

# 785D

Mining Truck



## Engine

Engine Model	Cat® 3512C HD	
Gross Power – SAE J1995	1082 kW	1,450 hp
Net Power – SAE J1349	1005 kW	1,348 hp

## Weights – Approximate

Gross Machine Operating Weight (GMW)	249 476 kg	550,000 lb
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**The 785D Mining Truck is engineered for performance, designed for comfort, and built to last. Developed specifically for high production mining and construction applications, the 785D Mining Truck keeps material moving at high volume to lower your cost-per-ton.**

**Rugged construction creates a durable machine. Easy maintenance procedures ensure high reliability and long life with low operating costs.**

# Power Train – Engine

The Cat® 3512C HD engine delivers high power and reliability.

## Design

The 3512C HD is a 12-cylinder, four-stroke design that uses long, effective power strokes for more complete fuel combustion and optimum fuel efficiency.

## EPA Compliant

Where applicable, the 3512C engine is compliant with U.S. Environmental Protection Agency emission requirements.

## Altitude Compensation

Designed for maximum operating efficiencies at altitudes under 4267 m (14,000 ft).

## High Torque Rise

The 23 percent net 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.

## Oil Renewal System

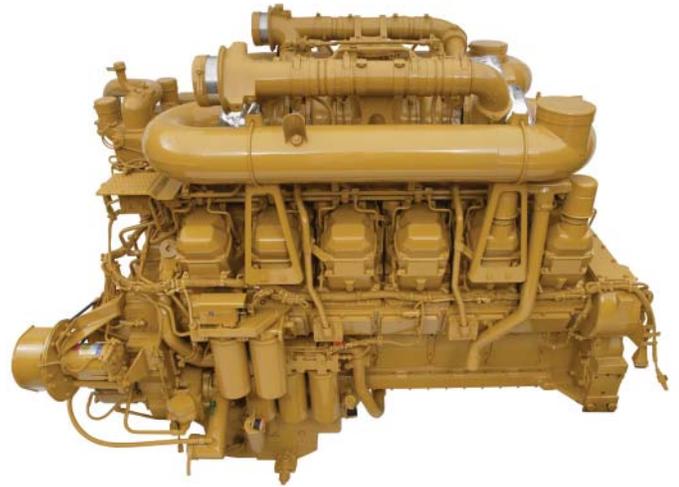
Optional oil renewal system extends engine oil change intervals from 500 hours to 4,000 hours or more to increase machine availability and reduce costs.

## Engine Protection

Computerized system electronically protects the engine during cold starts, high altitude operation, air filter plugging, high exhaust temperature and engine overspeed (ARC). Optional Engine Pre-Lubrication builds up oil pressure before cranking providing additional wear protection.

## 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.



# Power Train – Transmission

Unmatched operating efficiency in all mining conditions.



## 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 3512C engine to deliver constant power over a wide range of operating speeds.

### Robust Design

Designed to efficiently apply the higher horsepower of the 3512C engine, the proven planetary power shift transmission is built tough for long life between overhauls.

### 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/h (5 mph), delivering more power to the wheels.

### 3) Final Drives

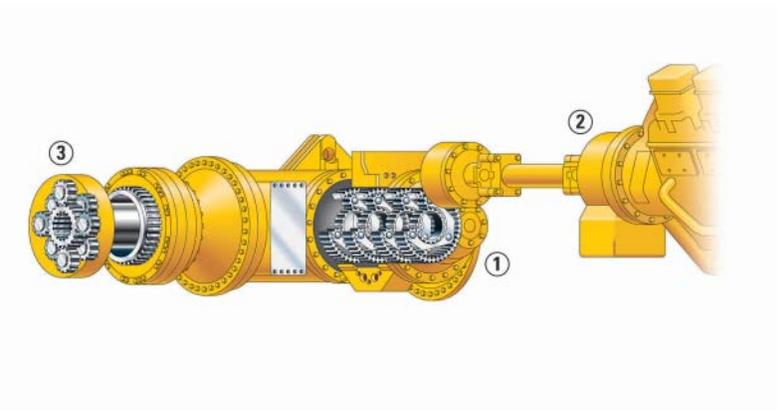
Cat final drives work as a system with the planetary power shift transmission to deliver maximum power to the ground. Built to withstand the forces of high torque and impact loads, double reduction final drives provide high torque multiplication to further reduce drive train stress.

