

Cat® 745

Articulated Truck

The Cat® 745 features a world-class cab, re-engineered using global operator feedback to advance comfort and ease of operation. Enhancements include class-leading levels of performance and new features, such as Advanced Automatic Traction Control (AATC) and assisted hoisting control, that keep a machine productive all day long.

Proven Reliability

- Cat C18 engine delivers proven reliability across a variety of applications.
- Terrain-based throttle control smooths throttle input over rough terrain to improve ride quality.
- Enhanced reliability through commonality and design simplicity with long life to overhaul.
- Minimized impact of emissions systems allows excellent response and ample power.
- Combination of engine compression brake and hydraulic retarder improves response and increases retarding power for controlled descent of grades.
- Aftertreatment technologies reduce emissions, including reducing NOx emissions by 80%.

Durability

- All structures and components are proven through extensive testing and customer experience.
- Advanced suspension allows for greater speed over rough terrain, while softening impact loads.
- Front suspension oscillates ±6 degrees for a smooth ride.
- Frames are designed to handle torque loads, decrease hitch area stress, and optimize suspension geometry.
- Frames are robot-welded for maximum durability.

Achieve Greater Productivity

- Advanced Automatic Traction Control (AATC) decreases wheel slippage, delivering maximum traction and productivity. Fully automatic, no operator action.
- Advanced Productivity Electronic Control Strategy (APECS) and Electronic Clutch Pressure Control (ECPC) deliver smooth gear changes with improved acceleration and increased productivity.
- Automatic Retarder Control (ARC) manages the retarder without any operator interaction. Fully automatic 100% of the time.
- New Assisted Hoisting Control allows automatic tipping and lowering of the dump body at the flick of a switch.
- Combined hoist/transmission lever, exclusive to Caterpillar, places multiple controls on the transmission lever, incorporates park brake, and reduces operator interaction by as much as 50%.

Boost Fuel Efficiency

- Economy mode reduces fuel use without affecting productivity and can be engaged with a single button.
- Next-generation machine design improves fuel economy with minimized maintenance costs and the same great power and response.
- Innovative air-management systems optimize airflow and enhance power and fuel efficiency.
- Advanced Mechanically-Actuated Electronically Controlled Unit Injection (MEUI)™-C injector platforms deliver increased injection pressures and more precise fuel rates.
- The Cat NOx Reduction System (NRS) captures and cools a small quantity of exhaust gas, then routes it back into the combustion chamber where it drives down combustion temperatures and reduces NOx emissions.

CAT®

Easy, Comfortable Operator Environment

- New cab has 20% more interior space and is designed to make all aspects of machine operation as simple as possible for every operator.
- Cab is 7 dB quieter for a more comfortable working environment.
- Increased glass area optimizes operator and trainer visibility.
- Newly styled and updated dash puts controls within easy reach and features LED-illuminated rocker switches.
- Simple, intuitive control and display layouts allow the operator to focus on safe machine operation while maintaining productivity.
- Updated touchscreen display allows for easy monitoring and adjustment of systems.
- Make and receive hands-free calls via the optional Bluetooth® equipped stereo.
- Improved automatic climate control system makes maintaining the desired temperature easier.
- Increased and improved storage prevents cabin clutter.

Technology That Gets Work Done

- Integrated systems give you the ability to make timely, fact-based decisions to maximize efficiency, improve productivity, and lower costs.
- Product Link™ system connects to each machine wirelessly, allowing you to monitor location, hours, fuel use, productivity, idle time, and diagnostic codes.
- Payload technology allows operators to view real-time load weights on the integrated display.
- External payload indicator lights alert the loader when to stop, reducing the risk of machine overloading.
- Stability assist software reports information via online VisionLink®, increasing awareness of machine history if a rollover has occurred.

Built-In Safety Features

- Cat Detect with Stability Assist provides audible and visual alerts to the operator if the machine approaches an unstable angle during operation to prevent body or cab rollover.
- Enter the machine safely with machine wakeup and new stairway lighting.
- Grab rail allows for easier and safer machine access.
- Operator-presence detection system applies parking brake if gear is engaged and operator is not seated.
- In-cab tertiary brake switch allows the operator to bring the machine to a safe stop in the unlikely event of both main and secondary brake circuits failing.
- Electro-hydraulic secondary steering activates automatically if low pressure is sensed in primary system.
- Hill Assist reduces potential roll-back on grades.
- Waiting brake applies the service brakes when neutral is selected and button is pressed, allowing quick and easy control of the machine while dumping and loading.

