SERVICE MANUAL

A419 (W45ZHD)



Rev. 04/14

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This section is for the following models:

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This section is for the following models:

P2.0 [A290];
(W45ZHD) [A419]

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Troubleshooting

PROBLEM	POSSIBLE CAUSE	PROCEDURE OR ACTION
Unusual noise from traction motor.	Parking brake not releasing/ damaged.	Troubleshoot the parking brakes.
	Drive unit internal damage.	Check that the drive unit rotates smoothly.
	Traction motor bearing damaged.	Replace end head(s) and check stator and rotor for damage. Replace damaged components or traction motor if necessary.
Truck moves slow or in a jerky motion.	Encoder broken.	Replace encoder bearing.
	Encoder wire broken.	Check and repair encoder wire or replace encoder bearing.
Temperature sensor failure.	Temperature sensor wire damaged.	Measure resistance with ohmmeter. Resistance should be 530 ohms at 25 °C (77 °F). Inspect and repair temperature sensor wire. The temperature sensor wire can be repaired, but the temperature sensor must be replaced if faulty.
	Main wiring harness damaged.	Test temperature sensor circuit through main wiring harness from connection at controller.
	Temperature sensor malfunction.	Measure resistance with ohmmeter. If wiring is ok, resistance should be 530 ohms at 25 °C (77 °F). Replace the temperature sensor.
Stator shorting.	Loss of insulation in wire.	Disconnect the battery and check resistance between winding and case. Resistance should be at 50,000 ohms or above.
Stator open circuit.	Broken coil windings.	Raise drive wheel off the floor and verify voltage at motor terminals. Disconnect the battery and check resistance of windings.

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Hydraulic System

Unit	Volts	Operating Pressure[1]		Ampere Draw[2]		Relief Setting		Lift Time (sec)		Lower Time (sec)	
		No Load	Rated Load	No Load	Rated Load	Pressure [3]	Amp Draw	No Load	Rated Load	No Load	Rated Load
P2.0 and W45ZHD	24	2.07 MPa (300 psi)	14.82 MPa (2150 psi)	37	100	24.1 MPa (3500 psi)	150	2.3	3.1	2.8	1.4
Standard Specifications Hydraulic Tank Capacity - 1.0 liter (1.06 qt) Pump Displacement (24 Volts) - 1.25 cm3/rev (0.076 in.3/rev) Creep Rate - 6.4 mm (0.25 in.) Maximum In 10 Minutes @ 32°C (90°F) Oil Temperature											
Footnotes [1] ±0.35 MPa (±51 psi) @ 21°C (70°F) Oil Temperature [2] ±10 Amps @ 1.270 Battery Specific Gravity [3]+0.6 to 0.0 MPa (+87 to 0 psi) @ 32°C (90°F) Oil Temperature Full Flow											

Hydraulic Oils

Operating Condition	Standard	CS/Freezer
Truck Temperature Range	0 to −84°C (32 to −120°F)	−18 to −84°C (0 to −120°F)
For All Hydraulically Actuated Equipment		
Specification	ISO VG 46 Antiwear (HCE-140)	Exxon Univis® HVI 26
Pour Point Maximum	−15°C (5.0°F)	−60°C (−76.0°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.		

Grease

Fittings and Bearings		
Application	**Standard/CS/Freezer**	**Steer Bearings**
Approved Vendor	Mobilgrease® 28	Amsoil GHD®
Oil	Synthetic	Synthetic
Thickener	Clay	Lithium Complex
Grade NGLI	1.5	2.0
Moly-Fortified	No	Yes
Dropping Pt.	310°C (590°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.		

