



785C

Mining Truck



CAT[®]

Engine @ 1750 RPM

Engine Model	Cat [®] 3512B EU1	
Gross Power	1082 kW	1,450 hp
Flywheel Power	1005 kW	1,348 hp

Weights

Gross Machine		
Operating Weight	249 480 kg	550,000 lb

Operating Specifications

Body Capacity – SAE (2:1)	78 m ³	102 yd ³
Nominal Payload Capacity	136 tonnes	150 tons

785C Mining Truck

Engineered for performance, designed for comfort, built to last.

Power Train – Engine

The Cat® 3512B engine delivers the power and reliability necessary to perform in the most demanding applications. Designed for efficient operation, the 3512B offers excellent fuel efficiency, lower emissions, reduced engine noise and lower operating costs. **pg. 4**

Power Train – Transmission

The Cat six-speed power shift transmission and mechanical power train, matched with the electronic unit injection 3512B engine, provides consistent power and efficiency for peak power train performance. **pg. 5**

Engine/Power Train Integration

The Cat Data Link electronically combines engine, transmission, brake and operational information to optimize overall truck performance. Stored diagnostic data can be accessed via the Electronic Technician (ET) to improve troubleshooting and reduce downtime. **pg. 6**

Monitoring System

Vital Information Management System (VIMS) provides operators, service technicians and managers with vital machine health and payload data to keep the 785C performing at peak efficiency and top production levels while lowering cost-per-ton. **pg. 12**

Truck Body Systems

A variety of Caterpillar designed and built truck bodies ensure optimal performance and reliability in tough mining applications. Cat dealers can help build an optimum hauling system to maximize truck payloads and extend body and truck wear life. **pg. 14**

Top Performance.

Developed specifically for high production mining and construction applications, the 785C Mining Truck keeps material moving at high volume to lower your cost-per-ton.

Reliable, Durable Operation.

Rugged construction and easy maintenance procedures ensure long life with low operating costs.



Caterpillar® Brake System

Cat oil-cooled, multiple disc brakes offer exceptional, fade-resistant braking and retarding for maximum performance and productivity in all haul road conditions. Integrated Braking Control combines retarding and traction control into one system for optimum braking efficiency. **pg. 8**

Structures

Caterpillar truck frames are built to resist twisting in the most severe, high impact applications. Mild steel provides flexibility, durability and resistance to impact loads. Castings and forgings in high stress areas provide exceptional strength and durability for long life. **pg. 10**

Operator's Station

The ergonomic cab is designed for operator comfort and ease of operation to allow the operator to focus on production. Controls and gauges are positioned within easy reach for optimum efficiency and superior control all shift long. **pg. 11**

Serviceability

The 785C is designed for quick and easy servicing. Simplified service and maintenance features reduce downtime, allowing the machine to spend less time being serviced and more time on the haul roads. **pg. 16**

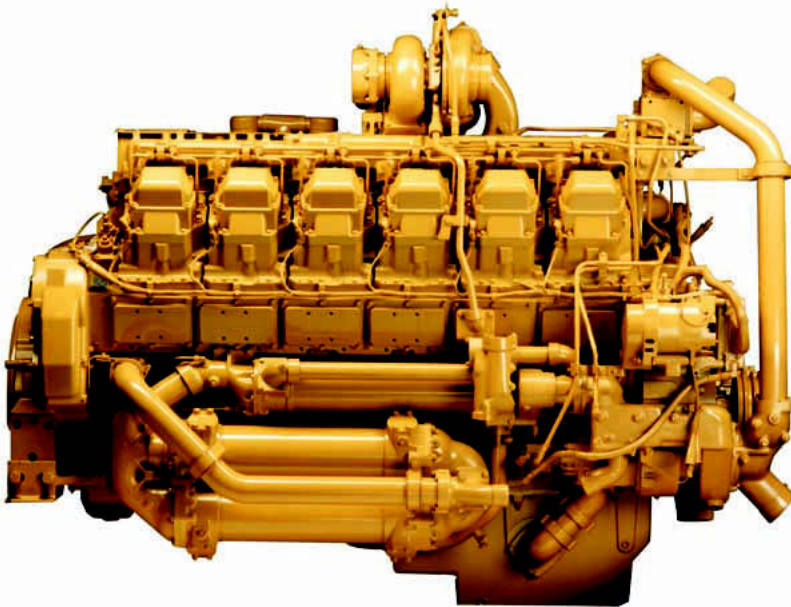
Customer Support

Caterpillar dealers provide unmatched product support, anywhere in the world. With industry-best parts availability and a wide range of maintenance and service options, Cat dealers have what it takes to keep your mining machines productive. **pg. 17**



Power Train – Engine

The Cat 3512B engine is built for power, reliability and efficiency for superior performance in the toughest applications.



Engine. The Cat 3512B EUI twin turbocharged and aftercooled diesel engine delivers high power and reliability in the world's most demanding mining applications. The 3512B is a 16-cylinder, four-stroke design that uses long, effective power strokes for more complete fuel combustion and optimum efficiency.

EPA Compliant. The 3512B engine is compliant with U.S. Environmental Protection Agency Tier I emissions standards.

Altitude Compensation. Designed for maximum operating efficiencies at altitudes under 3048 m (10,000 ft).

High Torque Rise. The 23 percent torque rise provides unequalled lugging force during acceleration, on steep grades and in rough underfoot conditions. Torque rise effectively matches transmission shift points for maximum efficiency and fast cycle times.

Enhanced Life. High displacement, low rpm rating and conservative horsepower ratings mean more time on the haul roads and less time in the shop.

Two-Piece Piston Design. Two-piece articulated pistons with a deep bowl, low volume crevice design enhances combustion efficiency, improves fuel efficiency and lowers emissions.

Electronic Unit Injection (EUI). The electronically controlled unit injection fuel system senses operating conditions and regulates fuel delivery for optimum fuel efficiency. The proven high-pressure fuel system provides improved response times and more efficient fuel burn with lower emissions and less smoke.

Electronic Control Module (ECM). ECM utilizes advanced engine management software to monitor, control and protect the engine utilizing self-diagnosing electronic sensors. The computerized system senses operating conditions and power requirements and adjusts engine for peak performance and most efficient operation and at all times.

Separate Circuit Aftercooler. Allows the aftercooler circuit to operate cooler than jacket water temperature for a denser air charge and greater combustion.

Oil Renewal System. Optional oil renewal system extends engine oil change intervals from 500 hours to 4000 hours or more to increase machine availability.

Engine Protection. Computerized system electronically protects the engine during cold starts, high altitude operation, air filter plugging, and high exhaust temperature.



Power Train – Transmission

Cat mechanical power train delivers more power to the ground for greater productivity and lower operating costs.

Mechanical Power Train. The Cat mechanical drive power train and power shift transmission provides unmatched operating efficiency and control on steep grades, in poor underfoot conditions, and on haul roads with high rolling resistance.

1) Transmission. The Cat six-speed planetary power shift transmission is matched with the direct-injection 3512B diesel engine to deliver constant power over a wide range of operating speeds.

Robust Design. Designed for the higher horsepower of the 3512B engine, the proven planetary power shift transmission is built tough for long life between overhauls.

Long Life. A dedicated oil tank and circuit provides cooler, cleaner oil for maximum performance and longer component life.

Transmission Chassis Control (TCC). TCC uses electronically transferred engine rpm data to execute shifts at preset points for optimum performance, efficiency and clutch life.

2) Lock-Up Torque Converter. Combines maximum rimpull and cushioned shifting of torque converter drive with the efficiency and performance of direct drive. Engages at approximately 8 km/hr (5 mph), delivering more power to the wheels.

Lock-Up Clutch. Quickly releases and re-engages to reduce power train torque loads for smoother shifting, long life and a more comfortable ride.

Smooth Shifting. Individual clutch modulation provides smooth clutch engagements to optimize performance and extend clutch life.

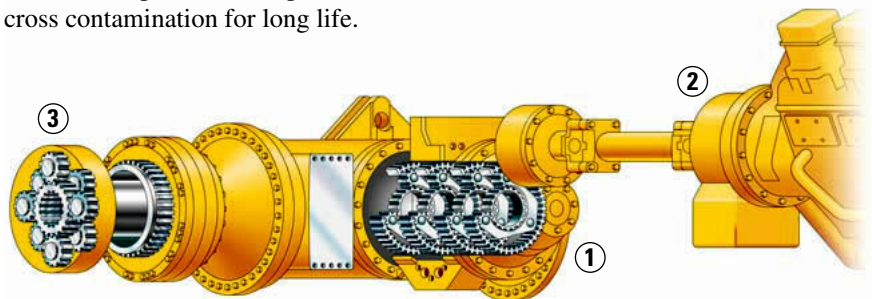


3) Final Drives. Cat final drives work as a system with the planetary power shift transmission to deliver maximum power to the ground. Built to withstand the forces of high torque and impact loads, double reduction final drives provide high torque multiplication to further reduce drive train stress.

Steering System. Hydraulic steering control system is designed for exceptional smoothness and precise control. A separate circuit prevents cross contamination for long life.

