



Cat[®] 789D

Mining Truck

Technical Specifications

Configurations and features may vary by region. Please consult your Cat[®] dealer for availability in your area

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789D Mining Truck Specifications

Engine

Engine Model	Cat® 3516C – HD	
Gross Power – SAEJ1995	1566 kW	2,100 hp
Net Power – (ISO 9249)	1468 kW	1,969 hp
Rated Speed	1,750 rpm	
Emissions Rating	Fuel Optimized or U.S. EPA Tier 2 equivalent	
Bore	170 mm	6.7 in
Stroke	215 mm	8.5 in
Displacement	78.1 L	4,766 in ³

Optional Engine

Engine Model	Cat 3516B – EUI	
Gross Power – SAEJ1995	1417 kW	1,900 hp
Net Power – (ISO 9249)	1320 kW	1,770 hp
Rated Speed	1,750 rpm	
Emissions Rating	Fuel Optimized	
Bore	170 mm	6.7 in
Stroke	190 mm	7.5 in
Displacement	69 L	4,211 in ³

Net Power advertised is the power available at the flywheel when the engine is equipped with air intake system, exhaust system, direct drive fan, and alternator.

- Power ratings apply at 1,750 rpm when tested under the specific conditions for the specified standard.
- Ratings based on SAE J1995 standard air conditions of 25° C (77° F) and 99 kPa (29.32 Hg) 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).
- 3516B engine, no derate required up to 2300 m (7,500 ft) altitude.
- 3516C engine, (US EPA Tier 2 equivalent) no engine derate required up to 2743 m (9,000 ft).
- 3516C engine, (Fuel Optimized) no engine derate required up to 3658 m (12,000 ft).

Weights – Approximate

Rated Gross Machine Weight (RGMW)		
Tire size 37R57	324 319 kg	715,000 lb
Tire size 40R57	324 319 kg	715,000 lb
Chassis Weight (CW)		
Tire Size 37R57	102 821 kg	226,681 lb
Tire Size 40R57	106 010 kg	233,713 lb
Body Weight (BW)		
Dual Slope (108 m ³ [141 yd ³] capacity)	27 365 kg	60,331 lb
X Body (123 m ³ [161 yd ³] capacity)	30 107 kg	66,376 lb
MSD II (130 m ³ [170 yd ³] capacity)	24 113 kg	53,161 lb
HP Body (144 m ³ [188 yd ³] capacity)	27 137 kg	59,828 lb
Coal Body (191 m ³ [250 yd ³] capacity)	28 300 kg	62,390 lb
Combination Body (153 m ³ [200 yd ³] capacity)	28 633 kg	63,125 lb
Nominal Payload (NRP)		
Tire size 37R57	194 tonnes	214 tons
Tire size 40R57	191 tonnes	211 tons

- Consult your tire manufacturer for maximum tire load.
- Chassis weight with full fuel and fluids, standard and mandatory attachments, hoist, body mounting group, rims, and tires.

Weight Distributions – Approximate

Front Axle – Empty	50%
Rear Axle – Empty	50%
Front Axle – Loaded	33%
Rear Axle – Loaded	67%

- Weight distributions optimized with Cat body.

Final Drives

Double-reduction, planetary with full floating axles	
Differential Ratio	2.35:1
Planetary Ratio	10.83:1
Total Reduction Ratio	25.46:1

Transmission

Forward 1	12.6 km/h	7.8 mph
Forward 2	17.1 km/h	10.6 mph
Forward 3	23.1 km/h	14.4 mph
Forward 4	31.2 km/h	19.4 mph
Forward 5	42.3 km/h	26.3 mph
Forward 6	57.2 km/h	35.5 mph
Reverse	11.8 km/h	7.3 mph
Top Speed – Loaded	57.2 km/h	35.5 mph

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Tires and Rims

Standard Tires 37R57

Optional Tires 40R57

- Quick Change Rims optional.
- Caterpillar recommends the customer evaluate all job conditions and consult the tire manufacturer for proper tire selection and Tonne Kilometres Per Hour (TKPH) (Ton-Miles Per Hour [TMPH]) capabilities.

Braking System

Service Brakes: Four-Corner, Wet Multi-disc, Oil Cooled, Hydraulically Actuated

Front Brake Surface Area	81 693 cm ²	12,662 in ²
Rear Brake Surface Area	134 590 cm ²	20,862 in ²
Standards	ISO 3450:2011	

Parking Brake: Four-corner, Wet Multi-disc, Spring applied, Hydraulically Released

Bodies

Standard MSD Body (SAE 2:1)	130 m ³	170 yd ³
Standard X Body (SAE 2:1)	123 m ³	161 yd ³
Standard Dual Slope Body (SAE 2:1)	108 m ³	141 yd ³
Standard Combi Body (SAE 2:1)	153 m ³	200 yd ³
Standard Gateless Coal Body (SAE 2:1)	191 m ³	250 yd ³
Standard HP (non-heated) Body (SAE 2:1)	144 m ³	188 yd ³

- Refer to the Cat Mining Truck Optimized payload policy for maximum gross machine weight limitations.

