

CEAM012100

Operation & Maintenance Manual

930E-2

DUMP TRUCK

SERIAL NUMBERS **A30300 thru A30303**

KOMATSU

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TABLE VIII. TORQUE CONVERSIONS
Foot Pounds – ft. lbs. To Newton-meters (N.m)

FT. LBS.	0	1	2	3	4	5	6	7	8	9
0	(N.m)	1.36	2.71	4.07	5.42	6.78	8.14	9.49	10.85	12.20
10	13.56	14.91	16.27	17.63	18.98	20.34	21.69	23.05	24.40	25.76
20	27.12	28.47	29.83	31.18	32.54	33.90	35.25	36.61	37.96	39.32
30	40.67	42.03	43.39	44.74	46.10	47.45	48.81	50.17	51.52	52.87
40	54.23	55.59	56.94	58.30	59.66	60.01	62.37	63.72	65.08	66.44
50	67.79	69.15	70.50	71.86	73.21	74.57	75.93	77.28	78.64	80.00
60	81.35	82.70	84.06	85.42	86.77	88.13	89.48	90.84	92.20	93.55
70	94.91	96.26	97.62	98.97	100.33	101.69	103.04	104.40	105.75	107.11
80	108.47	109.82	111.18	112.53	113.89	115.24	116.60	117.96	119.31	120.67
90	122.03	123.38	124.74	126.09	127.45	128.80	130.16	131.51	132.87	134.23

See NOTE on page 12-5 regarding table usage

TABLE IX. TORQUE CONVERSIONS
Foot Pounds – ft. lbs. To kilogram-meters (kg.m)

FT. LBS.	0	1	2	3	4	5	6	7	8	9
0	(kg.m)	0.138	0.277	0.415	0.553	0.692	0.830	0.968	1.106	1.245
10	1.38	1.52	1.66	1.80	1.94	2.07	2.21	2.35	2.49	2.63
20	2.77	2.90	3.04	3.18	3.32	3.46	3.60	3.73	3.87	4.01
30	4.15	4.29	4.43	4.56	4.70	4.84	4.98	5.12	5.26	5.39
40	5.53	5.67	5.81	5.95	6.09	6.22	6.36	6.50	6.64	6.78
50	6.92	7.05	7.19	7.33	7.47	7.61	7.74	7.88	8.02	8.16
60	8.30	8.44	8.57	8.71	8.85	8.99	9.13	9.27	9.40	9.54
70	9.68	9.82	9.96	10.10	10.23	10.37	10.51	10.65	10.79	10.93
80	11.06	11.20	11.34	11.48	11.62	11.76	11.89	12.03	12.17	12.30
90	12.45	12.59	12.72	12.86	13.00	13.14	13.28	13.42	13.55	13.69

See NOTE on page 12-5 regarding table usage

TABLE X. PRESSURE CONVERSIONS
Pounds/square inch (psi) To Kilopascals (kPa)
Formula: psi x 6.895 = kPa

PSI	0	1	2	3	4	5	6	7	8	9
0	(kPa)	6.895	13.79	20.68	27.58	34.47	41.37	48.26	55.16	62.05
10	68.95	75.84	82.74	89.63	96.53	103.42	110.32	117.21	124.1	131.0
20	137.9	144.8	151.7	158.6	165.5	172.4	179.3	186.2	193.1	200.0
30	206.8	213.7	220.6	227.5	234.4	241.3	248.2	255.1	262.0	268.9
40	275.8	282.7	289.6	296.5	303.4	310.3	317.2	324.1	331.0	337.9
50	344.7	351.6	358.5	365.4	372.3	379.2	386.1	393.0	399.9	406.8
60	413.7	420.6	427.5	434.4	441.3	448.2	455.1	462.0	468.9	475.8
70	482.6	489.5	496.4	503.3	510.2	517.1	524.0	530.9	537.8	544.7
80	551.6	558.5	565.4	572.3	579.2	586.1	593.0	599.9	606.8	613.7
90	620.5	627.4	634.3	641.2	648.1	655.0	661.9	668.8	675.7	682.6

See NOTE on page 12-5 regarding table usage

Traveling On Slopes

- Traveling on slopes could result in the machine tipping over or slipping.
- Do not change direction on slopes. To ensure safety, drive to level ground before turning.
- Do not travel up and down on grass, fallen leaves, or wet steel plates. These materials may make the machine slip on even the slightest slope. Avoid traveling sideways, and always keep travel speed low.
- When traveling downhill, use the retarder to reduce speed. Do not turn the steering wheel suddenly. Do not use the foot brake except in an emergency.
- If the engine should stop on a slope, apply the service brakes fully and stop the machine. Apply the parking brake after the machine has stopped.

Ensure Good Visibility

- When working in dark places, install work lamps and head lamps. Set up extra lighting in the work area if necessary.
- **Discontinue operations if visibility is poor, such as in mist, snow, or rain. Wait for the weather to improve to allow the operation to be performed safely.**

Operate Carefully On Snow

- When working on snowy or icy roads, there is danger that the machine may slip to the side on even the slightest slope. Always travel slowly and avoid sudden starting, turning, or stopping in these conditions.
- Be extremely careful when clearing snow. The road shoulder and other objects are buried in the snow and cannot be seen. When traveling on snow-covered roads, always install tire chains.

Avoid Damage To Dump Body

- When working in tunnels, on bridges, under electric cables, or when entering a parking place or any other place where there are height limits; always use extreme caution. The dump body must be completely lowered before driving the machine.

Driving Near High Voltage Cables

- Driving near high-voltage cables can cause electric shock. Always maintain safe distances between the machine and the electric cable as listed below.

Voltage	Minimum Safety Distance	
6.6 kV	3 m	10 ft.
33.0 kV	4 m	14 ft.
66.0 kV	5 m	17 ft.
154.0 kV	8 m	27 ft.
275.0 kV	10 m	33 ft.

