



745

Articulated Truck

Technical Specifications

Configurations and features may vary by region. Please consult your Cat® dealer for availability in your area.

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745 Articulated Truck Specifications

Engine

Engine Model	Cat® 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/EU Stage V emission standards.
- Diesel exhaust fluid (DEF) used in Cat selective catalytic reduction (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 Required 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
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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 (2.6 lb) of refrigerant which has a CO₂ equivalent of 1.716 metric tonnes (1.891 tons).

Body Capacities

Heaped SAE 2:1	26.0 m ³	33.4 yd ³
Struck	19.9 m ³	26.0 yd ³
Tailgate Heaped SAE 2:1	27.3 m ³	35.7 yd ³
Tailgate Struck	20.9 m ³	27.3 yd ³

Transmission

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

Sound Levels

Interior Cab	72 dB(A)
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- 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.

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Operating Weights

Front Axle – Empty	19 180 kg	42,285 lb
Center Axle – Empty	7100 kg	15,653 lb
Rear Axle – Empty	6830 kg	15,058 lb
Total – Empty	33 110 kg	72,995 lb
Front Axle – Rated Load	5880 kg	12,963 lb
Center Axle – Rated Load	17 560 kg	38,713 lb
Rear Axle – Rated Load	17 560 kg	38,713 lb
Total – Rated Load	41 000 kg	90,389 lb
Front Axle – Loaded	25 060 kg	55,248 lb
Center Axle – Loaded	24 660 kg	54,366 lb
Rear Axle – Loaded	24 390 kg	53,771 lb
Total – Loaded	74 110 kg	163,385 lb

Body Plate

High Strength Brinell HB450 Wear Resistant Steel		
Front	7 mm	0.28 in
Chute	14 mm	0.55 in
Side	11 mm	0.43 in
Base	14 mm	0.55 in

Body Hoist

Raise (manual)	12 seconds
Raise (automatic)	13 seconds
Lower (manual)	10 seconds
Lower (automatic)	10 seconds

Service Refill Capacities

Fuel Tank	550 L	145.3 gal
Diesel Exhaust Fluid (DEF)	25 L	5.3 gal
Cooling System	90 L	23.7 gal
Brake Cooling Tank	67 L	17.7 gal
Steering/Hoist Hydraulic System	140 L	36.9 gal
Engine Crankcase	52 L	13.7 gal
Transmission/Output Transfer Gear (OTG)	75 L	19.8 gal
Final Drives (each)	5 L	1.3 gal
Axles (each)	60 L	15.8 gal

