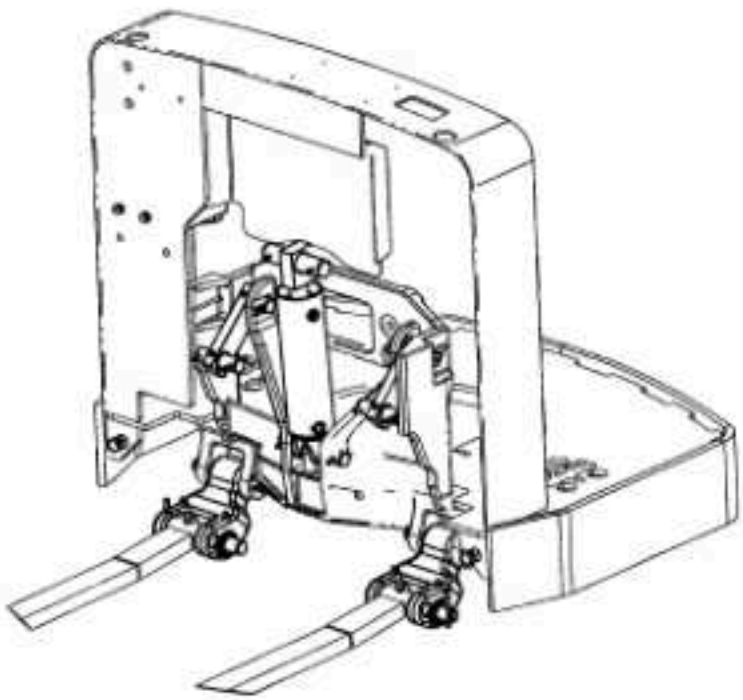
SERVICE MANUAL

For A230 (B60Z)



FORM 1480465-A230 Rev. 07/14

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This section is for the following models:

All Electric Lift Trucks

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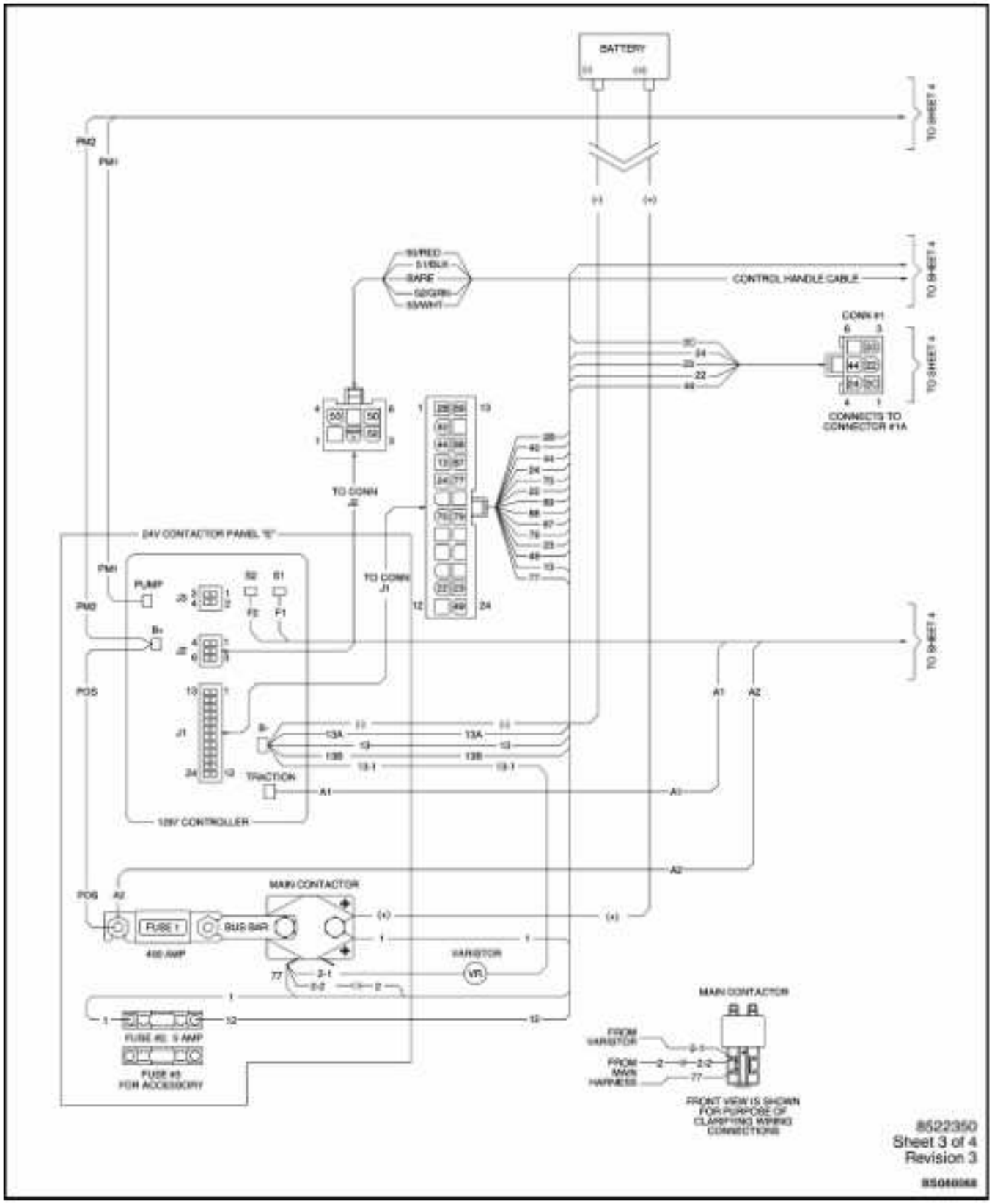


