CEBM010100

Shop Manual

930E

DUMP TRUCK

SERIAL NUMBERS **32604 - 32789, 32803 - 32815**
w/MTU Engine

KOMATSU®

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SECTION A

GENERAL INFORMATION

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BRAKE CIRCUIT AND BRAKE VALVE TROUBLESHOOTING

POSSIBLE CAUSES	SUGGESTED CORRECTIVE ACTION
TROUBLE: The Brakes are Locked, Service and/or Parking	
Parking brake solenoid is de-energized.	Check power to solenoid
Connections to tank and pressure ports reversed.	Correct the plumbing.
Parking brake solenoid coil defective.	Replace coil.
Parking brake solenoid valve defective.	Replace solenoid valve.
Tank line is plugged or restricted.	Remove restriction.
TROUBLE: Both Brake Circuits are Dragging	
Tank line has back pressure.	Ensure tank line has no back pressure.
Pedal set screw out of adjustment; residual pressure.	Adjust pedal deadband with set screw.
TROUBLE: One Brake Circuit is Dragging	
Obstruction in the brake valve subassembly.	Remove obstruction.
Brake valve is out of balance.	Adjust balance according to instructions.
Actuator piston defective.	Replace piston.
Brake valve is defective.	Rebuild or replace brake valve assembly.
A dual relay valve is defective	Rebuild or replace dual relay valve assembly.
TROUBLE: The Brakes are Not Going to Full Pressure	
Internal malfunction of modulating section of Brake Valve.	Remove, disassemble, clean, and inspect brake valve.
Supply pressure is low.	Check steering/brake pump system and accumulators.
Improper collar adjustment on brake valve.	Adjust collars according to instructions.
TROUBLE: The Output Pressure At Controller is Correct but Brakes are Not Applying	
Brake lines are blocked or improperly connected.	Check plumbing.
TROUBLE: A Low Brake Pressure Warning Occurs When the Brakes are Not Applied	
Short in electrical system.	Check wiring.
Brake accumulator bleeding down.	Valve Open; close valve.
Differential pressure switch defective.	Check brake valve and dual relay valves; replace switch assembly.
Brake warning relay defective.	Replace relay.

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After approximately 90 seconds, the solenoid will de-energize to close the return port to tank. By this time all the oil in the accumulator should be returned to tank. At start-up, the steering circuit will be charged, including the brake circuit. The Low Steering Pressure light and buzzer will turn on until steering pressure reaches 2300 psi (15.9 MPa). This is controlled by the steering pressure switch, located on the frame mounted manifold (7, Figure 4-1). During operation, if steering pressure falls below 2300 psi (15.9 MPa), the Low Steering Pressure warning light will illuminate until pressure returns to normal.

Accumulators

The accumulators (12, Figure 4-1) are a floating piston type. The top side of the accumulators are charged to 1400 psi (9.7 MPa) with pure dry nitrogen.

Oil entering the accumulators pushes the piston upward compressing the nitrogen on the top side of the piston. The nitrogen pressure increases directly with steering circuit pressure. When steering circuit pressure reaches 3025 psi (20.9 MPa) the unloader valve will unload the pump. The accumulators will contain a quantity of oil under pressure available for steering the truck. When system pressure drops to 2750 psi (19.0 MPa) the pump output will again increase, to refill the accumulators and increase steering system pressure. The accumulators also provide oil, for a limited period of time, to be used in case of an emergency situation should the pump become inoperative.

Low Precharge Warning Switch

Pressure switches located in the top of each accumulator monitor nitrogen pressure and are used to activate the accumulator precharge warning light if the nitrogen pressure drops below 1100 psi (7.6 MPa).

The switches monitor nitrogen pressure when the key switch is turned ON and before the engine is started. If nitrogen pressure is too low, the warning lamp turns on - a latching circuit prevents the warning lamp from turning off when the engine is started and steering system pressure compresses the nitrogen remaining in the accumulator.

⚠WARNING

Do not operate the truck with less than 1100 psi (7.6 MPa) nitrogen precharge in the accumulator. Low nitrogen pressure may not provide an adequate supply of steering system oil in some emergency conditions. If the low precharge warning light remains ON, check accumulator precharge pressure and recharge if necessary.

High Pressure Filter

The high pressure filter (6, Figure 4-1) filters oil for the steering and brake circuits.

NOTE: Oil routed to the brake system passes through an additional high pressure filter mounted on the inside, left frame rail below the bleeddown manifold and flow amplifier.

