



Cat[®] 789D

MINING TRUCK

FEATURES:

- **Safety and Sustainability.** Safety is top priority.
- **Engine options** to meet regulatory requirements or application specific needs.
- **Production capability** with nominal payload capacity of 181 metric tons (200 short tons).
- **Performance** with the 1976 kW (2,100 hp) engine delivers fast speed on grade.
- **Access and Egress** with a diagonal stairway for primary machine access and 600 mm (24 in) walkways. Another option is the powered ground level access.
- **Serviceability** to enable safer and more efficient maintenance.
- **Larger tire options** have been designed into the 789D to provide a broader choice for tires. Applicable hauling conditions will benefit from increased tire life or significant reduction in tire costs.
- **Application specific capabilities** for extreme ambient conditions, high altitude applications, and extra quiet machine to reduce spectator sound levels.
- **A variety of Cat Truck Bodies** are available including Mine Specific Design (MSD II), X, Combination, Gateless Coal and Dual Slope bodies.

Specifications

Engine

Engine Model	3516C – HD	
Gross Power	1566 kW	2,100 hp
Rated Net Power (ISO 9249)	1468 kW	1,969 hp
Bore	170 mm	6.7 in
Stroke	210 mm	8.3 in
Displacement	78.1 L	4,766 in ³

Optional Engine

Engine Model	3516B EUI	
Gross Power	1417 kW	1,900 hp
Rated Net Power (ISO 9249)	1335 kW	1,791 hp
Bore	170 mm	6.7 in
Stroke	190 mm	7.5 in
Displacement	69 L	4,211 in ³

- 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, (STANDARD) no derate required up to 2300 m (7,500 ft) altitude.
- 3516C engine, (EPA/ARB Flexibility) no engine derate required up to 2743 m (9,000 ft).
- 3516C engine, (STANDARD) no engine derate required up to 3658 m (12,000 ft).
- Where applicable, the 3516C engine, (EPA/ARB Flexibility) arrangement is compliant with U.S. Environmental Protection Agency regulations.

Weights – Approximate

Gross Machine Operating Weight (GMW)	324 319 kg	715,000 lb
Body Weight Range	23 920 kg-	52,850 lb-
	45 547 kg	100,414 lb
Empty Operating Chassis Weight (EOCW)	99 129 kg	218,542 lb

- Body weight varies depending on how body is equipped.
- Estimated weight of debris is not included in operating chassis weights.
- Chassis weight includes standard rims and tires, all operating fluid levels full, 100% fuel in standard tank and standard mandatory attachments.

Operating Specifications

Nominal Payload Capacity	181 tonnes	200 tons
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

- Refer to the Cat Mining Truck 10-10-20 payload policy for maximum gross machine weight limitations.

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

- Maximum travel speeds with standard 37.00-R57 tires.



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Final Drives

Differential Ratio	2.35:1	
Planetary Ratio	10.83:1	
Total Reduction Ratio	25.46:1	

- Double-reduction, planetary, with full floating axles.

Suspension

Effective Cylinder Stroke – Front	105 mm	4.0 in
Effective Cylinder Stroke – Rear	93 mm	3.5 in
Rear Axle Oscillation	± 5.6°	

Brakes

Brake Surface – Front	81 693 cm ²	12,662 in ²
Brake Surface – Rear	116 283 cm ²	18,024 in ²
Standards	SAE J1473 OCT90 ISO 3450:1996	

- Gross Machine Operating Weight is 324 319 kg (715,000 lb).

Body Hoists

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	
High Idle Body Lower Time – Float	17.3 Seconds	
High Idle Body Lower Time – Power	15.6 Seconds	

Weight Distributions – Approximate

Front Axle – Empty	46%
Rear Axle – Empty	54%
Front Axle – Loaded	33%
Rear Axle – Loaded	67%

Tires

Standard Tires	37.00-R57
Optional Tires	40.00-R57

- Productive capabilities of the 789D 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.

