



TECHNOLOGY
SUBJECTS
SUPPORT
SERVICE

Leaving Certificate

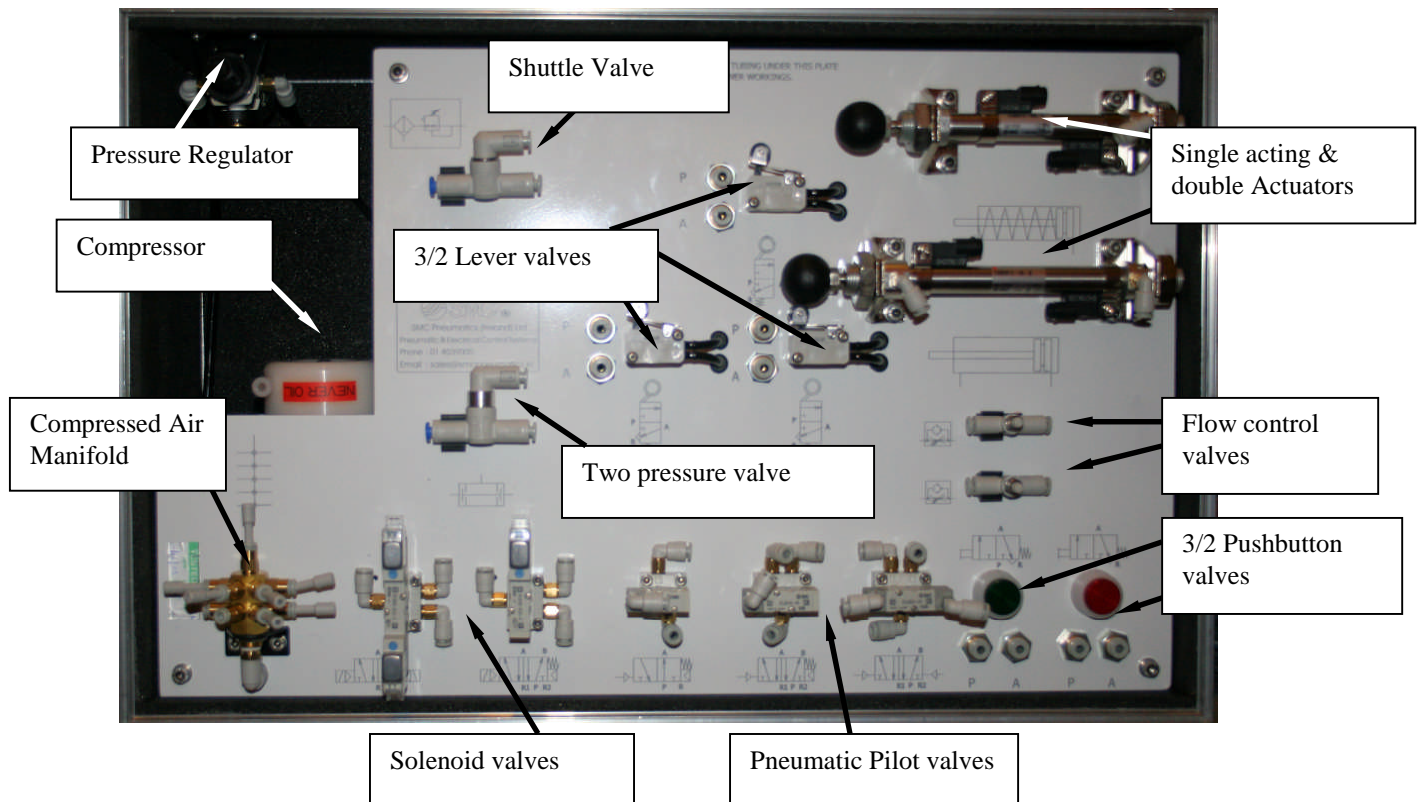
Technology

Pneumatics

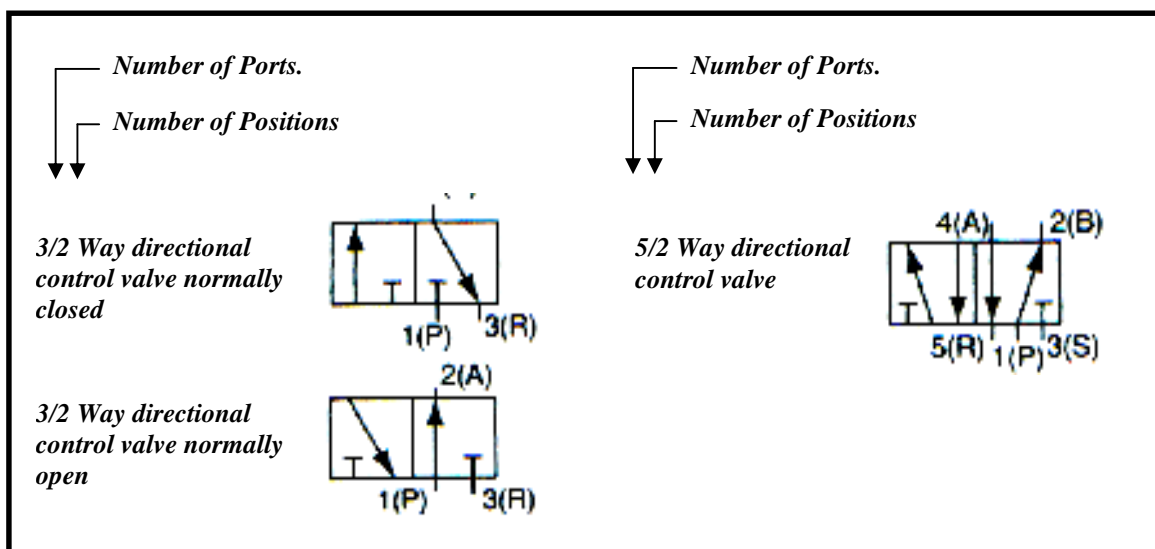
Practical Circuit Building

RD 9 Pneumatics (Practical Circuit Building).

1. Identify the components on the SMC Kits.

