



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.

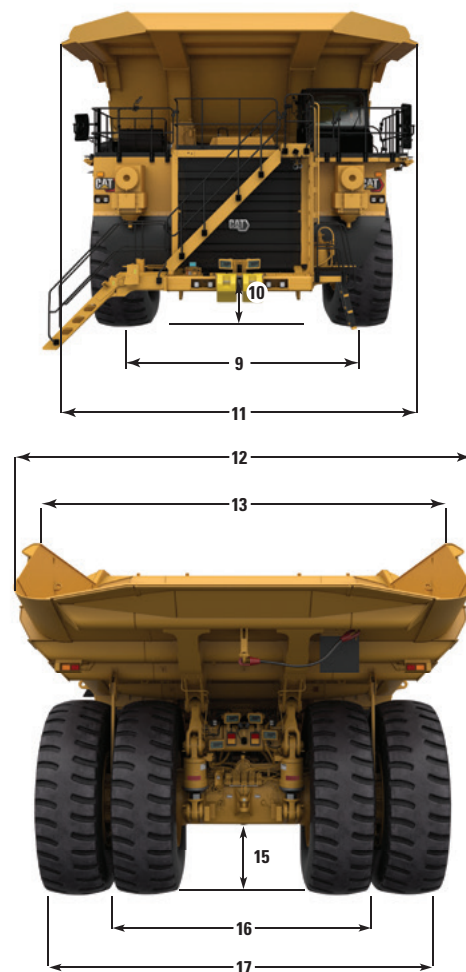
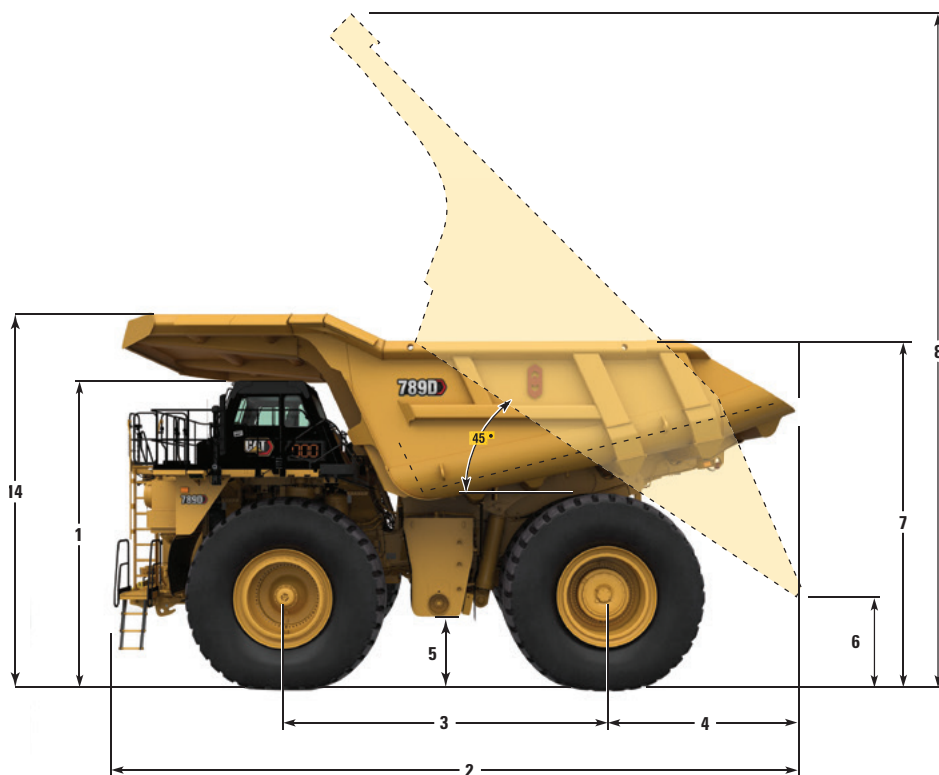
Steering

| | | |
|----------------------------------|---------------|----------|
| 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

