

KOMATSU®

830E

MAXIMUM GVW
385848 kg **850,650 lb**

PAYLOAD
218-231 m ton **240-255 U.S. ton**

GROSS HORSEPOWER
1865 kW **2,500 HP**



ELECTRIC DRIVE TRUCK

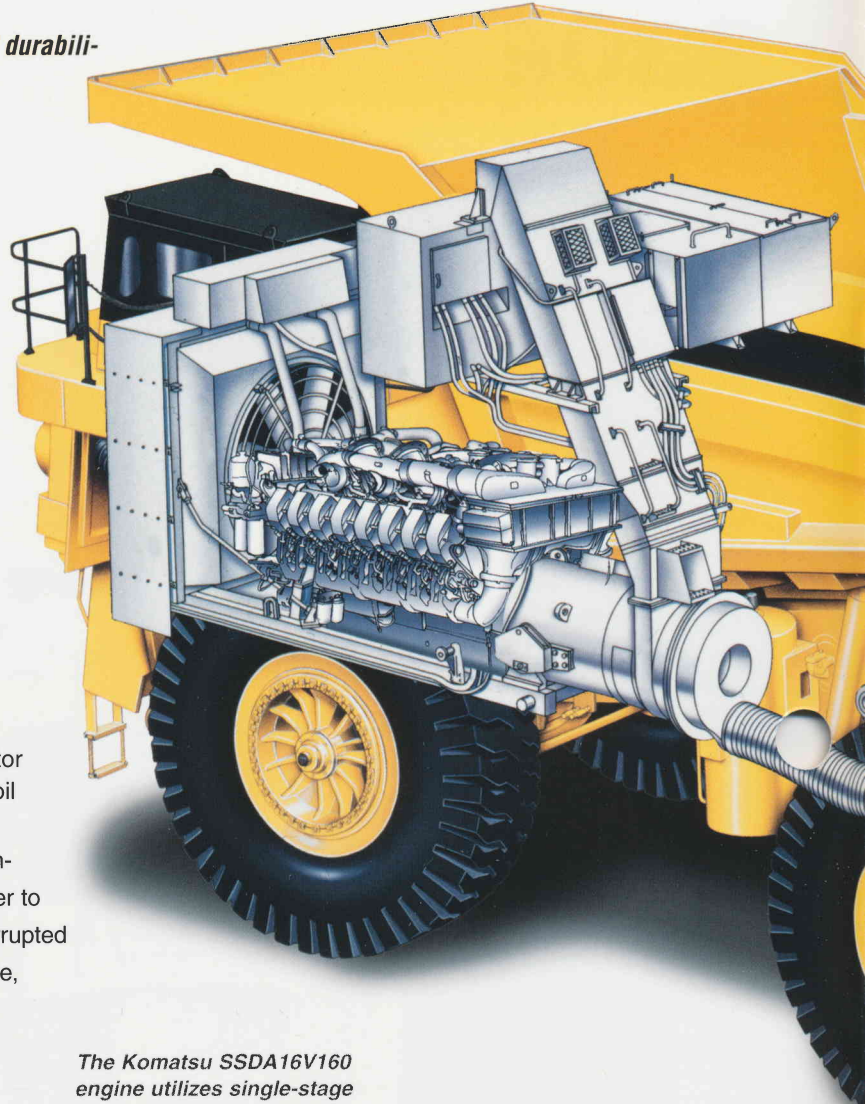
830E

Komatsu SSDA16V160 Engine

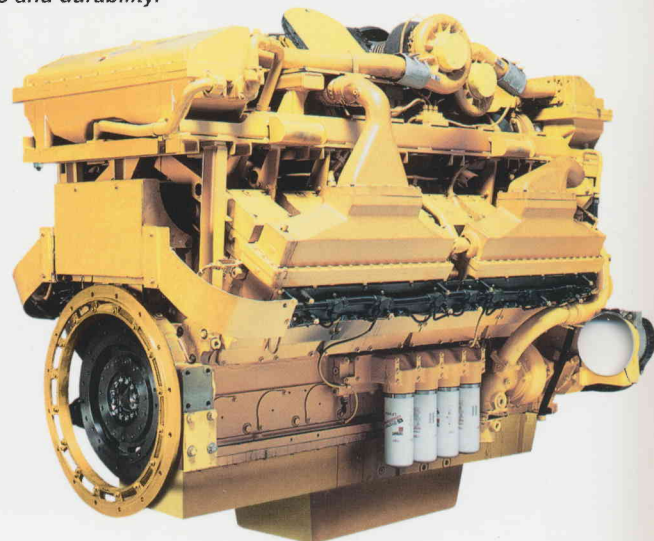
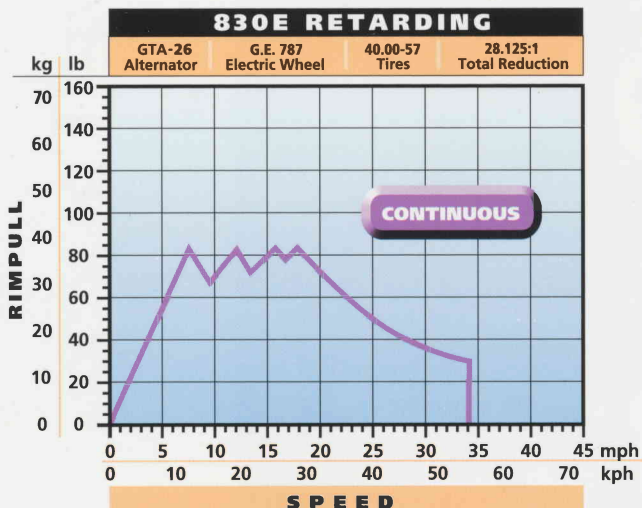
Building on the industry-leading reputation for reliability and durability of the Komatsu SSA16V159 engine:

- Single-stage 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

The General Electric GTA-26 alternator's dual impeller traction-type design provides highly efficient conversion from diesel power to electric output. A flexible, engine-driven coupling assures uninterrupted power flow—even under heavy shock loads. Advanced solid-state, insulated design provides long life and low maintenance.



The Komatsu SSDA16V160 engine utilizes single-stage turbocharging combined with single-stage cooling of intake air for maximum performance and durability.



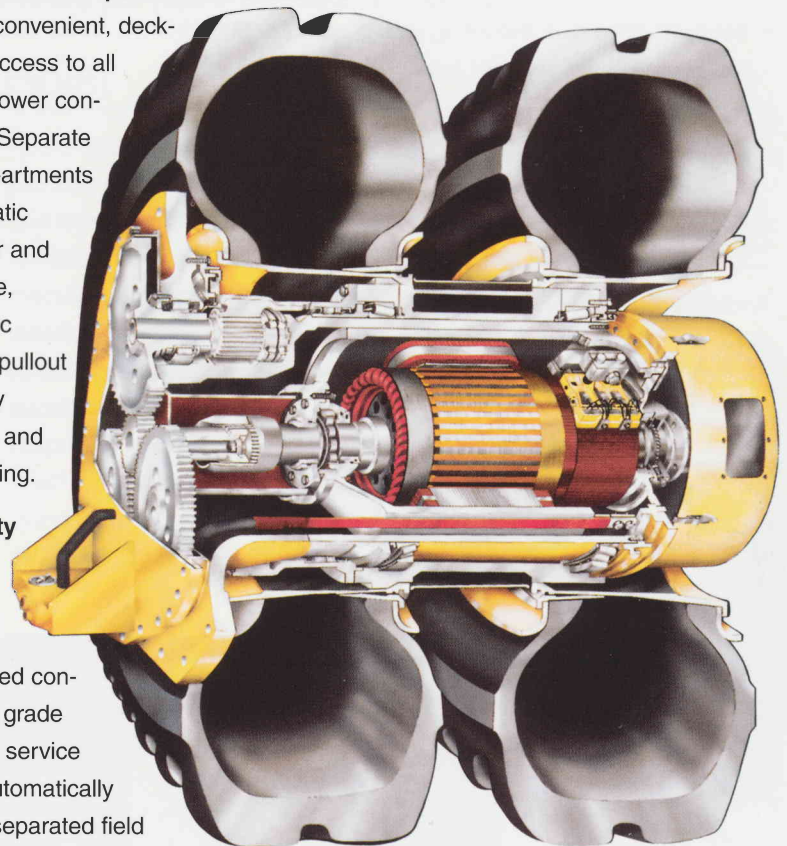
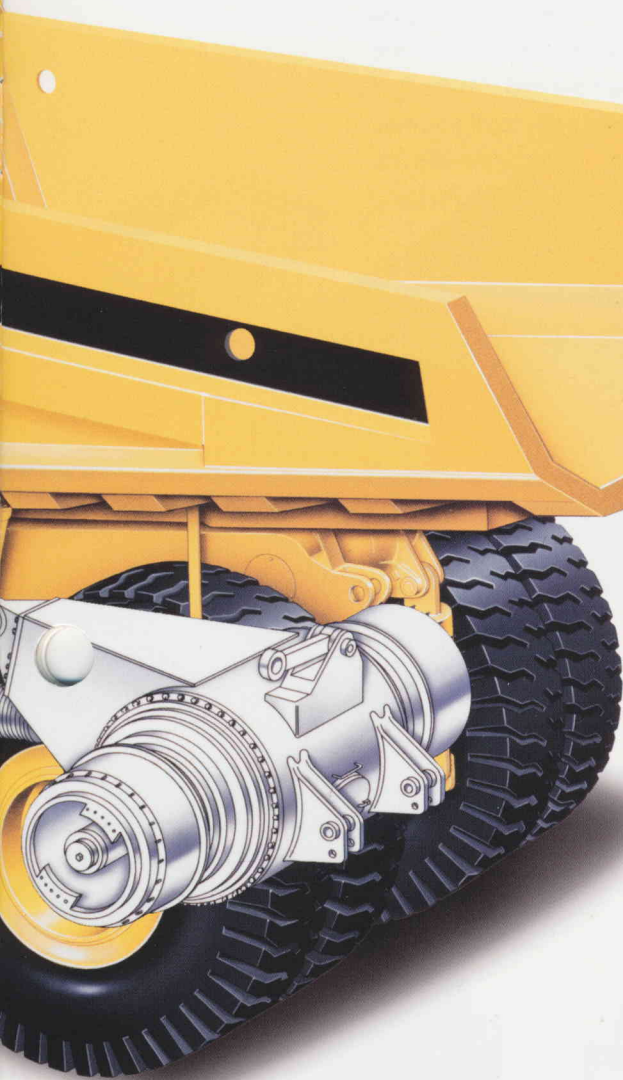
Time-tested G.E. 787 Wheel Motors, designed to run with engines operating at 1800–2100 rpm at full load, provide efficient, responsive performance. Right and left wheels are identical and interchangeable, and the modular design allows easy testing and change-out.