Body Hoists

Twin, two-stage hydraulic cylinders with snubbing valve

Pump Flow – High Idle	731 L/min	193 gal/min
Relief Valve Setting – Raise	17 238 kPa	2,500 psi
Body Raise Time – High Idle	18.9 Seconds	
Body Raise Time – High Idle Body	17.3 Seconds	
Body Lower Time – Float	15.6 Seconds	

Suspension

Self-contained nitrogen/oil cylinders, pin-to-pin mounting, top and bottom double shear clevis attachments

Effective Cylinder Stroke – Front	105 mm	4.0 in
Effective Cylinder Stroke – Rear	93 mm	3.5 in
Rear Axle Oscillation	+/- 5.6 degrees	

Service Refill Capacities

Fuel Tank	2082 L	550 gal
Fuel Tank (optional)	3785 L	1,000 gal
Cooling System	725 L	192 gal
Crankcase	291 L	77 gal
Differential and Final Drives	583 L	154 gal
Steering System (includes tank)	189 L	50 gal
Brake/Hoist System (includes tank)	909 L	241 gal
Transmission Tank	76 L	20 gal

Cab

Air Conditioning	6.9 kW (23,543 BTU/hr)
Heater/Defroster	10.1 kW (34,462 BTU/hr)

- Rollover Protective Structure (ROPS) for cab offered by Caterpillar meets ISO 3471:2008 and ISO 13459:2012.
- Falling Objects Protective Structure (FOPS) meets ISO 3449:2005 Level II and ISO 13459:2012 Level II.

Sound

Sound Standards

- The operator sound pressure levels are measured according to work cycle procedures specified in ISO 6394:2008 and ISO 6396:2008 is 78 dB(A).
- The exterior sound power level for the standard machine is tested using ISO 6393:2008 and ISO 6395:2008 procedures is 121 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.

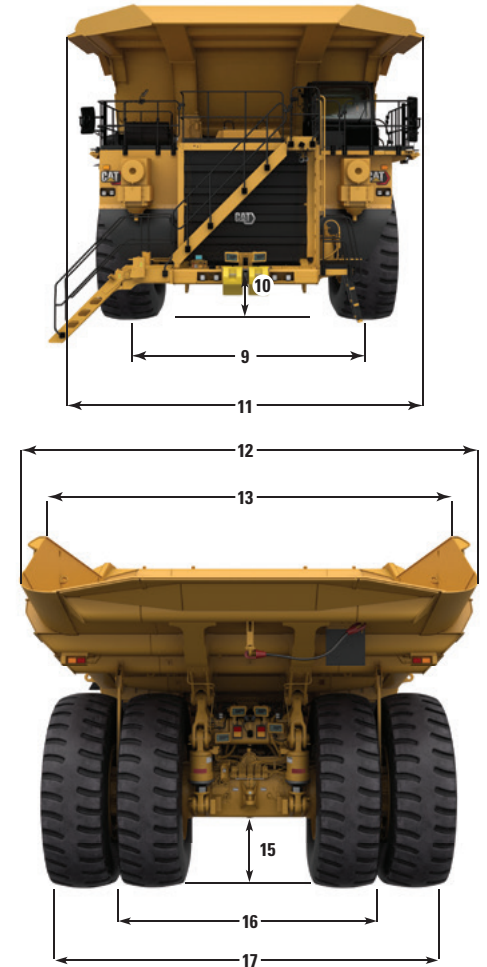
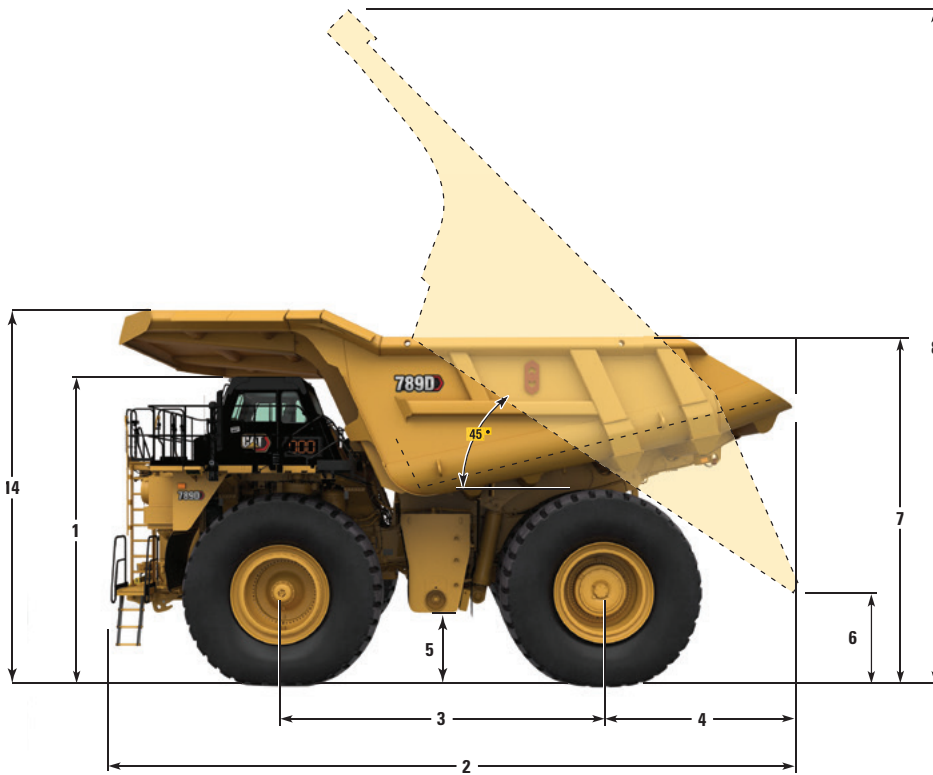
Steering

Steer Angle	36 degrees	
Turning Diameter (ISO 7457:1997)	27.53 m	90.32 ft
Steering Standards	ISO 5010:2007	

789D Mining Truck Specifications

Dimensions

All dimensions are approximate. Shown with HP Body.