The following actions are effective in preventing accidents while working near high voltages:

- Wear shoes with rubber or leather soles.
- Use a signalman to give warning if the machine approaches an electric cable.
- If the work equipment should touch an electric cable, the operator should not leave the cab.
- When performing operations near high voltage cables, do not allow anyone to approach the machine.
- Check with the electrical maintenance department about the voltage of the cables before starting operations.

SPECIAL PRECAUTIONS FOR WORKING ON A 930E TRUCK

Preliminary Procedures Before Welding or Performing Maintenance

Prior to welding and/or repairing a 930E dump truck, maintenance personnel should attempt to notify a Komatsu service representative. Only qualified personnel, specifically trained for servicing the AC Drive System, should perform this service.

If it is necessary to perform welding or repair to the truck without the field engineer present, the following procedures should be followed to ensure that the truck is safe for maintenance personnel to work on and to reduce the chance for damage to equipment.



ANYTIME THE ENGINE IS RUNNING:

- Do not open any of the cabinet doors or remove any covers.
- Do not use any of the power cables for hand holds or foot steps.
- Do not touch the retarder grid elements.

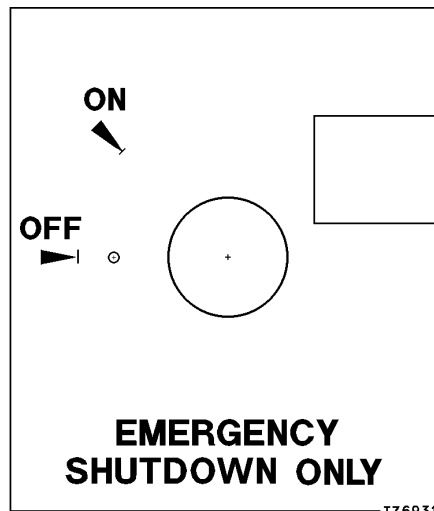


Before opening any cabinets or touching a grid element or a power cable, the engine must be shutdown and the red drive system warning lights must not be illuminated.

Normal Engine Shutdown Procedure

1. Stop the truck out of the way of other traffic on a level surface (dry, if possible) and free of overhead power lines or other obstructions (in case dump body should need to be raised).
 - a. Reduce engine speed to idle. Allow the engine to cool gradually by running at low idle for approx. 5 minutes.
 - b. Place the directional selector switch in NEUTRAL.
 - c. Apply the parking brake switch. Be sure the "parking brake applied" indicator light in the overhead display panel is illuminated.
2. Place rest switch in ON position to put AC drive system in "rest" mode of operation. Be sure the "rest" indicator light in the overhead panel is illuminated.
3. With engine cooled down, turn keyswitch counterclockwise to OFF position for normal shutdown of engine. If the engine does not shutdown with keyswitch, use engine shutdown switch on operator cab center console, and hold this switch down until engine stops.
4. With keyswitch OFF, and engine stopped, wait at least 90 seconds. Insure the steering circuit is completely bled down by turning the steering wheel back and forth several times. No front wheel movement will occur when hydraulic pressure is relieved. If the vehicle continues to steer after shutdown, notify maintenance personnel.
5. Verify that all the link voltage lights are off (one on back wall of operator cab, and two on deck control cabinets). Notify maintenance personnel if any light remains illuminated longer than five minutes after engine shutdown.
6. Close and lock all windows, remove key from keyswitch, and lock the cab to prevent possible unauthorized truck operation. Dismount the truck properly. Put wheel chocks in place.

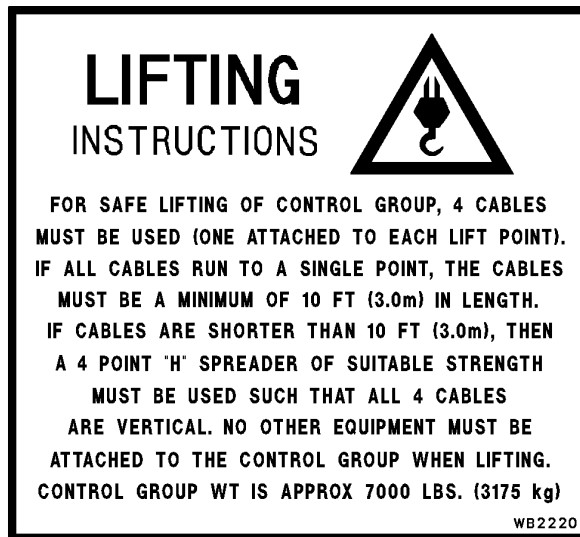
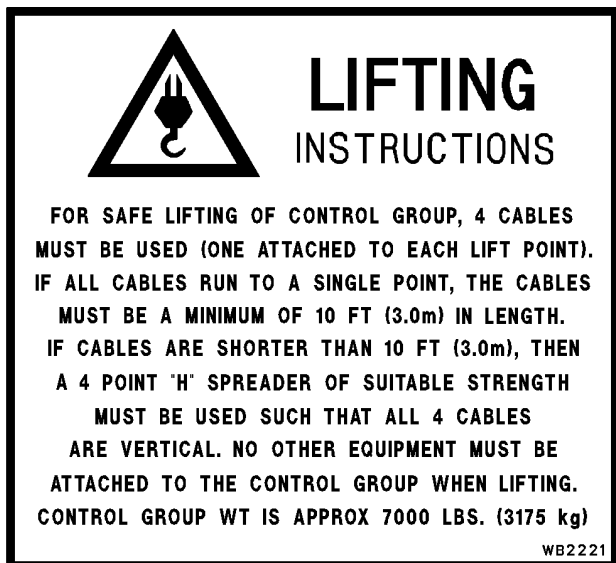
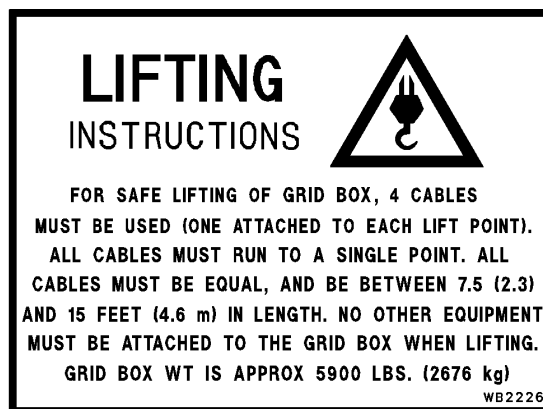
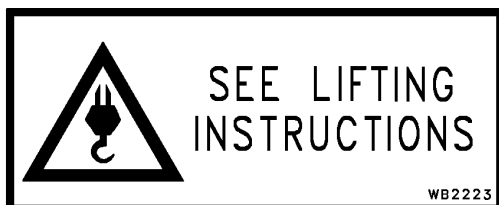
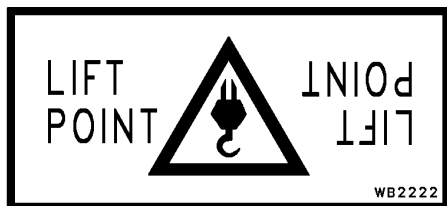
This decal is placed on the ground level engine shutdown switch which is mounted on the right side of the front bumper structure. It specifies that this switch is for emergency shutdown only.



