

Possible applications one-way flow control valves GRLA, GRLZ

FESTO



Key features

Function

The piston speed of both advancing and retracting pneumatic cylinders can be regulated using one-way flow control valves.

This is achieved by restricting the flow rate of compressed air in exhaust air or supply air direction as required. The non-return function works in the opposite direction.

The flow control function creates an adjustable annular gap inside the valve. This gap can be increased or decreased by turning the knurled screw or slotted head screw.

The required restriction can be set with the help of this adjustment element.

General information

Standard nominal flow rate q_{nN}

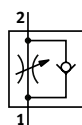
The standard nominal flow rate q_{nN} is the volumetric flow rate based on standard conditions at an operating pressure of $p_1 = 6$ bar and an output pressure of $p_2 = 5$ bar, measured at room temperature $t = 20^\circ\text{C}$.

Standard flow rate q_n

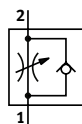
The standard flow rate q_n is measured at an operating pressure of $p_1 = 6$ bar and an output pressure with respect to atmospheric pressure ($p_2 = 0$ bar).

Symbols

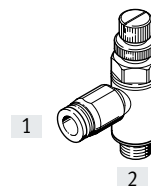
Exhaust air one-way flow control function



Supply air one-way flow control function

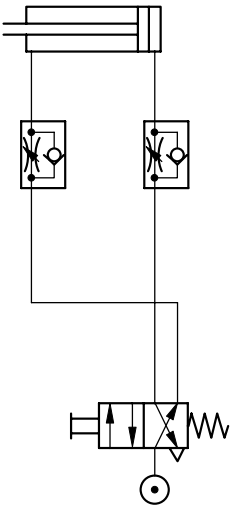
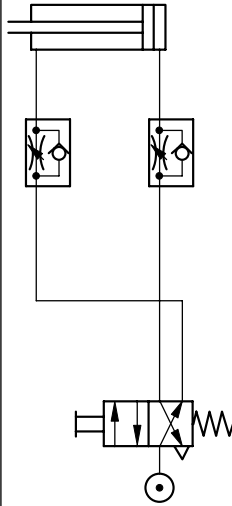
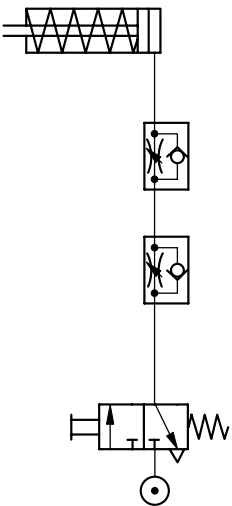
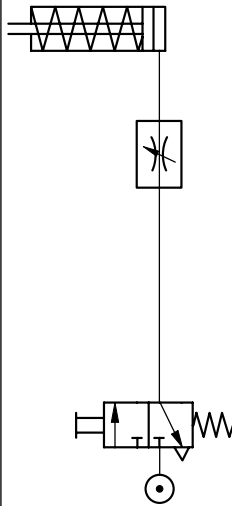


Connections



- [1] Pneumatic connection 1 (compressed air connection)
- [2] Pneumatic connection 2 (working port)

Key features

Flow control functions and range of applications	
Application	Description
Double-acting cylinder with one-way flow control valve	
Exhaust air one-way flow control function	Speed is adjustable using exhaust air flow control. Free flowing supply air and throttled exhaust air ensure that the piston moves between the air pockets (improves motion, even with load changes).
	
Supply air one-way flow control function	Speed for advance and return strokes can be adjusted. The flow rate is identical in both directions.
	
Single-acting cylinder with one-way flow control valve	
Exhaust air and supply air one-way flow control function	Speed for advance and return strokes can be adjusted. The flow rate can be adjusted differently for both directions.
	
Single-acting cylinder with flow control valve	Flow control function in both directions
	Speed adjustment through flow control on both sides is often used with single-acting or small cylinders. The benefit of this application is its simplicity.

Application examples

Mini slide SLT with one-way flow control valve, standard

Flat cylinder DZF with one-way flow control valve, mini

