Installation & Maintenance Manual

External pilot solenoid valve for actuator control:
VQC2101NR-5-X27 / VQC2301NR-5-X27
VQC2401NR-5-X27 / VQC2501NR-5-X27
VQC2A01NR-51-X27 / VQC2B01NR-51-X27
VQC2C01NR-51-X27

(Basic and well-tried safety principles in accordance with ISO 13849)

The intended use of the valve is to control the movement of an actuator.
This product is validated according to ISO 13849 basic and well-tried safety principles. Refer to Doc. Nr. VQC2000V-SMP0002.

1. Safety Instructions

This manual contains essential information for the protection of users and others from possible injury and/or equipment damage.

Read this manual before using the product, to ensure correct handling, and read the manuals of related apparatus before use.

Keep this manual in a safe place for future reference.

These instructions indicate potential hazard by label of “DANGER”, “WARNINGS” or “CAUTION”, followed by important safety information which must be carefully followed.

To ensure safety of personnel and equipment the instructions in this manual and the product catalogue must be observed, along with other relevant safety practices.

Take care about the compliance with the relevant safety laws and standards.

CAUTION
Indicates a hazard with a low level of risk, which if not avoided, could result in minor or moderate injury.

WARNING
Indicates a hazard with a medium level of risk, which if not avoided, could result in death or serious injury.

DANGER
Indicates a hazard with a high level of risk, which if not avoided, will result in death of injury.

2. Specifications

2.1 General specifications

<table>
<thead>
<tr>
<th>Valve Type</th>
<th>Special Pilot Control Valve Type</th>
<th>Actuator Type</th>
<th>Actuator Diameter</th>
<th>Max. operating pressure</th>
<th>max. operating pressure</th>
<th>Secure pilot range</th>
<th>Valve Rated Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(A) Non-locking push type (Tool required)</td>
<td>(1) Spring return</td>
<td>(2) Air return</td>
<td>3 MPa (max.)</td>
<td>1 MPa (max.)</td>
<td>1.5 MPa</td>
<td>0.7 MPa</td>
</tr>
</tbody>
</table>

Note 1) When the external pilot pressure is removed the main valve returns to the original position. The valves are to be used with a suitable external pilot sub-base or manifold or VQC2101NY-5.X.10

Note 2) Values represented in this column are based on JIS 8375-1981 (operating voltage suppressor. Values vary depending on the pressure as well as the air quality). Tested with ports size C8 and without back pressure check valves

3.3 Lubrication

3.3.1 SMV products have been lubricated for fit at manufacture, and do not require lubrication in service.

If a lubricant is used in the system, use turbine oil Class 1 (no additive), ISO VG32. Once lubricant is used in the system, lubrication must be continued because the original lubricant applied during manufacturing will be washed away.

3.5 Wiring

1. Applied voltage.

When electric power is connected to the solenoid valve, be sure to use proper voltage. Improper voltage may cause malfunction or cell damage.

2. Confirm the connections.

After completing the wiring, confirm that the connections are made correctly.

4. Settings

4.1 Manual override

Since connected equipment will operate when the manual override is activated, confirm that conditions are safe prior to activation. The non-locking push type (Tool required) is standard. Non-locking push type (Tool required)

Figure 5
7 Maintenance

1. Perform maintenance procedures shown in this instruction manual. If handled improperly malfunction or damage of machinery/equipment may occur.

2. Removing the product
To avoid the risk of being burned, ensure that the valve has had sufficient time to cool before performing work.
1. Shut off the fluid supply and release the fluid pressure in the system.
2. In the case of air pilot or air-operated type, shut off the supply air source and discharge the compressed air inside the pilot piping.
3. Shut off the power supply.
4. Remove the product.

3. Low frequency operation.
Valves should be operated at least once every 30 days to prevent malfunction. (Use caution regarding the air supply).

4. Manual override
When the manual override is operated, connected equipment will be actuated.

5. Do not disassemble the product.

5.1 Replacing One-touch fittings
Cylinder port fittings are available with cassette type manifolds and are easily replaced. Fittings are secured with a retaining clip that is inserted vertically from either the top or bottom of the manifold. After removing the valve, remove the clip with a flat head screwdriver to replace the fittings. To mount a fitting, insert the fitting assembly until it spots and reinsert the retaining clip to its designated position.

Dust on the sealing surface of the gasket or solenoid valve can cause air leakage.
Take care that the pilot pressure is able to exhaust. Do not block the Exhaust Ports.

5 How to order
Order Number
VQC2010NR-5-X27 2-position single
VQC2250NR-5-X27 3-position closed center
VQC2401NR-5-X27 3-position exhaust center
VQC2501NR-5-X27 3-position pressure center
VQC3A01NR-51-X27 4-position dual 3-port (NC/NO)
VQC2B01NR-51-X27 4-position dual 3-port (NO/NO)
VQC2C01NR-51-X27 4-position dual 3-port (NC/NO)

6 Outline dimensions (mm)

<table>
<thead>
<tr>
<th>Dimension</th>
<th>0</th>
<th>48.5</th>
<th>50.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clip</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Special Pilot valve Cover (Color: Red)</td>
<td>Dimensions are in Millimeter</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>