



# Cat<sup>®</sup> 777E

## OFF-HIGHWAY TRUCK

### FEATURES:

- **Power Train** – The updated Cat<sup>®</sup> C32 ACERT<sup>™</sup> engine and powerful torque converter with ECPC (Electronic Clutch Pressure Control) Transmission provides superior performance. The ECPC Transmission with controlled throttle shifting regulates engine speed, torque converter lock-up and transmission clutch engagement for smoother shifts, reduced clutch wear and longer component life.
- **Fuel Economy** – The 777E fuel saving strategies find opportunities to reduce fuel burn and fuel costs.
  - Economy Mode modifies engine maps to take advantage of steady grades and level ground, reducing power and fuel burn.
  - Speed Limiting automatically selects the most fuel efficient gear and speed for the terrain instantaneously.
  - Engine Idle Shutdown identifies when the truck is in park and idles for more than a preset time, and initiates engine shutdown to conserve fuel.
- **Engine Over Speed Protection** – Electronically senses engine conditions and automatically up-shifts one gear to prevent over speeding. If over speeding occurs in the top gear, the lock-up clutch is disengaged, and the brakes are applied.
- **Operator Comfort** – The all new operator station interior is ergonomically designed for total machine control in a comfortable, productive and safe environment. All controls, levers, switches and gauges are positioned to maximize productivity and minimize operator fatigue. Designed for excellent all-around visibility and clear sight lines to the haul road, the large viewing area offers exceptional visibility. The well positioned hand rails ensure three point contact for safe and easy access and emergency egress for the operator.
- **Diagnostic Capability** – Critical power train data, including transmission shifting, engine speed and fuel consumption, provides service technicians with enhanced diagnostic capability to reduce downtime and operating costs.
- **Electronic Technician (ET)** – Cat ET service tool provides service technicians with easy access to stored diagnostic data through the Cat Data Link.
- **Cab and Access** – The 777E cab interior, is completely redesigned to provide better visibility and comfort for the operator. Features include a new dash, advisor display and redesigned center console. Rollover and Falling Object Protection is an extension of the truck frame.
- **Operator Seat** – The Cat Comfort Seat uses full air suspension to smooth rough rides, and has a retractable four-point seat belt with a shoulder harness. A Trainer seat with a lap belt to facilitate on-the-job training.
- **Brakes** – The Cat Front dry caliper with rear oil-cooled multiple disc brakes deliver reliable performance and control in the most extreme haul-road conditions. Wet brakes on rear wheels and gear limiting during body up operations are both standard. If equipped with front oil cooled multiple disc brakes, four corner retarding with a 40/60 percent front/rear split provides superior control in slippery conditions and minimizes wheel lock-up.
- **Automatic Retarder Control (ARC) (optional)** – ARC controls braking on grade electronically, maintaining consistent engine speed, lower fuel burn, and better control.
- **Traction Control System (TCS) (optional)** – The Traction Control System electronically monitors and controls rear wheel slippage for greater traction and enhanced truck performance in poor underfoot conditions. If slippage exceeds a set limit, the rear wet brakes engage to slow the spinning wheel. Torque is then automatically transferred to the wheel with better traction and optimum control.
- **Steering** – Cat integrated steering and suspension system is designed for precise steering, excellent maneuverability, minimal tire wear and superior ride control.
- **Secondary Steering** – Automatically engages if power source for the normal steering fails.
- **Durability** – Rear wheel spindles are solid steel for longer life, and the rear suspension cylinders have been inverted to minimize contamination. These rugged cylinders use large diameter bore and low pressure nitrogen/oil design for long life with minimal maintenance.