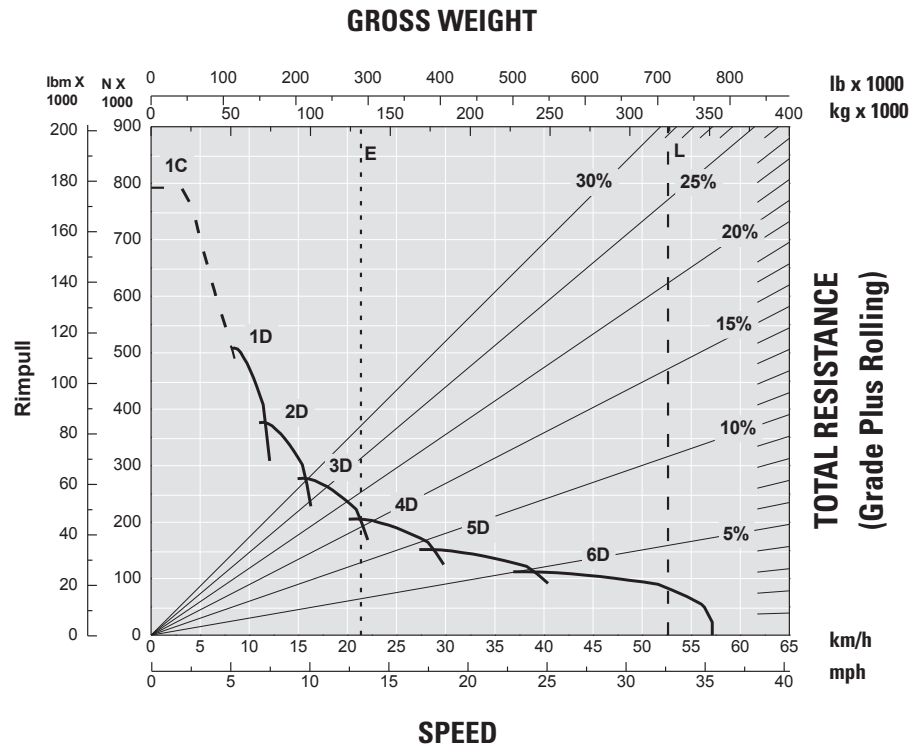
Typical Field Empty Weight (E)

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

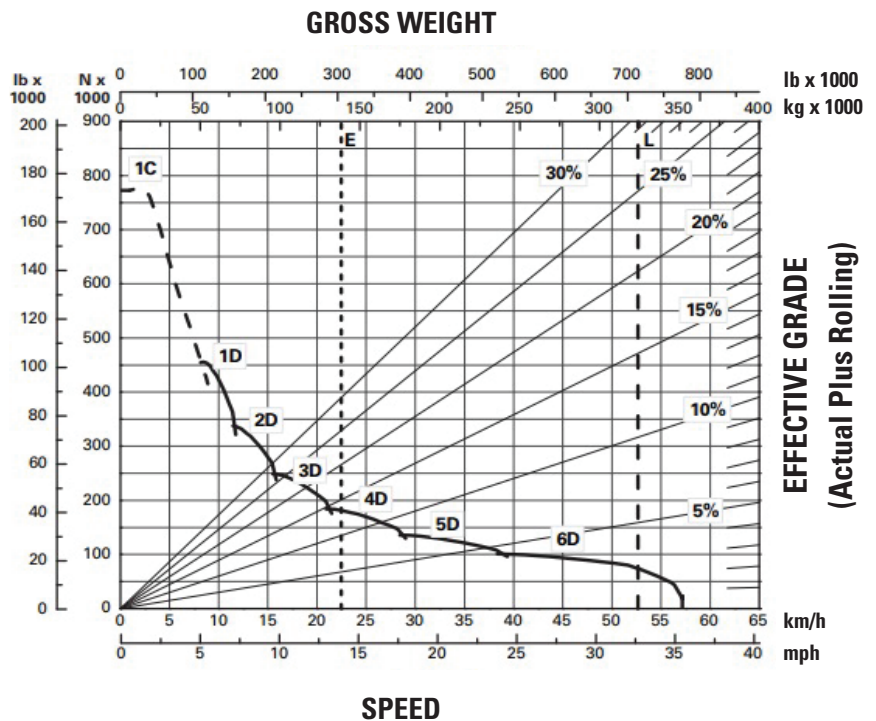
Typical Field Empty Weight (E)

