



CAT[®] 785 (04)

OFF-HIGHWAY TRUCK BARE CHASSIS

Caterpillar offers off-highway truck bare chassis designed for specialty machines in a variety of applications — including water trucks, tow tractors, and fuel / lube trucks. When configured as a water truck, the chassis can be equipped with the Cat[®] Water Delivery System (WDS) from factory and a 32,000 gallon (121 133 liter) capacity water tank from a 3rd party provider. These partial machine configurations allow quarry and mining customers to purchase complete solutions from our global Cat dealer network

PROVEN CAT TRUCK PLATFORM

Cat trucks are built for durability, reliability, and efficiency to deliver the performance you need in some of the toughest applications around the world.

APPLICATION-SPECIFIC CAB & ROPS CERTIFICATION

Cat Off-Highway Truck Bare Chassis ROPS is certified to ISO 3471 Tractor criteria, to provide a higher level of protection for specialty applications.

CUSTOMIZATION FOR YOUR APPLICATION

Cat bare chassis can be customized for your application — including water trucks, tow tractors, and fuel / lube trucks.

POWER TO THE GROUND

The Cat 6-speed planetary power shift transmission is matched with the direct-injection 3512C engine to deliver constant power over a wide range of operating speeds and is built tough for long life between overhauls.

SERVICE WITH EASE

Easy maintenance procedures ensure high reliability and long life with low operating costs. Easy access to daily service points simplifies servicing and reduces time spent on regular maintenance procedures.

SUPPORTED BY THE CAT DEALER NETWORK

- + Full support of Cat dealer and parts network
- + Cat dealer installation & retrofit kits available
- + Eligible for Equipment Protection Plans (EPP) & Customer Value Agreements (CVAs)



785 (04) Off-highway Truck Bare Chassis Specifications

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

Engine

Engine Model	Cat® 3512C HD-EUI	
Rated Engine Speed	1,750 rpm	
Gross Power – SAE J1995:2014	1082 kW	1,450 hp
Emissions Rating	Fuel Optimized	
Bore	170 mm	6.7 in
Stroke	215 mm	8.4 in
Displacement	58.56 L	3,573.6 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.
- Ratings based on standard air conditions of 25° C (77° F) and 99 kPa (29.32 Hg) dry 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 4267 m (14,000 ft) altitude..

Weights – Approximate

Rated Gross Machine Weight (RGMW)	249 476 kg	550,000 lb
Nominal Rated Payload (NRP)	145 tonnes	160 tons

- Consult your tire manufacturer for maximum tire load.

Weight Distributions – Approximate

Front Axle – Empty*	47.5 %
Front Axle – Loaded	32.6 %
Rear Axle – Empty*	52.5 %
Rear Axle – Loaded	67.4 %

*Depends on configuration.

Operating Weights – with Hoist Cylinders

Bare Chassis Weight	82 022 kg	180,827 lb
Payload	167 454 kg	369,173 lb
Gross Vehicle Weight	249 476 kg	550,000 lb
Front Axle Bare Chassis Weight	43 677 kg	96,290 lb
Front Axle Payload	39 399 kg	86,860 lb
Front Axle Gross Vehicle Weight	83 076 kg	183,150 lb
Rear Axle Bare Chassis Weight	38 345 kg	84,537 lb
Rear Axle Payload	128 055 kg	282,313 lb
Rear Axle Gross Vehicle Weight	166 401 kg	366,850 lb

Operating Weights – without Hoist Cylinders

Bare Chassis Weight	80 426 kg	177,309 lb
Payload	169 050 kg	372,691 lb
Gross Vehicle Weight	249 476 kg	550,000 lb
Front Axle Bare Chassis Weight	43 133 kg	95,091 lb
Front Axle Payload	39 943 kg	88,059 lb
Front Axle Gross Vehicle Weight	83 076 kg	183,150 lb
Rear Axle Bare Chassis Weight	37 294 kg	82,218 lb
Rear Axle Payload	129 107 kg	284,632 lb
Rear Axle Gross Vehicle Weight	166 401 kg	366,850 lb

- The payload includes anything added to the bare chassis.
- Care must be taken when designing any attachments so that the axle weights are not exceeded.

