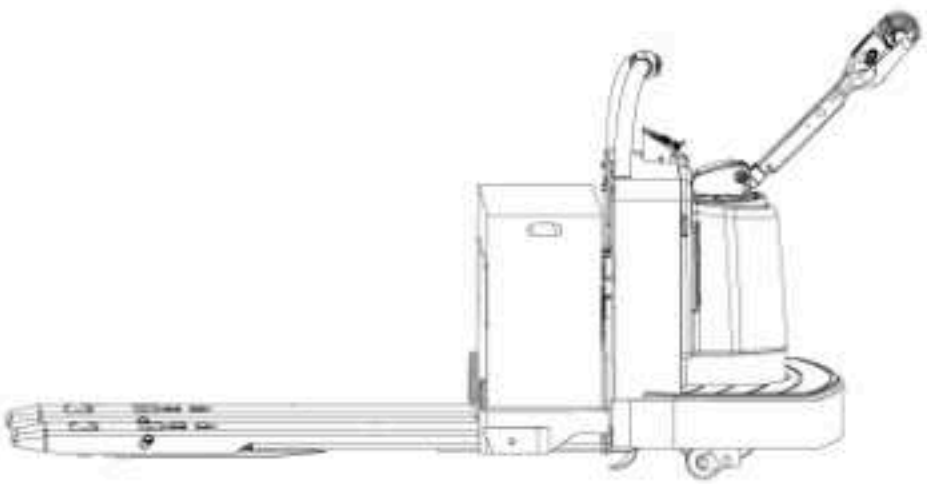
SERVICE MANUAL

C230 (B60ZAC)



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:

(B60Z) [A230];
(W60Z) [A231];
(W65Z) [A229];
(B80Z) [A233];
(W80Z) [A234];
(T5Z) [A476];
(T7Z) [A477];
(C60Z) [A478];
(C80Z) [A479];
(T5ZAC) [B476];
(T7ZAC) [B477];
(C60ZAC) [B478];
(C80ZAC) [B479];
(W30-40ZA) [B453];
(W20-30ZR) [B455];
(W25-30-40ZC) [B454];
(B60ZAC) [B230];
(B80ZAC) [B233];
(B60ZHD) [A262];
(B80ZHD) [A257, B257*];
(B60ZHD, B80ZHD) [B262*];
(B60ZAC) [C230];
(T5ZAC, T7ZAC) [C476]

