



Cat[®] 789

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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789 Mining Truck 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 and 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 and 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 and 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.

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 Tonne Kilometres Per Hour (TKPH)/Ton-Miles Per Hour (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 ³

• 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	2082 L	550 gal
Fuel Tank Large	3785 L	1000 gal
Fuel Tank for Tier 4/Stage V Truck	2082 L	550 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 and 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
Operator Sound pressure level Tested to ISO 6396:2008	76 dB(A)
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

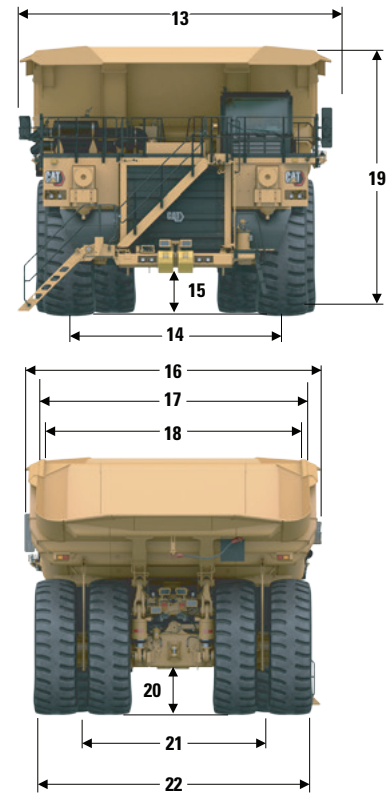
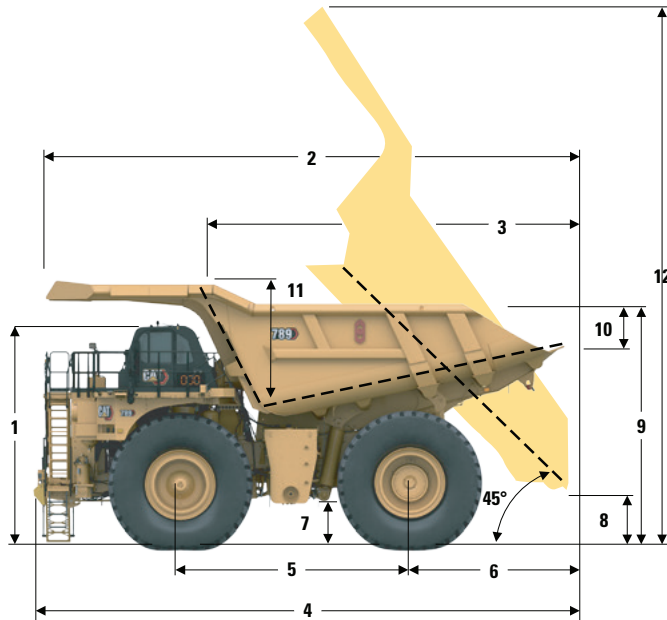
Steering

Steer Angle	36.07 degrees
Turning Diameter (ISO 7457:1997)	27.53 m 90.3 ft
Steering Standards	ISO 5010:2019

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	12 945 mm	42 ft 6 in
3	Inside Body Length	8730 mm	28 ft 8 in
4	Overall Length	12 970 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	11 534 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

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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.

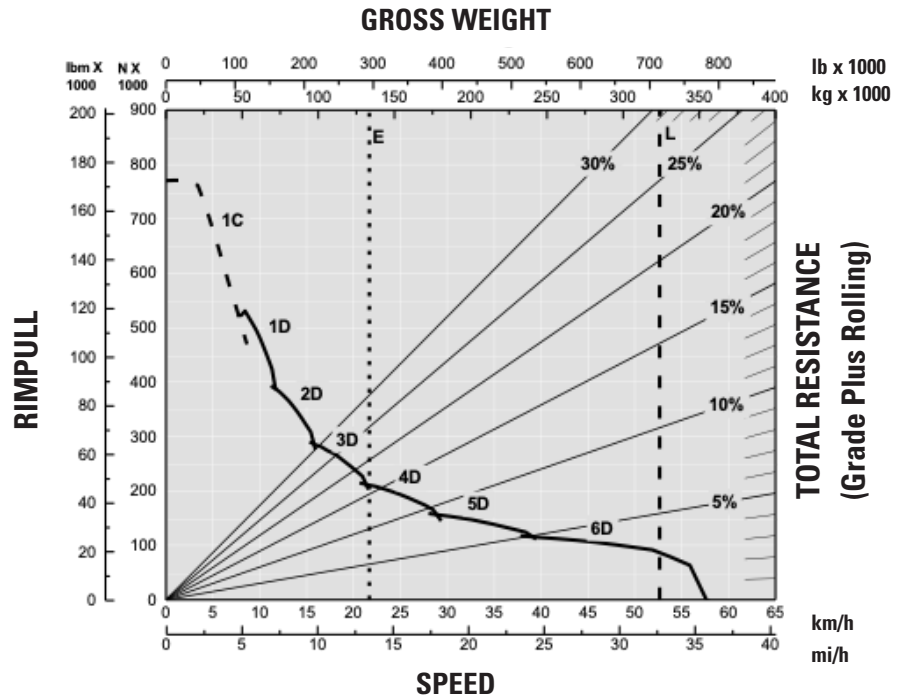
Nominal Empty Machine Weight (E)

