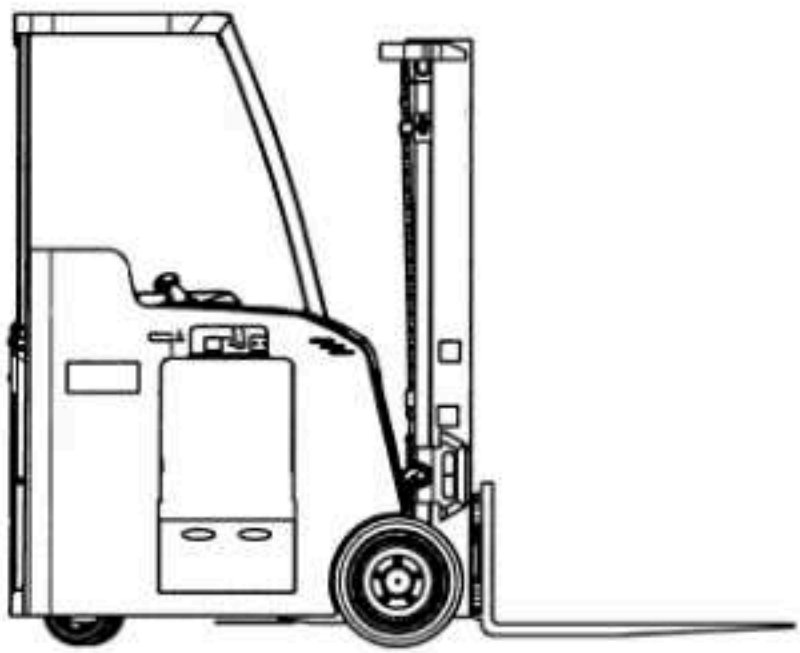
SERVICE MANUAL

E30-35-40HSD (A219)



FORM 1495902 Rev. 11/03

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E30-35-40HSD (A219)
SERVICE MANUAL CONTENTS

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STEERING SYSTEM	1600 SRM 0996	11/03
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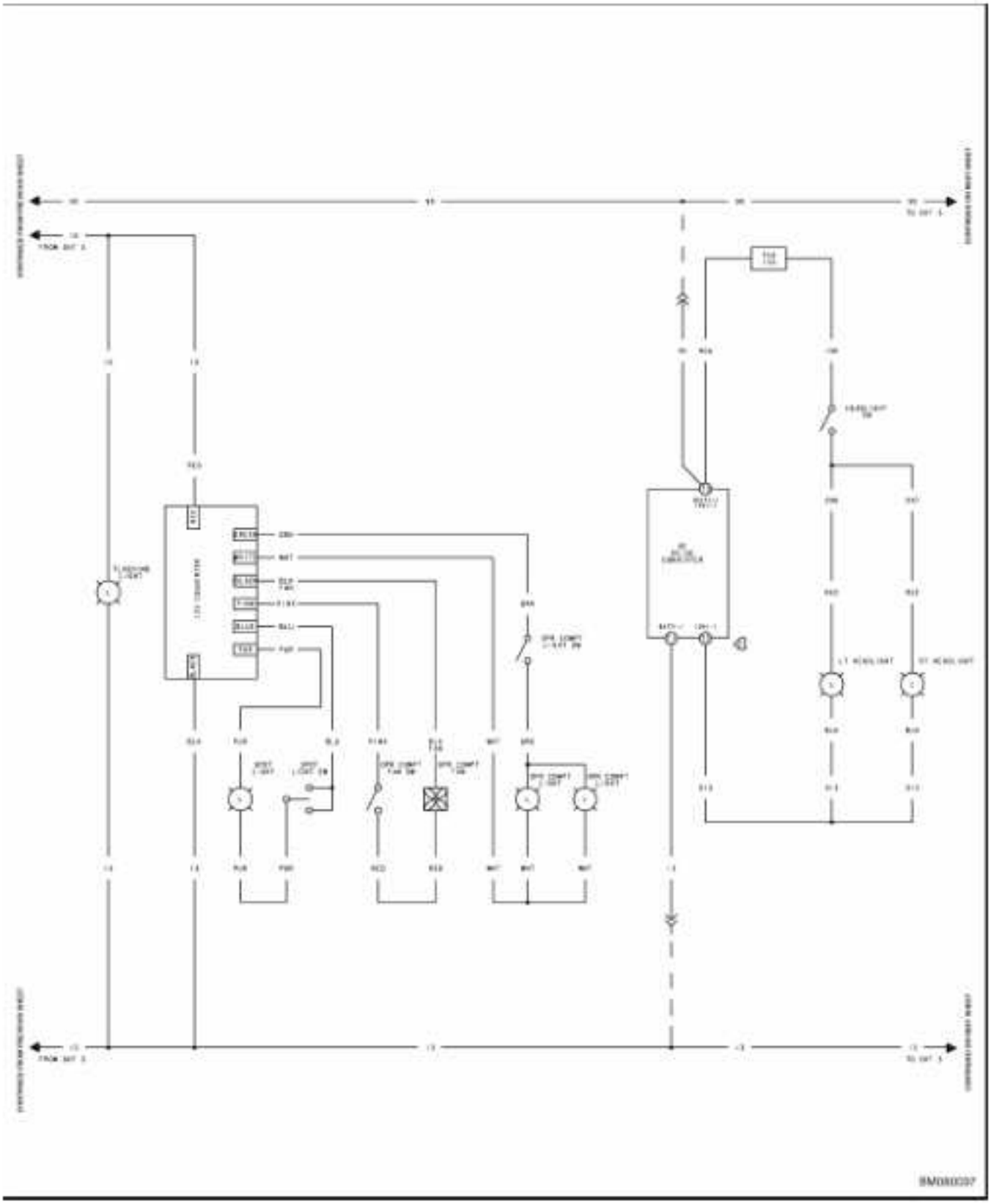


