



SERVICE MANUAL

NRM20N2
NRM25N2

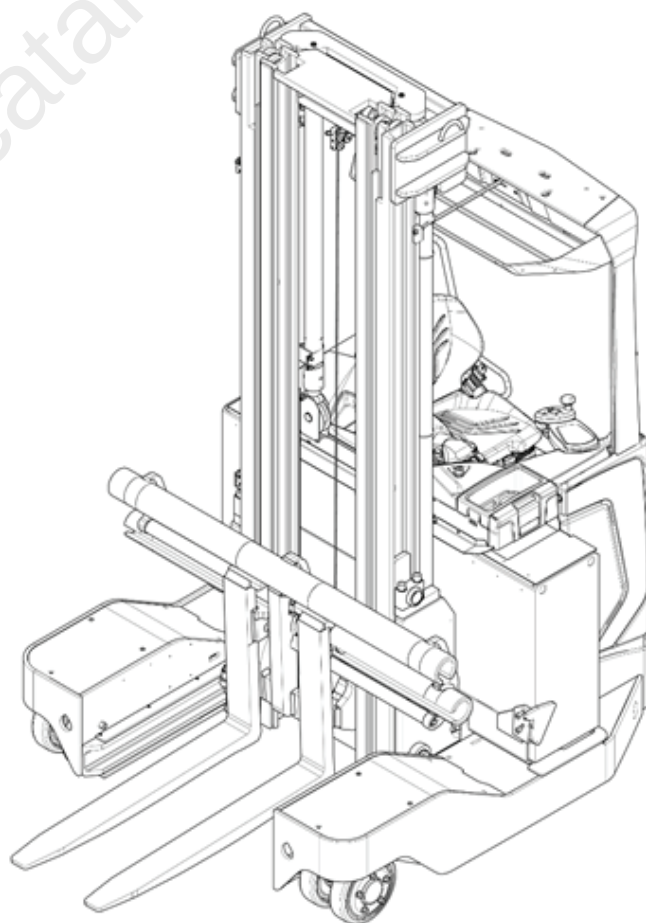


Table 5. Schematic diagram identifiers

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 96 shows the reference to which Figure 95 referred.

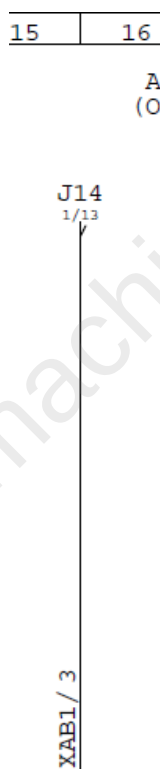


Figure 96. Page 8, zone 16, wiring reference J14

Once again, note the numbers below the wiring reference J14. These numbers (1/13) direct you back to the page (and zone) shown in Figure 95.

11.1 Location of the service socket

The location of the service socket for connecting TruckTool to the truck.