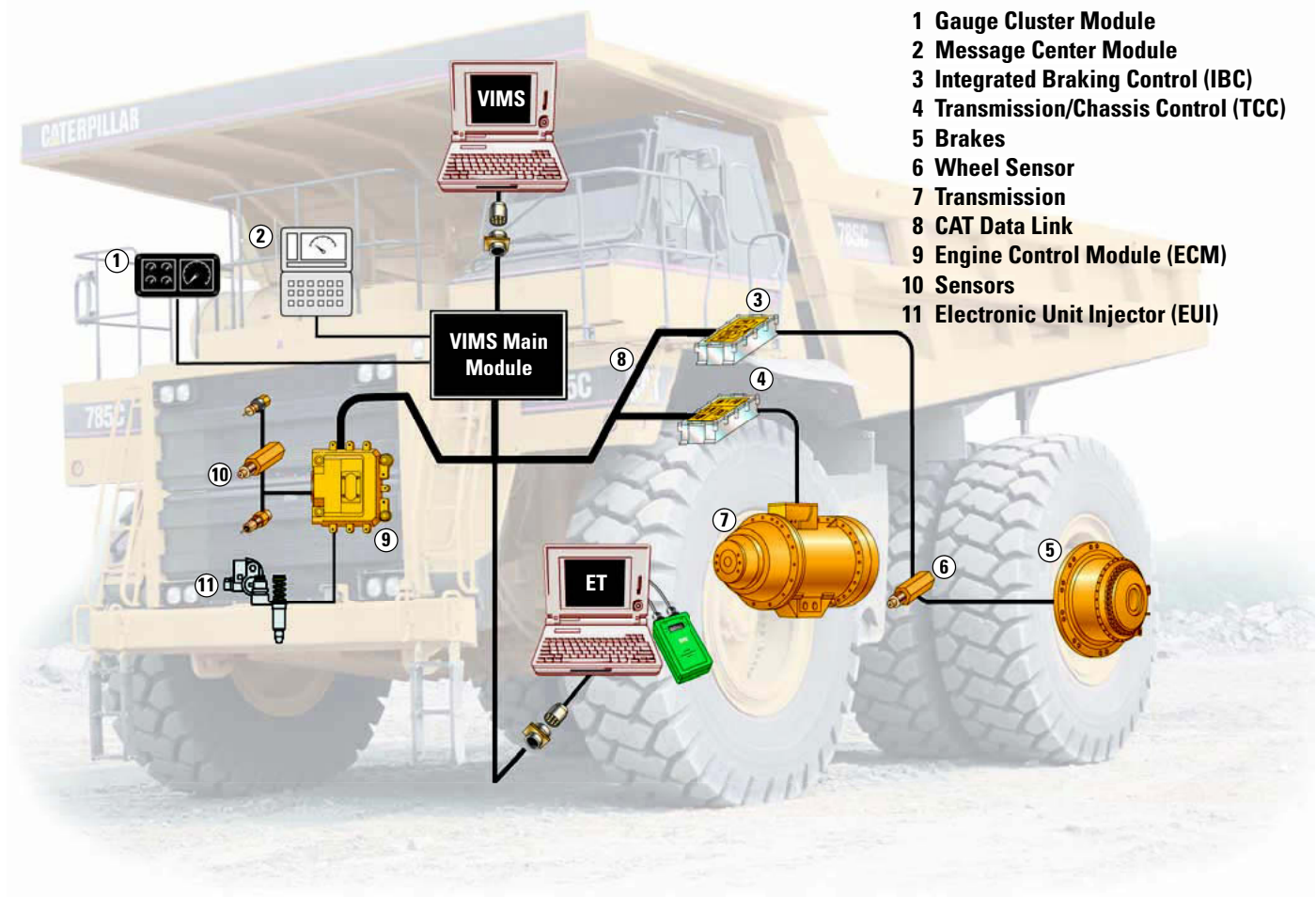
Supplemental Steering. Supplemental steering system uses pressure accumulators and allows up to three 90 degree turns in case of engine failure.

Wheels and Rims. Cast rear wheels and Cat center-mount rims are mounted using studs and nuts to minimize maintenance and maximize durability.



Engine/Power Train Integration

Electronically combines critical power train components to work more intelligently and to optimize overall truck performance.



Cat Data Link. Electronically integrates machine computer systems to optimize overall power train performance, increase reliability and component life, and reduce operating costs.

Controlled Throttle Shifting. Regulates engine rpm during shifting to reduce power train stress and clutch wear by controlling engine speed, torque converter lock-up and transmission clutch engagement for smoother shifts and longer component life.

Directional Shift Management. Regulates engine speed during directional shifts to prevent damage caused by high speed directional changes.

Neutral Coast Inhibitor. Prevents transmission from shifting to neutral at speeds above 6.5 km/h (4 mph) to protect the transmission from operating with insufficient lubrication.

Body-up Reverse Neutralizer.

Automatically shifts the transmission to neutral if the hoist lever is activated while transmission is shifted in reverse.

Body-up Shift Inhibitor. Prevents the transmission from shifting above a pre-programmed gear without the body fully lowered.

Overspeed Protection. The transmission control electronically senses engine conditions and automatically up-shifts one gear to prevent overspeeding. If overspeeding occurs in top gear, the lock-up clutch is disengaged.

Programmable Top Gear. Transmission top gear maximum can be set using the ET service tool to help the operator maintain speed limits.

Anti-Hunt Function. Prevents gear hunting when operating near a shift point and minimizes shifts by not allowing an upshift or downshift immediately after a shift has occurred for increased component life.

Downshift Inhibitor. Prevents engine overspeeding by keeping the transmission from downshifting until engine speed reaches the downshift point.

Electronic Technician (ET). ET service tool provides service technicians with easy access to stored diagnostic data through the Cat Data Link to simplify problem diagnosis and increase machine availability.

Diagnostic Capability. Critical data from the electronic engine and transmission controls, including transmission shifting, engine speed and fuel consumption, provides service technicians with enhanced diagnostic capability to reduce downtime and operating costs.

Integrated Braking Control (IBC). IBC integrates Automatic Retarder Control and Traction Control into one system for optimum performance and efficiency.

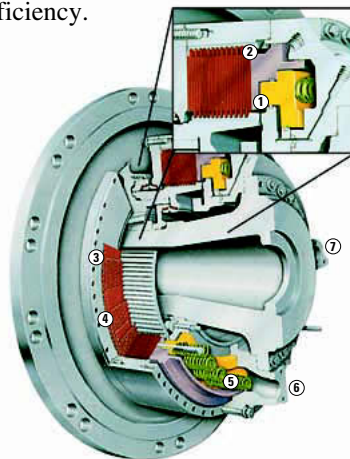
Caterpillar Brake System

Reliable braking with superior control gives the operator the confidence to focus on productivity.



Integrated Braking System. The Cat oil-cooled braking system delivers reliable performance and control in the most extreme haul road conditions. The integrated system combines the service, secondary, parking brake and retarding functions in the same robust system for optimum braking efficiency.

Cat Data Link. All control modules communicate via the Cat Data Link and work together as an integrated system to maximize production efficiency and extend component life.



- 1 Parking/Secondary Piston
- 2 Service/Retarding Piston
- 3 Friction Discs
- 4 Steel Plates
- 5 Actuating Springs
- 6 Cooling Oil In
- 7 Cooling Oil Out

Oil-Cooled Multiple Disc Brakes.

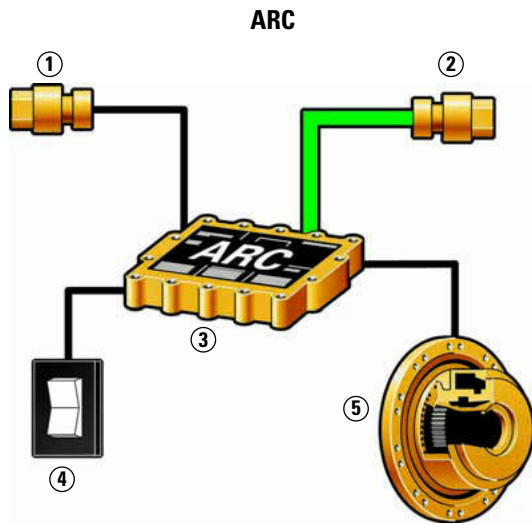
Caterpillar four-wheel, forced oil-cooled, multiple disc service brakes are continuously cooled by water-to-oil heat exchangers for exceptional, non-fade braking and retarding performance.

Brake Design. Cat oil-cooled disc brakes are designed with large discs and plates for reliable, adjustment-free operation and performance. Brakes are completely enclosed and sealed to prevent contamination and reduce maintenance.

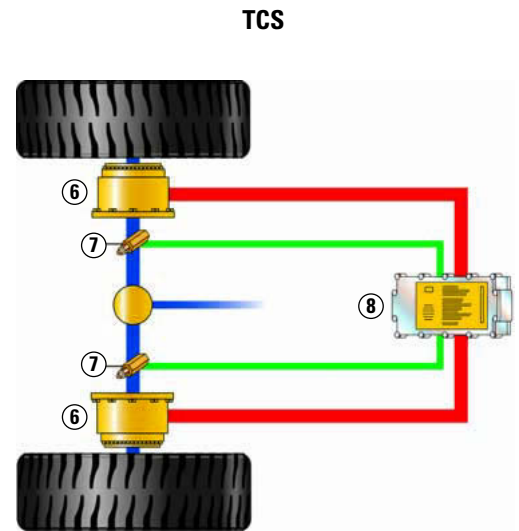
Long Life. An oil film prevents direct contact between the discs. This design absorbs the braking forces by shearing the oil molecules and carrying heat away to extend brake life.

Pistons. The Caterpillar two-piston design combines the service, secondary, parking brake and retarding functions in the same system. The primary piston hydraulically actuates both service and retarding functions. The secondary piston is spring-applied and held in the disengaged position by hydraulic pressure. If hydraulic system pressure drops below a specified level, the spring-applied secondary piston automatically applies the brakes.

Parking Brake. Oil-cooled, spring-applied, hydraulically released parking brake is applied to all four wheels for superior parking capability on all grades up to 15 percent.



- 1 Service Brake Sensor
- 2 Engine Sensor
- 3 ARC
- 4 ARC Switch
- 5 Brakes
- 6 Service Brakes
- 7 Axle Speed Sensor
- 8 TCS



Integrated Braking Control (IBC).

Combines Automatic Retarder Control (ARC) and Traction Control System (TCS) into one integrated brake control system for optimum efficiency, performance and reliability.

Automatic Retarder Control (ARC).

Electronically controls retarding on grade to maintain optimum engine rpm and oil cooling. Additional braking may be applied using the manual retarder or the brake pedal. ARC is deactivated when the operator applies the brakes or throttle.

Four Corner Retarding. Four corner retarding with 60/40 percent split (rear/front) in braking effort provides superior control in slippery conditions. Balanced front to rear brake torque provides exceptional braking performance and minimizes wheel lock-up, especially during retarding.

Faster Speeds. ARC allows the operator to maintain optimum engine speeds for faster downhill hauls and greater productivity.

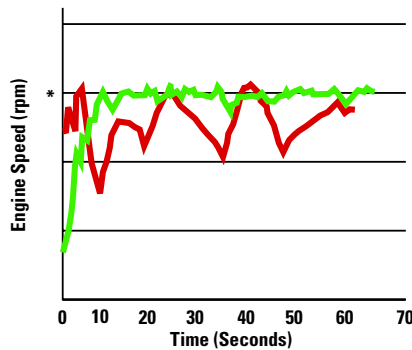
Superior Control. Automatic brake modulation offers a smoother ride and better control in slippery conditions, allowing the operator to concentrate on driving.

