engineering **adventures**

Worksheet SP1 & Training Record **Hydraulic Equipment Specification**		**Equipment Specification**
Email:	Course:	Provider:

Expected Outcomes: (20-30mins)

Appreciate the range of issues and requirements that need to be considered when purchasing, maintaining or designing hydraulic equipment.
Understand the relationship between duty, design life and equipment specifications by examining small, medium, and large power units.
Produce an equipment specification for their scissor lift.

Previous Knowledge Required:

Students should have completed worksheet SZ1 'Scissor Lift Sizing and Performance' or have a good knowledge of sizing hydraulic components and systems.

Self-driven micro-learning tutor (SDLT)

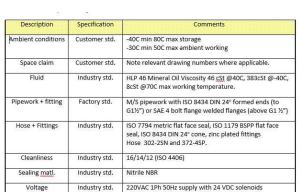
Complete the 'Hydraulic system priorities and specification' SDLT app via www.e4training.com/hydraulic_courses/specification1.php, phone app or CD/download

Date, score & time:

Coursework

Consider the system priorities and what features in the equipment might affect them:

- Appreciate how the different duty cycles and operating conditions will affect the life expectancy of the equipment.
- Appreciate how components are designed to meet the specific requirements of different market sectors.
- Appreciate how production volumes and manufacturing lead times can affect the design of the equipment used.
- Review an existing lift design as a good basis to adapt your potentially new design.



Description	Specification	Comments
Ambient conditions	Customer std.	-40C min 80C max storage -30C min 50C max ambient working
Space claim	Customer std.	Note relevant drawing numbers where applicable.
Fluid	Industry std.	HLP 46 Mineral Oil Viscosity 46 cSt @40C, 383cSt @-40C, 8cSt @70C max working temperature.
Pipework + fitting	Factory std.	M/S pipework with ISO 8434 DIN 24° formed ends (to G1½") or SAE 4 bolt flange welded flanges (above G1 ½")
Hose + Fittings	Industry std.	ISO 7794 metric flat face seal, ISO 1179 BSPP flat face seal, ISO 8434 DIN 24° cone, zinc plated fittings. Hose 302-2SN and 372-4SP.
Cleanliness	Industry std.	16/14/12 (ISO 4406)
Sealing matl.	Industry std.	Nitrile NBR
Voltage	Industry std.	220VAC 1Ph 50Hz supply with 24 VDC solenoids

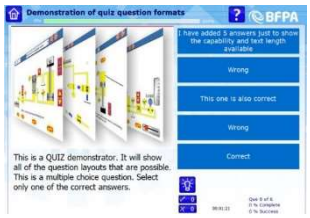
Review a typical system specification and understand why communicating requirements clearly is so important:

- Produce a list of design priorities for an example scissor list.
- Decide whether the scissor lift will target minimum cost, industrial environments or the outside, mobile market.
- Produce a hydraulic system specification to meet the priorities of the example scissor list.

Sample specification

Submit your priority list and specification document to the course tutor based on which their design brief provided.

Interactive quiz



Complete the 'TBC' Quiz either online at www.e4training.com/hydraulic_test2.php , phone app, CD or download.

Quiz name, date, score

Additional video and instructional resources

Visit www.e4training.com/hyd_princip/priority1.php for additional explanation and videos.

Dates & durations (Optional):

Qualification pass requirements:

Students will need to complete and return all worksheets to their registered training provider. Methods of testing and qualification will vary between course providers.

For online certificates, students must post their results by clicking the email button that will appear in the app, once the training module has been completed.