CEBM007002

Shop Manual

930E-2

DUMP TRUCK

SERIAL NUMBERS **A30181 thru A30223**
w/ Cummins QSK60 Engine

KOMATSU®

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TABLE OF CONTENTS

SUBJECT	SECTION
GENERAL INFORMATION	A
STRUCTURES	B
ENGINE SYSTEMS	C
ELECTRIC SYSTEM (24 VDC. NON-PROPULSION)	D
ELECTRIC PROPULSION AND CONTROL	E
DRIVE AXLE, SPINDLES AND WHEELS	G
HYDRAIR® II SUSPENSIONS	H
BRAKE CIRCUIT	J
HYDRAULIC SYSTEM	L
OPTIONS AND SPECIAL TOOLS	M
OPERATOR'S CAB	N
LUBRICATION AND SERVICE	P
ALPHABETICAL INDEX	Q
SYSTEM SCHEMATICS	R

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SECTION A

GENERAL INFORMATION

INDEX

MAJOR COMPONENTS & SPECIFICATIONS A2-1

GENERAL SAFETY AND TRUCK OPERATION A3-1

WARNINGS AND CAUTIONS. A4-1

STANDARD TABLES. A5-1

STORAGE PROCEDURES A7-1

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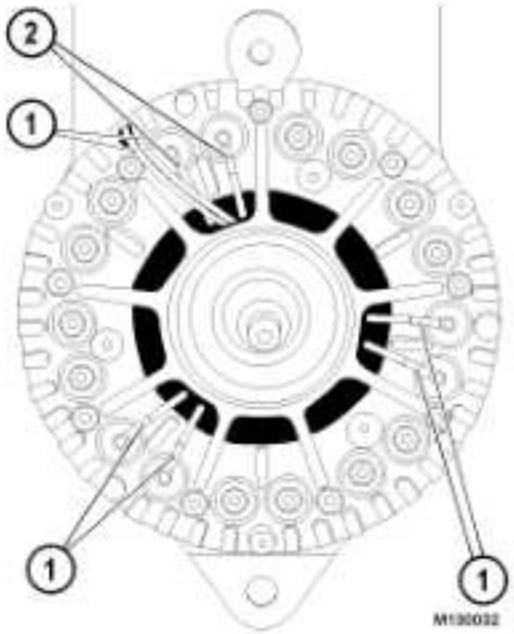


FIGURE 10-33.
1. Field Leads 2. Phase Leads

Control Unit Assembly Replacement

Refer to Figures 13-34 and 13-35 for the following steps:

1. Hold the new regulator connector harness in its approximate installation position and bend wires into their proper position.
2. Solder both the regulator connector lead "3", and the output lead from "B+" buss, to the terminal block, "B+" position. (right of center)
3. Position nuts on the terminal block attaching screws about 2 threads from the tip of the screw.

NOTE: These nuts are used as spacers.

4. Attach the terminal block to the alternator housing.

CAUTION: Thread both screws in evenly so as not to cock the terminal block. Failure to keep the terminal block parallel to the housing may break the terminal block.

5. Attach the ground lead from the regulator harness (lead "2") to the housing.
6. Route the regulator harness under "B+" buss leads. Care should be taken to keep the regulator connector flat with "A" pin properly positioned.

NOTE: Wires in steps 7 & 8 should slant away from both "E" & "R" terminals (down and left, as viewed from outside).

