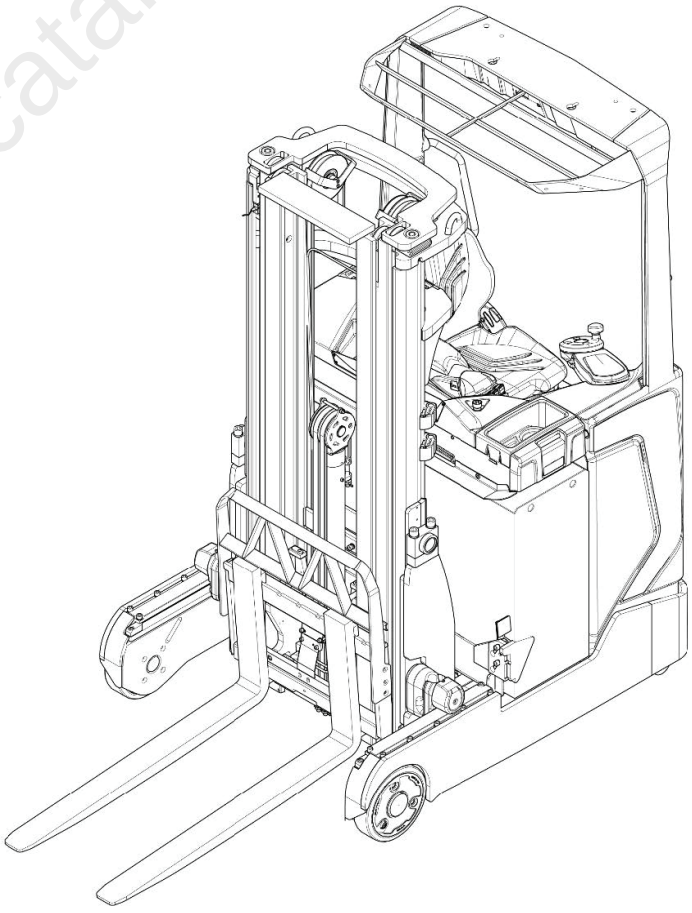
SERVICE MANUAL

NR14N2S, NR14N2HS
NR16N2, NR16N2H, NR16N2S
NR16N2HS, NR16N2C, NR16N2HC
NR20N2H, NR20N2X
NR25N2X



English

622076-EN C

Table 5. Schematic diagram identifiers

IDENTIFIER	DESCRIPTION
S#	Switches and other state changing devices (for example, most sensors).
#F#	Fuse
J#	Reference. All references marked with an even ”J” (for example J2) are positive (+). All references marked with an odd “J” (for example J3) are negative (-).
M#	Motor
V#	Diode
A#	Controllers and displays
K#	Contactors and relays
X#	Connector. Contact numbers are marked on individual wires.
XX#	Splice. Multiple wires are connected together at this point.

Figure 111 shows the reference to which Figure 110 referred.

