



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, air over hydraulic actuated

Front Brake Surface Area 81 693 cm² 12,662 in²

Rear Brake Surface Area 116 283 cm² 18,023 in²

Standards ISO 3450:2011

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

Bodies

Standard MSD Body (SAE 2:1) 130 m³ 170 yd³

Standard X Body (SAE 2:1) 123 m³ 161 yd³

Standard Dual Slope Body (SAE 2:1) 108 m³ 141 yd³

Standard Combi Body (SAE 2:1) 153 m³ 200 yd³

Standard Gateless Coal Body (SAE 2:1) 191 m³ 250 yd³

Standard HP (non-heated) Body (SAE 2:1) 144 m³ 188 yd³

- 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 699 L/min 184 gal/min

Relief Valve Setting – Raise 18 950 kPa 2,750 psi

Body Raise Time – High Idle 18.9 Seconds

Body Lower Time – Float 17.3 Seconds

Body Lower Time – Power Down 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 ± 5.4 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 728 L 192 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 23,5453 Btu/hr

Heater/Defroster 10.1 kW 34,462 Btu/hr

Operator Sound pressure level 80 dB(A)

Tested to ISO 6394:2008 and ISO 6396:2008

Rollover Protective Structure (ROPS) for:

Operator meets ISO 3471:2008

Trainer meets ISO 13459:2012

Falling Objects Protective Structure (FOPS) for:

Operator meets ISO 3449:2005 Level II

Trainer meets ISO 13459:2012 Level II

- 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 36.07 degrees

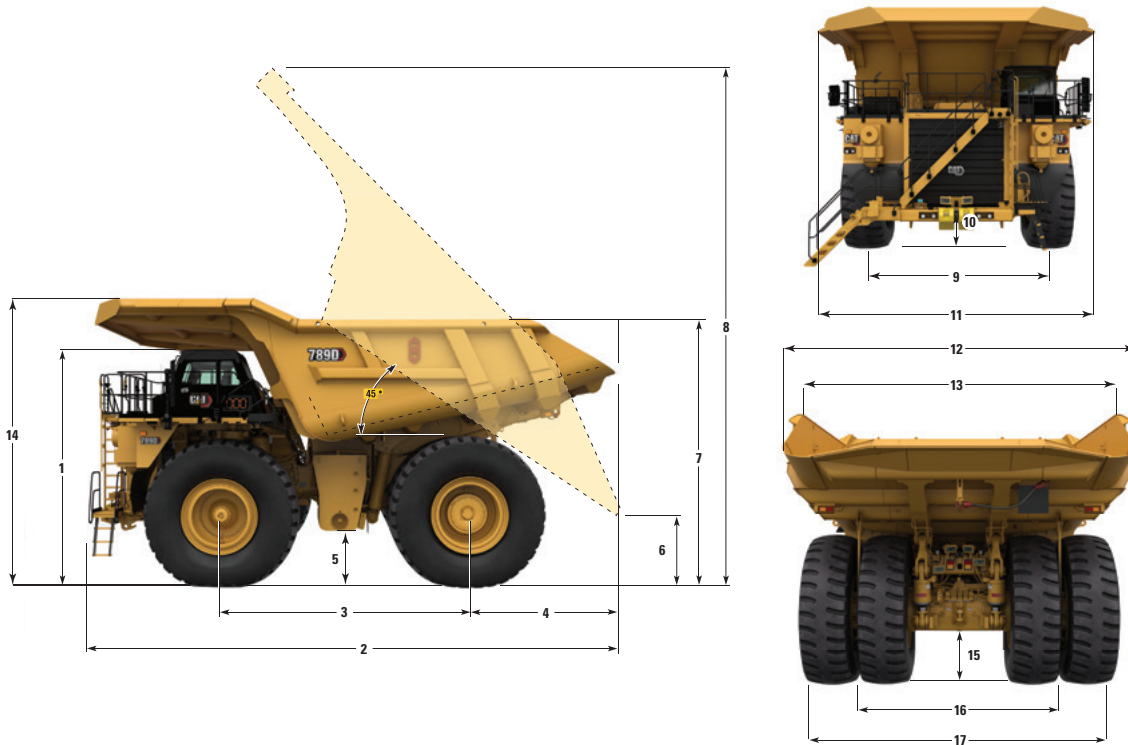
Turning Diameter (ISO 7457:1997) 30.34 m 99.5 ft

Steering Standards ISO 5010:2019

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Dimensions

All machine dimensions are approximate. Shown with HP body, 37.00 R57 size tires, unloaded machine.