1 Height to Top of ROPS	5550 mm	18 ft 3 in
2 Overall Length	12 945 mm	42 ft 6 in
3 Wheelbase	5700 mm	18 ft 8 in
4 Rear Axle to Tail	3856 mm	12 ft 8 in
5 Ground Clearance	1304 mm	4 ft 3 in
6 Dump Clearance	1585 mm	5 ft 2 in
7 Loading Height – Empty	6147 mm	20 ft 2 in
8 Overall Height – Body Raised	13 122 mm	43 ft 1 in
9 Centerline Front Tire Width	5410 mm	17 ft 9 in
10 Engine Guard Clearance	1290 mm	4 ft 3 in
11 Overall Canopy Width	7769 mm	25 ft 6 in
12 Outside Body Width	7377 mm	24 ft 2 in
13 Inside Body Width	6691 mm	21 ft 11 in
14 Front Canopy Height	6739 mm	22 ft 1 in
15 Rear Axle Clearance	1263 mm	4 ft 2 in
16 Centerline Rear Dual Tire Width	4695 mm	15 ft 5 in
17 Overall Tire Width	7120 mm	23 ft 4 in

789D Mining Truck Specifications

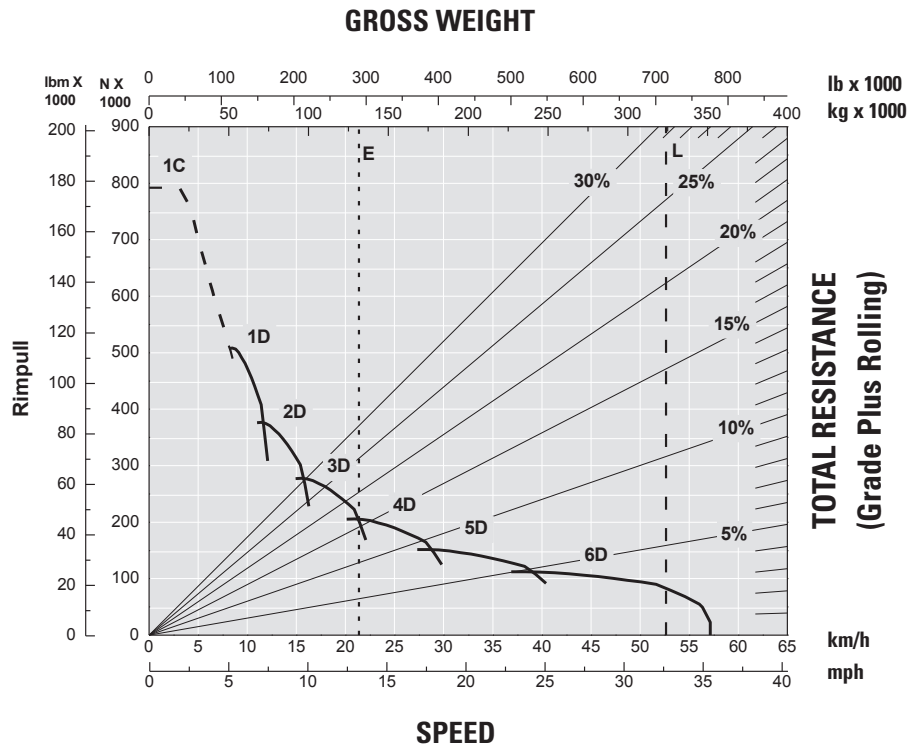
789D Gradeability/Speed/Rimpull* – 2100 hp

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.

The following charts are based on a tire size of 37.00-R57

- Typical Field Empty Weight (E)
- Gross Machine Operating Loaded Weight (L)
324 319 kg (715,000 lb)
- Torque Converter Drive
- _____ Direct Drive

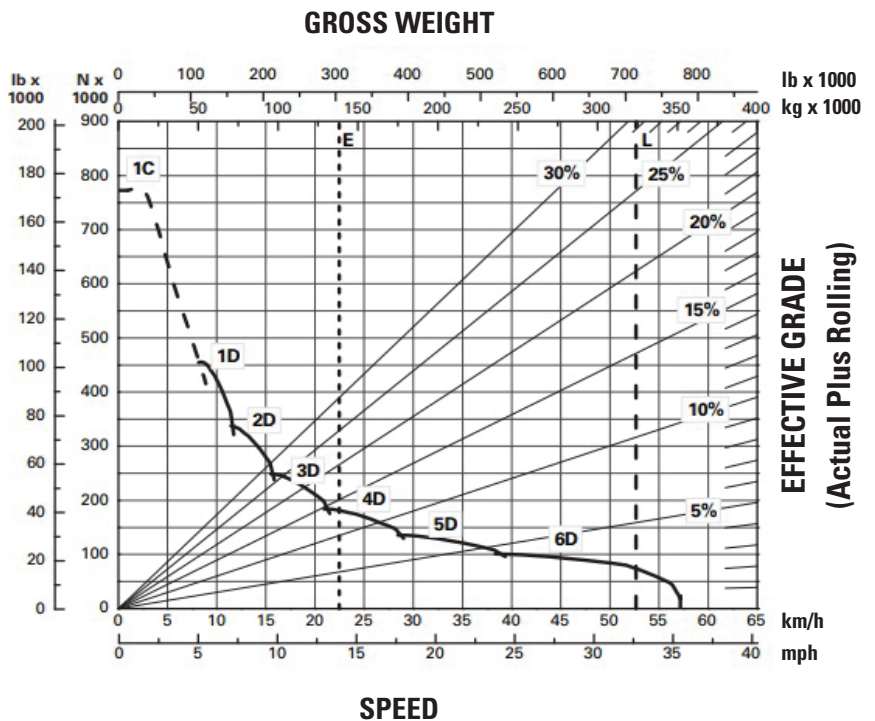
- 1 – 1st Gear
- 2 – 2nd Gear
- 3 – 3rd Gear
- 4 – 4th Gear
- 5 – 5th Gear
- 6 – 6th Gear