Final Drives

Double reduction, planetary with full floating axles.

Differential Ratio	2.10:1
Planetary Ratio	10.83:1
Total Reduction Ratio	22.75:1

Transmission

Forward 1	12.1 km/h	7.5 mph
Forward 2	16.3 km/h	10.2 mph
Forward 3	22.2 km/h	13.8 mph
Forward 4	29.9 km/h	18.6 mph
Forward 5	40.6 km/h	25.2 mph
Forward 6	54.8 km/h	34 mph
Reverse	11 km/h	6.8 mph

- Maximum travel speeds with standard 33.00-R51 tires.

Braking System

Service Brakes: Four corner, wet multi disc, oil cooled, air over hydraulic actuated

Brake Surface – Front	61 270 cm ²	9,497 in ²
Brake Surface – Rear	89 681 cm ²	13,900 in ²
Brake Standards	ISO 3450:2011	

Parking Brake: Four-corner, wet multi disc, Spring applied, Hydraulically Released

785 (04) Off-highway Truck Bare Chassis Specifications

Body Hoists

Twin, two-stage hydraulic cylinders with snubbing valve		
Pump Flow – High Idle	750 L/min	198 gal/min
Relief Valve Setting – Raise	17 238 kPa	2,500 psi
Body Raise Time – High Idle	15.2 seconds	
Body Lower Time – Float	16.2 seconds	
Body Power Down – High Idle	15.9 seconds	

- Power raise in both stages; power down in second stage.

Suspension

Self-contained nitrogen/oil cylinders, pin-to-pin mounting, top and bottom double shear clevis attachments		
Effective Cylinder Stroke - Front	320 mm	12.6 in
Effective Cylinder Stroke - Rear	165 mm	6.5 in
Rear Axle Oscillation	+/- 5.4 °	

Service Refill Capacities

Fuel Tank	1893 L	500 gal
Fuel Tank (optional)	2498 L	660 gal
Cooling System	490 L	129 gal
Crankcase	204 L	54 gal
Differentials and Final Drives	650 L	171 gal
Steering Tank	94 L	25 gal
Steering System (includes tank)	117 L	31 gal
Brake/Hoist Hydraulic Tank	540 L	120 gal
Brake Hoist System (includes tank)	641 L	169 gal
Torque Converter/Transmission System (Includes Sump)	248 L	65.5 gal
Front Wheels, Each	13.5 L	3 gal

Steering

Steering Standards	ISO 5010:2019	
Steer Angle	31.34°	
Turning diameter, (ISO 7457:1997)	29.8 m	97 ft 9 in

Tires and Rims

Standard Tire	33.00-R51 (E3 & E4)	
---------------	---------------------	--

- Quick Change Rims optional.
- Caterpillar recommends the customer evaluate all job conditions and consult the tire manufacturer for proper tire selection.