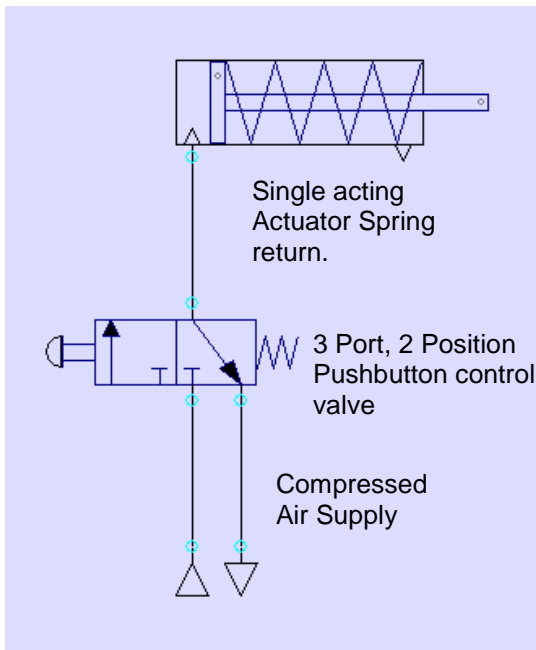


2. Familiarise yourself with the Pneumatic valve ports nomenclature. (No standard nomenclature, Letters and Numbers used, we are keeping to the Number system to avoid confusion? SMC kits use Letter system.)