789D Gradeability/Speed/Rimpull* – 1900 hp

- Typical Field Empty Weight (E)
- Gross Machine Operating Loaded Weight (L)
324 319 kg (715,000 lb)
- Torque Converter Drive
- _____ Direct Drive

- 1 – 1st Gear
- 2 – 2nd Gear
- 3 – 3rd Gear
- 4 – 4th Gear
- 5 – 5th Gear
- 6 – 6th Gear



* at sea level

789D Mining Truck Specifications

789D Retarding – Continuous*

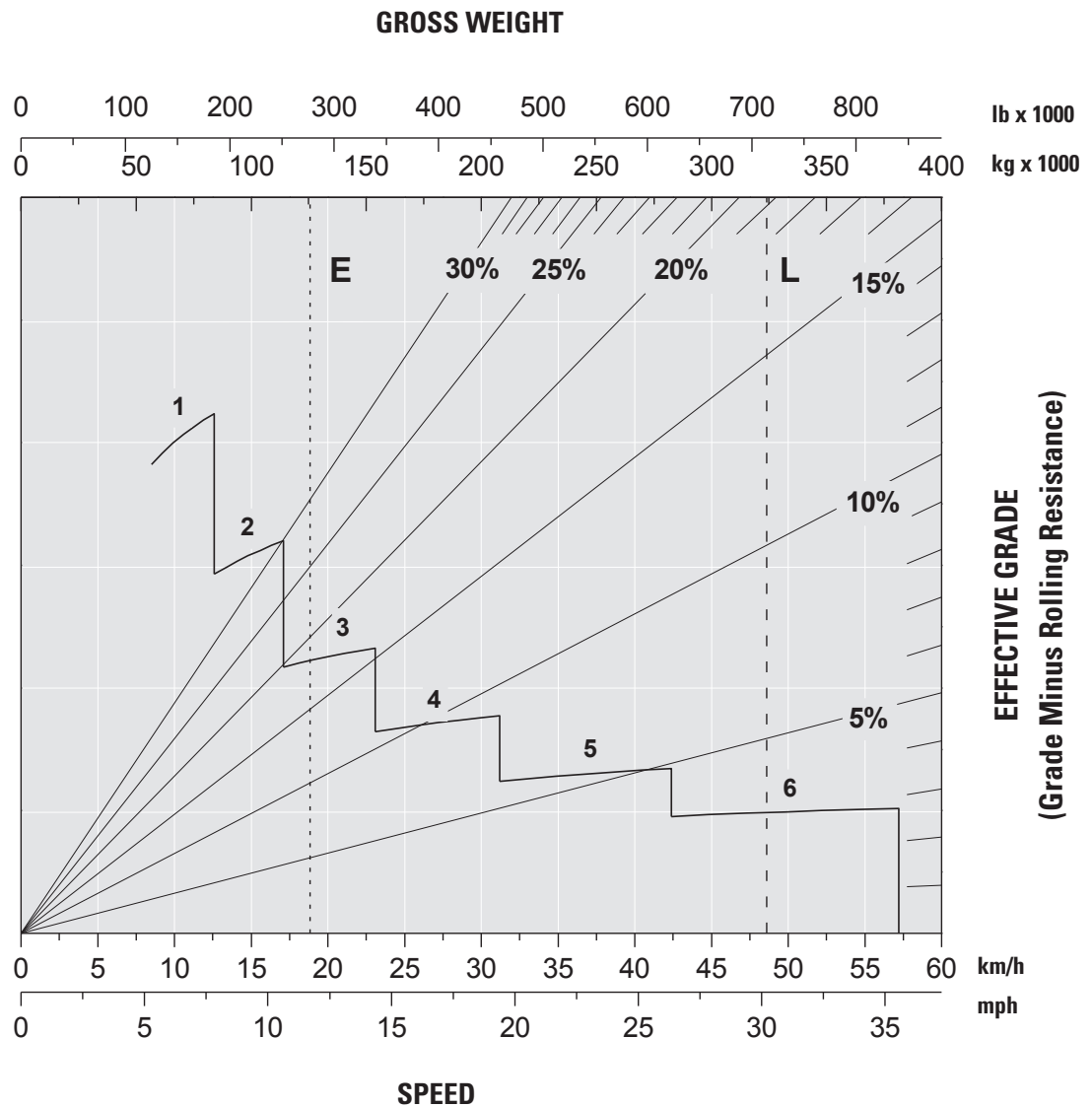
To determine retarding performance: Add lengths of all downhill segments and, using this total, refer to proper retarding chart. Read from gross weight down to the percent effective grade. Effective grade equals actual % grade minus 1% for each 10 kg/t (20 lb/ton) of rolling resistance. From this weight-effective 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, and 37.00-R57 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 (E)

