

Hydraulic Pneumatic Training Workbenches

DT Workshop Equipment Reference — D&T / STEM resource for school workshops | Robotics & Mechatronics



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Hydraulic and pneumatic training workbenches are self-contained rigs with pumps, cylinders, valves, pressure gauges and modular components clipped onto profile plates, teaching fluid power principles through hands-on circuit building.

Key Features

- Fluid power units with pumps
- Modular cylinders, valves and actuators
- Profile mounting plates
- Pressure gauges and flow controls
- Course packs with exercises

Typical Uses in the Workshop

- Build pneumatic and hydraulic circuits
- Study pressure, flow and control valves
- Teach automation actuation
- Practise component selection

Safe Operation

1. Plan the circuit on the diagram
2. Mount the components on the plate
3. Connect the tubing per the diagram
4. Set the supply pressure safely
5. Test the sequence step by step

SAFETY NOTES

- Keep pressure within the rig rating
- Do not block exhausts or ports while powered
- Check fittings are tight before pressure
- Depressurise before touching components
- Wear eye protection against fluid spray

Maintenance & Consumables

- Check oil levels and filters
- Drain condensation from air lines
- Check seals and O-rings
- Tighten loose fittings
- Service the pressure relief valves

Specification & Buying Notes

A pneumatic bench suits most curricula; add a hydraulic module for advanced groups. Quality components seal and switch cleanly - cheap valves leak and frustrate. Buy the course documentation.