DIMENSION	DIM. SL #	MSD II		DUAL SLOPE		HP	
		mm	ft	mm	ft	mm	ft
1 Height to top of ROPS	1	5400	17.7	5400	17.7	5400	17.7
2 Overall Length	2	13 350	43.8	12 650	41.5	12 915	42.4
3 Wheelbase	3	5700	18.7	5700	18.7	5700	18.7
4 Rear Axle to Tail	4	3985	13.1	3590	11.8	3860	12.7
5 Ground Clearance	5	1224	4	1224	4	1224	4
6 Dump Clearance	6	1315	4.3	1740	5.7	1620	5.3
7 Loading Height – Empty	7	5840	19.2	5470	17.9	6150	20.2
8 Overall Height – Body Raised	8	13 100	43	13 335	43.7	13 045	42.8
9 Centerline Front Tire Width	9	5410	17.7	5410	17.7	5410	17.7
10 Engine Guard Clearance	10	1210	4	1210	4	1210	4
11 Overall Canopy Width	11	7780	25.5	7645	25.1	7770	25.5
12 Outside Body Width	12	7800	25.6	7645	25.1	7770	25.5
13 Inside Body Width	13	6635	21.8	6500	21.3	6705	22
14 Front Canopy Height	14	6335	20.8	6700	22	6525	21.4
15 Rear Axle Clearance	15	1180	3.9	1178	3.9	1178	3.9
16 Centerline Rear Dual Tire Width	16	4625	15.2	4625	15.2	4625	15.2
17 Overall Tire Width	17	6945	22.8	6945	22.8	6945	22.8

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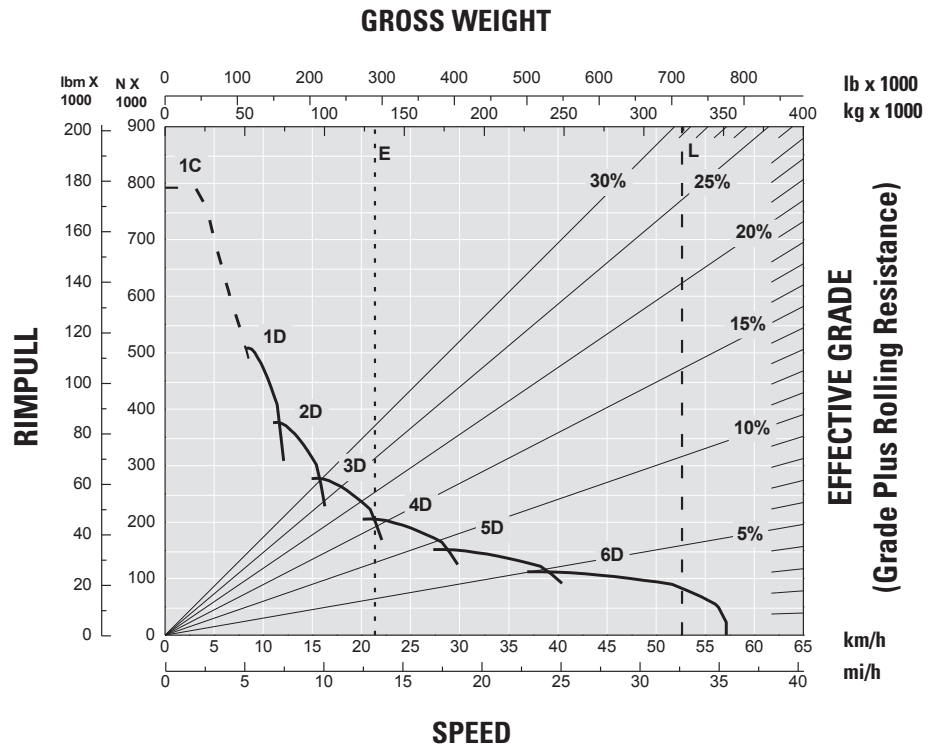
789D Gradeability/Speed/Rimpull* – 2100 hp

