

Pneumatic Clamps

General Notes

Pneumatic clamps have a variety of uses in machine and device construction. They are used for clamping, holding and positioning workpieces. The different pneumatic clamps can be categorized into the following types, based on their kinematic properties and design: Pneumatically operated toggle clamps, power clamps and swing clamps.

Toggle Clamps

Pneumatically operated toggle clamps correspond to manually operated toggle clamps in terms of design and dimensions. They function according to the knee lever principle but they are operated pneumatically rather than purely by hand.

Due to the knee lever principle, the clamp remains closed even after a loss of compressed air.

Toggle clamps with a permanent magnet integrated into the piston (coding M) enable detection of the end position by means of sensors.



Power Clamps

Power clamps achieve high clamping forces even with small clamp sizes, which results in lower air consumption and weight reduction.

The kinematic properties of the power clamps are designed so that the clamping force achieved in the clamped position is retained even after a loss of compressed air. In some cases, the opening angle is adjustable.

Sensors for detecting the end positions are integrated into the clamps or are available as accessories.

On request, all power clamps and their accessories can be ordered with an anti-stick coating for protection against welding spray and corrosion.



Swing Clamps

Swing clamps differ from other clamps in terms of their kinematic action. The clamping movements consist of an initial 90° pivot and linear motion downward, followed by the linear clamping motion for clamping of the workpiece.

Swing clamps are generally used when the clamping point must be freely accessible from above for insertion and removal of the workpiece.

Typically, swing clamps are fitted with rectangular or cylindrical housings. Swing clamps with rectangular housings (block version) are additionally fitted with a magnet ring piston, making them suitable for end position detection by means of a sensor.