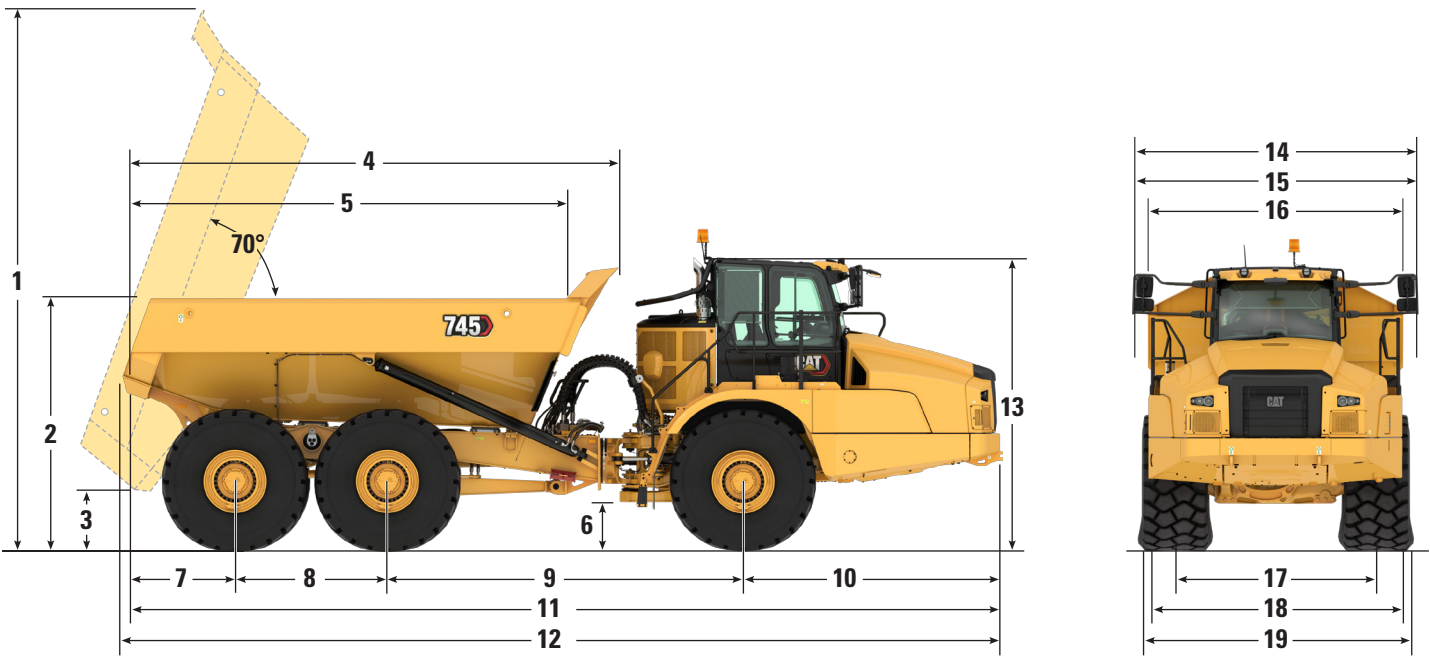
Standards

Brakes	ISO 3450:2011
Cab/Falling Objects Protective Structure (FOPS)	ISO 3449: 2005 Level II
Cab/Rollover Protective Structure (ROPS)	ISO 3471:2008
Steering	ISO 5010:2019

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Dimensions

All dimensions are approximate.



	mm	ft/in
1 Body Height Fully Tipped	7288	24'0"
2 Load over Height	3261	10'7"
3 Ground Clearance – Body Fully Tipped	779	2'7"
4 Body Length	6402	21'0"
5 Body Length Inside	5929	19'4"
6 Ground Clearance	590	1'11"
7 Rear Axle Center to Body Rear	1458	4'8"
8 Mid Axle to Rear Axle Center	1966	6'5"
9 Mid Axle to Front Axle (Centers)	4590	15'1"
10 Front Axle Center to Machine Front	3418	11'3"
11 Overall Length	11 432	37'6"
12 Overall Length with Tailgate	11 559	37'11"
13 Height Transport Position	3762	12'4"
14 Overall Width	3801	12'6"
15 Width over Tailgate/Width Including Tailgate	3774	12'5"
16 Body Width	3422	11'3"
17 Track Width	2687	8'10"
18 Width over Fenders	3370	11'1"
19 Max Laden over Tire Bulge	3500	11'6"

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Turning Circle

Dimensions are for machines equipped with 29.5R25 tires.

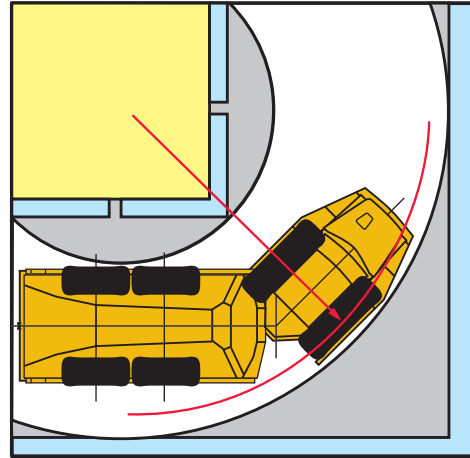
Turning Dimensions

Steer Angle – From Center Left/Right	45°	
SAE Turning Radius	8625 mm	340 in
Clearance Radius	9082 mm	356 in
Inside Radius	4413 mm	174 in
Aisle Width	5917 mm	233 in

Steering

Lock to Lock

4.8 seconds @ 60 rpm



Optimal Loader/Truck Pass Matching

Hydraulic Excavators

Passes	390	374
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Wheel Loaders