Service Refill Capacities

Fuel Tank (standard)	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	189 L	50 gal
Brake/Hoist System	909 L	241 gal
Transmission Tank	76 L	20 gal

ROPS

ROPS Standards

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

Sound

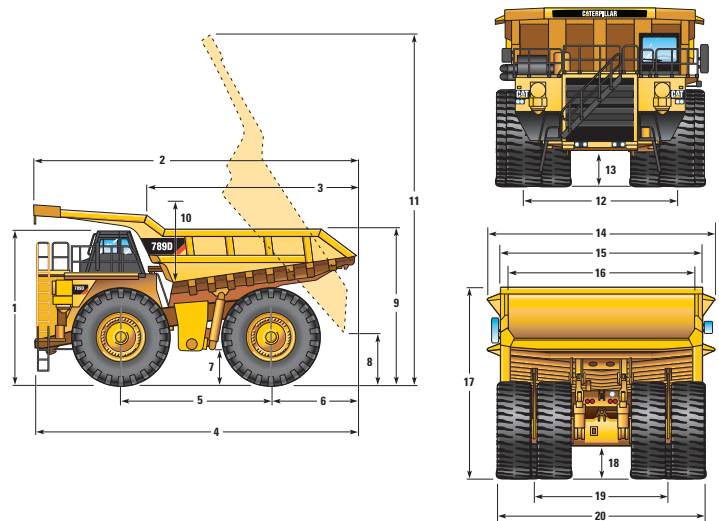
Sound Standards

- 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

Steering Standards	SAE J1511 OCT90 ISO 5010:1992	
Steering Angle	36.07°	
Turning Diameter on Front Wheel	27.53 m	90.32 ft
Vehicle Clearance – Turn Circle	30.23 m	99.18 ft

- Gross Machine Operating Weight is 324 319 kg (715,000 lb).



Dimensions (All dimensions are approximate)

Dimensions are with standard dual slope body 344-7340 and 37.00-R57 tires.

	Dual Slope	
1 Height to Top of ROPS – Empty	5510 mm	18'1"
2 Overall Body Length	12 723 mm	41'9"
3 Inside Body Length	8293 mm	27'3"
4 Overall Length	12 697 mm	41'8"
5 Wheelbase	5700 mm	18'8"
6 Rear Axle to Tail	3604 mm	11'10"
7 Loaded Ground Clearance	1036 mm	3'5"
8 Dump Clearance	1535 mm	5'0"
9 Loading Height – Empty	5595 mm	18'4"
10 Inside Body Depth – Maximum	2684 mm	8'10"
11 Overall Height – Body Raised	13 198 mm	43'4"
12 Centerline Front Tire Width	5374 mm	17'8"
13 Engine Guard Clearance – Loaded	1057 mm	3'6"
14 Overall Canopy Width	7645 mm	25'1"
15 Outside Body Width	6995 mm	22'11"
16 Inside Body Width	6500 mm	21'4"
17 Front Canopy Height – Empty	6496 mm	21'4"
18 Rear Axle Clearance – Loaded	1071 mm	3'6"
19 Centerline Rear Dual Tire Width	4622 mm	15'2"
20 Overall Tire Width	6926 mm	22'9"

STANDARD EQUIPMENT

POWER TRAIN

- Diesel engine/turbocharged/aftercooled:
 - Ground level engine shutdown
 - Ether starting aid (automatic)
 - Aftercooler (separate circuit or air to air)
 - Elevated low idle control
 - Automatic starter protection
 - Multi-point all pressure sensing
- Braking system:
 - Brake release motor (towing)
 - Oil-cooled, multi-disc (front and rear) (service retarding, parking, secondary)
 - Automatic Retarder Control
 - Engine overspeed protection
 - Extended life brake disc material
- Transmission:
 - 6-speed, automatic powershift with electronic control (TCC)
 - Controlled throttle shifting
 - Individual clutch modulation
 - Body-up shift inhibitor
 - Directional shift management
 - Downshift/reverse shift inhibitor
 - Oil level sensor
 - Neutral start switch/coast inhibitor
 - Body-up reverse neutralizer
 - Programmable top gear
 - Lock-up torque converter
 - Rear axle continuous lubrication/filtration

ELECTRICAL

- Alarm, backup
- Alternator, 105 amp
- Batteries, 12V (2), 93 amp-hour
- Converter, 12V electrical
- Electrical system, 24V, 15 amp
- Lighting system:
 - Backup and hazard lights
 - Auxiliary work lights (2) rear, (1) RH side, (1) LH side
 - Directional signals (front and rear LED)
 - Engine compartment lights
 - External payload lights
 - Headlights with lo-hi beam selector
 - Ladder light and service deck lights
 - Left-hand ladder/service deck
 - Stop/tail lights (LED)
 - VIMS, blue light (LED)