The Statex III Fuelsaver Drive System Control, common to other Komatsu trucks, offers extensive diagnostic and data recording functions for a simpler, more reliable drive system. Statex III provides “real-time” information on such things as: component operating hours, vehicle utilization, operating profiles, and problem diagnosis. Fault data storage/snapshot capability records machine status prior to, during, and after a fault occurs.

The Fuelsaver Integrated Control System reduces fuel consumption, emission levels and improves performance, electronically linking and controlling all power module components, wheel motors, alternator, engine and ECM.

A sectionalized power control cabinet offers convenient, deck-level access to all vital power controls. Separate compartments for static exciter and module, electronic controls and pullout cards simplify maintenance and trouble-shooting.

High-capacity dynamic retarding provides excellent speed control down the grade without using service brakes. By automatically switching to separated field control and power circuit rearrangement, the electric traction motors become generators. Electric power is converted to heat, which is dissipated through grid resistors. The result—added operator control and extended service brake life.

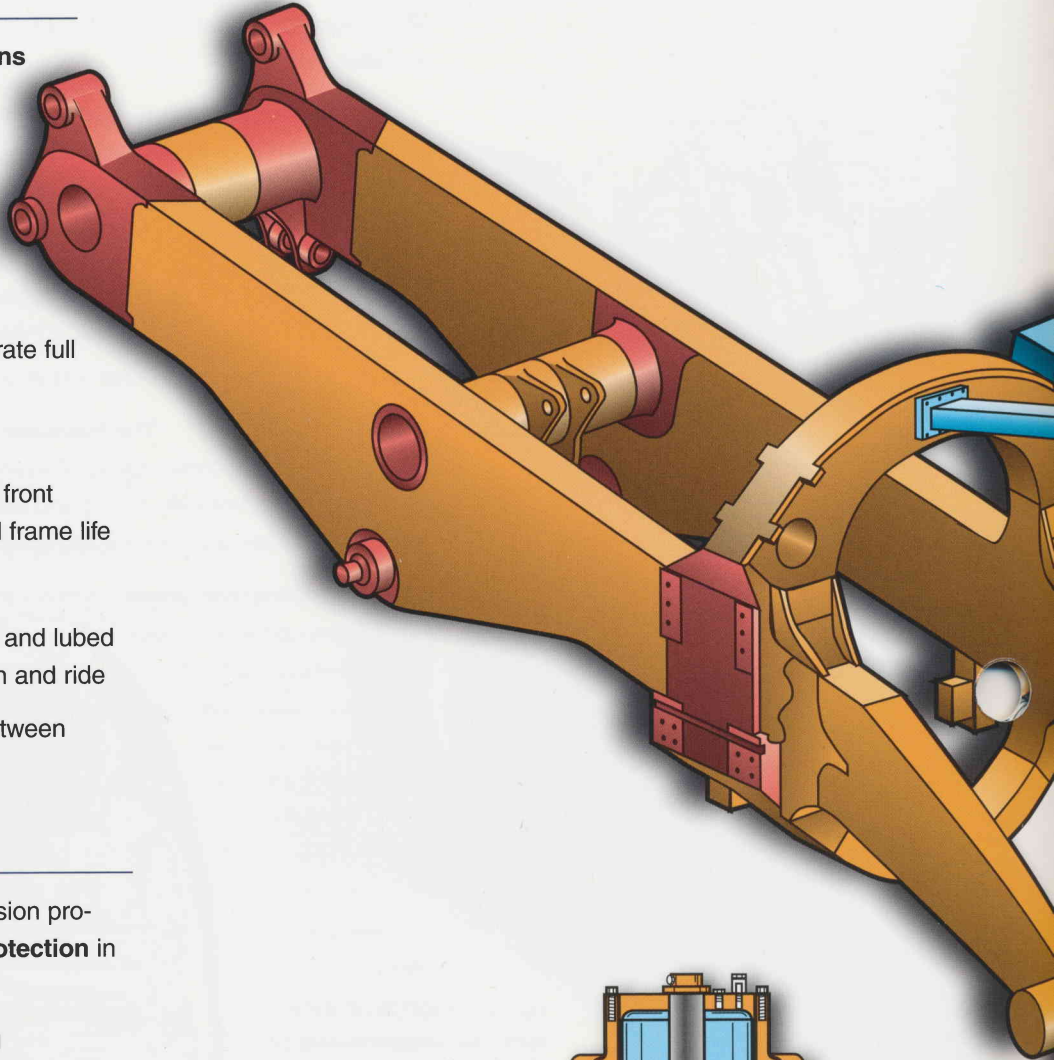


FRAME AND SUSPENSION

Frame

The Komatsu reputation for **reliability begins with the frame**. It's the "backbone" of the 218-231 t **240-255 ton** machine. Steel castings and box-section design evenly distribute stress for **superior structural integrity**.