Rated Gross Machine
Operating Weight (L)
324 318 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



789 Mining Truck Specifications

789 Resistive Braking – Continuous*

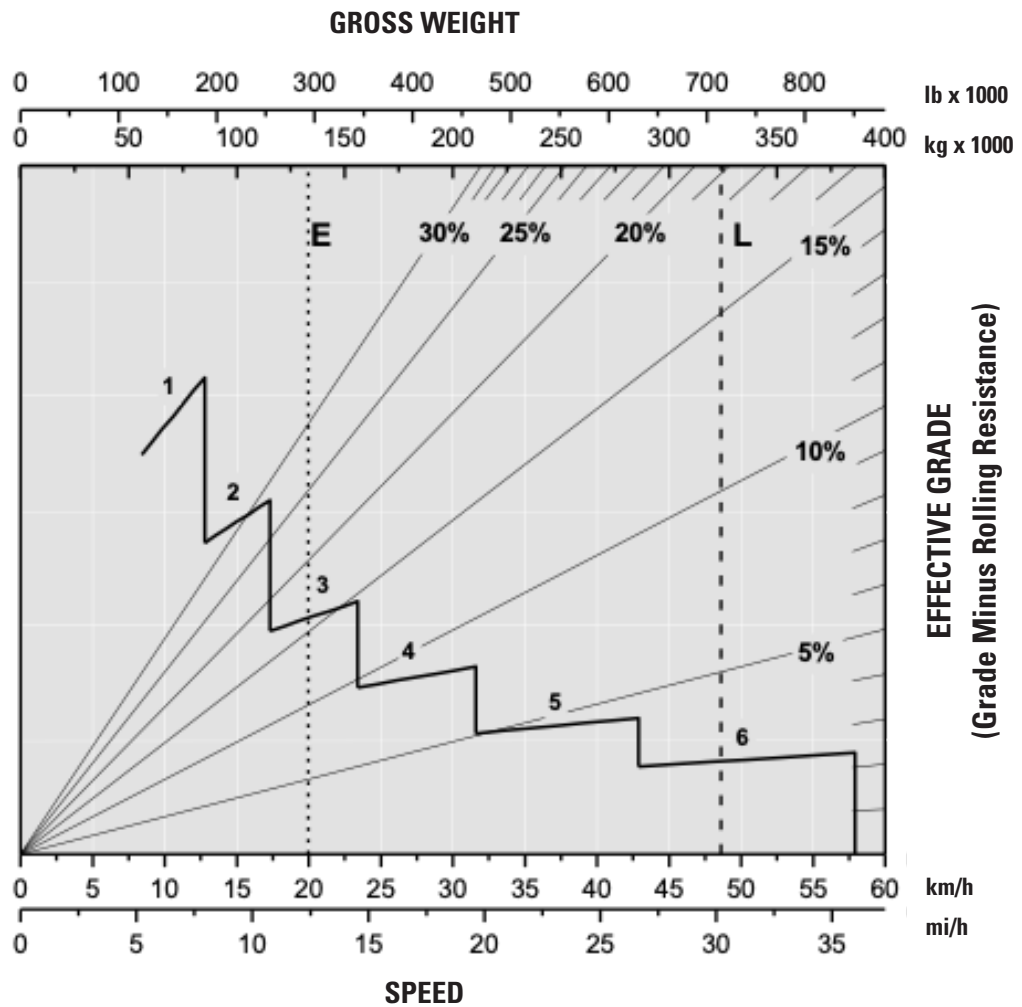
To determine resistive braking (retarding) performance: Add lengths of all downhill segments and, using this total, refer to proper resistive braking chart. Read from gross weight down to the percent effective grade. Effective grade equals actual % grade minus 1% for each 10 kg/t (20 lb/ton) of rolling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

