



CAT[®] 789

MINING TRUCK

FEATURES

Caterpillar's comprehensive design ownership creates a total hauling unit that delivers the best integration of high production, availability, and payload in combination with low operating cost and long life.

The Cat[®] 789 continues the tradition of Caterpillar's proven 789D Truck with high productivity and lowest cost per ton.

High Performance Engine: The proven Cat 3516E fuel optimized engine is available worldwide at two power ratings, 2,100 HP and 1,900 HP. An optional engine meets U.S. EPA Tier 4 Final and EU Stage V emission standards and offers the perfect balance between power, robust design, and economy, also available at two power ratings.

Operator-Focused Environment: The Next Generation cab features the Next Generation operator seat with GenTherm, improved storage, pass through egress, automated temperature control, and an integrated transmission hoist control and jog dial for improved control while providing the operator with a quieter, smoother, more comfortable ride.

Cutting Edge Connectivity: Increased machine connectivity via cellular 4G/LTE (Product Link™ Elite), MineStar™ Fleet, Detect, and Health Equipment Insights, along with haul road analytics provide high-speed, quality data transfer for improved operator performance, maintenance, and machine life.

Streamlined Serviceability: Modular HVAC and radiator, remote troubleshooting and flash updates, optional Cat Health Equipment Insights, Electronic Operation and Maintenance Manual, and ground level serviceability improve maintenance and reduce downtime.

Advanced Productivity Electronic Control Strategy Transmission: The APECS transmission provides a smoother ride for the operator, less spillage on the haul road, and allows for faster acceleration.

Built for the Future: Today's 789 has the technology backbone to support the latest features available today for boosting productivity and efficiency. Additional built-in capacity accommodates future innovation.

Performance and Emissions: The proven Cat 3516E engine offers flexibility both in terms of emission profiles and power ratings. An optional engine meeting U.S. EPA Tier 4 Final and EU Stage V emission standards is available with the Cat Selective Catalytic Reduction system. The standard power of 2,100 HP is there for faster cycle times, or an optional 1,900 HP is available to match other fleet performance.

Safety: Integrated Cat Detect system, 360-degree surround view, LED lighting, 600 mm (24 in) wide walkways, guarding of rotating components and hydraulic brake system with enhanced traction control system. Optional Working at Heights and Powered Access Stairway.

Truck Bodies: Five different Caterpillar designed and built bodies (Dual Slope, High Performance, MSDII, X Body, Combi) are available to provide optimal performance and reliability in any application.

Tire Options: Tire life can be optimized for a specific mine site with a selection of optional tire sizes.

TECHNICAL SPECIFICATIONS

| Engine | | |
|------------------------------|------------------------|-----------------------|
| Engine Model | Cat [®] 3516E | |
| Gross Power - SAE J1995:2014 | 1566 kW | 2,100 HP |
| Net Power - SAE J1349:2011 | 1473 kW | 1,975 HP |
| Rated Speed | 1,650 rpm | |
| Emissions Rating | Fuel Optimized | |
| Bore | 170 mm | 6.7 in |
| Stroke | 215 mm | 8.5 in |
| Displacement | 78.1 L | 4,766 in ³ |

- Net Power advertised is the power available at the flywheel when the engine is equipped with air intake system, exhaust system, and alternator.
- Optional 1417 kW / 1,900 HP engine rating.
- U.S. EPA Tier 4 Final / EU Stage V optional engine available for applicable markets.

| Weights—Approximate | | |
|--|------------|------------|
| Rated Gross Machine Weight (RGMW) | | |
| 37 R57 Tires | 324,318 kg | 715,000 lb |
| 40 R57 & 42/90 R57 Tires | 324,318 kg | 715,000 lb |
| Chassis Weight (CW) (LRC) | | |
| 37 R57 Tires | 103,657 kg | 228,525 lb |
| 40 R57 & 42/90 R57 Tires | 106,847 kg | 235,557 lb |
| Body Weight (BW) (HP Body) | | |
| | 27,400 kg | 60,406 lb |
| Nominal Rated Payload (NRP) | | |
| 37 R57 Tires | 193 tonnes | 213 ton |
| 40 R57 & 42/90 R57 Tires | 190 tonnes | 210 ton |

- 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.