If the filter element becomes restricted, a warning indicator is activated at 40 psi (276 kPa) and oil will bypass the element at 50 psi (345 kPa).

Refer to Section L9 for further information regarding the various system filters and maintenance procedures.

Flow Amplifier

The flow amplifier (3, Figure 4-1, & Figure 4-4) is located on the left frame rail forward of the bleed down manifold valve and is used in the steering circuit to provide the high volume of oil displacement required for the steering cylinders.

The flow amplifier uses the amount of flow from the steering control valve to determine a proportional amount of flow to send from the bleed down manifold to the steering cylinders.

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F-20: Sensor Power Fault

A common failure point can be the connector on the suspension pressure sensors. These connectors take a lot of abuse from pressure washing and occasionally short circuit or develop floating voltages from water and dirt intrusion. The quickest way to fix these problems is to disconnect the two halves and blow out any debris and clean the contacts. The process of disconnecting and re-inserting a connector often clears up many problems. If a problem persists, check the crimps on the terminals for intermittent connection due to vibration and wear.

On the 930E's, the most common cause for sensor power faults is a short in the harness coming from the back of the cab to the Aux/Junction box. This harness contains a splice for sensor power. This splice is approximately 305 mm (12 in.) from the connector and is exposed to vibration and dirt from the left tire. It may be possible to locate this splice and repair it. A single wire for circuit 39F carries 18v from the payload meter to the splice, where it branches out for each sensor.

The 39F circuit from PLM II™ is over-current protected. If this circuit is shorted to ground, the payload meter will automatically shut off the 18v supply. This will cause the payload meter to register faults for all the sensors.

In general, check the voltages at the sensors. It may be possible to disconnect each sensor in the junction box to see where the short may be. If disconnecting all the sensors does not clear the fault, it is likely that the problem lies within the harness from the back of the cab to the control cabinet.

Refer to the following page for the fault tree diagram.

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COMPONENT	SHEET	LOC
11CR - 3.3K Resistor	03	E13
12CR - 3.3K Resistor	03	E13
A/C compressor clutch	10	A17
A3PV - Alt Out 3 phase Volt Measure	02	D7
Accelerator Pedal	08	B2
AF - Alternator Field (input)	02	B5
AFSE - Alt Fld Static Exciter	02	C2
AFSE - Alt Fld Static Exciter	07	D5
AFVLT - Alt Field Voltage Measure Module	02	B3
AID	07	E3
AID	08	C4
AID	09	B1
