



Worksheet HW2 & Training Record
Hydraulic Scissor Lift Circuits

Hydraulic
Projects

Email:

Course:

Provider:

Expected Outcomes: (120-240mins)

Understand the different features used in scissor lift hydraulic circuits and when and why they are used.

Produce a hydraulic circuit for a specific scissor lift design.

Previous Knowledge Required:

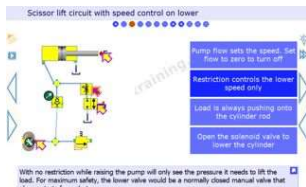
Students should have completed worksheet HV1 'Hydraulic control valves' and have a good knowledge of what the different hydraulic components are used.

Certificate of Achievement:



Click the email button (shown left, that will appear within each app) to post your results, once the training module has been completed. Enter your email or the email for your external training provider. e4training.com will also receive a copy of the results to include in the certificate assessment process.

Interactive tutorial

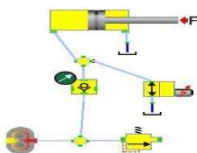


Complete the 'scissor lift circuit design training' tutorial at www.e4training.com/hydraulic_courses/microtutor1.php?wtcircsscissor (or via the phone app or CD/download) Complete quick quiz at end and post results.

Date, score & time:

Tick when posted

Interactive experiments



Experiment with the Circuits/ScissorLift1 simulation model at www.e4training.com/simulate/simulate2.php?circuits/scissorlift1 :

- Click the pump and set the flow to zero to stop lifting
- Click the solenoid to lower the load
- Change the pump flow and observe the cylinder speed changes
- Click the rod to change the mass, friction or force on the cylinder
- Observe how the pump pressure changes with load changes
- Observe how the pressure increase at the end of the cylinder stroke

Complete



	<p>Select Circuits/ScissorLift2 :</p> <ul style="list-style-type: none"> • Change the pump flow and solenoid valve to raise and lower the cylinder • Click on and change the orifice size to observe the effects on speed • Compare the pump pressure (energy input) with previous circuit <p style="text-align: right;">Complete <input type="checkbox"/></p>
	<p>Select Circuits/ScissorLift3 :</p> <ul style="list-style-type: none"> • Change the orifice size and observe the effects on raise and lower speeds. • Compare the energy efficiency with the previous circuit design <p style="text-align: right;">Complete <input type="checkbox"/></p>
	<p>Select Circuits/SynchroniseCyls :</p> <ul style="list-style-type: none"> • Observe how two, unlinked cylinders maintain synchronisation • Change the loads and restrictors to observe the effects • Consider how this might affect scissor lift designs <p style="text-align: right;">Complete <input type="checkbox"/></p>
	<p>Select Circuits/ScissorLift4 :</p> <ul style="list-style-type: none"> • Compare the performance and efficiency of a system where the cylinder is driven down and does not rely on gravity • Discuss when this design may be more appropriate <p style="text-align: right;">Complete <input type="checkbox"/></p>

Coursework assignments

	<p>Produce a report to explain which circuit features you would include in the hydraulic scissor lift design, based on the design specification required. This is likely to include a circuit drawing with explanations for how you will achieve control of:</p> <ul style="list-style-type: none"> • Direction, speed, holding position and safe lowering. <p>Number of pages emailed Complete <input type="checkbox"/></p>
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Related Worksheets:

See also SZ1 & SZ2 for scissor lift sizing calculations and SZ3 for an example FMEA analysis. See www.e4training.com/hydraulic_courses/worksheets1.php for all worksheets.

And Finally:

Complete this worksheet and keep for your records. Submit the written coursework to e4training.com or your training course provider. Application result postings will be collated automatically by the course provider; e4training.com will also receive a copy of the results to include in the certificate assessment process.