



Self-Study Worksheet HV05

Pressure Relief Valve Basics

Hydraulic Components

Email:

Course:

Provider:

Learning Objectives/Expected Outcomes: (30-60 mins)

1. To understand what hydraulic pressure relief valves do.
2. To know where pressure relief valves are used.
3. To understand how pressure relief valves work.
4. To appreciate the different types of pressure relief valve.
5. Able to recognise typical components and their symbols.

Previous Knowledge Required:

Students should have completed worksheet HV01 'Hydraulics check valve basics' and HV03 'Directional control valve basics'.

Terminology:

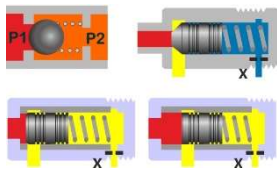
Pressure relief valve, safety valve, thermal relief valve, direct acting relief, pilot operated (PO) relief.

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 watch the instructional videos at www.e4training.com/hydraulic_valves/relief1.php & [relief2.php](http://www.e4training.com/hydraulic_valves/relief2.php)
Key points:

- Limit or control the maximum line pressure.
- Required over-pressure protection safety device.
- Can be direct acting pilot operated.
- Many different build quality and design types available.

Dates & durations:

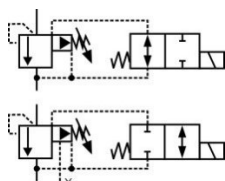
Complete



Learn to recognise the many different types of relief valve:
www.e4training.com/hydraulic_valves/relief1.php

Dates & durations:

Complete



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

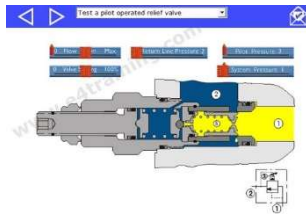
www.e4training.com/hyd_princip/hydraulic_symbols5.php

Dates & durations:

Complete



Virtual test rig experiment



Experiment with the valve fundamentals simulation at www.e4training.com/hydraulic_valves/relief3.php:

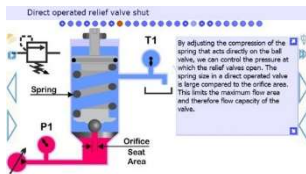
- Follow the suggested exercises and observations list below the simulation.
- Run the experiments, answer the questions, and click the buttons to see the answers.

Explore how a pilot operated relief valve works and what happens when you change the settings, flow rate, and back pressure.

Date, score & time:

Tick when posted

Further work



Complete the 'pressure relief valve training' tutorial at

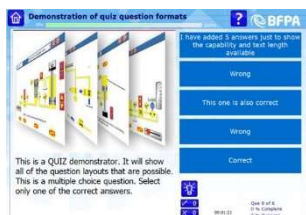
www.e4training.com/hydraulic_courses/microtutor1.php?wtvalvesrelief

Complete quick quiz at end and post results.

Date, score & time:

Tick when posted

Interactive quiz to check and reinforce learning



Complete the 'hydraulic valve questions' at

[www.e4training.com/hydraulic_test2.php? Quiz - Hydraulics part 1](http://www.e4training.com/hydraulic_test2.php?Quiz-Hydraulics%20part%201)

Post result when complete.

Quiz name, date, score:

Tick when posted

Key questions / Plenary

Can you explain what pressure relief valves do?

Can you describe 3 different applications where pressure relief valves are used and explain why?

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

Can you draw a pressure relief 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:

HV07 – Flow control valve operation, use, types (Introductory)

or HV06 – Pressure relief valve features, tips, specification (Advanced).

For specialist course worksheets visit www.e4training.com/hydraulic_courses/worksheets1.php

Notes