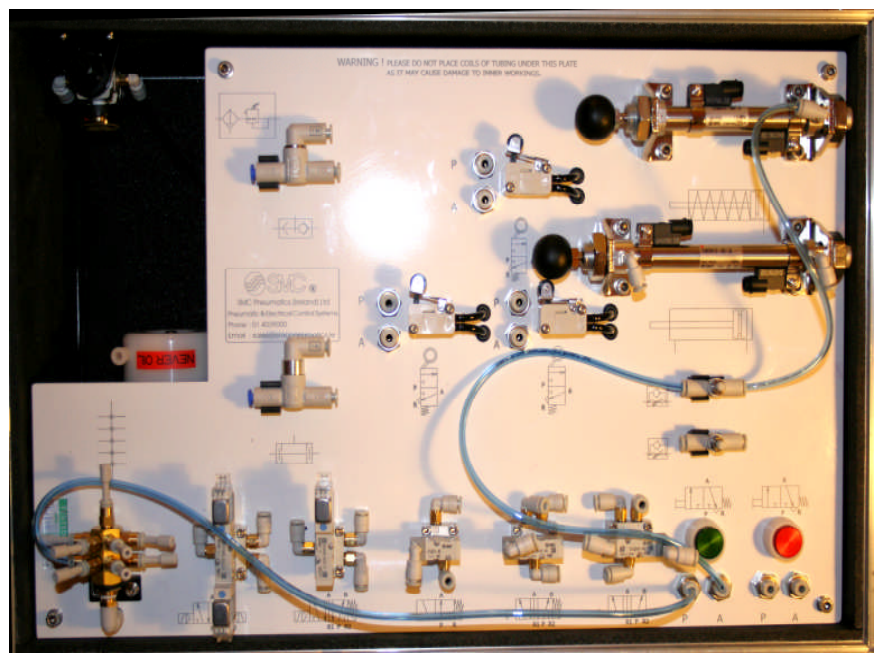
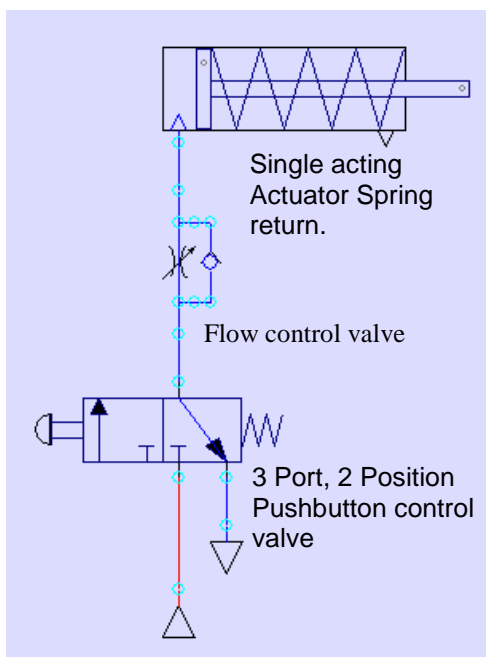


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3. First simple circuit, 3/2 Pushbutton valve with a single acting actuator.

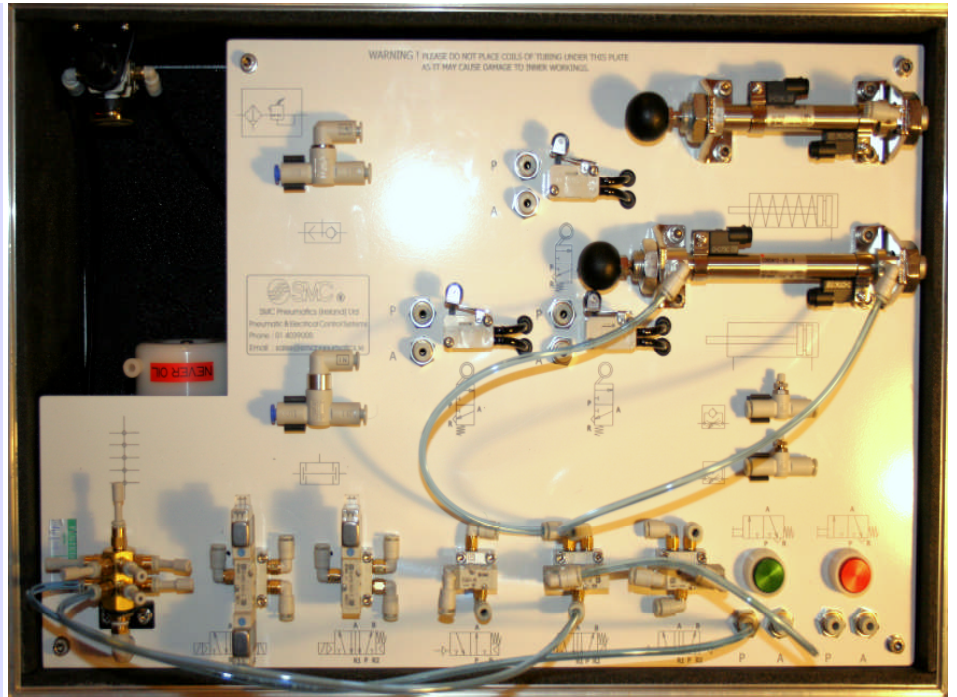
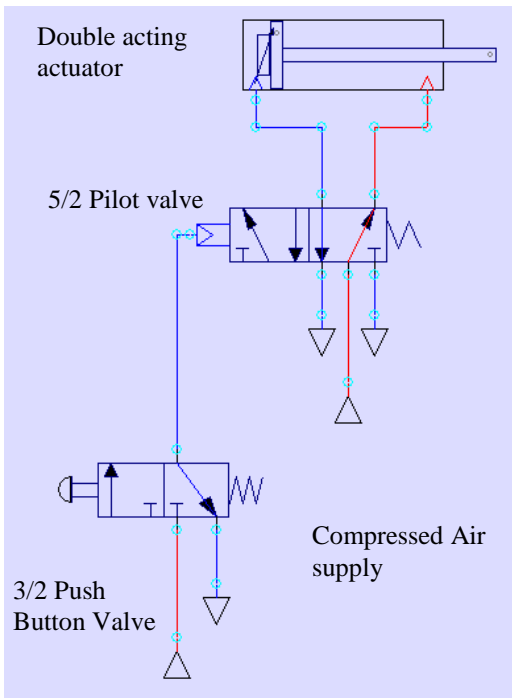


