

Lesson Plan

Introduction to hydraulics

Subject

Learn where and why fluid power is used and how hydraulic equipment makes things move.

Terminology

Hydraulic engineering is a broad term commonly used in several industries including river flows, fluid process distribution and motion and control.

Fluid power is the term used to describe the use of different fluids to transmit power to drive, move or control equipment.

Target skill level

No previous knowledge required.

Expected outcomes

To understand the types of equipment driven by hydraulic fluid power.

To understand how hydraulic fluid power works.

To identify typical components used inside a hydraulic system.

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Examples from industry

Fluid power hydraulics is used to drive the biggest, most powerful machines in the world. It is used when pneumatic or electrical systems cannot meet the small size, high power, flexibility, control or safety requirements as well as a hydraulic system.

More examples at www.e4training.com/hyd01/

Key topics covered

- Power is transmitted using the hydraulic fluid
- Pumps supply hydraulic fluid
- Actuators drive the loads
- Valves control the fluid direction
- Pressure relief valves provide safety protection

Resources to support learning

Read additional information at www.e4training.com/hyd_newbie/basic_comp1.php

Watch a video presentation at www.e4training.com/hyd_newbie/basic_comp2.php

Experiment with a hydraulic circuit simulation at

www.e4training.com/hyd_newbie/basic_comp3.php

Take the online quiz at www.e4training.com/hydraulic_test1.php

Download a lesson plan at www.e4training.com

[/downloads/LP_Intro_to_Hydraulics.pdf](#)

Download a PPT lesson presentation at

www.e4training.com/downloads/PP_Intro_to_Hydraulics.pptx

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Summary

Hydraulic fluid power drives the biggest and the best solutions for motion control.

If you want to work with the most powerful robots, machines or energy recovery then consider a job in hydraulics.

Further activities

Learn about hydraulic circuits in more detail at www.e4training.com/hyd_newbie/basic_circ1.php

Learn the fundamental hydraulic principles www.e4training.com/menuprinciples1.php

This lesson plan is part of a series of hydraulic training courses from www.e4training.com. This resource is provided free to schools and colleges, but all credits and website links must remain.