Cab

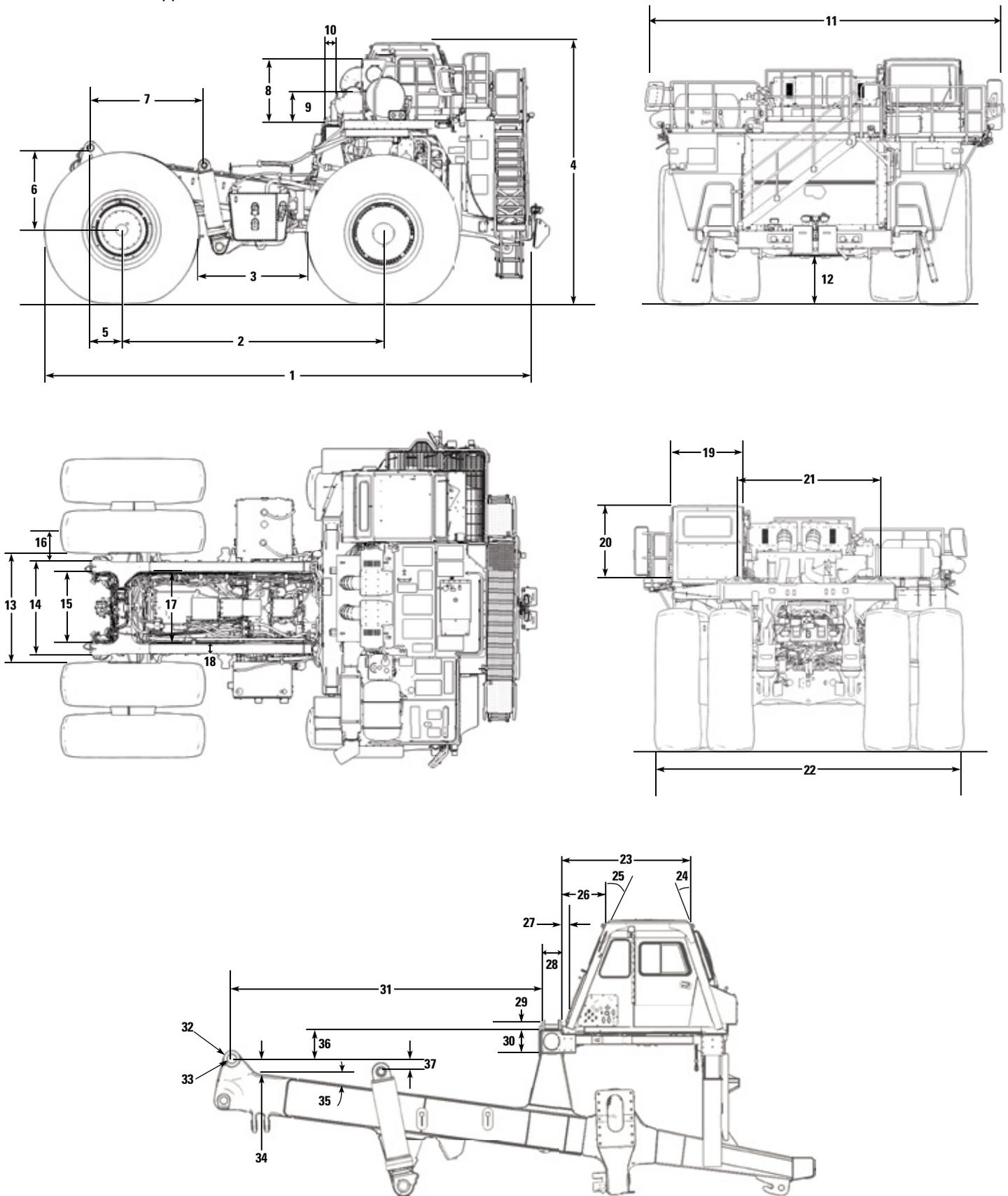
Air Conditioning	6.9 kW	23,543 Btu/hr
Heater / Defroster	10.01 kW	34,462 Btu/hr
Operator Sound pressure level) Tested to ISO 6396:2008	82 dB(A)	
Rollover Protective Structure (ROPS) for:		
Operator meets	ISO 3471:2008	
Trainer meets	ISO 13459:2012	
Falling Objects Protective Structure (FOPS) for:		
Operator meets	ISO 3449:2005 Level II	
Trainer meets	ISO 13459:2012 Level II	
785 WTR (Tractor)	94 000 kg	207,234 lb

- 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.
- Note: Welding on ROPS or making modifications to the ROPS may void the ROPS certification. Please contact Caterpillar OEM Solutions if the application requires welding on the machine frame.

785 (04) Off-highway Truck Bare Chassis Specifications

Dimensions

All dimensions are approximate.