This page illustrates a variety of decals which are mounted on deck mounted cabinets, housings, and structures which must be lifted in a specific manner, and from specific points, in order to safely move or lift any of these structures.

If any of these decals are damaged or defaced, so that it is no longer legible, it should be replaced immediately.

Maintenance personnel must follow these lifting instructions.



DUMPING

Raising The Dump Body

1. Pull into dump area with extreme caution. Make sure area is clear of persons and obstructions, including overhead utility lines. Obey signals directed by the spotter, if present.

Avoid unstable areas. Stay a safe distance from edge of dump area.

Position the truck on a solid, level surface before dumping.



As the body raises, the truck center of gravity will move. Truck must be on level surface to prevent tipping / rolling!

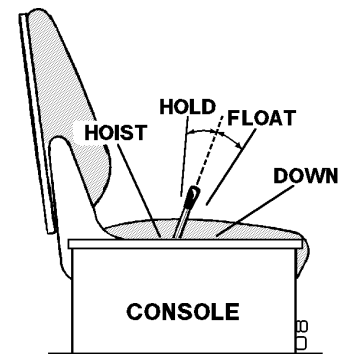
2. Carefully maneuver truck into dump position. When backing truck into dump position, use only the foot-operated brake pedal to stop and hold truck; Do not rely on wheel brake lock to stop truck; this control is not modulated and applies **rear service brakes only**.
3. When truck is stopped and in dump position, apply wheel brake lock and move the selector switch to the NEUTRAL position.



The dumping of very large rocks (10% of payload, or greater) or sticky material (loads that do not flow freely from the body) may allow the material to move too fast and cause the body to move rapidly and suddenly. This sudden movement may jolt the truck violently and cause possible

injury to the operator, and/or damage to the hoist cylinders, frame, and/or body hinge pins. If it is necessary to dump this kind of material, refer to the WARNING in the following procedure:

4. Pull the lever to the rear to actuate hoist circuit. (Releasing the lever anywhere during "hoist up" will hold the body at that position.)
5. Raise engine rpm to accelerate hoist speed. Refer to the CAUTION below.



If dumping very large rocks or sticky material as described in WARNING above, slowly accelerate engine rpm to raise body. When the material starts to move, release hoist lever to HOLD position. If material does not continue moving and clear body, repeat this procedure until material has cleared body.

6. Reduce engine rpm as last stage of hoist cylinder begins to extend and let engine go to low idle as last stage reaches half-extension.
7. Release hoist lever as last stage of hoist cylinder reaches full extension.
8. After material being dumped clears body, lower body to frame.

Lowering The Dump Body

(When dumping on flat ground):

It is very likely when dumping on flat ground that the dumped material will build up enough to prevent the body from lowering. In this case, the truck will have to be driven forward a short distance (just enough to clear the material) before the body can be lowered.

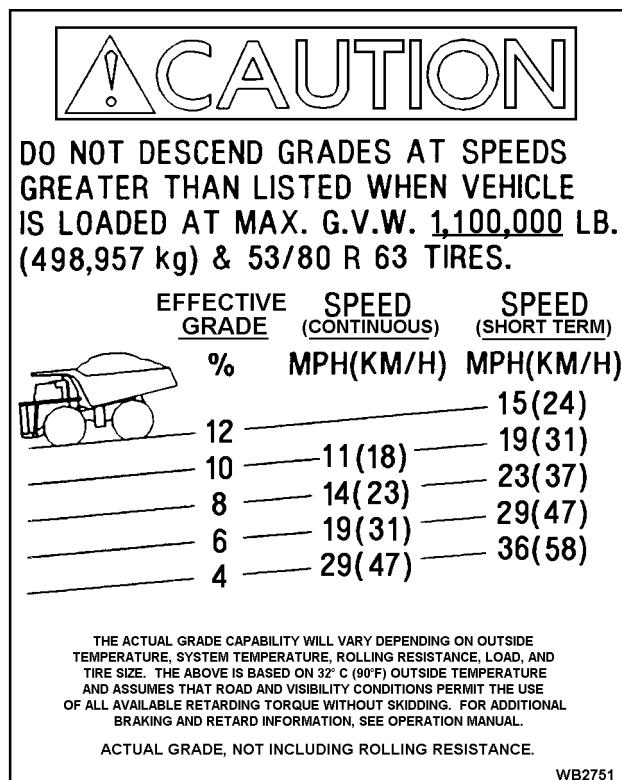
1. Shift selector switch to FORWARD, release brake lock, depress override button and drive just far enough forward for body to clear material. Stop, shift selector switch to NEUTRAL, and apply brake lock.
2. Move hoist lever forward to DOWN position and release. Releasing the lever places hoist control valve in the FLOAT position allowing the body to return to frame.

