

Accumulators

MEM16012A: Interpret technical specifications and manuals

HYDAC unit number: ST-T03-1
Duration: 24 hours (3 days)

This training unit can be nationally recognised through an association with **AiGROUP**



Outline

Hydro-pneumatic accumulators are pressure vessels which are used in oil hydraulic systems. They can provide a number of functions. They also present an acute safety risk to personnel and equipment if not correctly engineered or maintained.

This course is designed as a detailed examination of hydraulic accumulator technology. We examine all aspects of their construction, their sizing for, and operation within a system.

This course has a major “Hands-on” component, where bladder accumulators are dis-assembled, inspected, assembled and pre-charged. Diaphragm and piston accumulators are also demonstrated.

Topics covered:

Introduction:

- Pressure vessels - Definition and construction
- Applications for accumulators in hydraulic systems
- Advantages and disadvantages of the different accumulator types
- Mechanical accumulator types:
 - Dead weight
 - Metal bellows
 - Spring
- Hydro-pneumatic accumulator types:
 - Bladder
 - Diaphragm
 - Piston

Introduction to thermodynamics

- Accumulator operation
- Isothermal
- Adiabatic
- Polytropic

Sizing and calculations

- Establishment of requirements
- Type choice
- Manual calculations with formulas
- Calculations using the HYDAC ASP software

Safety

- Pressure ratings

- Limitations of materials
- Isolation

Installation

- Accessories
 - Mounting
 - Safety devices
 - Automatic bleed down
- Location
- Mounting positions and limitations

Pre-charging, testing and de-gassing

- All accumulator types

Service

- Dis-assembly
- Inspection
- Examination of failure modes
- Root causes of failure
- Assembly / re-assembly

Identification

- Types
- Stamping and markings

Legal requirements

- Pressure vessel registration
- Type approvals
- Application and installation
- Establishment of requirements
- Periodic service inspections
 - Frequency
 - Method
 - Records of inspections

Storage

- Environment
- Time

Transportation

- Shipping and handling

Outcomes

At the completion of the course, a certificate of acknowledgement will be issued to the participant, stating the course name and all other relevant details.

This course is not nationally recognised as there have been no competencies created to reflect the required knowledge.

Prerequisites

There are no prerequisites for this course, however it is designed for those with some experience in hydraulic technology. This course can only be provided for those fluent in English. Participants must be able to read and write, and to follow instructions.

Lunches

Morning tea, lunch and afternoon tea are provided. If you have any special dietary needs, please contact HYDAC beforehand to arrange alternatives.

Clothing and equipment

Pens, paper, tools and training resources are provided.

Clothing should be neat casual, or cotton drill work clothing is fine, but they must be clean.

Dirty work boots are not to be worn, fully covered footwear such as runners are acceptable. Open toed footwear must not be worn.

Dates and times

Times: 8:30AM to 5:00PM

Dates: Please, check our website (www.hydac.com.au/hydac-training) for information on available dates.

Venue

HYDAC Pty. Ltd.

109 - 111 Dohertys Road
Altona North
Victoria, 3025
Australia

Course fee

Course fee is AUD \$1260 per participant, plus GST

Minimum class size is 10 people.

Flights and accommodation are not included in the course fee.

Text book

We also have a 401 page text book available, entitled "Basic Hydraulics and Components", it is the supporting text for this course. It has a 50 page section dedicated to accumulator technology.

It can only be purchased by those who attend our hydraulic courses.

Part No: 3508592

Nett price: \$140 plus GST



Contact

Technical Training Officer



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Altona North

VIC 3025

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