

## Schedule for a 5 day Service Training for the Noell Straddle Carrier type NSC E

### Day 1: Electrical system

- Overview of the electrical system of the NSC E
- Operating the Strad, focus on the new display
- Electrical Components (e.g. absolute encoder, keyboard etc.)
- Troubleshooting the electrical system

### Day 2: PLC System (ESX boxes)

- Description / function CAN-Bus
- Working with PCanView or PCanExplorer to diagnose the CAN-Bus
- Working with CoDeSys (monitoring the program / create HEX file)
- Working with WinFlash (downloading a HEX file to a ESX box)
- Working with the Mvision software to setup and program the display
- Troubleshooting the PLC system

### Day 3: Frequency Converters / Electrical Steering System

- Basic description
- Diagnostic using the frequency converter / CAN fault list
- Downloading / changing parameters with the laptop
- Troubleshooting the frequency converter
- Drive motors / hoist motor and attached resolvers / encoders
  
- Overview of the electrical steering system
- Working with WinPCS for the electrical steering system
- Troubleshooting the steering system

### Day 4: Hydraulic System

- Brake system
- Hydraulic winch brake
- Steering system
- Spreader & Spreader supply

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### **Day 5: Diesel engine / Maintenance**

- Diagnose the CAT diesel engine
- Maintenance at the CAT engine
  
- Strad Maintenance
  
- Questions and answers to the training
- Practical troubleshooting on the Strad

If the training is located at the customers terminal, the customer would have to provide a suitable training room and for the practical parts of the training a functional straddle carrier.

The times and the training content may vary depending on the knowledge and needs of the trainees. This can be done by the trainer on site if necessary to ensure a more productive training.