CEBM011801

Shop Manual

930E-2

DUMP TRUCK

SERIAL NUMBERS **A30292**

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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TABLE III: DID PANEL FAULT CODES (Codes Received from Inverter 1, 2)				
EVENT NUMBER		EVENT DESCRIPTION	EVENT RESTRICTION	DETECTION INFORMATION
113/213 (cont.)				
	:29	C volt hi Adn	INV1 (INV2) off	Phase C volt too high while phase A down on
	:30	C volt lo Aup		Phase C volt too low while phase A up on
	:31	C volt hi Bdn		Phase C volt too high while phase B down on
	:32	C volt lo Bup		Phase C volt too low while phase B up on
	:33	C volt hi Cdn		Phase C volt too high while phase C down on
	:34	C volt lo Cup		Phase C volt too low while phase C up on
	:35	Aup fault cur		Phase A fault current when phase A up on
	:36	Adn fault cur		Phase A fault current when phase A down on
	:37	Bup fault cur		Phase B fault current when phase B up on
	:38	Bdn fault cur		Phase B fault current when phase B down on
	:39	Cup fault cur		Phase C fault current when phase C up on
	:40	Cdn fault cur		Phase C fault current when phase C down on
	:48	A volt hi off		Phase A voltage high with all GTOs off
	:49	A volt lo off		Phase A voltage low with all GTOs off
	:50	B volt hi off		Phase B voltage high with all GTOs off
	:51	B volt lo off		Phase B voltage high with all GTOs off
	:52	C volt hi off		Phase C voltage high with all GTOs off
	:53	C volt lo off		Phase C voltage high with all GTOs off
	:54	phase short pos		Possible phase to DC+ short
	:55	phase short neg		Possible phase to DC- short
	:60	linkV too hi PTL		Link volts above PTL
	:70	Aph neg I low		Phase A negative current low (unbalance)
	:71	Bph neg I low		Phase B negative current low (unbalance)

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23. After the brake assembly is properly positioned on the adapter and the four capscrews are snug, remove the alignment studs.

    Remove socket head capscrews (34) securing seal retainer (37) to brake assembly (18).

    Install the remaining brake adapter/brake assembly mounting capscrews (20) and hardened flatwashers (21). Tighten the capscrews to **1995 ± 100 ft. lbs. (2705 ± 136 N.m)**.

24. Install bearing retainer pin (40) in groove in spindle. Align and slide outer bearing cone (7) over pin. Lubricate the bearing with clean hydraulic oil.

25. Install shim pack (8), retainer (13), capscrews (11), and washers (12). Tighten the capscrews alternately in several successive increments while rotating the hub. Final torque is **750 ± 75 ft. lbs. (1017 ± 100 N.m)**.

26. Install a new O-ring (41) on cover (5). Install the cover, capscrews, and washers. Tighten the capscrews to standard torque.

Seal Assembly Gap Check

After the assembly of the wheel and brake is complete, the gap between seal carrier (3, Figure 3-7) and the brake assembly back plate (6) must be measured and adjusted if necessary.

The ideal gap is 0.433 in (11.0 mm). If necessary, the gap must be adjusted, using shims as required to maintain a **minimum** gap of 0.423 in (10.75 mm) to 0.443 in (11.25 mm) **maximum**.

27. Measure seal gap as follows:

    a. Measure gap, dimension "A", Figure 3-7 at three, equally spaced places and record the results.

    b. Add the three dimensions and divide the result by 3 to obtain the average gap width

28. If average gap width is not between the minimum and maximum allowable range, loosen the seal retainer capscrews (4, Figure 3-6) and add shims (5) as required to **reduce** the gap or remove shims to **increase** the gap. **The quantity and thickness of shims at each of the six locations must be equal.**

29. Re-tighten seal retainer capscrews to standard torque and measure gap as described in Step 28. If necessary, repeat Step 29 until the proper gap is maintained.