Ease of Operation. ARC increases operating ease, resulting in greater operator confidence with less fatigue.

Engine Overspeed Protection.

Automatically activates ARC when engine speed exceeds factory preset levels, regardless of operator inputs, to avoid potentially damaging engine overspeeds.

ARC Operating Efficiency Advantages



- Automatic Retarder Control (Maintains Engine rpm between 2160-2300)
- Manual Retarder Control (Wide Variation in Engine rpm)
- * Optimum Engine rpm

Fuel Efficiency. The engine provides additional retarding by running against compression on downhill hauls. During retarding applications the engine ECM does not inject fuel into the cylinders for exceptional fuel economy.

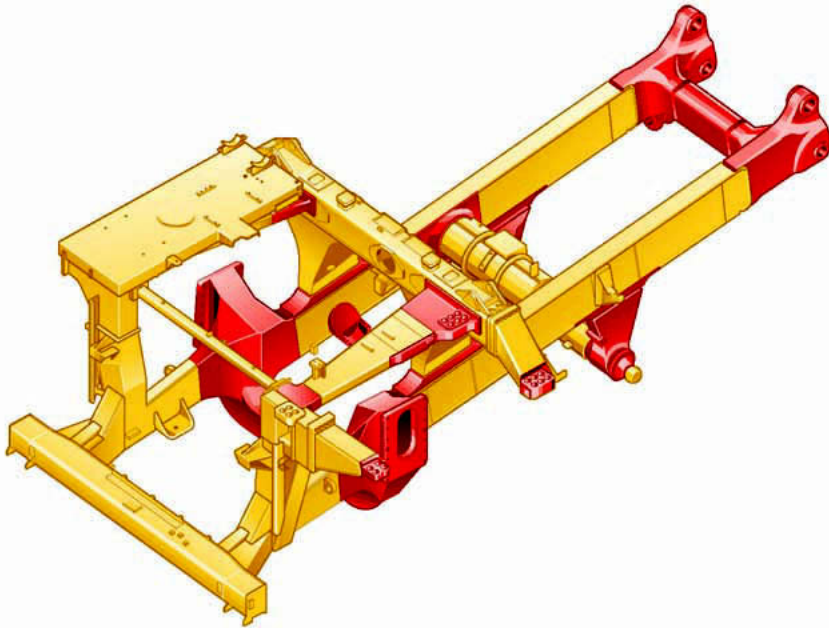
Traction Control System (TCS).

Electronically monitors and controls rear wheel slippage for greater traction and enhanced truck performance in poor underfoot conditions. If slippage exceeds a set limit, the oil-cooled disc brakes engage to slow the spinning wheel. Torque is then automatically transferred to the wheel with better traction.

Differential Action. Normal differential action provides superior maneuvering and control in slippery conditions.

Structures

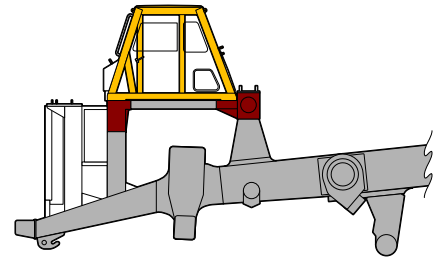
Rugged Cat structures are the backbone of the 785C mining truck's durability.



Box-Section Design. The 785C frame uses a box-section design, incorporating two forgings and 24 castings in high stress areas with deep penetrating and continuous wrap-around welds to resist damage from twisting loads without adding extra weight.

Steel Structures. Mild steel used throughout frame provides flexibility, durability and resistance to impact loads, even in cold climates, and allows for easy field repairs.

Castings. Castings have large radii with internal reinforcing ribs to dissipate stress in areas of high stress concentration. Castings move welds to lower stress areas for greater frame life.



Rollover Protective Structure (ROPS). Integral to the cab and frame, ROPS is resiliently mounted to reduce vibration and noise levels.

Suspension System. Designed to dissipate haul road and loading impacts for longer frame life and a more comfortable ride.

Cylinders. Four independent self-contained, oil pneumatic, variable-rebound suspension cylinders are designed to absorb shocks in the most severe applications.

- **Front.** Front cylinders with preset caster and camber are mounted to the frame and serve as steering kingpins for a tight turning radius with excellent maneuverability and low maintenance.

- **Rear.** Rear cylinders allow axle oscillation and absorb bending and twisting stresses caused by uneven and rough haul roads rather than transmitting them to the main frame.



Operator's Station

Ergonomically designed for operator comfort, superior control and high productivity.

Ergonomic Layout. The 785C operator station is ergonomically designed for total machine control in a comfortable, productive and safe environment. All controls, levers switches and gauges are positioned to maximize productivity and minimize operator fatigue.

Quiet Cab. Integral, sound-suppressed ROPS/FOPS cab is resiliently mounted to the mainframe to isolate the operator from sound and vibration for a quiet, secure and comfortable ride.

Viewing Area. Designed for excellent all-around visibility and clear sight lines to the haul road, the large viewing area enables the operator to maneuver with confidence for high productivity.

1) Air Suspension Seat. Ergonomically designed, fully adjustable air suspension seat with adjustable armrests provides optimal driving comfort. A wide, retractable seat belt provides a secure, comfortable restraint.

2) Hoist Levers. Low effort electronic hoist control is mounted next to the operator's seat for ease of operation.

3) Secondary Brake Pedal. Conveniently located on the floor for easy operator control.

4) Monitoring System. VIMS features an easy-to-read display and easy-to-use operator input keypad for precise machine status information.

5) Steering Column. Offers tilt and telescoping steering features to provide a comfortable driving position.

6) Transmission Console. Designed with backlit gear indicators and ergonomic shift knob.

7) Storage Compartment. Located under the trainer seat for a safe, uncluttered working environment.



8) Trainer Seat. Full-size, fully padded trainer seat features a backrest, wide hip and shoulder room, and seat belt for secure travel.

9) Operator Window. Powered operator window and sliding trainer seat window offer simple operation and an excellent unobstructed view.

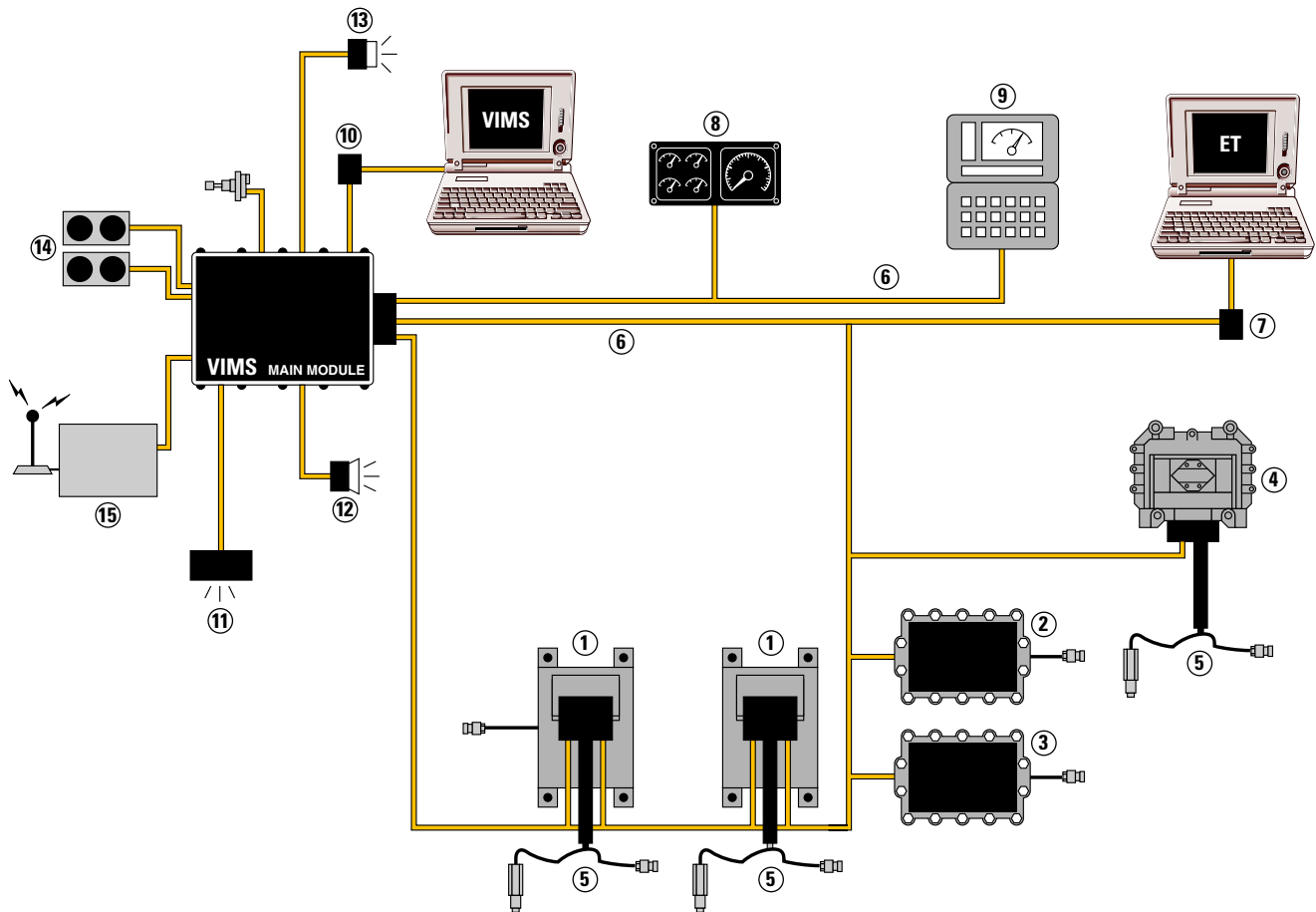
10) Operator Controls. Easy to reach turn signal, high beam, intermittent windshield wiper and windshield washer controls are designed for optimum efficiency and comfort.

