

KOMATSU®

980E-5

6
8
0
E
5

ELECTRIC DRIVE TRUCK



Photos may include optional equipment.

GROSS HORSEPOWER
3,500 HP 2610 kW

NOMINAL GVW
1,384,500 lb 627999 kg

WALK-AROUND

Komatsu 980E-5 Mining Dump Truck

www.wme.cn/komatsu-980e-5/

PRODUCTIVITY FEATURES

- High performance Komatsu SSDA18V170 engine Gross Horsepower 2610 kW **3,500 HP**
- Dual IGBT AC electric drive system
- 4474 kW **6,000 HP** retarding
- Traction (spin-slide) control
- Cruise control
- Komatsu designed application specific body
- Tight turning radius 15.9 m **52' 2"**
- Payload Meter IV® (PLM IV)
- High torque for soft underfoot applications

ENVIRONMENTALLY FRIENDLY

- Komatsu SSDA18V170 engine with after-treatment meets U.S. EPA Tier 4 Final emissions regulations
- Fuel efficient engine
- Less fluids compared to mechanical drive trucks



Photos may include optional equipment.

GROSS HORSEPOWER

3,500 HP 2610 kW
@ 1800 rpm

NOMINAL GVW

1,384,500 lb 627999 kg



OPERATOR ENVIRONMENT

- Ergonomically designed spacious cab with excellent visibility
- Fully adjustable driving position settings
- Four post ROPS/FOPS level 2 cab
- User friendly display with payload information
- Komatsu Hydrair® II suspensions designed for optimum ride comfort
- AM/FM/CD/MP3/USB/weather band radio
- Optional KomVision™ All Around Monitoring System



EASY MAINTENANCE

- KOMTRAX Plus 2® allows immediate diagnostics of key engine, chassis, and drive system components
- Oil-cooled wet disc braking system reduces wear and extends component replacement intervals
- Automatic lubrication system
- Eliminator® oil filtration system
- Flange mounted rims with optional Komatsu Smart type rims
- In-tank fast fuel & DEF fill system

RELIABILITY FEATURES

- Frame design optimized for 363 metric ton **400 short ton** payload
- Simple and reliable hydraulic system
- Steering and brake accumulators
- Hydraulically actuated multiple-disc wet brakes (All four wheels)

PRODUCTIVITY FEATURES

Komatsu High Horsepower Engine

The 2610 kW **3,500 HP** Komatsu SSDA18V170 engine will operate in most of today's mining applications without experiencing power derate. Fuel efficiency is maximized due to optimized air handling with two-stage turbocharging. Standard features include:

- A standard pre-lube system designed to reduce start-up wear and increase overhaul life.
- CENSE® on board monitoring of engine performance for each cylinder.
- ELIMINATOR® filtration system reduces oil and filter changes by one-third.

AC Electric Drive System

The GTA39 traction alternator coupled with GDY108C wheelmotors and Invertex II® AC control system provides reliable performance and easy maintenance. Invertex II® offers independent control of the rear wheelmotors, which in turn provides outstanding traction-ability during wet and slippery conditions, thus improving tire wear and operator confidence.

The air cooled Insulated Gate Bipolar Transistor (IGBT) inverter system technology provides the highest available reliability. The IGBT inverter is more compact and much simpler than the design of its predecessor, the Gate Turn Off (GTO) inverter, which improves serviceability and routine maintenance.

Electric Dynamic Retarder

The 4474 kW **6,000 HP** retarding system provides state of the art braking capacity for navigating today's mining applications which contain steep continuous descents and sharp switch-backs. Continuous retarding capacity enhances the productivity of the vehicle operator, while eliminating the need for excessive mechanical braking effort.



Traction (Spin-Slide) Control

During slippery conditions, the 980E-5 wheel traction control technology detects and corrects wheel spin or slide events. Traction control operates automatically and independently of the service brakes. During propulsion, "wheel slip control" reduces non-productive wheel spin in low traction conditions. During retarding, "wheel slide control" prevents wheel lockup and subsequent sliding.

Cruise Control

Cruise control, both in propulsion and retarding, allows the operator to concentrate on steering and situational awareness while maintaining a constant speed. A set speed indicator provides confirmation the truck speed matches the desired speed selected by the operator, with simple automotive style controls.

