KOMATSU®930E-2

MAXIMUM GVW 498952 kg 1,100,000 lb PAYLOAD 290 m ton 320 U.S. ton GROSS HORSEPOWER 2014 kW 2,700 HP



ELECTRIC DRIVE TRUCK



930E-2

ЗАКАЗ ТЕХНИКИ И ЗАПЧАСТЕЙ www.komimport.ru т.(495) 651-61-19 e-mail: komatsu@komimport.ru

930E-2 Electric Drive Truck

WALK-AROUND

Cab

- Komatsu universal cab with integral four-post ROPS
- Payload meter
- CFC-free air conditioning
- 80 dB(A) or less sound level

Body

- Lightweight design
- Horizontal side bolsters
- Flat floor with 45° discharge

Engine

- Komatsu SSDA16V160 @ 2,700 gross horsepower
- Removable power module

The Komatsu SSDA16V160 engine utilizes two-stage turbocharging combined with two-stage cooling of intake air, eliminator/centinel/reserve package providing extended oil change intervals and oil burn system for maximum performance and durability.





Brakes

- 45.6" 1158 mm diameter oil-cooled multiple-disc service brakes
- All hydraulic with emergency auto apply

komatsu@komimport.p

GROSS HORSEPOWER 2700 HP 2014 kW @ 1900 rpm

OPERATING WEIGHT 1,100,000 lb 498960 kg

PAYLOAD 320 U.S. tons 290 tonnes

Komatsu SSDA16V160 Engine

Building on the industryleading reputation for reliability and durability of the Komatsu SSA16V159 engine:

- Two-stage inter-cooled and after-cooled turbocharging
- Improved altitude capability
- Better control of exhaust and turbine temperatures
- Improved performance
- Improved durability
- Fully tier one compliant
- Full authority electronic fuel system
- 65 programmable features to customize performance
- Automatic adjustment for atmospheric conditions
- Built-in engine protection features
- Advanced engine monitoring
- Monitors 39 engine parameters
- Diagnostics for over 150 engine faults
- Trend and exception reporting via INFORM and INSITE software
- Single-cylinder performance monitoring on a real-time basis
- Automatic download by radio or linking with mine dispatch system available
- Extended service options available
- Continuous oil replacement system linked to engine load factor
- Self-cleaning full flow and pass filter that eliminates spin on oil filters

Frame

- Steel castings at all critical stress transition zones
- Four-point engine sub-frame mount
- High-mount drive case pivot bearing
- Every weld is checked ultrasonically for zero defect

New low profile tires—53/80R63

- Lower tire cost per hour
- Higher tmph leading to greater productivity on high-speed hauls
- Longer tire life because of better heat dissipation and lower inflation pressure



Drive System

- AC drive with two inverters
- Air-cooled 300 kW retard grips with 5400 HP 4027 kW short-time capacity
- High-speed/deep pit capability
- Outboard double planetary final drive with 31.50:1 reduction

Suspension

- Front—independent sliding pillar-type hydropneumatic 15.75" 400 mm diameter suspension
- Rear—12.00" 305 mm diameter hydropneumatic strut with new lancier bushings

AC DRIVE System

The 930E-2 Komatsu truck uses a powerful AC Drive System to deliver superior high-speed, deep-pit performance—and a whole new dimension in productivity.

Payloads of up to 320 U.S. ton make it potentially 20–30 percent more productive than 240-ton trucks, at about a 10 percent lower cost per ton.

AC Drive Performance

Uphill

The AC Drive System provides:

- Maximum gradeability: 20% at GVW of 1,100,000 lb 498960 kg
- Speed on grade:
 - **—6.16 mph** 9.9 km/h on 12% effective grade
 - —9.34 mph 15.0 km/h on 8% effective grade

On the Level

Maximum speed with 498960 kg 1,100,000 lb GVW: 40 mph 64.3 km/h

Downhill

AC electric retarding ensures these advantages:

- Engages more quickly
- Generates more braking power
- Gives operator greater control and security
- Permits higher speeds on downhill hauls

How AC Propulsion Works

The engine drives the alternator at engine speed. The GTA34 alternator sends AC current at a fixed voltage and frequency to the main electrical cabinet, where it is changed to DC. A series of electronic steps converts the DC current back to AC with a variable frequency and voltage. This modified AC current can then be matched to the power needed by the wheel motors according to the operating conditions of the truck.