789 Mining Truck Specifications

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 |

Tires and Rims

| |
|----------------------|
| 37 R57 (standard) |
| 40 R57 (optional) |
| 42/90 R57 (optional) |
| 29" x 57" Rims |

- Quick Change Rims optional
- Caterpillar recommends the customer evaluate all job conditions and consult tire manufacturer for proper tire selection and TKPH (TMPH) capabilities.

Braking System

| | |
|---|--|
| Service Brakes: Four-Corner, Wet Disc, Oil Cooled, Hydraulically Actuated | |
| Front Wet Disc Brake Surface Area | 81 693 cm ² 12,662 in ² |
| Rear Wet Disc Brake Surface Area | 134 590 cm ² 20,861 in ² |
| Standards (Service and Secondary) | ISO 3450:2011 |

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

Capacity—High Performance Body—100% Fill Factor

| | | |
|------------------|--------------------|---------------------|
| Struck | 77 m ³ | 101 yd ³ |
| Heaped (SAE 2:1) | 143 m ³ | 187 yd ² |

- Consult your local Cat dealer for body recommendations.

Body Hoists

| | | |
|--|------------|---------------|
| Twin, two-stage hydraulic cylinders with snubbing valve. | | |
| Pump Flow - High Idle | 403 L/min | 106.5 gal/min |
| Relief Valve Setting - Raise | 18 950 kPa | 2,749 psi |
| Body Raise Time - High Idle | 14 sec | |
| Body Lower Time - Float | 16 sec | |

Suspension

| | | |
|--|---------------|---------|
| Self-contained nitrogen/oil cylinders, pin-to-pin mounting, top and bottom double shear clevis attachments | | |
| Effective Cylinder Stroke - Front | 104.65 mm | 4.12 in |
| Effective Cylinder Stroke - Rear | 93.22 mm | 3.67 in |
| Rear Axle Oscillation | +/- 5 degrees | |

Service Refill Capacities

| | | |
|--|--------|----------|
| Fuel Tank Standard | 2500 L | 550 gal |
| Fuel Tank Large | 4546 L | 1000 gal |
| Fuel Tank for Tier4/StageV Truck | 2500 L | 55 gal |
| Diesel Exhaust Fluid (DEF) Tank | 233 L | 62 gal |
| Cooling System | 679 L | 180 gal |
| Crankcase | 291 L | 77 gal |
| Front Wheels, Each | 22 L | 5.8 gal |
| Differentials & Final Drives | 610 L | 161 gal |
| Steering Tank | 160 L | 42 gal |
| Steering System (Includes Tank) | 175 L | 46 gal |
| Brake/Hoist Tank | 640 L | 169 gal |
| Brake/Hoist System (Includes Tank) | 1315 L | 347 gal |
| Torque Converter/Transmission System (Includes Sump) | 209 L | 55 gal |

Cab

| | |
|---|---------------|
| Air Conditioning (HFC - 134A refrigerant) | 24,500 Btu/hr |
| Heater / Defroster | 33,300 Btu/hr |

- The operator sound pressure level, 77 dB(A) with direct drive and 75 dB(A) with optional clutch, tested to ISO 6396:2008.
- ROPS (Rollover Protective Structure) meets ISO 3471:2008 for Operator and ISO 13459:2012 for Trainer.
- FOPS (Falling Objects Protective Structure) meets ISO 3449:2005 Level II for Operator and ISO 13459:2012 Level II for Trainer.