Komatsu Designed Application Specific Body

Utilizing the required Body Worksheet (BW) process, Komatsu ensures that each body is designed to meet the requirements for each specific application while carrying its rated payload. Komatsu works with each customer to understand all of the material properties at a mine site and to identify the appropriate liner package.

Komatsu offers a standard all-welded steel, flat floor body with a full canopy and horizontal bolsters. This body includes a driver side eyebrow, body up sling, and rubber mounts on the frame.

- Standard Body SAE Heaped 2:1: 250 m³ **327 yd³**
- Standard Komatsu Body Weight: 42638 kg **94,000 lbs**



PRODUCTIVITY FEATURES



Tight Turning Radius

By using double acting hydraulic steering cylinders with a six-point articulation linkage, the 980E-5 power steering system provides positive steering control with minimal operator effort. The turning radius of the 980E-5 is 15.9 m 5'2"2", which provides excellent maneuverability for tight loading and dumping conditions. The steering accumulators comply with ISO-5010 standards.

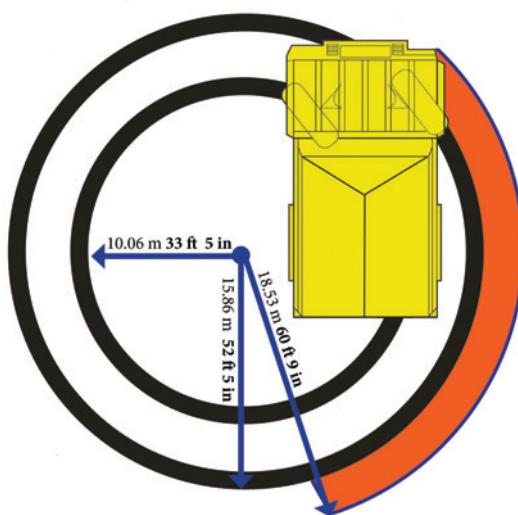
Payload Meter IV (PLM IV®)

PLM IV® is an electronic system that monitors and records payload information for Komatsu's off-highway mining trucks. The accurate and reliable payload measurement system is designed to help optimize payload, maximize productivity and reduce the life cycle cost of the machine. PLM IV® tracks and records the following key production parameters:

- Payload
- Empty Carry-Back
- Operator Identification
- Haul Cycle, Loading, Dumping Time and Date
- Distance Traveled (Loaded and Empty)
- Cycle Time Information
- Maximum Speeds (Loaded and Empty)
- MPH Estimate for Front and Rear Tires
- Average Speed (Loaded and Empty)

Hydrair II® Hydropneumatic Suspension

Hydrair II® is a suspension system that utilizes four nitrogen-over-oil cylinders. This suspension system is designed to maximize machine productivity by providing the operator with a smooth and comfortable ride. By absorbing shocks to the chassis during operation, Hydrair II® contributes to the durability of the machine's frame and components.



OPERATOR ENVIRONMENT

Ergonomically Designed Cab

The Komatsu 980E-5 cab design provides a comfortable and productive environment to meet today's mining demands. The cab includes tinted safety glass windows, heating and air conditioning, acoustical insulation, double sealed doors, and filtered and pressurized air to reduce dust.

User Friendly Display

The 980E-5 comes with a new operator friendly dash configuration which includes lighted gauges, switches and information panel. This allows the operator to see the status of the machine during operation and informs them of any faults. An instructive message will appear after any fault is detected on the machine.

Operator Seat

Komatsu recognizes that operator comfort is a key to productivity in today's mining environment. The five-way adjustable operator seat and the tilt-telescopic steering column provide an optimum driving posture for increased operator comfort and control over the machine. The air suspension seat absorbs vibrations transmitted from the machine, reducing operator fatigue. A 51 mm **2 in** wide, blaze orange, three-point seat belt is provided as standard equipment.

Built-in ROPS and FOPS Structure

These structures conform to ISO standards 3471 and 3449.



Photo may include optional equipment.