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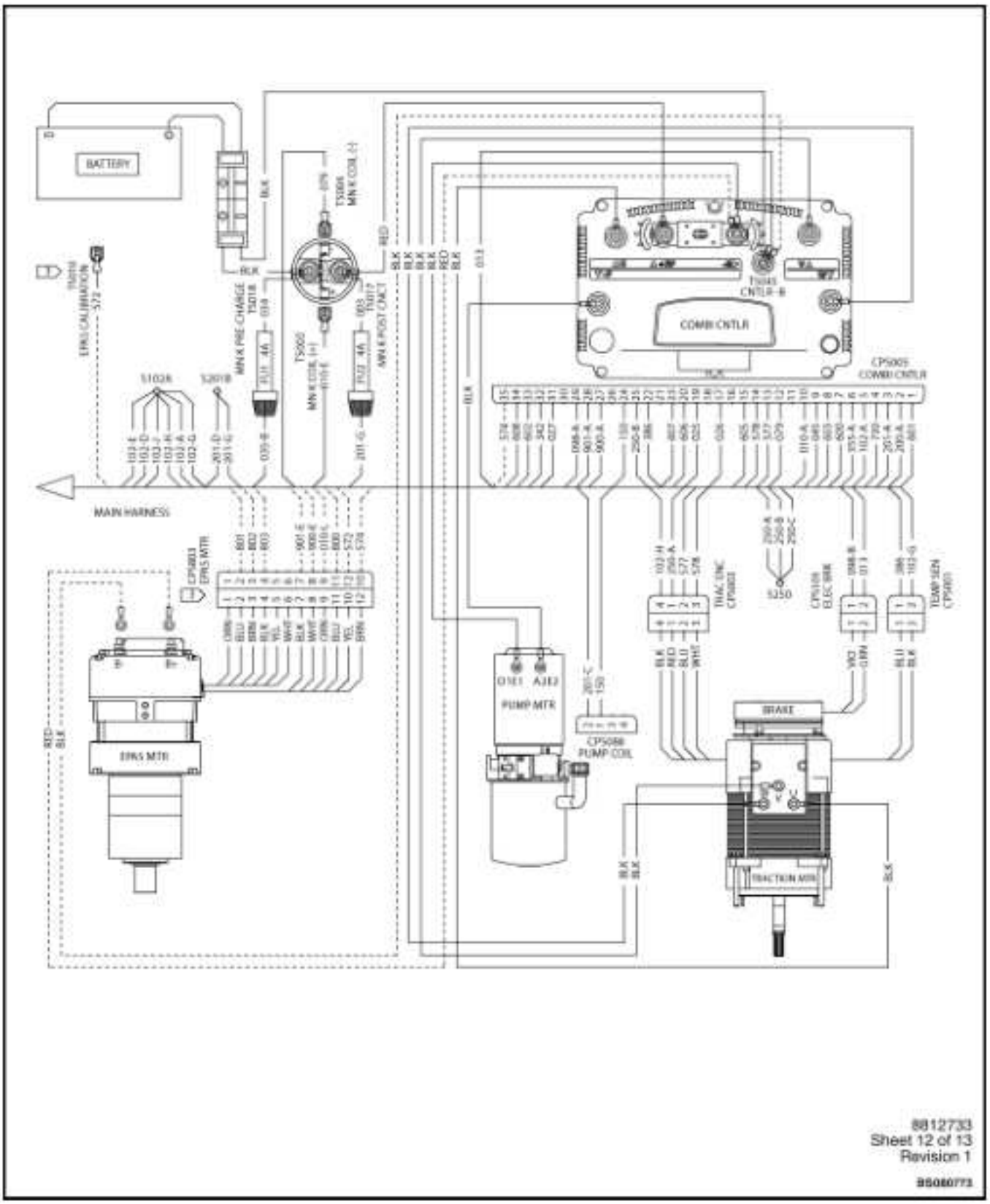


Figure 1. Schematic/Wiring (Sheet 12 of 13)

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Troubleshooting

See the **Troubleshooting Manual** section for information on using on-board diagnostics for troubleshooting electrical problems.

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Table 1. B60Z^{HD} and B60Z^{AC}

Voltage	Ampere Hours (Max)	Kilowatt Hours (Max)	Compartment Length (X)	Compartment Width (Y) (Max)	Recommended Height (Max)	Weight (Max)
24	225	5.2	650.2 mm (25.6 in.) a	223.5 mm (8.8 in.)	591.8 mm (23.3 in.)	243.1 kg (536 lb)
24	255	6.0	650.2 mm (25.5 in.) a	218.4 mm (8.6 in.)	591.8 mm (23.3 in.)	267.6 kg (590 lb)
24	375	8.7	673.1 mm (26.5 in.) b	330.2 mm (13.0 in.)	591.8 mm (23.3 in.)	374.2 kg (825 lb)
24	425	9.9	673.1 mm (26.1 in.) b	325.1 mm (12.8 in.)	591.8 mm (23.3 in.)	392.3 kg (865 lb)
24	450	10.5	784.8 mm (30.9 in.) c	330.2 mm (13.0 in.)	591.8 mm (23.3 in.)	447.7 kg (987 lb)
24	510	11.9	784.8 mm (30.9 in.) c	330.2 mm (13.0 in.)	591.8 mm (23.3 in.)	469.5 kg (1035 lb)
24	600	14.0	784.8 mm (30.9 in.) c	330.2 mm (13 in.)	591.8 mm (23.3 in.)	517.1 kg (1140 lb)

Note: If Y is less than 327.6 mm (12.9 in.), a supplemental retainer is required. a – Adjust both A and B retainers. b – Adjust A and remove B retainer. c – Remove both A and B retainer.

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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: Ensure key is in ON position when performing this test.

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-A 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.

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