11) Heating/Air Conditioning. Efficient design provides fresh, pressurized, temperature-controlled air circulation for a comfortable working environment in any climate.

Radio Ready. Cab is prewired with power converter, speakers, wiring harness, antenna and provision for add-on communication systems.

Monitoring System

Vital machine health and payload data keeps the 785C performing at peak production levels.



- 1 VIMS Interface Modules
- 2 Transmission/Chassis Control (TCC)
- 3 Integrated Braking Control (IBC)
- 4 Engine Control Module (ECM)
- 5 Sensors
- 6 CAT Data Link
- 7 Diagnostic Connector (ET)
- 8 Gauge Cluster Module
- 9 Message Center Module
- 10 Data Port (VIMS-PC)
- 11 Action Lamp
- 12 Action Alarm
- 13 Service Lamp
- 14 Payload Lamps
- 15 Radio System

Vital Information Management System (VIMS). Intelligent Caterpillar designed machine monitoring system provides critical machine health and payload data in real-time to keep the 785C performing at top production levels.

Integrated System Monitoring. Sensors located throughout the machine systems enable VIMS to quickly exchange and monitor information from all machine systems for efficient, high performance operation.

Advanced Diagnostics. VIMS simplifies troubleshooting, reduces downtime and lowers operating costs by identifying abnormal conditions before they cause extensive damage.

Data Access. Monitoring and diagnostic information is stored on-board until it can be downloaded for analysis. Data can be accessed through the message center, transmitted via optional radio or downloaded onto a computer for detailed analysis.

Machine Management. Service technicians or mine management can download data and generate reports for better machine management. Data can be used to improve effectiveness of scheduled maintenance programs, maximize component life, improve machine availability, and lower operating costs.



Gauge Cluster. Conveniently located gauge cluster maintains a constant display of vital machine functions, including:

- engine coolant temperature
- brake oil temperature
- air system pressure
- fuel level

Speedometer/Tachometer/Gear Indicator. Backlit display offers excellent operator visibility.



Keypad. Provides operator or service technician immediate access to current machine information, gauge values and stored data through the message center display.

Message Center. Displays messages requested by operator and advises operator of abnormal machine conditions.

Alert System. Three-category warning system alerts operator of abnormal machine health conditions.

- **Category I.** Machine or system needs attention.
- **Category II.** Requires operator to evaluate and correct situation before continuing work.
- **Category III.** Immediate shutdown required to prevent serious damage to machine or system.

Production Management. True Weight Production Management provides accurate production reporting by utilizing suspension strut pressure differentials and advanced algorithm to weigh the truck after it moves away from the loading tool and shifts into second gear. Production data enhances truck and loading tool effectiveness and fleet productivity, and minimizes overloading to reduce downtime and lower operating and maintenance costs.

Data Storage. VIMS stores up to 2400 cycles for a complete record of payload weight, cycle times, distances and actual dates/times.

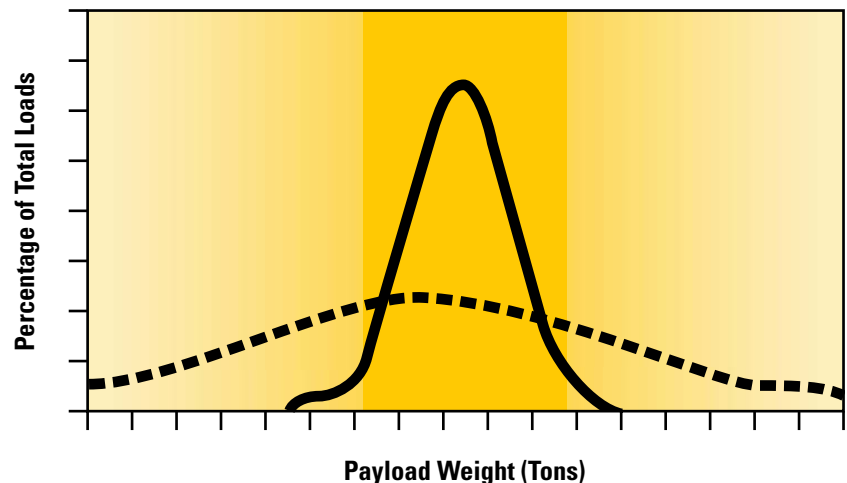
Payload Lights. External lights on both sides of the truck signals loading tool operator when to cease loading for optimum payloads without overloading.

Road Analysis Control (RAC). Optional system monitors haul road conditions by measuring frame rack and pitch to improve haul road maintenance, cycle times, tire life and fuel efficiency.

VIMS-PC. VIMS-PC, the off-board reporting software program, allows service personnel to download a complete record of machine health and productivity data to a laptop computer for diagnosis and analysis. Easy-to-use software enables service technicians and mine management to generate health and payload reports for more effective machine management.

VIMS Supervisor. Optional software allows mine management to easily manage and interpret VIMS data for optimum fleet management and productivity.

Payload Weight Distribution



- Recommended Payload Range
- Inefficient Payload Ranges
- With Production Management
- - Without Production Management

Truck Body Systems

Cat designed and built for rugged performance and reliability in the toughest mining applications.



Cat Truck Bodies. Caterpillar offers three specific body styles and custom body options to help customers obtain the lowest cost-per-ton hauling solution.

- Dual-Slope
- Flat Floor
- Mine Specific Design (MSD)

Body Selection. Selection of the right body depends on material and haul road conditions. The better the match of body to application, the greater the efficiency. Your Cat dealer can help you select the right body system for your site specific applications.

Body/Chassis Integration. Caterpillar truck bodies are designed and matched with the integrated chassis system for optimum structural reliability, durability and long life.

Fast Hoist Cycle Times. Two-stage hoist cylinders provide fast dump cycle times of 15.2 seconds for raise and 16.2 seconds for dump.

Body Design. Cat truck bodies are designed for optimal strength, capacity and durability. Wear surfaces are equipped to handle even the toughest impact and abrasion over the long haul without diminishing capacity.

- Five-Sided Beams tie in the sidewall and floor junctions add increased body rigidity and strength.
- Wide Ribs in body floor provide increased durability and impact support.
- Full-Length Stringers create strength and rigidity throughout the bed.
- Box Section Beams offer increased durability in the floor, sidewall, top rail, corner, and cab canopy areas.

Custom Body Options. Tail extensions, sideboards, tumblebars, rock boxes and rock shedders are available to maintain rated payload, reduce spillage, and improve hauling efficiencies.

- Sideboards are designed to maximize or attain gross machine weight.
- Tail extensions are used to help retain the rear portion of the pile and limit load spillage on haul roads, extending tire life.



1) Dual-Slope Body. The advanced dual-slope body design with V-shaped floor increases load retention, maintains a low center of gravity, reduces shock loading, and maintains optimum load distribution on steep inclines and in challenging haul road conditions.

- Reinforced, rolled steel top rail increases body strength and protects the body from damage caused by the loading tool or falling material.
- 8 degree “V” reduces shock loading and centers the load.
- 7.5 degree forward body slope and 16 degree ducktail slope helps retain loads on steep grades.



2) Flat Floor Body. The flat floor design with slight incline delivers excellent payload capacity, high dump clearances and smooth, controlled dumping.

- Flat floor design provides consistent wear characteristics on body tail.
- 12 degree forward body slope provides good load retention on better maintained haul roads.
- 400 Brinell steel on surfaces provides excellent wear.



3) Mine Specific Design (MSD) Body. The MSD body is based on the flat floor design and is customized to maximize payload potential and minimize cost-per-ton. Each MSD body design begins with a detailed mine site profile to develop a body suitable for a mine’s individual needs.

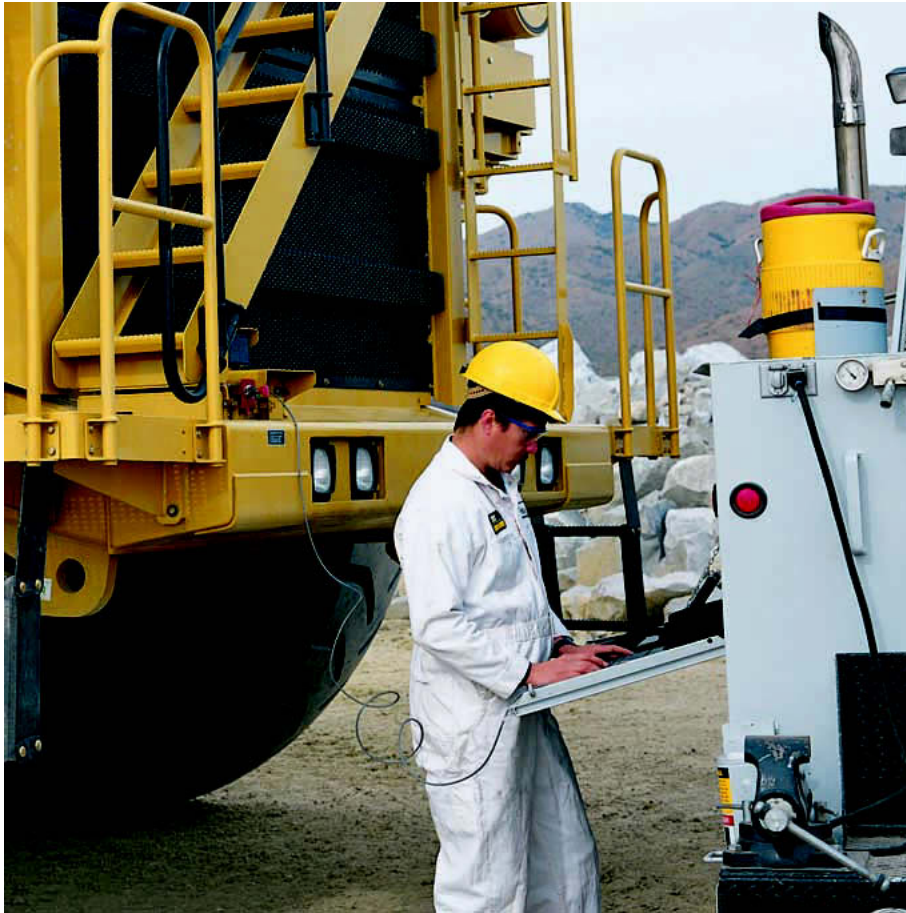
Body Liners. A variety of liner options are available to save weight and help extend the body system’s life. Wear surfaces and liners are equipped to handle tough impact loads while resisting abrasion. Wear plates deliver long life in high wear areas.