GRADE/SPEED RETARD CHART

Grade/speed retard chart (8, Figure 32-1 & shown below) provides the recommended **MAXIMUM** retarding limits at various truck speeds and grades with a fully loaded truck.

This decal in the truck may differ from the decal below due to optional truck equipment such as: wheel motor drive train ratios, retarder grids, tire sizes, etc. **Always refer to this decal in the operator's cab**, and follow these recommendations for truck operation.

The operator should reference this chart before descending any grade with a loaded truck. Proper use of dynamic retarding will maintain a safe speed.



Two speed lists are provided, one for continuous retarding, and the second, for short term (approx. 3-minute) retarding. Both lists are matched to the truck at maximum Gross Vehicle Weight (GVW). The two ratings are guidelines for proper usage of the retard function on downhill grades.

The "short term" numbers listed on the chart indicate the combination of speeds and grades which the vehicle can safely negotiate for a short duration before system components reach the maximum allowable temperature during retarding. These speeds are faster than the "continuous" values, reflecting the thermal capacity of various system components. System components can accept heating at a higher-than-continuous rate for a short period of time. Beyond this short duration of time, the system would become overheated.

If the vehicle is operated at "short term" grade and speed limits for a period of time exceeding thermal capacity, the Propulsion System Controller (PSC) gradually reduces retarding effort from "short term" to "continuous". The "retard @ continuous" indicator light will illuminate alerting the operator of the retarding reduction and the need for a reduction in speed. The operator must use the service brakes to **quickly** slow the truck to maximum "continuous" retarding limits or less.



Do Not LIGHTLY apply the service brakes when attempting to slow the truck on a downhill grade. Overheating of the brakes will result. Fully apply the brakes (within safe limits for road conditions) in order to quickly slow the truck to maximum "continuous" retarding limits or less.

NOTE: The "three minute" curve is a minimum and the actual time limit could be greater. Ambient temperature, barometric pressure and recent motor power levels can affect this number.

The "short term" rating will successfully accommodate most downhill loaded hauls. It is necessary to divide haul road grade segment length by allowable speed to determine actual time on grade. If actual time on the grade exceeds the allowable limits, the grade will need to be negotiated at the "continuous" speed.

The "continuous" numbers on the chart indicate the combination of speeds and grades which the vehicle can safely negotiate for unlimited time or distance during retarding.

DO NOT exceed these recommended MAXIMUM speeds when descending grades with a loaded truck.

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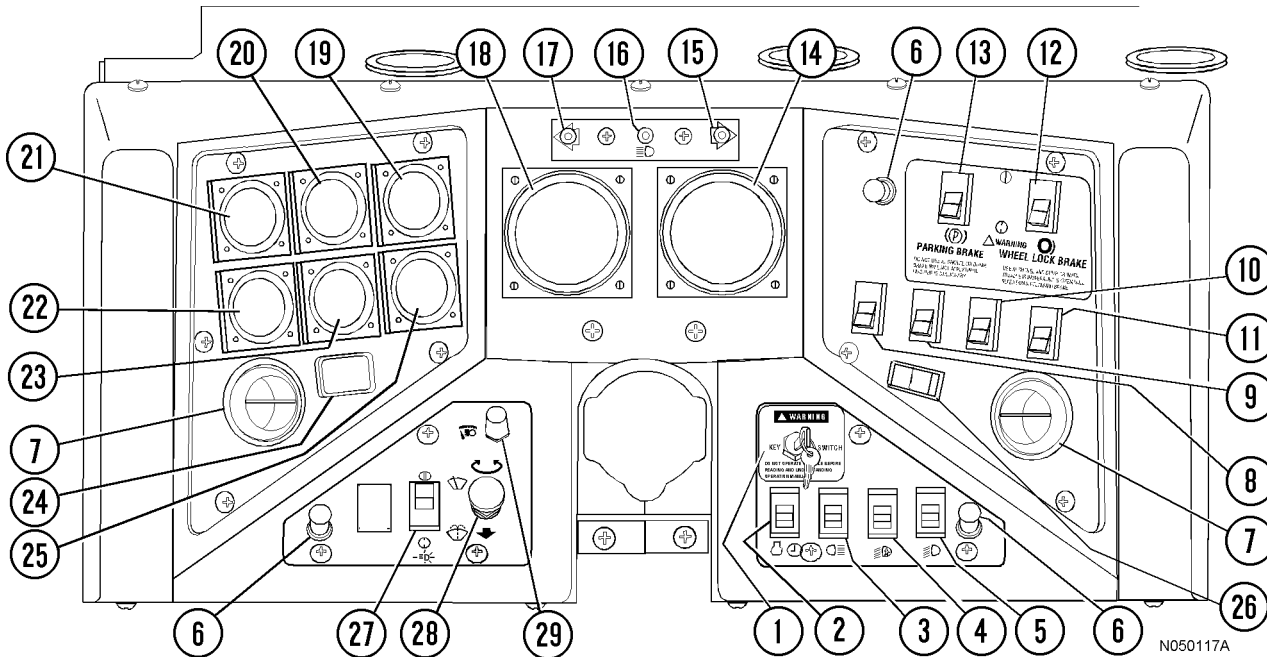