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

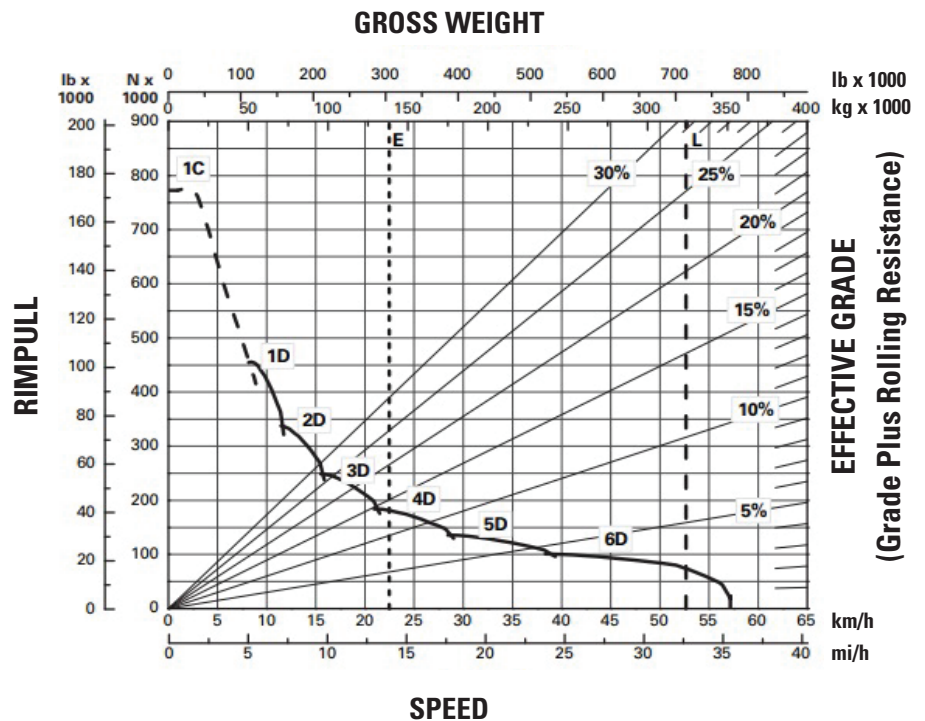
- 1 – 1st Gear
- 2 – 2nd Gear
- 3 – 3rd Gear
- 4 – 4th Gear
- 5 – 5th Gear
- 6 – 6th Gear



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

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789D Resistive Braking (Retarding) – Continuous*

To determine resistive braking (retarding) performance: Add lengths of all downhill segments and, using this total, refer to proper resistive braking 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)