Matched Systems. For full truck payloads with minimum loading time, an efficient loading/hauling system starts with a perfect match. The 785C is matched with specific Cat loading tools to maximize volume of material moved at the lowest cost-per-ton.

- 5130B – 7 pass/match
- 5230B – 5 pass/match
- 994D – 4 pass/match

Serviceability

Less time spent on maintenance means more more time on the haul roads.



Servicing Ease. Easy access to daily service points simplifies servicing and reduces time spent on regular maintenance procedures. Enhanced serviceability and 500-hour service intervals are designed to increase machine availability and productivity.

Maintenance Platform. Provides access to engine, air filters, steering hydraulic tank and battery compartment.

In-Frame Access. Permits easy access to major components for easy servicing and removal.

Ground-Level Access. Allows convenient servicing to tanks, filters, drains, and engine shutdown. Ground-level VIMS data port permits easier downloading of information.

Autolube. Automatic lubrication system reduces maintenance time by automatically lubricating necessary components on a regular basis.

Fast Fill Service Center. Wiggins fast fill service center features high speed fuel and oil exchange.

Oil Renewal System (ORS). Optional system extends oil change intervals and reduces waste oil handling by continuously burning oil from the engine oil pan through normal engine operation. Make-up oil must be continually added to compensate for oil burned.

Scheduled Oil Sampling. S•O•SSM sampling valves speed sampling and analysis reliability.

Pressure Test Points. Disconnect valves are conveniently located throughout the hydraulic systems for easy pressure testing.

Air Filters. Radial seal air filters are easy to change, reducing time required for air filter maintenance.

Sealed Electrical Connectors. Electrical connectors are sealed to lock out dust and moisture. Harnesses are braided for protection. Wires are color coded for easy diagnosis and repair.

Cylinder Heads. Individual cylinder heads are interchangeable for easy removal and visual inspection of internal parts.

On-Board Diagnostic Systems. VIMS continuously checks all critical machine functions and components, and helps locate faults quickly for faster repair. Electronic control system enables quick diagnosis of engine conditions and effective maintenance and repairs utilizing the Electronic Technician (ET) service tool.

Customer Support

Caterpillar dealers have what it takes to keep mining haul trucks productive.

Machine Selection. Make detailed comparisons of the machines under consideration before purchase. Cat dealers can estimate component life, preventive maintenance cost, and the true cost of lost production.

Purchase. Look past initial price. Consider the financing options available, as well as day-to-day operating costs. This is also the time to look at dealer services that can be included in the cost of the machine to lower equipment owning and operating costs over the long run.

Financing. Your dealer is an expert at arranging affordable financing options for all Caterpillar products.

Product Support. You will find nearly all parts at your dealer parts counter. Cat dealers use a worldwide computer network to locate in-stock parts to minimize machine downtime. Save money with Cat Reman parts. Receive the same warranty and reliability as new products at a savings of 40 to 70 percent.

Literature Support. Operation and maintenance manuals are easy to use, helping you get the full value of your equipment investment.

Customer Support Agreements. Cat dealers offer a variety of product support agreements, and work with customers to develop a plan that meets specific needs. Plans can cover the entire machine, including attachments, to help protect your investments.



Operation. Improving operating techniques can boost your profits. Your Cat dealer has training videotapes, literature and other ideas to help you increase productivity.

Replacement. Repair, rebuild or replace? Your Cat dealer can help you evaluate the cost involved so you can make the right choice.

Technology Products. Cat dealers offer a range of advanced mining technology products for customers, dealers and operators designed to improve fleet efficiency, increase productivity and lower costs.

www.CAT.com. For more complete information on Cat products, dealer services, and industry solutions, visit us on the web at www.CAT.com.

Engine

Engine Model	Cat 3512B EUI	
Gross Power	1082 kW	1,450 hp
Flywheel Power	1005 kW	1,348 hp
Net Power – Cat	1005 kW	1,348 hp
Net Power – ISO 9249	1005 kW	1,348 hp
Net Power – SAE J1349 (6/95)	1005 kW	1,348 hp
Net Power – EEC 80/1269	1005 kW	1,348 hp
Torque rise	23%	
Bore	170 mm	6.7 in
Stroke	190 mm	7.5 in
Displacement	51.8 L	3,158 in ³

- Net power advertised is the power available at rated speed of 1750 rpm, measured at the flywheel when the engine is equipped with fan, air cleaner, muffler and alternator.
- Ratings based on standard air conditions of 25° C (77° F) and 99 kPa (29.32 Hg) dry barometer. Power based on fuel having API gravity of 35 at 16° C (60° F) and an LHV of 42 780 kJ/kg (18,390 BTU/lb) when engine used at 30° C (86° F).
- No engine derating required up to 3050 m (10,000 ft) altitude.
- Compliant with U.S. Environmental Protection Agency Tier I emissions standards.

Weights

Gross Machine Operating Weight	249 480 kg	550,000 lb
Operating Weight – Empty – Flat Floor Body	102 130 kg	225,200 lb
Operating Weight – Empty – Dual-Slope Body	95 710 kg	211,040 lb
Operating Weight – Loaded	249 480 kg	550,000 lb

Operating Specifications

SAE (2:1) Capacity	78 m ³	102 yd ³
Nominal Payload Capacity	136 tonnes	150 tons
Top Speed – Loaded	56 kph	35 mph
Maximum Capacity	Custom	
Maximum Capacity Struck (SAE)	Custom	
Circle Clearance Diameter	30.5 m	99.2 ft

- Refer to the Caterpillar Mining Truck 10-10-20 payload policy for maximum gross machine weight limitations.

Transmission

Forward 1	12.1 kph	7.5 mph
Forward 2	16.3 kph	10.2 mph
Forward 3	22.2 kph	13.8 mph
Forward 4	29.9 kph	18.6 mph
Forward 5	40.6 kph	25.2 mph
Forward 6	54.8 kph	34 mph
Reverse	11 kph	6.8 mph

- Maximum travel speeds with standard 33.00-R51 tires.

Final Drives

Differential Ratio	2.10:1	
Planetary Ratio	10.83:1	
Total Reduction Ratio	22.75:1	

- Planetary, full-floating.

Suspension

Effective Cylinder Stroke – Front	306.5 mm	12.1 in
Effective Cylinder Stroke – Rear	165 mm	6.5 in
Rear Axle Oscillation	±5.5°	

Brakes

Brake Surface – Front	61 270 cm ²	9,497 in ²
Brake Surface – Rear	89 729 cm ²	13,908 in ²
Standards	SAE J1473 OCT90 ISO 3450-1985	

- Maximum operating weight up to 249 480 kg (550,000 lb).

Body Hoists

Pump Flow – High Idle	750 L/min	198 gal/min
Relief Valve Setting – Raise	17 238 kPa	2,500 psi
Body Raise Time @ High Idle	15.2 Seconds	
Body Lower Time Float	16.2 Seconds	
Body Power Down @ High Idle	15.9 Seconds	

- Twin, two-stage hydraulic cylinders mounted inside main frame; double-acting cylinders in second stage.
- Power raise in both stages; power down in second stage.

Approximate Weights – Dual-slope

Gross Vehicle	95 710 kg	211,040 lb
Chassis	74 450 kg	164,170 lb
Body	21 250 kg	46,865 lb
Front Axle – Empty	47 %	
Front Axle – Loaded	33 %	
Rear Axle – Empty	53 %	
Rear Axle – Loaded	67 %	

Approximate Weights – Flat Floor

Gross Vehicle	102 130 kg	225,200 lb
Chassis	74 450 kg	164,170 lb
Body	25 690 kg	56,630 lb
Standard Liner	2000 kg	4,400 lb
Front Axle – Empty	47 %	
Front Axle – Loaded	33 %	
Rear Axle – Empty	53 %	
Rear Axle – Loaded	67 %	

- Percentages represent weight distribution without liner.

Capacity – Dual-slope – 100% fill factor

Struck	57 m ³	74 yd ³
Heaped 2:1 (SAE)	78 m ³	102 yd ³

Capacity – Flat Floor – 100% fill factor

Struck	74 m ³	96 yd ³
Heaped 2:1 (SAE)	91 m ³	119 yd ³

Service Refill Capacities

Fuel Tank	1893 L	500 gal
Cooling System	379 L	100 gal
Crankcase	204 L	54 gal
Differentials and Final Drives	436 L	115 gal
Steering Tank	90 L	24 gal
Steering System (Includes Tank)	117 L	31 gal
Brake/Hoist Hydraulic Tank	337 L	89 gal
Brake/Hoist System (Includes Tank)	641 L	169 gal

Dimensions

Height to Top of ROPS	5122 mm	202 in
Overall Body Length	10 615 mm	418 in
Inside Body Length	7652 mm	301 in
Overall Length	11 022 mm	434 in
Wheelbase	5180 mm	204 in
Rear Axle to Tail	3410 mm	134 in
Ground Clearance	987 mm	39 in
Dump Clearance	1284 mm	51 in
Loading Height – Empty	4968 mm	196 in
Rear Sidewall Height	906 mm	36 in
Inside Body Depth – Max	2132 mm	84 in
Overall Height – Body Raised	11 207 mm	441 in
Operating Width	6640 mm	256 in
Centerline Front Tire Width	4850 mm	191 in
Engine Guard Clearance	1057 mm	41 in
Overall Canopy Width	6200 mm	249 in
Outside Body Width	5890 mm	232 in
Inside Body Width	5510 mm	217 in
Front Canopy Height	5769 mm	227 in
Rear Axle Clearance	1080 mm	43 in
Centerline Rear Dual Tire Width	4285 mm	169 in
Overall Tire Width	6277 mm	247 in

ROPS

ROPS Standards	SAE J1040 APR88 ISO 3471:1994
----------------	----------------------------------

- ROPS (Rollover Protective Structure) for cab offered by Caterpillar meets SAE J1040 APR88 and ISO 3471:1994 Level II ROPS criteria.