- Castings used in high stress areas
- Fabricated box-section members incorporate full penetrating welds for long frame life
- Integral ROPS supports
- Rear tubular cross members and integral front bumper for greater structural integrity and frame life
- Continuous horsecollar
- Six-point drive axle mounting with sealed and lubed bearing joints for superior load distribution and ride
- Drive axle alignment with panhard rod between frame and axle housing



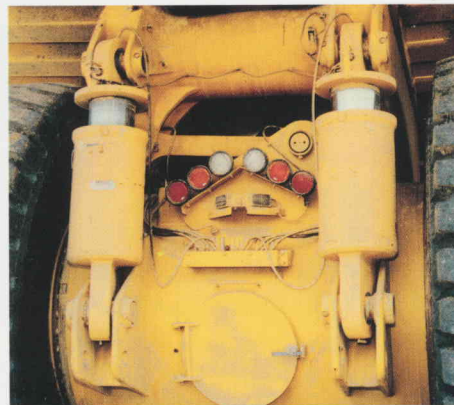
Suspension

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

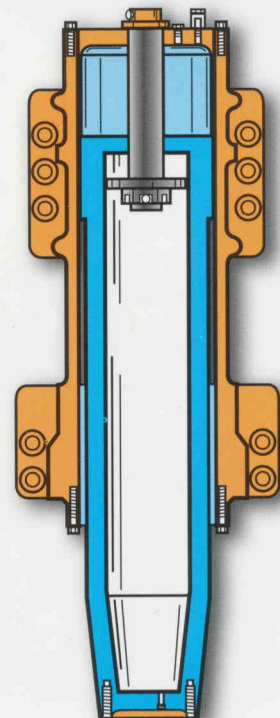
- Rear suspension pin and clevis mounting
- Forged front suspension rod and housing tube
- Large casting steel mounts
- Extra length bearings



Front



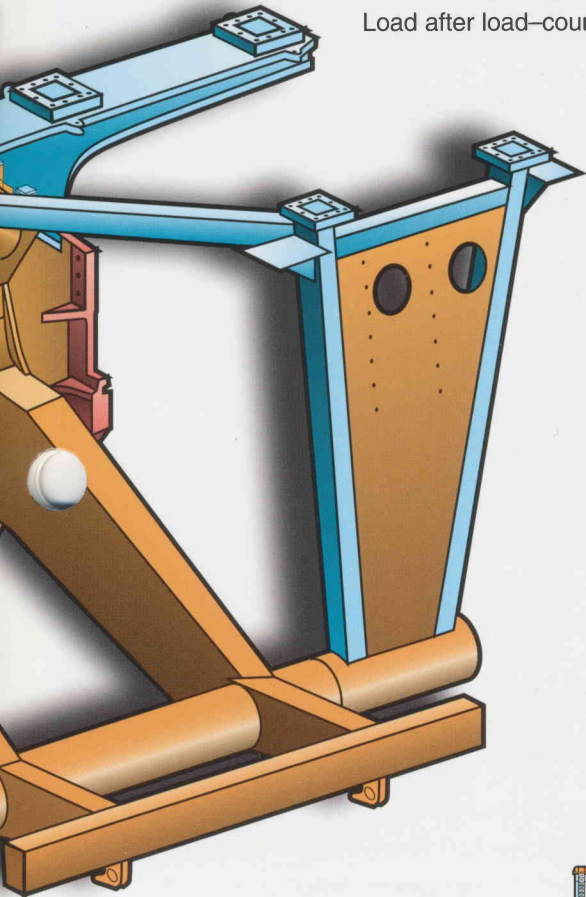
Rear



BODY AND HOIST

Body

The **all-welded-steel**, flat-floor body, with its low loading height and large target area, makes loading the 830E a snap. The low profile, deep "V" shape, extra-strength horizontal bolster, proportioned weight distribution, and patented "bodyguide" bring strength and stability to the haul. And the full canopy with spill guards protects the operator from glancing debris. Straight floor design and a 45° discharge angle assure fast, clean dumping. Load after load—count on this structure to last.

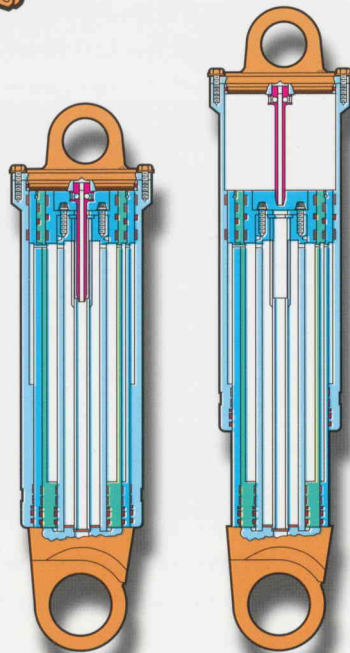


- Struck capacity = 117 m³ 153 yd³
- Heaped capacity = 147 m³ 193 yd³
- Bottom plate = 1207 mPa 175, 000 psi
- Front and side plate = 1207 mPa 175, 000 psi

Hoist

Two 3-stage, dual-acting outboard cylinders power your load up in just 25 seconds. 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.**

That's why these cylinders are called "**Super Cylinders.**"

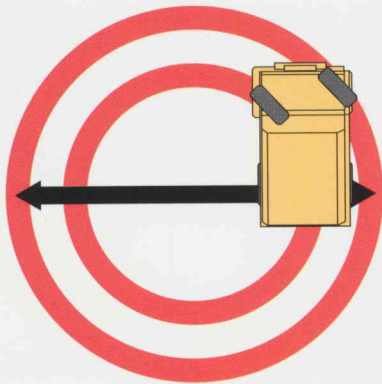


Hydraulics

Komatsu's advanced hydraulic system **delivers instant power to steering, hoist, and brake systems** with exceptional speed and efficiency. Simple design, with fewer parts and less complicated piping than competitive models, means fewer problems, less downtime and fast easy maintenance. No need for hydraulic oil coolers.