Figure 111. Page 8, zone 16, wiring reference J14

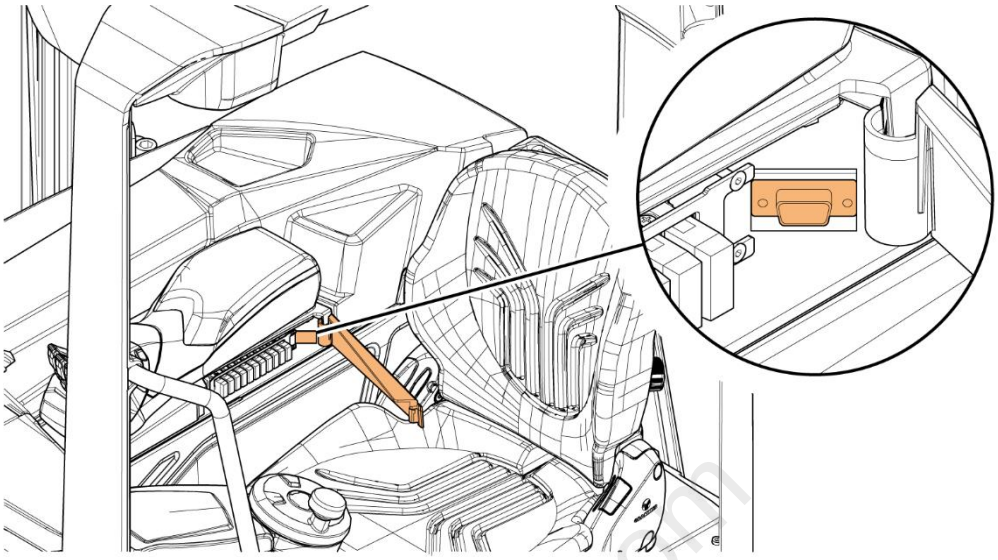
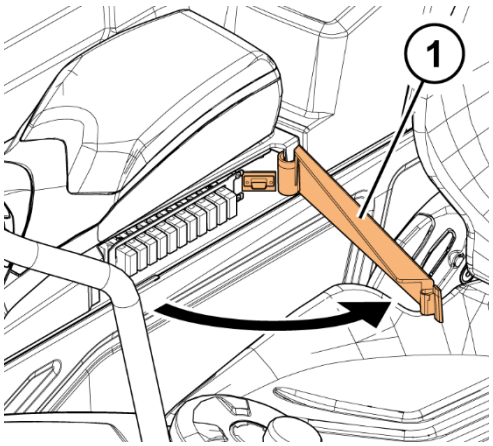
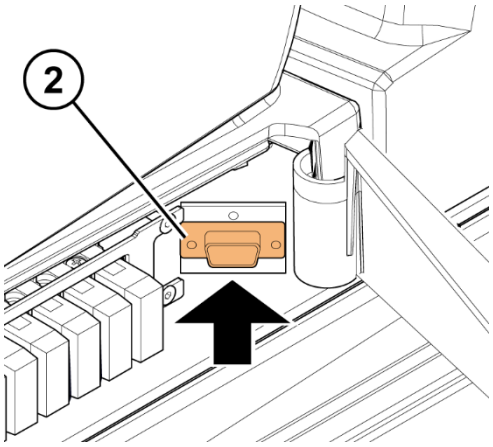


Figure 161. Location of the service socket

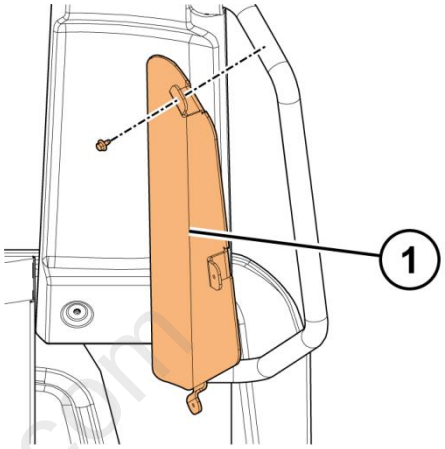
11.1.1 Connect TruckTool to the service socket

The service socket is behind the fuse cover. You must open the cover before you can connect TruckTool to it.

1. Open the fuse cover.	
2. Connect TruckTool to the service socket.	

The plate protects the operator from impacts in narrow and tight areas.

