Basic Pneumatic Circuit







| Check location | Description | Related items | |
|----------------|------------------|---------------|-------------------------|
| 1 | Filter/Regulator | Drain cock | |
| | | Bonnet | Body |
| 2 | Solenoid valve | Pilot valve | |
| | | PE port | Bonnet |
| | | Silencer | |
| 3 | Fitting/Tubing/ | | |
| (3) | Speed controller | _ | |
| 4 | Air cylinder | Air Cushion | |
| | | Auto Switch | 1 |
| | | 3 | PE port (Pilot exhaust) |

| Check location | | Detailed status | [Probable cause] and Actions |
|--------------------|---------------------------|--|---|
| ① Filter/Regulator | | ☐ Pressure gauge is deviating abnormally. | [Pressure fluctuation] • Secure the flow rate. [Clogging of air filter] • Replace air filter elements |
| | | ☐ Silencer is clogged. | [Operation trouble caused by back pressure] · Remove foreign (drain) objects · Replace silencers |
| ② Solenoid valve | | ☐ There is always leakage from the silencer. | [Foreign matter caught in solenoid valve] · Replace solenoid valves · Purify the air. *1 [Wear of cylinder piston seal] · Replace piston seal |
| ③ Fitting/Tubing | | ☐ Bent or flattened | [Insufficient pressure and flow rates] • Reconnect tubing. |
| | | ☐ Meter-in is being used. | [Pressure fluctuation] · Consider using meter-out. |
| ③ Speed controller | | Speed controller is used while valve is excessively tightened. (Driven at low speed.) | [Driven at piston speed or below] • Review speed setting. * Smooth cylinder * Low-speed cylinder |
| | Rod | ☐ Scratches on rod surface | [Increase of sliding resistance] [Lateral load/Moment] [Foreign matter adhesion] · Replace cylinders |
| | | ☐ There is splashing or adhesion of dust, water, welding spatter, etc. | [Increase of sliding resistance] [Flowing of grease due to surrounding environment] · Replace cylinder rod seal · Replace with a cylinder equipped with dust, water resistance, and welding spatter measures. |
| | | ☐ Out of grease | |
| | | ☐ Floating mechanism is not installed. | [Increase of sliding resistance] [Lateral load/Moment] Install floating mechanism. Readjust alignment. Check the minimum operating pressure. |
| 4 Air cylinder | | ☐ Guide and rods are off center. | |
| | Load/Guide | ☐ Insufficient guide lubricant | [Increase of sliding resistance] · Apply lubricant. |
| | | ☐ There is a load fluctuation. | [Meter-in is being used] Consider using meter-out. |
| | | ☐ Driven at low speed. | [Driven at piston speed or below] • Review speed setting. * Smooth cylinder * Low-speed cylinder |
| | Operation and environment | ☐ Quick extension phenomenon is occurring. | [Deterioration of back pressure] [Load fluctuation] · Consider using dual speed controller. |

^{*1} The purification measures for the air are to ① install an air dryer or air filter, and ② check if the air dryer and air filter are operating normally.