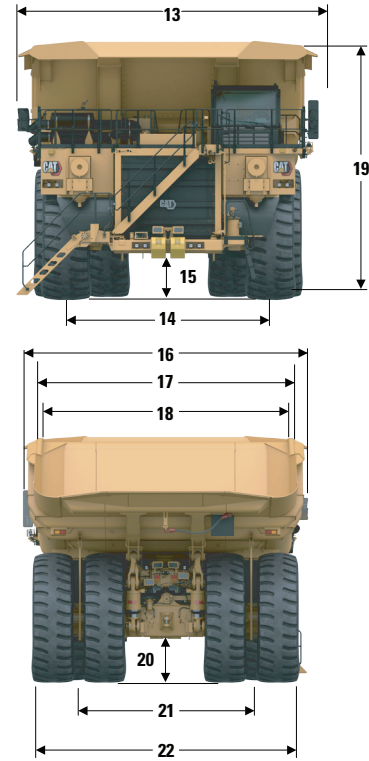
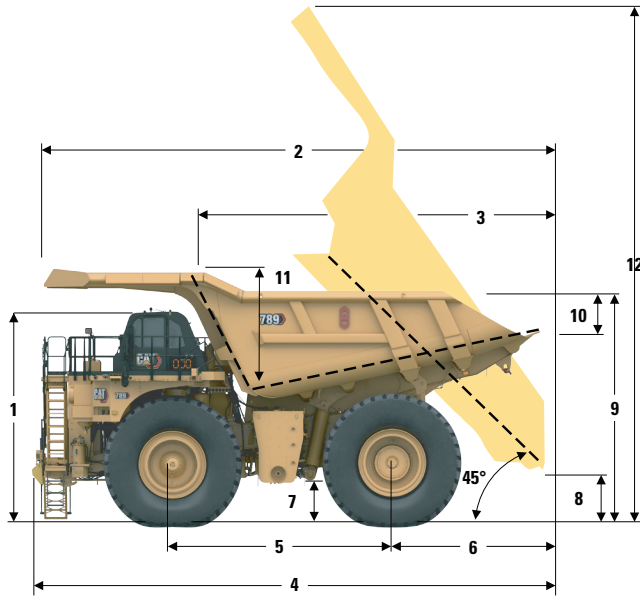
Steering

| | | |
|----------------------------------|---------------|---------|
| Steer Angle | 36.07 degrees | |
| Turning Diameter (ISO 7457:2009) | 27.53 m | 90.3 ft |
| Steering Standards | ISO 5010:2007 | |

789 Mining Truck Specifications

Dimensions

- All dimensions are approximate.
- High Performance Body shown.



| | | |
|------------------------------------|----------|-------------|
| 1 Height to Top of ROPS | 5550 mm | 18 ft 3 in |
| 2 Overall Body Length | 12945 mm | 42 ft 6 in |
| 3 Inside Body Length | 8730 mm | 28 ft 8 in |
| 4 Overall Length | 12970 mm | 42 ft 7 in |
| 5 Wheelbase | 5700 mm | 18 ft 8 in |
| 6 Rear Axle to Tail | 3856 mm | 12 ft 8 in |
| 7 Ground Clearance | 1304 mm | 4 ft 3 in |
| 8 Dump Clearance | 1585 mm | 5 ft 2 in |
| 9 Loading Height – Empty | 6147 mm | 20 ft 2 in |
| 10 Rear Sidewall Height | 1010 mm | 3 ft 4 in |
| 11 Inside Body Depth – Maximum | 3075 mm | 10 ft 1 in |
| 12 Overall Height – Body Raised | 11534 mm | 37 ft 10 in |
| 13 Operating Width | 7822 mm | 25 ft 8 in |
| 14 Centerline Front Tire Width | 5410 mm | 17 ft 9 in |
| 15 Engine Guard Clearance | 1290 mm | 4 ft 3 in |
| 16 Overall Canopy Width | 7769 mm | 25 ft 6 in |
| 17 Outside Body Width | 7123 mm | 23 ft 4 in |
| 18 Inside Body Width | 6920 mm | 22 ft 8 in |
| 19 Front Canopy Height | 6739 mm | 22 ft 1 in |
| 20 Rear Axle Clearance | 1263 mm | 4 ft 2 in |
| 21 Centerline Rear Dual Tire Width | 4695 mm | 15 ft 5 in |
| 22 Overall Tire Width | 7120 mm | 23 ft 4 in |