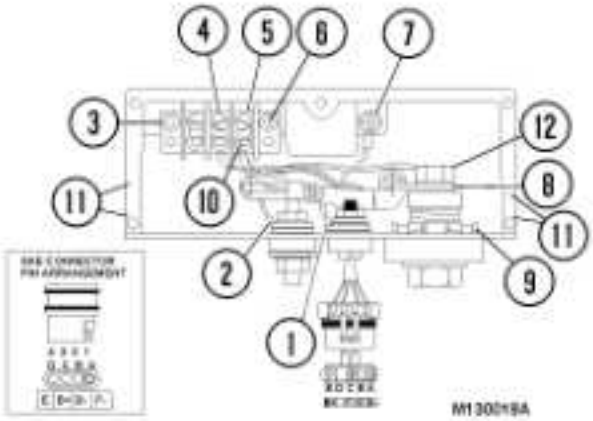


FIGURE 10-34.
1. Ignition (E) (Harness Lead #4)
2. Relay (R)
3. Terminal Block
4. F- (Harness Lead #1)
5. F+ (Harness Lead #3); **10 in. lbs. (1.3 Nm)** torque
6. Terminal Block Screw; **30 in. lbs. (3.5 Nm)** torque
7. Ground Wire from Regulator (Harness Lead #2)
8. **24 in. lbs. (2.7 Nm)** torque
9. B+ Buss Leads to Rectifier
10. When replacing output stud only; tighten to **12-15 ft.lbs. (16-20 N.m)** torque, coat with epoxy.

10. Solder here.
10. Apply RTV here.
10. Tighten to **180 in.lbs. (20 N.m)** torque.

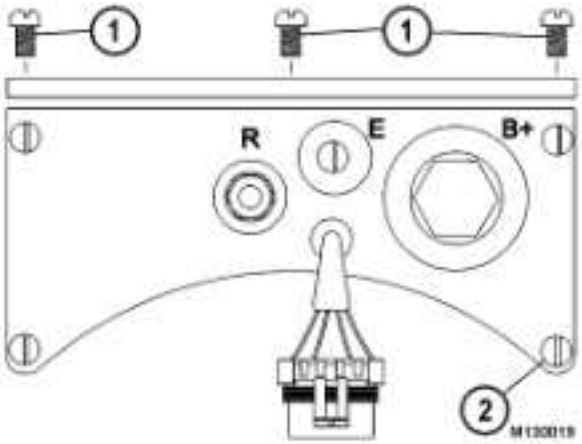


FIGURE 10-35.

1. Cover Screws (TOP) 2. Control Unit Screw

NOTE: Tighten nine screws to 20 in.lbs. (2 Nm) torque.

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Speed Signal

The speed signal triggers the payload meter to display the time of day when the truck begins moving. If this does not happen or the payload meter does not count up the distance from the shovel after loading, the speed signal may be missing. This can be confirmed by checking the inputs to the payload meter. Refer to "Monitoring Input Signals". Verify the payload meter is not receiving a speed signal before following the troubleshooting fault tree.

NOTE: The payload meter will ignore speed signal input if the brake lock appears to be on. Confirm the payload meter correctly reads the brake lock input.

930E Speed Signal

On the 930E, the speed signal comes from a speed sensor mounted on the left-front wheel. Occasionally, this sensor is damaged by debris, impact during tire mounting, or misalignment during repair of the spindle. The wheel must be removed to replace the sensor. Since the sensor is an active device, it requires an 18v power supply to power the electronics that convert the electromagnetic pulses into signals for the payload meter. In addition, because the sensor is active and not just a simple coil, it is not possible to measure the resistance across the contacts of the harness to determine if the sensor has failed.

To troubleshoot, confirm that the 18v power supply is reaching the sensor. The speed signal can be monitored in the control cabinet to confirm the wiring from the sensor to the cabinet. Checking the signal at the back of the payload meter will confirm the wiring from the control cabinet. It is also possible to check the speed signal at the back of the payload meter to confirm the entire wiring route. A signal generator may be used at the wheel to generate a signal back to the payload meter. The speed signal input can be monitored from the payload meter using the procedure outlined in "Monitoring Input Signals".

Adjusting the Speed Sensor

1. Align a tooth on the speed sensor gear with the tip of the speed sensor.
2. Check the distance between the speed sensor and gear tooth with a feeler gauge.
3. Adjust the gap to 0.060 in. (1.5 mm) and lock the sensor in place.
4. Rotate the wheel hub 180° and verify that the gap has remained within specifications.

730E/830E Speed Signal

The speed signal for the 730E/830E model trucks comes from a passive speed sensor mounted on the left wheel motor. This signal travels on the 714/714A circuits to an isolation transformer in the control cabinet. From the transformer, the signal travels through the connector at the back of the cab up to the payload meter.