AID	09	B6
AID	09	C12
AID	09	C14
AID	09	C3
AID	09	D10
AID	09	D11
AID	09	D16
AID	09	D9
AID	10	A2
AID	10	B2
AID	10	C2
AID	10	D6
AID	10	F11
Alarm Horn	09	B3
ALT - Alternator Stator (output)	02	B6
ALT SPD SNSR - Engine Speed Sensor in alt	06	B4
Auxiliary Battery Charge Connector	07	B9
Auxiliary Blower Motor	03	B11
AXCAP - Auxiliary Inverter Capacitors	03	A6
AXFU1 - Auxiliary Inverter input fuse	03	A2
AXFU2 - Auxiliary Inverter input fuse	03	B2
AXIND - Auxiliary Inverter Inductor	03	A4
AXINV - Auxiliary Inverter	03	B8
AXINV - Auxiliary Inverter rectifier	03	B3
BATFU - Electric cabinet 24V fuse	07	C2
Battery Box	02	C12
4Battery Charging Alternator	07	B6
Battery, Control	02	C3
Battery, Control	07	A8
Battery, Control	07	D1
Battery, Control	10	G13
Battery, Control, voltage measure	08	B8
Battery, Cranking	07	B8
Battery, Cranking	10	F13
Battery, Cranking, voltage measure	08	B8
Battery Separate Relay	07	A6
Battery Separate Relay	10	G12
BLFP - PSC battery supply filter panel	07	C6
Brake Lock Solenoid	10	D2
Brake Warning Delay Timer	10	C1
Brake Warning Relay	10	D2
Buzzer, Brake Warning	09	C13
CB 00 - 12 volt supply (battery box)	10	E13
CB 02 - interface cabinet heater relay coils	10	C14
CB 03 - interface cabinet fans	10	C11
CB 04 - interface cabinet right heater	10	B11
CB 05 - interface cabinet left heater	10	B11
CB 06 - engine service lights	10	C4
CB 07 - Lincoln Lube control timer & sol	10	D5
CB 08 - hoist limit solenoid	10	B1
CB 09 - starter controls	07	A9
CB 13 - clearance lights RB1	10	B11
CB 13 - clearance lights RB1	10	E8
CB 14 - turn signal lights RB1	10	B12
CB 14 - turn signal lights RB1	10	E9
CB 15 - tail lights RB1	07	F4
CB 15 - tail lights RB1	10	E9
CB 16 - retard lights RB3	09	A15
CB 16 - retard lights RB3	10	G9
CB 17 - manual backup lights RB3	09	C16
CB 17 - manual backup lights RB3	10	G9
CB 18 - stop lights (RB3)	07	E4
CB 18 - stop lights (RB3)	10	G9
CB 19 - backup lights and horn (RB3)	09	C16
CB 19 - backup lights and horn (RB3)	10	G9
CB 20 - prk brk fail rel (RB4)& eng warn ind	09	B3
CB 20 - prk brk fail rel (RB4)& eng warn ind	10	G11
CB 21 - steer bleed timer, horn rel (RB4)	10	E2
CB 21 - steer bleed timer, horn rel (RB4)	10	G11
CB 22 - MTU gov ignition RB7 K2 relay coil	09	B3
CB 22 - MTU gov ignition RB7 K2 relay coi	10	G11
CB 23 - headlights, left low beam (RB5)	10	C7
CB 23 - headlights, left low beam (RB5)	10	E11
CB 24 - headlights, right low beam (RB5)	10	C7
CB 24 - headlights, right low beam (RB5)	10	E11
CB 25 - headlights, left high beam (RB5)	10	B7
CB 25 - headlights, left high beam (RB5)	10	E11
CB 26 - headlights, right high beam (RB5)	10	B7
CB 26 - headlights, right high beam (RB5)	10	E11
CB 27 - hdlght sw, light rel coils (RB5	07	F7
CB 27 - hdlght sw, light rel coils (RB5)	10	E11
CB 28 - Payload Meter lights (RB2)	10	F9
CB 28 - Payload Meter lights (RB2)	10	G5

