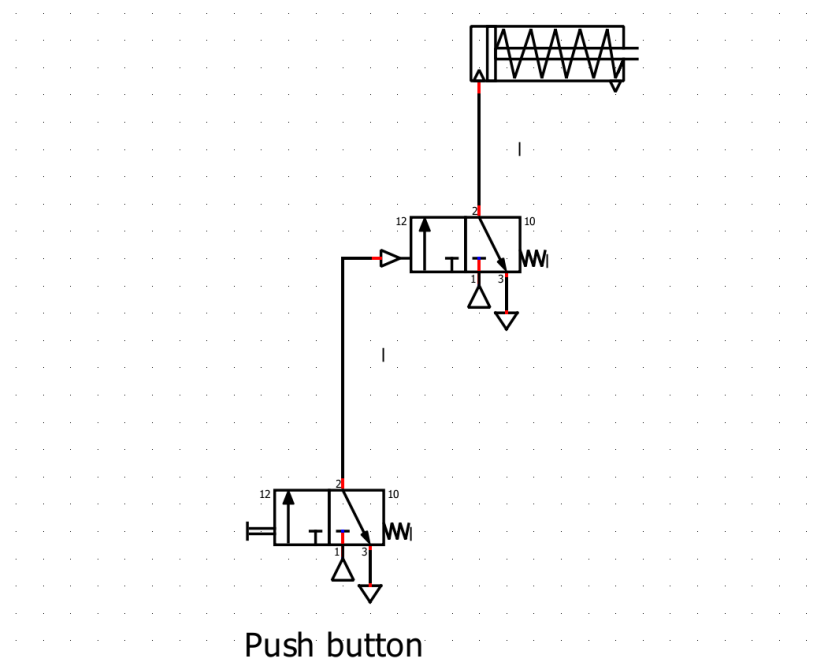


Exercise No:- 1

Title:- Single acting cylinder operates with push button

Problem Description: - There is one conveyor belt and articles are sent to the belt by gravity feed magazine. When the article reaches the actuator come back to its initial position.

Diagram:-



Solution: -

we have to take one 3/2 push button and its port 1 is connected with air supply and port 2 connected with exhaust. Port 2 is the output and it is connected with the single directional 3/2 pilot operated spring return pneumatic control valve. And the control valve controls the single acting cylinder. As we know a single acting cylinder is always used with 3/2 pilot operated valve.

Sequence Operation: - when the 3/2 push button is pressed air supplied to the control valve and it actuates the cylinder's piston at forward direction. After that the piston comes back to its initial position by a spring and the air exhausts by the port 3 of 3/2 pneumatic control valve.

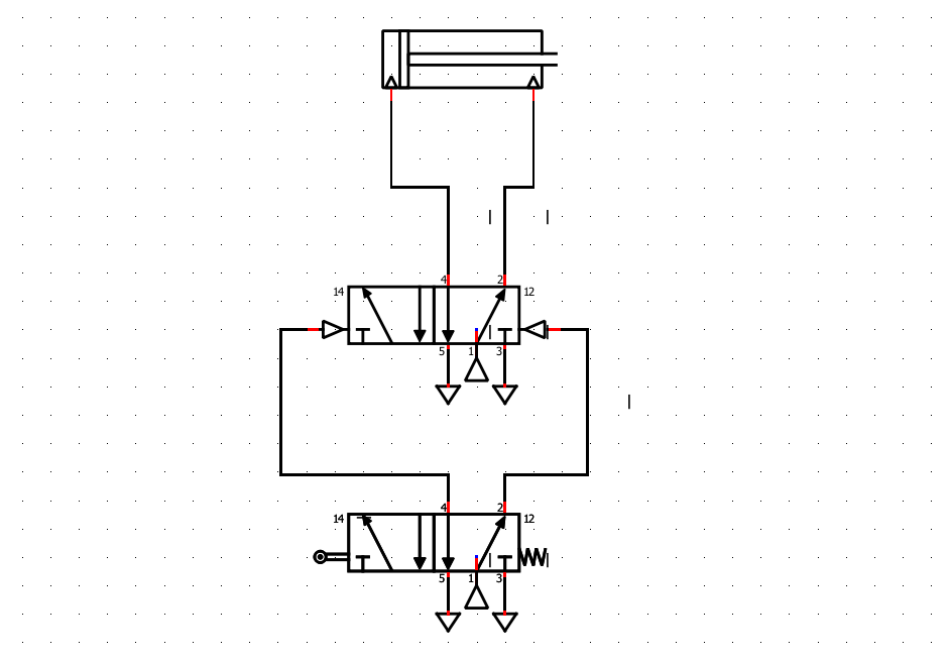
Written By:- Akash Mukherjee

Exercise No:- 2

Title:- To open or close a heavy door using a double-acting cylinder

Problem Description:- A heavy door is open and closed by a lever operated hand valve.

Diagram:-



Solution: -

We have to take one 5/2 lever operated hand valve. A lever operated hand valve is manually operated by a lever. We also have to take one double directional 5/2 pilot operated pneumatic valve and one double acting cylinder. Air is supplied to the pilot operated valve by actuating the lever operated hand valve. According to the air supply, the pilot operated valve supply the air to the double acting cylinder and the cylinder' piston moves.



Sequence Operation: -

When Lever moves and the valve sends the air to the pilot valve and the pilot valve actuates and air is supplied to the double acting cylinder. The door open or closed by the cylinder movement. When the piston moves right side, door is open and when piston moves left side, door closed.

Written By:- Akash Mukherjee