Gross Machine Operating
Loaded Weight (L)
324 319 kg (715,000 lb)

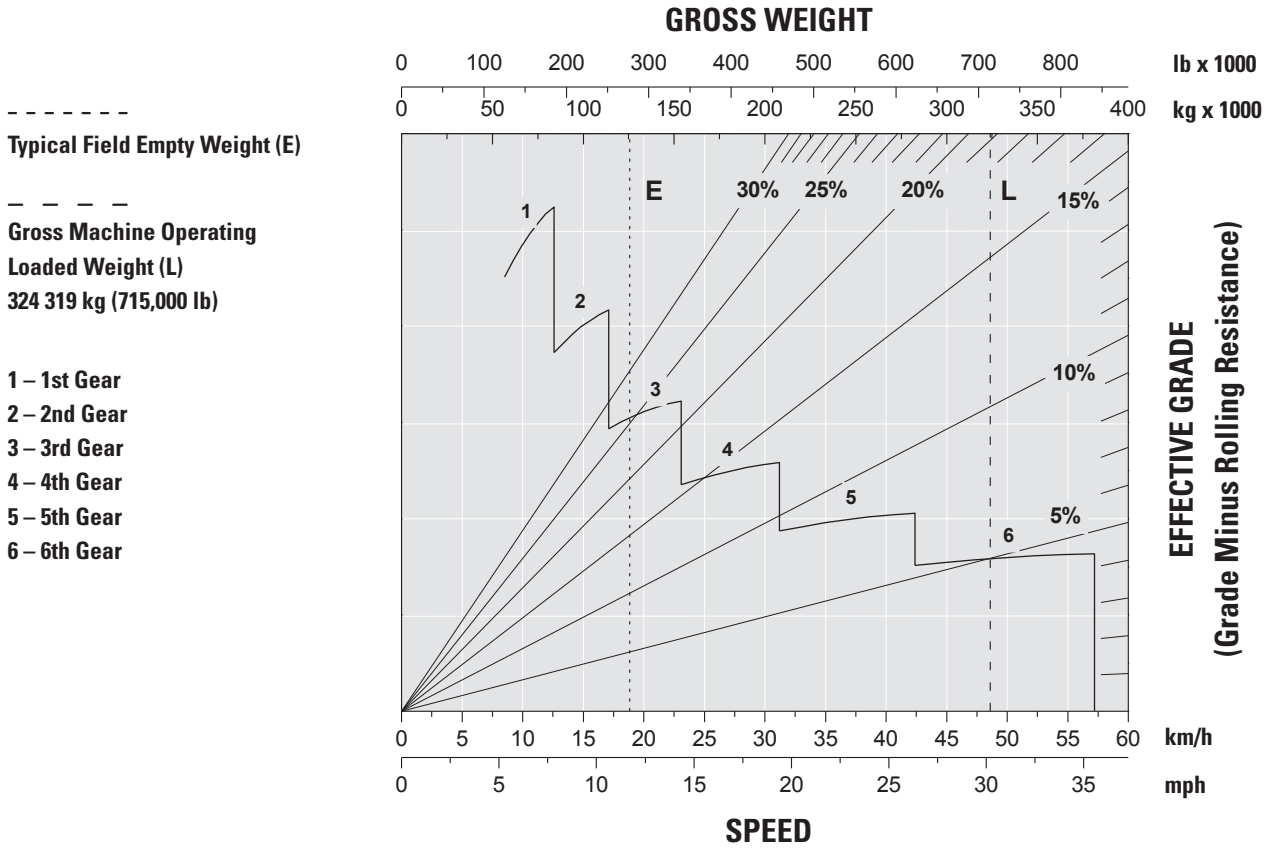
- 1 – 1st Gear
- 2 – 2nd Gear
- 3 – 3rd Gear
- 4 – 4th Gear
- 5 – 5th Gear
- 6 – 6th Gear