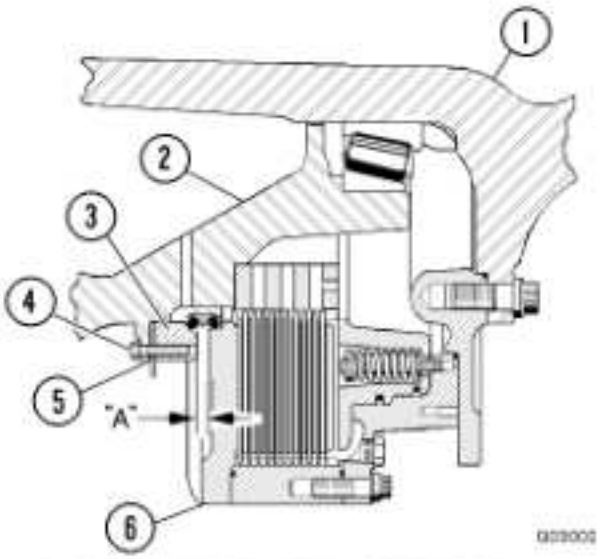


FIGURE 3-7. MEASURING SEAL GAP

1. Spindle
2. Wheel Hub
3. Seal Carrier
4. Capscrews
5. Shims
6. Brake Back Plate

30. Install speed sensor(s) (16, Figure 3-6) in support bracket(s) (17). Adjust sensor gap as follows:

    a. Rotate hub to position the top of a gear tooth directly under the sensor tip.

    b. Insert a 0.060 in (1.5 mm) feeler gauge between sensor tip and gear tooth. Loosen and adjust sensor clearance.

    c. Lock the sensor in place.

    d. Rotate hub 180° and verify clearance remains within 0.040 in (1.0 mm) minimum to 0.080 in (2.0 mm) maximum.

31. Install speed sensor cables.

32. Install hub and spindle assembly on suspension per instructions in Installation.

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HYDRAULIC SYSTEM

HYDRAULIC PUMP MODULE

The following is a general description of the model 930E hydraulic system. Additional information concerning individual component description and operation can be found under the different system circuits such as the hoist circuit, steering circuit, and hydraulic brake circuit.

Hydraulic pumps (16 & 18, Figure 2-1) are mounted on a modular structure behind the traction alternator. The pump module also contains the pilot operated hoist valve (3), used to control operation of the hoist cylinders during body dumping operations. An overcenter manifold (10) contains internal valves (8 & 9) used to ensure smooth operation and maximum service life from the hoist cylinders.

The overcenter manifold also provides quick disconnect fittings (12) to allow operation of the hoist circuit by an external hydraulic source or to utilize the hoist circuit of the truck to dump the load from a disabled truck.

