# Fluid Control Components: Warnings and Cautions

Be sure to read this section before use.



## Precautions for each model series: product-specific cautions

Dedicated direct acting 2, 3-port solenoid valves for each working fluid

## Design/selection

### ⚠WARNING

**1** Working fluids

(1) Since active gases cannot be used with the compressed air and dry air, contact CKD when these applications are required.

(2) Dedicated solenoid valve for each fluid. Select the solenoid valve based on the fluid. Consult with CKD when other kinds of fluids need to be used (for example, using air in a model for water) as specifications may differ.

**2** Degree of protection

The degree of protection has passed IEC standard compliance tests, but performance greatly differs based on weather resistance and aging, so these values are not guaranteed.

Take measures to ensure that water, dust, etc., do not come in direct contact.

### ⚠CAUTION

**1** Continuous energizing

Contact CKD when the 3-port valve for water (FWG) is to be continuously energized with the NO port pressurized.

**2** Fluid viscosity

The fluid viscosity must be 50 $mm^2/s$ or less.

Malfunctions could occur if the viscosity is higher than 50 $mm^2/s$.

## Mounting, piping and wiring

### ⚠CAUTION

**1** Piping

Always hold the socket with a wrench, etc., when tightening the piping to the NO port of the FWG Series.

**2** Wiring

Refer to the connection methods on Intro Page 64 when wiring to a compact terminal box, DIN terminal box or T type terminal box.

## Maintenance

### ⚠CAUTION

**1** For compressed air/dry air/medium vacuum

(1) When disassembling or assembling the FAB/G or FGB/G Series, tighten the coil assembly mounting screws with the following tightening torques.

| Model No. | Coil assembly mounting screw |
|---|---|
| FAB/G1 | 0.3 to 0.7 Nm |
| FAB/G2/FGB/G2 | 0.7 to 1.1 Nm |
| FAB/G3/FGB/G3 | 1.1 to 1.8 Nm |
| FAB/G4/FGB/G4 | 1.1 to 1.8 Nm |
| FAB/G5/FGB/G5 | 2.0 to 3.0 Nm |

(2) When disassembling or assembling the FAB32/42/52 or FVB Series, tighten the core assembly and body with the following tightening torques.

| Model No. | Core assembly mounting screw |
|---|---|
| FVB2 | 12 to 18 Nm |
| FAB32/FVB3 | 16 to 24 Nm |
| FAB42/FVB4 | 21 to 31 Nm |
| FAB52/FVB5 | 21 to 31 Nm |

**2** For water/hot water/oil

When disassembling or assembling the FWB/G, FHB or FLB Series and tightening the core assembly and body, and core assembly and socket, first temporarily tighten until the core assembly contacts the O-ring to prevent entanglement of the spring (outer spring). Then tighten with the following torques.

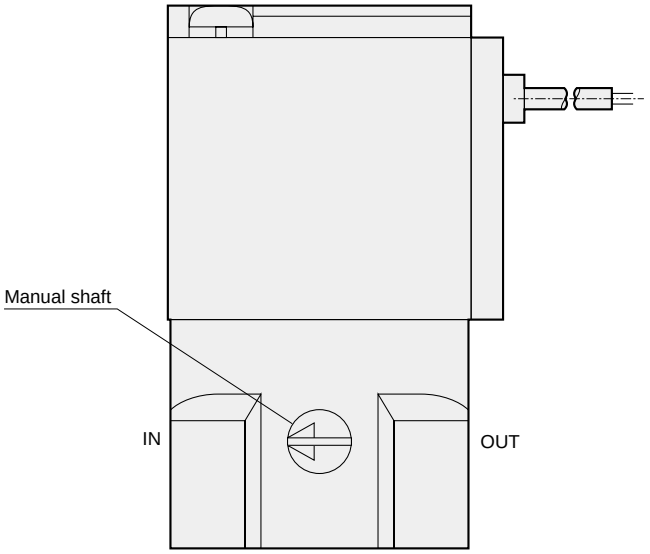
| Model No. | Core assembly tightening torque | Socket tightening torque |
|---|---|---|
| FWB2/FHB2/FLB2 | 12 to 18 Nm | ——— |
| FWG2 | | 3 to 5 Nm |
| FWB3/FHB3/FLB3 | 16 to 24 Nm | ——— |
| FWG3 | | 6 to 10 Nm |
| FWB4/FHB4/FLB4 | 21 to 31 Nm | ——— |
| FWG4 | | 10 to 14 Nm |
| FWB5/FHB5/FLB5 | 21 to 31 Nm | ——— |
| FWG5 | | 10 to 14 Nm |