RELIABILITY FEATURES

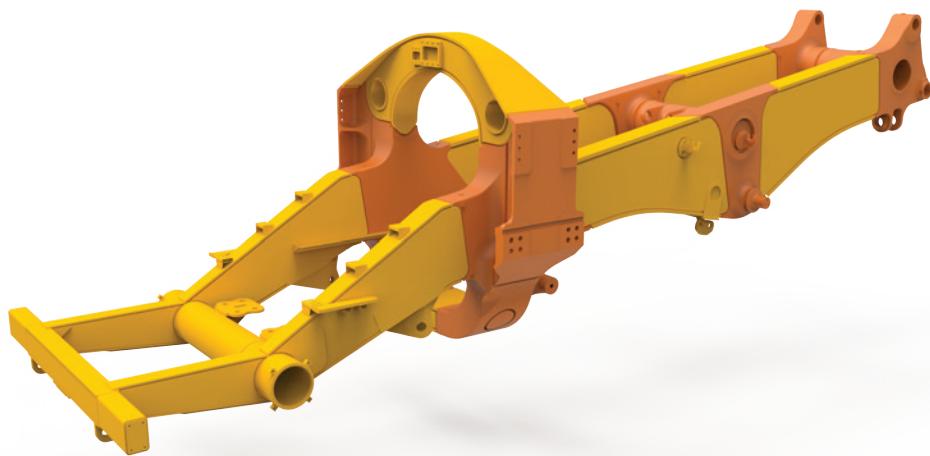
9-80E-5

Structurally Enhanced Frame Design

By using advanced computer-aided design, finite element analysis, and full-scale dynamic testing, the frame has been designed to carry 363 metric tons **400 short tons** and provides the high structural reliability Komatsu is known for.

Castings Used in High Stress Areas

To increase frame reliability, steel castings have been incorporated at key frame pivot points and critical load bearing portions of the structure. This includes the rear body pivot and horsecollar sections.



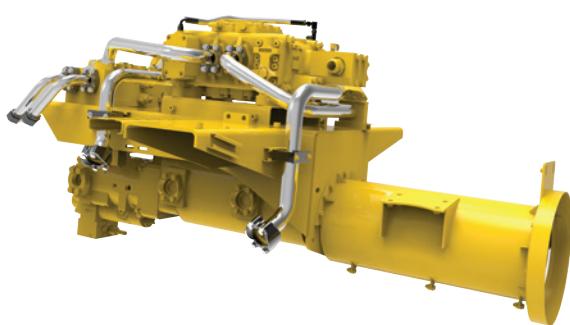
Simple and Reliable Hydraulic System

The hydraulic system is a proven and reliable design with fewer parts than other OEMs. The system utilizes a single tank, providing one common source of fluid for steering, braking, and hoisting. In-line, replaceable filtration elements provide protection from hydraulic system contamination, making the system easier to service.

To keep downtime to a minimum, Komatsu developed a sub-frame pump module that can be removed and replaced as a single unit. This reduces change-out time and allows easy access to the hydraulic pump module.

Proven Wheelmotor Design

The GDY108C wheelmotor builds on the success of its predecessor. Held to the highest standards, the transmission was subjected to extensive testing and quality confirmation, both on the bench and in the field. A full scale bench durability test was conducted during development to evaluate design quality prior to production. By using planetary design, extensive machining is not required during a standard rebuild.



Evolutionary, not Revolutionary Design

Komatsu's Tier 4 solution begins with a base engine which is similar to previous MCRS engine platforms. In keeping the basic operation of the engine the same, durability is assured. Utilizing High Pressure Common Rail fuel delivery ensures atomization of the fuel/air mixture to a level which reduces particulate matter, meeting U.S. EPA Tier 4 standards.



Komatsu After-treatment

Removal of NOx is accomplished by treating the exhaust through Selective Catalytic Reduction (SCR). The introduction of Diesel Exhaust Fluid (DEF) into the SCR canister generates a chemical reaction which breaks down the oxides of nitrogen into oxygen and nitrogen, both non-pollutants. Internal cleaning of the SCR is performed through an automatic process.



Fully Hydraulic Controlled Multiple-Disc Wet Brakes

Although the dynamic retarding system is the primary braking force, the 980E-5 comes standard with four-wheel, hydraulically actuated, oil cooled service brakes. In the event that the truck's hydraulic system pressure drops below an acceptable level, accumulator tanks will automatically apply all wheel brakes to bring the truck to a complete stop.

