# Electrical Troubleshooting Multi-gear Drawworks

# Overview

Product training for multi-gear drawworks type GH4500 including

- Classroom training
- TTL training (Technical Training Laboratory)
- Simulator training based on HMH HMI

This is an open-class training. The training content is not project specific or customized.

# Course description and learning objectives

Electrical maintenance personnel shall be able to carry out troubleshooting on multi-gear drawworks control software and HMI more effective but without in depth knowledge about the software functionality. This course covers theoretical classroom, practical TTL and simulator troubleshooting training.

After this course the participant shall be able to use failure & help messages, technical drawings and documentation for failure analysis in order to provide our 24/7 technical support hotline the required information in a professional manner. Furthermore the participant shall be able to monitor interface signals of control systems via ServiceLab/HMI. This course module is based on monitoring software ServiceLab 9. The training content for ServiceLab 9 is limited on monitoring of determined software interfaces but not the handling of the complete software.



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#### Training content

- Safety instructions
- Functionality of control systems
- Introduction of control software structure
- Handling of failure messages and help texts
- Handling of Cause and effect list
- Electrical schemes and bus topology
- Electrical devices and their functionality
- Introduction of data blocks which are available for signal monitoring via ServiceLab 9
- Handling of ServiceLab 9 for signal monitoring
- Practical troubleshooting and failure analysis on simulator
- Practical work on control system cabinets

### Duration

2 days

### **Course capacity**

Min. 4 participants Max. 6 participants

## **Target group**

Electrical maintenance personnel

#### Language

Training execution and digital training material will be provided in English language.

#### Prerequisites

- Basic knowledge about drilling technology
- General technical and physical understanding
- Basic hydraulic knowledge is recommended
- Electrical knowledge and ability to read electrical schemes and bus topology drawings is required
- Experience in troubleshooting and signal monitoring using data interfaces.

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 Participation on Multi-gear Drawworks Training or comparable field experience with drawworks