789 Mining Truck Specifications

Standard and Optional Equipment

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

| | Standard | Optional | | Standard | Optional |
|--|----------|----------|--|----------|----------|
| ELECTRICAL | | | | | |
| 24V electrical system, low maintenance batteries (2) 93 amp-hour | ✓ | | Emergency stop | ✓ | |
| Alarm, backup | ✓ | | Cruise control | | ✓ |
| Auxiliary rear work lights, (one) LH side | | ✓ | Operator speed coaching | | ✓ |
| Brushless alternator, 225 amp | ✓ | | Entertainment radio ready: | | |
| Digital payload display | | ✓ | • Speakers | ✓ | |
| LED payload indicator lamps | ✓ | | • Radio Antenna (AM/FM/XM/DAB) | | ✓ |
| Workshop horn | | ✓ | • Radio mounting provisions & 12V power supply | ✓ | |
| Jump start/battery charge receptacle | ✓ | | Fire suppression ready | ✓ | |
| Ground accessible power control box: | | | | | |
| • VIMS™ lamp | ✓ | | Floor mat, multi-piece & replaceable | ✓ | |
| • Engine starter, transmission and battery lockouts | ✓ | | Digital gauges and indicators panel: | | |
| LED Lighting system: | | | | | |
| • Back-up and hazard lights | ✓ | | • Critical oil and coolant temperatures | ✓ | |
| • Curb lights, (one) RH side, (one) LH side | ✓ | | • Fuel and DEF level (if applicable) | ✓ | |
| • Turn signals (front and rear) | ✓ | | • Engine system, brake and transmission fault indicators | ✓ | |
| • Engine compartment lights | ✓ | | • Speedometer, Tachometer | ✓ | |
| • Headlights with low-high beam selector | ✓ | | Operator selectable max. machine speed by rotary dial | ✓ | |
| • Ladder light and service deck lights | ✓ | | Heated mirrors, right and left | ✓ | |
| • Stop/tail lights | ✓ | | PRNDL shift lever and body hoist control | ✓ | |
| • Additional lighting package | | ✓ | Interactive touchscreen vehicle information display: | | |
| • Body rear stop/tail lights & directional signal | | ✓ | • Day/night mode | ✓ | |
| • Seat & park brake | | ✓ | • Action alarm | ✓ | |
| TRUCK BODIES | | | | | |
| Dual Slope body | | ✓ | • Configurable gauge display | ✓ | |
| High Performance (HP) body | | ✓ | Premium operator air suspension seat | ✓ | |
| MSDII body | | ✓ | Operator door power window | ✓ | |
| X body | | ✓ | Provision for customer accessory mounting | ✓ | |
| Body specific side wall and tail extensions | | ✓ | Push button secure start | ✓ | |
| Customizable body liner packages | | ✓ | Retractable front visor | ✓ | |
| Body heat exhaust | | ✓ | ROPS cab, insulated/sound suppressed | ✓ | |
| Rock ejectors | | ✓ | Stairway and walkway access, 600 mm (24 in) | ✓ | |
| FLUIDS | | | | | |
| Extended life coolant to -35° C (-30° F) | ✓ | | Steering wheel, tiltable, telescopic | ✓ | |
| Antifreeze/coolant protects to -50° C (-58° F) | | ✓ | Self-filling to windshield washer fluid from AC condensate | ✓ | |
| OPERATOR ENVIRONMENT | | | | | |
| 5V USB charging port | ✓ | | Storage locations for operator gear | ✓ | |
| 12V auxiliary power connection | ✓ | | Three point seat belt for operator seat | ✓ | |
| Cup holders | ✓ | | Windshield wiper, intermittent control / washer | ✓ | |
| Ethernet service port | ✓ | | Unitized hydraulic powered HVAC with automatic temperature control | ✓ | |
| Delayed engine shutdown | ✓ | | Deluxe Cab: | | |
| Dome courtesy light and map lights | ✓ | | • Premium Plus, heated, cooled and ventilated operator seat | | ✓ |
| | | | • Premium air suspension companion seat | | |
| | | | • Advanced cabin air filtration system | | |
| | | | • Catwalk and handrails for rear cab access | | |
| | | | • Companion door power window | | |
| | | | • Storage tray | | |