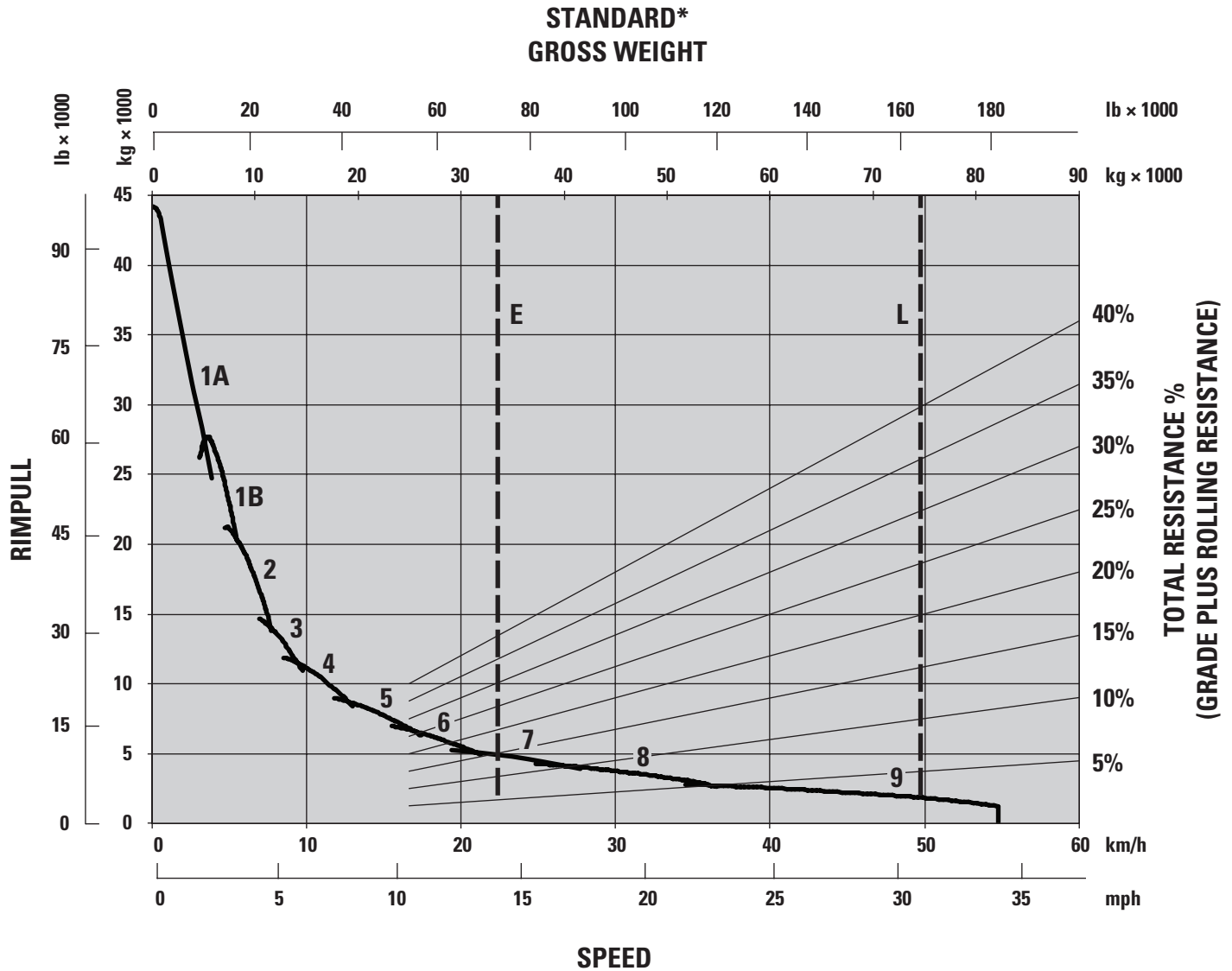
Passes	982	980	972
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An optimum system match gives you a major productivity advantage. Having matched loading and hauling tools results in increased production and lower system costs per unit of volume moved.