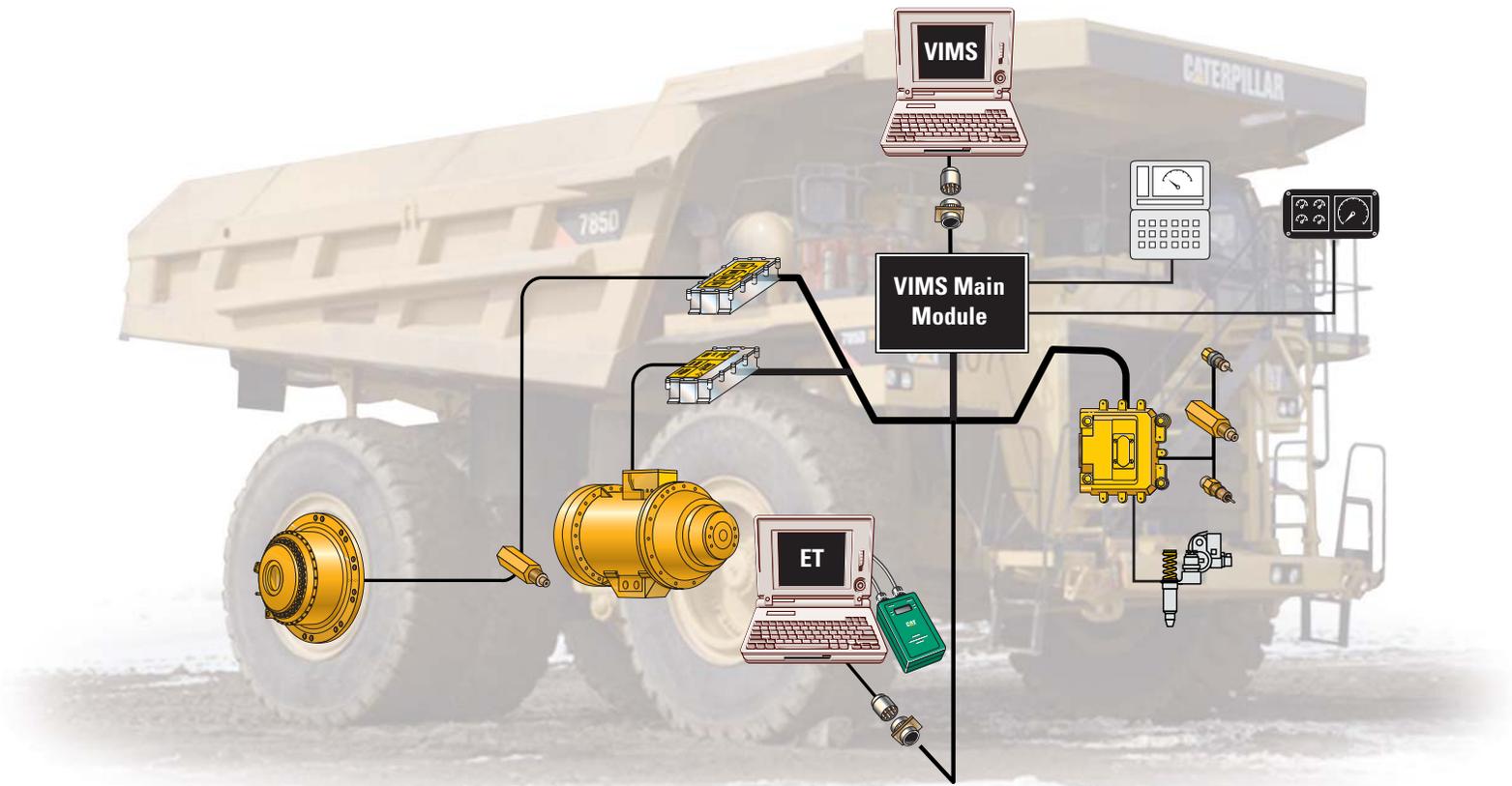
### Wheels and Rims

Cast rear wheels and Cat center-mount rims are mounted using studs to minimize installation, maintenance and maximize durability.

### Rear Axle Filtration

A new pump drive system provides continuous rear axle filtration. Benefits include cleaner oil, less down time and improved component life.





# Engine/Power Train Integration

Electronically optimizes 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.

## **Electronic Technician (Cat ET)**

Cat 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.

## **Integrated Braking Control (IBC)**

IBC integrates Automatic Retarder Control and Traction Control into one system for optimum performance and efficiency.

## **Body-up Reverse Neutralizer**

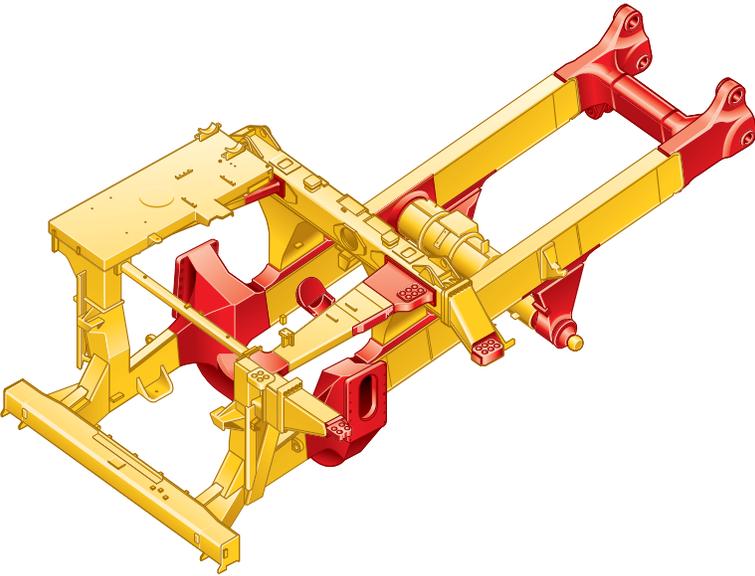
Automatically shifts the transmission to neutral if the hoist lever is activated while transmission is shifted in reverse.

## **Supplemental Steering**

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

# Structures/Suspension/Steering

Rugged Cat designs are the backbone of the 785D mining truck's durability.



## Box-Section Design

The 785D 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.

## Serviceability

The open box-section frame design allows easy access to power train components, reducing overall removal and installation time, and lowering overall repair costs. The raised and pinned body allows excellent access to the transmission.

## 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.

## Integral Four-Post ROPS Cab

Resiliently mounted to the main frame to reduce vibration and sound, the integral ROPS is designed as an extension of the truck frame. The ROPS/FOPS structure provides “five-sided protection” for the operator and instructor.

## Suspension System

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

## 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.

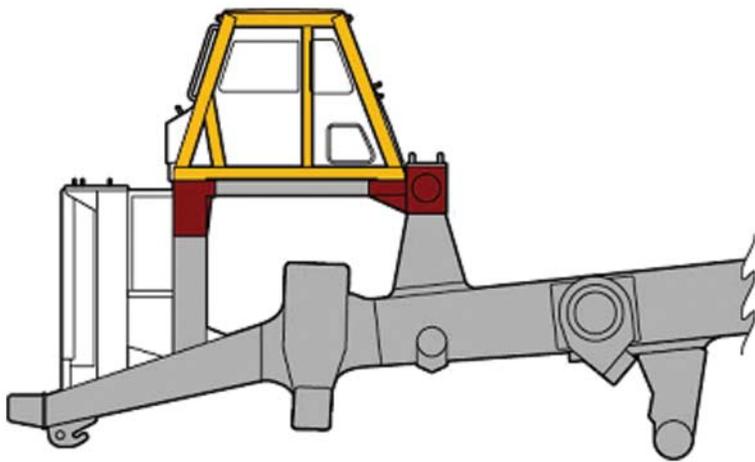
## Cylinders

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

## Durable Design

Rugged cylinders utilize large diameter bore and low pressure nitrogen/oil design for long life with minimal maintenance.

- **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

Designed for operator safety and comfort, superior control and high productivity.

## Enhanced Operator Visibility

Through the use of the fully Integrated Object Detection System, RADAR AND CAMERA, the operator can receive both audible and visual indications of detected objects.

## Ergonomic Layout

The 785D 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 with Three-Point Operator Restraint 2) Hoist Lever 3) Secondary Brake Pedal  
 4) Monitoring System 5) Steering Column 6) Transmission Console 7) Parking Brake Reset Valve  
 8) Storage Compartment 9) Trainer Seat 10) Operator Window 11) Operator Controls 12) Heating/  
 Air Conditioning

## Radio Ready

The operator's station comes ready with power ports, speakers, antenna, and electrical connections to facilitate trouble-free radio installation. Consult your dealer for the complete line of available Cat radio options including satellite radio.

# Cat Brake System

Superior control gives the operator confidence to focus on productivity.



## Integrated Braking System

The Cat oil-cooled braking system delivers reliable performance and superior control in the most extreme haul road conditions. Automatic brake modulation offers a smoother ride and better control in slippery conditions, allowing the operator to concentrate on driving. The two piston design system combines the service, secondary, parking brake and retarding functions in the same robust system for optimum braking efficiency.

## 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.

## Oil-Cooled Multiple Disc Brakes

Cat 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.