- Max. service apply pressure: 18960 kPa **2,750 psi**
- Total friction area per brake: 103729 cm² **16,078 in²**

The oil cooled brake system provides lower maintenance costs and higher reliability versus dry disc brakes. This system is fully sealed to help keep contaminants out and reduce brake wear and maintenance. The brakes are hydraulically actuated; no pneumatic system is used. There are three independent hydraulic circuits that provide hydraulic back-up.

The 980E-5 braking system meets ISO 3450-2011.



EASY MAINTENANCE

980E-5

Extended Engine Oil Change

ELIMINATOR® is a self-cleaning filtration system that offers extended filter change intervals and superior serviceability.

Access, Service and Convenience

Located on the front left bumper adjacent to the main entry to the machine, Komatsu installs many service and convenience items. This central location simplifies maintenance events, reducing the time the truck is out of service for routine upkeep.

1. Auto-lubrication tank and controls
2. Power, starter and drive system lockout (lock-out/tag-out capable switches)
3. Ground level engine shut-down
4. Fluid service center (coolant, engine oil, hydraulic oil, grease fill)
5. Hydraulic step up/down switch (Hydraulic stairs are optional)



KOMTRAX Plus 2®

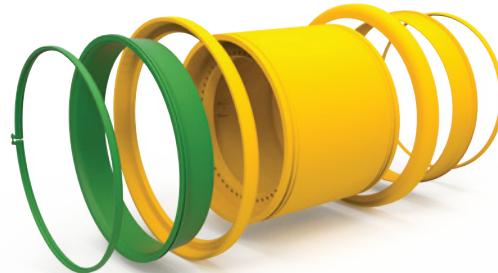
As part of a complete service and support program, Komatsu equips every mining and quarry sized machine with KOMTRAX Plus 2®. By using a satellite-based communication system, KOMTRAX Plus 2® offers a new vision of monitoring your valuable assets. By providing insight to critical operating metrics the user can manage increased availability, lower owning and operating costs and maximize fuel efficiency.

The information available through KOMTRAX Plus 2® allows service personnel to review faults and trends, improve the quality of the troubleshooting process and reduce unscheduled machine downtime.



(Optional) Komatsu Smart Type Rims

Komatsu Smart Rim technology allows easy removal and installation of the tires to minimize the overall impact on downtime.



DRIVE SYSTEM

Drive System (Invertek II)

- True Quad Chopper Eliminates RP Contactors
- Double Stack IGBT's
- Increased Cabinet Rigidity
- Front Placement of Indicator & Interface Panels
- Front Access for Maintenance
- All LED Lighting

Improved Bus Bar

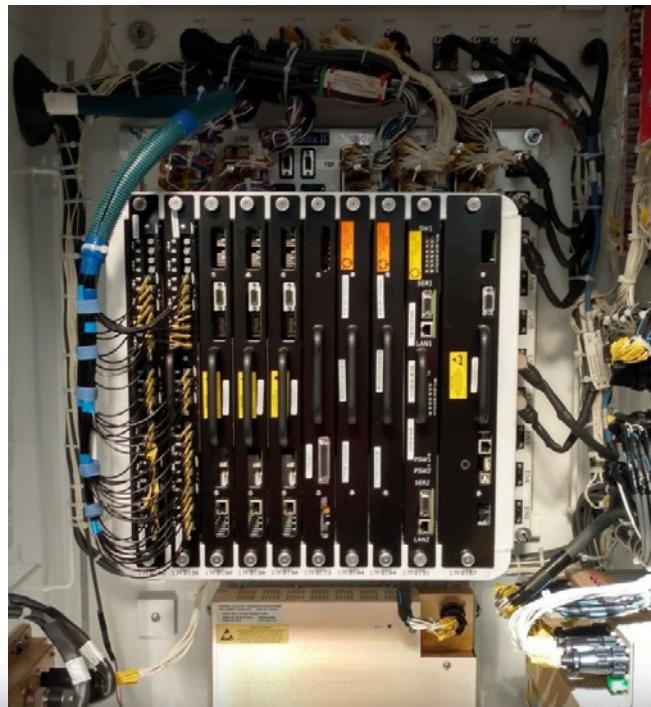
- Close Molded Design- Eliminates Potting
- No Soldered Bushings
- Edge Protection
- FR4 & Abrasion Protection
- Simplified, More Robust Bus Bar Design