# Manual operation (optional) (FAB/FAG/FGB/FGG/GFAB/GFAG/GFGB/GFGG Series)

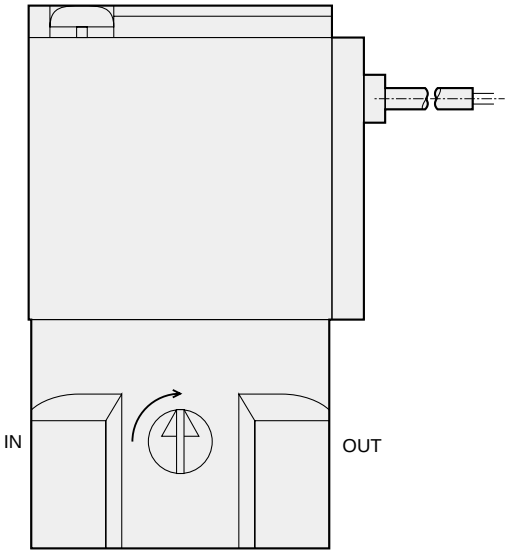
## 1 Manual locking (available for FAB/FAG/FGB/FGG Series)

Opening : Insert a flathead screwdriver into the slit on the manual adjustment shaft, and turn it approx. 90° to the right. The plunger assembly will rise and the valve will open. (For the 3-port valve, the NC side valve seat will open and the NO side valve seat will close.) The open state is held even when the screwdriver is removed.

Closing : Turn the manual adjustment shaft to the left from the open position to the close position. The plunger will lower and the valve will close. (For the 3-port valve, the NC side valve seat will close and the NO side valve seat will open.)




Valve closed
(Slit is in horizontal position)

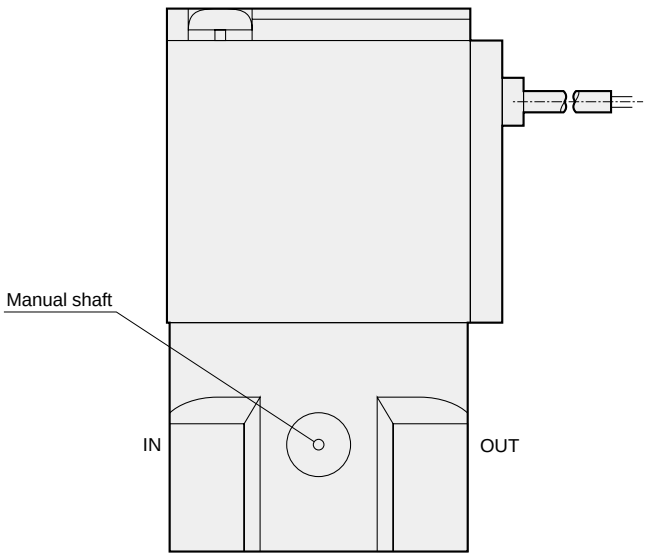



Valve opened
(Slit is in vertical position)

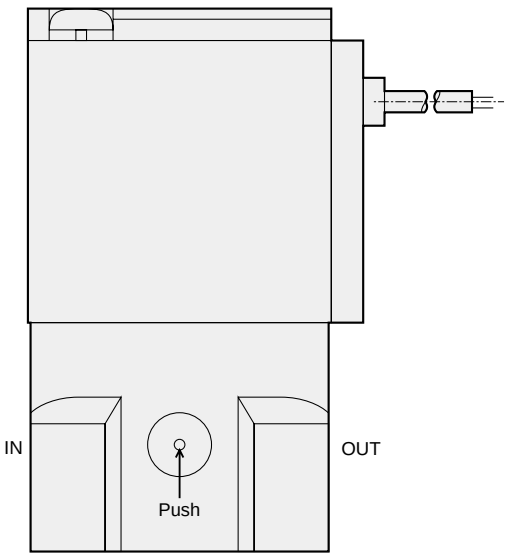
## 2 Manual non-locking

Opening : When the concave section at the center of the manual shaft is pressed in with the fine tip of a Phillips screwdriver, the plunger assembly will rise and the valve will open. (For the 3-port valve, the NC side valve seat will open and the NO side valve seat will close.)

Closing : When the screwdriver is removed from the manual shaft, the shaft will return to the front with inner spring force, the plunger assembly will lower and the valve will close. (For the 3-port valve, the NC side valve seat will close and the NO side valve seat will open.)




Valve closed state




Valve open state