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Gradeability/Speed/Rimpull

To determine performance, read from gross weight down to percent total resistance. Total resistance equals actual percent grade plus 1% for each 10 kg/metric ton (20 lb/ton) of rolling resistance. From this point, read horizontally to the curve with the highest attainable speed range. Then, go down to maximum speed. Usable rimpull depends on traction available.



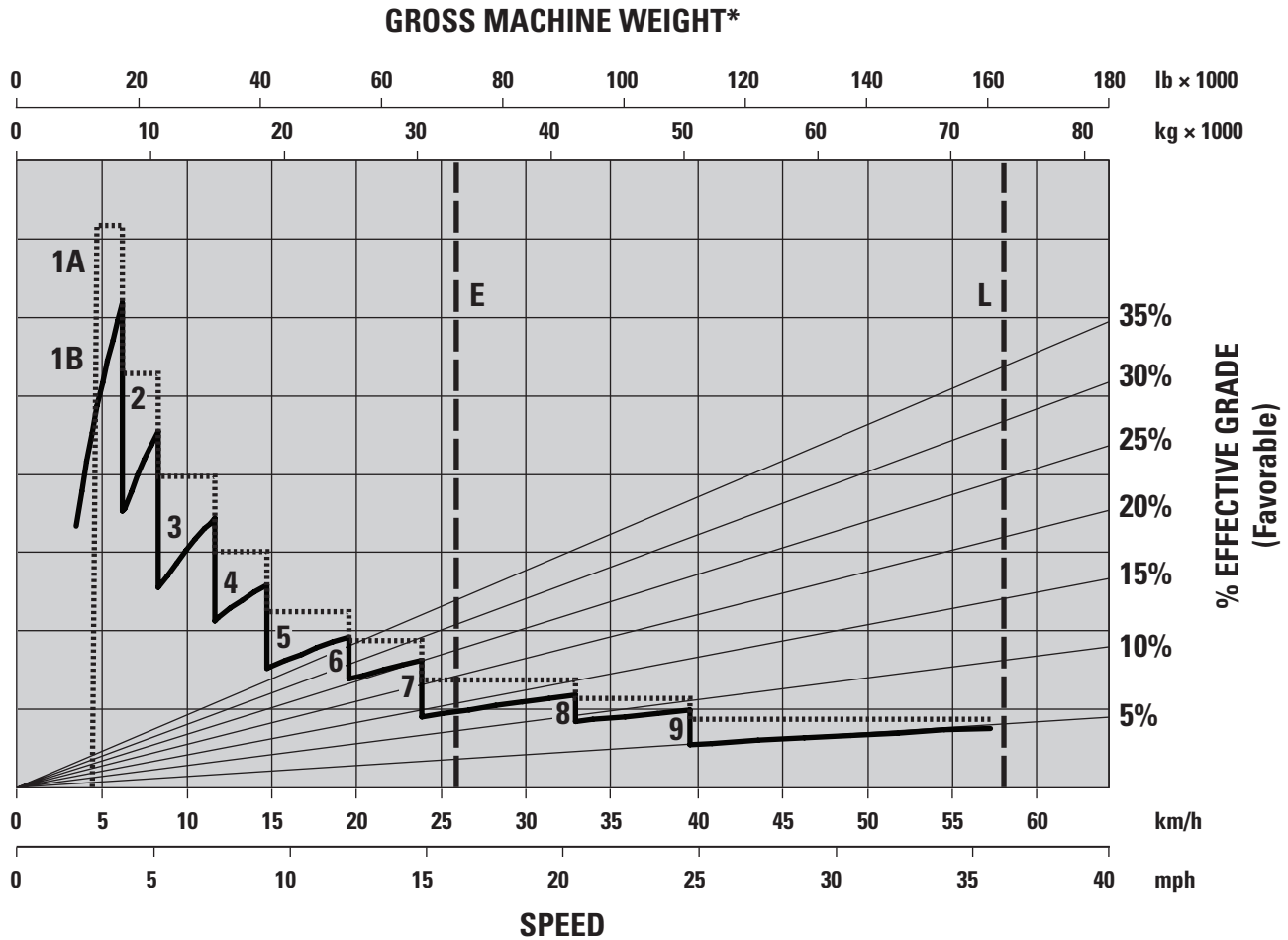
- 1A – 1st Gear (Converter Drive)
- 1B – 1st Gear (Direct Drive)
- 2 – 2nd Gear
- 3 – 3rd Gear
- 4 – 4th Gear
- 5 – 5th Gear
- 6 – 6th Gear
- 7 – 7th Gear
- 8 – 8th Gear
- 9 – 9th Gear

