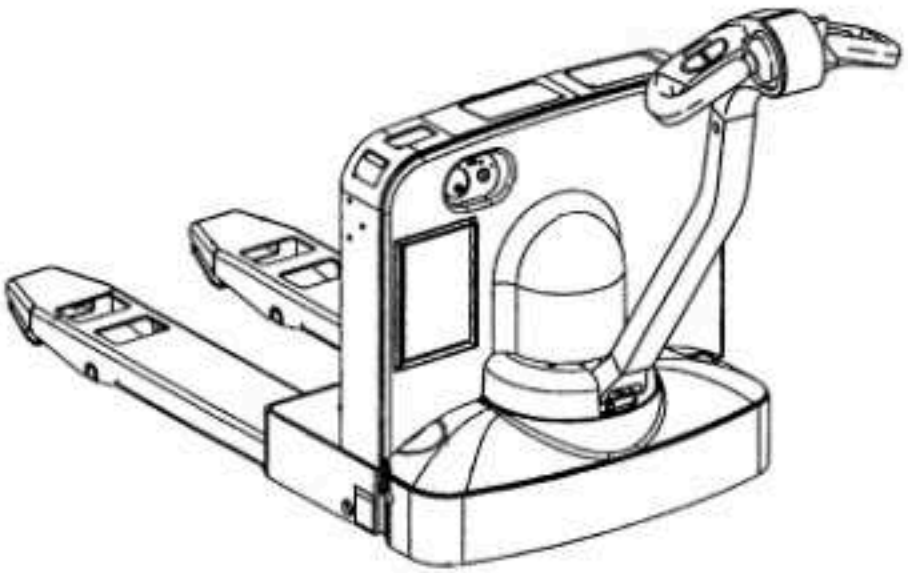
SERVICE MANUAL

D215 (W50Z)



FORM 1616295 Rev. 03/14

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This section is for the following models:

All Electric Lift Trucks

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Tires

Weight and Voltage	Drive Tire	Load Wheel
4000 lb	9 × 4 in.	3.25 × 4.5 in.
4500 lb, 12 Volts	9 × 4 in.	3.25 × 4.5 in.
4500 lb, 24 Volts	9 × 4 in.	3.25 × 4.5 in.
5000 lb	9 × 4 in.	3.25 × 4.5 in.

Torque Specifications

CASTER ASSEMBLY

Mounting Capscrews (3 each)
57 N•m (42 lbf ft)

MASTER DRIVE UNIT

Motor Mount Studs (3 each)
20 N•m (15 lbf ft)

Transmission to Frame Mounting Bolts (4 each)
Torque to 54 N•m (40 lbf ft)
Then loosen, and torque to 34 N•m (25 lbf ft)

Drain Plug
41 N•m (30 lbf ft)

Fill-Level Plug
41 N•m (20 lbf ft)
27 N•m (20 lbf ft)

STEERING

Steer Handle to Tiller Bracket Screws (2 each)
115 N•m (85 lbf ft)

Butterfly Throttle Control to Handle Screws (2 each)
1 N•m (8.9 lbf in)

Gas Springs Mounting Stud (1 each)
25 N•m (18.5 lbf ft)

Control Arm Support Bracket Pivot Pins (2 each)
142 ±7 N•m (105 ±5 lbf ft)

BRAKE

Mounting Capscrews (3 each)
11 N•m (25 lbf in)

Traction Motor Power Wire Nuts (4 each)
5 N•m (44 lbf in)

Controller Hardware Connections
M5 metric screw 3 N•m (26.5 lbf in)
M5 metric nut 4.5 N•m (40 lbf in)
M5 metric screw and nut 88 N•m (115 lbf in)

LIFT MECHANISM

Hydraulic Power Unit Mounting Capscrews (3 each)
24 N•m (18 lbf ft)

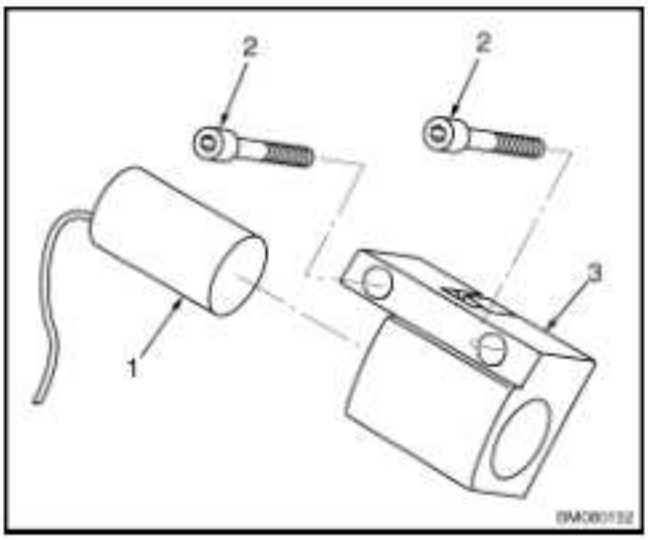
Battery Specifications and Adjustments

4000 LB - 24 VOLT

Battery Compartment is shown in Figure 1.