4. Actuator speed control using a 3/2 Pushbutton valve with a single acting actuator and flow control valve.



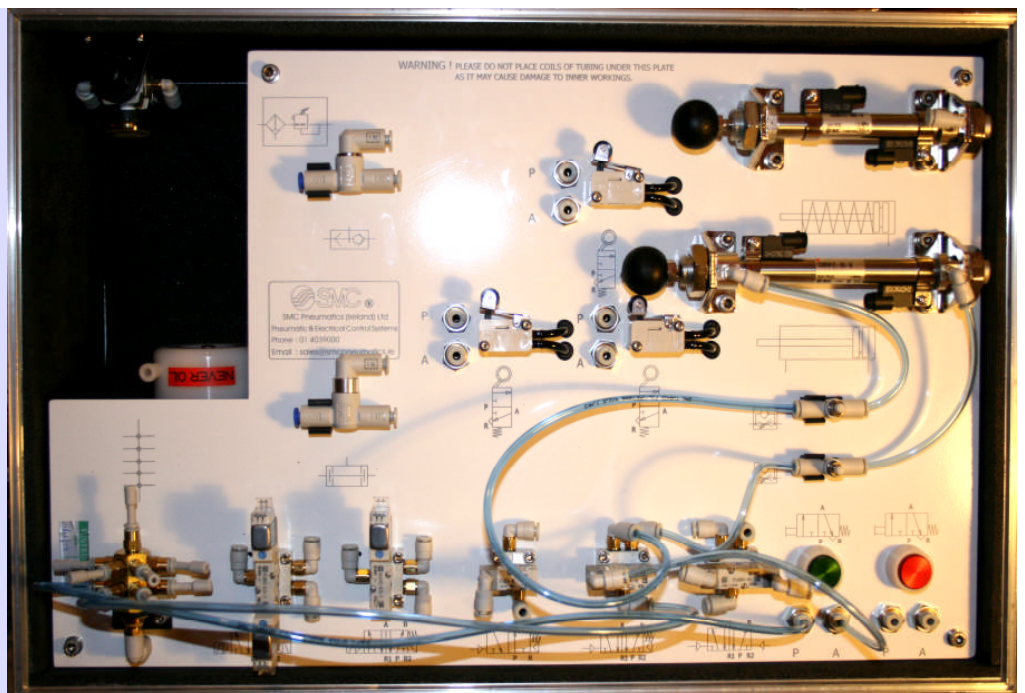
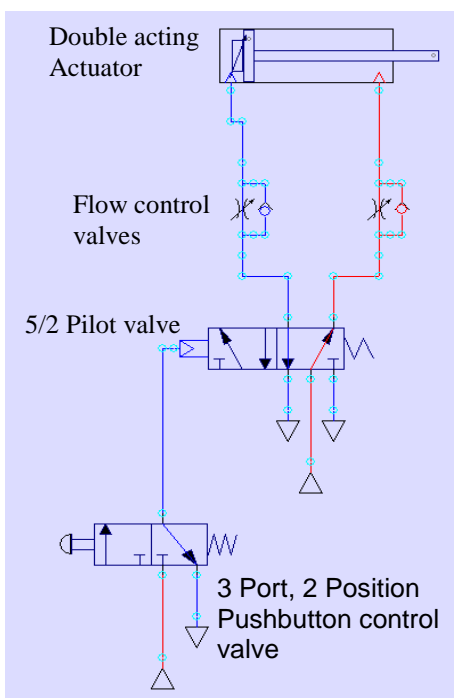
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5. Second circuit, a 3/2 pushbutton valve, a 5/2 Pilot controlled pneumatic valve and a double acting actuator.