Figure 3. Schematic Diagram - 24 Volt (B60Z and B80Z) (Sheet 3 of 4)

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Hydraulic System

Unit	Battery Compartment	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
W60Z	340 mm (13.4 in.)	24	2.94 MPa (426 psi)	11.03 MPa (1600 psi)	34	81	16.62 MPa (2700 psi)	124	3.7	4.7	3.0	1.8
B60Z	340 mm (13.4 in.)	24	2.94 MPa (426 psi)	11.03 MPa (1600 psi)	34	81	18.62 MPa (2700 psi)	124	3.7	4.7	3.0	1.8
W65Z	229 mm (9.0 in.)	12	(359)	(1750)	93	194	(2850)	270	3.75	5.7	7.8	4.24
W80Z	340 mm (13.4 in.)	24	(401)	(2173)	45	108	(3500)	147	3.7	5.4	5.9	3.2
B80Z	340 mm (13.4 in.)	24	(401)	(2173)	45	108	(3500)	147	3.7	5.4	5.9	3.2

W60Z and B60Z – Standard Specifications
Hydraulic Tank Capacity – 1.0 liter (1.06 qt)
Pump Displacement (24 Volts) – 1.59 cm^3/rev (0.092 $in.^3$/rev)
Creep Rate – 6.4 mm (0.25 in.) Maximum In 10 Minutes @ 32°C (90°F) Oil Temperature

W65Z, W80Z, and B80Z – Standard Specifications
Hydraulic Tank Capacity – 1.0 liter (1.06 qt)
W80Z and B80Z Pump Displacement (24 Volts) – 2.0 cm^3/rev (0.122 $in.^3$/rev)
W65Z Pump Displacement (12 Volts) – 2.0 cm^3/rev (0.122 $in.^3$/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/Food Processing	Arctic
For All Hydraulically Actuated Equipment			
Specification	ISO VG 46 Antiwear (HCE-140)	Exxon Univis® HVI 26	Exxon Univis® HVI 26
Temperature Range	32 to –120°C (89.6 to –184.0°F)	0 to –120°C (32.0 to –184.0°F)	–40 to –120°C (40.0 to –184.0°F)
Pour Point Maximum	–15°C (5.0°F)	–60°C (–76.0°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.