15.16.1 Install the left shoulder protection plate

1. Install the left shoulder protection plate to the left side of the operator compartment with screws.	

15.17 Fire extinguisher

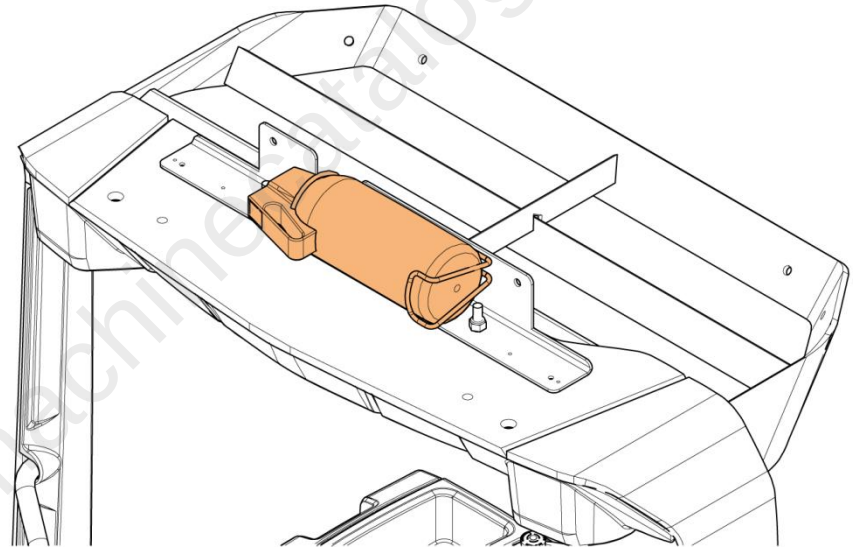


Figure 185. Fire extinguisher overview

In case of a fire in the truck, the fire extinguisher can be used as a preliminary means of putting out the fire.

NOTE: With this option, the height of the overhead guard increases by 100 mm.

8.3.9.1 CNA external connector

CONNECTION	DESCRIPTION
A3 CHA (XA3A/3) (encoder channel A)	A channel of the steering motor encoder.
A4 CHB (XA3A/4) (encoder channel B)	B channel of the steering motor encoder.
A5 GND (XA3A/5) (encoder GND)	Ground for the steering motor encoder.
A6 PTHM (XA3A/6) (temperature sensor input)	Input for the motor temperature sensor.
A7 GND (XA3A/7) (temperature sensor GND)	Ground for the motor temperature sensor.
A8 GND (XA3A/8) (QL channel GND)	Ground for the steering wheel QL channel.
A9 PCOIL (XA3A/9) (brake supply)	Brake supply (single safety contact).
A11 SW1 (XA3A/11) (reference sensor 90 degrees)	Steering reference sensor 90 degree switch.
A12 SW2 (XA3A/12) (reference sensor 0 degrees)	Steering reference sensor 0 degree switch.
A15 KEY-IN (XA3A/15) (key)	Key line supply for EPS.
A16 VCC2 (XA3A/16) (encoder supply)	Supply for the motor encoder.
A17 QL (XA3A/17) (QL channel)	Steering wheel QL channel.
A19 GND (XA3A/19) (GND)	Ground for the steering wheel DL channel.
A20 DL (XA3A/20) (DL channel)	Steering wheel DL channel.
A22 CANH (XA3A/22) (CANH)	High signal of CAN bus.
A23 CANL (XA3A/23) (CANL)	Low signal of CAN bus.

CODE	TRUCKTOOL DESCRIPTION	DISPLAY DESCRIPTION	MESSAGE TYPE
8A235	CNA4 open	Internal alarm Call Service	Alarm
	The XA1A/4 input is open, and the emergency input parameter is set to Present (it must always be Absent). This alarm occurs when there are incorrect parameters in the controller. **NOTE:** During resistance measurements, make sure that the battery connector is disconnected, and that the voltage at the measured circuit is 0 V. • Read the alarm status from each controller. Try to make an overall picture of the root cause for the event code(s). • Make sure that the battery is not damaged. Measure the battery voltage when idle, and during full speed lift. The battery voltage must stay over 38 V. • Make sure that the fuses are not damaged. • Make sure that the truck frame is isolated from the battery positive and negative. Measure this from both sides of the drive contactor. Make sure that there is no short-circuit or low resistance between the positive and negative from the terminals of any controller (B+ and B- terminals). • Make sure that the wiring harness is not damaged. Make sure that the related connections do not have loose pins etc. • Set the truck back to the default settings. Run the truck model configuration wizard. • If the default settings are not a solution to the problem, flash the controller and run the wizards again. • If the flashing does not help, replace the current controller with another controller. **NOTE:** If the controller replacement does not help, install the original controller back to the truck. • If the controller replacement does not help, evaluate the possible root causes for the alarm again. Also, see if there are other alarm messages active in the system. • Clear the online error codes in TruckTool. Set the power of the truck OFF and ON again: other error codes can show up during start-up.		

