Design of Pneumatic Cylinders

By choosing the correct pneumatic cylinder design for your chosen application, machinery is more likely to operate efficiently and withstand the demands of the job. MGA Controls has collated this guide about the material and **design of pneumatic cylinders**, in order to help you make an informed decision when purchasing your product.

Pneumatic Cylinder Material

The most common pneumatic cylinder materials include:

- Stainless steel
- Nickel plated brass
- Aluminium
- Steel

These materials are mainly used due to their resistance to rust and ability to operate at high temperatures and under pressure.

The choice of **material for a pneumatic cylinder** will depend on the application the cylinder is being used for, as well as other factors such as load, stroke length, temperature and humidity. By taking these factors into account, you are more likely to end up the right match of product for your application, ensuring a longer life cycle and this lower replacement costs.

Pneumatic Cylinder Design

There are a number of pneumatic cylinder designs, including the basic rod-style industrial cylinder: a rod, attached to an internal piston that extends through a sealed tube. The cylinder attaches to a machine and the piston acts on the load.

Design of double acting pneumatic cylinders

This type of pneumatic cylinder is ideal for applications that require machinery to push and pull loads. Double acting cylinders are available in a variety of materials, meaning their resistance to temperature and pressure will vary depending on the chosen cylinder material.

Design of single acting pneumatic cylinders

Single acting cylinders are mostly used in exhaust systems for the automotive industry. Single acting pneumatic cylinders are also used in hydraulic rams and pumps. The material composition of the cylinder will depend on the pressure and temperature range of the application.

Design of a rodless cylinder

Rodless pneumatic cylinders are used for space saving purposes, due to their compact design. They are most commonly used in automation systems in order to move, position and assemble heavy duty products. This requires a sturdy material composition.

MGA Controls supplies a wide range of pneumatic cylinders, suitable for a variety of applications. If you require further information on any of our pneumatic products, please contact our technical team today on +44 1704 898980 or email sales@mgacontrols.co.uk.