## Extended Life Disc Brakes

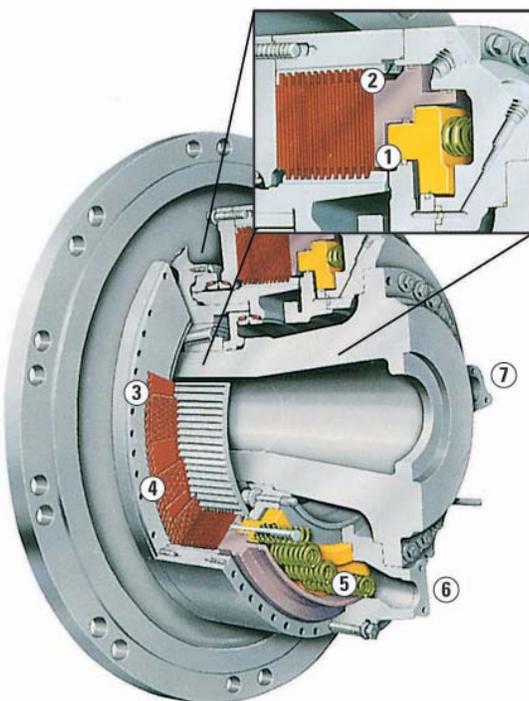
Cat oil-cooled disc brakes are designed with large discs and plates for reliable, adjustment-free operation and performance. Brakes are completely enclosed and sealed to prevent contamination and reduce maintenance. Additionally, this machine features new extended life friction material that is now standard on this model. The friction material has double the wear life of standard brakes and is twice as resistant to glazing resulting in more consistent braking power with less noise.

## Pistons

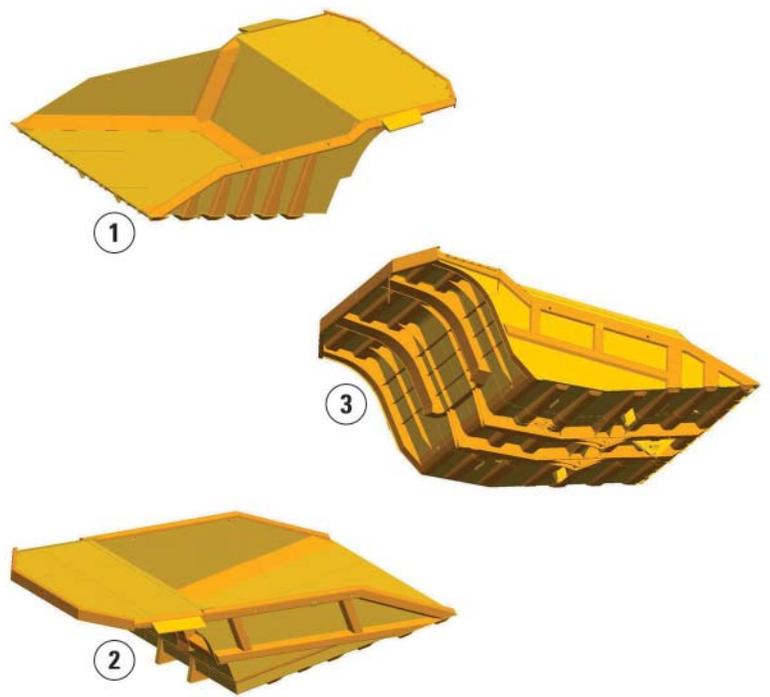
The primary piston hydraulically actuates both service and retarding functions. The secondary piston is spring-applied and held in the disengaged position by hydraulic pressure. If hydraulic system pressure drops below a specified level, the spring-applied secondary piston automatically applies the brakes.

## Parking Brake

The superior parking brake function on this truck is provided by the oil-cooled, spring-applied, hydraulically-released service brakes at all four wheels. This reliable and durable parking brake will hold a truck carrying a rated load on any grade up to 15 percent.



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



# Truck Body Systems

Caterpillar designed and built for the toughest mining applications.

## Cat Truck Bodies

Matching the truck body to the application is a critical part of achieving the best value from your 785D. Caterpillar offers a variety of application specific body options that yield a payload ranging from 131 to 143 metric tons (144 to 157 tons). The Caterpillar exclusive 10/10/20 payload guidelines help achieve a balance of excellent payload with safe operation.

## Body Options

- 1) **Cat "X" Body** – The X body is a heavy duty body configured with a variety of liner options to meet site specific requirements of a mine. Like the Dual Slope – the X body is designed for durability across a range of harsh applications.
- 2) **Mine Specific Body (MSD II)** – For mature mines with good operational and maintenance practices, the lighter weight MSD II (Mine Specific Design) body is available in several sizes. It is a customer/site specific body that is designed to maximize performance. The MSD II is designed to maximize payload, provide good durability and can be configured with a variety of liner options to meet the specific requirements of the mine.
- 3) **Gateless Coal Body** – This specialized high volume body, available in several sizes, is targeted at dedicated coal haulage applications with minimal impact. The kicked up floor design eliminates the tailgate and gives the volume required to meet target payload.
- 4) **Dual Slope Body** – The original standard body, the Dual Slope body, provides excellent load retention, maintains a low center of gravity with optimum load distribution, reduces shock loading and is available in lined and unlined configurations. The Dual Slope body is intended for tough applications including greenfield sites and contracting mines.

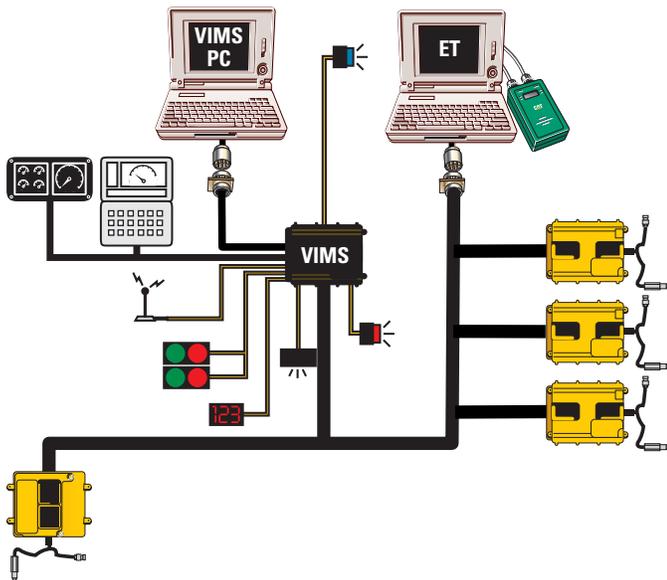
## Custom Body Options

A variety of options including tail extensions, sideboards, tumble bars, rock boxes and rock shedders are available to maintain rated payload, reduce spillage and improve hauling efficiencies.

1) X Body 2) MSD II Body 3) Gateless Coal Body 4) Dual Slope Body (not shown)

# Monitoring System

Vital machine health and payload data keeps the 785D performing.



## VIMS® Monitoring System

The Caterpillar designed machine monitoring system provides critical machine health and payload information to the operator and service personnel. With the system monitoring and the advanced diagnostic ability, VIMS simplifies troubleshooting and reduces downtime by identifying abnormal conditions before they cause damage. VIMS also stores machine data to help manage production and utilize the efficiency Preventative Maintenance.

## Production Management

Production Management enhances truck/loading tool effectiveness, improves fleet productivity and helps extend the life of truck frames, tires, rims and power train components, while lowering operating and maintenance cost.

