

# What is an Air Cylinder?



Festo Air Cylinder

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An air cylinder, also known as a pneumatic cylinder or pneumatic actuator, is a mechanical device that uses the power of compressed air to produce a force in a reciprocating linear motion or convert compressed air into a rotary motion. The most popular style of pneumatic actuator consists of a piston and rod moving inside a closed cylinder.

Two main types of air cylinders based on the above operating principle are single-acting and double-acting. Single-acting cylinders have a single port to allow compressed air to enter the cylinder to move the piston to the desired position. They use an internal spring or sometimes simply gravity to return the piston to the "home" position when the air pressure is removed. Double-acting cylinders have a port at each end and move the piston forward and back by alternating the port that receives the high-pressure air.

Pneumatic cylinders are often preferred because they are quieter, cleaner, and do not require large amounts of space for fluid storage. Since the operating fluid is a gas, leakage from a pneumatic cylinder will not drip out and contaminate the surroundings, making pneumatics more desirable where cleanliness is required.

**Source: Microsoft Copilot AI**