Improved Truck Performance

- Retains Wheel Slip/Slide control in all Modes of Operation
- Cruise Control (Both Motoring & Retarding)
- Fuel Saver 2 Built-in

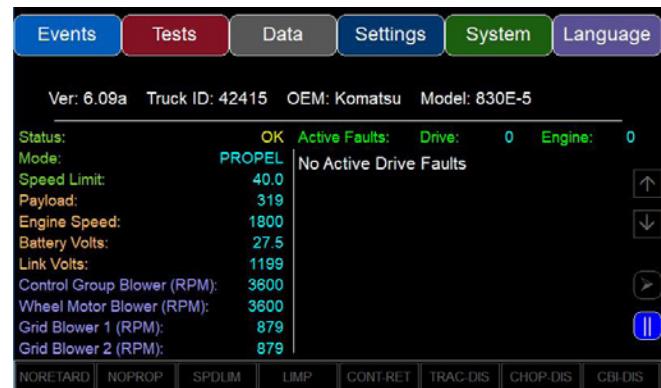
Technology Advancements

- Supports Data Collection & Transmission for Remote Monitoring
- New Generation Technology for Faster Processing with Higher Capacity (90% Faster Data Transfer)
- Common CAN Network Consists of Engine, Truck & Drive System
- Supports CAN, Ethernet & USB



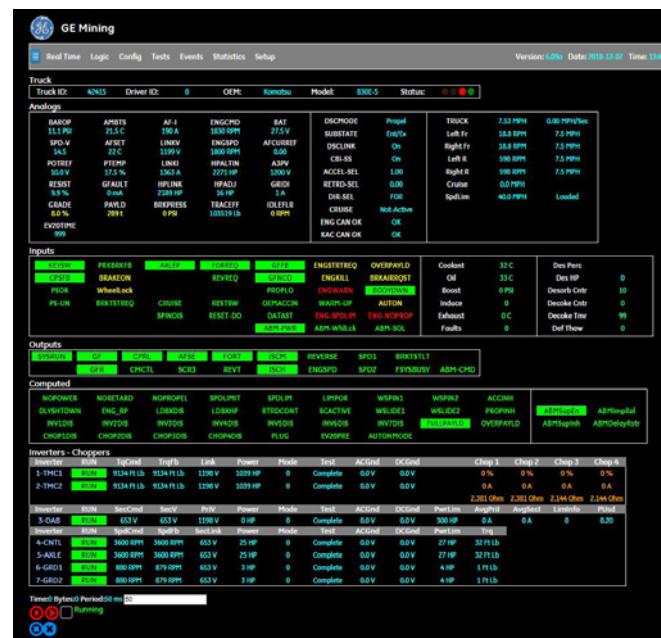
VID Display

- Replaces DID Panel
- In-cab Touch Screen Display for Setup, Maintenance & Troubleshooting
- Access, Download & Update System from the Operators Cab
- Entry to Control Cabinet no Longer Required for Basic Troubleshooting



WebPTU

- Replaces wPTU
- Primary Maintenance & Troubleshooting Tool for all Future Systems
- Browser Based Access & Visualization of Truck System Data
- Eliminates Dependency on Legacy PC's & Operating Systems
- Accessible in Operators Cab via Ethernet



ADDITIONAL FEATURES

980E-5

Environmentally Friendly

Less Fluids than Mechanical Drives

Komatsu's 980E-5 contains 63% less hydraulic fluid compared to similar class mechanical drive trucks, creating a lower environmental impact and making fluid replacement simpler, quicker and more economical.

U.S. EPA Compliant

The Komatsu SSDA18V170 engine is compliant with the U.S. EPA Tier 4 emissions regulations.

Reduced Fuel Consumption

The engine and drive system are specifically tuned together, providing efficient power usage and minimizing fuel consumption.

Komatsu Loading Policy for Mining Trucks

In normal loading operations, variations in payloads occur. The loading policy identifies the guidelines and limitations for the loading of those Komatsu Mining Truck models specified.