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*

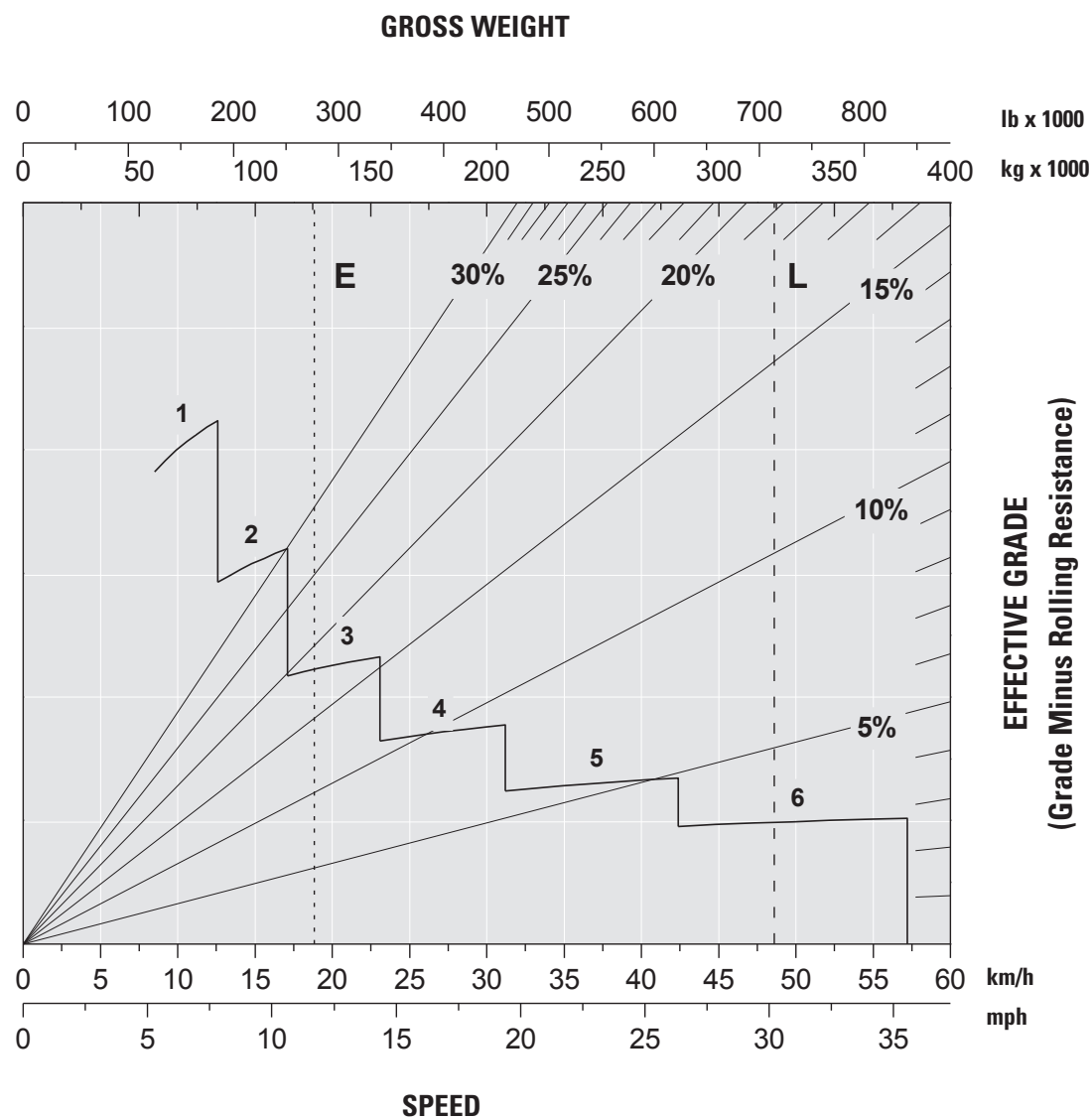
To determine retarding performance: Add lengths of all downhill segments and, using this total, refer to proper retarding chart. Read from gross weight down to the percent effective grade. Effective grade equals actual % grade minus 1% for each 10 kg/t (20 lb/ton) of rolling resistance. From this weight-effective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