789 Mining Truck Specifications

Standard and Optional Equipment *(continued)*

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

| | Standard | Optional | | Standard | Optional |
|---|----------|----------|---|----------|----------|
| POWER TRAIN | | | OTHER EQUIPMENT | | |
| 37R57 Standard rims | ✓ | | Automatic lubrication system | ✓ | |
| 37R57 Quick change rims | | ✓ | Auxiliary "buddy" dumping quick connect | ✓ | |
| 40R57 Standard rims | ✓ | | Auxiliary connection 'user defined shutdown' | ✓ | |
| 40R57 Quick change rims | ✓ | | Auxiliary steering quick connect (towing) | ✓ | |
| Cat 3516E Engine: | | | Body heat exhaust | | ✓ |
| • Automatic engine and DEF thermal management (if applicable) | ✓ | | Bumper towing – center pin kit | | ✓ |
| • Automatic low voltage idle management | ✓ | | Cold weather start (block heater) | | ✓ |
| • Air cleaner with precleaner (two) | ✓ | | Communication arrangement – Minestar™ radio | | ✓ |
| • Turbocharging (four) with air-to-air aftercooler | ✓ | | Electronic Operation and Maintenance Manual in touchscreen | ✓ | |
| • Mechanical Electronic Unit Injector (MEUI™-A) fuel system | ✓ | | Fast fill fuel and DEF remote fill system | ✓ | |
| • Electric starter (no air) with 93-amp hour batteries (four), electric horn and automatic lubrication system | ✓ | | Fire extinguisher, portable | | ✓ |
| • Turbine air starter with 93-amp hour batteries (two), air tank, air horn and automatic lubrication system | | ✓ | Fuel heater, fuel water separator | | ✓ |
| • Variable speed fan drive | | ✓ | Fuel tank mud guard | | ✓ |
| • Engine pre-lubrication system | | ✓ | Gauge, brake wear indicator | | ✓ |
| Hydraulic braking system: | | | Ground accessible fluid service center, hydraulic and coolant | | ✓ |
| Four channel independent wheel braking control | ✓ | | Guards for rotating components | ✓ | |
| Anti Lock Braking (ABS) / Dynamic Stability Control (DSC) | | ✓ | Hub odometer, kilometers | | ✓ |
| • Automatic retarder control (ARC), adjustable and automatic | ✓ | | Hydraulic Filters, 1,000 hours | ✓ | |
| • Brake release motor (towing) | ✓ | | Powered access stairway | | ✓ |
| • Engine over speed protection | ✓ | | Rim diffuser | | ✓ |
| • Extended life brake disc material | ✓ | | Secondary steering (automatic) | ✓ | |
| • Hill start assist/anti roll back strategy | ✓ | | Tie off points | ✓ | |
| • Oil-cooled, multi-disc (front and rear) – service, retarding, parking, secondary | ✓ | | Tow hooks (front) and tow pin (rear) | ✓ | |
| • Park brake integrated with gear selector | ✓ | | Sight glasses for hydraulic oils | ✓ | |
| Transmission: | | | S-O-S™ ports | ✓ | |
| • Six-speed, automatic power shift with Electronic Clutch Pressure Control (ECPC) | ✓ | | Wheel chocks | | ✓ |
| • Advanced Productivity Electronic Control Strategy (APECS) | ✓ | | Wireless Electronic Technician (ET) | | ✓ |
| • Body-up reverse neutralizer | ✓ | | Working at heights protection | | ✓ |
| • Body-up shift inhibitor | ✓ | | Vital Information Management System (VIMS) | ✓ | |
| • Downshift/reverse shift inhibitor | ✓ | | Mudflaps | ✓ | |
| • Directional shift management | ✓ | | CAT® TECHNOLOGY PRODUCTS | | |
| • Engine pre-lubrication system | | ✓ | 360 degree surround view | | ✓ |
| • Enhanced traction control system | ✓ | | Product Link™ Elite with cellular radio | ✓ | |
| • Programmable top speed | ✓ | | Product Link™ Elite with cellular and satellite radio | | ✓ |
| • Oil level sensor | ✓ | | Connectivity bundle (includes: wireless operator ID, bluetooth key FOB to start) | | ✓ |
| • Neutral coast inhibitor | ✓ | | Cyber security | ✓ | |
| Lock-up torque converter | ✓ | | Driver Safety System (DSS) 4.0 ready | | ✓ |
| Rear axle continuous lubrication/filtration | ✓ | | Integrated object detection system with touchscreen display | ✓ | |
| Rear axle cooler | | ✓ | Minestar GPS | | ✓ |
| | | | Minestar communication group (enables: Minestar Fleet, Aux) | | ✓ |
| | | | Oil Renewal System (ORS) (non-Tier 4) | | ✓ |
| | | | Productivity bundle (includes: AutoHoist, crusher mode, dump control, speed coaching) | | ✓ |
| | | | Road Analysis Control (RAC) | ✓ | |
| | | | Tire Payload Monitoring System 2 (TPMS 2) | ✓ | |
| | | | Remote flash software and troubleshooting | ✓ | |