Confirm that the sensor at the wheel motor is working properly. This is a passive, coil-type speed sensor and its electrical integrity can be checked using an ohmmeter. Confirm the speed signal in the control cabinet at the transformer. A signal generator may be used at the wheel motor to generate a signal back to the payload meter. The speed signal input can be monitored from the payload meter using the procedure outlined in "Monitoring Input Signals".

HD1500/530M Speed Signal

The speed signal runs from a speed sensor on the transmission output shaft to the PMC and to the payload meter. You can confirm the speed sensor by checking the speed input to the PMC. Confirm the speed signal wiring from the PMC to the payload meter. The speed signal input can be monitored from the payload meter using the procedure outlined in "Monitoring Input Signals".

Refer to the following page for the fault tree diagram.

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INJECTORS (SL-1 Series "H"))

Injector Specifications

- Each lube injector services only one grease point. In case of pump malfunction, each injector is equipped with a covered grease fitting to allow the use of external lubricating equipment.
- Injector output is adjustable:
  Maximum output = 0.08 in^3 (1.31 cc).
  Minimum output = 0.008 in^3 (0.13 cc).
- Operating Pressure:
  Minimum - 1850 psi (12 755 kPa)
  Maximum - 3500 psi (24 133 kPa)
  Recommended - 2500 psi (17 238 kPa)
  Maximum Vent Pressure - (Recharge)
  600 psi (4 137 kPa)

Injector Adjustment

The injectors may be adjusted to supply from 0.008 in3 to 0.08 in^3 (0.13 cc to 1.31 cc) of lubricant per injection cycle. The injector piston travel distance determines the amount of lubricant supplied. This travel is in turn controlled by an adjusting screw in the top of the injector housing.

Turn the adjusting screw (1, Figure 4-9) counterclockwise to increase lubricant amount delivered and clockwise to decrease the lubricant amount.

When the injector is not pressurized, maximum injector delivery volume is attained by turning the adjusting screw (1) fully counterclockwise until the indicating pin (8) just touches the adjusting screw. At the maximum delivery point, about 0.38 inch (9.7 mm) adjusting screw threads should be showing. Decrease the delivered lubricant amount by turning the adjusting screw clockwise to limit injector piston travel. If only half the lubricant is needed, turn the adjusting screw to the point where about 0.19 inch (4.8 mm) threads are showing. The injector will be set at minimum delivery point with about 0.009 inch (0.22 mm) thread showing.

NOTE: The above information concerns adjustment of injector delivery volume. The timer adjustment should also be changed, if overall lubricant delivery is too little or too much. Injector output should NOT be adjusted to less than one-fourth capacity.

NOTE: The piston assembly (8) has a visible indicator pin at the top of the assembly to verify the injector operation.

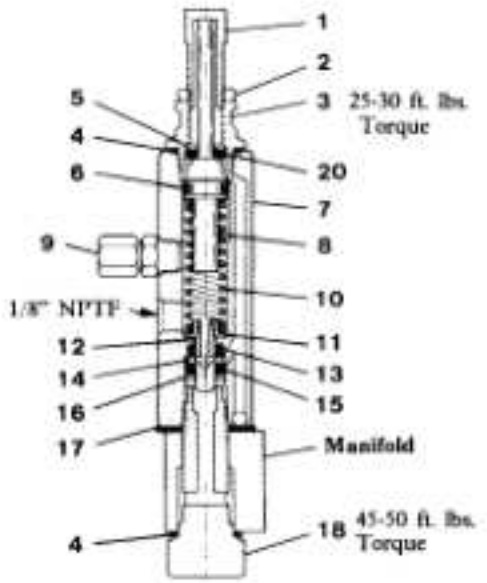


FIGURE 3-6. TYPE SL-1 INJECTOR

1. Adjusting Screw
2. Locknut
3. Piston Stop Plug
4. Gasket
5. Washer
6. Viton O-Ring
7. Injector Body Assy.
8. Piston Assembly
9. Fitting Assembly
10. Plunger Spring
11. Spring Seat
12. Plunger
13. Viton Packing
14. Inlet Disc
15. Viton Packing
16. Washer
17. Gasket
18. Adapter Bolt
19. Adapter
20. Viton Packing

