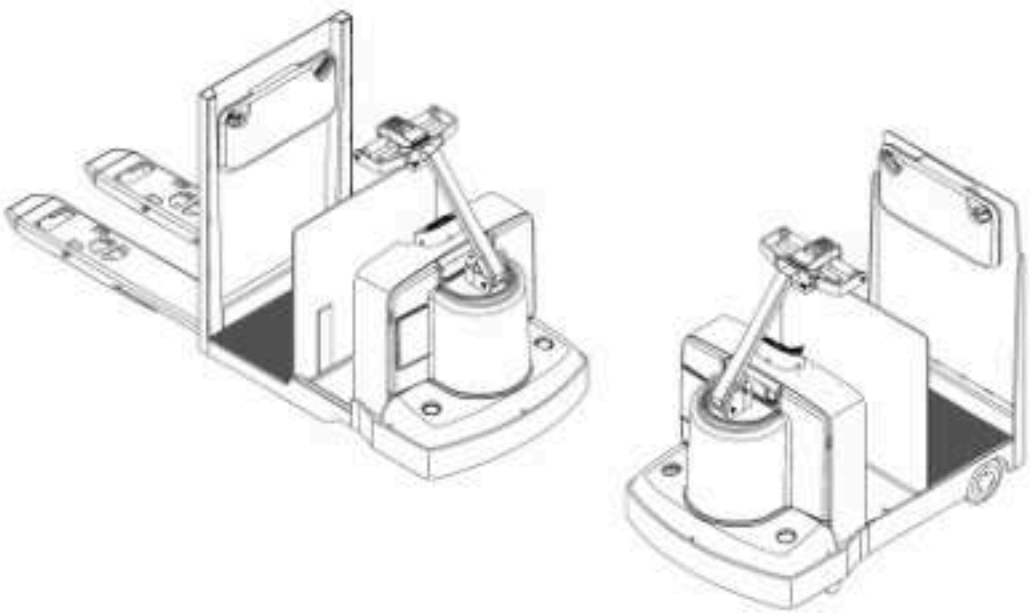
SERVICE MANUAL

C477 (T5ZAC, T7ZAC)



Rev. 07/14

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This section is for the following models:

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This section is for the following models:

(N30ZDR2, N35-40ZR2) [E470];
(N30ZDRS2, N35-40ZRS2) [B265];
(N35ZDR2, N45ZR2) [D264];
(R30XMF3) [A169];
(R30XMA3) [A185];
(R30XMS3) [E174];
(R30XM3) [H118];
(B60ZHD) [B262];
(B80ZHD) [B257];
(C60ZHD) [A373];
(C80ZHD) [A282];
(T5ZAC, T7ZAC) [C477];
(BE80ZHD, BE100ZHD) [A244]