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3. Remove the upper drive unit compartment cover.
4. Remove the lower drive unit compartment cover.
5. Remove the four capscrews from the two-piece shield over the MDU and remove the shields.
6. Discharge the capacitor. See Special Precautions.
7. Cut the tie wrap located at the end of the proximity switch harness.
8. Remove the proximity switch harness clamp, located beneath the drive unit housing.
9. Disconnect the proximity switch from the wiring harness.
10. Fully lower the control handle arm. Remove the two capscrews that mount the proximity switch assembly to the control handle arm. See Figure 10. Remove the proximity switch assembly.



1. PROXIMITY SWITCH
2. CAPSCREW
3. SWITCH BRACKET

Figure 10. Proximity Switch Assembly

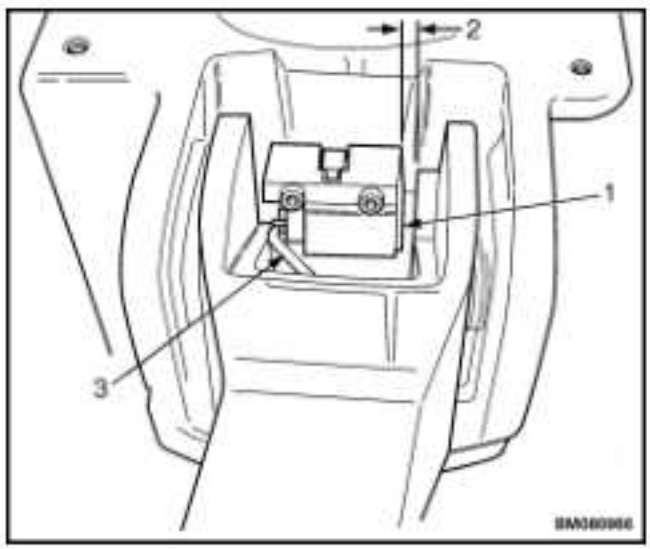
Install

1. Insert the proximity switch fully into the switch bracket. Route the proximity switch wire so that it will not be pinched or damaged when the control handle is installed.

CAUTION

DO NOT damage the plastic switch bracket or proximity switch by overtightening screws.

2. Install the proximity switch assembly to the drive unit housing with two capscrews through the switch bracket into the drive unit housing. **DO NOT** tighten the capscrews until after the switch has been adjusted.
3. Check the gap between the proximity switch assembly and the control handle. The gap should measure 3.0 to 5.0 mm (0.12 to 0.20 in.) See Figure 11. If the gap distance is different, horizontally adjust the location of the proximity switch.



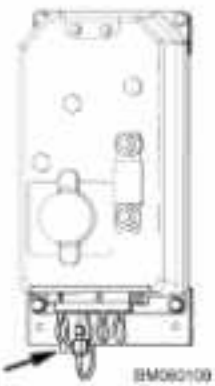
1. PROXIMITY SWITCH ASSEMBLY
2. GAP 3.0 TO 5.0 mm (0.12 TO 0.20 in.)
3. PROXIMITY SWITCH WIRE

Figure 11. Proximity Switch Assembly Location

4. Connect the switch to the wiring harness.
5. Connect the battery and turn the key switch to the **ON** position.
6. With the handle at 10° from vertical, move the proximity switch until the LED turns on.
7. Slowly move the proximity switch in the opposite direction until the LED just turns off.
8. Torque the two capscrews to 4.17 N·m (37 lbf in).

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Troubleshooting

Dash Display	Controller LED	Handset or PC
LCD display Red LED Fault Indicator (Trucks equipped with optional dash display)	Red LED Located at base of motor controller. (Trucks without dash display)	Error codes stored under Main Menu Alarms Message displayed on Handset or PC
		CORRESPONDING SCHEMATIC SHOWING CIRCUITS TO BE CHECKED OR AFFECTED COMPONENT(S)
CONDITION **TRUCK RESPONSE** **POSSIBLE CAUSES AND TEST PROCEDURES**		**LOGIC** (Brief description of the reason behind truck exhibited malfunction.)

NOTE: General error code information is provided by the Dash Display and Red LED at the base of the controller. In most instances, it will be necessary to use a handset or a PC to further define the possible causes and test procedures.

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