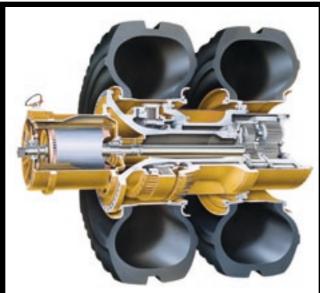




Slip/Slide Control

If the road you travel gets slippery, the 930E-2's wheel slip and slide prevention technology will not only detect the problem, but correct it as well. Slip/Slide Control operates automatically and independently of the service brakes. During propulsion, "wheelslip" reduces non-productive wheelspin in low traction conditions. During retarding, "wheelslide" prevents wheel lockup and subsequent sliding. Greater control and peace of mind go together!





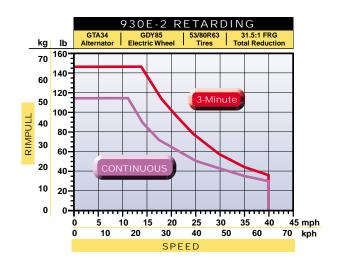
GE-GDY85 Electric Wheel



The advanced technology of the G.E. AC DRIVE SYSTEM, well-proven in providing power for locomotives, is ideally suited for the 930E-2.

How AC Retarding Works

Service brakes are applied, if necessary, to slow the vehicle to a speed the retarding action can maintain. The force of the truck moving downhill turns the wheels and (thus) the wheel motors. The wheel motors, in turning, produce AC power which goes to inverters. They change the AC power to DC. The DC current passes to resistors which impede the flow of the current, causing the wheel motors to resist turning as fast. This force of electrical resistance is sufficiently powerful to cause the truck to slow down or maintain speed according to application requirements. The Retard Speed Control separately monitors each wheel motor for speed and instantly adjusts for any fluctuation due to slippery underfoot conditions.



TIRES

53/80R63 Tire Benefits

- Lower tire cost per ton hour—estimated 15 to 20% savings
- Higher TMPH (ton mile per hour)—greater productivity on high-speed hauls (up to 1200 TMPH)
- Longer tire life—fewer changes, reduced downtime
- Lower inflation pressure—reduced cuts and tire damage, less downtime

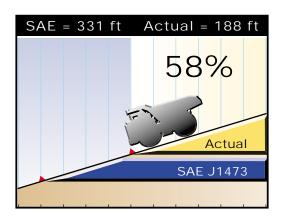
Tire Reference*

	Standard	Cut Resistant	Cut Resistant Hybrid	Heat Resistant
Size	53/80R63	53/80R63	53/80R63	53/80R63
Load	183,300 lb	183,300 lb	183,300 lb	183,300 lb
Inflation Pressure	85 psi	85 psi	85 psi	85 psi
Weight	9,482 lb	9,482 lb	9,482 lb	9,482 lb

*Dimensional data is approximate



HYDRAULICS AND BRAKING



Hydraulics

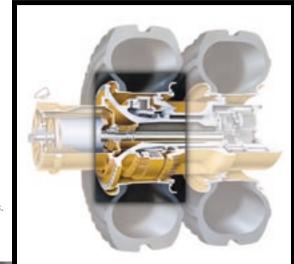
Simple, efficient design means superior responsiveness, unmatched reliability, and long service life.

