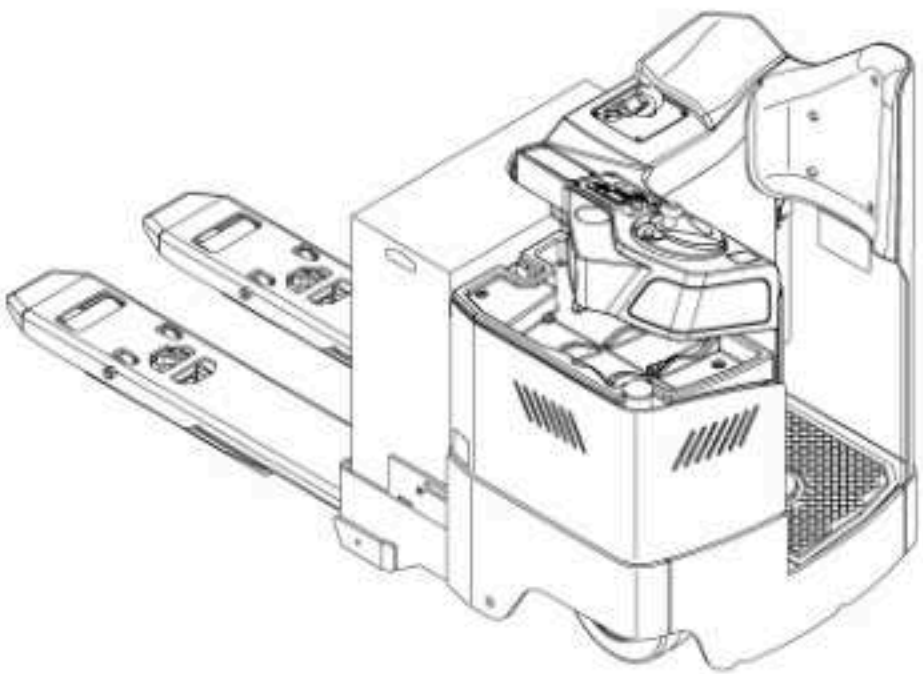
SERVICE MANUAL

A244 (BE80ZHD, BE100ZHD



Rev. 06/14

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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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Voltage	Ampere Hours (Max)	Kilowatt Hours (Max)	Compartment Length (X)	Compartment Width (Y) (Max)	Recommended Height (Max)	Weight (Max)
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.)	544.3 kg (1200 lb)
24	750	17.6	784.8 mm (30.9 in.)	330.2 mm (13.0 in.)	787.46 mm (31.0 in.)	680.4 kg (1500 lb)
24	840	19.5	784.8 mm (30.9 in.)	330.2 mm (13.0 in.)	787.4 mm (31.0 in.)	680.4 kg (1500 lb)
24	930	21.6	784.8 mm (30.9 in.)	330.2 mm (13.0 in.)	787.4 mm (31.0 in.)	680.4 kg (1500 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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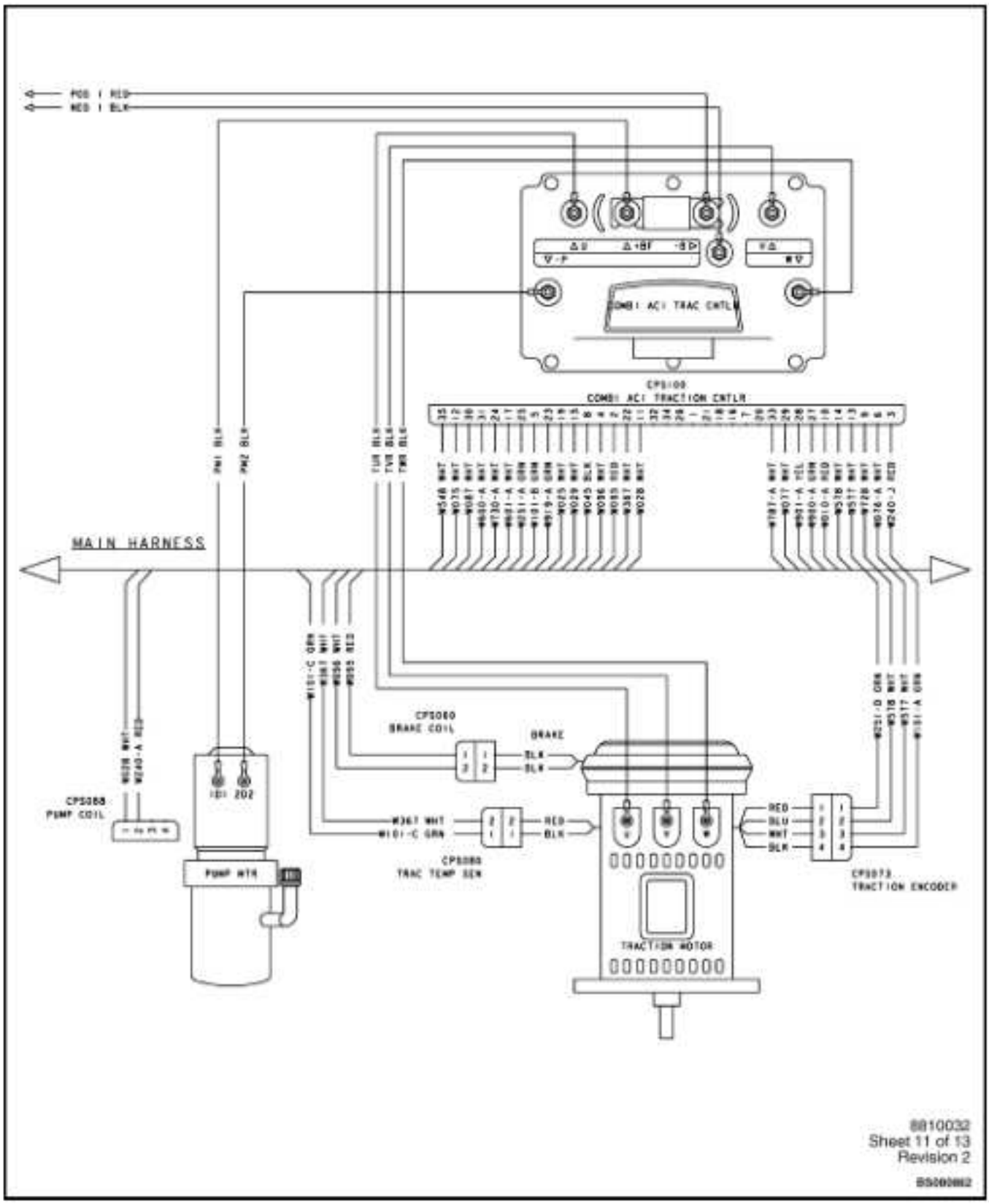


