Pneumatics Subject

Separating out plain pins

Title

 Indirect actuation of a double-acting cylinder with a bi-stable valve (memory)

Training aims

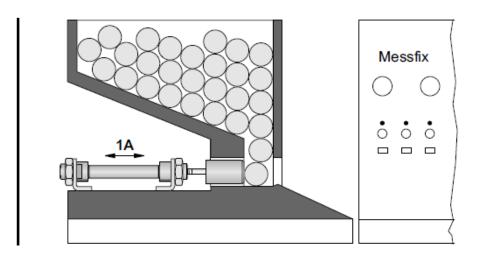
- Application of a 5/2-way pneumatic bi-stable valve with manual over-
- Use of a time-delay valve with normal position closed
- Design and construction of a control system with continuous to and fro movement (continuous cycle)
- Drawing the displacement-step diagram (with signal lines)

- Designing and drawing the circuit diagram
- Comparing one's own solution to the one proposed
- Constructing the circuit
- Function check
- Adjusting the stroke times with the one-way flow control valves
- Adjusting the time delay valve
- Checking the time cycle
- Follow up
- Dismantling and orderly replacement of components

Problem description

A double-acting cylinder (1A) guides cylinder pins towards a measuring device. The pins are separated by means of a continuous to and fro movement. The oscillating motion can be started by means of a valve with selector switch.

The duration of the forward stroke of the cylinder is to be t_1 = 0.6 seconds, the return stroke t_3 = 0.4 seconds. The cylinder is to remain in the forward end position for $t_2 = 1.0$ seconds, resulting in a cycle time of $t_4 = 2.0$ seconds.



Problem