6. Double acting actuator speed control using a 3/2 pushbutton valve, a 5/2 Pilot controlled pneumatic valve and two flow control valves.

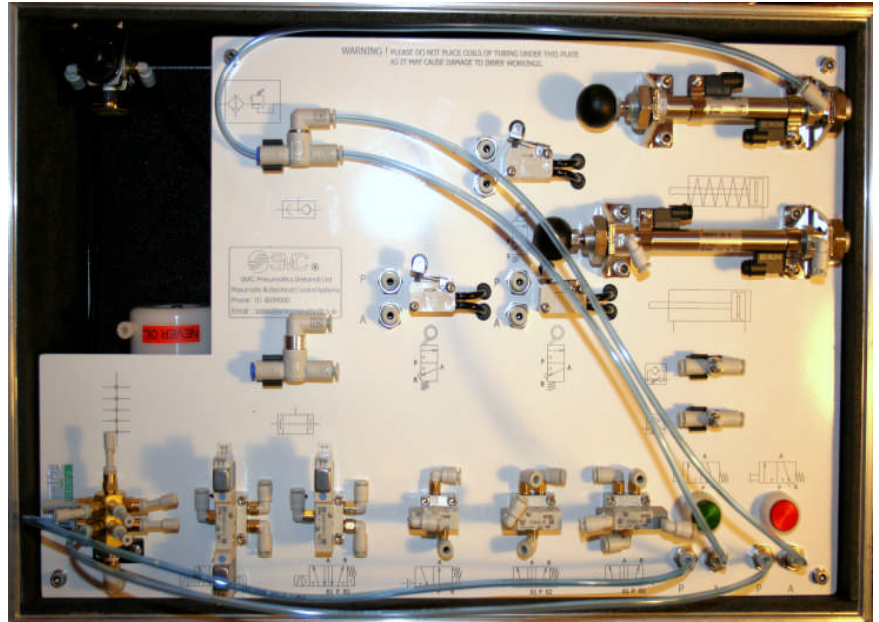
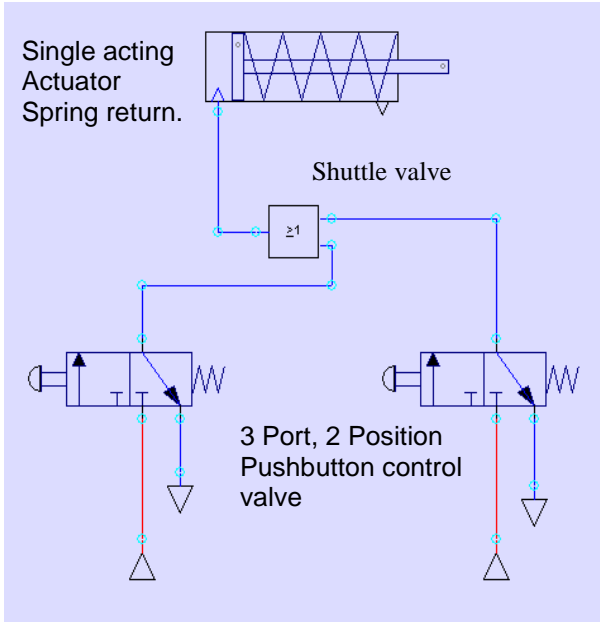
(Demonstrates how the piston speed may be different on the in and out strokes.)