## Payload Management

Max Payload Speed Manager is a feature that aids in managing the Caterpillar 10/10/20 Overload Policy. Based on target payload weight and overload settings, the VIMS system logs and warns the operator when the truck reaches overload after second gear reweigh. The truck will be limited to second gear at 1,750 rpm, and the automatic retarder speed setting is reduced to 1,750 rpm until the load is dumped.

## 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.

## Machine Management

Service technicians or mine personnel can download data and generate reports. 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.





# Safety

Cat mining machines and systems: Safety is priority one.

## Product Safety

Caterpillar has been and continues to be proactive in developing mining machines that meet or exceed safety standards. Safety is an integral part of all machine and system designs.

## Access and Egress

Improvements for machine level access and egress include a standard 600 mm (24 in) diagonal stairway across the front of the machine. Improvements for ground level access include an optional powered access stairway.

## Integrated Object Detection Systems

Object Detection Systems are factory installed as standard equipment on 785D mining trucks. The fully Integrated Object Detection System, RADAR AND CAMERA, provides both audible and visual indications of detected objects. This system uses a combination of short and medium range radars which surround the machine, along with cameras on each side to allow the operator to confirm the detected object. The cameras supplement the radar alerts and are selectable by touch screen menus through an intuitive interface.

## Overload Policy

Adherence to the Caterpillar 10/10/20 Overload Policy assures that steering and braking systems have sufficient capacity to perform.

## Standard Safety Features

Slip resistant surfaces, retractable, seat/shoulder belts with three-point operator restraint, wide-angle mirrors, body raised indicator, body retaining cable, guard rails, reverse neutralizer when dumping, low interior sound level, secondary steering system, ground level access shutoff switches.

**[SAFETY.CAT.COM](http://SAFETY.CAT.COM)**<sup>™</sup>



# Sustainability

A variety of features improve sustainability in areas of decreasing waste, extending component life and lowering emissions levels.

## **Sustainability Features**

The 785D Mining Truck offers oil renewal systems, continuous rear axle filtration, extended life filters and extended maintenance intervals which aid in decreasing the amount of waste contributed to our environment.

## **Engines with Advanced Technology**

Engines with advanced technology contribute less emissions to the environment while maintaining fuel efficiency.

## **Advanced Surface Technology (AST)**

Advanced Surface Technology (AST) is a replacement for hard chrome coatings on some steel parts, including suspension and hoist cylinder rods. This technology improves wear resistance and reduces repair time. Chrome has been eliminated to reduce environmental impact.

## **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.

# Serviceability

Less time spent on maintenance means 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

Optional service center reduces daily maintenance times with clustered fast fill connections for steering oil, transmission oil, engine oil and coolant.

## Pressure Test Points and S-O-S<sup>SM</sup> Ports

Sample points and ports yield representative samples to monitor critical machine systems.

## 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.

## Fast Fill Fuel

Provides a receiver at the fuel tank to accept most 567 liters per minute/150 gallons per minute fueling systems.

## Air Filters

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





# Customer Support

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

## **Commitment Makes the Difference**

Support goes far beyond parts and service. From the time you select a piece of Cat equipment until the day you rebuild, trade or sell it, the support you get from your Cat dealer makes the difference that counts.

## **Dealer Capability**

Dealer expert technicians have the knowledge, experience, training and tooling necessary to handle your repair and maintenance needs, when and where you need them.

## **Product Support and Service Support**

Supported by a worldwide network of parts distribution facilities, dealer service centers and technical training facilities, Cat dealers can maximize your uptime. With a tailored service plan, your dealer can help you get the most return on your investment.

## **Training**

Your Cat dealer can arrange training programs to help operators improve productivity, decrease downtime, reduce operating costs, enhance safety, and improve return on the investment you make in Cat products.

## **Technology Products**

Cat dealers offer a range of advanced technology products such as VIMS monitoring system and MineStar™ information management system. These products include radio data communications, machine monitoring and diagnostics, fleet management, and haul road maintenance software – all designed to improve fleet efficiency, increase productivity, and lower costs.

## **[www.cat.com](http://www.cat.com)**

For more complete information on Cat products, dealer services, and industry solutions, visit us on the web at [www.cat.com](http://www.cat.com).

# 785D Mining Truck Specifications

## Engine

Engine Model	Cat® 3512C HD	
Rated Power	1082 kW	1,450 hp
Gross Power – SAE J1995	1082 kW	1,450 hp
Net Power – SAE J1349	1005 kW	1,348 hp
Net 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 – 80/1269/EEC	1005 kW	1,348 hp
Torque Rise	23%	
Bore	170 mm	6.7 in
Stroke	215 mm	8.4 in
Displacement	58.56 L	3,573.6 in <sup>3</sup>

- Net power advertised is the power available at rated speed of 1,750 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 4267 m (14,000 ft) altitude.
- Where applicable, the 3512C engine is compliant with U.S. Environmental Protection Agency emission requirements.

## Weights – Approximate

Gross Machine Operating Weight (GMW)	249 476 kg 550,000 lb	
Minimum/Maximum Operating Chassis Weight Range (OCW)	83 304 – 84 668 kg	183,654 – 186,661 lb
Body Weight Range	20 831 – 30 623 kg	45,924 – 67,512 lb
Minimum/Maximum Operating Chassis Weight Range Empty (EOMW)	106 218 – 117 597 kg	234,170 – 259,257 lb

- Body weight varies depending on how body is equipped. Weight range for known applications.
- Estimated weight of debris is not included in operating chassis weights.
- Chassis weight includes hoist, body mounting group, rims, tires, full with all operating fluids and 100% fuel.

## Operating Specifications

Top Speed – Loaded	54.8 km/h	34 mph
Steer Angle	36 Degrees	
Turning Diameter – Front	29.8 m	97.7 ft
Machine Clearance Turning Diameter	33.2 m	108.9 ft
Target Payload (Dual Slope)*	133 tonnes	146 tons
Minimum Target Payload	131 tonnes	144 tons
Maximum Target Payload	143 tonnes	157 tons

- Refer to the Cat Mining Truck 10-10-20 payload policy for maximum gross machine weight limitations.
- \* Includes standard liners.

## Transmission

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

- Maximum travel speeds with standard 33.00-R51 tires.
- Caterpillar recommends the customer evaluate all job conditions and consult the tire manufacturer for proper tire selection.

## 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

## Brakes

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

- Gross Machine Operating Weight (GMW) up to 249 476 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 – High Idle	15.9 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.

# 785D Mining Truck Specifications

## Body – Dual Slope

Body Weight	22 295 kg	49,150 lb
Heaped SAE (2:1)	78 m <sup>3</sup>	102 yd <sup>3</sup>

- Body weight only. Does not include liners.

## Body – X

Body Weight	25 160 kg	55,468 lb
Heaped SAE (2:1)	85 m <sup>3</sup>	111 yd <sup>3</sup>

- Body weight only. Does not include liners.

