket and pull the lead wire out.
To reuse the socket, expand the hook outward.



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Valve Mounted Cylinder

Series *MVGQ*/Common Precautions

Be sure to read before handling.

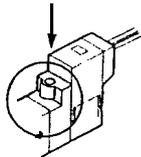
Warning

Manual Operation

Make sure that it is safe to engage manual operation before doing so, because any equipment that is connected will operate once manual operation is engaged.

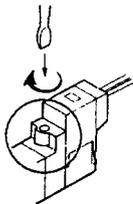
■ Non locking push style [Standard]

Push in the direction the arrow indicates.

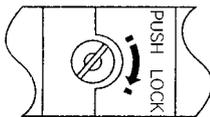


■ Push & turn-locking slotted style [D type]

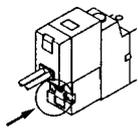
Press it to enable manual operation and turn it in the direction of the arrow to lock it. If this is not turned, it can be used in the same way as the non-locking extension style.

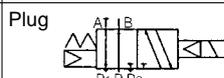
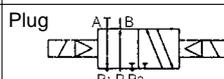


The position when locked



Note) The manual operation on the pilot valve can also be used. However, because the manual control on the pilot valve is only the non-locking extension style, it must be pushed in the direction of the arrow.



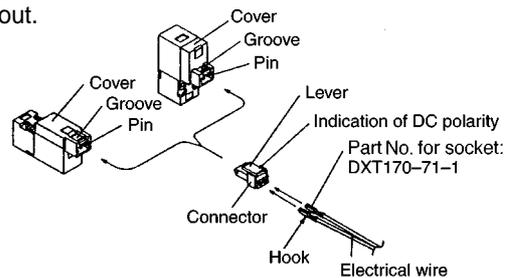
Plug position		B port	A port
Switching		N.C.	N.O.
Solenoid	Single		
	Double		

(The example of JIS symbols is of SYJ5000.)

Plug Connector

① Connector installation and removal

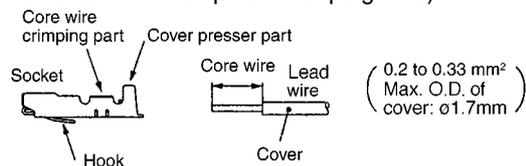
- To install the connector, squeeze the lever and the connector body with your fingers, slide the connector straight over the pin, and lock it in place by pushing the tab of the lever into the groove in the cover.
- To remove the connector, press the lever with your thumb to disengage the tab from the groove, and pull the connector straight out.



② Crimping the lead wire into the socket

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Use a special crimping tool to crimp the sockets. (Contact SMC for details on the special crimping tool.)



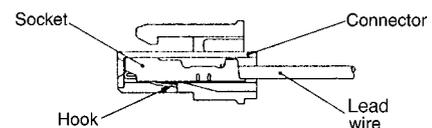
③ Installation and removal of the sockets containing lead wires

• Installation:

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• Removal:

To pull the sockets out of the connector, use a rod with a small end (approximately 1mm) to press the hook of the socket and pull the lead wire out.

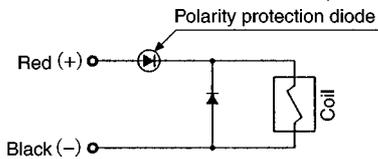


Surge Voltage Suppressor

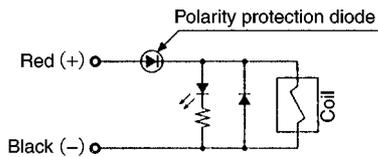
<DC>

Grommet, L/M plug connector style

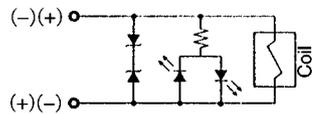
With surge voltage suppressor



With light/surge voltage suppressor (□Z)



Non polarity style circuit (□U) (24V DC and 12V DC only.)



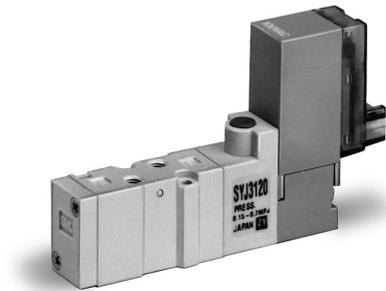
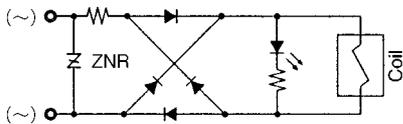
- Connect the wires by matching their polarities with the ⊕ and ⊖ marks.
(The non-polar style can be connected either way.)
- The voltage specifications for other than the 24V and 12V DC types are not provided with a reverse connection protection diode.
Therefore, make sure not to interchange the polarities.
- If the lead wires are connected beforehand, the red wire is ⊕, and the black wire is ⊖.

<AC>

(There is not an S type, for a rectifier prevents voltage surges.)

Grommet, L/M plug connector

With light (□Z)



CL

MLGC

CNA

CB

CV/MVG

CXW

CXS

CXT

MX

MXU

MXS

MXQ

MXF

MXW

MXP

MG

MGP

MGQ

MGG

MGC

MGF

CY1

MY1