# 777E Off-Highway Truck

## Engine

Engine Model	Cat C32 ACERT	
Engine Speed	1,750 rpm	
Engine Power – ISO 14396	749 kW	1,004 hp
Gross Power – SAE J1995	758 kW	1,016 hp
Net Power – SAE J1349	708 kW	949 hp
Net Torque @ 1,300 rpm	4757 N·m	3,509 lbf·ft
Net Torque Rise	23%	
Cylinders	12	
Bore	145	5.7 in
Stroke	162	6.4 in
Displacement	32.1 L	1,959 in <sup>3</sup>

- Power rating applies at 1,750 rpm when tested under the specified condition for the specified standard.
- Ratings based on SAE J1995 standard air conditions of 25° C (77° F) and 100 kPa (29.61 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).
- No engine derating required up to 3048 m (10,000 ft) altitude.
- Meets U.S. EPA Tier 2 Equivalent emission standards.
- Certified for China Nonroad Stage III emission standards.

## Transmission

Forward 1	10.7 km/h	6.6 mph
Forward 3	19.8 km/h	12.2 mph
Forward 5	36.2 km/h	22.5 mph
Forward 7	65.9 km/h	40.9 mph
Reverse 1	12.1 km/h	7.5 mph

- Maximum travel speeds with standard 27.00R49 (E4) tires.

## Final Drives

Differential Ratio	2.74:1
Planetary Ratio	7.00:1
Total Reduction Ratio	19.16:1

## Brakes

Brake Surface Area Front Caliper	2787 cm <sup>2</sup>	432 in <sup>2</sup>
Brake Surface Area Front OCDB	40 846 cm <sup>2</sup>	6331 in <sup>2</sup>
Brake Surface Area – Rear	102 116 cm <sup>2</sup>	15,828 in <sup>2</sup>
Brake Standard	ISO 3450:2011	

## Body Hoists

Pump Flow – High Idle	491 L/min	130 gal/min
Body Raise Time – High Idle	15 seconds	

## Capacity – Dual Slope – 100% Fill Factor

Struck	42.1 m <sup>3</sup>	55 yd <sup>3</sup>
Heaped 2:1 (SAE)	60.1 m <sup>3</sup>	78.6 yd <sup>3</sup>

## Capacity – X Body – 100% Fill Factor

Struck	43.1 m <sup>3</sup>	56.3 yd <sup>3</sup>
Heaped 2:1 (SAE)	64.1 m <sup>3</sup>	83.8 yd <sup>3</sup>

## Weight Distributions – Approximate

Front Axle – Empty/Loaded	44%/30%
Rear Axle – Empty/Loaded	56%/70%

## Suspension

Effective Cylinder Stroke – Front	318	12.5 in
Effective Cylinder Stroke – Rear	165	6.5 in
Rear Axle Oscillation	5.4°	

## Sound

Sound Standards	ISO 6393:2008, SAE J1166:2008
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- The operator sound exposure Leq (equivalent sound pressure level) measured according to work cycle procedures specified in SAE J1166:2008 is 80 dB(A) for cab offered by Caterpillar, when properly installed and maintained and tested with doors and windows closed.
- The dynamic operator sound pressure level is 80 dB(A) as per ISO 6396:2008 for cab offered by Caterpillar. When properly installed and maintained and tested with doors and windows closed.

## Steering

Steering Standard	ISO 5010:2007	
Steer Angle	30.5°	
Turning Diameter – Front	25.3 m	83 ft
Turning Circle Clearance Diameter	28.4 m	93 ft 2 in

- Separate hydraulic system prevents cross-contamination.

## ROPS

### ROPS/FOPS Standards

- ROPS (Rollover Protective Structure) cab offered by Caterpillar meets ISO 3471:2008 for Operator and ISO 13459:2012 for Trainer.
- FOPS (Falling Objects Protective Structure) meets ISO 3449:2005 for Operator and ISO 13459:2012 Level II FOPS criteria for Trainer.

## Tires

Standard Tire	27.00R49 (E4)
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- Productive capabilities of the 777E 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.