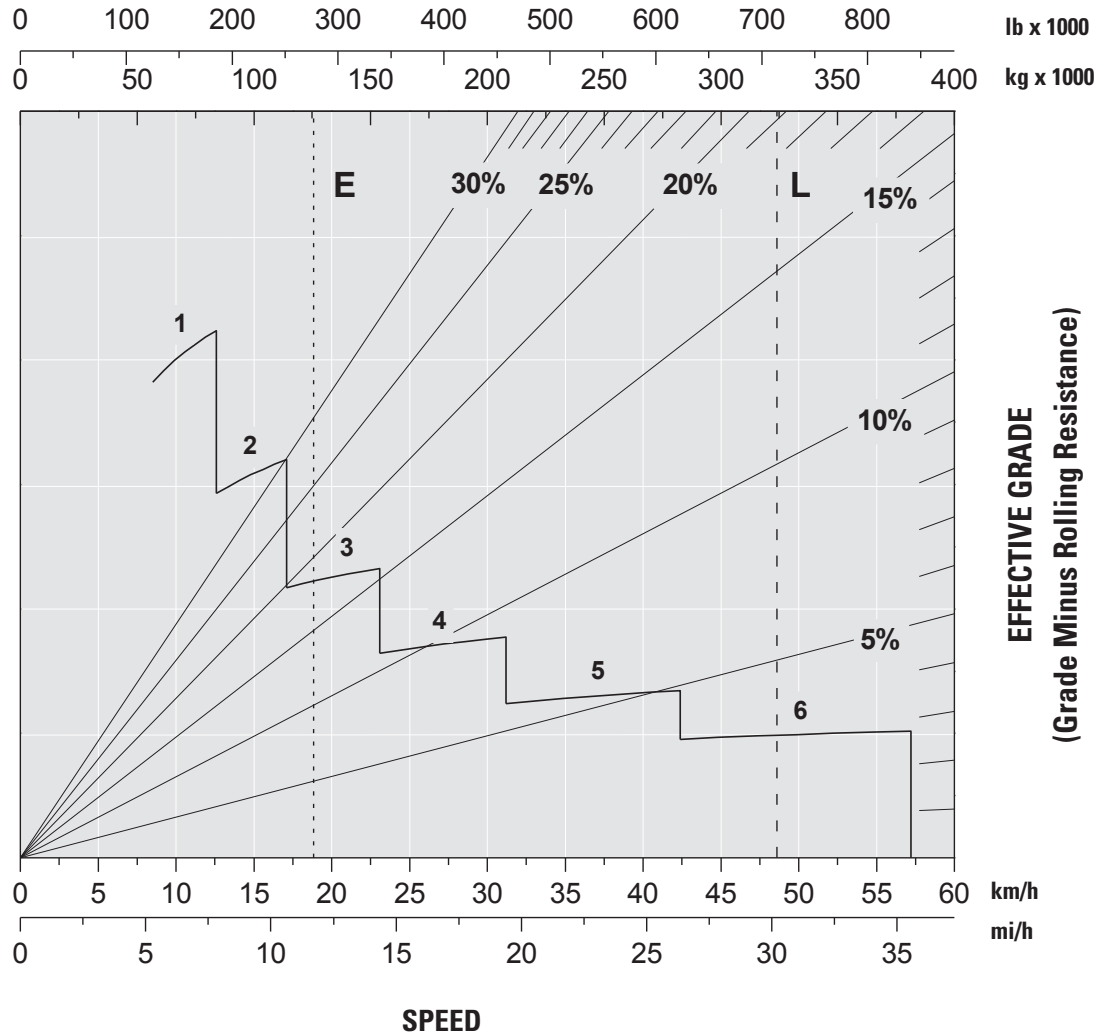
Gross Machine Operating

Loaded Weight (L)

324 319 kg (715,000 lb)