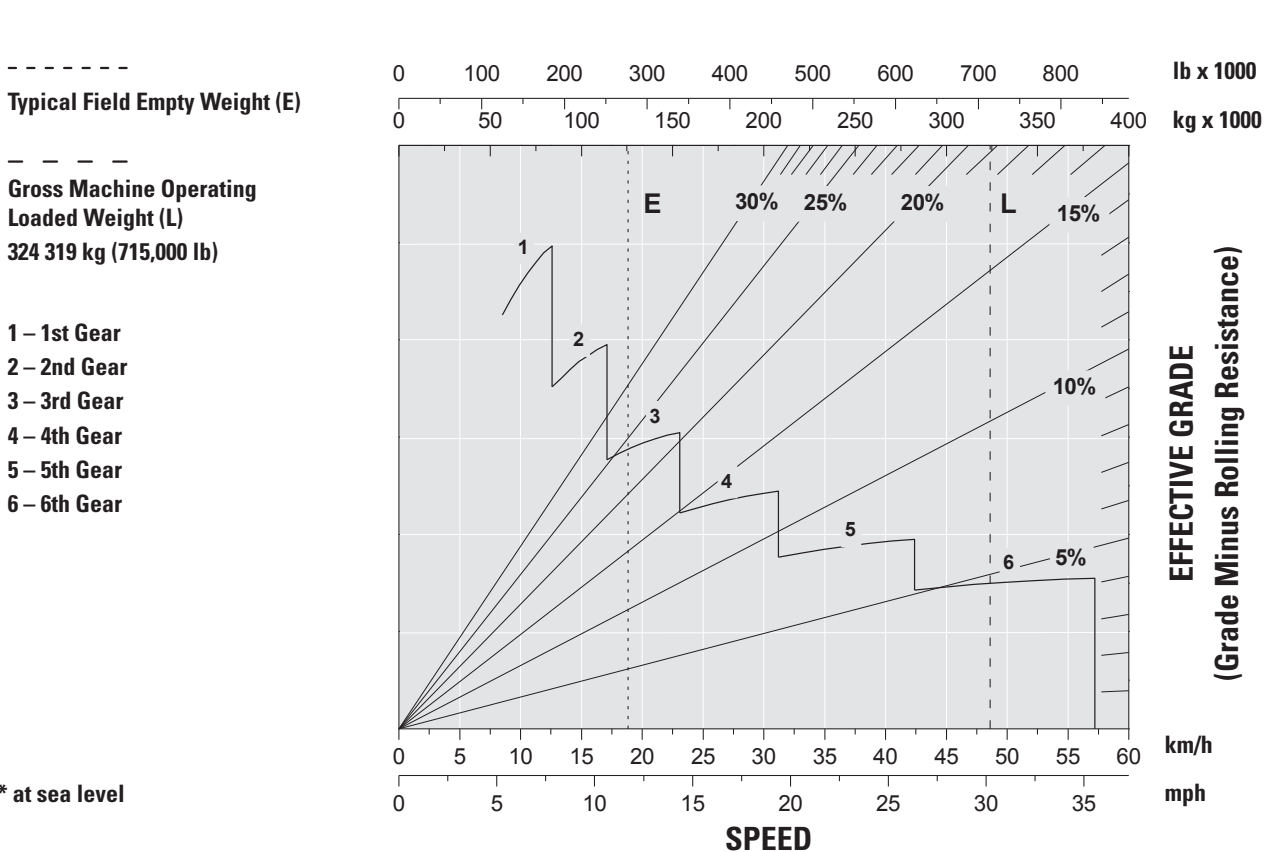
* at sea level

789D Mining Truck Specifications

789D Retarding – 450 m (1,475 ft)*



789D Retarding – 600 m (1,968 ft)*



* at sea level

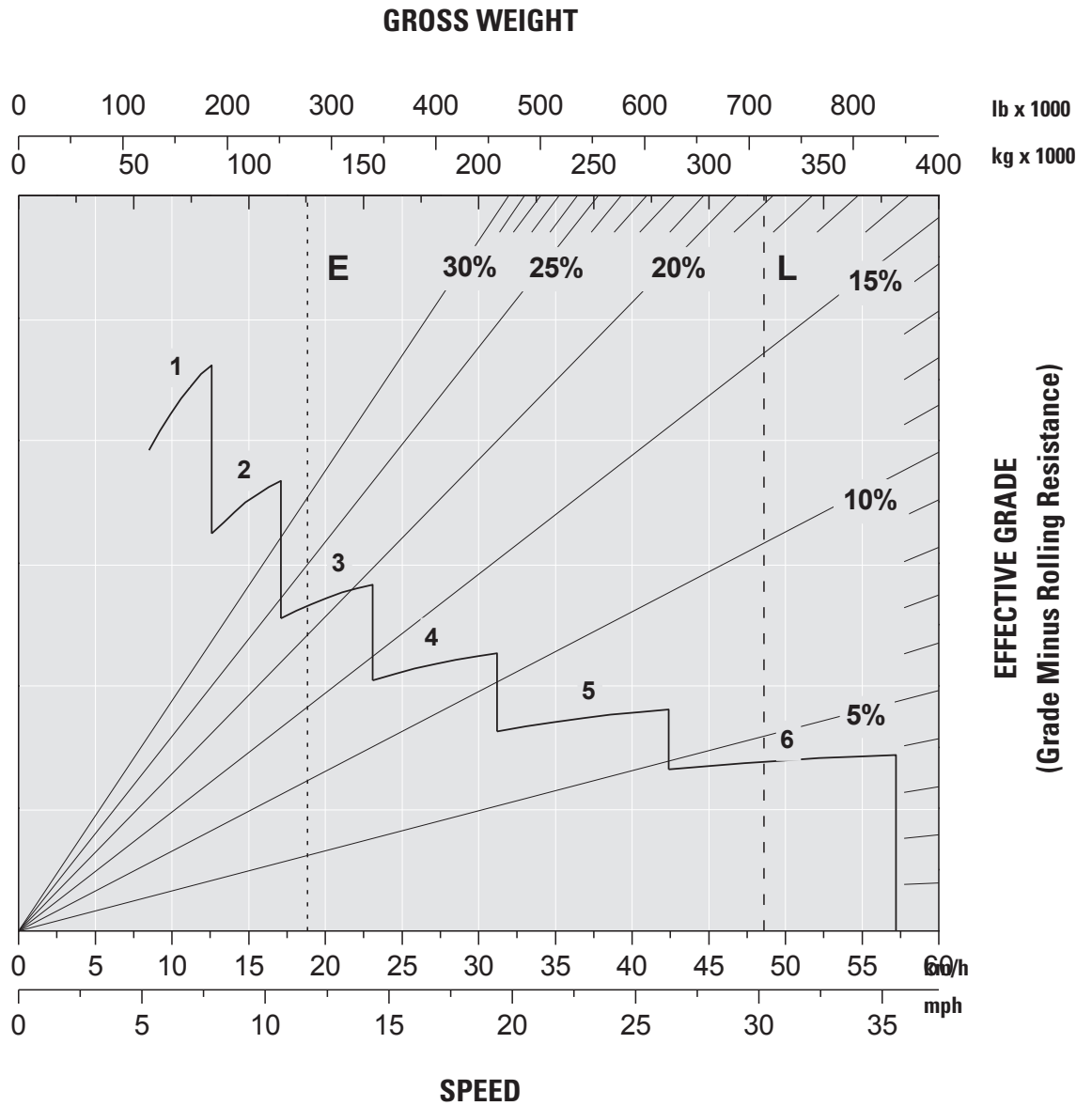
789D Mining Truck Specifications

789D Retarding – 900 m (2,953 ft)*

 Typical Field Empty Weight (E)