## Weight Distributions – Approximate

Front Axle – Empty\* 45-46%

Rear Axle – Empty\* 54-55%

Front Axle – Loaded 33%  
(Target)

Rear Axle – Loaded 67%  
(Target)

\*Depends on body configuration.

## 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	337 L	89 gal
Hydraulic Tank		
Brake/Hoist System (Includes Tank)	641 L	169 gal
Torque Converter/ Transmission System (Includes Sump)	248 L	65.51 gal

## ROPS

ROPS Standards	SAE J1040 APR88 ISO 3471:1994
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- 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
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- 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, 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
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- Turning diameter with standard tires, per ISO 7457: 29.8 m (97 ft 9 in).
- Machine clearance diameter, per ISO 7457: 33.2 m (108 ft 11 in).
- Steering angle, left or right: 36 degrees.
- Separate hydraulic system prevents cross contamination.

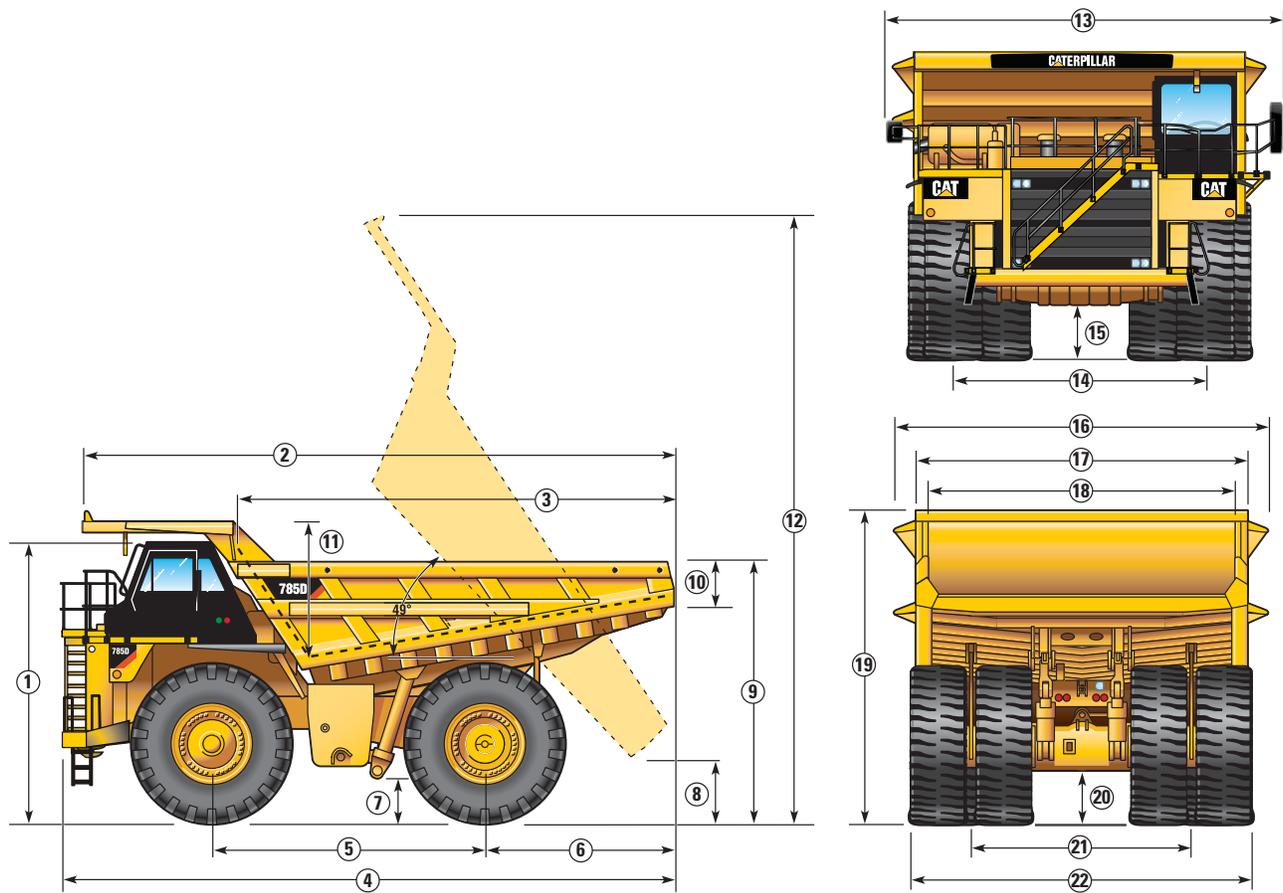
## Tires

Standard Tire	33.00-R51 (E3 & E4)
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- Productive capabilities of the 785D 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.



<b>1</b>	Height to Top of ROPS	5122 mm	16 ft 10 in
<b>2</b>	Overall Body Length	11 550 mm	37 ft 9 in
<b>3</b>	Inside Body Length	7652 mm	25 ft 2 in
<b>4</b>	Overall Length	11 548 mm	37 ft 10 in
<b>5</b>	Wheelbase	5180 mm	17 ft 0 in
<b>6</b>	Rear Axle to Tail	3410 mm	11 ft 3 in
<b>7</b>	Ground Clearance	987 mm	3 ft 3 in
<b>8</b>	Dump Clearance	1200 mm	3 ft 11 in
<b>9</b>	Loading Height – Empty	4968 mm	16 ft 4 in
<b>10</b>	Rear Sidewall Height	906 mm	3 ft 0 in
<b>11</b>	Inside Body Depth – Max.	2132 mm	7 ft 0 in

<b>12</b>	Overall Height – Body Raised	11 809 mm	38 ft 9 in
<b>13</b>	Operating Width	7061 mm	23 ft 2 in
<b>14</b>	Centerline Front Tire Width	4850 mm	15 ft 11 in
<b>15</b>	Engine Guard Clearance	1057 mm	3 ft 6 in
<b>16</b>	Overall Canopy Width	6747 mm	22 ft 1 in
<b>17</b>	Outside Body Width	5894 mm	19 ft 4 in
<b>18</b>	Inside Body Width	5510 mm	18 ft 1 in
<b>19</b>	Front Canopy Height	5679 mm	18 ft 7 in
<b>20</b>	Rear Axle Clearance	1080 mm	3 ft 7 in
<b>21</b>	Centerline Rear Dual Tire Width	4285 mm	14 ft 1 in
<b>22</b>	Overall Tire Width	6277 mm	20 ft 7 in

Note: Standard Dual Slope Body and Standard Body Mounting Group (mirrors) shown.