- E – Empty 33 110 kg (72,995 lb)
- L – Loaded 74 110 kg (163,385 lb)
- * at sea level

745 Articulated Truck Specifications

Retarding Performance

To determine performance, read from gross weight down to percent effective grade. Effective grade equals actual percent favorable grade plus 1% for each 10 kg/metric ton (20 lb/ton) of rolling resistance. From this point, read horizontally to the curve with the highest attainable speed range. Then, go down to maximum speed. Retarding effect on these curves represents full application of the retarder.



- 1A – 1st Gear (Converter Drive)
- 1B – 1st Gear (Direct Drive)
- 2 – 2nd Gear
- 3 – 3rd Gear
- 4 – 4th Gear
- 5 – 5th Gear
- 6 – 6th Gear
- 7 – 7th Gear
- 8 – 8th Gear
- 9 – 9th Gear

- E – Empty 33 110 kg (72,995 lb)
- L – Loaded 74 110 kg (163,385 lb)
- * at sea level
- Manual
- Automatic

745 Articulated Truck Standard & Optional Equipment

Standard and Optional Equipment

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

	Standard	Optional		Standard	Optional
OPERATOR ENVIRONMENT			TECHNOLOGY		
Air conditioning with R134a refrigerant	✓		Cat® Detect with Stability Assist	✓	
Adjustable air vents	✓		Cat Production Measurement payload monitoring system		✓
Combined gear selection and hoist control lever	✓		Machine security system (MSS)		✓
Glass windows: front, laminated and tinted; sides and rear, toughened and tinted	✓		Product Link™ Elite: PLE641 (cellular)	✓	
Heater and defroster with four-speed fan	✓		Product Link Elite: PLE631E (satellite)		✓
Infrared glass – high ambient cab		✓	ELECTRICAL AND LIGHTING		
Liquid crystal display (LCD): alert indicator, selected gear and direction, speed or auto shift, operation and maintenance manual (OMM), primary steering failure (warning), seat belt warning, secondary steering failure, diesel particulate filter (DPF) regeneration filter, secondary steering energy source engaged, hour meter, retarder active	✓		Batteries (two) maintenance free	✓	
Mirrors: extensive arrangement for improved visibility	✓		Cold weather start attachment		✓
Mirrors, heated motorized		✓	Engine block heater		✓
Machine operation monitoring system: action lamp, engine oil pressure, primary steering system, left and right turn signal, high beam, coolant temperature, tachometer, parking brake, fuel level, transmission oil temperature, brake system, transmission hold, hoist control, hydraulic system, charging system, transmission fault, traction control system, check engine lamp	✓		Ether start		✓
Operator seat belt, four-point		✓	Electrical system: 24-volt, 5A 24- to 12-volt converter	✓	
Radio, Bluetooth® stereo system		✓	Flashing LED beacon		✓
Seat, heated/cooled		✓	Horn	✓	
Seats: operator – fully adjustable, air suspension, retractable lap belt; trainer – padded with retractable lap belt	✓		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	✓	
Secondary steering – electro hydraulic	✓		Main disconnect switch	✓	
Storage: cup holder, flask receptacle (under the secondary seat), under seat storage, door pocket, behind seat storage, coat hook	✓		Remote starting receptacle (cables not included)	✓	
Sun visor	✓		Roof-mounted high intensity discharge (HID) work lights		✓
Tilt and telescopic steering wheel	✓		POWERTRAIN		
Touchscreen display incorporating the rearview camera video feed	✓		Auto shift nine-speed forward and two-speed reverse transmission	✓	
Window blinds		✓	Cat C18 engine	✓	
Window wiper and washer, two speed (rear)		✓	Cat Clean Emissions Module (CEM) and exhaust aftertreatment package	✓	
Windows (tinted) opening both sides	✓		CX38 transmission	✓	
Windshield wiper and washer, two speed, intermittent (front)	✓		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	✓	
			Rollover protective structure/falling objects protective structure (ROPS/ FOPS) cab	✓	

