



Worksheet HV07 & Training Record Flow Control Valve Basics

Hydraulic Components

Email:

Course:

Provider:

Learning Objectives/Expected Outcomes: (30 mins)

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

Previous Knowledge Required:

Students should have completed worksheet HV05 'Pressure relief valve basics' and shall have completed HF03 'Flow formulas and fundamentals'.

Terminology:

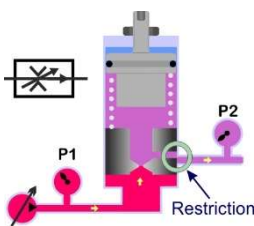
Flow control valve, fixed orifice, restrictor, variable orifice, throttle valve, needle valve, pressure compensated, pressure drop, flow divider.

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

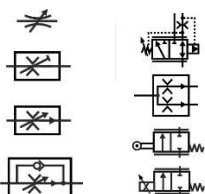


Study the detailed information and instructional video at www.e4training.com/hydraulic_valves/flow1.php & [flow2.php](http://www.e4training.com/hydraulic_valves/flow2.php)
Key points include:

- Different ways flow control regulate flow.
- Different valve performances.
- Format types used in different markets.

Dates & durations:

Complete

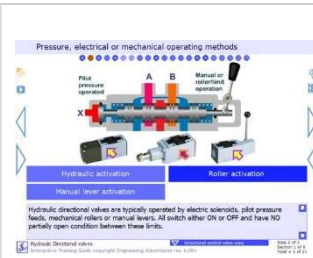


Recognise flow control valve symbols and appreciate what effect the different features have:

www.e4training.com/hyd_princip/hydraulic_symbols6.php

Dates & durations:

Complete



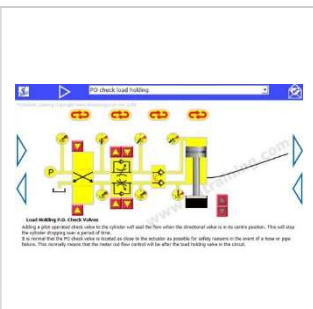
Complete the 'flow control valve training' tutorial at www.e4training.com/hydraulic_courses/microtutor1.php?wtvalvesflow

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/flow3.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 the flow valves control the speed of movement of the cylinder and the line pressures.

Date, score & time:

Tick when posted



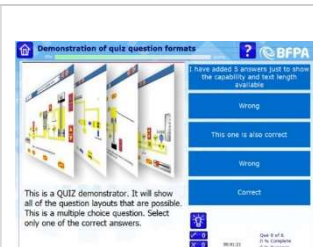
Experiment with the valve fundamentals simulation at www.e4training.com/hyd_formula/flow3.php:

- Experiment with the orifice size, flow and load pressures to understand how they affect each other.
- Calculate the orifice size required for a given flow and pressure drop.

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 2

Post result when complete.

Quiz name, date, score:

Tick when posted



Can you explain why flow control valves are needed?
Can you describe 3 main types of flow control valve?
Finish this rhyme 'If in doubt, meter ...'?

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:

HV09 – Pressure reducing valve operation, use, types (Introductory)
or HV08 - Flow control 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/courses1.php)

Notes