- Common (divided) tank for steering, hoist and brake systems
- Fewer components, less hydraulic hose and tubing
- Reduced maintenance, simple servicing
- Common fluid for all systems
- Externally-mounted filter keeps system clean, easy to service
- Brake control valves limit oil flow, save horsepower and fuel (when brakes are not in use)
- Pressure compensating piston pump for steering and braking—saves fuel, increases component life
- Gear-type hoist and brake cooling pumps



93 ft (28.4 m) Turning Circle

Service Brakes

Time-tested, high performance, all-hydraulic, dry-disc mechanical service brakes are designed to stop the truck anywhere within its performance envelope. The completely airless braking system is all-hydraulic-actuated for fast response and emergency control permitting faster downhill speed at rated GVW for more cycles per day. Front disc brakes are inboard-mounted, 1213 mm **47.75"** diameter discs with a three-caliper design on each disc. Rear brakes feature dual 635 mm **25"** diameter discs each with a single caliper.

Emergency brakes—front, rear, and parking—apply automatically when hydraulic system pressure drops below the level necessary to meet secondary stopping requirements.

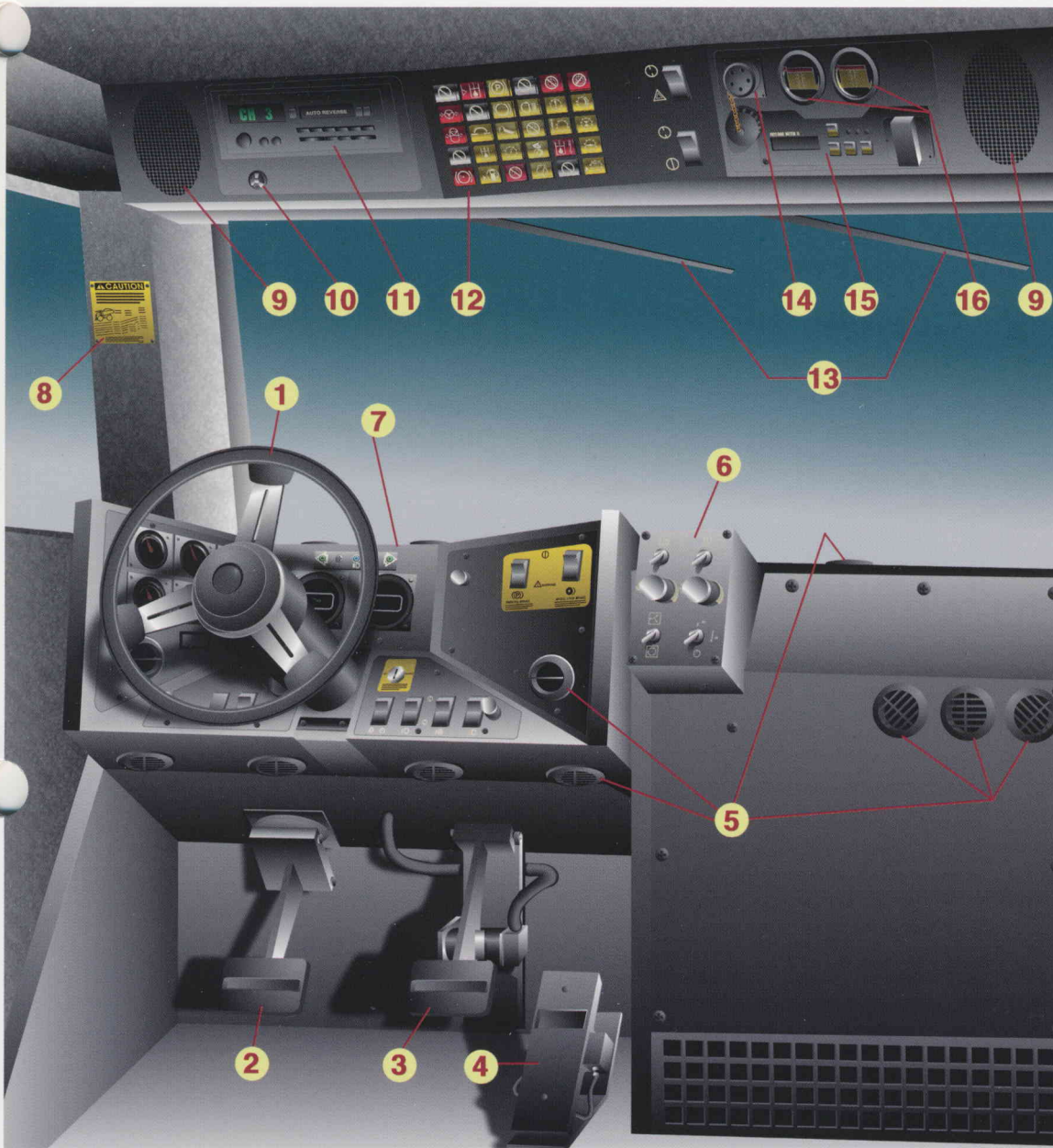
Parking brakes are spring-applied and oil-released.