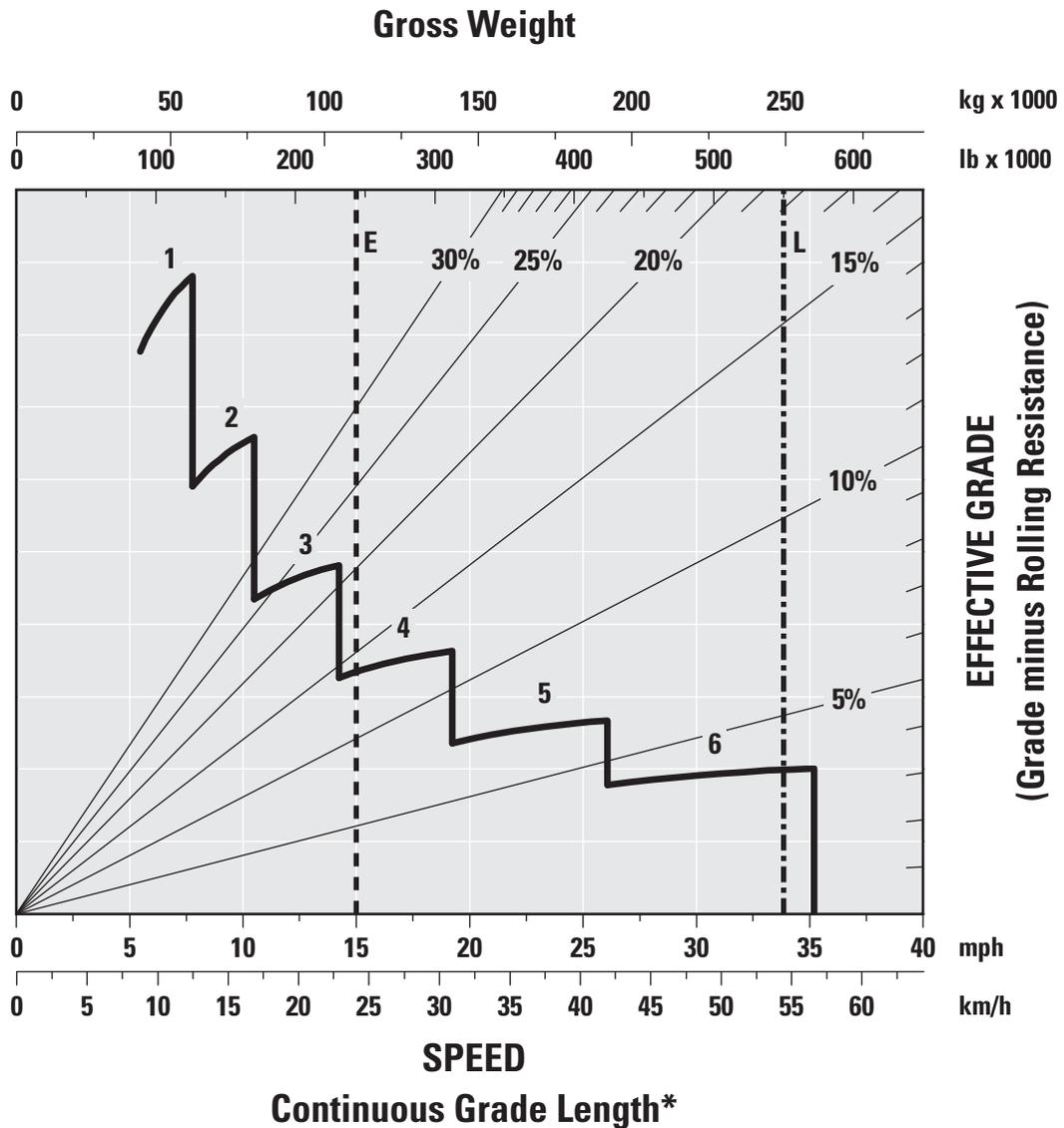
# 785D Mining Truck Specifications

## 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  
249 476 kg (550,000 lb)

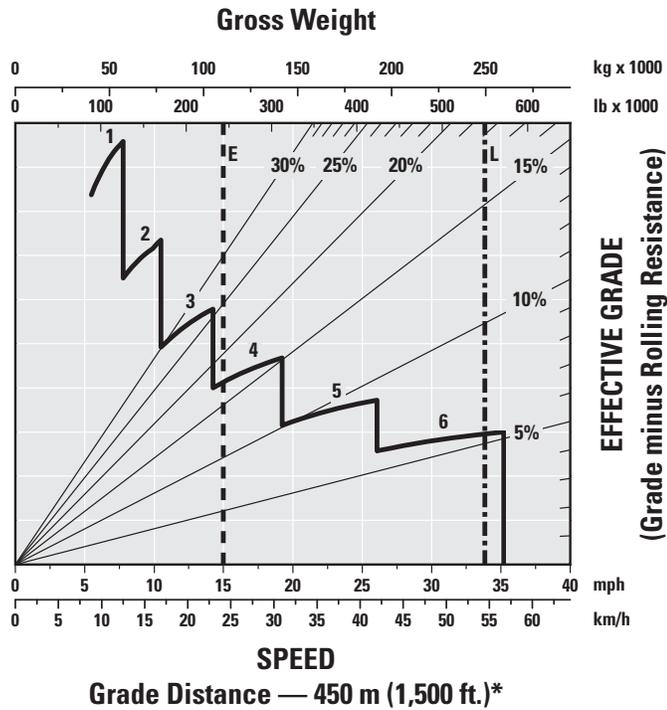


\*at sea level

- E – Empty
- L – Loaded

# Retarding Performance

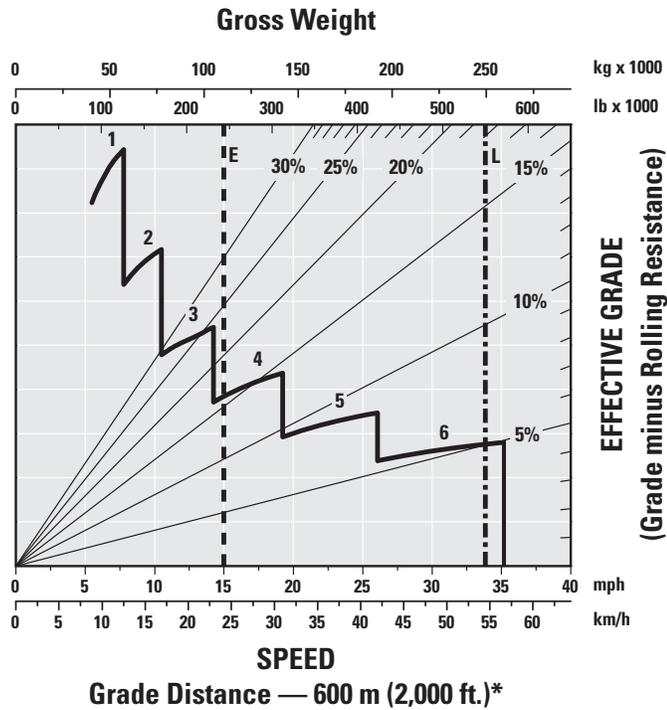
- Typical Field Empty Weight
- - - - Gross Machine Operating Weight  
249 476 kg (550,000 lb)



- E – Empty
- L – Loaded

\*at sea level

- Typical Field Empty Weight
- - - - Gross Machine Operating Weight  
249 476 kg (550,000 lb)