- Separate accumulators for steering and brakes
- Vertical hydraulic tank with external filters
- High-pressure hydraulic filtration
- Super cylinder body hoist system
- · Simplified steering articulation

Service Brakes

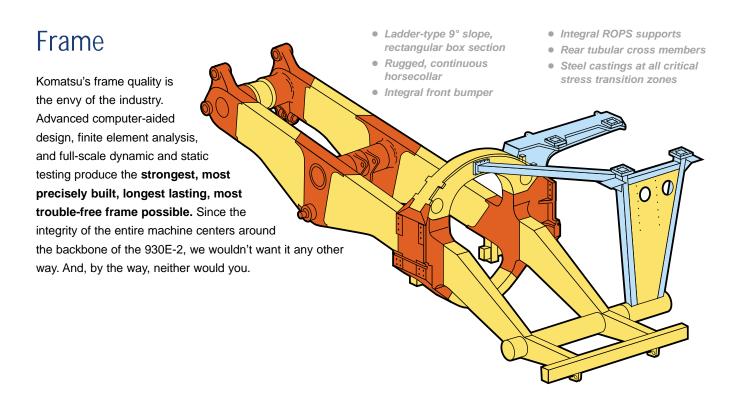
When you're heading downhill at rated GVW, know that the 930E-2's oil-cooled front and rear multiple-disc hydraulic service brakes are capable of stopping twice the weight of the 930E-2—fully loaded. That's security.

Rear multiple-disc brakes.





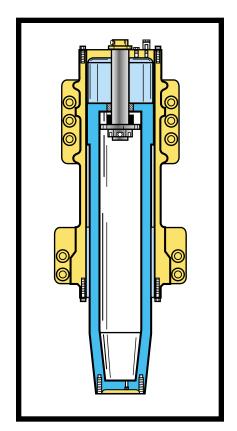
FRAME AND SUSPENSION



Suspension

Komatsu's exclusive HYDRAIR® II suspensions provide the **smoothest ride** and the **best protection** in the industry for both truck and driver.

- Rear suspension pin and clevis mounting
- Forged front suspension rod and housing tube
- Large cast steel mounts
- Extra-length nylon bearings





Nitrogen gas/oil damping suspension design

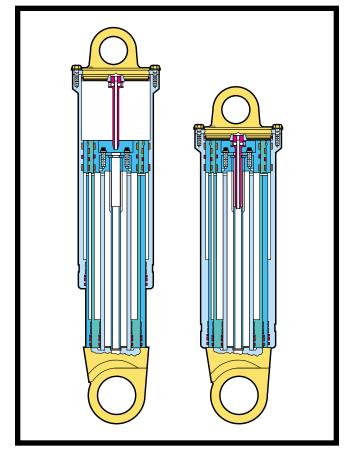


BODY AND HOIST

Body

This all-welded-steel, flat-floor body, with its low loading height and large target area, makes loading by today's big shovels a snap. Three or four passes and you're on another cycle again. Its low profile, deep V-shape, extra-strength horizontal bolsters, proportioned weight distribution, and patented "bodyguide" bring strength and stability to your haul. And the full canopy with its spill guards protects you from glancing debris. Straight floor design and 45° discharge angle ensure fast, clean dumping. More payload and more cycles. You can bank on that.







Hoist

Two 3-stage, dual-acting outboard cylinders power your load up in less than half a minute. Our precision-crafted hydraulics, with fewer parts and less complicated piping than our competitors', mean more reliability, less downtime, and fast, easy maintenance. We manufacture them ourselves to our own exacting standards. The result is unmatched reliability and superior responsiveness.

OPERATOR'S COMPARIMENT

Operator Station

This environment not only makes sense, it's comfortable, too—a great place to put in a good day's work. Logically-arranged controls **maximize productivity** and **minimize training time.** The instrument panel and operator switches are easy to read and reach. Diagnostics are designed for effortless monitoring of critical machine functions. And the comforts: adjustable steering wheel, padded adjustable seat, R-12 insulation, large thermopane tinted glass windows, heating and air conditioning, acoustical insulation, double sealed doors, and filtered, pressurized air for dust-free breathing, all say "operator-engineered."



Logical, easy-to-use AC Drive System controls conveniently located in the console.



