



## Air Cylinder Terms

**Actuator** – A device that converts fluid power into mechanical power. An actuator may be a cylinder or a fluid motor.

**Air Consumption** – The amount of compressed air that is consumed by a pneumatic cylinder. The energy of the air is converted into power output and exhausted into the atmosphere on the reversal of the piston stroke.

**Air Compressor** – Device used in a pneumatic power system to supply the compressed air.

**Bellows** – A circumferentially corrugated cylinder that is flexible and thin-walled and may have integral ends that axially contract or expand when under changing pressure.

**Bore** – The inside diameter of the cylinder tube.

**Bubble Tight** – A term referring to a tightly closing valve seat that prevents the leakage of visible gas bubbles.

**Clearance** – On the working side of the piston, the maximum volume of the cylinder from which the piston displacement volume per stroke is subtracted. Typically, clearance is expressed as a percentage of the displacement volume.

**Clevis** – A cylinder mounting device.

**Compressed Air** – Air that is at any level of pressure greater than the prevailing atmospheric pressure.

**Cushion Cylinder** – A device in a cylinder that enables the control of movement by restricting the flow at the outlet, stopping the movement of the piston rod.

**Cylinder** – Also referred to as a “linear actuator,” it is a device that converts pneumatic power into linear (in a line) or reciprocating (back-and-forth) motion.

**Cylinder Thrust** – The driving force (i.e. the piston power) generated in the cylinder that is a function of the piston diameter, the working air pressure and resistance caused by friction.

**Directional Control Valve** – A valve that controls the flow of air in a particular direction.

**Drag** – A situation in which the valve remains partially open after popping until the pressure further decreases.

**Filter** – A device through which air is passed in order to separate suspended contaminants. The life of cylinders and valves is lengthened by using filters.

**Fluid** – A liquid or gas.



**Fluid Power** – Power conveyed and maintained by the use of a pressurized fluid.

**Foot** – A mounting device for cylinders.

**Linear Actuator** – A device that creates mechanical force in a linear manner. Air cylinders are considered linear actuators.

**N.C. (Normally Closed)** – A designation describing the position of a valve when it is resting (non-activated).

**N.O. (Normally Open)** – A designation describing the resting position (non-activated) of a valve.

**Piston** – The sliding piece that is put into motion by pneumatic pressure. Typically, pistons consist of a short cylinder fitted inside a cylindrical tube in which it moves in and out.

**Piston Velocity** – Determined by opposing forces, operating pressure, inside diameter, length of air line between control valve and cylinder and size of control valve. The piston velocity may also be affected by the installation of any quick-exhaust or throttle valve.

**Pneumatic System** – The use of a gas, usually air, to transmit, convert or store power.

**Port** – The external or internal terminus of the valve on an air cylinder.

**Power Factor** – The relationship between the surface area of a piston and air pressure of an air cylinder.

**PSIA (Pounds Per Square Inch, Absolute)** – The sum of gauge and atmospheric pressures, which will vary with altitude.

**Regulator** – A device that provides control of the operating pressure of the compressed air system. Regulators allow working pressure of the system to be adjusted from the minimum to the maximum at the prop.

**Reservoir** – A storage area for air that, when located near the prop, prevents air starvation.

**Valve** – A device that controls the flow of air in an air cylinder.