



Worksheet HV03 & Training Record Directional Valve Basics

Hydraulic Components

Email:

Course:

Provider:

Learning Objectives/Expected Outcomes: (30 mins)

1. To understand what functions hydraulic directional valves perform.
2. To understand how hydraulic directional valves work
3. To recognise the different types of directional valve and where they are used.
4. To recognise and understand their symbols.

Previous Knowledge Required:

Students should have completed worksheet HV01 'Check valve basics' or have a good knowledge of where hydraulic equipment is used and what it does.

Terminology:

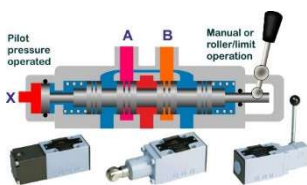
Directional valve, spool valve, on/off valve, 4 way 3 position valve.

Record of Achievement:



Click the email button (that will appear within each app) to post your results, once training is complete. Enter your training provider or your own email address. Also record progress, times, scores etc. on this training record sheet and keep together with any additional written work or sample calculations.

Coursework investigations



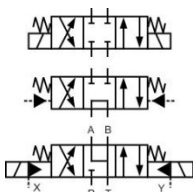
Study the detailed information and instructional video at www.e4training.com/hydraulic_valves/directional1.php & [directional2.php](http://www.e4training.com/hydraulic_valves/directional2.php)

Key points include:

- Different ways they control flow direction.
- Different operating mechanisms.
- Centre condition variations.
- Format types used in different markets.

Dates & durations:

Complete



Recognise the directional valve symbols and appreciate what the different features do:

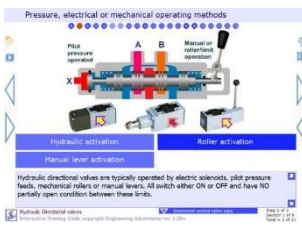
www.e4training.com/hyd_princip/hydraulic_symbols3.php

Dates & durations:

Complete



Interactive tutorials

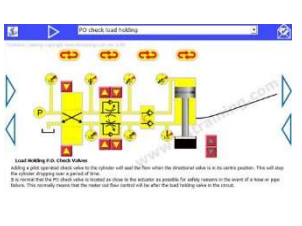


Complete the 'directional valve training' tutorial at www.e4training.com/hydraulic_courses/microtutor1.php?wtvalvesdirect

Complete quick quiz at end and post results.

Date, score & time:
Tick when posted

Virtual test rig experiment



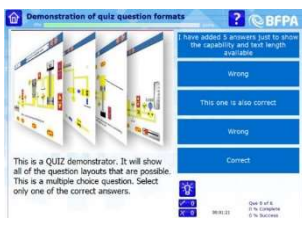
Experiment with the valve fundamentals simulation at www.e4training.com/hydraulic_valves/directional3.php:

- Follow the suggested exercises and observations list below the simulation.
- Run the experiments, answer the questions, and click the buttons to check the answers.

Explore how directional valves control the direction of movement but still allow cylinder creep.

Date, score & time:
Tick when posted

Interactive quiz to directional and reinforce learning



Complete the 'hydraulic valve questions' at www.e4training.com/hydraulic_test2.php? Quiz - Hydraulics part 1

Post result when complete.

Quiz name, date, score:
Tick when posted

Key questions / Plenary

Can you explain what directional valves do?

Can you describe 3 different ways directional valves can be operated?

Can you explain why a pilot operated directional valve might be needed?

Can you draw a 3 way 2 position directional valve symbol?

Repeat above if the answer is no



And Finally:

Complete this worksheet and keep for your records. Submit any written coursework etc. to your training course provider.

Follow-on Course Worksheets:

Potential follow-on worksheets include:

HV05 – Pressure relief valve operation, use, types (Introductory)

or HV04 - Directional valve features, tips, specification (Advanced).

Or refer to your individual lesson plan or search the worksheet lists at

www.e4training.com/hydraulic_courses/worksheets1.php or [courses1.php](http://www.e4training.com/hydraulic_courses/courses1.php)

Notes