FIGURE 32-7. PANEL GAUGES, INDICATORS, AND CONTROLS

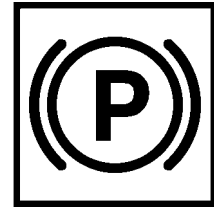
- | | |
|--|---|
| 1. Keyswitch | 15. Right Turn Signal Indicator Light |
| 2. Engine Shutdown Switch with Timer Delay | 16. High Beam Headlight Indicator Light |
| 3. Backup Light Switch (N./O.) | 17. Left Turn Signal Indicator Light |
| 4. Ladder Light Switch (3 - Way) | 18. Digital Speedometer |
| 5. Fog Light Switch (N./O.) | 19. Voltmeter Gauge |
| 6. Panel Illumination Light(s) | 20. Engine Oil Pressure Gauge |
| 7. Vent(s) - Cab Air Conditioner/Heater | 21. Engine Water Temperature Gauge |
| 8. Not used on 930E | 22. Fuel Gauge |
| 9. Rotating Beacon Light Switch (N./O.) (Optional) | 23. AC Drive System Temperature |
| 10. Heated Mirror Switch (N./O.) (Optional) | 24. Engine Hourmeter |
| 11. Not used on 930E | 25. Hydraulic/Brake Oil Temperature |
| 12. Wheel Brake Lock Switch (N./O.) | 26. AC Rest Switch |
| 13. Parking Brake Switch (N./O.) | 27. Headlights Switch (N./O.) |
| 14. Digital Tachometer | 28. Wiper / Washer Switch |
| | 29. Panel Illumination Lights Dimmer Rheostat |

WIRE NUMBERS

- | | | |
|-----------------------------------|------------------------------------|---|
| 1. 712/21PB/11S | 11. 71/79M/SPR55/79H/72F/
SPR54 | 21. 712D/31TS/710/49 |
| 2. 11S/11TD/11R | 12. 712BL/52B/39H/710/SPR59 | 22. 712D/38G/710/49 |
| 3. 712/47S/47L/710 | 13. 71/52C/21PB/21 | 23. 15V/72MT/49/710 |
| 4. 11L/48A/48B | 14. 41TS/74X/74Z/710 | 24. 11L/36 |
| 5. 11L/48F | 15. 45R/710 | 25. 15V/34BT/710/49 |
| 6. 49/710 | 16. 41H/710 | 26. 710/72RQ |
| 7. N/A | 17. 45L/710 | 27. 11D/41L/41TS |
| 8. 712/28E | 18. 41TS/77/77A/710 | 28. High 66S/Low 66L/710/66P
Park/712W / Washer 66 |
| 9. 11L/11RB | 19. 712D/710/49 | 29. 49/41TS |
| 10. 712/69M/SPR56/SPR57/
SPR58 | 20. 712D/31PS/710/49 | |

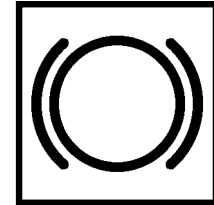
A3. Parking Brake

This amber parking brake indicator will illuminate when the parking brake is applied. Do not attempt to drive truck with parking brake applied.



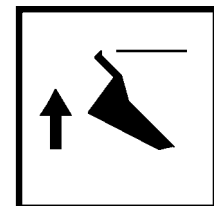
B3. Service Brake

This amber service brake indicator light will illuminate when the service brake pedal is applied or when wheel brake lock or emergency brake is applied. Do not attempt to drive the truck from stopped position with service brakes applied, except as noted in Section 30, Operating Instructions - Starting On A Grade With A Loaded Truck.



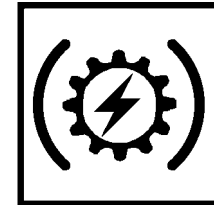
C3. Body Up

This amber body up indicator, when illuminated, shows that the body is not completely down on the frame. The truck should not be driven until body is down and the light is off.



D3. Dynamic Retarding

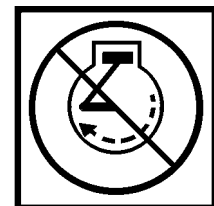
This amber dynamic retarding indicator light illuminates whenever the retarder pedal (or retarder lever) is operated, RSC (Retarder Speed Control) is activated, or the automatic over-speed retarding circuit is energized, indicating the dynamic retarding function of the truck is operating.



E3. Stop Engine

This red engine monitor warning light will illuminate if a serious engine malfunction is detected in the electronic engine control system.

- Electric propulsion to the wheelmotors will be discontinued.
- Dynamic retarding will still be available if needed to slow or stop the truck.



Stop the truck as quickly as possible in a safe area and apply parking brake.