785 (04) Off-highway Truck Bare Chassis Specifications

Dimensions

1	Overall Length ** (does not include Wheel Chocks)	9730 mm	383.07 in
2	Wheel Base	5180 mm	203.94 in
3	Distance between Tires **	2165 mm	85.24 in
4	Height to Top of ROPS **	5143 mm	202.48 in
5	Rear Axle to Body Pivot	637 mm	25.07 in
6	Distance between Body Pivot and Rear Axle	1595 mm	62.80 in
7	Distance between Body Pivot and Hoist Cylinders - Horizontal	2251 mm	88.62 in
8	Distance between Main Beam and Top of Air Cleaner	1293 mm	50.91 in
9	Distance between Main Beam and Engine Hood - Vertical	650 mm	25.59 in
10	Distance between Main Beam and Engine Hood - Horizontal	268 mm	10.55 in
11	Overall Width	7703 mm	303.27 in
12	Engine Guard Clearance **	980 mm	38.58 in
13	Distance between Hoist Cylinders	2348 mm	92.44 in
14	Distance between Body Pivots - Outer	1885 mm	74.21 in
15	Distance between Body Pivots - Inner	1518 mm	59.76 in
16	Body Pivot Bearing Width	175 mm	6.89 in
17	Distance between Frame Rails	1510 mm	59.45 in
18	Frame Rail Width	200 mm	7.87 in
19	Cab Width	1660 mm	65.35 in
20	Height of the Cab from Main Beam	1639 mm	64.53 in
21	Distance between Rocker Pads	3000 mm	118.11 in
22	Overall Tire Width	6277 mm	20.58 in
23	Distance between Main Beam and Cab Front	1955 mm	76.97 in
24	Cab Front Angle		18 degrees
25	Cab Rear Angle		21.33 degrees
26	Distance between Main Beam and Cab Roof	625 mm	24.61 in
27	Distance between Main Beam and Cab Rear	390 mm	15.35 in
28	Main Beam Width	361 mm	14.21 in
29	Rocker Pad Height	80 mm	3.15 in
30	Main Beam Height	354 mm	13.94 in
31	Distance between Body Pivot and Main Beam	4658 mm	183.39 in
32	Body Pivot Outer Radius	240 mm	9.45 in
33	Body Pivot Pin Diameter	129.5 mm	5.10 in
34	Distance between Body Pivot and Frame	230 mm	9.06 in
35	Frame Slope Angle		7.5 degrees
36	Distance between Main Beam and Body Pivot Pin	439 mm	17.28 in
37	Distance between Body Pivot and Hoist Cylinders - Vertical	194 mm	7.64 in

** These dimensions may vary based on tire size, pressure and load. All dimensions are for reference only and may change for different machine configurations.