GROSS WEIGHT

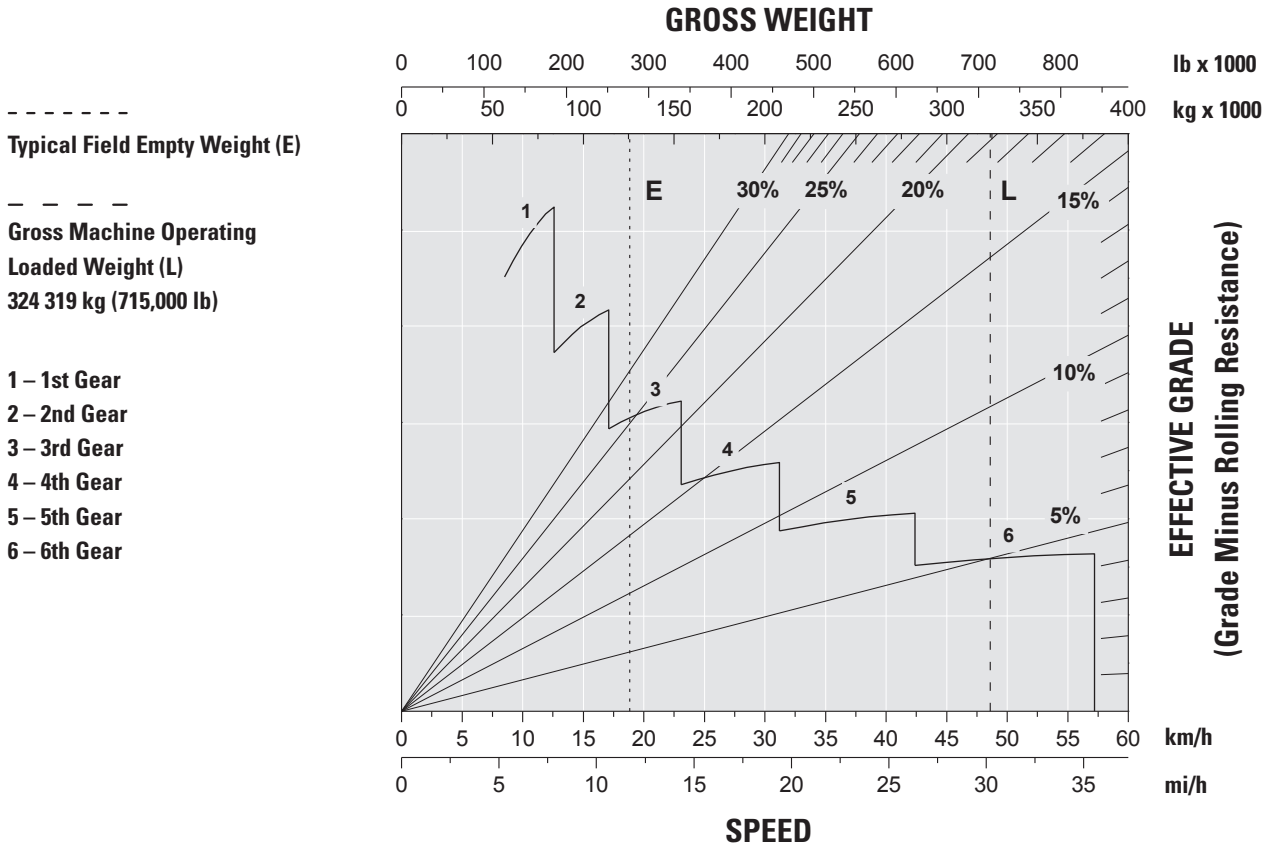
- 1 – 1st Gear
- 2 – 2nd Gear
- 3 – 3rd Gear
- 4 – 4th Gear
- 5 – 5th Gear
- 6 – 6th Gear