745 Articulated Truck Standard & Optional Equipment

Standard and Optional Equipment

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

	Standard	Optional		Standard	Optional
GUARDS			OTHER (CONTINUED)		
Axle	✓		Mud flaps: wheel arch and body mounted with transportation tiebacks	✓	
Crankcase	✓		Scissor tailgate		✓
Front dump body spill guard, integral part of fabricated body	✓		Scheduled oil sampling (S-O-S SM) sampling valves	✓	
Radiator	✓		Sound suppression (standard in EFTA*)	✓	
Rear window	✓		Sound suppression (optional outside EFTA*)		✓
OTHER			Tires, six 29.5 R25	✓	
Auto lube installation for automatic greasing of bearings		✓	Vandalism protection: lockable caps	✓	
Bare chassis (no body) long wheel base		✓	Wheel chocks		✓
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		✓			

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

745 Environmental Declaration

The following information applies to the machine at the time of final manufacture as configured for sale in the regions covered in this document. The content of this declaration is valid as of the date issued; however, content related to machine features and specifications are subject to change without notice. For additional information, please see the machine's Operation and Maintenance Manual.

For more information on sustainability in action and our progress, please visit <https://www.caterpillar.com/en/company/sustainability.html>.

Engine

- The Cat® C18 engine meets U.S. EPA Tier 4 Final/EU Stage V emission standards.
- Cat diesel engines are required to use ULSD (ultra-low sulfur diesel fuel with 15 ppm of sulfur or less) or ULSD blended with the following lower-carbon intensity fuels up to:
 - ✓ 20% biodiesel FAME (fatty acid methyl ester)*
 - ✓ 100% renewable diesel, HVO (hydrotreated vegetable oil) and GTL (gas-to-liquid) fuelsRefer to guidelines for successful application. Please consult your Cat dealer or "Caterpillar Machine Fluids Recommendations" (SEBU6250) for details.

**Engines with no aftertreatment devices can use higher blends, up to 100% biodiesel.*

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 (2.6 lb) of refrigerant, which has a CO₂ equivalent of 1.716 metric tonnes (1.891 tons).

Paint

- Based on best available knowledge, the maximum allowable concentration, measured in parts per million (PPM), of the following heavy metals in paint are:
 - Barium < 0.01%
 - Cadmium < 0.01%
 - Chromium < 0.01%
 - Lead < 0.01%

Sound

With cooling fan speed at 70% of maximum value:

Interior Cab (ISO 6396:2008)	72 dB(A)
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- 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

Oils and Fluids

- Caterpillar factory fills with ethylene glycol coolants. Cat Diesel Engine Antifreeze/Coolant (DEAC) and Cat Extended Life Coolant (ELC) can be recycled. Consult your Cat dealer for more information.
- Cat Bio HYDO Advanced is an EU Ecolabel approved biodegradable hydraulic oil.
- Additional fluids are likely to be present, please consult the Operations and Maintenance Manual or the Application and Installation guide for complete fluid recommendations and maintenance intervals.

Features and Technology

- The following features and technology may contribute to fuel savings and/or carbon reduction. Features may vary. Consult your Cat dealer for details.
 - Economy mode minimizes fuel consumption without impacting productivity
 - Innovative air-management systems optimize airflow and enhance power and fuel efficiency
 - Fully automatic retarder control helps prevent engine overspeed and preserves the machine without any operator intervention
 - Cat Stability Assist helps improve machine safety and uptime by increasing awareness of machine stability during operation
 - Cat Production Measurement provides real-time payload weighing which reduces fuel burn and carbon emissions by helping you maximize productivity while improving jobsite efficiency and lowering costs
 - Maximize uptime and reduce cost with world-class support from the Cat dealer network
 - Uniquely combined hoist and transmission lever allows for easy, intuitive control and cuts operator interaction by as much as 50%

For more complete information on Cat products, dealer services, and industry solutions, visit us on the web at www.cat.com.

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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