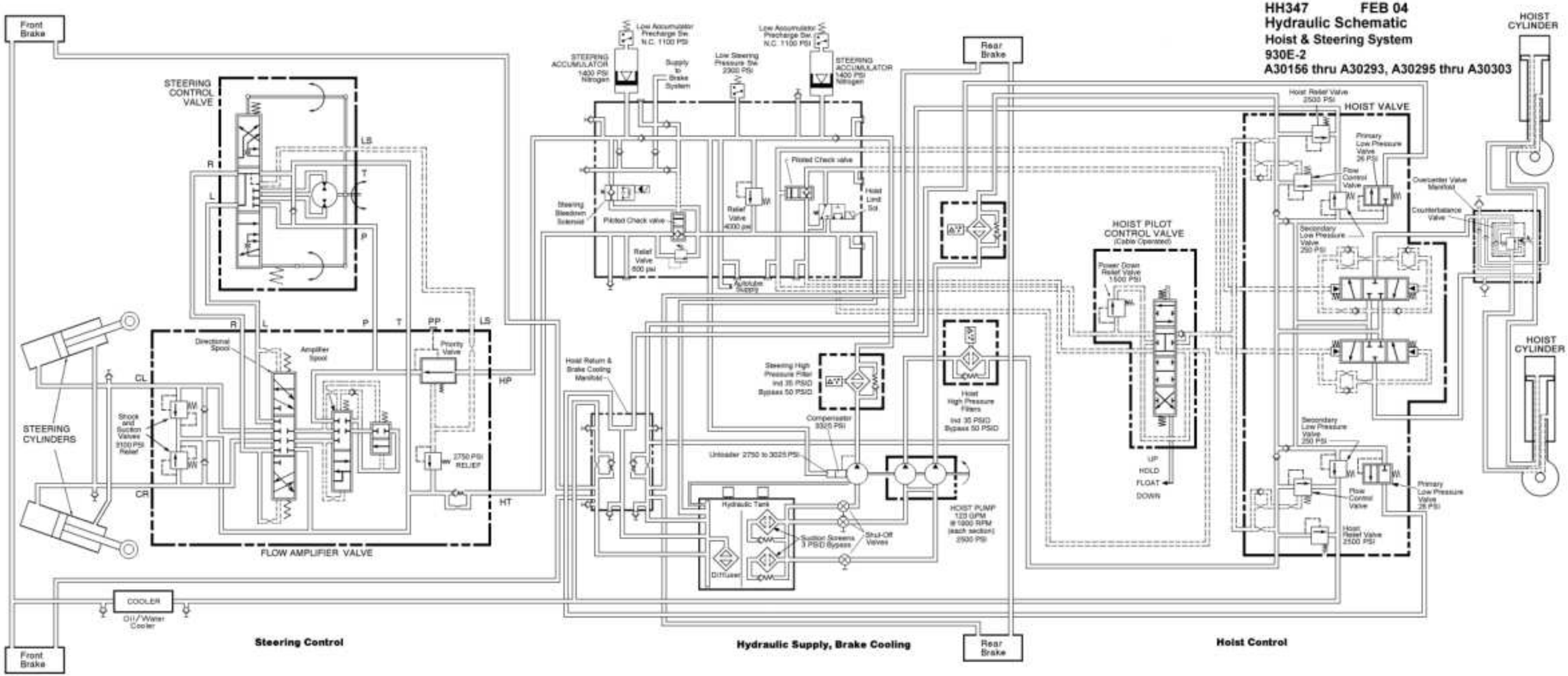
SYSTEM CHECKOUT

To check system operation (not including timer), proceed as follows:

1. Turn keyswitch ON and start the engine.
2. Actuate the lube system test switch at the reservoir/pump assembly on the front bumper.
3. The motor and pump should operate until the system attains 2500 psi (17 237 kPa).
4. Once the required pressure is achieved, the pump motor should turn off and the system should vent.
5. Check for pump, hose or injector damage or leakage with the system under pressure.
6. After checking system, shutdown engine, observing normal precautions regarding high voltage present in the propulsion system before attempting to repair lube system.

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HH347 FEB 04
Hydraulic Schematic
Hoist & Steering System
930E-2
A30156 thru A30293, A30295 thru A30303



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