



Pneumatic components (speed controller)

## Safety Precautions

Be sure to read this section before use.

Refer to Intro Page 63 for precautions for general pneumatic components.

Product-specific cautions: Needle valve with dial

### Design/selection

#### CAUTION

- This valve cannot be used as a stop valve that requires no leakage.  
Slight leakage is allowed for in this product's specifications.
- Note that the flow rate may differ from the values on page 712 depending on the piping conditions around the unit and the temperature changes.
- Dust cannot be completely kept out of the flow path.  
Even when using oil-prohibited models, install a final clean filter if dust could be a problem with the circuit.
- Oil-prohibited specifications apply for fluid passage section only.  
Do not wash this product, because grease is used for the internal parts except for the wetted sections.
- Do not use this valve in circuits where ozone is generated intentionally. Ozone resistance is sufficient for naturally occurring ambient ozone. Packing deteriorates if ozone levels are high.

- Use the product in the range of conditions specified for the product. Consult with CKD when using the product for special applications.

- Use of the product exceeding the specifications range may result in insufficient performance, and its safety cannot be guaranteed.
- This product may not be usable in special applications and environments.

For example, use in applications requiring safety, including nuclear energy, railways, aircraft, vehicles, medical devices, devices in contact with beverages or foodstuffs, amusement devices, emergency cutoff circuits, press machines, brake circuits, or safety devices or applications.

- Confirm before use that the product will withstand the working environment.

- This product cannot be used in environments where functional obstacles could occur. Such environments include high temperatures, chemical atmospheres, or where chemical liquids, vibration, moisture, water dripping or gas is present. Environments where ozone is generated.
- Do not use the product in a place where it could directly contact coolant or spatter, etc.

### Mounting, installation and adjustment

#### CAUTION

- To adjust the flow rate, turn the dial to the right to open or the left to close.
- After adjustment, lock the dial with the sliding lock lever.
- The flow rate control range is from "1" to "12" or "13" on the dial rotation display. Do not set the flow rate outside this range. Turning the dial to the fully closed or fully open position forcibly may result in failure or abnormal flow characteristics.

- Even when the needle is fully closed, the dial display is not "0".

Calibration of the dial indicator flow rate is performed when the needle is not fully closed. Note that 0 is not necessarily indicated when the needle is fully closed. After "0", either "19" or no number at all is displayed.

- Do not remove the dial from the body.

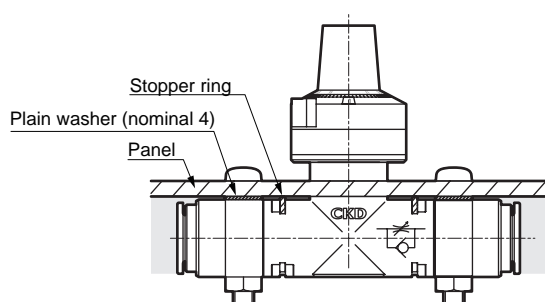
If the dial is removed, readjustment and calibration of flow characteristics cannot be performed.

- Install a pneumatic filter before the circuit.

Flow rate fluctuates due to clogging and foreign matter in the orifice.

## Mounting, installation and adjustment

- The dial of the DVL-N is slightly stiff.  
Because of the oil-prohibited specifications, dial movement may be slightly stiffer than with the DVL-S.
- Rotate the mounting hole section at the no pressurized state.
- The mounting hole of the DVL-N is slightly stiff.  
Because of the oil-prohibited specifications, movement of the rotary mounting hole will be stiffer than the DVL-S.
- When mounting on a panel, the stopper ring will interfere with the panel, so insert a flat washer between the mounting hole and panel.



- When piping, fix the product with a bolt or cable tie.  
Movement or displacement of the product may cause disconnection of the tube.
- Tightening torque should be 0.8 N·m when tightening the bolt to the mounting hole.
- There is no direction for needle valve piping.
- Stop air flow and confirm that there is no residual pressure before replacing the tube.
- Handling push-in fittings and tubes  
For handling push-in fittings and tubes, refer to the warnings and cautions for fittings and tubes in "Pneumatic/Vacuum/Auxiliary Components (No. CB-24SA)".
- When supplying compressed air after connecting pipes, do not suddenly apply high pressure.  
The pipe connection could dislocate causing the pipe tube to fly out and result in accidents.

- After connecting the pipes, check pipe connections for air leaks before supplying compressed air.  
Apply a leakage detection agent on pipe connections with a brush and check for air leaks.
- Connect the piping so that connections are not dislocated by equipment movement, vibration, tension, etc.
- Around the pneumatic components, keep space for installation, removal and piping work.
- Avoid using the product for applications that involve continuous rotation or oscillations.  
Fittings could be damaged.
- Avoid use in areas with large vibration or impact.

### Controlling the actuator's speed

- Adjust the final speed after each use.  
Check the final speed after each use since it should be adjusted depending on individual variability of the products, actuators, use condition and ambient temperature.  
Aging of the actuator may cause speed to fluctuate greatly.
- Check the flow direction with the JIS symbol.  
If installed in reverse, speed adjustment will not function and the actuator could pop out, creating a hazard.
- Adjust speeds by first almost closing the needle and then by opening it.  
If the needle is fully open, the actuator could suddenly and dangerously pop out.
- Understand compressed air features before designing a pneumatic circuit.

|                            |
|----------------------------|
| F.R.L.                     |
| F.R.                       |
| F (Filtr)                  |
| R (Reg)                    |
| L (Lub)                    |
| Drain Separ                |
| Mech Press SW              |
| Res press exh valve        |
| SlowStart                  |
| Anti-bac/Bac-remove Filt   |
| Film Resist FR             |
| Oil-ProhR                  |
| Med Press FR               |
| No Cu/ PTFE FRL            |
| Outdrs FRL                 |
| Adapter Joiner Press Gauge |
| CompFRL                    |
| LgFRL                      |
| PrecsR                     |
| VacF/R                     |
| Clean FR                   |
| ElecPneuR                  |
| AirBoost                   |
| Speed Ctrl                 |
| Silncr                     |
| CheckV/ other              |
| Fit/Tube                   |
| Nozzle                     |
| Air Unit                   |
| PresCompn                  |
| Electro Press SW           |
| ContactSW                  |
| AirSens                    |
| PresSW Cool                |
| Air Flo Sens/Ctrl          |
| WaterRISens                |
| TotAirSys (Total Air)      |
| TotAirSys (Gamma)          |
| Gas generator              |
| RefrDry                    |
| DesicDry                   |
| HiPolymDry                 |
| MainFiltr                  |
| Dischrg etc                |
| Ending                     |