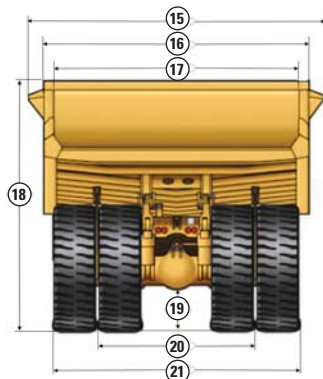
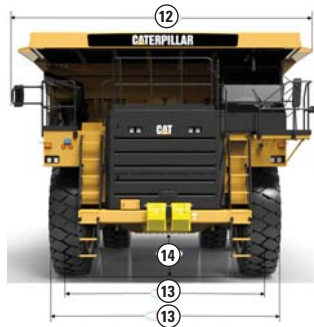
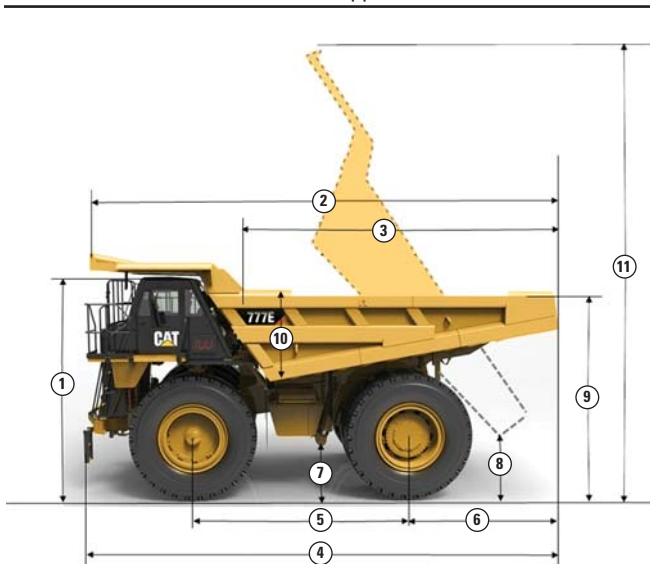
## Service Refill Capacities

Fuel Tank	1140 L	300 gal
Cooling System	212 L	56 gal
Crankcase	113.5 L	29.9 gal
Differentials	222 L	58.6 gal
Final Drives (each)	42 L	11 gal
Steering System (includes tank)	59 L	15.6 gal
Torque Converter/Brake/ Hoist Hydraulic Tank	385 L	101.7 gal
Transmission System	122 L	32.2 gal

## Weights

	Dual Slope				X Body			
	Without Liner		With Liner		Without Liner		With Liner	
	kg	lb	kg	lb	kg	lb	kg	lb
Target Gross Machine Weight	163 360	360,147	163 360	360,147	163 360	360,147	163 360	360,147
Body System Weight	16 070	35,428	16 070	35,428	15 900	35,053	15 900	35,053
Empty Operating Weight	65 158	143,648	70 753	155,983	64 988	143,274	69 674	153,604
Target Payload	98 202	216,499	92 607	204,164	98 372	216,873	93 686	206,543

## Dimensions (All dimensions are approximate.)



	Dual Slope		X Body	
	mm	ft	mm	ft
1 Height to Top of ROPS – Loaded	4730	15.51	4730	15.51
2 Overall Body Length	9555	31.35	10 070	33.00
3 Inside Body Length	6870	21.54	7258	23.81
4 Overall Length	10 004	32.82	10 230	33.56
5 Wheel Base	4570	15.00	4570	15.00
6 Rear Axle to Tail	3045	10.00	3263	10.70
7 Ground Clearance	896	2.93	896	2.93
8 Dump Clearance	890	2.91	818	2.68
9 Loading Height – Empty	4380	14.37	4430	14.53
10 Inside Body Depth – Maximum	1895	6.21	1777	5.83
11 Overall Height – Body Raised	10 050	33.00	10 400	34.12
12 Operating Width	6105	20.00	6105	20.00
Operating Width Extended Catwalk	6545	21.47	6545	21.47
13 Center Line Front Tire Width	4163	13.66	4163	13.66
Overall Front Tire Width	4961	16.28	4961	16.28
14 Engine Guard Clearance	864	2.83	864	2.83
15 Overall Canopy Width	6056	19.87	6200	20.34
16 Outside Body Width	5524	18.12	5689	18.66
17 Inside Body Width	5200	17.06	5450	17.88
18 Front Canopy Height – Loaded	5177	17.00	5370	17.62
19 Rear Axle Clearance	902	2.95	902	2.95
20 Center Line Rear Dual Tire Width	3576	11.73	3576	11.73
21 Overall Tire Width	5262	17.26	5262	17.26