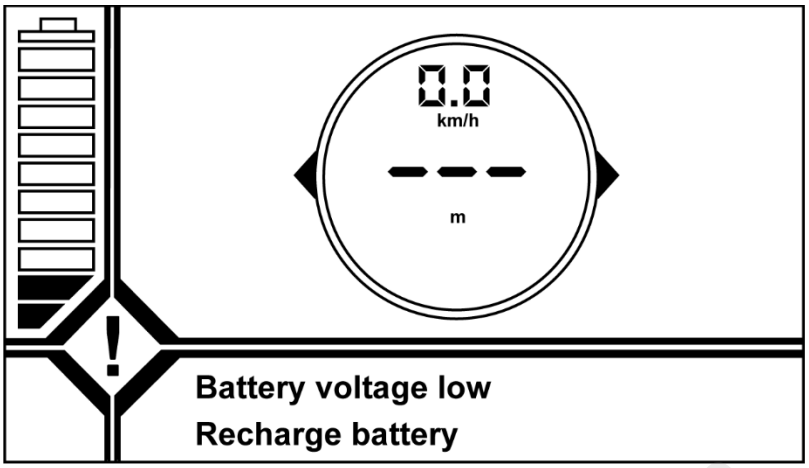


Figure 16. Battery discharge level almost empty

Center information area

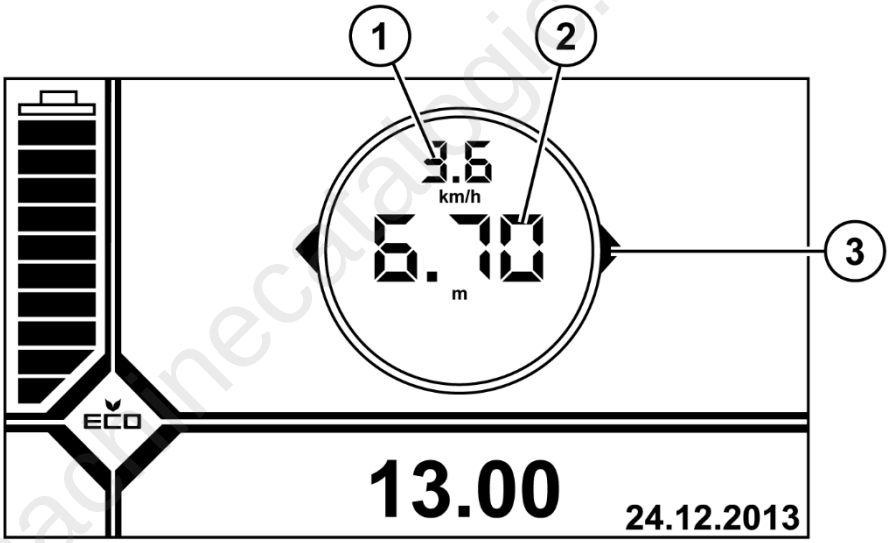


Figure 17. Center information area overview

1. *Speed indicator*
2. *Height indicator*
3. *Driving direction indicator*

In a normal operating situation, the center information area displays the speed and height indicators. In addition, the driving direction of the truck is indicated with two arrows on the opposite sides of the center information area. If no driving direction is set, the arrows are blinking. When the driving direction is set, the selected direction is indicated with a solid blue colored arrow and the other arrow turns gray.

Parking brake indicator

The parking brake indicator is displayed in the bottom left-hand corner of the truck display. The parking brake must be engaged before the operator leaves the truck.

Full Version Available

Caterpillar NR14N2HS Reach Truck Service and Operator Manual (622076-EN-C)

Caterpillar NR14N2HS Reach Truck service manual, covers hydraulics, mast, Zapi controls, wiring, and maintenance. Searchable PDF download.