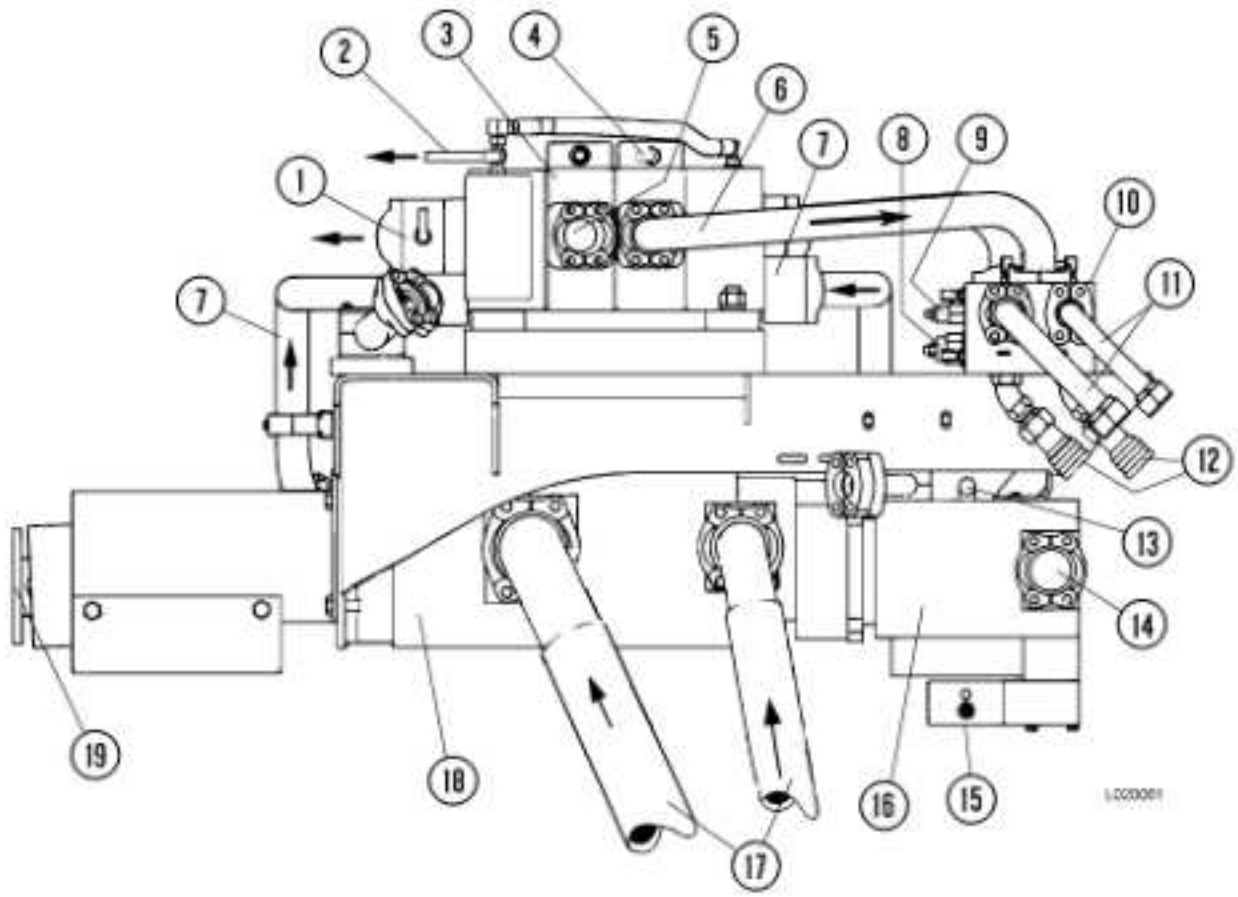
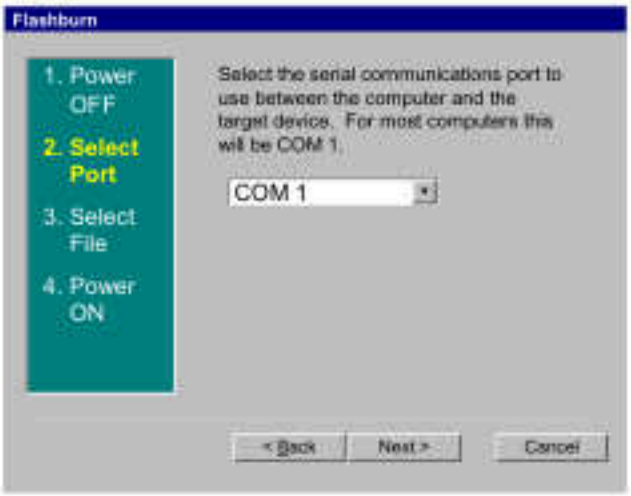