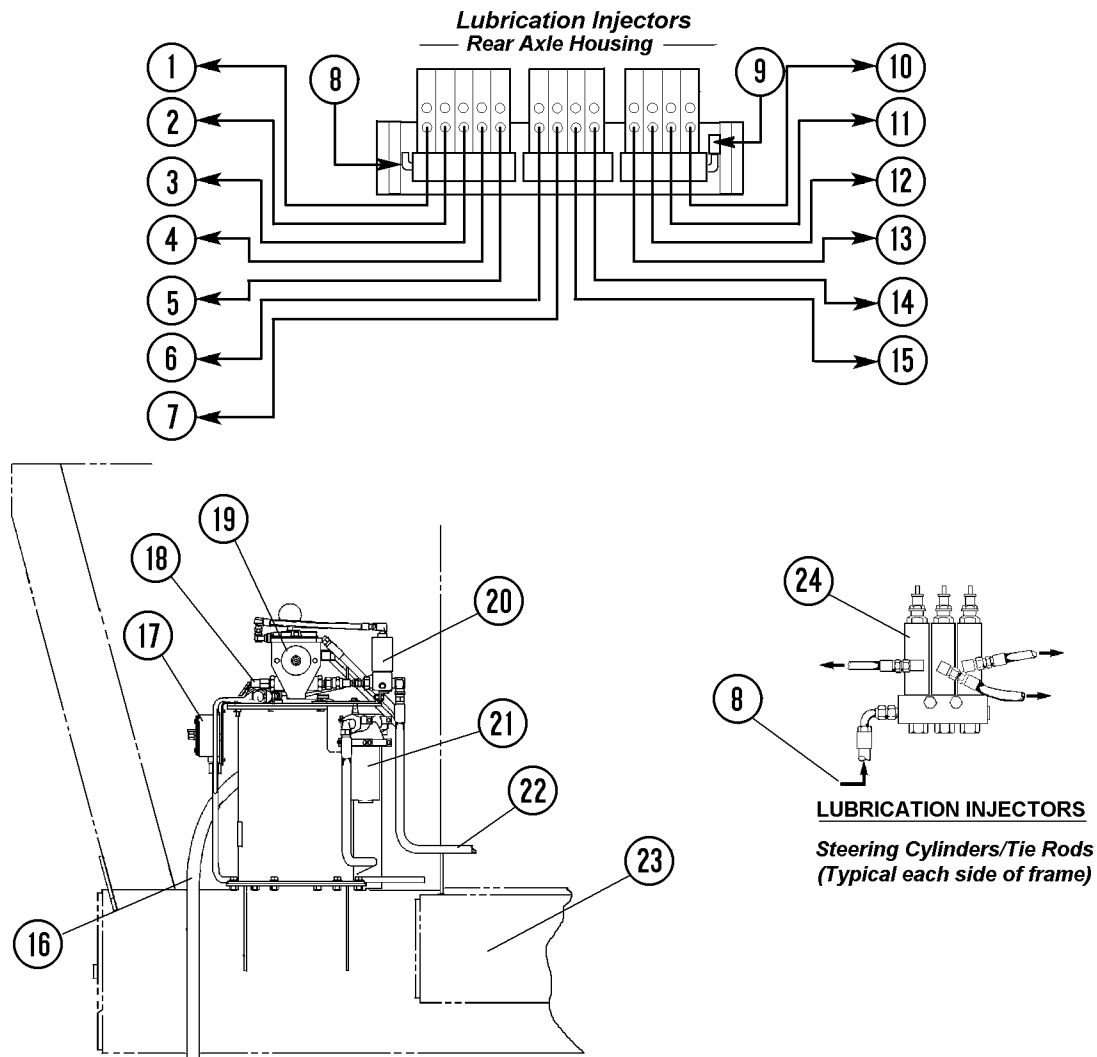
SHUT DOWN THE ENGINE IMMEDIATELY. Additional engine damage is likely to occur if operation is continued.

Listed below are a few conditions that could cause the stop engine light to illuminate:

- Low Oil Pressure - red warning light will illuminate, but engine does not shutdown.
- Low Coolant Level - red warning light will illuminate, but engine does not shutdown.
- Low Coolant Pressure - red warning light will illuminate, but engine does not shutdown.
- High Coolant Temperature - red warning light will illuminate, but engine does not shutdown.

10 HOUR (DAILY) INSPECTION (Continued)

Truck Serial Number _____ Site Unit Number _____ Date _____ Hourmeter _____ Name of Service Technician _____				
	TASK	COMMENTS	CHECKED	INITIALS
13.	FUEL FILTERS (Fuel Separators) - Drain water from the bottom drain valve on each fuel separator.			
14.	AUTOMATIC LUBE SYSTEM - <ul style="list-style-type: none"> • Check the grease reservoir; fill as required. Lube Key "D". • When filling the reservoir, check the grease filter indicator. Clean or replace the grease filter if the indicator detects a problem. • Inspect the system and check for proper operation. Be certain the following important areas are receiving adequate amounts of grease. Lube Key "D". Steering Linkage Final Drive Pivot Pin - Rear Suspension Pin Joints - Upper & Lower Body Hinge Pins - Hoist Cylinders Pins - Upper & Lower Anti-sway Bar - Both Ends			



P030024

FIGURE 42-2. AUTO LUBE SYSTEM INSTALLATION

NOTE: The above illustration shows the standard location for the lube pump & reservoir (right platform). This assembly may be located on left platform on some models.

- | | |
|---|--|
| 1. L.H. Suspension, Top Bearing | 13. R.H. Hoist Cylinder, Top Bearing |
| 2. L.H. Suspension, Bottom Bearing | 14. R.H. Hoist Cylinder, Bottom Bearing |
| 3. L.H. Body Pivot Pin | 15. R.H. Anti-Sway Bar Bearing |
| 4. L.H. Hoist Cylinder, Top Bearing | 16. Vent Hose |
| 5. L.H. Hoist Cylinder, Bottom Bearing | 17. Junction Box |
| 6. L.H. Anti-Sway Bar Bearing | 18. Pressure Switch, N.O., 2500 psi (17 237 kPa) |
| 7. Rear Axle Pivot Pin | 19. Grease Pump |
| 8. Grease Supply From Pump | 20. Vent Valve |
| 9. Pressure Switch, N.O., 2000 psi (13 789 kPa) | 21. Filter |
| 10. R.H. Suspension, Top Bearing | 22. Grease Supply to Injectors |
| 11. R.H. Suspension, Bottom Bearing | 23. Truck Frame |
| 12. R.H. Body Pivot Pin | 24. Injector |

POSSIBLE CAUSES

SUGGESTED CORRECTIVE ACTION

TROUBLE: Pressure Gauge Does Not Register Pressure

No system pressure to the pump motor.
No 24 VDC signal at pump solenoid.
Pressure reducing valve set too low.
Relay (RB7K5) may be defective.

Check hydraulic hose from steering system.
Determine problem in 24 VDC electric system.
Refer to Pressure Control Valve Adjustment.
Replace relay.

