



## Worksheet HP02 & Training Record Hydraulic Equipment Specification

## Equipment Specification

Email:

Course:

Provider:

Learning Objectives/Expected Outcomes: (60-120mins)

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

Previous Knowledge Required:

This module should be completed as part of the HW02 'Scissor Lift Design Project' or for purchasing staff, following the basic hydraulic introduction HI05.

Terminology:

Project management, specification, duty, working life, technical requirements.

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.

*Interactive tutorial*



Complete the 'Hydraulic system priorities and specification' tutorial at [www.e4training.com/hydraulic\\_courses/microtutor1.php?wtspecification](http://www.e4training.com/hydraulic_courses/microtutor1.php?wtspecification)

Complete quick quiz at end and post results.

Date, score & time:

Tick when posted

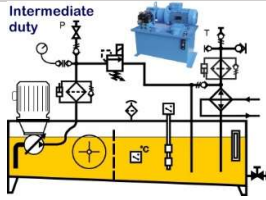
*Coursework investigations*



Study the different system priorities at [www.e4training.com/hyd\\_princip/priority1.php](http://www.e4training.com/hyd_princip/priority1.php)

- Understand why all hydraulic systems are not the same.

Complete



Study the three different power unit options at [www.e4training.com/hyd\\_maint/maintexample1.php](http://www.e4training.com/hyd_maint/maintexample1.php)

- Compare the components and performance of the different power units.

Complete

Description	Specification	Comments
Install conditions	Customer std.	40°C min OTC max storage 10°C min OTC max ambient working
Space claim	Customer std.	Note relevant drawing numbers where applicable.
Fluid	Industry std.	HP-40 Mineral Oil Viscosity 40 cSt @40°C, 280 cSt @-40°C, RUL @100°C max working temperature.
Pipework + Fitting	Factory std.	M3 pipework with ISO 2448 DIN 24° formed ends (Ø 63.5) or SAE 4 bolt flange welded flanges (obese 62.5")
Hose + Fittings	Industry std.	ISO 724 metric Rat face spec. ISO 1179 SPP Rat face spec. ISO 1843 DIN 24° cone, cric etched fitting. Hose 303-206 and 372-459.
Clearances	Industry std.	1637472 (501 1406)
Sealing gags	Industry std.	NIH-NI NRI
Voltage	Industry std.	200VAC 10A 50Hz supply with 24 VDC subcircuit

Download and study the 'example system specification' from [www.e4training.com/navigate6.php](http://www.e4training.com/navigate6.php)

- Study an example specification.

Complete

## Practical and coursework assignments

Description	Specification	Comments
Install conditions	Customer std.	40°C min OTC max storage 10°C min OTC max ambient working
Space claim	Customer std.	Note relevant drawing numbers where applicable.
Fluid	Industry std.	HP-40 Mineral Oil Viscosity 40 cSt @40°C, 280 cSt @-40°C, RUL @100°C max working temperature.
Pipework + Fitting	Factory std.	M3 pipework with ISO 2448 DIN 24° formed ends (Ø 63.5) or SAE 4 bolt flange welded flanges (obese 62.5")
Hose + Fittings	Industry std.	ISO 724 metric Rat face spec. ISO 1179 SPP Rat face spec. ISO 1843 DIN 24° cone, cric etched fitting. Hose 303-206 and 372-459.
Clearances	Industry std.	1637472 (501 1406)
Sealing gags	Industry std.	NIH-NI NRI
Voltage	Industry std.	200VAC 10A 50Hz supply with 24 VDC subcircuit

Identify a piece of hydraulic equipment you work with (or consider the scissor lift design example).

- Review the list of design priorities as per the example list.
- Write your own equipment specification based on the requirements at:

[www.e4training.com/hyd\\_princip/priority3.php](http://www.e4training.com/hyd_princip/priority3.php)

Sample specification

Complete

## Key questions / Plenary

Can you describe the main hydraulic system design priorities?

Can you identify the priorities that have been applied to a particular piece of equipment?

Can you write a specification to ensure equipment is delivered to meet these priorities?

Record answers:

Tick when complete

And Finally:

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

Follow-on Course Worksheets:

Potential follow-on worksheets include: HP03 – Hydraulic symbols

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

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