Figure 1. Wiring Schematic (Sheet 11 of 13)

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Group 20

Diagnostic Trouble Codes

DTC xx099
Internal - Fault

POSSIBLE CAUSE

A. INTERNAL FAULT

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 Cause A.
   NO: Problem may be intermittent.

CAUSE A - INTERNAL FAULT

PROCEDURE OR ACTION:

1. Replace faulty 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

END FAULT

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Main Contactor

CODES

DTC 32067 - Combi - Main Contactor - Welded Tips
DTC 32068 - Combi - Main Contactor - Not Closed

POSSIBLE CAUSE

A. MAIN CONTACTOR COIL WIRING FAULT
B. MAIN CONTACTOR STUCK CLOSED
C. MAIN CONTACTOR STUCK OPEN
D. 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 status tests (D1) and view the main contactor (D1.2) to verify main contactor position.
   Does main contactor remain open or closed when coil is energized/de-energized?
   YES: Proceed to Cause A.
   NO: Fault may be intermittent, inspect main contactor tips for damage or debris.

CAUSE A - MAIN CONTACTOR COIL WIRING FAULT

PROCEDURE OR ACTION:

1. Disconnect the main contactor coil's positive terminal TS031 and measure voltage between socket TS031 and B(-). Perform test with key in ON position.
   Is voltage 24 ± 2.5 Vdc / 36 ± 3.5 Vdc?
   YES: Disconnect battery and proceed to Step 2.
   NO: Inspect circuit W010-G for open or short.
2. Disconnect the Combination controller connector CPS100 and the contactor coil negative terminal TS032. Measure continuity between socket TS032 and socket 12 of the Combination controller connector CPS100.
   Is continuity present?
   YES: Reconnect battery and all connectors. Proceed to Cause B if contactor is stuck closed or Cause C if contactor is stuck open.
   NO: Inspect ground control circuit W075 for open or short.

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DTC xx104
CANBus Communications - Steer

POSSIBLE CAUSE

A. CANBUS COMMUNICATION FAULT
B. STEER CONTROLLER WIRING FAULT
C. FAULTY STEER 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 (D2.10) and verify steer controller communication (D2.10.40).
   Is the controller online?
   YES: Fault may be intermittent.
   NO: Proceed to Step 4.
4. Using input diagnostics (D2.10), determine if other nodes are offline.
   Are other nodes offline?
   YES: Suspect short to frame.
   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 steer controller connector CRS120 and measure voltage between socket 14 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 steer controller connector CRS120, socket 6 and B(-).
   Is CAN LO voltage approximately 2.5 Vdc?
   YES: Disconnect battery and proceed to Step 3.

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