TROUBLE: Pump Pressure Builds Very Slowly Or Not At All

No signal at RB7K5 relay.
Pressure switch may be defective.
Pressure reducing valve may be set too low.
Grease viscosity may be too high for temperature at which pump is operating.
Pump inlet check or outlet check may have foreign matter trapped causing leakage.

Lubricant supply line leaks or is broken.
Insufficient hydraulic oil supply.

Check Timer and CB7.
Replace pressure switch.
Refer to Pressure Control Valve Adjustment.
Replace grease with a lower viscosity lubricant.

Remove, inspect and clean, if necessary. Inspect sealing surfaces between checks. Replace if rough or pitted.

Repair lubricant supply line .
Check oil pressure and flow to motor.

TROUBLE: Lube Cycle Timer Not Operating

Timer BAT (-) connection is not on grounded member.
Timer BAT (+) connection not on circuit continuously connected to BAT (+) terminal during operation of vehicle.
Loose wire connections at any of the timer terminals.

Connect to good ground.

Establish direct connection between Timer BAT (+) connection and 24 V BAT (+) terminal.

Secure wire connections.

TROUBLE: Timer Stays Timed Out

Commutation failure in timer caused by damaged component.
Output relay contacts welded shut caused by extended short to ground.
Solenoid valve connected to "IGN" terminal of timer instead of terminal marked "SOL".

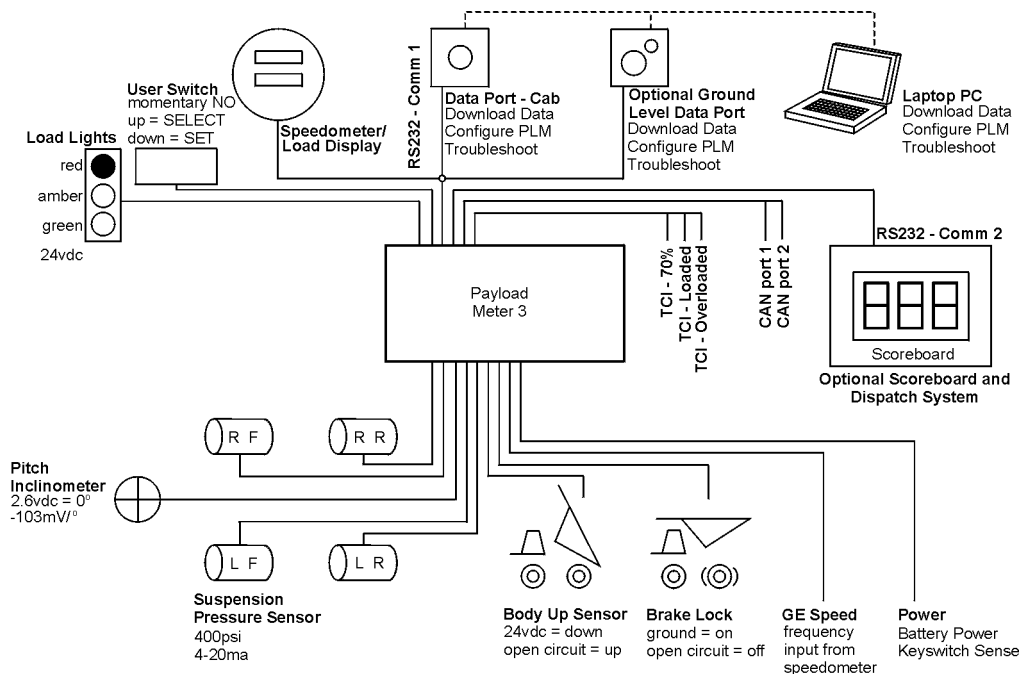
Replace Timer.

Replace Timer.

Correct wiring hook-up.

COMPONENT DESCRIPTION

System Diagram



70422

Suspension Pressure Sensors

PLMIII uses a two-wire pressure sensor. The range for the pressure sensor is 4000 psi (281 kg/cm²) and the overload limit is 10,000 psi (700 kg/cm²). One wire to the sensor is the supply voltage and the other is the signal. The 0-4000 psi range is converted into an electrical current between 4-20 ma. The supply voltage for the sensor is nominally +18vdc. Each pressure sensor has a 90" length of cable that is terminated with #10 ring terminals. The cable is specially shielded and reinforced to provide mechanical strength and electronic noise immunity. A typical part number for the pressure sensor is PC0328.

Inclinometer

The inclinometer is used to increase the accuracy of load calculations on an incline. The inclinometer uses three wires. For the sensor, red is the +18vdc supply voltage, black is ground and the white is the signal. The incline signal is a voltage between 1 and 4 volts. Zero degrees of incline is represented by 2.6vdc on the signal line. The voltage signal will be decreased by 0.103vdc for every degree of nose up incline. A typical part number for the inclinometer assembly is 7861-92-5330.

Operator Display

The speedometer/display gauge is used as a speedometer and payload display. The top display is used for speed and can display metric (km/h) or English (mph) units. Grounding terminal #4 on the back of the speedometer will switch the meter to display metric units. Leaving terminal #4 unconnected will cause the gauge to display English units. The speedometer can be adjusted using a calibration potentiometer in the back just like existing speedometers.

The payload meter uses the lower display for payload information. The normal display mode shows the current payload. The display can be changed to show the load and total tons counter or the Operator ID. Using the operator switch on the dash panel, the current suspension pressures and incline can be displayed. The units for display are set using the PC software. Payloads can be displayed in Short Tons, Long Tons or Metric Tons. A typical part number for this gauge is the PC0550.

Haul Cycle Warning Flags

The payload meter expects haul cycles to progress in a particular way. When something unexpected takes place, the system records a warning flag. Several events within the haul cycle can cause a warning flag to be generated. Each one indicates an unusual occurrence during the haul cycle. They do not necessarily indicate a problem with the payload meter or payload calculation.