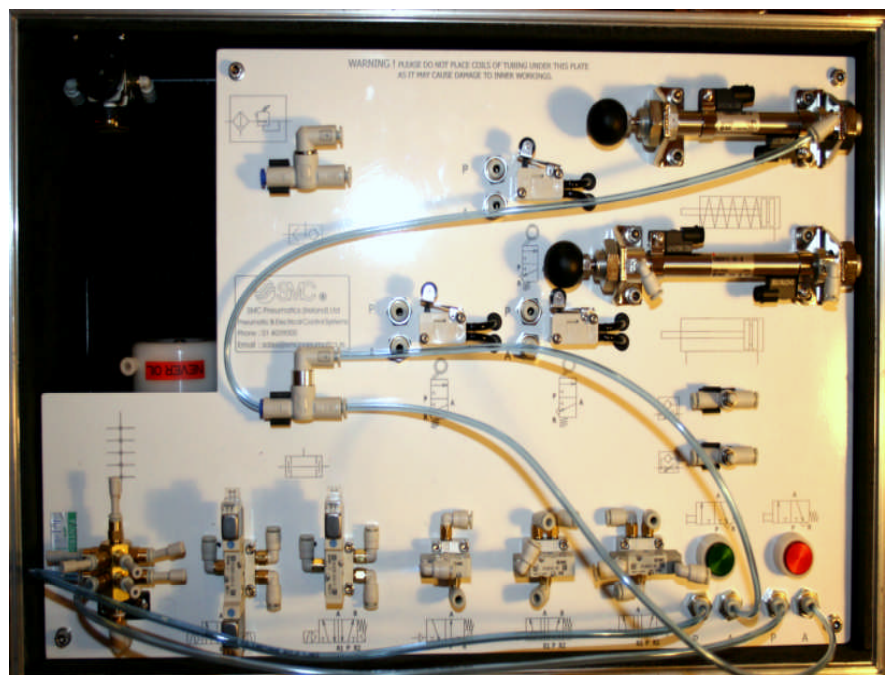
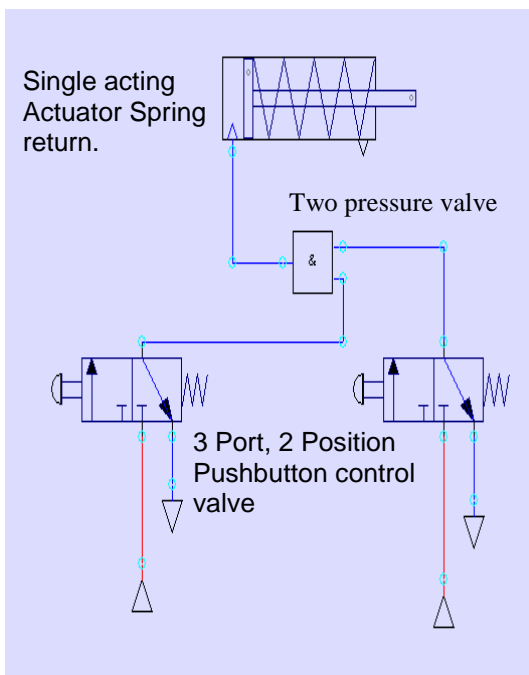
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Logic circuits.

7. The OR Logic circuit using two 3/2 pushbutton valves, a shuttle valve and a single acting actuator.

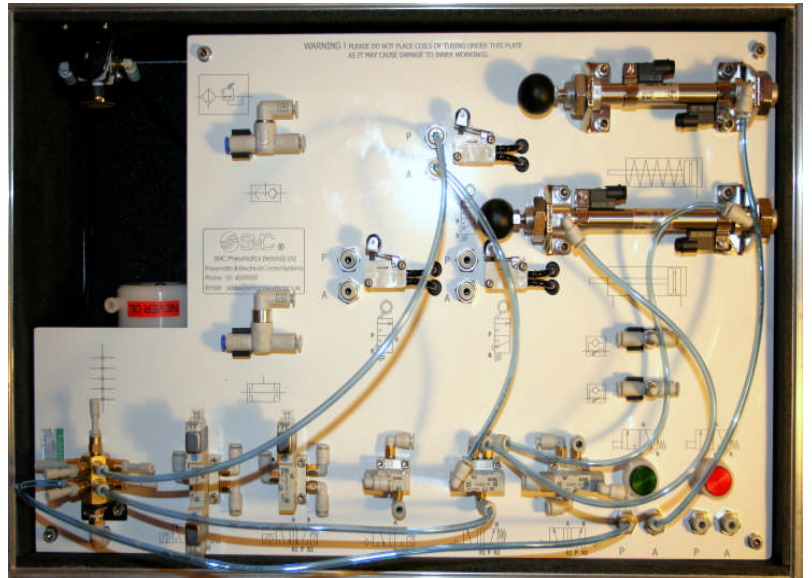
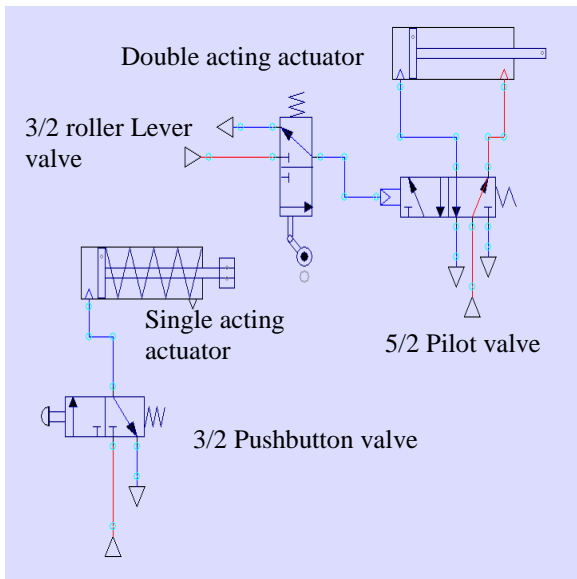