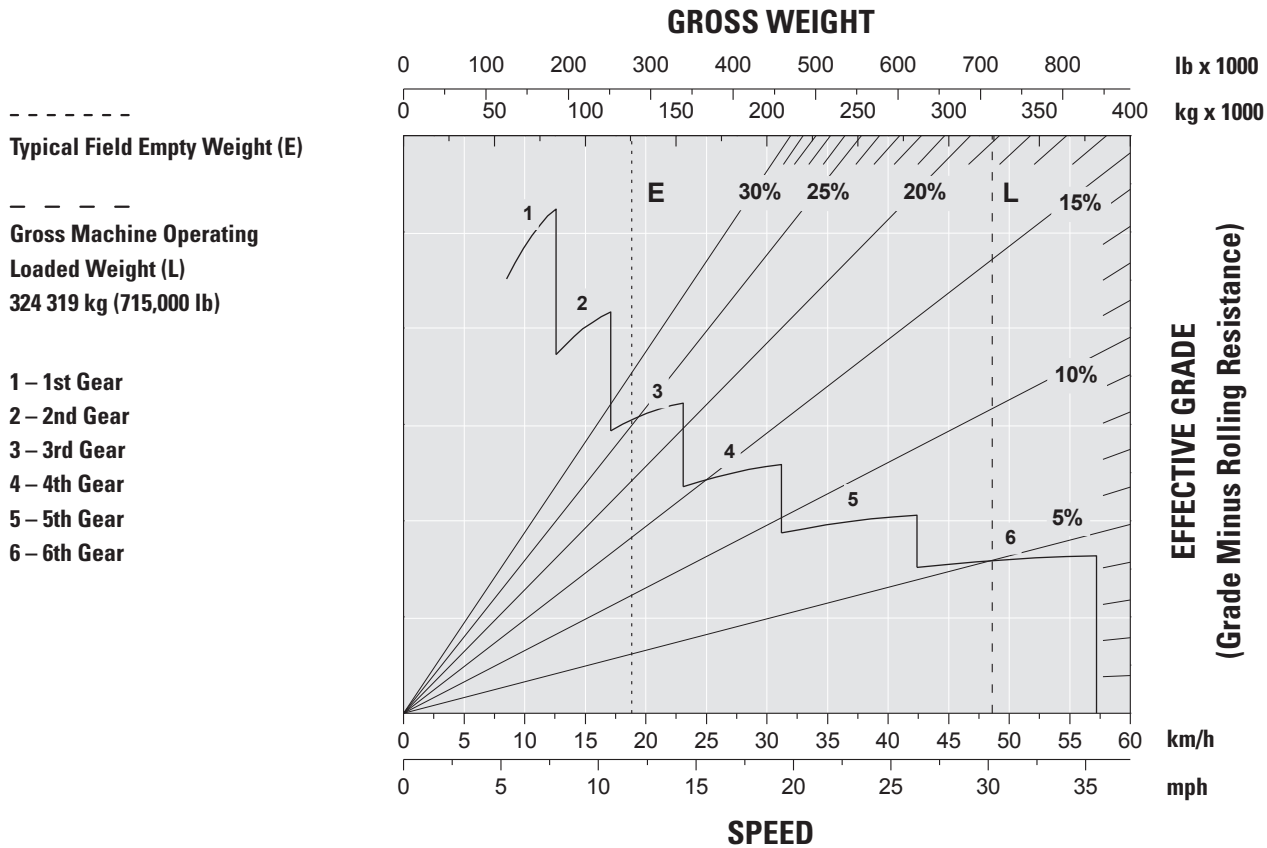
- 1 – 1st Gear
- 2 – 2nd Gear
- 3 – 3rd Gear
- 4 – 4th Gear
- 5 – 5th Gear
- 6 – 6th Gear