View A



- 1. Center Console
- 2. F-N-R Selector Switch
- 3. Hoist Control Lever
- 4. Ash Tray
- 5. Cigar/Cigarette Lighter
- 6. L.H. Window Control
- 7. R.H. Window Control
- 8. Engine Shutdown Switch
- 9. Override/Fault Reset Switch
- 10. (Not Applicable for Electric Trucks)
- 11. Retarder Speed Control (RSC) "Off/On" Switch
- 12. RSC Dial
- 13. Propulsion System Controller (PSC) Diagnostic Port
- 14. Engine Diagnostic Port
- 15. Truck Control Interface (TCI)
 Diagnostic Port



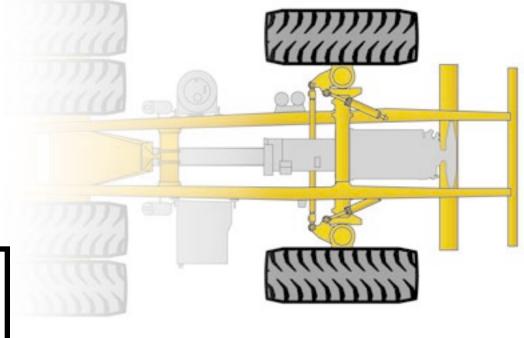


ADDITIONAL FEATURES



Steering

Excellent steering characteristics begin with the 930E-2's twin, doubleacting hydraulic steering cylinders and six-point articulation linkage. The steering arms bolt on the front spindles, making the left and right spindles interchangeable. The 20'10" 6.35 m wheelbase will turn a circle with a diameter of 98'1" 29.9 m. Steering meets SAE J1511 standards. Reliable, responsive, and built to last. If you didn't already know it, you might never suspect you were steering one of the world's largest trucks.



98'1" 29.9 m turning circle

AVAILABILITY

Serviceability

With high production and minimal downtime as top priorities, the 930E-2 was designed with lots of feedback from customers "from the ground up." Serviceability advantages derive from fast, easy diagnosis of all vital machine functions and walk-up, easy-reach access to major component groups.

Engine and hydraulic system service points are readily accessible with two designed-in service ladders to provide convenient, easy access to the deck. An upper deck-to-frame walkway is standard on the 930E-2.

Engine diagnostics, deck-mounted brake control and power control cabinets, convenient sight gauges, all exemplify the 930E-2's simple, fast, and logical serviceability.



Product Support

Count on Komatsu's product support people, parts, programs, and promise to keep your machine investment working for you.



People

Expertise you can lean on from the company with the "mining machine mentality." Field engineers provide valuable application analysis; professional parts and service personnel offer insight into maintenance and repair issues; experienced trainers in operation and service teach effectively in the factory and at your mine site.

Parts

Where you need them, when you need them—inventoried at your location, available from nearby parts depots, or rushed by air from strategically-located parts centers throughout the world.

Programs

Customized to best fit your needs and designed to maximize the value of your existing maintenance profile. Personalized Repair and Maintenance Programs (RAMP) deliver the flexibility, efficiency, and predictable overhaul and maintenance scheduling to minimize downtime and maximize productivity.

Promise

Our full commitment to help you lower your owning and operating costs while increasing your productivity. Because we not only sell the best trucks in the business, we work hard to support them in the best way, too. We're driven to keep your machine investment working for you.

¹²ЗАКАЗ ТЕХНИКИ И ЗАПЧАСТЕЙ www.komimport.ru т.(495) 651-61-19 e-mail: komatsu@komimport.ru

SPECIFICATIONS



Make and model
Fuel Diesel
Number of cylinders
Operating cycle
*Rated brake power 2014 kW 2,700 HP @ 1900 rpm
**Flywheel power 1902 kW 2,550 HP @ 1900 rpm
Weight (wet)9608 kg 21,182 lb

*Rated brake power is the output of the engine as installed in this machine, at governed rpm and with engine manufacturer's approved fuel setting. Accessory losses included are water pump, fuel pump and oil pump **Flywheel power is the rated power at the engine flywheel minus the average accessory losses. Accessories include fan and charging alternator. Rating(s) represent gross engine performance in accordance with SAE J1349 conditions.



ELECTRIC DRIVE

AC/DC CURRENT
Alternator
Integral cooling fan 71 m³/min 2,500 cfm
AC thermally mod. dual fan 340 m³/min 12,000 cfm
Control AC Torque Control System
*Motorized wheels GDY85 AC Induction Traction Motors
*Ratio
Speed (maximum)

*Wheel motor application depends upon gross vehicle weight, haul road grade, haul road length, rolling resistance and other parameters. Komatsu and G.E. must analyze each job condition to assure proper application.