Definitions:

- **Rated GVW** (Gross Vehicle Weight) includes the chassis, body, tires, accessories (including local options), lube, fuel, operator, payload and any excess material build-up.
- **Rated Payload** is the resultant difference of Rated GVW minus EVW.
- **Overload** refers to any payload amount in excess of the Rated Payload.
- **Never to exceed GVW** is the maximum allowable GVW under the guidelines of this Policy.

Actual payloads greater than the Rated Payload are allowable, but shall not result in a GVW that is greater than the Never to Exceed GVW.

No single payload that results in a **GVW** in excess of the Never to Exceed GVW is allowed under any circumstances.

The mean of all payloads for a rolling 30-day period shall not exceed the Rated Payload.

Truck Model	980E-5	
Specification	lb	kg
Rated GVW	1,384,500	627,999
Standard Tire Size		59/80R63
Rated / Nominal Payload	800,000	362,874
Never To Exceed GVW	1,544,500	700,573

SPECIFICATIONS



ENGINE

Make and model	Komatsu SSDA18V170
Fuel	Diesel
Number of cylinders	18
Operating cycle	4 cycle
Gross horsepower*	2610 kW 3,500 HP @ 1800 rpm
Net flywheel power**	2495 kW 3,346 HP @ 1800 rpm
Weight (wet)	11750 kg 25,897 lbs
Weight (dry)	11250 kg 24,795 lbs

Optional: Tier 4 emissions compliant engine for North American market.

Non-emissioned engine for markets outside of North America.

* Gross horsepower 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.

**Net flywheel power is the rated power at the engine flywheel minus the average accessory losses. Accessories include fan and charging alternator. Rating(s) represent net engine performance in accordance with SAE J1349 conditions.



ELECTRIC DRIVE

AC/DC CURRENT

Alternator	GTA-39
Dual Fan Main Blower	340 m ³ /min 12,000 cfm
Control	AC Torque Control System
Motorized wheels*	GDY108-C Induction Traction Motors
Ratio	35.02:1
Speed (maximum)	64 km/h 40 mph

* Drive system performance depends upon gross vehicle weight, haul road grade, haul road length, rolling resistance and other parameters. Komatsu must analyze each job condition to assure proper application.



TIRES AND RIMS

Rock service, tubeless, radial tires

Standard tire*	59/80 R63
Flange mount, five piece rim	1118 mm x 1600 mm x 140 mm
	44" x 63" x 5.5" rim assembly.
Rims rated at 758 kPa 110 psi cold inflation pressure.	

Typical total tire weight.....32585 kg **71,838 lbs**

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



CAB

Advanced Operator Environment with integral 4-post ROPS/FOPS Level 2 structure (ISO 3449), adjustable air suspension seat w/lumbar support and arm rests, full-size passenger seat, maximum R-value insulation, tilt and telescoping steering column, electric windshield wipers w/washer, tinted safety glass, power windows, Payload Meter IV, 55,000 Btu/hr heater and defroster, 21,600 Btu/hr air conditioning (HFC - 134A refrigerant)



SUSPENSION

Variable rate hydro-pneumatic with integral rebound control	
Max. front stroke	303 mm 11.92"
Max. rear stroke	239 mm 9.40"
Max. rear axle oscillation	±6.5°



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"** Rear

32 mm **1.26"** Front

Drive axle mounting.....Pin and spherical bushing

Drive axle alignment.....Swing link between frame and axle



BODY

All-welded steel flat floor body with horizontal bolsters and full canopy. Rubber mounts on frame, eyebrow and body up sling are standard. Extended canopy and pivot exhaust heating are optional.

Floor sheet.....16 mm **0.63"** Outer

19 mm **0.75"** Center

1379 MPa **200,000 psi** tensile strength steel

Front sheet.....10 mm **0.39"** Outer

12 mm **0.47"** Center

1379 MPa **200,000 psi** tensile strength steel

Side sheet.....10 mm **0.39"**

1379 MPa **200,000 psi** tensile strength steel

Canopy sheet.....6 mm **0.24"**

690 MPa **100,000 psi** tensile strength steel

SAE heaped 2:1.....250 m³ **327 yd³**

Standard Komatsu body weight.....41731 kg **92,000 lb**



Braking System

Service brakes.....Oil-cooled, hydraulic actuated, multiple disc brakes at each wheel.