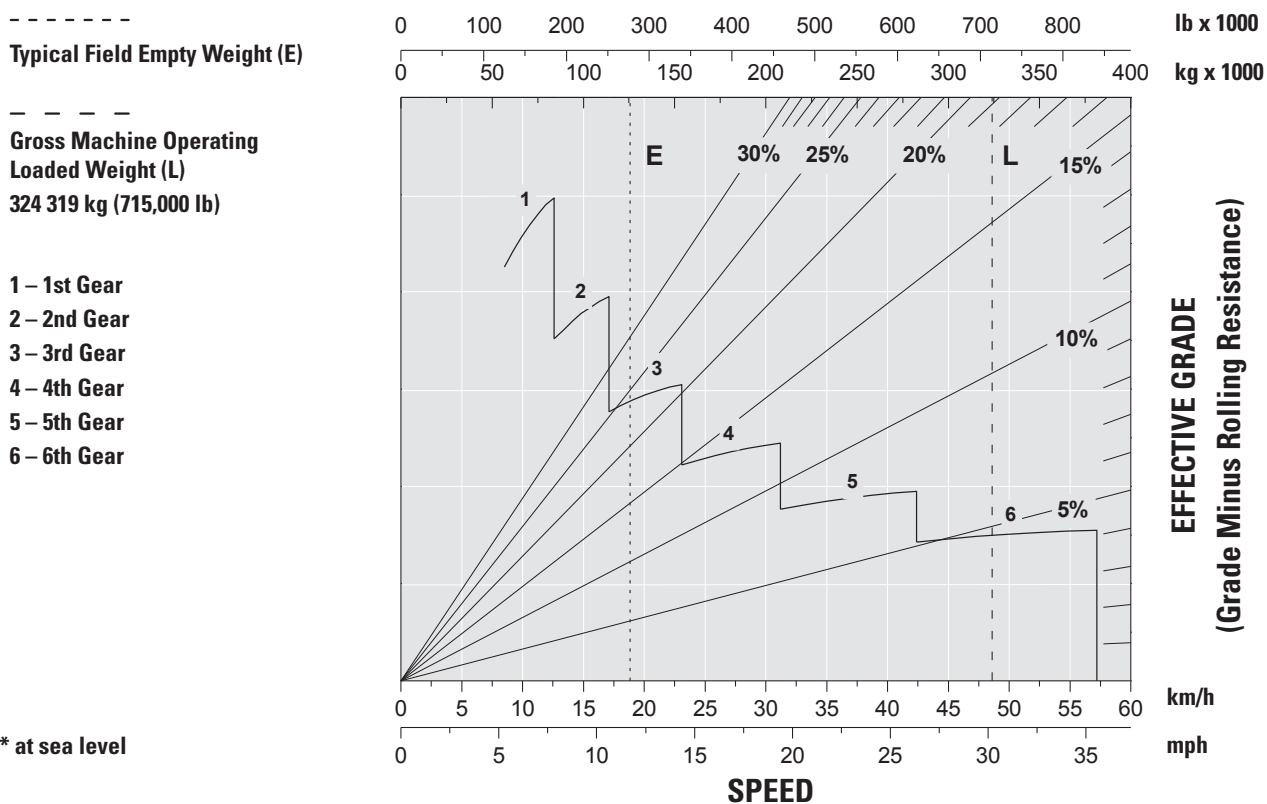
* at sea level

789D Mining Truck Specifications

789D Retarding – 450 m (1,475 ft)*



789D Retarding – 600 m (1,968 ft)*



* at sea level

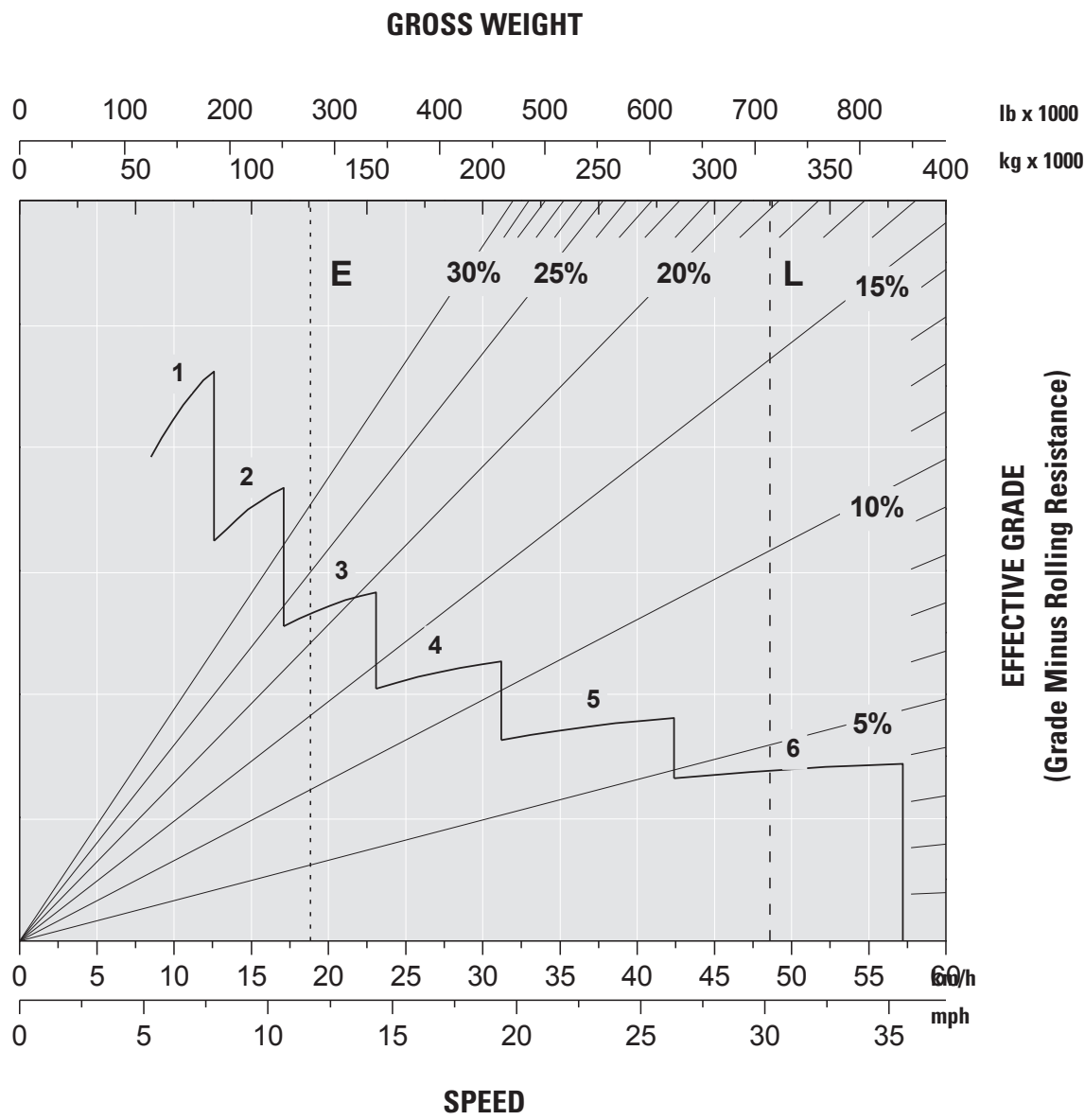
