Operation & Maintenance Manual

DG716



530M

DUMP TRUCK

SERIAL SUFFIX AFP49
A30003 and up

KOMATSU®

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STANDARD TABLES

This manual provides dual dimensioning for many specifications. Metric units are specified first, with U.S. standard units in parentheses. References throughout the manual to standard torques or other standard values will be to one of the following Tables.

For values not shown in any of the charts or tables, standard conversion factors for most commonly used measurements are provided in TABLES I and .

NOTE: Portions of this truck may be assembled with SAE (U.S.) hardware.
BE SURE TO REFER TO THE CORRECT TABLE!

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TABLE I – COMMON CONVERSIONS METRIC -to- ENGLISH

TO CONVERT FROM	TO	MULTIPLY BY
millimeter (mm)	inch – in.	0.0394
centimeter (cm)	inch – in.	0.3937
meter (m)	foot – ft.	3.2808
meter (m)	yard – yd.	1.0936
kilometer (km)	mile – mi.	0.6210
sq. centimeters (cm^2)	sq. in. – $in.^2$	0.1550
sq. centimeters (cm^2)	sq. ft. – $ft.^2$	0.001
cu. centimeters (cm^3)	cu. in. – in.3	0.061
liters (l)	cu. in. – $in.^3$	61.02
cu. meters (m^3)	cu. ft. – $ft.^3$	35.314
liters (l)	cu. ft. – $ft.^3$	0.0353
grams (g)	ounce – oz.	0.0353
milliliter (ml)	fluid ounce – fl. oz.	0.0338
kilogram (kg)	pound (mass)	2.2046
Newton (N)	pound (force) – lbs.	0.2248
Newton.meters (N.m)	kilogram.meters (kg.m)	0.102
Newton.meters (N.m)	ft. lbs. (force)	0.7376
kilogram.meters (kg.m)	ft. lbs. (force)	7.2329
kilogram.meters (kg.m)	Newton.meters (N.m)	9.807
kilopascals (kPa)	psi (pressure)	0.1450
megapascals (MPa)	psi (pressure)	145.038
kilograms/cm^2 (kg/cm^2)	psi (pressure)	14.2231
kilograms/cm^2 (kg/cm^2)	kilopascals (kPa)	9.8068
kilogram (kg)	ton (short)	0.0011
metric ton	ton (short)	1.1023
liters (l)	quart – qt.	1.0567
liters (l)	gallon – gal.	0.2642
Watts	HP (horsepower)	0.00134
kilowatts (kW)	HP (horsepower)	1.3410

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Automatic Idle Selector Switch (AISS)



The AISS Switch (4, Figure 3-7) controls the "idle" speed of the engine (released throttle pedal). With the foot-operated throttle pedal in the released position, the PMC (Powertrain Management Controller) sends a signal to the Centry™ Fuel Control System for a "low idle" RPM.

This signal may be for either:

- 750 RPM - "Normal" low idle, or
- 1000 RPM - High-Low idle;

depending on the following conditions:

1. Depressing the bottom of the switch selects the "Off/AUTO" position which is used for normal truck operations. When the AISS switch is in this position, the PMC idle signal will be determined by two conditions:
   engine coolant temperature, and
   brake application.
   a. Engine Coolant Temperature -
      If the engine coolant temperature is **below** 30°C/47°F, the PMC will signal for 1000 RPM, regardless of other conditions.
      If the engine coolant temperature is **above** 30°C/47°F, the PMC will signal for 750 RPM, except as follows:
   b. Brake Application -
      If both the parking brake and service brake are released (acceleration anticipated), the PMC will signal for 1000 RPM, regardless of other conditions.
2. Depressing the top of the switch selects the "On/Low" position.
   When the AISS switch is in this position, the PMC will signal for 750 RPM, regardless of other conditions. "On/Low" position is used when fine control movements are needed, such as when parking in confined spaces.

Air Conditioner & Heater Vent

The air conditioner/heater vent (5, Figure 3-7) swivels on a vertical axis to direct air toward or away from the operator. Air flow (up, down, on, off) through the vent is controlled by manually opening/closing or turning the louver.

Auto Cruise Control (OPTIONAL)

The Auto Cruise Control (6, Figure 3-7), if installed, allows the operator to electronically control the truck travel speed.

On/Off Switch

This Switch (7, Figure 3-7) selects the On/Off status for the Auto Cruise Control feature.

Turning the switch clockwise to the vertical position turns the switch "On".
Turning the switch counter-clockwise to the diagonal position turns the switch "Off".

Resume/Accel Switch

The Resume/Accel Switch (8, Figure 3-7) is a green, back-lighted switch (power switch "On") that is used to resume a previously pre-selected speed, or to accelerate/increase to a higher speed. Depressing and releasing the switch will increase speed approximately 1 mph (0.62 kph) each time the switch is depressed.

Set/Coast Switch

The Set/Coast Switch (9, Figure 3-7) is a green, back-lighted switch (power switch "On") that is used to set the "Cruise" speed when a desired travel speed has been attained.

Depressing and releasing the switch will also decrease speed approximately 1 mph (0.62 kph) each time the switch is depressed.

Cancel Switch

The Cancel Switch (10, Figure 3-7) is a yellow, back-lighted switch (power switch "On") that is used to cancel any speed settings which have been previously selected.