Steering

Excellent steering characteristics begin with the 830E's twin, double-acting hydraulic steering cylinders and six-point articulation linkage. Spindle steering arms bolt on the front, and left and right spindles are interchangeable. A 40.5° turning angle allows the 830E to turn a circle with a diameter of just 28.4 m **93 ft**. Reliable, responsive, and built to last.

Operator Station

Advanced technology and ergonomic design for operator comfort and health. 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. Here's a work environment designed for top productivity and enjoyment.



- | | |
|------------------------------------|--|
| 1. Steering Wheel | 10. Warning Alarm Buzzer |
| 2. Retarder Control Pedal | 11. Radio, AM/FM Stereo, Cassette (Optional) |
| 3. Retarder/Service Brake Pedal | 12. Warning/Status Indicator Lights |
| 4. Throttle/Accelerator Pedal | 13. Windshield Wipers |
| 5. Heater/Air Conditioner Vents | 14. Payload Meter Download Connector |
| 6. Heater/Air Conditioner Controls | 15. Payload Meter |
| 7. Instrument Panel | 16. Air Cleaner Vacuum Gauges |
| 8. Grade/Speed Chart | |
| Radio Speakers | |

- | |
|--|
| 1. Center Console |
| 2. F-N-R Selector Switch |
| 3. Hoist Control Lever |
| 4. Ashtray |
| 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 |



AVAILABILITY



Serviceability

Serviceability is built into the 830E. You'll discover **low service and maintenance costs** with easy walk-up and convenient access to major systems and components. And low fluid and filter costs mean lower life-cycle costs.

Ask your Komatsu representative about a carefully designed, fully integrated, personalized and predictable **Repair and Maintenance Program (RAMP)**. It's another way to maximize uptime and deliver the flexibility and quick response you need.

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, at your distributor, 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.



substantial
— maintenance cost —
savings

HEALTH MONITORING

Mining truck fleet owners and operators around the world agree—Komatsu Mining Systems, Inc., builds the world's most dependable, productive and advanced mining trucks. So it's no surprise ... the 830E is designed to out-perform any competitor in its class.



Vehicle Health System™

When it comes to maximizing the return on your investment, information is power. Komatsu's

Vehicle Health System™ is a preventive maintenance tool that monitors and reports engine, wheel motor, tire, and payload parameters.

This high-level software allows mine personnel to view "real-time" graphics and text monitoring screens, and to display and print status and maintenance reports.

Komatsu On-Board Weighing System (Payload Meter) signals haul truck and loading equipment operators when specified payload levels are reached, eliminating guesswork and assuring consistent loading at rated payload.

Whether you're at the mine or at corporate headquarters halfway around the world, **Modular Mining Systems' GPS-based products** give you the facts you must have to keep performing at peak levels. Modular Mining's **DISPATCH®** system integrates fully with the Komatsu Vehicle Health System and equips you to monitor and manage your mining machine activity in "real-time."

Productivity

Higher speed, superior control, and true economy of scale deliver unmatched production.

Reliability

Quality engineering and support provide the key to sustainable productivity.

Economics

Better efficiency in life-cycle costs yields greater profitability.

"...maintenance personnel can monitor the 830E from a PC at the shop. Alarms can be displayed selectively to the truck operator as they occur..."

SPECIFICATIONS



ENGINE

Make and model	Komatsu SSDA16V160
Fuel	Diesel
Number of cylinders	16
Operating cycle	4 cycle
*Rated brake power	1865 kW 2,500 HP @ 1900 rpm
**Flywheel power	1761 kW 2,360 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	G.E. GTA-26
Dual impeller in-line blower	255 m ³ /min 9,000 cfm
Control	Statex III Fuelsaver
*Motorized wheels	G.E. 787
*Ratio	31.875:1
Speed (maximum)	48.8 kph 30.3 mph

* 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.
 **Optional ratios available.



TIRES AND RIMS

Rock service, tubeless, tires (bias ply or radial)

*Standard tire	40.00-57
Standard five (5) piece rim	
737 mm x 1488 mm x 152 mm 29" x 57" x 6" patented Phase II New Generation rim assembly with patented 152 mm 6" double forged flanges. Not interchangeable with other manufacturers' rims due to improved design for greater load support and longer fatigue life. Rated at 827 kPa 120 psi cold inflation pressure.	

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



BODY

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.

Floor sheet	16 mm 0.63" 1379 mPa 200,000 psi tensile strength steel (two-piece)
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	117 m ³ 153 yd³
Standard SAE heaped 2:1	147 m ³ 193 yd³



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	32 mm 1.25"
Side plate thickness	16 mm 0.62"
Drive axle mounting	Pin and spherical bushing
Drive axle alignment	Swing link between frame and axle



BRAKING SYSTEM

Service brakes: all-hydraulic actuated

Front	Wheel speed disc. Three calipers on a 1213 mm 47.75" O.D. disc.
Rear	Dual disc armature speed. Two 635 mm 25" O.D. discs per side. One caliper per disc.
Emergency brakes	Automatically applied prior to hydraulic system pressure dropping below level required to meet secondary stopping requirements.
Wheel brake locks	Switch-activated
Parking brakes	Spring-applied, hydraulically released, with speed application protection.
Electric dynamic retarder (max.)	2983 kW 4000 hp Continuously rated (18 element) blown grids. Two-speed overspeed retarding. Extended range retarding. Reverse retarding.