 Gross Machine Operating Loaded Weight (L)
 324 319 kg (715,000 lb)

- 1 – 1st Gear
- 2 – 2nd Gear
- 3 – 3rd Gear
- 4 – 4th Gear
- 5 – 5th Gear
- 6 – 6th Gear



* at sea level

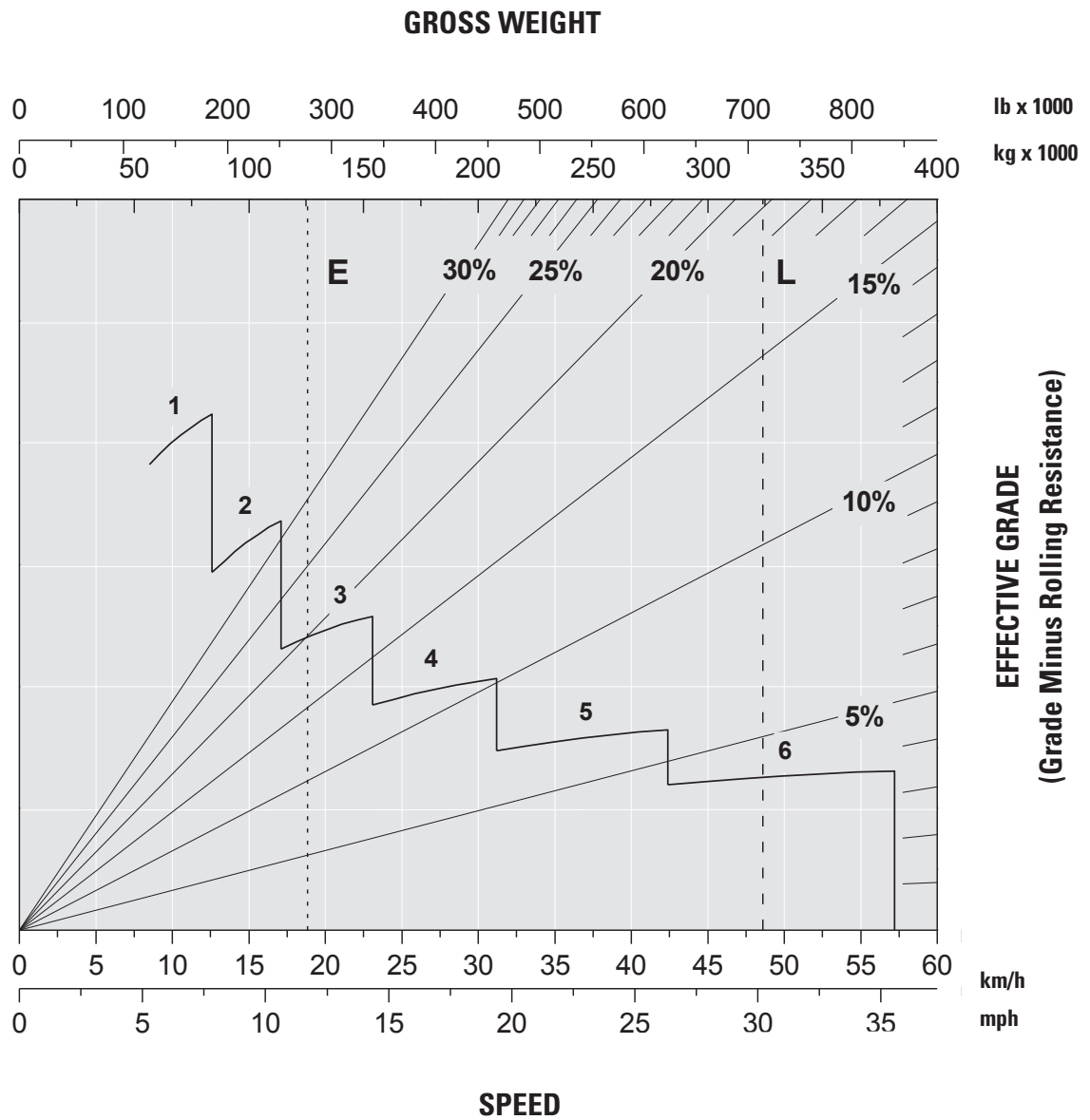
789D Mining Truck Specifications

789D Retarding – 1500 m (4,900 ft)*

 Typical Field Empty Weight (E)

 Gross Machine Operating Loaded Weight (L)
 324 319 kg (715,000 lb)

- 1 – 1st Gear
- 2 – 2nd Gear
- 3 – 3rd Gear
- 4 – 4th Gear
- 5 – 5th Gear
- 6 – 6th Gear