789D Mining Truck Specifications

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

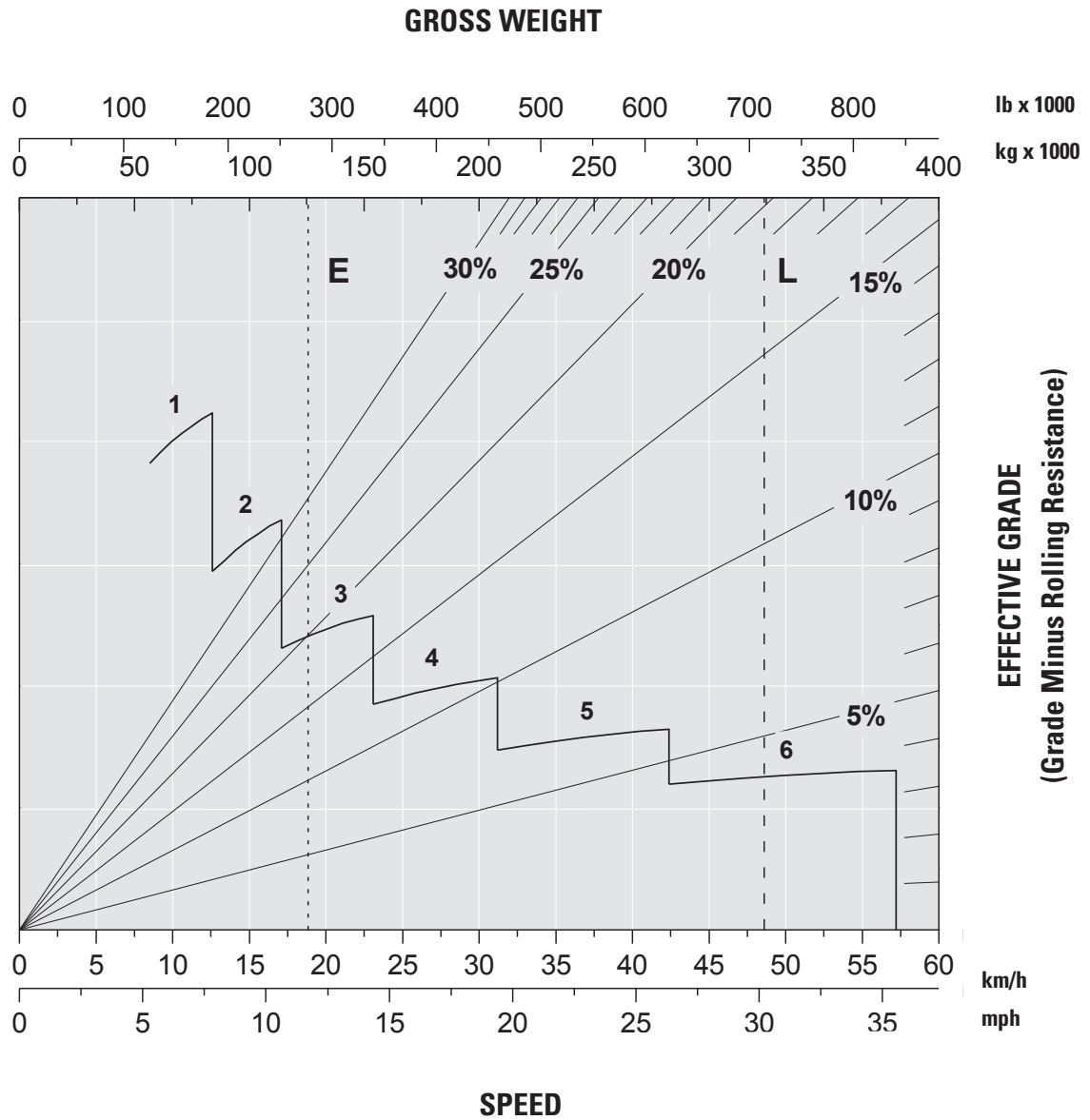
789D Mining Truck Specifications

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) | ✓ | |

789D Mining Truck Specifications

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

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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Replaces PEDJ1077-03
(LRC)