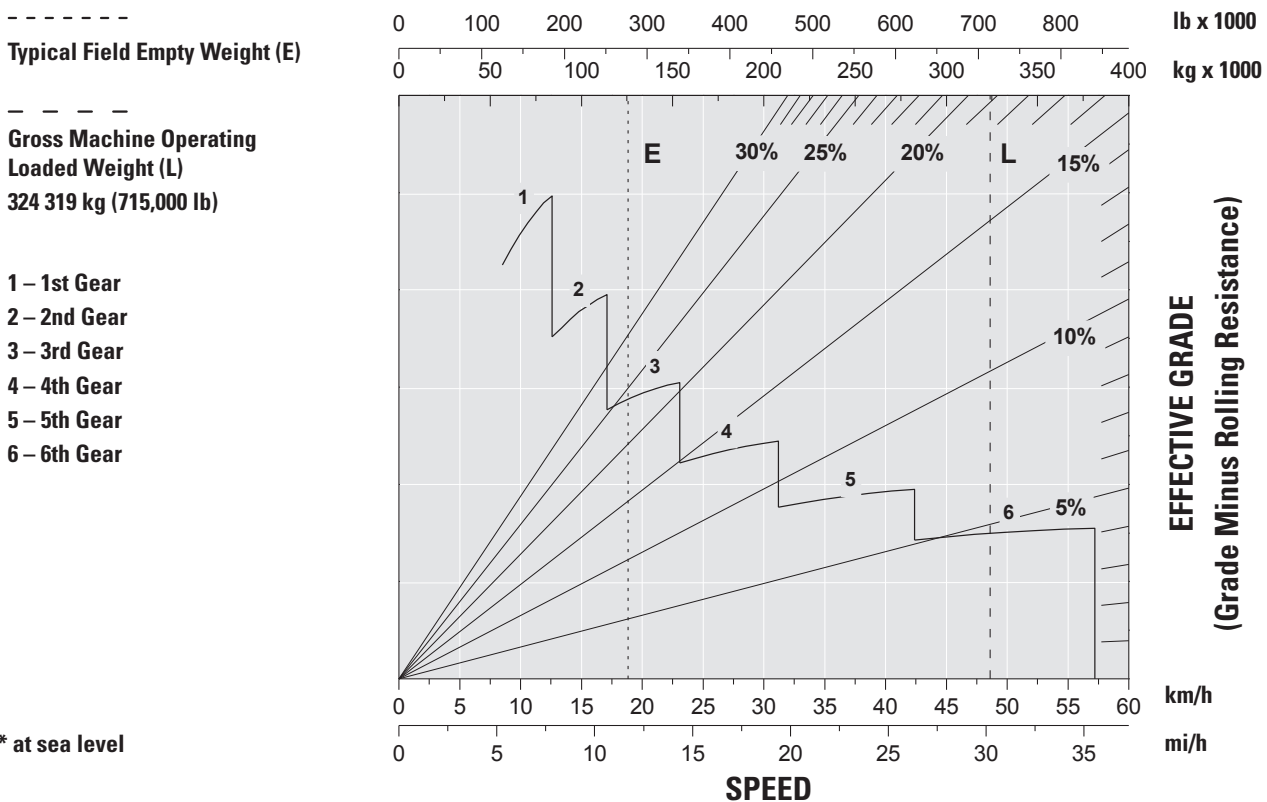
* at sea level

789D Mining Truck Specifications

789D Resistive Braking – 450 m (1,475 ft)*



789D Resistive Braking – 600 m (1,968 ft)*



* at sea level

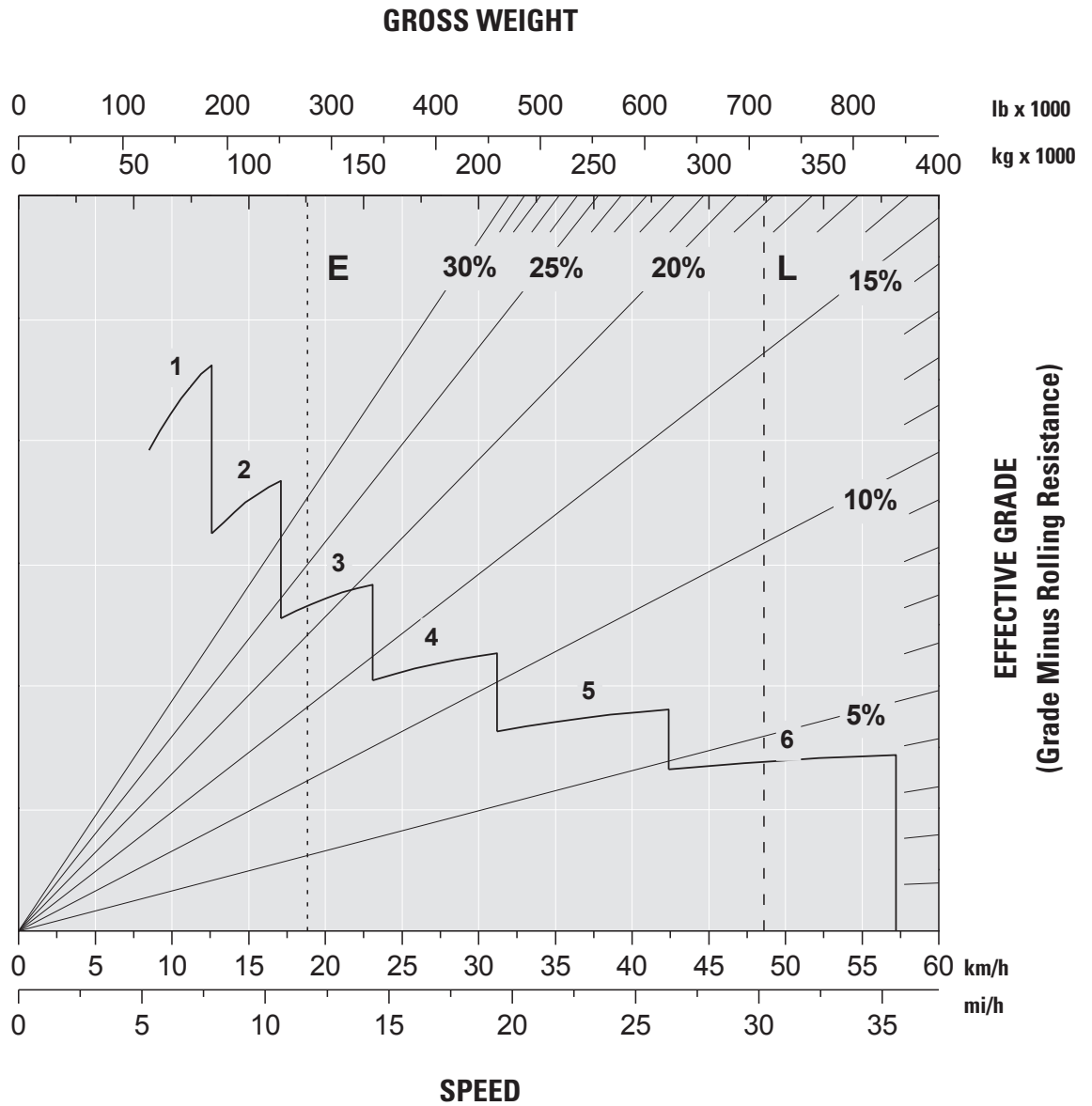
789D Mining Truck Specifications

789D Resistive Braking – 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

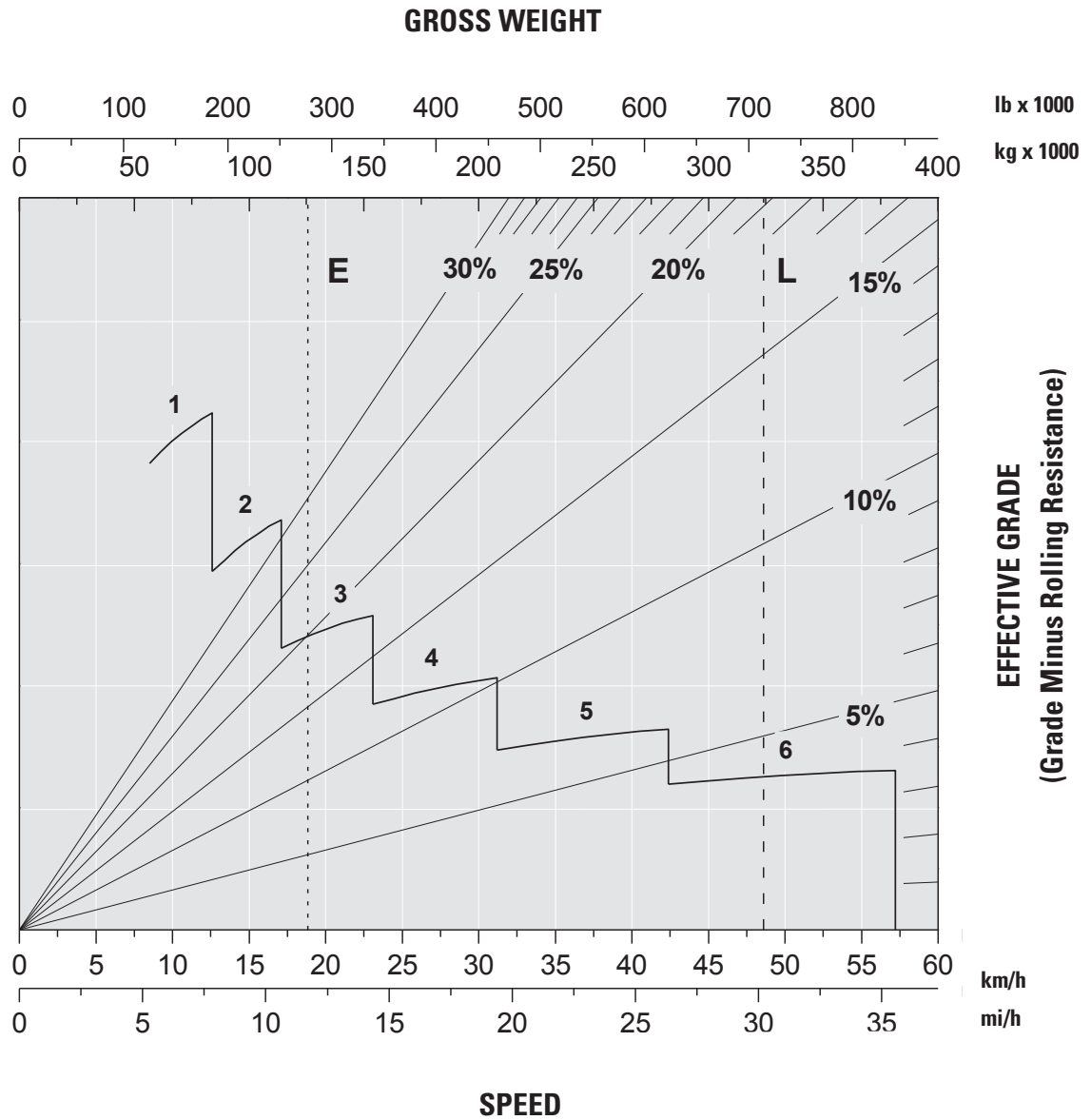
789D Mining Truck Specifications

789D Resistive Braking – 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

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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, resistive braking, parking, secondary)	✓		Air conditioner	✓	