Sound

Sound Standards	ANSI/SAE J1166 MAY90 SAE J88 APR95
-----------------	---------------------------------------

- The operator sound exposure Leq (equivalent sound pressure level) measured according to work cycle procedures specified in ANSI/SAE J1166 MAY90 is 80 dB(A) for cab offered by Caterpillar, when properly installed and maintained and tested with doors and windows closed.
- The exterior sound pressure level for the standard machine measured at a distance of 15 m (49 ft) according to the test procedures specified in SAE J88 APR95, mid-gear moving operation is 89 dB(A).
- Hearing protection may be needed when operating with an open operator station and cab (when not properly maintained or doors/windows open) for extended periods or in a noisy environment.

Steering

Steering Standards	SAE J1511 OCT90 ISO 5010:1992
--------------------	----------------------------------

- Turning diameter on front wheel track with standard tires: 27.5 m (90 ft 2 in).
- Machine clearance turning circle: 30.2 m (99 ft 2 in).
- Steering angle, left or right: 36 degrees.
- Separate hydraulic system prevents cross contamination.

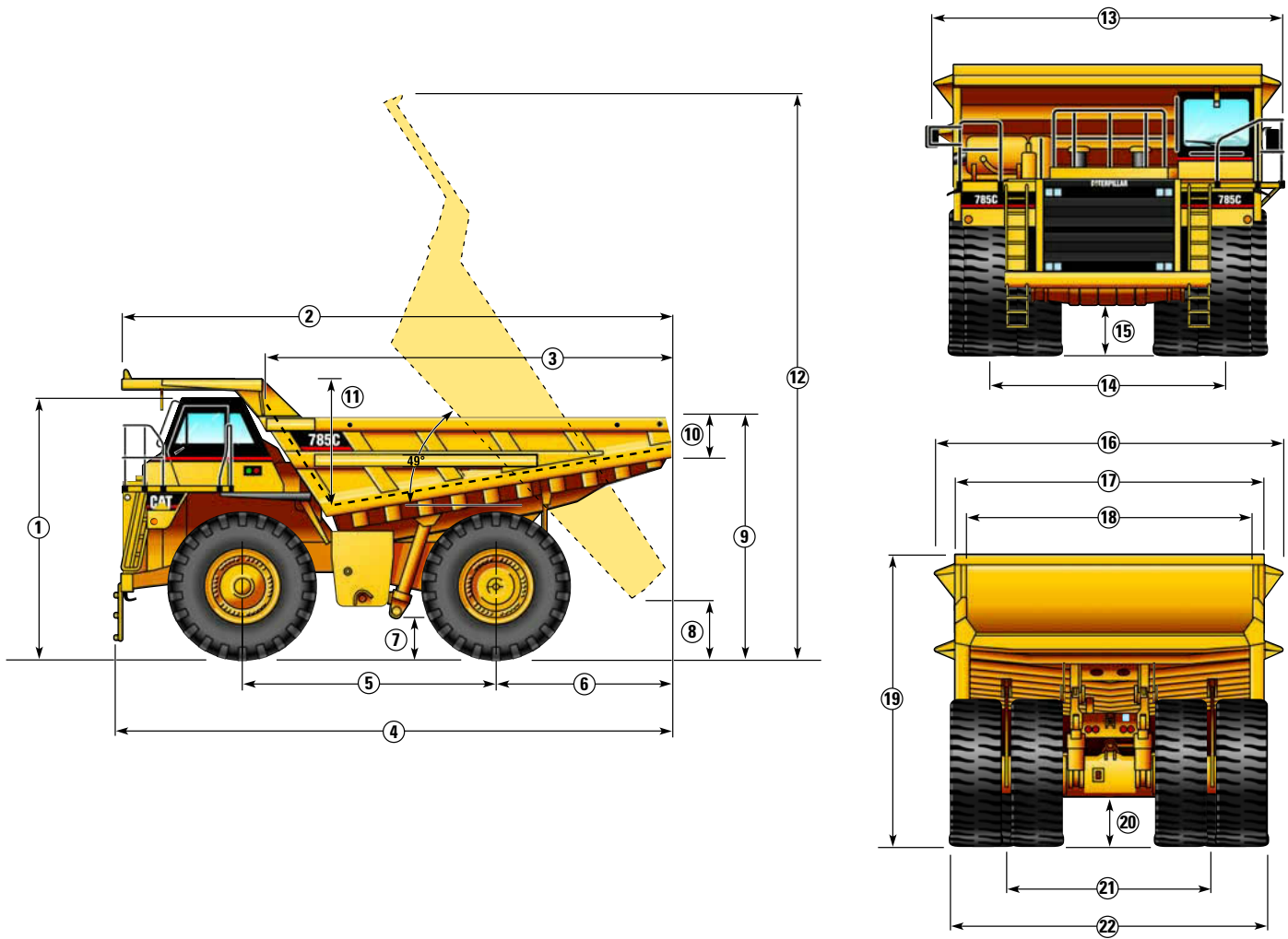
Tires

Standard Tire	33.00-R51 (E4) 33.00-R51 (E3)
---------------	----------------------------------

- Productive capabilities of the 785C truck are such that, under certain job conditions, TKPH (TMPH) capabilities of standard or optional tires could be exceeded and, therefore, limit production.
- Caterpillar recommends the customer evaluate all job conditions and consult the tire manufacturer for proper tire selection.

Dimensions

All dimensions are approximate.



1	Height to Top of ROPS	5122 mm	202 in
2	Overall Body Length	10 615 mm	418 in
3	Inside Body Length	7652 mm	301 in
4	Overall Length	11 022 mm	434 in
5	Wheelbase	5180 mm	204 in
6	Rear Axle to Tail	3410 mm	134 in
7	Ground Clearance	987 mm	39 in
8	Dump Clearance	1284 mm	51 in
9	Loading Height - Empty	4968 mm	196 in
10	Rear Sidewall Height	906 mm	36 in
11	Inside Body Depth - Max	2132 mm	84 in

12	Overall Height - Body Raised	11 207 mm	441 in
13	Operating Width	6640 mm	256 in
14	Centerline Front Tire Width	4850 mm	191 in
15	Engine Guard Clearance	1057 mm	41 in
16	Overall Canopy Width	6200 mm	249 in
17	Outside Body Width	5890 mm	232 in
18	Inside Body Width	5510 mm	217 in
19	Front Canopy Height	5769 mm	227 in
20	Rear Axle Clearance	1080 mm	43 in
21	Centerline Rear Dual Tire Width	4285 mm	169 in
22	Overall Tire Width	6277 mm	247 in

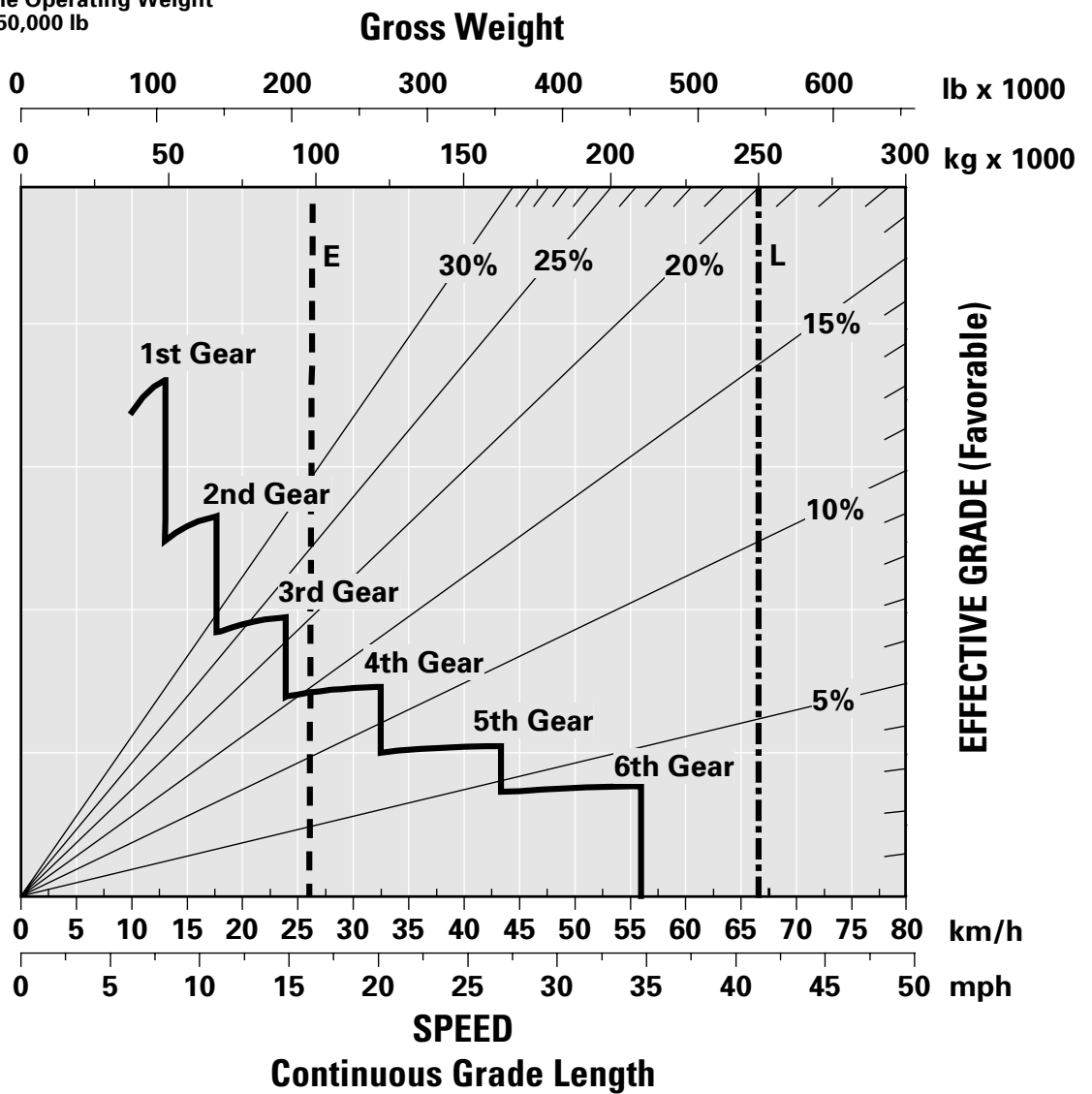
Retarding Performance

To determine retarding performance: Add lengths of all downhill segments and, using this total, refer to proper retarding chart. Read from gross weight down to the percent effective grade. Effective grade equals actual % grade minus 1% for each 10 kg/t (20 lb/ton) of rolling resistance. From this weight-effective grade point, read horizontally to the curve with the highest obtainable gear, then down to maximum descent speed brakes can properly handle without exceeding

cooling capacity. The following charts are based on these conditions: 32° C (90° F) ambient temperature, at sea level, with 33.00-R51 tires.