8. The AND circuit using two 3/2 pushbutton valves, a two pressure valve and a single acting actuator.

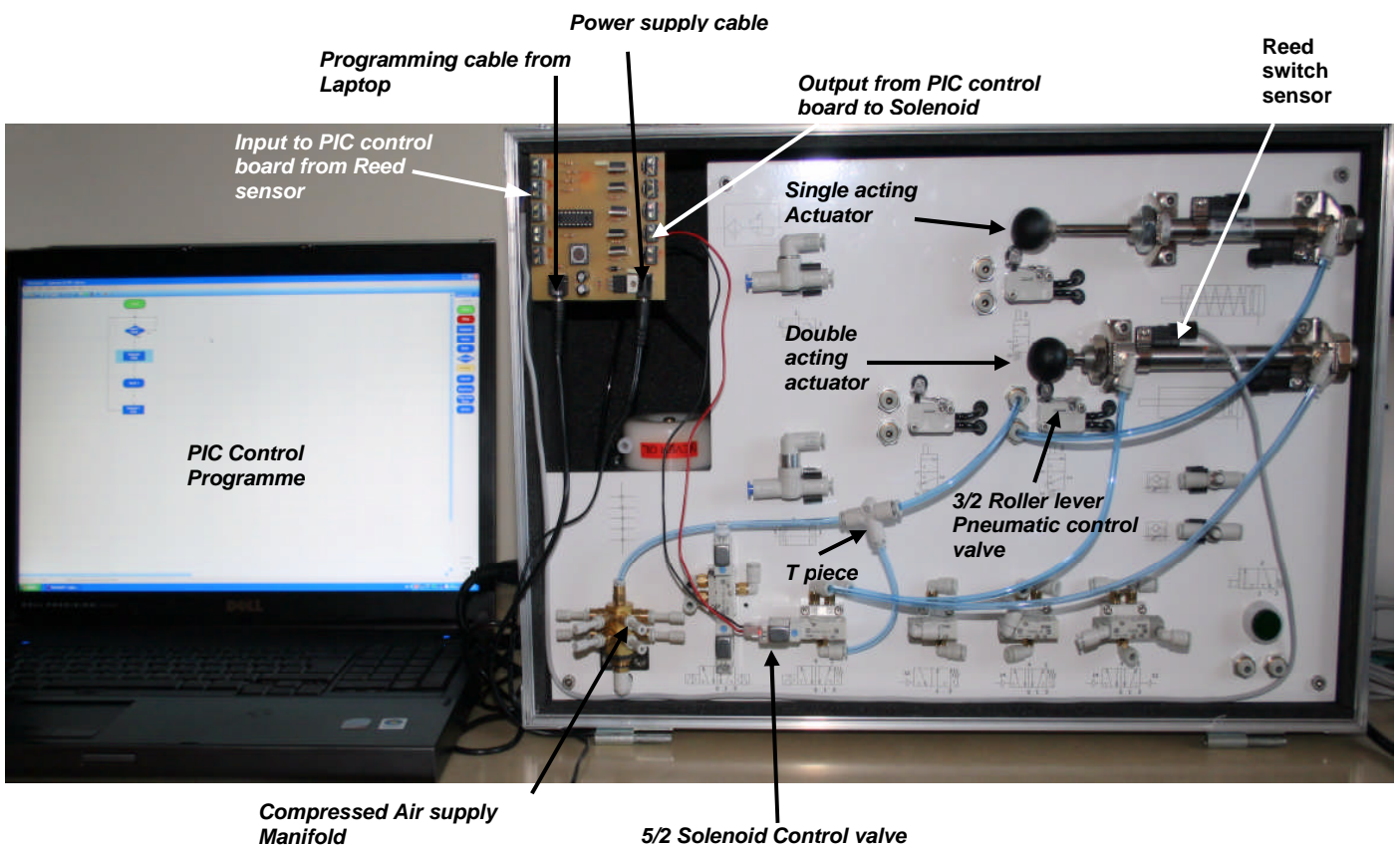


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9. **Semi automatic circuit using a 3/2 pushbutton control valve, a 3/2 roller lever valve, a 5/2 pilot valve, a single and a double acting actuator.**