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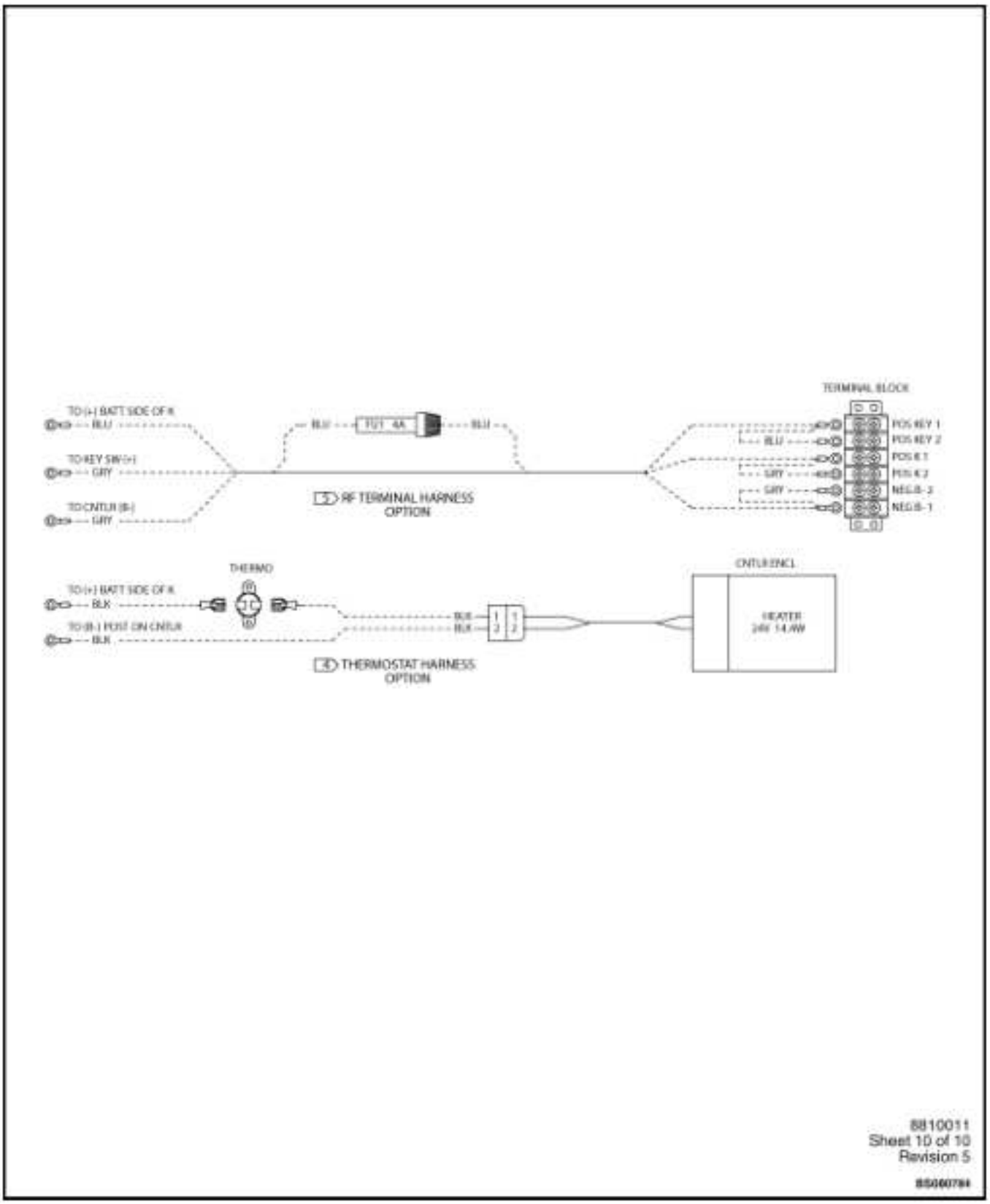


Figure 1. Schematic/Wiring (Sheet 10 of 10)

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Troubleshooting

PROBLEM	POSSIBLE CAUSE	PROCEDURE OR ACTION
Steering is rough or difficult.	Damaged, worn, or defective steering handle swivel bearing(s).	Replace bearings.
	Steering handle swivel bearing(s) need lubrication.	Lubricate or repack bearings.
	Bearing retaining nut torque incorrect.	Loosen retaining nut and torque to 27 N•m (20 lbf ft).
	Drive unit housing bearing (steer) damaged.	Replace drive unit housing bearing (steer).
	Incorrect caster adjustment.	Adjust caster height.
	Caster damaged.	Replace caster.

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Grease

Fittings and Bearings			
Application	**Standard/CS/Freezer**	**Arctic/Food Processing**	**Steer Bearings**
Approved Vendor	Mobilgrease® 28	Amsoil GHD®	Amsoil GHD®
Oil	Synthetic	Synthetic	Synthetic
Thickener	Clay	Lithium Complex	Lithium Complex
Grade NGLI	1.5	2.0	2.0
Moly-Fortified	No	Yes	Yes
Dropping Pt.	310°C (590°F)	288°C (550°F)	288°C (550°F)
Field Personnel Note: The product listed above is the approved source that meets or exceeds **Hyster** specifications. The use of products other than that listed above is unauthorized.			

Tire Specifications

Lift Truck Model	Drive Tire		Load Wheel		Casters	
	Size	**Composition**	**Size**	**Composition**	**Size**	**Composition**
T5Z^{AC}	10.0 × 5.0 in.	Poly[1] (Standard) Rubber[2] (Optional) Siped-Poly[1] (Optional)	8.0 × 5.0 in.	Rubber[2] (Standard) Poly[3] (Optional)	Not Available	
T7Z^{AC}	12.0 × 4.5 in.	Poly[1]	8.0 × 5.0 in.	Rubber[2] (Standard) Poly[3] (Optional)	Not Available	
C60Z^{HD}	10.0 × 5.0 in.	Rubber[2] (Standard) Poly[1] (Optional) Siped-Poly[1] (Optional)	3.25 × 6.50 in.	Single/Poly[4] (Standard)	4.0 × 2.5 in.	Poly[4]
			3.250 × 3.125 in.	Dual/Poly[4] (Optional)		
C80Z^{HD}	12.0 × 4.5 in.	Poly[1]	3.25 × 6.50 in.	Single/Poly[4] (Standard	4.0 × 2.5 in.	Poly[5]
			3.250 × 3.125 in.	Dual/Poly[4] (Optional)		
[1]Durometer 90 [2]Durometer 65 [3]Durometer 93 [4]Durometer 95 [5]Durometer 92						

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DTC 32085
Combi - Key input - Voltage Low

POSSIBLE CAUSE

A. KEY INPUT WIRING FAULT
B. FAULTY COMBINATION CONTROLLER

NOTE

Please refer to the end of this procedure for supporting diagrams.