OPERATOR ENVIRONMENT

- STANDARD CAB
 - Operator seat
 - Non-suspension trainer seat
 - Flip down front visor
 - Standard side of cab access
- DELUXE CAB
 - Heated and ventilated operator seat
 - Suspension trainer seat
 - Retractable front visor
 - Rear of cab access and standard side of cab access
 - Vacuum, cab clean-out
 - Operator Footrest
- DELUXE COLD WEATHER CAB
 - Heated and ventilated operator seat
 - Suspension trainer seat
 - Retractable front visor
 - Rear of cab access and standard side of cab access
 - Vacuum, cab clean-out
 - Operator Footrest
 - Deluxe Diffuser
- Air conditioner
- Auxiliary power connection/cigarette lighter
- Diagnostic connection port
- Dome courtesy light
- Entertainment Radio Ready:
 - 5 amp converter
 - Speakers
 - Antenna wiring
- Gauges/indicators:
 - Air cleaner service indicator
 - Quad gauge panel
 - Air pressure
 - Brake oil temperature
 - Engine coolant temperature
 - Fuel level
- Electric hour meter
- Electric engine control fault indicator
- Engine idle shutdown
- Mirrors, right and left
- Speedometer
- Tachometer
- Transmission gear indicator
- VIMS message center with universal gauge
- VIMS keypad

OPERATOR ENVIRONMENT (cont'd)

- Heater/defroster (11 070 kCal/43,930 BTU)
- Horn
- Hoist, body control (electric)
- Integrated object detection system
- ROPS cab, insulated/sound suppressed
- Seatbelt, operator, 75 mm/3" wide
- Seatbelt, trainer, two points
- Stairway and walkway access, 600 mm (24 in)
- Steering wheel, tilt, padded, telescopic
- Window, operator, electric powered
- Windshield wiper, intermittent control and washer

FLUIDS

- Extended Life Coolant to -35° C (-30° F)

OTHER STANDARD EQUIPMENT

- Air line dryer
- Auto lubrication system
- Auxiliary "buddy" dumping quick connect
- Auxiliary steering quick connect (towing)
- Body mounting group
- Center mounted rims (6) (29x57) (used for 37.00-R57 tires)
- Driveline guard (fully enclosed)
- Fast fill fuel system
- Ground level VIMS data port
- Ground level battery disconnect
- Rock ejectors
- Supplemental steering (automatic)
- Tie off points
- Tow hooks (front)
- Tow pin (rear)
- Traction Control System
- Vital Information Management System

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OPTIONAL EQUIPMENT

BODY

- Dual slope body:
 - Body, dual slope, 109 m³ (142 yd³)
- Dual slope body attachments:
 - Extensions, 457 mm (18"), side, DS, 123 m³ (161 yd³)
 - Extension, wraparound tail, DS
 - Liner, entire body, DS
 - Liner, wraparound, DS, 450 BHN
 - Rock deflector, rear tire, DS
- X body:
 - Body, X, 123 m³ (161 yd³)
- X body attachments:
 - Extensions, side, X, 185 mm (7"), 131 m³ (171 yd³)
 - Extensions, side, X, 385 mm (15"), 138 m³ (181 yd³)
- MSD II body:
 - Body, MSD II, 130 m³ (170 yd³)
- MSD II body attachments:
 - Extensions, side, MSD II, 141 m³ (185 yd³)
 - Extensions, side, MSD II, 153 m³ (200 yd³)
- Combination body:
 - Body, combi, 153 m³ (200 yd³)
- Combination body attachments:
 - Extensions, side, combi, 195 m³ (255 yd³)
- Gateless coal body:
 - Body, gateless coal, 191 m³ (250 yd³)
- Gateless coal body attachments:
 - Extensions, side, coal, 214 m³ (280 yd³)
 - Extensions, side, coal, 237 m³ (310 yd³)
- Body lighting group – rear:
 - Directional signals (LED)
 - Stop/tail lights (LED)

ELECTRICAL

- Lockout transmission, ground level
- Auxiliary work lights (1) RH side, (1) LH side

POWER TRAIN

- Prelube, engine
- Oil renewal system

FILTRATION CONFIGURATIONS

- Rear axle, cooler

OTHER ATTACHMENTS

- Information management:
- Control, road analysis (RAC)
- Cold weather:
 - Brake oil, recirculating
 - Cold weather start
- Service center:
 - Service, 3516B, standard volume
 - Service, 3516B, large volume
 - Service, 3516C, standard volume
 - Service, 3516C, large volume
 - Service, engine oil, standard
- Miscellaneous:
 - Fire extinguisher, portable
 - Hub odometer, kilometers
 - Wheel chocks
 - Gauge, brake wear indicator

ANTIFREEZE

- Coolant, -50° C (-58° F)

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