

Solenoid Valves for Automation

DT Workshop Equipment Reference — D&T / STEM resource for school workshops | Pneumatics & Air Tools

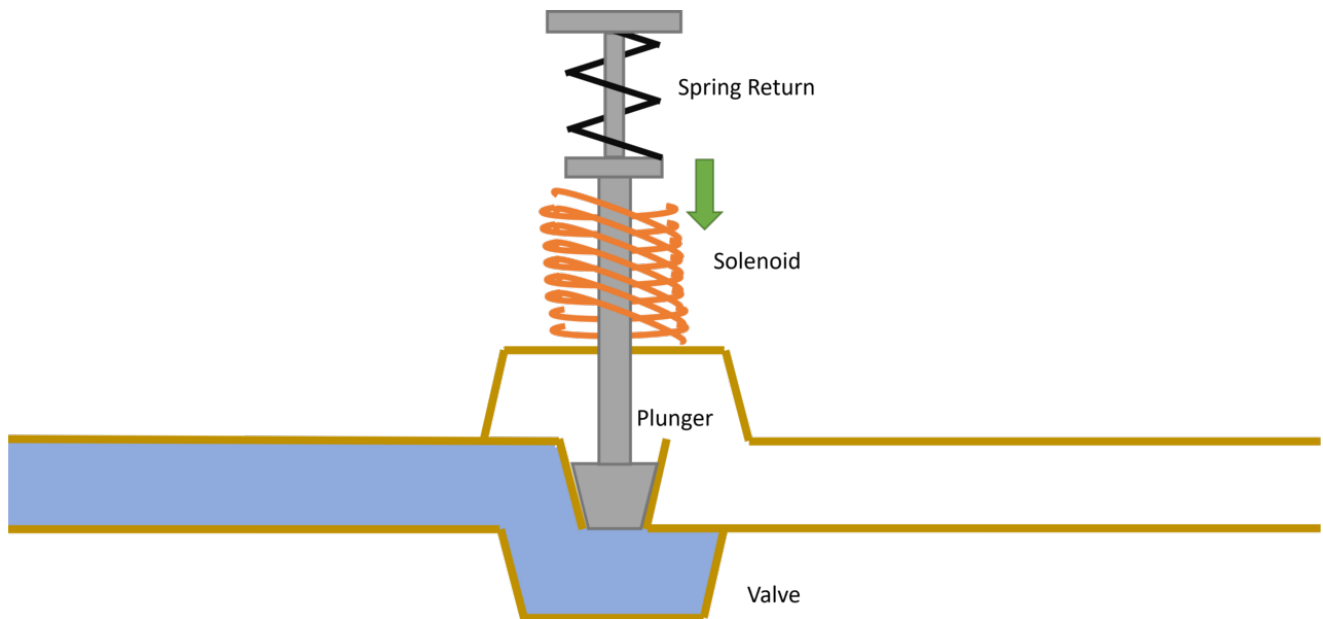


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Solenoid valves electrically switch air, water or light fluids on and off in automation rigs, with 12 V and 24 V coils controlling the flow while a microcontroller drives the coil. They are how program logic controls physical actuators.

Key Features

- 12 V or 24 V DC coils
- 2-way and 3-way configurations
- Normally open or normally closed
- Ports for 4-8 mm tubing
- LED and flyback protection boards

Typical Uses in the Workshop

- Switch air to cylinders in projects
- Control water in automated planters
- Actuate vacuum or vents by program
- Build home and lab automation

Safe Operation

1. Wire the coil to the driver (with flyback diode)
2. Connect the air or fluid line to the correct ports
3. Test the valve click with power
4. Drive the coil with PWM or digital output
5. Check flow direction and pressure rating

SAFETY NOTES

- Keep solenoid coils away from water and heat
- Do not exceed the coil voltage
- Check the fluid compatibility
- Mount the valve securely
- Disconnect power before plumbing

Maintenance & Consumables

- Clean the coil and fittings
- Check the tubing seals
- Test the valve cycles regularly
- Keep the coil terminals clean
- Replace worn valves

Specification & Buying Notes

12 V 2-way solenoid valves with tubing ports and a MOSFET driver board cover school automation. Quality valves seat cleanly; cheap valves leak air at pressure.