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## STANDARD EQUIPMENT

### POWER TRAIN

- Engine idle shutdown
- Air-to-air aftercooler (ATAAC)
- Air cleaner with precleaner (2)
- Automatic cold mode idle control
- Electric priming pump
- Two starters and four batteries
- Fuel filter/water separator
- Turbocharger (2)
- Braking system
  - Oil cooled, multiple disc (rear)
  - Parking
  - Secondary
  - Caliper disc (front)
  - Manual retarder (utilizes rear oil cooled, multiple disc brakes)
  - Brake release motor (towing)
- Body up shift inhibitor
- Controlled throttle shifting
- Directional shift management
- Downshift inhibitor
- Neutral start switch
- Neutral coast inhibitor
- Reverse shift inhibitor
- Reverse neutralizer during dumping
- Programmable top gear selection

### SUSPENSION SYSTEMS

- Hydro pneumatic suspension
  - Front and rear

### ELECTRICAL

- Alarm, backup
- Alternator, 145 amp
- Auxiliary jump start receptacle
- Batteries, maintenance-free, 12V (4), 190 amp-hour
- Electrical system, 10 amp, 24V to 12V converter
- MineStar™ ready
- Backup light, halogen
- Directional signals/hazard warning
  - Front and rear, LED
- Headlights, halogen, with dimmer
- Operator access courtesy lights
- Stop/tail lights, LED

### OPERATOR ENVIRONMENT

- HVAC
- Ashtray and cigarette lighter
- Coat hook
- Diagnostic connection port
- Entertainment radio ready
  - Speakers, antenna, wiring harness
- Air cleaner service indicator
- Transmission oil temperature gauge
- Air system pressure gauge
- Brake oil temperature gauge
- Coolant temperature gauge
- Hour meter
- Tachometer
- Engine overspeed indicator
- Fuel level, gauge
- Speedometer with odometer
- Transmission gear indicator
- Hoist lever
- Horn
- Load counter, automatic
- Mirrors, left and right
- ROPS cab, insulated/sound suppressed
- Seat, Caterpillar comfort, full air suspension and retractable four point seat belt with shoulder harness

- Seat, trainer with lap belt
- Steering wheel, padded/tilt/telescopic
- Storage compartment
- Sun visor
- Throttle lock
- Right side access door
- Left side power window
- Windshield wiper, intermittent, and washer
- Tinted, laminated glass

### GUARDS

- Engine crankcase
- Driveline, operator safety vandalism protection lock

### FLUIDS

- Extended life coolant to -35° C (-30° F)

### OTHER STANDARD EQUIPMENT

- Airline dryer
- Body mounting group
- Body safety pin (secures body in up position)
- Body down indicator
- CD ROM parts book
- Center mounted rims
- Ground level battery disconnect
- Ground level engine shutdown
- Ground level grease fittings
- Reservoirs
  - Transmission
  - Steering
  - Brake, converter and hoist
- Rims 19.5 × 49
- Rock ejectors
- Supplemental steering, automatic
- Tie down eyes
- Tow hooks (front)/tow pin (rear)

For more complete information on Cat products, dealer services, and industry solutions, visit us on the web at [www.cat.com](http://www.cat.com)

AEHQ7869 (08-2016)

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