Reduced Maintenance Costs

- Durable design and easier servicing mean maximized uptime, and reduced service costs.
- Universal joints are lubricated for life, eliminating any greasing during the product lifetime.
- Coolant formula improves component life by reducing corrosion.
- Entire machine is designed for greater ease of maintenance with side-tilting cab, electrically raised hood, access panels, and Cat Data Link connector.

Standard and Optional Equipment

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

	Standard	Optional
OPERATOR ENVIRONMENT		
Air conditioning with R134a refrigerant	✓	
Combined gear selection and hoist control lever	✓	
Liquid Crystal Display (LCD)	✓	
Mirrors: extensive arrangement for improved visibility	✓	
Mirrors, heated motorized		✓
Machine operation monitoring system	✓	
Operator seat belt, four-point		✓
Radio, Bluetooth stereo system		✓
Seats: operator – fully adjustable, air suspension, retractable lap belt; trainer – padded with retractable lap belt	✓	
Seat, heated/cooled		✓
Secondary steering – electro hydraulic	✓	
Sun visor	✓	
Tilt and telescopic steering wheel	✓	
Touchscreen display incorporating the rearview camera video feed	✓	
Windshield wiper and washer, two speed, intermittent (front)	✓	
TECHNOLOGY		
Cat Detect with Stability Assist	✓	
Cat Production Measurement payload monitoring system		✓
Machine Security System (MSS)		✓
Product Link Elite: PLE641 (cellular)	✓	
Product Link Elite: PLE631 (satellite)		✓
ELECTRICAL AND LIGHTING		
Batteries (two) maintenance free	✓	
Cold weather start attachment		✓
Electrical system: 24-volt, 5A 24- to 12-volt converter	✓	
Engine block heater		✓
Ether start		✓
Flashing LED beacon		✓
Lighting systems: cab interior, two head lamps, two width marker, two reversing, work light/cab access light, two stop/tail lights, front and rear direction indicators	✓	
Main disconnect switch	✓	
Roof mounted High Intensity Discharge (HID) work lights		✓

	Standard	Optional
POWER TRAIN		
Auto shift nine-speed forward and two-speed reverse transmission	✓	
Cat C18 engine	✓	
Cat Clean Emissions Module (CEM) and exhaust aftertreatment package	✓	
CX38 transmission	✓	
Differentials: standard with automatic clutched inter- and cross-axle differential locks	✓	
Dual circuit oil immersed, enclosed brakes – all wheels	✓	
Retarder: engine compression brake and hydraulic	✓	
Three axle, six-wheel drive	✓	
SAFETY		
Rearview camera	✓	
Reverse alarm	✓	
ROPS/FOPS cab	✓	
GUARDS		
Axle	✓	
Crankcase	✓	
Radiator	✓	
Rear window	✓	
OTHER		
Auto lube installation for automatic greasing of bearings		✓
Bare chassis (no body) long wheel base		✓
Bare chassis (no body) standard wheel base		✓
Body liners		✓
Cold weather coolant -51°C (-60°F)		✓
Exhaust heated body		✓
Fast fuel fill		✓
Fuel additive – anti-waxing		✓
Mud flaps: wheel arch and body mounted with transportation tiebacks	✓	
Scissor tailgate		✓
S·O·S℠ sampling valves	✓	
Sound suppression (optional outside EFTA*)		✓
Tires, six 29.5R25, radial	✓	
Vandalism protection: lockable caps	✓	
Wheel chocks		✓

** EFTA countries are EU countries plus Iceland, Norway, Lichtenstein, and Switzerland.*

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Technical Specifications

Engine

Engine Model	C18	
Gross Power (SAE J1995:2014)	381 kW	511 hp
Net Power (SAE J1349:2011)	370 kW	496 hp
Engine Power (ISO 14396:2002)	376 kW	504 hp
Bore	145 mm	5.7 in
Stroke	183 mm	7.2 in
Displacement	18.1 L	1,106 in^3

- Advertised power is tested at 1,700 rpm.
- The net power advertised is the power available at the flywheel when the engine is equipped with alternator, air cleaner, aftertreatment, and fan at minimum speed.
- Net power when the fan is at maximum speed is 348 kW (467 hp) per the SAE reference conditions.
- The C18 meets U.S. EPA Tier 4 Final and EU Stage V emission standards.
- DEF used in Cat SCR systems must meet the requirements outlined in ISO 22241-1. ISO 22241-1 requirements are met by many brands of DEF, including those that carry the AdBlue or API certifications.