COMPONENT	SHEET	LOC
CB 29 - Payload Meter supply (RB2)	10	F5
CB 29 - Payload Meter supply (RB2)	10	F9
CB 30 - fog, ladder, deck lights (cab)	10	E13
CB 31 - cab heater (cab)	10	C15
CB 32 - AID & indicator lights (cab)	07	E1
CB 32 - AID & indicator lights (cab)	09	A1
CB 36 - cigarette lighter (cab)	10	F15
CB 37 - windshield wiper (cab)	10	C15
CB 38 - gauges (cab)	10	D15
CB 40A - 12 volt computer plug (cab)	10	F15
CB 40B - radio (cab)	10	E15
CB 41A - left window motor (cab)	10	E15
CB 41B - right window motor (cab)	10	F15
CB 42 - seat air pump (cab)	10	D15
CB 43 - start request (cab)	07	A2
CCL1 - Capacitor Charged Light	02	A11
CCL2 - Capacitor Charged Light	02	C11
CCLR1 - Capacitor Charged Light Resistor	02	A10
CCLR2 - Capacitor Charged Light Resistor	02	C10
C1F11 - Capacitor, Inverter 1	02	F9
C1F12 - Capacitor, Inverter 1	02	F11
C1F13 - Capacitor, Inverter 1	02	F11
C1F14 - Capacitor, Inverter 1	02	F13
C1F15 - Capacitor, Inverter 1	02	F13
C1F16 - Capacitor, Inverter 1	02	F15
C1F21 - Capacitor, Inverter 2	02	E1
C1F22 - Capacitor, Inverter 2	02	E3
C1F23 - Capacitor, Inverter 2	02	E3
C1F24 - Capacitor, Inverter 2	02	F5
C1F25 - Capacitor, Inverter 2	02	F5
C1F26 - Capacitor, Inverter 2	02	F7
Cigarette Lighter	10	F16
CM1 - Chopper Module 1	02	C13
CM1 - Chopper Module 1 Gate Driver	04	A17
CM1 - Chopper Module 1 Gate Driver	04	D16
CM1A - Current Measure phase A left mtr	02	E12
CM1A - Current Measure phase A left mtr	05	A7
CM1B - Current Measure phase B left mtr	02	E14
CM1B - Current Measure phase B left mtr	05	A9
CM2 - Chopper Module 2	02	C15
CM2 - Chopper Module 2 Gate Driver	04	A6
CM2A - Current Measure phase A right mtr	02	E4
CM2A - Current Measure phase A right mtr	05	C7
CM2B - Current Measure phase B right mtr	02	E6
CM2B - Current Measure phase B right mtr	05	C9
CMAF - Current Measure Alt Field	02	C4
CMAF - Current Measure Alt Field	06	B13
CMTA - Current Measure Tertiary Alt	02	A4
CMTA - Current Measure Tertiary Alt	06	B14
Contactor, 5-minute idle shutdown delay	10	D14
Control Power Relay - Interface Cabinet	07	D1
Coolant Level Module	06	G6
CPR - Control Power Rel Coil - Elec Cab	07	B5
CPR - Control Power Rel Contacts Elec Cab	07	C4
CPRD - Control Power Relay Diodes	07	B4
CPSP - Capacitor Pressure Sensing Panel	03	F6
CT - Current Transformer (Batt Boost)	02	B1
DB1 - diodes D5, D7, D10, D11	09	C10
DB1 - diodes D21, D22, D23	10	C2
DB1 - P11 (1K P6-3 to P6-4 Resistor)	06	E3
DB1 - P12 (22.1K P6-5 to P6-6 Resistor)	06	F3
DB1 - P7 (.27K P5-1 to P5-2 Resistor)	06	E7
DB1 - P7 (.27K P5-1 to P5-2 Resistor)	08	A5
DB1 - P8 (P5-3 to P5-4 diode)	09	B5
DB1 - P9 (100K P5-5 to P5-6 Resistor)	06	F3
DB1 - R4 (2K resistor)	09	C10
Diagnostic Connector - MTU	05	F17
Diagnostic Connector - PSC	05	E17
Diagnostic Connector - TCI	05	E17
Diagnostic Information Display Panel(DID)	08	D7
DIT1A - Left mtr phase A inverter choke	02	E10
DIT1B - Left mtr phase B inverter choke	02	E12
DIT1C - Left mtr phase C inverter choke	02	E14
DIT2A - Right mtr phase A inverter choke	02	E2
DIT2B - Right mtr phase B inverter choke	02	E4
DIT2C - Right mtr phase C inverter choke	02	E6
DSTM - Payload Data Storage Trigger Mod	10	E5
Engine Electric Starters	07	B10
Engine Oil Pressure Gauge	06	F8
Engine Oil Pressure Sensor	06	F1
Engine Temperatur Gauge	06	F7
Engine Temperature Sensor	06	F1
FDP - Fault Detection Panel (diode)	02	C4
FDT - Fault Detection Transformer	02	C4
FP - Filter Panel	02	B6
Fuel Gauge	10	D6
FUEL/WATER Separator	06	F4
Gauge, drive system temperature	08	A15
Gauge, fuel	10	D6
Gauge, hydraulic fluid temperature	08	A16
GDFU1 - Gate Driver Power Supply fuse	04	F12
GDFU2 - Gate Driver Power Supply fuse	04	F12
GDPC1 - Gate Driver Power Converter 1	04	E16
GDPC2 - Gate Driver Power Converter 2	04	F1
GDPS - Gate Driver Power Supply	02	C3