*Obtional ratios available.



TIRES AND RIMS

Rock service, tubeless, radial tires
*Standard tire
Standard five (5) piece rim
914 mm x 1600 mm x 127 mm 36" x 63" x 5.0" patented Phase I rim

assembly with forged center bolt flange and 1626 mm **64"** centerline dual spacing. Rated at 758 kPa **110 psi** cold inflation pressure for rims.

*Tires should meet application requirements for tkph/tmph, tread, compound, inflation pressure, ply rating or equivalent, etc.



All-welded steel flat floor body with horizontal bolsters and full canopy. Eyebrow, rear wheel rock ejectors, body tilt cable, and rubber mounts on frame are standard. Pivot exhaust heating optional.

וכ	i frame are standard. Pivot exhaust neating optional.	
	Floor sheet 16 mm 0.63" 1379 mPa 200,000	psi
	tensile strength steel (two-p	iece)
	Front sheet 9 mm 0.35" 1379 mPa 200,000	psi
	tensile strength	steel
	Side sheet 8 mm 0.31" 1379 mPa 200,000	psi
	tensile strength	steel
	Canopy sheet 5 mm 0.19" 690 mPa 100,000	psi
	Struck	yd³
	Standard SAE heaped 2:1	vd ³



CAB

Advanced Operator Environment with integral 4-post ROPS/FOPS structure (meets J1040 Apr88), adjustable air suspension seat w/lumbar support and arm rests, passenger seat, maximum R-value insulation, tilt and telescoping steering wheel, electric windshield wipers w/washer, tinted safety glass, power windows, Komatsu Payload Weighing System, 55,000 Btu/hr heater and defroster, 21,600 Btu/hr air conditioning (HFC - 134A refrigerant).



FRAME

Advanced technology, full butt-welded box sectional ladder-type frame with integral ROPS supports, integral front bumper, rear tubular cross members, steel castings at all critical stress transition zones, rugged continuous horsecollar.

Plate material	482.6 mPa 70,000 psi
	tensile strength steel
Casting material	620.5 mPa 90,000 psi
	tensile strength steel
Rail width	305 mm 12"
Rail depth (minimum)	864 mm 34"
Top and bottom plate thickness	45 mm 1.77"
Side plate thickness	25 mm 0.98"
Drive axle mounting	. Pin and spherical bushing
Drive axle alignment Swing li	nk between frame and axle



BRAKING SYSTEM

Service brakes: oil-cooled, hydraulic-actuated, multiple disc brakes at each wheel. Traction system wheel slip/slide control.

Max. service apply pressure17237 kPa 2500 psi
Total friction area per brake
Emergency brakes Automatically applied prior
to hydraulic system pressure dropping below level
required to meet secondary stopping requirements.
Wheel brake locksSwitch activated
Parking brakesMultiple disc, spring-applied,
hydraulically-released, dry brakes on inboard end
of each wheel motor rotor shaft. Rated to hold on
±15% grade @ maximum gross vehicle weight.
Electric dynamic retarder Max 4026 kW 5400 hp
Continuous 2460 kW 3300 hp

Continuously rated (16 element) high-density blown grids w/retard at engine idle and retard in reverse propulsion.



SUSPENSION

HYDRAIR® II

Variable rate hydro-pneumatic with integral rebound of	control
Max. front stroke	12.92"
Max. rear stroke	9.40"
Max. rear axle oscillation	+6.50



COOLING SYSTEM

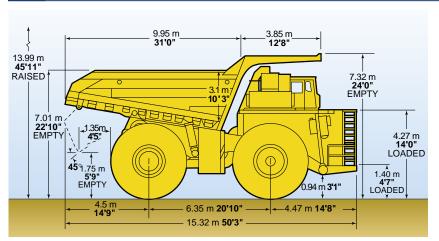
L&M radiator assembly, split-flow, with deareation-type top tank.