No Engine Derating Below	3050 m	10,000 ft
Peak Engine Torque Gross (SAE J1995:2014)	2618 N·m	1,931 lbf-ft
Peak Engine Torque Net (SAE J1349:2011)	2558 N·m	1,887 lbf-ft
Peak Engine Torque Speed	1,200 rpm	

Weights

Rated Payload	41 tonnes	45.2 tons

Body Capacities

Heaped SAE 2:1	25 m^3	32.7 yd^3
Struck	18.5 m^3	24.2 yd^3
Tailgate Heaped SAE 2:1	26.5 m^3	34.7 yd^3
Tailgate Struck	19.5 m^3	25.5 yd^3

Transmission

Speed	km/h	mph
Forward 1	6.1	3.8
Forward 2	8.1	5
Forward 3	11.2	7
Forward 4	14.1	8.8
Forward 5	18.7	11.6
Forward 6	22.9	14.2
Forward 7	31.5	19.6
Forward 8	37.9	23.5
Forward 9	54.8	34
Reverse 1	6.4	4
Reverse 2	14.6	9.1

Standards

Brakes	ISO 3450:2011
Cab/FOPS	ISO 3449:2005 Level II
Cab/ROPS	ISO 3471:2008
Steering	ISO 5010:2019

Air Conditioning System

- The air conditioning system on this machine contains the fluorinated greenhouse gas refrigerant R134a (Global Warming Potential = 1430). The system contains 1.2 kg of refrigerant which has a CO_2 equivalent of 1.716 metric tonnes.

Sound Levels

Interior Cab	72 dB(A)

- The declared dynamic operator sound pressure level is 72 dB(A) when ISO 6396:2008 is used to measure the value for an enclosed cab. The measurement was conducted at 70% of the cooling fan's maximum speed. The sound level may vary at different cooling fan speeds. The measurement was conducted with the cab doors and the cab windows closed. The cab was properly installed and maintained.
- Hearing protection may be needed when operating with an open operator station and cab or when not properly maintained or with doors/windows open for extended periods or in noisy environments.

Operating Weights

Front Axle – Empty	19 738 kg	43,515 lb
Center Axle – Empty	6944 kg	15,309 lb
Rear Axle – Empty	6682 kg	14,731 lb
Total – Empty	33 363 kg	73,553 lb
Front Axle – Rated Load	5900 kg	13,007 lb
Center Axle – Rated Load	17 550 kg	38,691 lb
Rear Axle – Rated Load	17 550 kg	38,691 lb
Total – Rated Load	41 000 kg	90,390 lb
Front Axle – Loaded	25 638 kg	56,522 lb
Center Axle – Loaded	24 494 kg	54,000 lb
Rear Axle – Loaded	24 232 kg	53,422 lb
Total – Loaded	74 363 kg	163,942 lb

Body Plate

High strength Brinell HB450 wear resistant steel

Body Plate Thickness

Front Plate	7 mm	0.28 in
Chute	14 mm	0.55 in
Side Plates	11 mm	0.43 in
Base Plate	14 mm	0.55 in

Service Refill Capacities

Fuel Tank	550 L	145.3 gal
DEF Tank	25 L	5.3 gal
Cooling System	90 L	23.7 gal
Brake Cooling System	67 L	17.7 gal
Hydraulic System	140 L	36.9 gal
Engine Crankcase	52 L	13.7 gal
Transmission	75 L	19.8 gal
Final Drives/Differential	5 L	1.3 gal
Axles	60 L	15.8 gal

Body Hoist

Raise Time	12 seconds
Lower Time	10 seconds

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Build Number: 04A
(N Am, Eur, Aus-NZ, Jpn)

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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