COMPONENT	SHEET	LOC
GDPS - Gate Driver Power Supply	04	F12
GDPS - Gate Driver Power Supply	07	D3
GF - Alt Fld Contactor Coil	07	C12
GF - Alt Fld Contactor Cutout Switch	07	B13
GF - Alt Fld Contactor Position Sensor	07	C13
GFIP - Ground Fault Interupt Panel	02	B12
GFM - AFSE Gate Firing Module	02	C2
GFR - Alt Fld Relay Coil	07	C12
GFR - Alt Fld Relay Contacts	02	B3
GFR - Alt Fld Relay Contacts	07	C3
GFR - Alt Fld Relay Postion Sensor	07	C11
GNDB1 - Ground Block 1	02	C12
GNDB1 - Ground Block 1	07	D4
GNDB2 - Ground Block 2	03	B2
GNDB3 - Ground Block 3	04	F14
GNDB4 - Ground Block 4	02	B16
GNDB5 - Ground Block 5	02	C16
Grade Sensor	08	A8
GRR - Ground Reference Resistor Panel	02	B12
Heater blower motor	10	B16
Heater hot water solenoid	10	B15
Hoist Limit Solenoid	10	B3
Horn	10	E4
Horns, Backup	09	C17
Hourmeter	06	D4
Hydraulic Fluid Level Sensor	10	B1
Hydraulic Fluid Temperature Sensor	08	A6
Indicator, Circuit Breaker Tripped	10	F12
Indicator, Engine Cautiion (AMBER)	09	C12
Indicator, Engine Warning (RED)	09	C12
Indicator, Hydraulic Filter Restricted	10	A3
Indicator, Hydraulic Fluid Overtemp	09	C13
Indicator, Left Turn Signal	10	A13
Indicator, Link Energized	08	D8
Indicator, Link Energized	09	C13
Indicator, Low Accumulator Precharge	10	B3
Indicator, Low Brake Pressure	10	C3
Indicator, Low Fuel Level	10	D7
Indicator, Low Hydraulic Level	10	B3
Indicator, Low Steering Pressure	10	C3
Indicator, Manual Backup Lights	09	D16
Indicator, No Propulsion	09	C8
Indicator, No Retard	09	C9
Indicator, Park Brake ON	09	A1
Indicator, Propulsion System Overtemp	09	C10
Indicator, PSC Not Ready	09	C12
Indicator, PSC System Warning	09	C10
Indicator, Reduced Propulsion	09	C12
Indicator, Retard	09	C11
Indicator, Retard Continuous Level	09	C11
Indicator, Right Turn Signal	10	A13
Indicator, Service Brakes ON	07	E2
LDBX1 - Load Box Amperage Measure	02	D9
LDBX1 - Load Box Amperage Measure	06	B17
LED, Control Power	07	C9
LED, No Acceleration Fault	07	C8
LED, Rest	07	C7
LED, System Ready (Run)	07	C8
LED, Test	07	C7
LEDP - LED panel end of electric cabinet	07	C7
Light, backup	09	D17
Light, clearance/turn, left	10	A8
Light, clearance/turn, right	10	B8
Light, deck, left	10	A6
Light, deck, right	10	B6
Light, engine service	10	C6
Light, fog	10	B6
Light, headlights bumper	10	B10
Light, headlights deck	10	C10
Light, ladder	10	A6
Light, payload meter, left	10	E7
Light, payload meter, right	10	G7
Light, retard, cab top	09	A17
Light, retard, rear	09	A-B17
Light, stop, cab top	07	G1
Light, stop, rear	07	F1
Light, stop, rear, resistor/diodes	07	F3
Lights, cabinet service	07	B-C2
Lincoln Lube Pressure Switch	10	D6
Lincoln Lube Solenoids 1 & 2	10	D7
Lincoln Lube Timer	10	D5
LINK1 - DC Link Amperage Measure	02	D10
LINK1 - DC Link Amperage Measure	06	B15
LINKV - DC Link Voltage Measure	02	B10
Modular Mining Communication Port	08	D6
Motor Cooling Airflow Sensor	08	A7
MTU ECS - MTU engine governor	05	F13
MTU ECS - MTU engine governor	06	B2
MTU ECS - MTU engine governor	07	A6
MTU ECS - MTU engine governor	09	A8
MTU ECS - MTU engine governor	09	B16
MTU Serial/Parallel Converter	06	C4
MTU Serial/Parallel Converter	09	A-B11
IZU Serial/Parallel Converter	09	B4
P305	08	E2
P329 - CNI	06	B7