Nominal Empty Machine Weight (E)

**Rated Gross Machine
 Operating Weight (L)**
 324 318 kg (715,000 lb)

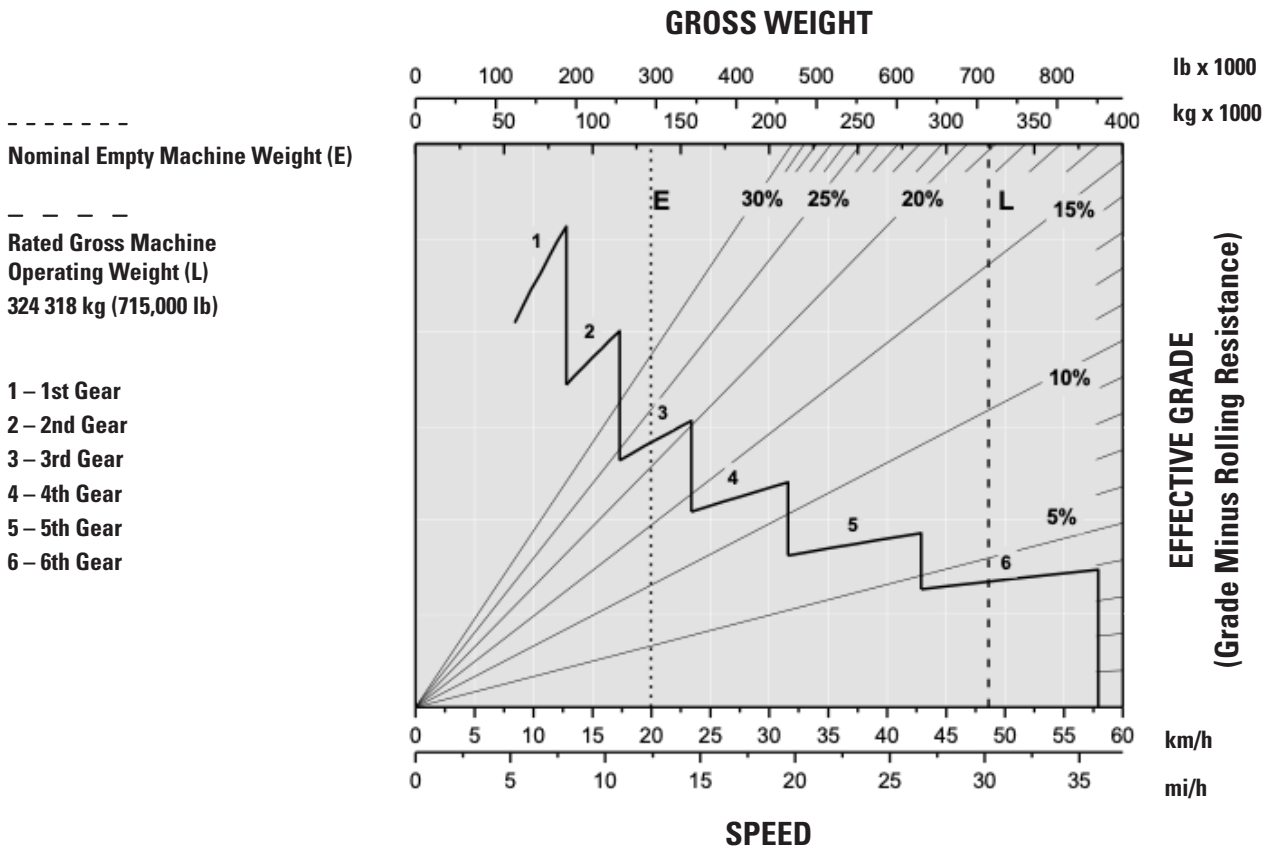
- 1 – 1st Gear
- 2 – 2nd Gear
- 3 – 3rd Gear
- 4 – 4th Gear
- 5 – 5th Gear
- 6 – 6th Gear