Traction system.....Wheel spin-slide control

Max. service apply pressure.....18960 kPa **2,750 psi**

Total friction area per brake.....103729 cm² **16,078 in²**

Auto apply system.....Automatically applied prior to hydraulic system pressure dropping below level required secondary stopping requirements.

Secondary brake system ...Complies with ISO-3450 Standards

Wheel brake lock.....Switch-activated

Parking brakes.....Multiple disc, spring-applied, hydraulically-released, dry brakes on inboard end of each wheel motor rotor shaft. Rated to hold on ±15% grade at maximum gross vehicle weight.

Electric dynamic retarder4476 kW **6,000 hp**



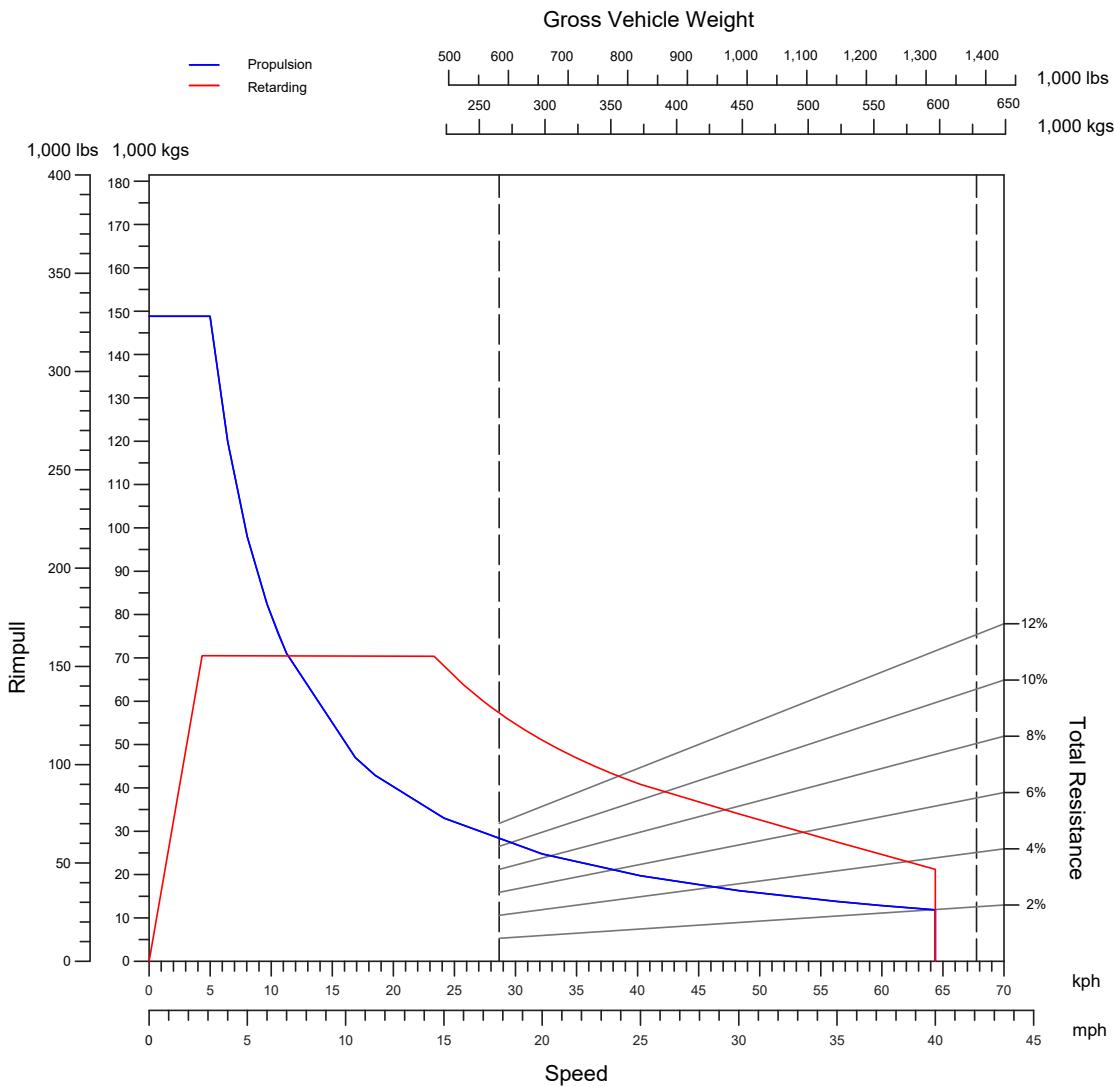
COOLING SYSTEM

Replaceable core radiator assembly, split-flow, with deaerator-type top tank.