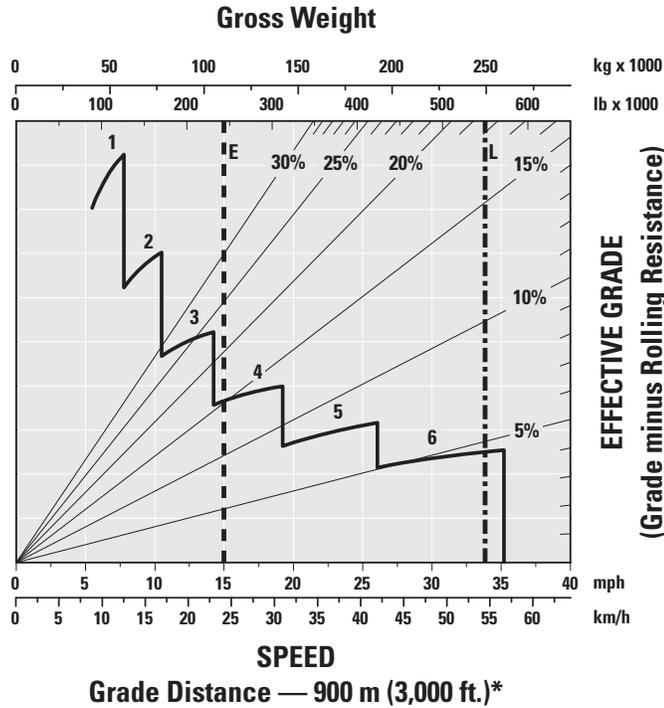
- E – Empty
- L – Loaded

\*at sea level

# 785D Mining Truck Specifications

## Retarding Performance

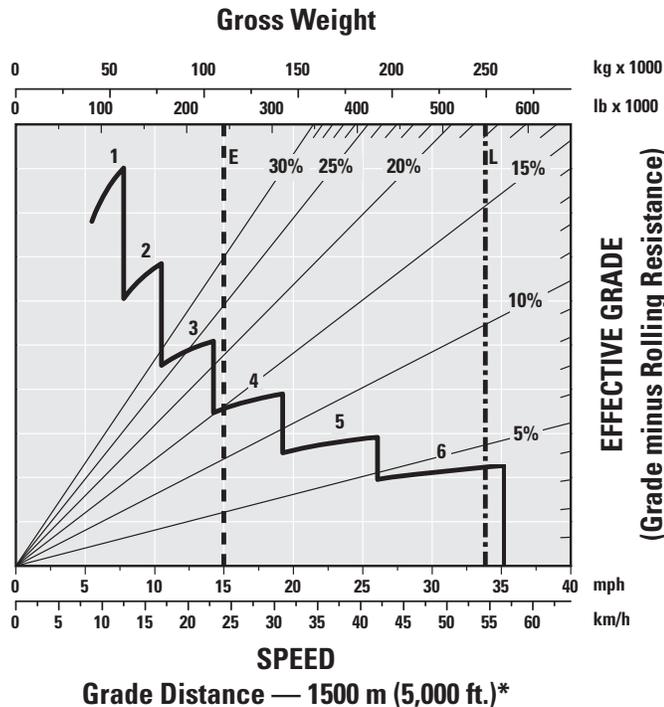
- Typical Field Empty Weight
- - - - Gross Machine Operating Weight  
249 476 kg (550,000 lb)



E – Empty  
L – Loaded

\*at sea level

- Typical Field Empty Weight
- - - - Gross Machine Operating Weight  
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E – Empty  
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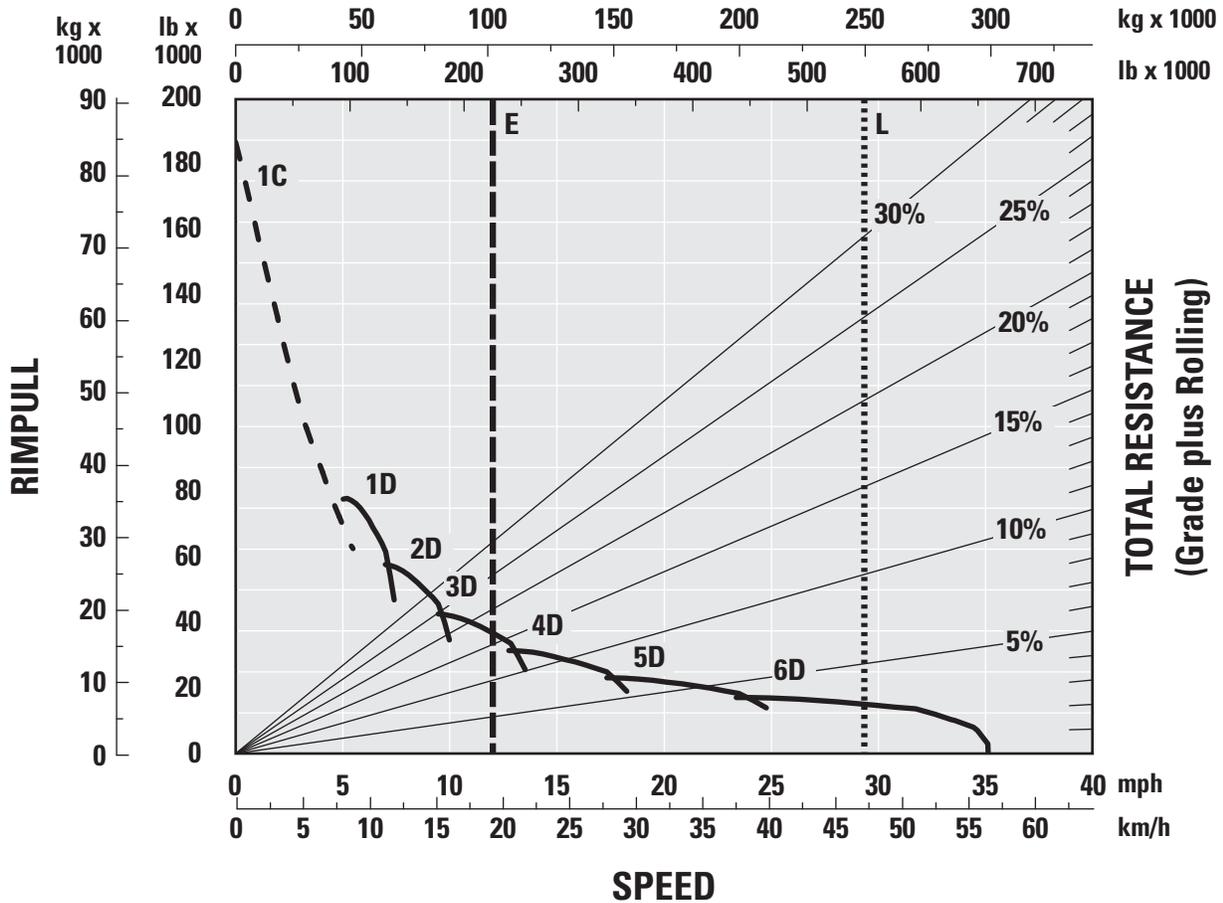
\*at sea level

## 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
- ..... Gross Machine Operating Weight  
249 476 kg (550,000 lb)

### 33.00-R51 Tires\* Gross Weight



\*at sea level

- Torque Converter Drive
- Direct Drive

- E – Empty
- L – Loaded

# 785D Mining Truck Standard Equipment

Standard equipment may vary. Consult your Cat dealer for details.