COMPONENT OPERATIONAL CHECK

NOTE: Always check battery condition and state of charge before performing electrical troubleshooting. A faulty or low charged battery will cause electrical features to not operate as designed and give incorrect readings while performing electrical tests.

PROCEDURE OR ACTION:

1. Conduct a visual inspection of all connectors/wiring associated with the fault code.
   Are any faults detected/observed?
   YES: Repair/replace connector or wiring associated with faults found. Refer to the appropriate **Electrical System** SRM.
   NO: Proceed to Step 2.
2. Re-key the vehicle.
   Is the code still present?
   YES: Proceed to Step 3.
   NO: Problem may be intermittent.
3. Locate input diagnostics (D2.32) and view key input voltages (D2.32.11, D2.32.13) to verify actual key voltage and minimum captured key voltage.
   Is key input voltage currently below 24 ± 2.5 Vdc?
   YES: Check battery state of charge and proceed to Cause A.
   NO: If battery is fully charged and code returns, proceed to Cause B.

CAUSE A - KEY INPUT WIRING FAULT

PROCEDURE OR ACTION:

NOTE: Perform Step 1 with key in ON position.

1. Disconnect the Combination controller connector CPS005 and measure voltage between socket 10 and B(-).
   Is voltage 24 ± 2.5 Vdc?
   YES: Proceed to Cause B.
   NO: Inspect circuit 010-C for open, short, or source of excessive resistance.

CAUSE B - FAULTY COMBINATION CONTROLLER

PROCEDURE OR ACTION:

1. If no faults are found, replace controller. Make sure to indicate the DTC code(s) on the warranty claim to include an accurate problem description leading to controller replacement.

END POSSIBLE CAUSES

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DTC xx109
CANBus Communications - Display

POSSIBLE CAUSE

A. CANBUS COMMUNICATION FAULT
B. DISPLAY WIRING FAULT
C. FAULTY DISPLAY

NOTE

Please refer to the end of this procedure for supporting diagrams.

COMPONENT OPERATIONAL CHECK

NOTE: Always check battery condition and state of charge before performing electrical troubleshooting. A faulty or low charged battery will cause electrical features to not operate as designed and give incorrect readings while performing electrical tests.

PROCEDURE OR ACTION:

1. Conduct a visual inspection of all connectors/wiring associated with the fault code.
   Are any faults detected/observed?
   YES: Repair/replace connector or wiring associated with faults found. Refer to the appropriate **Electrical System** SRM.
   NO: Proceed to Step 2.
2. Re-key the vehicle.
   Is the code still present?
   YES: If display diagnostic menu is operational, proceed to Step 3. If display is inoperative, proceed to Cause A.
   NO: Problem may be intermittent.
3. Using input diagnostics (D2.10), determine if other nodes are offline.
   Are other nodes offline?
   YES: Verify CAN HI and CAN LO voltages of offline node(s).
   NO: Proceed to Cause A.

CAUSE A - CANBUS COMMUNICATION FAULT

PROCEDURE OR ACTION:

NOTE: Perform Step 1 and Step 2 with key in ON position.

1. Disconnect the display connector CRS060 and measure voltage between socket 3 and B(-).
   Is CAN HI voltage approximately 2.5 Vdc?
   YES: Proceed to Step 2.
   NO: Inspect CAN HI circuit for open or short. If voltage is 0 volts, the CAN HI circuit is shorted to ground or open. If voltage is above 5 volts, the CAN HI circuit is shorted to power.
2. Measure voltage between the display connector CRS060, socket 4 and B(-).
   Is CAN LO voltage approximately 2.5 Vdc?
   YES: Disconnect battery and proceed to Step 3.
   NO: Inspect CAN LO circuit for open or short. If voltage is 0 volts, the CAN LO circuit is shorted to ground or open. If voltage is above 5 volts, the CAN LO circuit is shorted to power.
3. Measure resistance between the display connector CRS060, socket 3 and socket 4.
   Is resistance 60 ± 6 ohms?
   YES: No communication faults are present, connect battery and proceed to Cause B.

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