

Service Manual

New Generation AC Reach Truck

Developed and Collected By:

Done Information.

Date:

June 8th 2007

Revision Level: 1

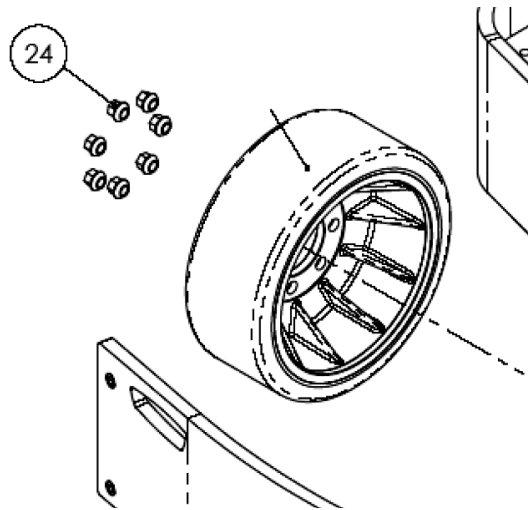


Figure: 3.4 Drive wheel nuts

The load wheels are located at the ends of the support legs. The main purpose of the load wheels is to support the weight of the mast and load. Depending on the truck model, there are either narrow or wide load wheels on each leg side.

Below is a figure portraying the construction of load wheels without the load wheel brakes:

LCD Heater ControlRange/value: **ON/OFF**

Display heater control enabled or disabled.

Sound EffectsRange/value: **ON/OFF**

Display sound effect enabled or disabled.

PreHeight SetupRange/value: **ON/OFF**

Pre-height selector setup enabled or disabled.

When disabled, programming the pre-height selector is not possible.

Performance SetupRange/value: **ON/OFF**

Performance setup enabled or disabled.

When disabled, adjusting the max. traction speed in the operator mode is not possible.

Battery Cell CheckRange/value: **ON/OFF**

Battery cell check enabled or disabled.

Height Multiplier**Default 3.75, do not change!**

Height multiplier converts mast encoder pulses to millimetres.

4.15.3 Truck Parameters**BDI Curve****0...9**

Battery discharge curve selection



Figure: 6.5 Spring positions

Use three temporary screws as table supports. Turn only two turns each. Glue the three air gap springs to their positions on the brake ring with Loctite 270.



Figure: 6.6 Wheel position over brake ring

Lower the wheel over the assembly slowly and parallel to the table.

The lowering function operates as follows:

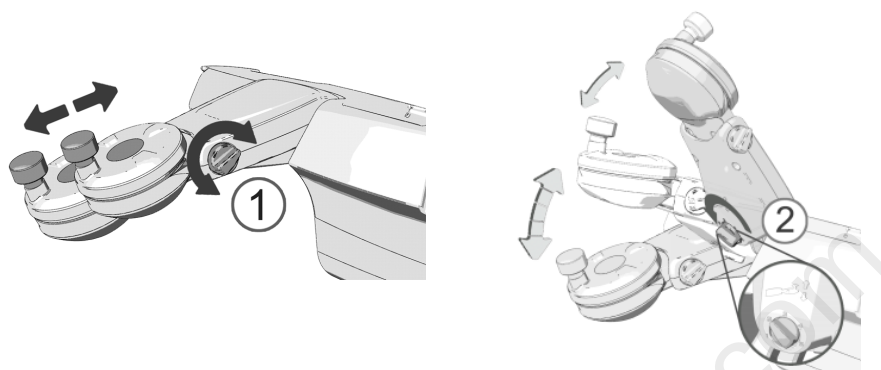
1. The operator requests lowering by moving the fingertip control towards the lowering position.
2. The voltage is supplied to the M1 valve coil by pulsing. As the conduction time of the voltage is prolonged, the valve coil voltage in the RIO1 board rises. At the same time, the pressure also rises in the lifting/lowering spool, and makes the spool move into lowering position.
3. Hydraulic fluid pressure is reduced on the left side of the proportional lowering valve, which causes the bottom envelope to return to the upper or open position.

NOTE There is still enough pressure available for the M1 valve to activate the lifting/lowering spool.

4. The hydraulic fluid returns to the tank at the requested rate, which is indicated by the position of the fingertip control.

activate/deactivate foot-operated driving direction change via the truck display.