## ELECTRICAL

- Alarm, Back-up
- Alternator (105 A)
- Batteries, 93Ah, Low-maintenance, 12V (2)
- Converter, 12V electrical
- Electrical System, 24V, 15A
- Lighting System
  - Back-up and Hazard Lights
  - Directional Signals (front and rear LED)
  - Headlights, with Dimmer
  - LH Ladder Light and Service Deck Lights
  - Stop and Tail Lights (LED)
  - Engine Compartment

## OPERATOR ENVIRONMENT

- Air Conditioner
- Ashtray/cigarette lighter
- Coat hook
- Diagnostic connection port
- Dome courtesy light
- Entertainment radio ready
  - 5 amp converter
  - Speakers
  - Antenna
  - Wiring harness
- Gauges/Indicators
  - Air cleaner service indicator
  - Quad gauge panel
    - Air pressure
    - Brake oil temperature
    - Engine coolant temperature
    - Fuel level
  - Electric engine control fault indicator
  - Electric hour meter/tachometer
  - Speedometer
  - Tachometer
  - Transmission gear indicator
  - VIMS message center with universal gauge
  - VIMS keypad
- Heater/defroster
- Horn

- Hoist body control, electric
- Integrated Object Detection System
- ROPS cab insulated/sound suppressed
- Storage compartment
- Seatbelt, 75 mm (3 in), retractable
- Steering wheel, tilt, padded, telescopic
- Sun visor
- Tinted glass
- Window, electric powered, operator
- Windshield wiper, intermittent control and washer

## POWER TRAIN

- Cat 3512C HD-EUI diesel engine
  - Air Cleaner with Precleaner (2)
  - Engine Shutdown
  - Ether starting aid
  - Air to air aftercooler (ATAAC)
  - Elevated low idle control
  - Auto starter protection
  - Multi-point oil pressure sensing
  - Antifreeze, extended life coolant  
-35° C (-30° F)
- Braking System
  - Brake release motor (towing)
  - Oil-cooled, Multiple-disc (front and rear), (service, retarding, parking, secondary)
  - Automatic retarder control
  - Engine overspeed protection
  - Extended life brake disc
- Transmission
  - 6-speed automatic powershift with electric control (TCC)
  - Body-up shift inhibitor
  - Controlled throttle shifting
  - Directional shift management
  - Downshift/reverse shift inhibitor
  - Individual clutch modulation
  - Neutral coast inhibitor/start switch
  - Body-up reverse neutralizer
  - Programmable top gear
  - Lock-up torque convertor

## OTHER STANDARD EQUIPMENT

- Air Line Dryer (2)
- Body Mounting Group
- Auto lubrication system (Lincoln)
- Dumping, Auxiliary Quick Connect for “Buddy Dumping”
- Steering, Auxiliary Quick Connect for Towing
- Continuous rear axle filtration
- Diagonal stairway, 600 mm (24 in)
- Driveline Operator Safety Guard
- Fast-fill Fuel System
- VIMS Dataport
- Battery Disconnect
- High speed crankcase oil change Reservoirs (Separate)
  - Brake/converter/hoist
  - Steering
  - Transmission
- S·O·S<sup>SM</sup> sample ports
- Supplemental steering (automatic)
- Tie Down Eyes
- Tow Hooks, Front
- Traction Control System
- Vandalism Protection Locks
- Vital Information Management System (VIMS) includes:
  - VIMS payload monitor
  - MAX payload and speed manager

# 785D Mining Truck Mandatory and Optional Equipment

## Mandatory Equipment

### ELECTRICAL

- VIMS
- VIMS, English/Spanish Monitor System
  - Payload, indicator lights
  - Payload, digital display
- Lights
- Lights, front/rear, HID
  - Lights, front/rear, Halogen

### FRAME

- Body Mounting Groups
- Mounting, body, X, MSD, dual

### OPERATOR ENVIRONMENT

- Integrated Object Detection System
- Radar and camera
  - Camera
  - Allowance for omission
- Seat Options
- Seat, Cat Comfort, 3 pt belt
- Companion Seats
- Cat Seat, air Suspension, companion
  - Cat Seat, non-suspension, companion
- Visor
- Visor, flip down, front
  - Visor, retractable, front

### STARTERS AND BATTERIES

- Air start, vane, Ingersoll
- Air start, turbine, Ingersoll
- Starting, electric, prelube
- Starting, electric
- Air start, turbine, TDI

### FUEL LINES AND TANKS

- Tank, fuel, standard volume, fast fill, 1893 L (500 gal)
- Tank, fuel, standard volume, non pressure, 1893 L (500 gal)
- Tank, fuel, large volume, fast fill, 2498 L (660 gal)
- Tank, fuel, large volume, non pressure, 2498 L (660 gal)

### POWER TRAIN

- Engine
- Engine, standard arrangement
  - Engine, EPA/ARB flexibility
- Radiator
- Radiator, folded core
- Fuel filters
- Screen, fuel, primary with lines
  - Filter, fuel with separator
- Exhaust System
- Exhaust, muffler
  - Exhaust, heated body

### Fans

- Fan, conventional drive
- Fan, variable speed

### Rims

- Rims, 24 × 51

### Ground Access

- Ladder, fixed
- Stairway, powered\*

### SPECIAL ARRANGEMENTS

#### Vessel Arrangements

- Vessels, pressurized, standard
- Vessels, pressurized, Canada
- Vessels, pressurized, EU

### SERVICE INSTRUCTIONS

- Instructions, ANSI
- Instructions, ISO

*\*Target available 2Q 2011*

## Optional Equipment

### BODIES

- Body, X
- MSD II (Mine Specific Design)
- Dual Slope
- Custom Body Options

### BODY EXTENSIONS

- Tail
- Wrap around

### LINERS

- Full-length liner
- Tail extension wrap-around

### OPERATOR ENVIRONMENT

- Footrest, operator
- Hose, cab clean-out
- Vacuum, cab clean-out

### POWER TRAIN

- Pre-lube, engine
- Oil renewal system
- Oil cooler, rear axle

### COLD WEATHER

- Starting, Cold Weather

### TIRES AND RIMS

- Spare rims
- Spare rim, 24 × 51

### INFORMATION MANAGEMENT

- Control, Road Analysis (RAC)

### SERVICE CENTER

- Service Center, Wiggins

### MISCELLANEOUS

- Fire extinguisher, portable
- Hub Odometer, Kilometers
- Hub Odometer, Miles
- Wheel Chocks
- Heater, Diesel fuel

# 785D Mining Truck

For more complete information on Cat products, dealer services, and industry solutions, visit us on the web at [www.cat.com](http://www.cat.com)

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