FIGURE 2-1. HYDRAULIC PUMP MODULE

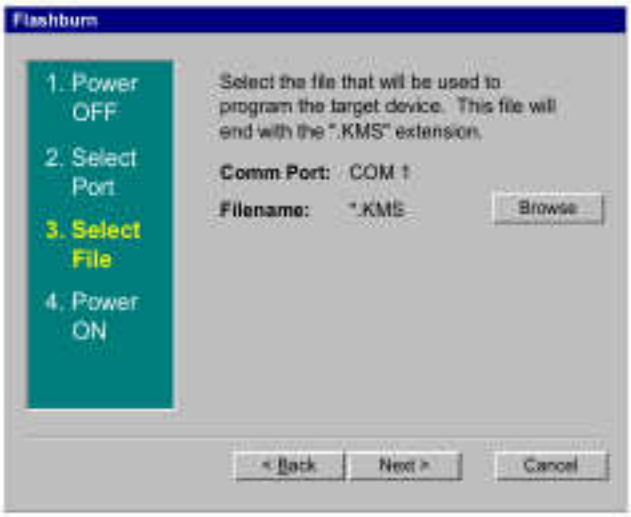
1. Hoist Valve Tank Return (To Brake/Hoist Return Manifold)
2. Supply to Pilot Valve
3. Hoist Valve
4. From Pilot Valve
5. To Brake/Hoist Return Manifold
6. Work Port Outlet
7. Supply From Hoist Pump & Filter
8. Counterbalance Valve
9. Needle Valve
10. Overcenter Manifold
11. Hoist Cylinder Supply Tubes
12. Hoist Quick Disconnects
13. Pump Case Drain Line
14. Steering Pump Inlet Port
15. Unloader Valve
16. Steering/Brake Pump
17. Hoist Pump Inlet Hoses
18. Hoist Pump
19. Pump Driveshaft

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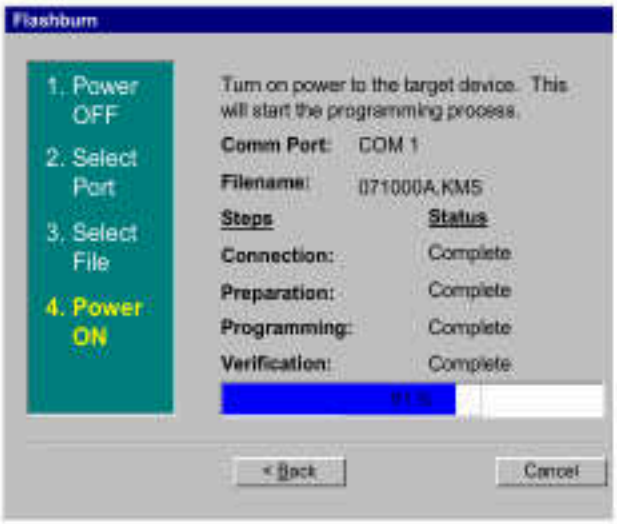
4. Confirm the proper communications port for the programming laptop. This is usually COM 1. Press "NEXT".



5. Press "BROWSE" and select the ".kms" file to program into the payload meter. Press "NEXT".



6. When instructed, turn the keyswitch ON in order to power-up the payload meter. The PC will begin to reprogram the payload meter. This process takes approximately 5 minutes.



7. After successful programming, turn the key witch OFF.
8. Wait 20 seconds and turn the keyswitch ON.
9. The payload meter will need to be configured as instructed in the manual using the Payload Data Manager software on the laptop computer.

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DOWNLOADING DATA

PLMIII records many types of data. The PLMIII PC software is designed to download the data from a whole truck fleet. Instead of creating one data file for each truck, the PC software combines all the data from many trucks into one database on the hard drive of the computer. The software then allows users to query the database to create custom reports and graphs. Data for individual trucks or groups of trucks can be easily analyzed. This same data can be exported for use in other software applications like word processors and spreadsheet applications.

As the database grows, performance of the PC software for analysis will slow down. It may be helpful to periodically export data. For example, query the database to show the oldest quarter, month, or half year and print out a summary report. Then export the data to a compressed format and save the file in a secure location. Once the data is exported, delete the entire query results from the database. If necessary, the data can easily be imported back into the main database for analysis at a future date. Removing this older data will improve performance.