789 Mining Truck Specifications

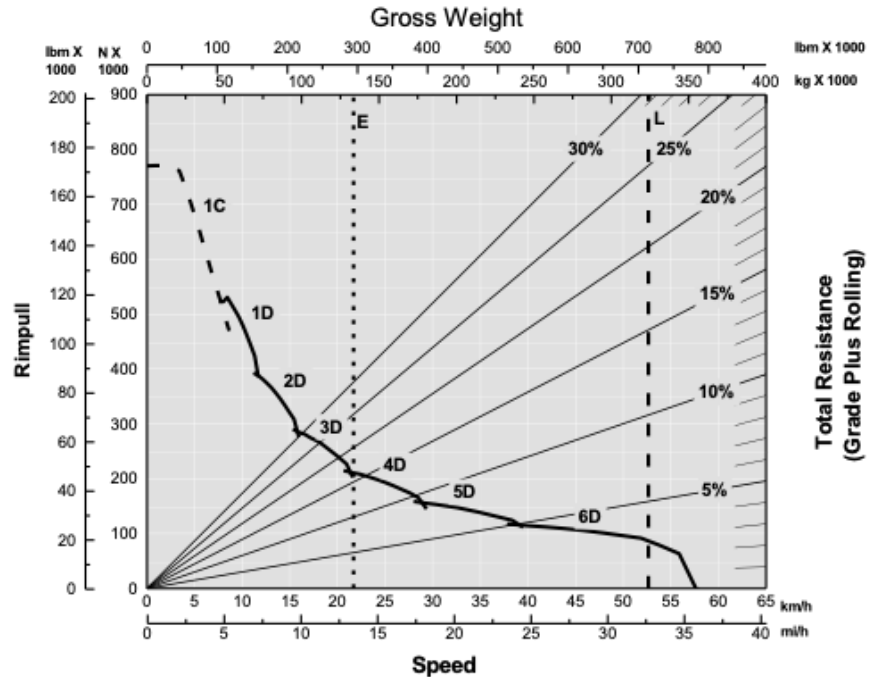
789 RIMPULL

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. The following charts are based on these conditions: 32° C (90° F) ambient temperature, at sea level, with 37R57 tires.

--- TORQUE CONVERTER DRIVE
 ——— DIRECT DRIVE

E – Nominal Empty Machine Weight
 L – Rated GMW 324, 318 kg (715,000 lbs)

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



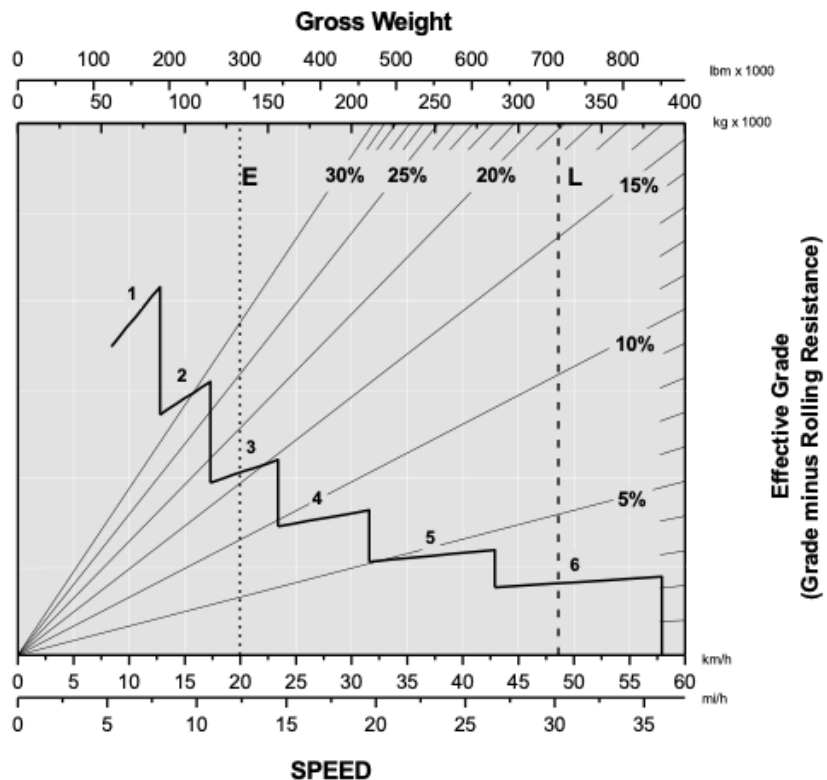
789 RETARDING CONTINUOUS AT SEA LEVEL

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.