2.3.6 Steering wheel

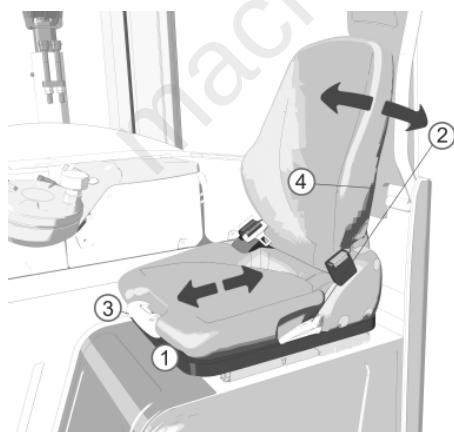


Steering wheel. The truck is equipped with an electronic steering system; refer to the User's manual for additional information (Chapter 5, "Electronic Steering System").

Length adjustment (1). Turn the adjustment knob anticlockwise to release the locking. Release the adjustment knob or turn it clockwise to lock the length adjustment. The adjustment is five-step.

Height adjustment (2). Raise the steering wheel higher by turning the adjustment knob to the left. Lower it by turning the knob to the right.

2.3.7 Seat



Seat MSG20 (mechanical suspension). You may adjust

- Seat suspension according to your weight (1).

100	rio11, tilt down output fault	Output current below 0,16A or above 1,9A more than 180ms
101	rio11, tilt up output fault	Output current below 0,16A or above 1,9A more than 180ms
102	rio11, current leak of tilt output(s)	Output feedback is measured above 0,18A even the output is set off.
103	rio11, aux b output fault	Output current below 0,16A or above 1,9A more than 180ms
104	rio11, aux a output fault	Output current below 0,16A or above 1,9A more than 180ms
105	rio11, current leak of side shift output(s)	Output feedback is measured above 0,18A even the output is set off.
106	rio11, side shift right output fault	Output current below 0,16A or above 1,9A more than 180ms
107	rio11, current leak of aux output(s)	Output feedback is measured above 0,18A even the output is set off.
108	Output Unit Fault	Unidentified error. Restart and if problem persists, output unit (A4) should be replaced. Stop mode active.
120	Input Unit Fault	No CAN messages received from logics within 100ms. Check wiring. If fault persists replace input unit (A6) board. Stop mode active.
121	Input Unit Fault	Software memory checksum check failed. Input unit (A6) should be replaced. Stop mode active.
122	Input Unit Fault	Unidentified error. Input unit (A6) should be replaced. Stop mode active.
140	Steering Fault	Motor short circuit. Check motor and cables if fault persists replace steering controller. Stop mode active.

60	Logic fault	Reach position has been lost (Front). Check sensor (S41), cam adjustment and wiring. Normal Mode active.
61	Logic fault	Reach position has been lost (Rear). Check sensor (S41), cam adjustment and wiring. Normal Mode active.
76	Incorrect Operation	Incorrect operating sequence. Throttle activated before deadman pedal. Normal Mode active.
101	No Direction	Drive direction not selected. Normal Mode active.
102	Battery Lock	Battery lock switch is open, check that battery is correctly in-place and the lock is properly closed. Stop mode active.
190	Incorrect Operation	Seat switch has been de-activated for more than 5 seconds. Stop mode active.
201	Logic fault	Alarm has caused truck to go into low performance mode. (See alarm list.) Normal Mode active.
202	Logic fault	Alarm has caused truck to go into stop mode. All functions are disabled. (See alarm list.) Normal Mode active.
203	Slow Mode	Alarm has caused truck to go into slow performance mode. (See alarm list.) Normal Mode active.
204	Normal State	Truck idle timeout has elapsed and the truck has entered the sleep mode. Normal Mode active.
205	Battery Low	Battery level close to minimum. Battery should be charged soon. Slow Mode active.
206	Max. Lifting Height	Mast is at its defined electrical top position, further lifting is disabled. Normal Mode active.
208	Incorrect Operation	No lifting allowed, because defined maximum weight is exceeded. (Option) Normal Mode active.
210	Traction Fault	Traction controller temperature is above defined warning level (80°C). Power reduction active. Normal Mode active.
211	Hydraulic Fault	Pump controller temperature is above defined warning level (80°C). Power reduction active. Normal Mode active.
212	Traction Fault	Traction motor temperature is above defined alarm level (110°C). Power reduction active. Normal Mode active.

Full Version Available

Caterpillar NR16NS Reach Truck Service and Schematic Manual (WHSM0013)

Caterpillar NR16NS Reach Truck service manual, covers mast, hydraulics, drive unit, wiring, and diagnostics. Searchable PDF download.

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