

### Special grippers

Special grippers are used in applications where it is not possible to generate a vacuum with suction pads. They act as the connecting element between the machine and the workpiece to be handled. Depending on the application, various special grippers are thus used.

A basic distinction is made between the following type of special grippers:

- Floating suction pads
- Magnetic grippers
- Needle grippers

### Floating suction pads

Floating suction pads are pneumatically powered special grippers, complete with vacuum generators, which operate on the Bernoulli principle. They have minimum contact with the workpiece: the grippers "float" above the workpiece surface on an air cushion, and are thus ideal for handling extremely sensitive products. The high volume flow results in an integrated compensation for leaks.

#### Advantages of floating suction pads:

- Integrated vacuum generator
- Low-contact handling
- High volume flow
- Reliable separation of thin, porous workpieces

#### Typical applications:

- Handling of paper, plastic film, wood veneer, printed circuit boards, wafers and solar cells
- Separation of thin, porous workpieces



### Magnetic grippers

Magnetic grippers are activated and deactivated by means of compressed air or a vacuum, which means that they can be operated either with pneumatic valves or with a compact ejector. The magnetic field is generated by a permanent magnet, permitting safe gripping of the workpieces. No external supply voltage is required.

#### Advantages of magnetic grippers:

- Permanent magnet ensures safe gripping
- No external supply voltage needed for gripping
- Gripping can be controlled by compressed air or a combination of compressed air and vacuum

#### Typical applications:

- Handling of rough metal sheets, perforated sheets and sheet-metal parts with holes or complex shapes
- Support for vacuum gripping systems in applications involving highly dynamic handling of sheet-metal parts
- Handling of ferromagnetic workpieces



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## Needle grippers

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Needle grippers are special grippers actuated by compressed air. The needles are pressed into the workpiece by the compressed air and are retracted either by a spring or by compressed air. The needles are extended at an angle to ensure reliable gripping of the workpieces.

### Advantages of needle grippers:

- Safe handling of soft or unstable materials
- Various types available for individual operating conditions
- Various needle diameters available; stroke can be adjusted

### Typical applications:

- Handling of porous and/or unstable workpieces such as textiles, insulating materials, foam materials, felt and fleece, carpets, filters, woven materials (such as carbon fibre), polystyrene and metal foam