Radiator frontal area.....7.02 m² **75.5 ft²**

Performance Chart

980E - 5 PERFORMANCE 3,500 HP - 59/80 R63 TIRES



Empty Vehicle Weight*

Front Axle Distribution (48%)	127260 kg	280,560 lbs
Rear Axle Distribution (52%)	137865 kg	303,940 lbs
Total EVW	265125 kg	584,500 lbs

Gross Vehicle Weight

Front Axle Distribution (33%)	209333 kg	461,500 lbs
Rear Axle Distribution (67%)	418666 kg	923,000 lbs
Nominal GVW	627999 kg	1,384,500 lbs

Payload

Nominal Payload	362874 kg	800,000 lbs
	363 metric tons	400 short tons

Nominal payload is defined by Komatsu America Corp's payload policy documentation. In general, the nominal payload must be adjusted for the specific vehicle configuration and site application. The figures above are provided for the basic product description purposes. Please contact your Komatsu distributor for specific application requirements.

* Includes Options Allowance



STANDARD EQUIPMENT

- Air cleaners w/ auto evacuators
- Alternator (24 volt/2 x 275A)
- Automatic lubrication system w/ground level fill, level indicator & dynamic timing
- Back-up alarm
- Batteries-4 x 8D (1400 CCA's)
- Battery charging/jump start connector
- Body over-center device
- Body-up sling (w/KAC supplied body)
- Brakes: oil-cooled, multiple disc front & rear
- Control cabinet
- Cruise control
- Electric start
- Eliminator®, Cense®
- Fast-fill fuel system (in tank)
- Filters, high pressure hydraulic
- Ground level radiator fill
- Mirrors, heated, multi-cambered convex LH & RH
- Mud flaps
- Muffled exhaust-deck-mounted
- Power supply, 24 volt and 12 volt DC
- Quick disconnects (steering, hoist and diagnostics)
- Radiator sight gauge
- Removable power module unit (radiator, engine, alternator, blower)
- Reverse retarding
- Service center-LH
- Thermostatic fan clutch

OPERATOR ENVIRONMENT & CONTROL

- All hydraulic service brakes with auto apply
- Back up alarm
- Battery disconnect switch
- Brake lock and drive system interlock
- Circuit breakers, 24 volt
- Diagonal staircase across grille
- Dynamic retarding with continuous rated element grids
- Engine shutdown at ground level
- Hoist propulsion interlock
- Horns (electric-front)
- Integral ROPS/FOPS Cab Level 2
- Maintenance and power lockout

- Parking brakes with warning light & speed application protection
- Power steering w/auto secondary steering
- Protective deck handrails
- Pump driveline protector
- Radiator fan guard
- Seat belts
 - Operator 3-point 51 mm **2"** retractable
 - Passenger lap 51 mm **2"** retractable
- Slip-resistant walkways

STANDARD HIGH VISIBILITY DELUXE CAB

- AC drive interface display
- Air conditioner HFC-134A
- AM/FM radio with CD, USB & MP3
- DEF Gauge
- Digital air cleaner restriction gauges
- Dome light
- Electronic Dash & Status Panel
 - Body up
 - Engine oil temperature (high)
 - Parking brake
 - Propulsion system not ready
 - No DC link voltage
 - No propel
 - Service brake applied
 - Wheel brake lock applied
 - Maintenance monitor
- Engine hourmeter, oil pressure gauge, coolant temperature gauge, hydraulic oil temperature
- Engine shutdown w/ "Smart Timer" delay
- Floor mat (double barrier)
- Fuel gauge in cab
- 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 (blue)
 - Engine service
 - KOMTRAX Plus 2® snapshot (IM)
- Komatsu Payload Meter IV® (PLM IV)