Figure 1. SEM CANBUS Schematic (Sheet 2 of 3)

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Legend for Figure 17

* Metric Formulas (All Dimensions are in Millimeters)
Dimension E = (Y + Z + 204) × 0.98
Example: Dimension E = (Y + Z + 204) × 0.98 **Step 1.** Dimension E = (1840 + 135 + 204) × 0.98 **Step 2.** Dimension E = 2179 × 0.98 **Step 3.** Dimension E = 2135

* Inch Formulas (All Dimensions are in Inches)
Dimension E = (Y + Z + 8.0) × 0.98
Example: Dimension E = (Y + Z + 8.0) × 0.98 **Step 1.** Dimension E = (72.4 + 5.3 + 8.0) × 0.98 **Step 2.** Dimension E = 85.7 × 0.98 **Step 3.** Dimension E = 84.0
*All measurements are made with mast vertical and fully lowered.

1. DIMENSION E
2. HOSE
3. VISE
4. TOP OUTER CHANNEL
5. BOTTOM OUTER CHANNEL
6. GROUND LEVEL

5. Attach the hoses to the carriage brackets with the clamps. See Figure 18.

6. Place the hoses at the location of the hose sheave. The hose sheave and stub shaft must be assembled on to the hose before they are attached to the mast. Tighten the mounting hardware to 66 N·m (49 lbf ft).

7. Put the clamps over the hoses and attach the clamps to the upper brackets. Do NOT tighten the hardware.

NOTE: To make the alignment of dimension **E** easier, use a crane with a capacity of at least 908 kg (2000 lb) to raise the carriage high enough to install a safety chain.

8. Align mark **E** at the bottom of the clamps. Tighten the hardware to 8 N·m (71 lbf in).

9. Connect the header hoses to the cowl hoses.

10. Use the rubber clamps and hose clamps to attach the hoses to the main lift cylinders. Make sure the hoses do NOT stretch or fold while tilting the mast fully forward and backward.

11. With no load on the forks, check the header hose adjustment by operating the mast through the full lift cycle two times. When properly adjusted, the hoses will not be so tight that they compress when they pass over the sheaves nor will they be so loose that they touch the load backrest or any crossmember that is next to a sheave. If the hoses require additional adjustment, see Two-Stage LFL Mast, Adjust Hoses after Installation.

TWO-STAGE LFL MAST, ADJUST HOSES AFTER INSTALLATION

1. Loosen the clamps and pull (if the hoses are loose) or push (if the hoses are tight) on the hoses so they move 30 mm (1.2 in.). Tighten the hardware to 8 N·m (71 lbf in). See Figure 17 and Figure 18.

2. With no load on the forks, check the header hose adjustment by operating the mast through the full lift cycle two times. When properly adjusted, the hoses will not be so tight that they compress when they pass over the sheaves nor will they be so loose that they touch the load backrest or any crossmember that is next to a sheave. If necessary, repeat Step 1 until the hoses are properly adjusted.

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Troubleshooting

PROBLEM	POSSIBLE CAUSE	PROCEDURE OR ACTION
No movement of the lift or tilt cylinders.	No oil or not enough oil in the hydraulic tank.	Fill tank. Check for leaks.
	Relief valve is open.	Remove, inspect, clean, or replace with new relief valve.
	Hydraulic pump does not operate or has damage.	Repair or install new pump.
	Manual lowering controls set to **open**.	Set manual lowering controls to **close**.
	Electrical connections between control handle, control valve, and controllers are damaged.	Repair or replace wiring.
	Inoperative coil or valve cartridge.	Remove, inspect, clean, or repair with new components.
Slow movement of the lift or tilt cylinders.	No oil or not enough oil to the lift cylinders.	Fill tank. Check for leaks.
	Cylinders have internal or external leaks.	Repair leaks. Install new parts.
	Relief valve is open.	Remove, inspect, clean, or replace with new relief valve.
	There is a restriction in a hydraulic line.	Remove restriction. Install new parts.
	Load is more than capacity.	Reduce load.
	Manual lowering controls set to **open**.	Set manual lowering controls to **close**.
	Inoperative coil or valve cartridge.	Remove, inspect, clean, or repair with new components.

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