* at sea level

789D Mining Truck Specifications

Standard and Optional Equipment

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

	Standard	Optional		Standard	Optional
POWERTRAIN			ELECTRICAL		
Engine, 1566 kW (2,100 hp) 3516C, HD, EUI	✓		Back up alarm	✓	
Engine, 1417 kW (1,900 hp) 3516B, EUI		✓	Alternator 105 ampere	✓	
Engine, 1566 kW (2,100 hp) 3516C, HD, EUI, US EPA Tier 2 equivalent		✓	Batteries, 12V (2), 93 amp-hour	✓	
Diesel engine/turbocharged/aftercooled	✓		Converter, 12V electrical	✓	
Ground level engine shutdown	✓		Electrical system, 24V, 15 amp	✓	
Ether starting aid (automatic)	✓		LED Lighting system:	✓	
Aftercooler	✓		– Backup and hazard lights	✓	
Elevated low idle control	✓		– Directional signals, front and rear	✓	
Automatic starter protection	✓		– Engine compartment lights	✓	
Multi-point oil pressure sensing	✓		– External payload lights	✓	
Pre-lube		✓	– Headlights and fog lights	✓	
Filtration for oil cooler		✓	– Lo-hi beam selector	✓	
Oil renewal system		✓	– Ladder light and service deck lights	✓	
Muffler	✓		– Left-hand ladder/Service deck -Stop/taillights VIMS, blue light	✓	
Muffler, extended exhaust		✓	Lock out transmission at ground level		✓
Exhaust system to heat body		✓	Lighting auxiliary at catwalk and passenger platform		✓
Exhaust deflector		✓	Lighting at body rear for signals and stop/taillights		✓
Fan, conventional drive	✓		Payload indicator lights	✓	
Fan, variable speed, rockford for use in freezing weather operations		✓	Payload digital display		✓
Air start		✓	INFORMATION MANAGEMENT		
Electric start	✓		Wiring standard (less road analysis control)	✓	
BRAKING SYSTEM			Wiring with road analysis control		✓
Brake release motor (towing)	✓		OPERATOR ENVIRONMENT		
Oil-cooled, multi-disc (front and rear)/ (service, retarding, parking, secondary)	✓		Air conditioner	✓	
Automatic retarder control	✓		Auxiliary power connection/cigarette lighter	✓	
Engine overspeed protection	✓		Diagnostic connection port	✓	
Extended life brake disc material	✓		Dome courtesy light	✓	
TRANSMISSION			Entertainment radio ready:	✓	
Controlled throttle shifting	✓		– 5-amp converter, speakers, antenna, and wiring	✓	
Individual clutch modulation	✓		Air cleaner service indicator	✓	
Body-up shift inhibitor	✓		Gauge panel: Air pressure, Brake oil temperature, Engine coolant temperature, Fuel level	✓	
Downshift/reverse shift inhibitor	✓		Electric hour meter	✓	
Oil level sensor	✓		Electric engine control fault indicator	✓	
Neutral start switch/coast inhibitor	✓		Mirrors, right and left	✓	
Body-up reverse neutralizer	✓		Speedometer and tachometer	✓	
Programmable top gear	✓		Supplemental steering (automatic)	✓	
Lock-up torque converter	✓		Traction control system	✓	
Rear axle continuous lubrication/filtration	✓		Transmission gear indicator	✓	
			Vital Info Management System (VIMS)	✓	

Standard and Optional Equipment *(continued)*

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

	Standard	Optional		Standard	Optional
OBJECT DETECTION SYSTEM			FRAMES		
Radar and camera	✓		Mirror heated	✓	
Camera only (radar ready)		✓	Mirror wide and heated		✓
CAT TECHNOLOGY PRODUCTS			Lift assist struts for front and rear hoods		✓
Product Link™ cellular	✓		Driveline guard	✓	
Product Link satellite		✓	COLD WEATHER		
SAFETY AND SECURITY			Starting, cold weather		✓
Ground level VIMS data port	✓		Brake oil recirculating		✓
Ground level battery disconnect	✓		SERVICE		
Working at heights handrail	✓		Service center		✓
Working at heights package		✓	Quick connect fitting for engine oil		✓
Working at heights service		✓	Grease injector	✓	
Fire extinguisher, portable		✓	BODIES ACCESSORIES		
FUEL SYSTEMS			Side extensions		✓
Fast fill fuel system	✓		Tail wraparound		✓
2,082 L (550 gal) capacity fuel tank and fast fill system	✓		Liner for base only		✓
3,785 L (1,000 gal) capacity fuel tank and fast fill system		✓	Liner for entire body		✓
Fuel filter basic screen	✓		Rock guard for dual slope bodies		✓
Fuel filter with separator		✓	Rock ejectors	✓	
Fuel filter with separator and heater		✓	Auxiliary "buddy" dumping quick connect	✓	
FLUIDS					
Antifreeze protection to -35° C (-30° F)	✓				
Antifreeze protection to -50° C (-58° F)		✓			
RIMS AND WHEELS					
37R57	✓				
37R57 quick change		✓			
40R57		✓			
40R57 quick change		✓			
Rim diffuser		✓			
Hub odometer		✓			
Wheel chocks		✓			
Brake wear indicator		✓			
MUD GUARDS					
Mud guards for standard hydraulic and fuel tanks		✓			
Mud guards for standard hydraulic and large fuel tank		✓			
ACCESS					
Fixed ladder	✓				
Powered staircase		✓			

789D Mining Truck Specifications

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

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(LRC)