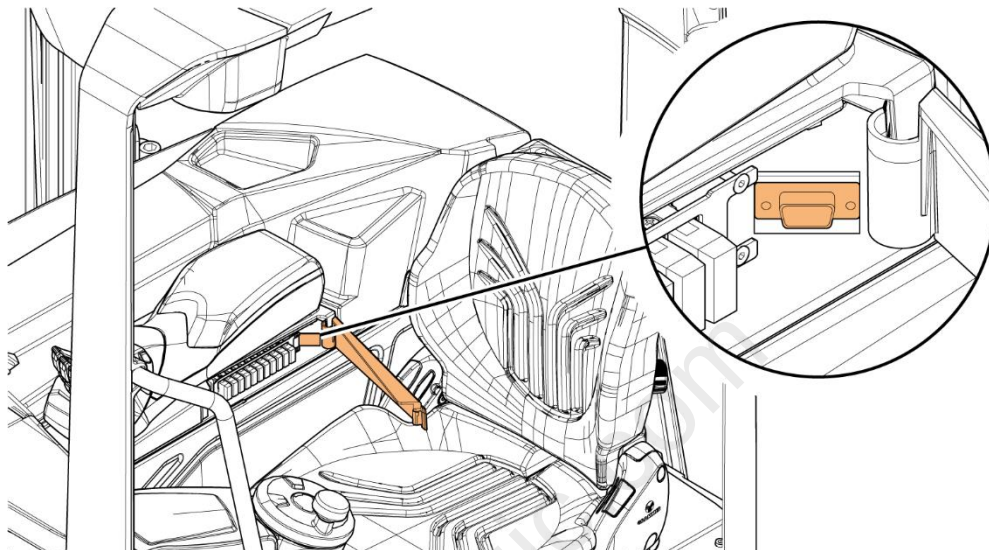
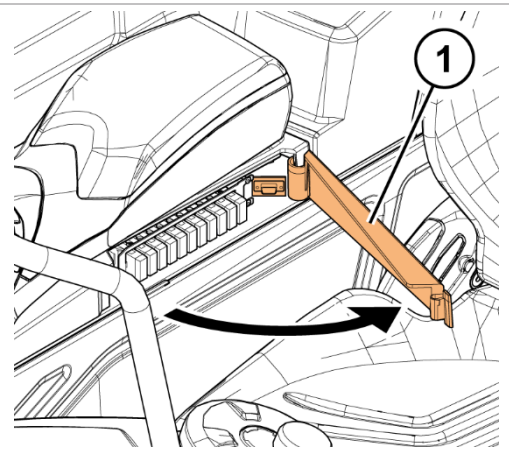


Figure 147. Location of the service socket

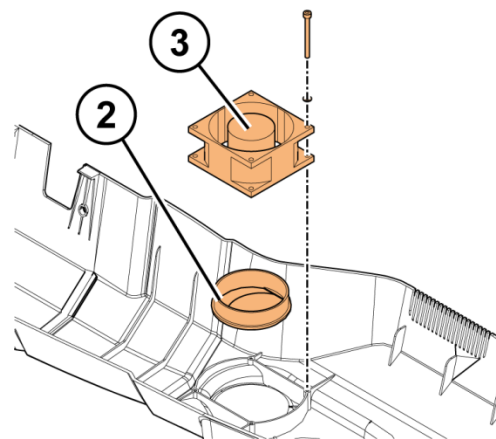
11.1.1 Connect TruckTool to the service socket

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. Install the fan cover to the plastic cover with screws.
3. Install the operator compartment fan to the plastic cover with screws.