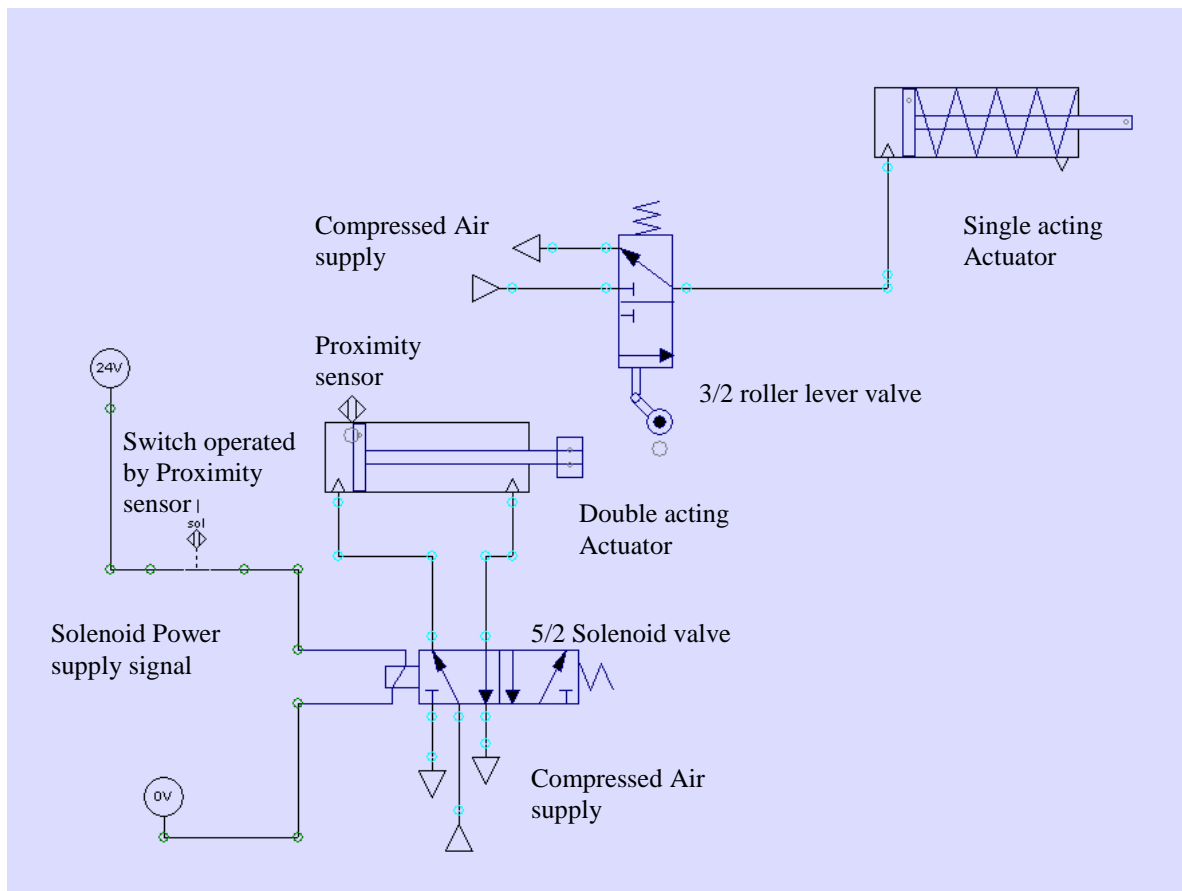


10. **Fully automatic circuit using a 5/2 Solenoid control valve, a Single and a Double acting actuator. Control is achieved using a feedback signal to the PIC Logicator interface board and Software.**



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Fully Automatic Pneumatic Circuit



Simple PIC Logicator Control programme for the Automatic circuit.