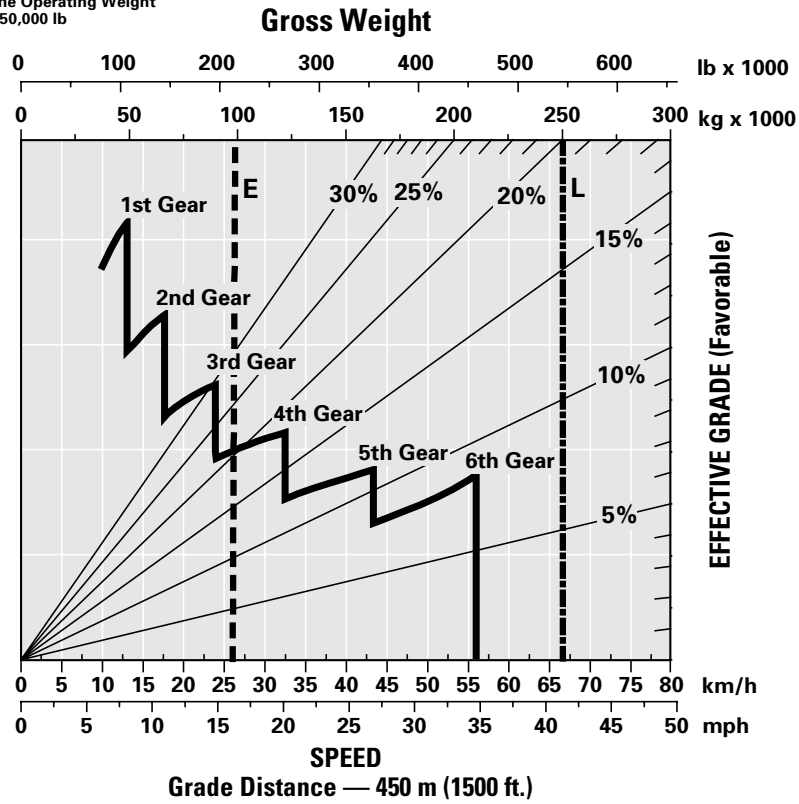
NOTE: Select the proper gear to maintain engine rpm at the highest possible level, without overspeeding the engine. If cooling oil overheats, reduce ground speed to allow transmission to shift to the next lower speed range.

- Typical Field Empty Weight
- - - - - Gross Machine Operating Weight
249 500 kg/550,000 lb

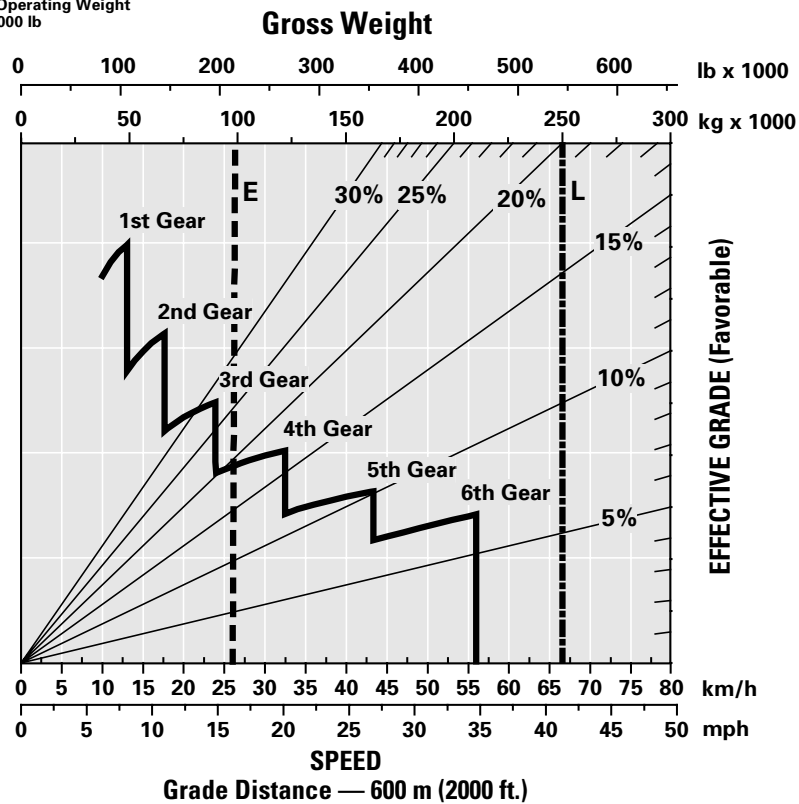


Retarding Performance

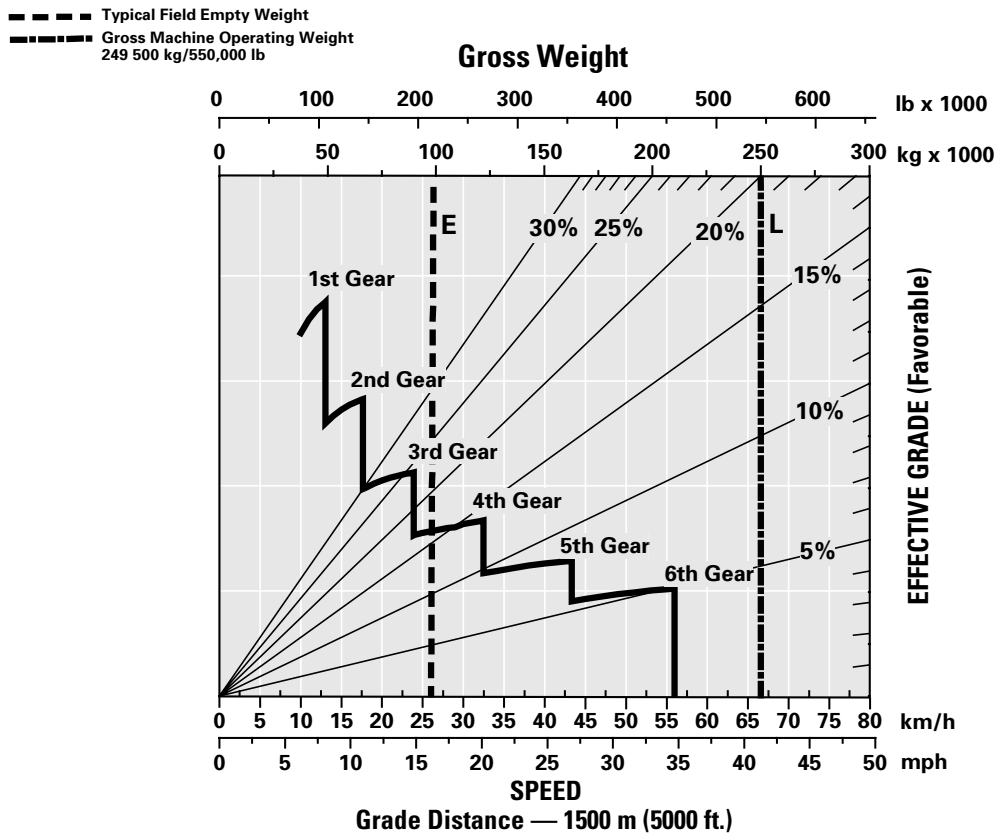
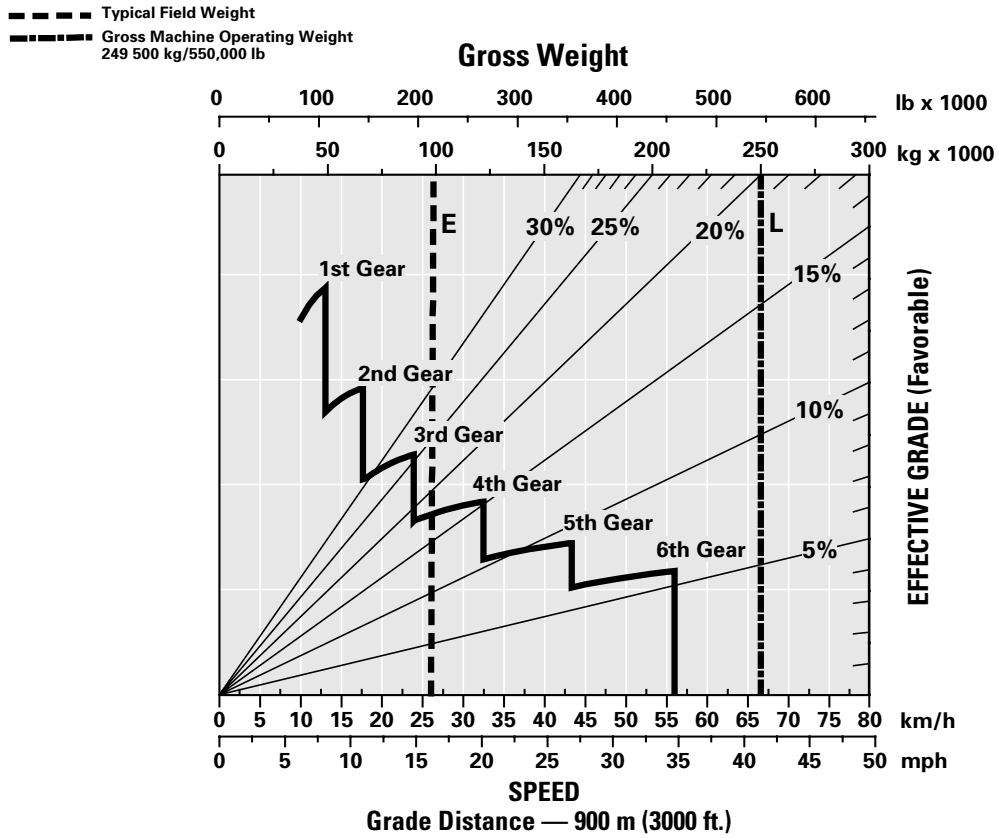
- - - Typical Field Empty Weight
 - - - Gross Machine Operating Weight
 249 500 kg/550,000 lb