SUSPENSION

HYDRAIR® II

Variable rate hydro-pneumatic with integral rebound control.	
Max. front stroke	335 mm 13.2"
Max. rear stroke	279 mm 11.0"
Max. rear axle oscillation	+10.3°



COOLING SYSTEM

L&M radiator assembly with sight gauge. Deaeration-type top tank. Dual pass cooling.	
Radiator frontal area	6.24 m ² 67.2 ft²



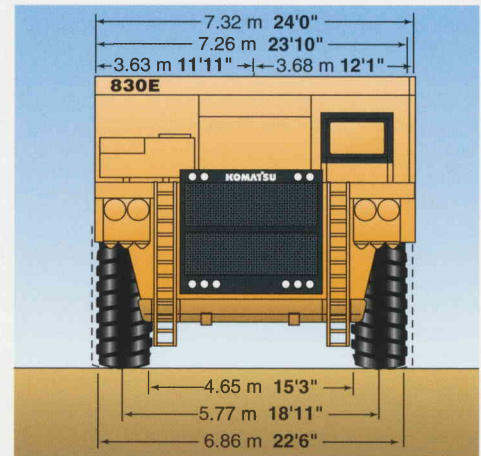
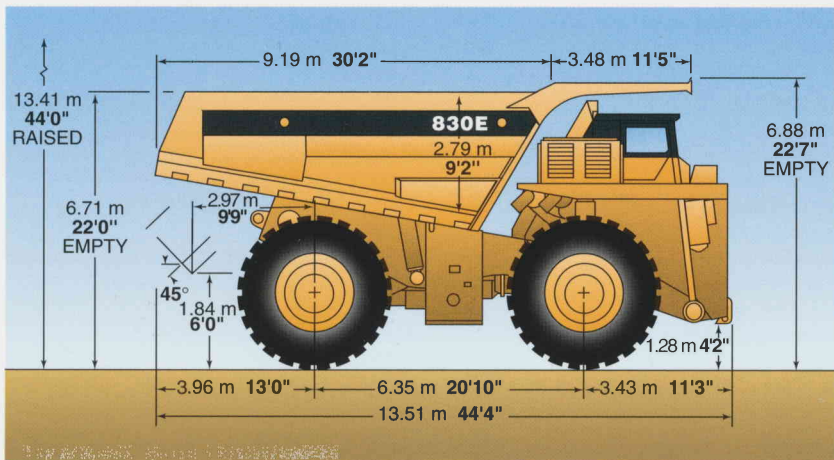
SERVICE CAPACITIES

Cooling system . . . . .	.568 L	150 U.S. gal
*Crankcase . . . . .	.280 L	74 U.S. gal
Hydraulic system . . . . .	.946 L	250 U.S. gal
Motor gear box . . . . .	.40 L	10.5 U.S. gal
Fuel . . . . .	.4542 L	1200 U.S. gal

* Includes lube oil filters



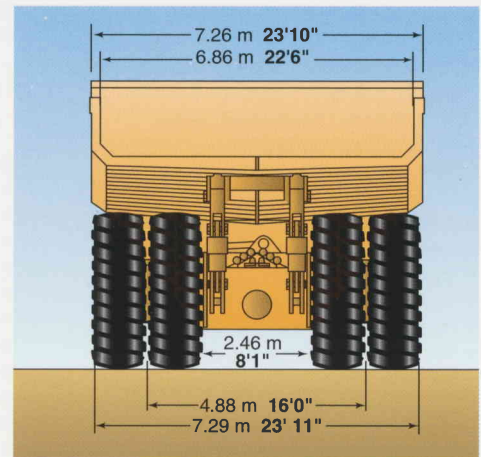
DIMENSIONS



All dimensions are with 147 m³ 193 yd³ body.

Bodies	Struck	2:1 Heap	Loading Height*
Standard	117 m ³ 153 yd ³	147 m ³ 193 yd ³	6.71 m 22'

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



HYDRAULIC SYSTEM

- Steering Accumulator-assisted twin cylinders provide constant rate steering. Emergency steering automatically applied by accumulator.
- Turning circle diameter (SAE) 28.4 m **93 ft**
- Reservoir 901 L **238 U.S. gal**
- Filtration In-line replaceable elements
 - Suction Single, full-flow, 100 mesh
 - Hoist and steering Dual, in-line, high-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 damping.
- Hoist times
 - Power-up loaded 25 sec
 - Power-down 27 sec
 - Float-down empty 24 sec
- Pumps
 - Hoist Tandem gear-type pump with output of 870 liters **230 gpm** @ 1900 rpm
 - Steering and brake Tandem radial piston, pressure compensated, with output of 246 liters **65 gpm** @ 1900 rpm

- System relief pressures
 - Hoist 17240 kPa **2,500 psi**
 - Steering and brake 27580 kPa **4,000 psi**
- Quick disconnects standard for powering disabled truck and for system diagnostics.