Radiator frontal area 7.02 m² 75.5 ft²



Cooling System	157 U.S. gal
Crankcase*	74 U.S. gal
Hydraulic system	350 U.S. gal
Motor gear box (each)	20 U.S. gal
Fuel	1200 U.S. gal

*Includes lube oil filters



8.69 m 28'6" 4.70 m 15'8" 6.15 m 20'2" 7.52 m 24'8"

All dimensions are with 211 m³ 276 yd³ body.

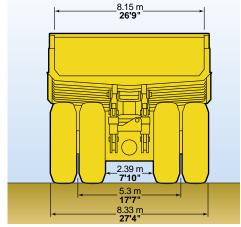
Bodies	Struck	2:1 Heap	*Loading Height
Standard	171 m ³ 224 yd ³	211 m ³ 276 yd ³	7.01 m 22'10"

*Exact load height may vary due to tire make, type, and inflation pressure.



systems diagnostics.

Steering. Accumulator assisted twin double acting cylinders provide constant rate steering. Emergency steering automatically applied by accumulator. Turning circle diameter (SAE) 29.9 m 98'1" Filtration In-line replaceable elements Suction Single, full flow, 100 mesh pressure. $\beta_{12} = 200$. Component cabinet Above deck, easily accessible with diagnostic test connections. Hoist..... Two 3-stage dual-acting outboard cylinders, internal cushion valve, over-center dampening. Hoist times Float-down empty......24 sec Pumps...... Two pumps, single package, end of alternator Hoist and brake cooling Tandem gear pump with output of 1022 liters 246 gpm at 1900 rpm and 17237 kPa 2,500 psi Steering and brake..... Pressure-compensating piston pump with output of 246 liters 65 gpm at 1900 rpm and 18961 kPa 2,750 psi System relief pressures Hoist and brake cooling 17237 kPa 2,500 psi Quick disconnects standard for powering disabled truck and for





4 x 8D 1450 CCA, 12 volt, in series/parallel, and 2 x 30H 800 CCA 220-ampere-hour batteries, bumper-mounted with disconnect switch.

Alternator
Lighting
Starters two 24-volt

lb

kg

%



Empty Vehicle

Front axle	220,319	49.3		
Rear axle102297	225,527	50.7		
Total (wet, 50% fuel)	445,846			
Loaded Vehicle at maximum GVW rating				
Front axle	372,900	33.9		
Rear axle	727,100	66.1		
Total498952	1,100,000			

NOTE: GVW shall not exceed 498,952 Kg $1,100,000\ lb$ including options, liners, fuel and payload, subject to application approval by Komatsu.

NOTE: Komatsu trucks comply with SAE specifications for cab noise, ROPS, steering and braking. Cover photos and illustrations may show optional equipment. Materials and specifications subject to change without notice.



- Air cleaners, dry type SRG
- Alternator (24V/240A)
- Auto lubrication system w/ground level fill & level indicator
- Batteries-4 x 8D and 2 x 30H (1450 CCA's)
- · Battery charging cable and socket
- Body over center device
- Brakes: oil-cooled, multiple disc front & rear
- Control cabinet
- Electric start
- · Filters, high pressure hydraulic
- Gate valve on hydraulic tank
- Ground level radiator fill
- Komatsu Payload Weighing System-PLM-III
- Mirrors, LH flat and RH rectangular convex
- Mud flaps
- Muffled exhaust-deck-mounted
- Power supply for 2-way radio
- Quick disconnects (hoist and diagnostics)
- Radiator sight gauge
- Removable power module unit (radiator, engine, alternator, blower)
- Retard grids, 16-element, blown
- Retard speed control
- Reverse retarding
- · Rock ejectors
- Thermostatic Fan Clutch
- Fast-Fill Fuel System (in tank and left side remote)
- Service Center-LH
- Body Impact Plate

SAFETY:

- · All hydraulic service brakes with emergency auto apply
- Battery disconnect switch
- Body prop cable
- Brake lock and drive system interlock
- Diagonal staircase across grill
- Dynamic retarding with continuous rated 16-element grids
- Engine shutdown at ground level
- Hoist propulsion interlock
- Horns (electric-front and back-up)
- Integral ROPS/FOPS Cab
- Maintenance and power lockout