--- TORQUE CONVERTER DRIVE
 ——— DIRECT DRIVE

E – Nominal Empty Machine Weight
 L – Rated GMW 324, 318 kg (715,000 lbs)

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



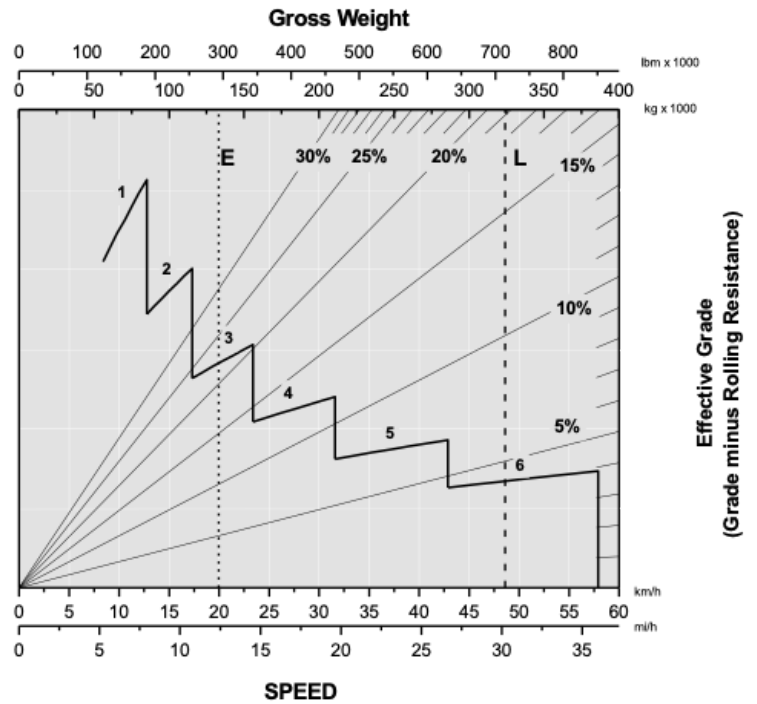
789 Mining Truck Specifications

789 RETARDING – 450m

--- TORQUE CONVERTER DRIVE
 ——— DIRECT DRIVE

E – Nominal Empty Machine Weight
 L – Rated GMW 324, 318 kg (715,000 lbs)

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

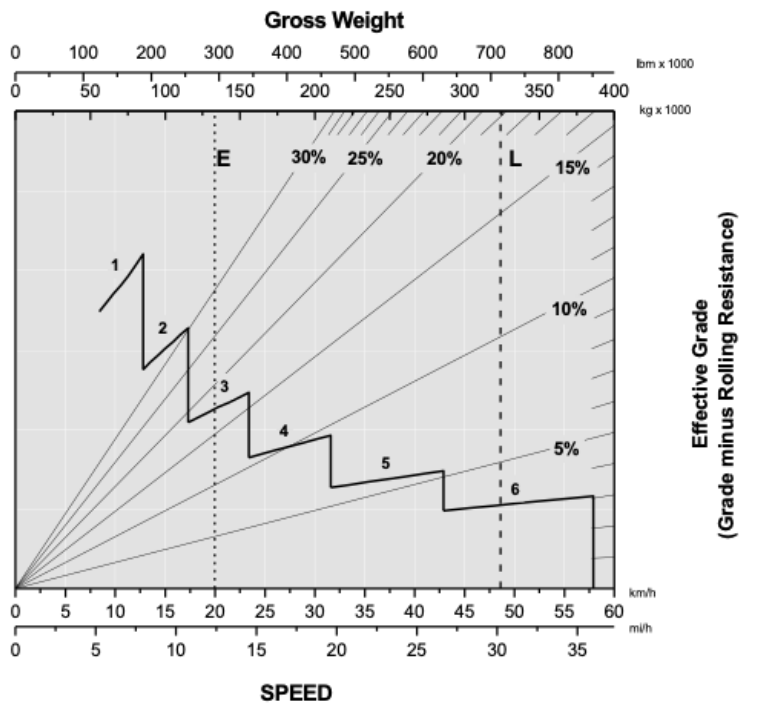


789 RETARDING – 1500m

--- TORQUE CONVERTER DRIVE
 ——— DIRECT DRIVE

E – Nominal Empty Machine Weight
 L – Rated GMW 324, 318 kg (715,000 lbs)

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



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