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General

This section covers the troubleshooting and repair procedures for the hydraulic components on B60Z, B80Z, B60Z, B80Z^{AC}, C60Z, C80Z, C60Z, C80Z^{AC}, W60Z, W65Z, and W80Z lift trucks.

It also includes the remove and install procedures for the solenoid coil used to activate the lowering valve.

For troubleshooting and repairs of the electrical components, see the sections **Electrical System** 2200 SRM 929, **Electrical System** 2200 SRM 1052, **Electrical System** 2200 SRM 1357, or **Electrical System** 2200 SRM 1287. See the sections **Curtis 1297 Transistor Motor Controller** 2200 SRM 928, **AC Motor Controller** 2200 SRM 1352, or **AC Motor Controller** 2200 SRM 1286 for Controller functions.

Description of Operation

The hydraulic system of the B60Z, B80Z, B60Z, B80Z^{AC}, C60Z, C80Z, C60Z, C80Z^{AC}, W60Z, W65Z, and W80Z lift trucks includes:

- Reservoir
- Pump
- Check Valve
- Relief Valve
- Lowering Valve
- Lift Cylinder
- Connecting Hoses and Tubes

WARNING

Always wear the proper protective equipment including eye protection and petroleum-resistant gloves when handling hydraulic oil. Thoroughly wash oil from exposed areas of skin as soon as possible.

Never check for leaks by putting hands on hydraulic lines or components under pressure. Hydraulic oil under pressure can be injected into the skin.

Completely lower forks to relieve hydraulic pressure before disassembling any part of the lift pump or disconnecting any hydraulic hoses.

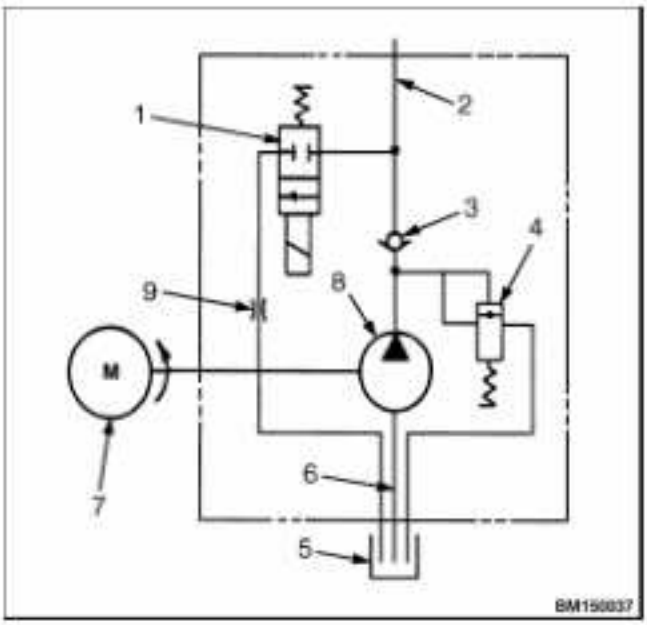
The hydraulic oil is hot at normal operating temperatures. Be careful when draining the oil.

CAUTION

Protect the hydraulic system from dirt and contaminants when servicing the hydraulic system.

Never operate the pump without the proper amount of oil in the hydraulic system. The operation of the hydraulic pump with low oil levels will damage the pump.

The reservoir contains the hydraulic fluid necessary for the operation of the system. It acts as a heat sink to provide cooling. As the hydraulic oil leaves the reservoir, it passes through a strainer in the reservoir. See Figure 1.



1. LOWERING SOLENOID VALVE
2. TO LIFT CYLINDER
3. CHECK VALVE
4. RELIEF VALVE
5. RESERVOIR
6. INLET LINE
7. PUMP MOTOR
8. LIFT PUMP
9. ORIFICE

Figure 1. Lift Pump and Motor Assembly Schematic

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