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250 HOURS SERVICE

INITIAL 250 HOURS SERVICE

Perform the following maintenance **after** running the machine for **the first 250 hours**.
Thereafter, these services are to be accomplished at the 1000/2000 hour interval as scheduled.
Refer to pages 4-8, -9, & -10.

a. Fuel Filter, replace cartridges.

b. Transmission - change oil and filter elements.

c. Steering & Brake Oil Tank - change oil and filter elements.

d. Hoist & Brake Cooling Oil Tank - change oil and filter elements.

e. Differential Case, change oil.

f. Final Drive Case, change oil.

EVERY 250 HOURS SERVICE

1. Lubrication -
   Check automatic lube system to be sure ample grease supply is reaching pins and bearings.

   - Dump body hinge pin - 2 points.
   - Rear Suspension - 4 points.
   - Axle Supports pins - 8 points.
   - Hoist Cylinder pin - 4 points.
   - Front Suspension Assembly - 8 points.
   - Steering Cylinder pin - 4 points.
   - Steering Linkage - 5 points.
   - Drive Shafts -
     Front, 2 points; Rear, 3 points.

   Refill grease reservoir - Use lube key "D".
   (Reservoir Capacity is approximately 7.7 gal. or 60 lbs [27kg] of grease.)

2. BATTERY - Check electrolyte level and add distilled water if necessary to maintain proper level.

3. ENGINE - Refer to engine manufacture's service manual for oil recommendations and capacity.

   - change engine oil.
   - change engine lube oil filter.

Truck Serial Number _____
Site Unit Number _____
Date:_____Hour Meter_____
Serviceperson Name_____

COMMENTS	√'d	INITIALS

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SPECIFICATIONS

ENGINE

Cummins KTA-50

Number of Cylinders 16

Operating Cycle (diesel) 4-Stroke

Rated 1082 kW **(1450 SAE Brake HP)** @ 1900 RPM

Flywheel . 1027 kW **(1377 SAE HP)** @ 1900 RPM

Weight (dry) . . . . . 4932 kg **(10,873 lbs)**

TORQFLOW TRANSMISSION

Automatic Electronic Shift Control
. . . with Automatic Clutch Modulation In All Gears.

Torque Converter . . . . . 3-Element, Single-stage, Two-phase

Lockup Clutch . . . . . Wet, Double-disc, Activated in F1–F7 gears.

Transmission . . . . . 7 Forward Speeds, 1 Reverse Planetary Gear, Multiple Disc Clutch, Hydraulically Actuated, Force-lubricated

Gear	Km/h	MPH
1	10.3	**6.4**
2	13.8	**8.6**
3	18.4	**11.4**
4	23.2	**14.4**
5	31.1	**19.3**
6	42.0	**26.1**
7	58.0	**36.0**
Rev	9.4	**5.8**

FINAL DRIVE ASSEMBLY

Final Drive . . . . . Plug-in Differential with Planetary Wheel Drive

Reduction Ratios:

Bevel Set 2.647:1
Planetary Final Drive 7.235:1
Total Reduction 19.151:1

ELECTRIC SYSTEM

Batteries (series-parallel) . . . . . 4 x 12V / 220 A. Hr.

Alternator . . . . . 24 Volt, 100 Ampere Output

Lighting . . . . . 24 Volt

Starters . . . . . Two (2) - 24 Volt Electric

SERVICE CAPACITIES

	Liters	U.S. Gallons
Cummins (Includes Lube Oil Filters)	170	**(44.9)**
Cooling System	511	**(135.0)**
Fuel Tank	2120	**(560.0)**
Transmission And Torque Converter	120	**(31.7)**
Hydraulic System (Includes Retarder Cooling)	710	**(187.6)**
Differential	300	**(79.0)**
Final Drive (each planetary)	120	**(31.7)**

HYDRAULIC SYSTEM

Hydraulic Pumps (3)

Hoist (Tandem Gear)
. 805 l/min. **(213 gpm)** @ 18 960 kPa **(2,750 psi)**

Steering (Piston Pump)
221 l/min. **(58.5 gpm)** @ 18 960 kPa **(2,750 psi)**

Brakes (Tandem Gear) . . . 1512 l/min. **(400 gpm)**

Hoist Control Valve . . . . . Spool Type

Positions . . . . . Raise, Hold, Float, and Lower

Hydraulic Cylinders

Hoisting . . . . . 3-Stage Telescoping Piston

Steering . . . . . Twin - Double Acting Piston

Relief Valve Setting . . . . . 18 960 kPa **(2,750 psi)**

Filtration . . . . . In-line Replaceable Elements

Suction . . . . . Single, Full Flow, 100 Mesh

Hoist & Steering . . . . . Dual, Full Flow, In-line High Pressure. Beta 12 Rating = 200

Transmission . . . . . Dual, High Pressure

SERVICE BRAKES

Actuation: . . . . . All-Hydraulic

Front . . . . . Oil-Cooled, Multiple-Disc

Rear . . . . . Oil-Cooled, Multiple-Disc

. . Both Act as both Service and Retarder Brakes

Retarder Brakes:

Normally Applied . . . . . Manually By Operator.

Automatically Actuated . . . . . when engine speed exceeds the rated revolutions of the shift position for the transmission.

Parking Brake: . . . Spring-Applied, Oil Released
. Dry Caliper Disc Actuates On Rear Drive Shaft

Emergency Brakes:

An emergency brake valve actuates the brakes automatically, if the hydraulic pressure drops below a pre-set value.
Manual operation is also possible.

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