- - - Typical Field Empty Weight
 - - - Gross Machine Operating Weight
 249 500 kg/550,000 lb



Retarding Performance

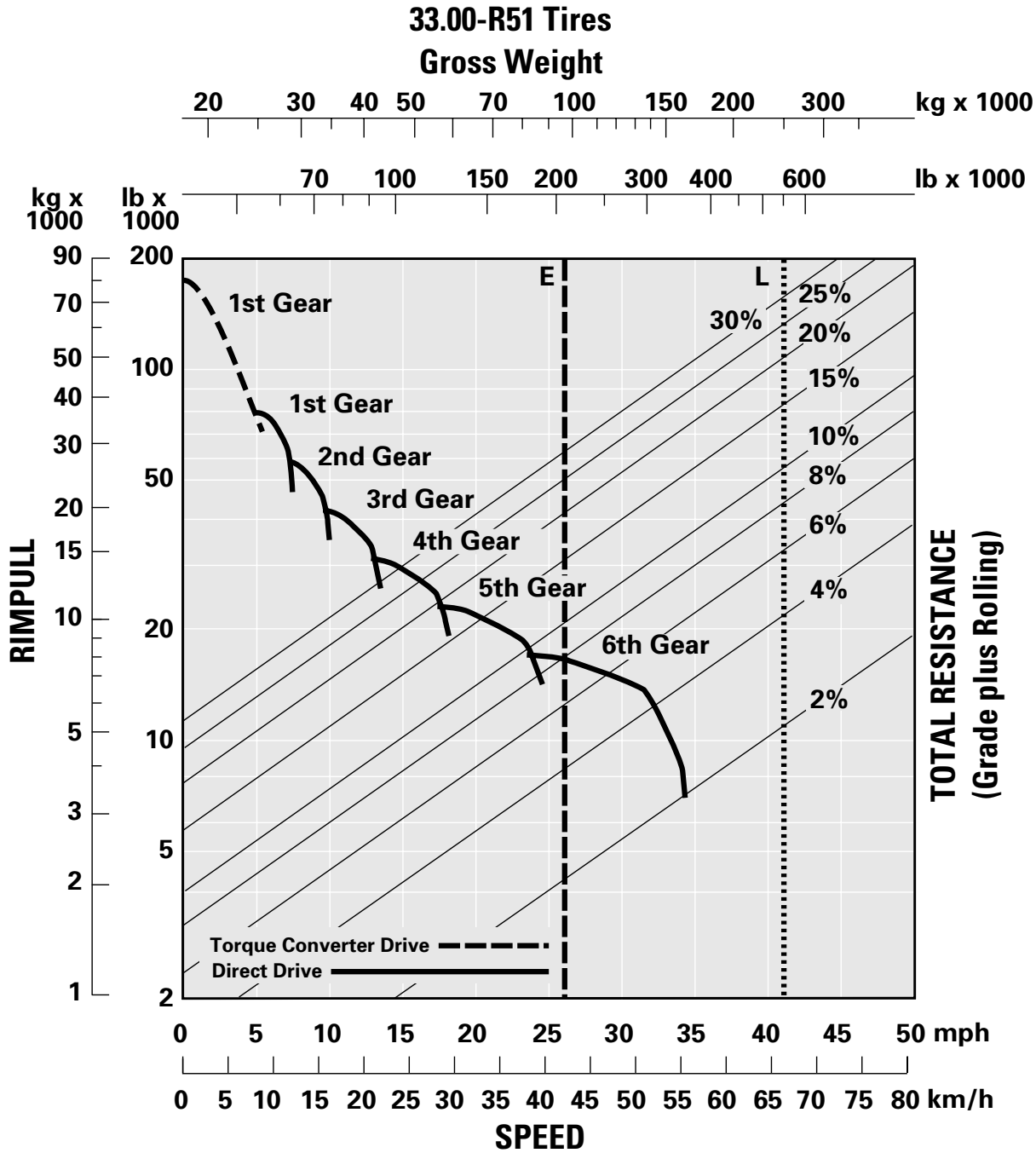


Gradeability/Speed/Rimpull

To determine gradeability performance: Read from gross weight down to the percent of total resistance. Total resistance equals actual percent grade plus 1% for each 10 kg/t (20 lb/ton) of rolling resistance. From this weight-resistance point, read

horizontally to the curve with the highest obtainable gear, then down to maximum speed. Usable rimpull will depend upon traction available and weight on drive wheels.

- Typical Field Empty Weight
- 136 080 kg (300,000 lb) Load



Standard Equipment

Standard and optional equipment may vary. Consult your Caterpillar dealer for specifics.

Air Cleaner with Precleaner (2)	Crankcase Protection
Air Conditioner	Driveline Operator Safety Guard
Air Line Dryer (2)	Dumping, Auxiliary Quick Connect for “Buddy Dumping”
Air Starter, Vane-type	Electrical System, 24-volt to 12-volt
Alarm, Back-up	Engine – Caterpillar 3512B with Electronic Injection and Multi Point Oil Pressure Sensing
Alternator (105-amp)	Fast-fill Fuel System, Wiggins
Automatic Retarder Control	Ground Level
Batteries, 93-amp-hour, Low-maintenance, 12-volt (2)	Battery Disconnect
Body Mounting Group	Engine Shutdown
Body Prop Cable	VIMS Dataport
Brake Release Motor for Towing	Lighting System
Brake System	Back-up Lights, Halogen
Oil-cooled, Multiple-disc, Front and Rear	Direction Signals and Hazard Warning (Rear Halogen)
Parking	Headlights, Halogen, With Dimmer
Secondary, Emergency	LH Ladder Light and Service Deck Lights
Cab, ROPS	Stop and Tail Lights (LED)
Ashtray	Under-hood Light
Cigarette Lighter	Oil Change System, Quick Service
Coat Hook	Reservoirs (Separate)
Diagnostic Connector	Brake/Converter/Hoist
Electric Window (Operator Only)	Steering
Entertainment Radio Ready	Transmission
Glass, Tinted	Rims, Center Mounted for 33.00-R51 Tires
Heater/defroster: 11 070 kCal (43,930 Btu)	Rock Ejectors
Horn	Starting Aid, Ether, Automatic
Insulated and Sound Suppressed	Steering, Auxiliary Quick Connect for Towing
Light, Dome/courtesy	Tie Down Eyes
Mirrors, Right and Left	Tow Hooks, Front
Quad-Gauge Panel	Tow Pin, Rear
Air Pressure	Traction Control System
Brake Oil Temperature	Transmission, Six-speed, Automatic Power Shift, Electronic Control and Downshift Inhibitor, Reverse Neutralizer during Dumping, and Neutral Start Switch, Reverse Shift Inhibitor, Controlled Throttle Shifting, Directional Shift Management, Neutral Coast Inhibitor, Body-up Shift Inhibitor
Coolant Temperature	Vandalism Protection Locks
Fuel Level	Vital Information Management System with True Weight Production Manager
Seat, Air Suspension	
Seat, Passenger, Non-suspension	
Seat Belts, 75 mm (3") wide retractable	
Speedometer	
Steering, Automatic Supplemental	
Steering Wheel, Tilt, Padded, Telescopic	
Storage Compartment	
Sun Visor	
Tachometer	
Transmission Gear Indicator	
VIMS Dataports (2)	
VIMS Keypad	
VIMS Message Center with Universal Gauge	
Windshield Wiper and Washer	

Optional Equipment

With approximate changes in operating weights.

Optional equipment may vary. Consult your Caterpillar Dealer for specifics.

	kg	lb		kg	lb
Bodies	see chart below		Heater, engine coolant and oil		
Body extensions:			120-volt external power source	2	5
Tail	665	1465	Heater, engine coolant and oil		
Sideboards ¹	798	1760	240-volt external power source	10	22
Body heat (exhaust)	36	80	Oil Renewal System	11	25
Body and tail extension liners ²			Prelube system	24	53
Full-length liner	7633	16,828	Rim, spare for 33.00-R51 tire	889	1960
Tail extension liner ³	338	745	Shutter group, inside mounted	265	585
Grid liner ⁴	1145	2525	Starting system		
Fuel tank 2500 L (660 gal.)	209	460	Air (TDI Turbine)	-5	-10
Heater, fuel			Air (IR Turbine)	-17	-37
recirculation type, non-electric	2	5	Variable pitch fan, Flexxaire	273	600
			Variable speed fan, Rockford	182	400

¹ Increases capacity to 91 m³/119 yd³

² Minimum yield strength 900 mPa/9000 Bar/130,500 psi; 400 Brinell steel

³ Use with full liners when tail extension used

⁴ Covers rear third of body only

Weight/Payload Calculation*

(Example)

	Flat Floor		Dual Slope	
	kg	lb	kg	lb
Empty Chassis Weight	55 421	122,180	55 421	122,180
Fuel Tank and Fuel 1892 L (500 gal.)	2232	4920	2232	4920
Tires (33.00-R51)	10 492	23,130	10 492	23,130
Rims 610 mm (24 in.)	6323	13,940	6323	13,940
Chassis Weight	74 468	164,170	74 468	164,170
Debris Allowance (4% of chassis)	2979	6567	2979	6567
Body Weight	25 687	56,630	21 258	46,865
Body Attachments Weight	1996	4400	0	0
Additional Attachments Weight	+	+	+	+
Total Empty Operating Weight	105 129	231,767	98 704	217,602
Target Payload	144 351	318,233	150 776	332,398
Gross Machine Operating Weight	249 480	550,000	249 480	550,000

*Note: Refer to Caterpillar's 10/10/20 Payload Policy for calculating maximum gross machine weight allowable.

Notes

785C Mining Truck

AEHQ5320-02 (4-02)
Replaces AEHQ5320-01

For more complete information on Cat products, dealer services,
and industry solutions, visit us on the web at www.CAT.com

© 2002 Caterpillar
Printed in U.S.A.

Materials and specifications are subject to change without notice.
Featured machines in photos may include additional equipment.
See your Caterpillar dealer for available options.

CATERPILLAR[®]