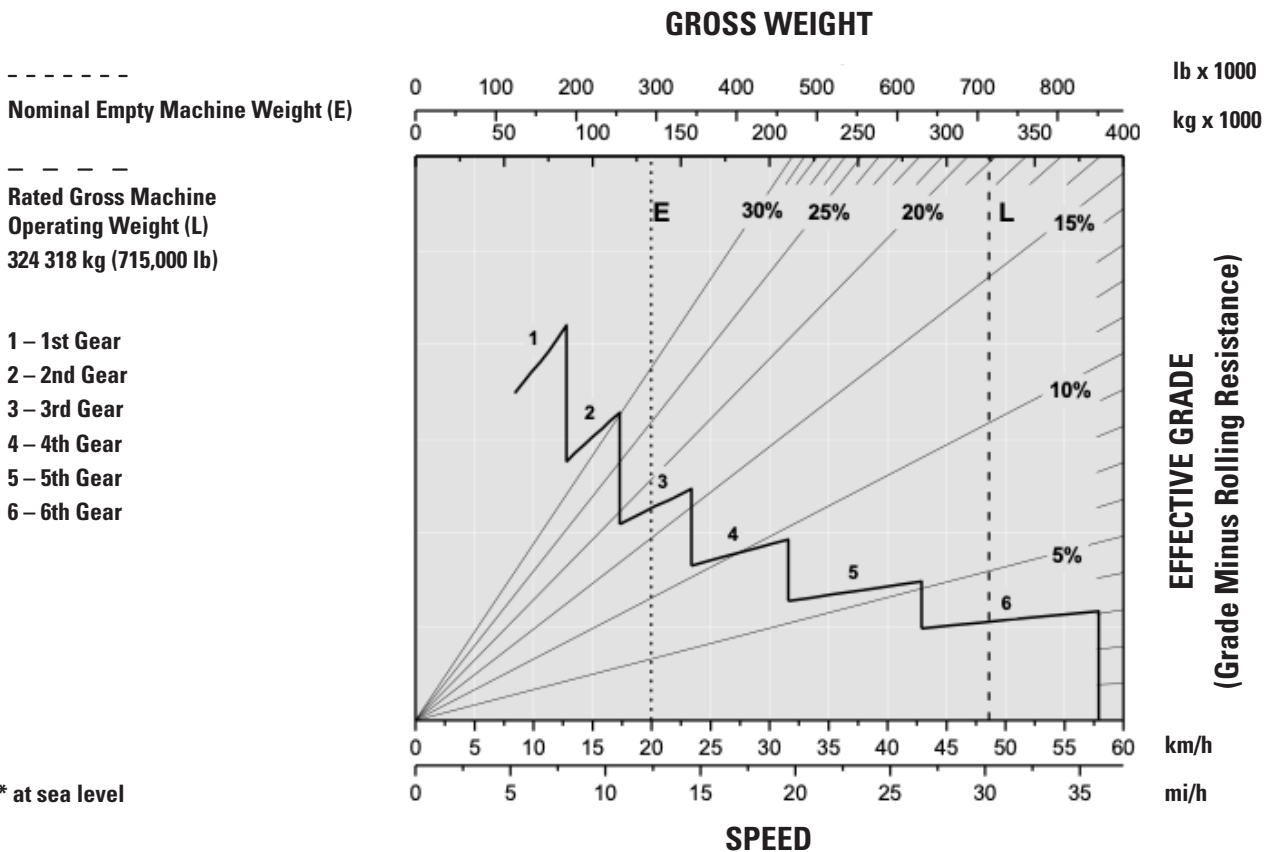
* at sea level

789 Mining Truck Specifications

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



789 Resistive Braking – 1500 m (4,900 ft)*



* at sea level

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

(continued on next page)

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 pre-cleaner (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 Resistor control (ARC) adjustable	✓		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, resistive braking, parking, secondary	✓		Tow hooks (front) and tow pin (rear)	✓	
• Park brake integrated with gear selector	✓		Sight glasses for hydraulic oils	✓	
Transmission:			Scheduled Oil Sampling (S·O·S SM) 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	✓		4G Product Link™ Elite with cellular radio	✓	
• Programmable top speed	✓		4G 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		✓	Ministar GPS		✓
			Ministar communication group (enables: Ministar Fleet, Auxiliary)		✓
			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)	✓	

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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