- Parking brakes with warning light & speed application protection
- Power steering w/auto emergency steering
- Protective deck handrails
- Pump driveline protector
- Radiator fan guard
- Seat belts (wide, retractable)
- Skid-resistant coating on walkways
- 24-volt circuit breakers

CAB:

- AC Drive Interface Display
- Air cleaner vacuum gauges
- Air conditioner HFC-134A
- Alarm System warning lights (red)
- Accumulator pre-charge
- Coolant low level w/alarm
- Drive system temperature w/alarm
- Electric system fault w/alarm
- Hydraulic oil level w/alarm
- Hydraulic oil temperature w/alarm
- Low engine oil pressure w/alarm
- Low brake pressure w/alarm
- No propel/retard power w/alarm
- Stop engine no propel w/alarm
- Steering pressure w/alarm
- AM/FM radio cassette player
- Column-mounted retarder control
- Digital tachometer and speedometer
- Dome light
- Engine hourmeter, oil pressure gauge, coolant temperature gauge, hydraulic oil temperature gauge
- Engine shutdown w/5 minute delay timer
- Floor mat (double barrier)
- Fuel gauge in cab and on tank
- Fuel low level light and buzzer
- Gauges (w/backlight)
- Headlight switch
- Heater and defroster (heavy duty)
- Heater switch
- · High beam selector and indicator
- Horn (center of steering wheel)
- Indicator lights (amber):

 - Circuit breaker tripped

- Coolant high temperature w/alarm
- Drive system reset switch
- Drive system temperature w/alarm
- Dump body up
- Dynamic retarding
- Manual back-up lights
- Park brakes applied
- Propel system not ready
- Reduced propel system mode Retard at continuous level
- Retard speed control
- Service brakes
- Voltmeter (battery output)
- Insulation (Max R-Value)
- · Operator seat, adjustable w/air suspension, lumbar support and arm rests
- Panel lighting (adjustable)
- Passenger seat
- Power windows
- Pressurized cab air system w/fan on
- Single brake/retarder pedal
- Starter key switch
- Sunvisor (adjustable)
- Tilt & telescoping steering wheel (adjustable)
- Windshield (tinted safety plate)
- Windshield wiper (dual) and washer (electric)

LIGHTING:

- Back-up lights-rear mount (2) halogen
- Back-up lights-R and L deck mount (2) halogen
- Brake and retard lights on top of cab
- Clearance lights
- · Control cabinet service light
- Dynamic retarding, rear (2) halogen
- Fog lights (2) halogen
- Headlights (8) halogen
- Stairway lights
- · Manual back-up light switch & indicator
- Payload lights R and L
- · Platform lights R, L and Center
- Stop & tail lights (2) halogen
- Turn signals halogen
- Check engine w/alarm Under-hood service lights



(Optional equipment may change operating weight).

- Body Liners*
- Air filter evacuators
- Fire extinguisher
- Heated Body High altitude grid

- Hot start engine oil (220V 2-600W)
- Motorized wheel ratios (higher-lower)

Mufflers between frame rails

- Hot start engine coolant (220V 2-2500W)
- Modular Mining Systems (MMS) cab ready
- Service Center–RH
- Special language markings Suspensions, cold weather

^{*}Available factory installed or non-installed. All other options and accessories listed are available factory installed only.

KOMATSU MINING SYSTEMS, INC.

"A world-class manufacturer of heavy equipment committed to providing mutually beneficial partnerships and solutions to the mining industry."

Komatsu Mining Systems offers the most complete line of equipment to improve productivity and lower your cost per ton...

From large *Dump Trucks* with more *Power and Maneuverability.....*

To *Loaders* that *Dig* with more breakout force and reduced cycle times.

To Excavators and Shovels known for their advanced features,

smooth hydraulics and proven availability...

To *Dozers* that are truly versatile and *highly productive* in all applications.

www.komatsu-mining.com





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DK12(7.5M)EH Datakom

12/01 (EV-1)



Komatsu Mining Systems, Inc. 568 Atrium Drive P.O. Box 8131 Vernon Hills, IL 60061-8131

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