COMPONENT	SHEET	LOC
P329 - CNI	06	D4
P329 - CNI	06	D8
P329 - CNI	07	E5
P367 - CNENG	03	F8
P367 - CNENG	06	A3
P367 - CNENG	06	A7
P367 - CNENG	06	E4
P367 - CNENG	07	A2
P367 - CNENG	07	E2
P399 - CNAUX	03	C3
P399 - CNAUX	08	D4
P800	06	B5
Panel light dimmer A	07	F2
Park Brake Solenoid	09	A2
Payload Meter 2	09	A8
Payload Meter 2	10	F2
Payload Meter Amber light relay	10	E6
Payload Meter data storage trigger mod	10	E5
Payload Meter Green light relay	10	F6
Payload Meter lights relay	10	F6
Payload Meter Red light relay	10	E5
PM1A+ - Phase Module Gate Driver	04	A12
PM1A+ - Phase Module Gate Driver	04	D11
PM1A+ - Phase Module phase A+ left mtr	02	D10
PM1A- - Phase Module Gate Driver	04	A13
PM1A- - Phase Module Gate Driver	04	D12
PM1A- - Phase Module phase A- left mtr	02	F10
PM1B+ - Phase Module Gate Driver	04	A13
PM1B+ - Phase Module Gate Driver	04	D13
PM1B+ - Phase Module phase B+ left mtr	02	D12
PM1B- - Phase Module Gate Driver	04	A14
PM1B- - Phase Module Gate Driver	04	D14
PM1B- - Phase Module phase B- left mtr	02	F12
PM1C+ - Phase Module Gate Driver	04	A15
PM1C+ - Phase Module Gate Driver	04	D15
PM1C+ - Phase Module phase C+ left mtr	02	D14
PM1C- - Phase Module Gate Driver	04	A16
PM1C- - Phase Module Gate Driver	04	D15
PM1C- - Phase Module phase C- left mtr	02	F14
PM2A+ - Phase Module Gate Driver	04	A2
PM2A+ - Phase Module Gate Driver	04	D1
PM2A+ - Phase Module phase A+ right mtr	02	D2
PM2A- - Phase Module Gate Driver	04	A2
PM2A- - Phase Module Gate Driver	04	D2
PM2A- - Phase Module phase A- right mtr	02	F2
PM2B+ - Phase Module Gate Driver	04	A3
PM2B+ - Phase Module Gate Driver	04	D2
PM2B+ - Phase Module phase B+ right mtr	02	D4
PM2B- - Phase Module Gate Driver	04	A4
PM2B- - Phase Module Gate Driver	04	D3
PM2B- - Phase Module phase B- right mtr	02	F4
PM2C+ - Phase Module Gate Driver	04	A5
PM2C+ - Phase Module Gate Driver	04	D4
PM2C+ - Phase Module phase C+ right mtr	02	D6
PM2C- - Phase Module Gate Driver	04	A6
PM2C- - Phase Module Gate Driver	04	D5
PM2C- - Phase Module phase C- right mtr	02	F6
PSC 104 card slot 5	02	C3
PSC 104 card slot 5	02	C5
PSC 104 Card slot 5	03	D1
PSC 104 Card slot 5	04	C5
PSC 104 Card slot 5	04	F10
PSC 104 Card slot 5	04	G2
PSC 104 Card slot 5	07	D9
PSC 104 Card slot 5	07	F9
PSC 127 Card slot 2	04	C15
PSC 127 Card slot 2	05	F3
PSC 134 Card slot 10	02	D15
PSC 134 Card slot 10	04	C8
PSC 134 Card slot 10	05	C2
PSC 134 Card slot 12	02	F7
PSC 134 Card slot 12	04	F7
PSC 134 Card slot 12	05	D2
PSC 138 Card slot 09	04	D13
PSC 138 Card slot 11	04	D2
PSC 143 Card slot 6	02	A3
PSC 143 Card slot 6	02	B11
PSC 143 Card slot 6	02	B13
PSC 143 Card slot 6	02	B5
PSC 143 Card slot 6	02	D3
PSC 143 Card slot 6	02	D8
PSC 143 Card slot 6	03	E1
PSC 143 Card slot 6	04	D8
PSC 143 Card slot 6	06	D14
PSC 143 Card slot 6	06	F13
PSC 147 Card slot 3	05	G10
PSC Fiber Optic Card	04	B14
PSC Fiber Optic Card	04	C3
R1 - Battery Boost Resistor	02	B3
R1 - Battery Boost Resistor	07	C4
R305	08	E2
R329 - CNI	06	B7
R329 - CNI	06	D4
R329 - CNI	06	D8
R329 - CNI	07	E5
R367 - CNENG	03	F8

COMPONENT	SHEET	LOC
R367 - CNENG	06	A3
R367 - CNENG	06	A7
R367 - CNENG	06	E4
R367 - CNENG	07	A2
R367 - CNENG	07	E2
R399 - CNAUX	03	C3
Radio	10	D17
Radio relay - in overhead panel	10	D16
RB1 K1 Relay (left turn signal)	10	A9
RB1 K2 Relay (right turn signal)	10	B9
RB1 K3 Relay (clearance light)	07	F4
RB1 K4 Relay (flasher)	10	A11
RB2 K1 Relay (payload green lights)	10	F6
RB2 K2 Relay (payload amber lights)	10	E6
RB2 K3 Relay (payload red lights)	10	E5
RB2 K4 Relay (payload lights)	10	F6
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COMPONENT	SHEET	LOC
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