Automatic resistor 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		✓
Omission, camera and radar		✓	Lift assist struts for front and rear hoods		✓
CAT TECHNOLOGY PRODUCTS			Driveline guard	✓	
Product Link™ cellular	✓		COLD WEATHER		
Product Link satellite		✓	Starting, cold weather		✓
SAFETY AND SECURITY			Brake oil recirculating		✓
Ground level VIMS data port	✓		SERVICE		
Ground level battery disconnect	✓		Service center		✓
Working at heights handrail	✓		Quick connect fitting for engine oil		✓
Working at heights package		✓	Grease injector	✓	
Working at heights service		✓	BODIES ACCESSORIES		
Fire extinguisher, portable		✓	Side extensions		✓
FUEL SYSTEMS			Tail wraparound		✓
Fast fill fuel system	✓		Liner for base only		✓
2082 L (550 gal) capacity fuel tank and fast fill system	✓		Liner for entire body		✓
3785 L (1,000 gal) capacity fuel tank and fast fill system		✓	Rock guard for dual slope bodies		✓
Fuel filter basic screen	✓		Rock ejectors	✓	
Fuel filter with separator		✓	Auxiliary "buddy" dumping quick connect	✓	
Fuel filter with separator and heater		✓			
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

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

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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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PEDJ1077-06 (11-2024)
Replaces PEDJ1077-05
(LRC)