ELECTRICAL SYSTEM

- 4 x 8D 1450 CCA, 12 volt batteries, in series/parallel, deck-mounted with disconnect switch.
- Alternator 24-volt, 240 amp
- Lighting 24-volt
- Starters Two 24-volt



WEIGHT DISTRIBUTION

Empty Vehicle	kg	lb	%
Front axle	78638	173,593	49.7
Rear axle	79521	175,543	50.3
Total (wet, 50% fuel)	158159	349,136	
Loaded Vehicle at maximum GVW rating			
Front axle	127330	280,715	33.0
Rear axle	258518	569,935	67.0
Total	385848	850,650	

NOTE: GVW shall not exceed 385848 kg **850,650 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.



STANDARD EQUIPMENT

- Air cleaners, dry-type SRG
- Alternator (24V/240A)
- Auto lubrication system
- Battery charging jumpstart connector
- Batteries (4 x 8D, 1450 CCA 12 volt)
- Body down indicator/body up buzzer
- Body over center device
- Brakes: Front: Wheel speed disc; Rear: dual disc armature speed
- Electric start
- Filters, high pressure hydraulic
- Gate valve on hydraulic tank
- Jump start battery charge socket, 24V
- Komatsu control cabinet
- Komatsu Payload Weighing System-PLM III
- Load counter, manual
- Mirrors, LH flat and RH rectangular convex
- Mud flaps
- Muffled exhaust, deck-mounted
- On-board load box
- Quick disconnects (air, steering, hoist)
- Radiator sight gauge
- Removable power module unit (radiator, engine, alternator, blower)
- Retard grids, 18-element, blown
- Retard speed control
- Reverse retarding
- Rock ejectors
- Thermostatic Fan Clutch
- Two-speed overspeed retarding
- Variable speed thermostatic fan clutch
- Vari-volt alternator control
- Fast-Fill Fuel System (in-tank)
- Service Center (radiator, engine, hydraulics)

SAFETY:

- All-hydraulic service brakes with emergency auto apply
- Battery disconnect switch
- Body prop cable

- Brake lock and drive system interlock
- Circuit breakers, 24V
- Diagonal staircase across grill
- Dynamic retarding with continuous rated grids
- Engine shutdown at ground level
- Hoist interlock
- Horns (electric)
- Maintenance & power lock-out
- Parking brake with warning light and speed application protection
- Power steering w/auto emergency steering
- Protective deck rails
- Pump drive guard
- Radiator fan guard
- Seat belts (wide, retractable)
- Skid-resistant coating on walkways
- Steps, access to rear frame area

CAB:

Instrumentation

- Warning system light and buzzer for: coolant low level, coolant high temperature, crankcase pressure, electric cooling blower, low oil pressure, ground relay
- Accumulator pre-charge light
- Air cleaner vacuum indicators
- Air conditioner HFC 134a
- AM/FM cassette radio
- Blower pressure indicator light
- Coolant temperature gauge
- Digital tachometer and speedometer
- Dome light
- Engine hourmeter
- Engine shutdown
- Floor mat
- Fuel gauge in cab and on tank
- Fuel low level warning
- Gauges (backlighted)
- Headlight switch

- Heater and defroster (heavy-duty)
- Heater switch
- High beam selector and indicator
- Horn (center of steering wheel)
- Hydraulic low level and oil temp light and buzzer
- Indicator lights for dynamic retarding, overspeed, service brakes
- Insulation (Max R-Value)
- Integral roll-over protection (ROPS)
- Motorized wheel temperature warning alarm
- Oil pressure gauge
- Operator seat, adjustable w/air suspension, lumbar support and arm rests
- Panel lighting (adjustable)
- Passenger seat
- Power windows
- Pressurized cab air system
- Starter key switch
- Steering system warning light and buzzer
- Sunvisor (adjustable)
- Tilt and telescoping steering wheel (adjustable)
- Voltmeter (battery output)
- Wheel brake lock w/drive system interlock
- Windshield (tinted safety plate)
- Windshield wipers and washer (electric)

LIGHTING:

- Back-up lights (2)
- Clearance lights
- Control cabinet service light
- Dynamic retarding, rear (2) & top of cab (2)
- Headlights—bumper (4) halogen
- Ladder lights
- Manual back-up light switch
- Service light in rear axle
- Stop and tail lights (2)
- Turn signals
- Under-hood service lights



OPTIONAL EQUIPMENT

(Optional equipment may change operating weight).

- 20-element grids with 7-step ERR
- Additional high-mounted headlights
- Air cleaner dust evacuators
- Arctic protection package (suspensions, antifreeze/lube below -40° C)
- Back-up lights, deck-mounted
- Body liners*
- Eliminator, centinel, reserve
- Fire extinguisher - 20 lb.
- Fog lights
- Hot starts (engine oil, coolant, hydraulic tank)
- Hubodometer
- Modular Mining Systems (MMS) cab ready
- Motorized wheel ratios (higher - lower)
- Pivot exhaust (heated body)
- Pressure fueling remote LH
- Radiator shutters
- Special language decals

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

AESS577-00

©2001 Komatsu Printed in USA

DK12(3M)EH Datakom

12/01 (EV-1)

KOMATSU®

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