4. Install the plastic cover back under the overhead guard.

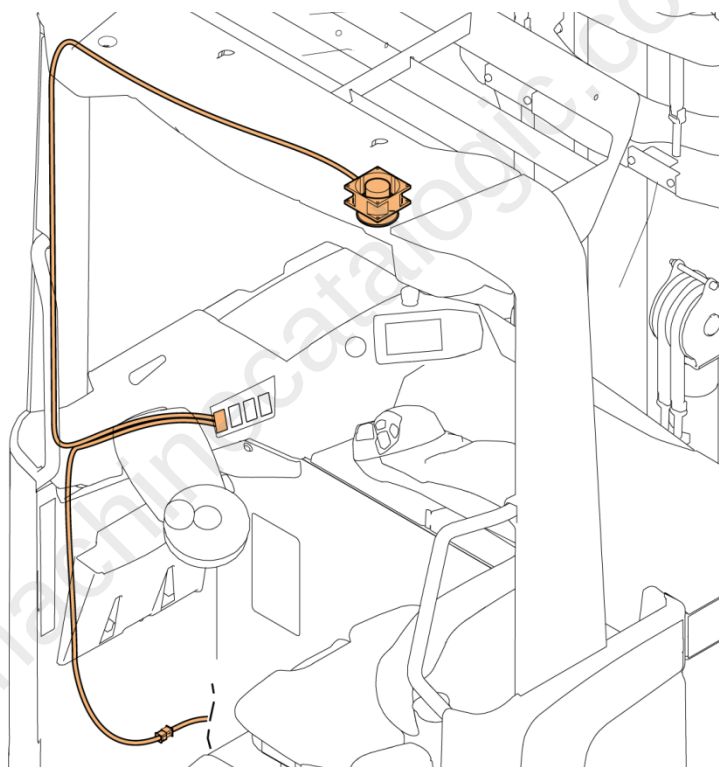


Figure 166. Operator compartment fan wiring overview

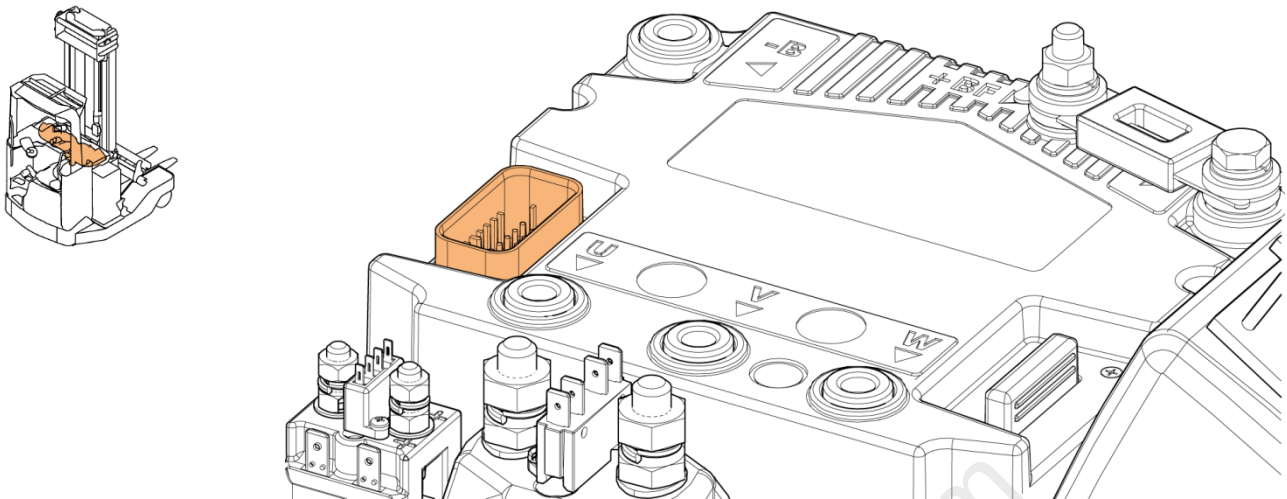


Figure 115. Pump controller CNA external connector

The pump controller uses one connector:

- CNA 23 poles connector

Contact 0.5–1.25 mm² for the CNA connector.

8.3.7.1 CNA external connector

CONNECTION	DESCRIPTION
A1 KEY (XA2A/1) (Keyline input)	Connected to the battery positive through a 10 A fuse.
A3 CPOT (XA2A/3) (EMCY state X12/5)	Emergency state input.
A4 DI1 (XA2A/4) (Battery lock XS35/2)	Battery lock state.
A5 DI1 (XA2A/5) (Seat belt XS21/2)	Seat belt state.
A7 ENCA (XA2A/7) (Motor encoder channel A XM2/3)	Pump motor encoder channel A.
A8 PENC (XA2A/8) (Motor encoder supply XM2/1)	Positive supply of +12 V for the pump motor encoder.
A9 -BATT (XA2A/9) (GND XA2A/11)	Ground connection.
A10 CPOTBR (XA2A/10) (Eco mode X12/6)	Eco mode switch.
A11 SAFETY IN (XA2A/11) (Safety chain in XA2A/9)	Safety chain input.
A14 ENCB (XA2A/14) (Motor encoder channel B XM2/2)	Pump motor encoder channel B.
A15 ENC GND (XA2A/15)	Pump motor encoder ground.

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.		

Full Version Available

Caterpillar NRM20N2 Reach Truck Service, Operator and Schematic Manual (633559-EN-A)

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