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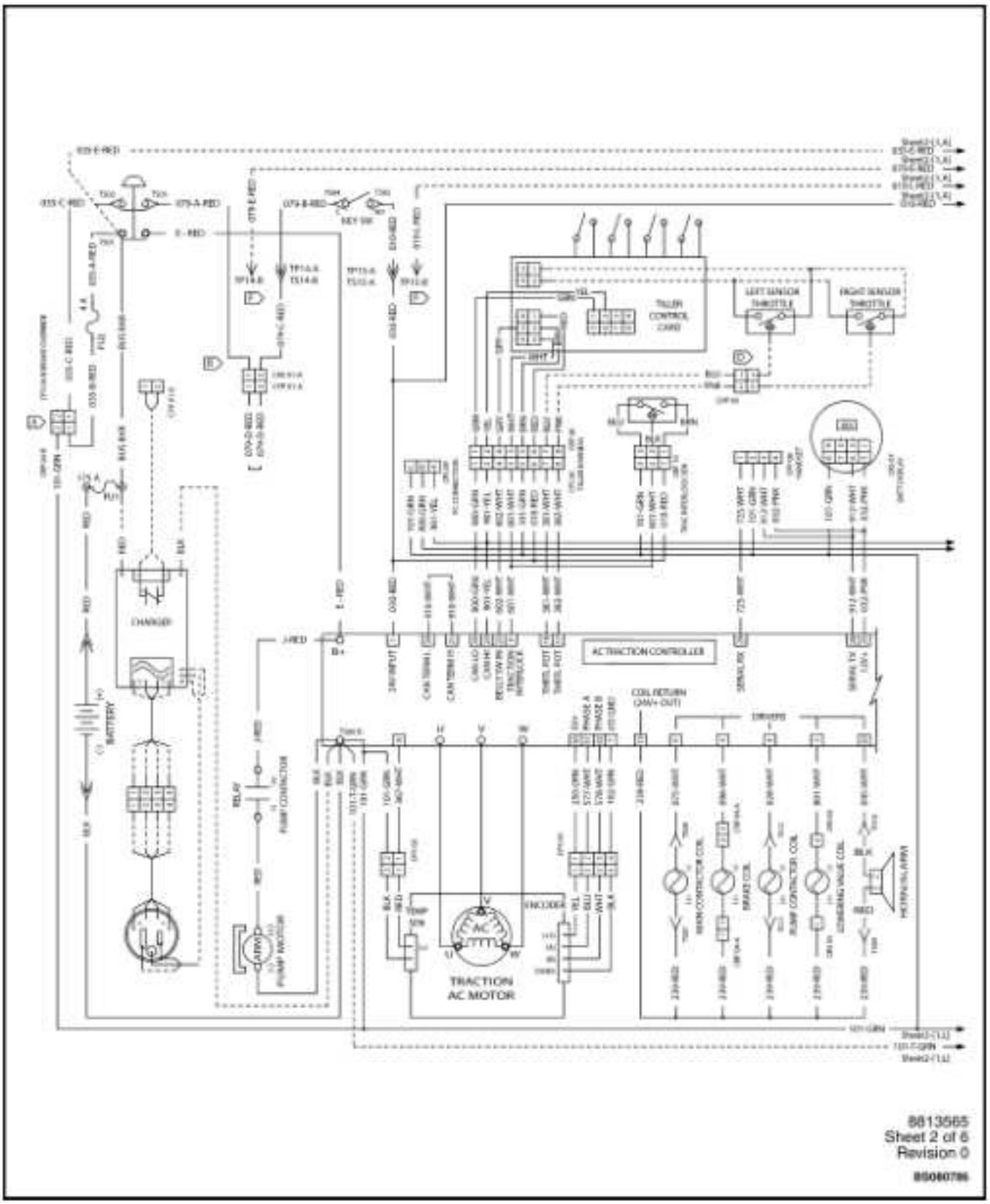


Figure 2. Schematic/Wiring Diagram Premium Walkie (Sheet 2 of 6)

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CODES

DTC 30201 - Start Up
DTC 60211 - Start Up

POSSIBLE CAUSE

A. **INCORRECT START UP SEQUENCE**
B. **CANBUS COMMUNICATION FAULT**
C. **HANDLE WIRING FAULT**
D. **TRACTION INTERLOCK SENSOR FAULT**
E. **TILLER CONTROL CARD FAULT**
F. **FAULTY TRACTION 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 Cause B.
   NO: Problem may be intermittent.

CAUSE A - INCORRECT START UP SEQUENCE

PROCEDURE OR ACTION:

1. The fault code may occur when the operator commands traction when traction interlock sensor is OFF or if driving tiller arm traveled outside of tiller arm operational range. Refer to **Electrical System SRM** manual for tiller arm operational range information.
   Is fault caused by tiller arm operation?
   YES: Clear fault.
   NO: Proceed to Cause A.

CAUSE B - CANBUS COMMUNICATION FAULT

PROCEDURE OR ACTION:

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

1. Measure voltage between connector CPS09 (PC Service Tool connector), socket C and socket A.

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DTC 30067
MainCont (Stuck Closed)

POSSIBLE CAUSE

A. **MAIN CONTACTOR COIL WIRING FAULT**
B. **MAIN CONTACTOR STUCK CLOSED**
C. **FAULTY TRACTION 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 Cause A.
   NO: Problem may be intermittent.

CAUSE A - MAIN CONTACTOR COIL WIRING FAULT

PROCEDURE OR ACTION:

NOTE: Key in ON position.

1. Disconnect the main contactor coil's positive socket terminal TS07 and measure voltage between the terminal and B(-).
   Is voltage 24 ± 2.5 Vdc?
   YES: Disconnect battery and proceed to Step 2.
   NO: Inspect circuit 239 for open or short.
2. Disconnect the traction controller connector CPS01 and the contactor coil negative terminal TS08. Measure continuity between TS08 and socket 6 of the traction controller CPS01.
   Is continuity present?
   YES: Reconnect battery and all connectors. Proceed to Cause B.
   NO: Inspect ground control circuit 075 for open or short.

CAUSE B - MAIN CONTACTOR STUCK CLOSED

PROCEDURE OR ACTION:

NOTE: Key in OFF position.

1. Measure voltage between controller B(+) and controller B(-).

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