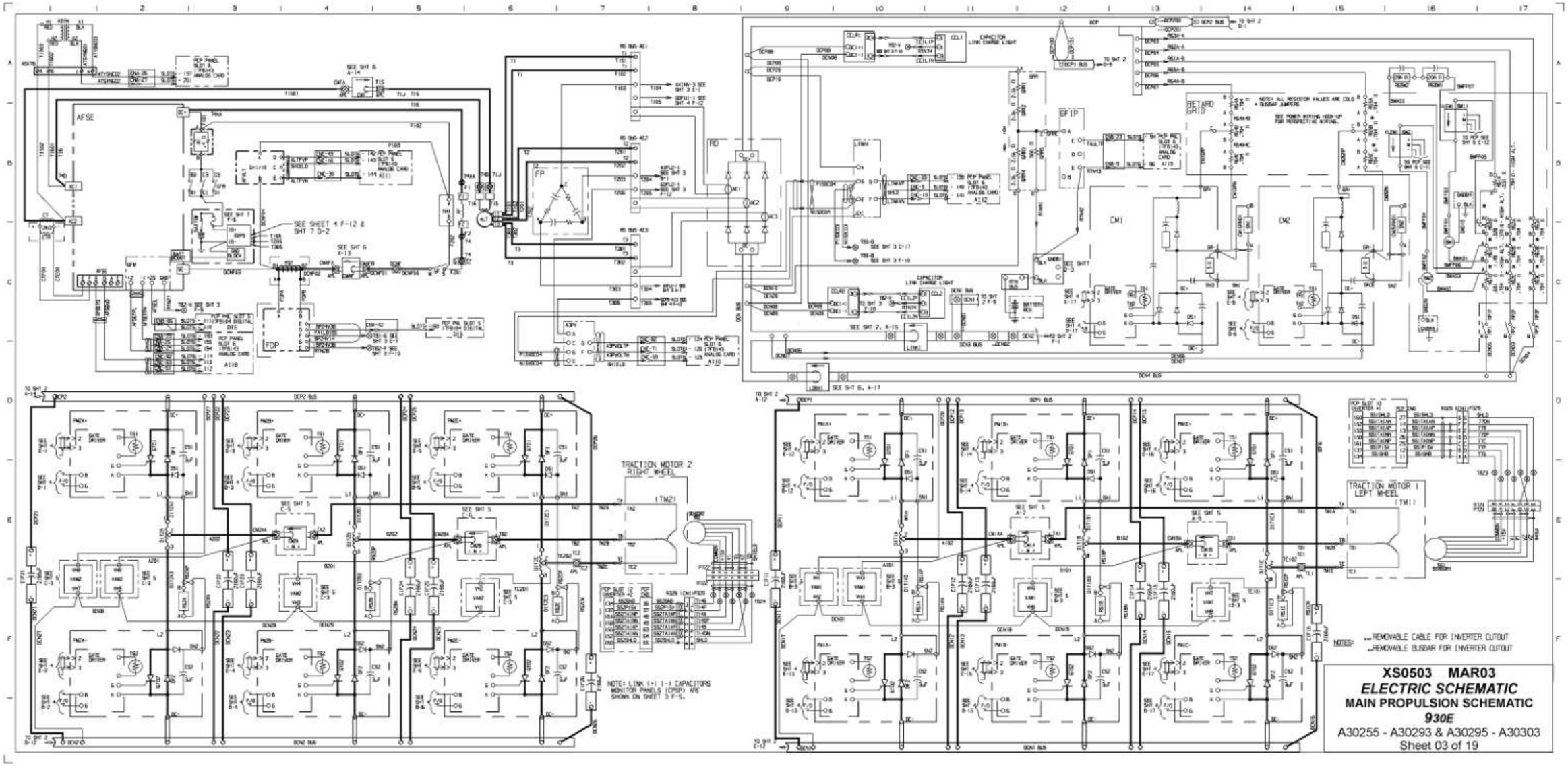
The PC software downloads the data from the payload meter into a single Paradox database. The data from all the trucks is added to the same database. Downloading the payload meter can take several minutes. The data is added to the database on the laptop used to download.

To move the data to another computer, a query must be run to isolate the particular data for export. Do not press the operator switch on the dashboard while downloading

To download the payload meter:

1. Connect to the payload meter and start the PC software.
2. From the main menu, select "Connect to Payload Meter". The PC will request the latest status information from the payload meter. The number of haul cycles and alarms will be displayed.
3. Select the " Begin Download" button. The PC will request the payload and alarm data from the payload meter and save it into the database. This may take several minutes. A progress bar at the bottom will show the approximate time left.

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