A: Continuous Loading

This message is generated when the truck is loaded over 50% full without the payload meter sensing swingloads. This indicates that a continuous loading operation was used to load the truck. It may also indicate that the payload meter did not receive the Brake Lock input while the truck was being loaded. There may be a problem with the wiring or the Brake Lock was not used. The payload meter will not measure swingloads unless the Brake Lock is used during the loading process.

B: Loading to Dumping Transition

This message is generated when the payload meter senses a body up input during the loading process. This message is usually accompanied by a `no_final_load` flag.

C: No Final Load

This message is generated when the payload meter is unable to determine the final payload in the truck. Typically, this means that the payload meter switched from a loaded state to the dumping state before the load could be accurately measured.

D: Maneuvering to Dumping Transition

This message is generated when the payload meter senses a Body-Up input during the maneuvering or repositioning process indicating that the operator has dumped the load. It may also be generated if the Body-Up signal is not properly reaching the payload meter and the weight in the truck falls dramatically while the truck is maneuvering or repositioning.

E: Average Load or Tare Used

This message indicates that the recorded payload may not be as accurate as a typical final load calculation. Typically, this is recorded when loading begins before an accurate tare is calculated or the load is dumped before the load can be accurately measured.

F: Final Zone to Dumping Transition

This message is generated when the payload meter senses a Body-Up while it is calculating the final payload indicating that the operator has dumped the load. It may also be generated if the Body-Up signal is not properly reaching the payload meter and the weight in the truck falls dramatically while the truck is calculating the final payload.

H: False Body Up

This message indicates that the body was raised during the haul cycle without the load being dumped. The Body-Up signal indicated that the truck was dumping, but the weight of the truck did not fall below 20% of the rated load.

I: Body Up Signal Failed

This message indicates that the load was dumped without a Body-Up signal being received by the payload meter. The weight of the truck fell below 20%, but the payload meter did not receive a Body-Up signal from the sensor.

J: Speed Sensor Failed

This message indicates that the payload meter sensed the truck loading and dumping without receiving a speed signal.

K: New Tare Not Calculated

The payload meter was not able to accurately calculate a new empty sprung weight for the truck to use as the tare value for the haul cycle. The tare value from the last haul cycle was used to calculate payload.

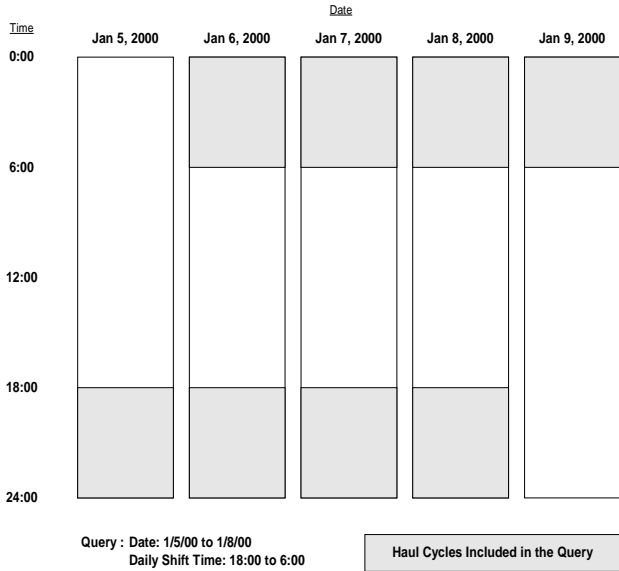
L: Incomplete Haul Cycle

The payload meter did not have proper data to start the haul cycle with after powering up. When the PLMIII powers off, it records the data from the haul cycle in progress into memory. This flag indicates that this data was not recorded the last time the payload meter was shut down. This can happen when the main battery disconnect is used to shut the truck down instead of the keyswitch. A haul cycle with this warning flag should not be considered accurate. Haul cycles with this warning are displayed in red on the Payload Summary window and are not included in the summary statistics for reports or display.

Creating Reports

Reports can be generated and viewed on the screen or printed. These reports are generated from the query displayed on the Payload Summary Screen. From the example in "Sorting on Time Range", the report printed would only contain data from truck 374 during the month of July 2000, from 8:00 AM to 5:00 PM.

It is important to carefully select the query data and press the "Query Database & Display" button before printing a report.



Payload Detail Screen

The Payload Detail screen gives the details for any individual haul cycle. From the "Payload Summary" screen, double-click on any haul cycle to display the detail.

PAYLOAD (Short tons)		CYCLE TIMES (Min:Sec)		START TIME (hh:mm:ss)	
Truck ID	374	Load Time	2:26	Payload Start Time	12:26:19
Operator ID	4200	Haul Time	12:03	Load Start Time	12:33:12
Payload Start Date	11/06/2000	Haul Stop Time	0:31	Dump Start Time	12:48:10
Dump Date	11/06/2000	Dump Time	0:49	CYCLE DISTANCE (m)	
Carry Back	-0.77	Return Time	5:42	Haul Distance	1.76
Swingloads	5	Return Stop Time	1:23	Return Distance	1.68
Final Payload	317	Total Operating Time	22:54	Total Distance	3.44
Payload Est @ Shovel	322			SPRUNG LOAD and TIRE TON MPH (hh:mm:ss)	
Peak Sprung Load	562.40 (Short Tons)	12:35:59	SPEEDS (mph)		
Left Front Tire	460.97 (Tire Short Ton MPH)	LOADED TIME			
Right Front Tire	507.54 (Tire Short Ton MPH)	Max Speed 25.02 12:44:50			
Rear Tire	374.66 (Tire Short Ton MPH)	Avg Speed 8.43			
			EMPTY TIME		
			Max Speed 28.03 12:27:20		
			Avg Speed 14.21		

Buttons: ? Help, Warning Flags, Close

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