785 (04) Off-highway Truck Bare Chassis Specifications

Standard and Optional Equipment

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

	Standard	Optional		Standard	Optional
POWERTRAIN					
Engine, 3512C, 1450 hp, Fuel optimized	•		Led lighting system		
Diesel engine/turbocharged/aftercooled	•		– Backup and hazard lights		
Ground level engine shutdown	•		– Directional signals, front and rear		
Ether starting aid (automatic)	•		– Engine compartment lights		
Aftercooler	•		– External payload lights	•	
Elevated low idle control	•		– Headlights and fog lights		
Automatic starter protection	•		– Lo-hi beam selector		
Multi-point oil pressure sensing	•		– Ladder light and service deck lights		
Pre-lube		•	– Left-hand ladder/service deck		
Filtration with oil cooler		•	– Stop/tail lights		
Oil renewal system		•	FLUIDS		
Muffler	•		Antifreeze protection to –50° C (–58° F)	•	
Muffler, extended exhaust		•	CAB		
Fan, conventional drive	•		Standard Cab		
Fan, variable speed, rockford for use in freezing weather operations		•	– Deluxe operator seat		
Air start		•	– Basic companion seat	•	
Electric start	•		– Payload indicator lamps		
Engine idle shutdown	•		– Retractable windshield visor		
TRANSMISSION			Deluxe cab – includes standard cab features plus:		
6-speed, automatic powershift with electronic Transmission Chassis Control (TCC)	•		– Premium plus operator seat		
Controlled throttle shifting	•		– Deluxe companion seat		•
Individual clutch modulation	•		– External payload digital display monitors		
Body-up shift inhibitor	•		– Cab cleanout vacuum		
Directional shift management	•		– Operator footrest		
Downshift/reverse shift inhibitor	•		Air conditioner	•	
Oil level sensor	•		Auxiliary power connection/cigarette lighter	•	
Neutral start switch/coast inhibitor	•		Diagnostic connection port	•	
Body-up reverse neutralizer	•		Dome courtesy light	•	
Programmable top gear	•		Entertainment radio ready – 5-amp converter, speakers, antenna, and wiring		
Lock-up torque converter	•		Air cleaner service indicator	•	
Rear axle continuous lubrication/ filtration	•		Gauge panel: Air pressure, Brake oil temperature, Engine coolant temperature, Fuel level	•	
BRAKING SYSTEM			Electric hour meter	•	
Brake release motor (towing)	•		Electric engine control fault indicator	•	
Oil-cooled, wet multi-disc (front and rear) (service, resistive braking, parking, secondary)	•		Mirrors, right and left	•	
Automatic resistive braking control	•		Speedometer and Tachometer	•	
Engine overspeed protection	•		Supplemental steering (automatic)	•	
Extended life brake disc material	•		Traction control system	•	
ELECTRICAL			Transmission gear indicator	•	
Back up alarm	•		Vital Info Management System (VIMS)	•	
Alternator 105 amp	•		VIMS message center w/universal gauge & keypad	•	
Batteries, 12V (2), 93 amp-hour	•		Heater/defroster (11 070 kCal/43,930 BTU)	•	
Converter, 12V electrical	•		Horn	•	
Electrical system, 24V, 15 amp	•		Hoist, body control (electric)	•	
Vehicle Information Management Systems	•		ROPS cab, insulated/sound suppressed	•	
VIMS, blue light	•		Seatbelt for operator, park brake safety; two-point seatbelt for trainer/passenger	•	
Payload indicator lights	•		Stairway and walkway access, 600 mm (24 in)	•	
			Steering wheel, tilt, padded, telescopic	•	
			Window, operator, electric powered	•	
			Windshield, wiper, intermittent control, and washer	•	
			Prohibit access handrail – rear cab	•	

785 (04) Off-highway Truck Bare Chassis Specifications

Standard and Optional Equipment

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

	Standard	Optional
CAT TECHNOLOGY PRODUCTS		
Product link™ cellular	•	
Product link satellite		•

OBJECT DETECTION SYSTEM		
Radar and camera	•	
Radar and camera, alternate		•
Camera only (radar ready)		•
Camera, alternate		•
Omission, camera and radar		•

SAFETY AND SECURITY		
Ground level VIMS data port	•	
Ground level battery disconnect	•	
Working at heights handrail		•
Working at heights package		•
Working at heights service		•
Fire extinguisher, portable		•

FUEL SYSTEMS		
Fast fill fuel system	•	
1893 L (500 gallon) capacity fuel tank and fast fill system	•	
2498 L (660 gallon) capacity fuel tank and fast fill system		•
Fuel filter basic screen	•	
Fuel filter with separator		•
Fuel heater		•

ACCESS		
Fixed ladder	•	
Powered staircase		•

RIMS AND WHEELS		
33R51 standard rim		•
33R51 quick change rim		•
Rims Mounting Group	•	
Rim diffuser		•
Hub odometer		•
Wheel chocks		•
Brake wear indicator		•

MUD GUARD		
Mud guards for standard hydraulic and fuel tank		•
Mud guards for standard hydraulic / large fuel tank		•

	Standard	Optional
CHASSIS		
Mirror heated	•	
Mirror wide and heated		•
Driveline guard	•	

COLD WEATHER		
240V engine coolant and oil heater		•

SERVICE		
Service center		•
Quick connect fitting for engine oil	•	
Grease injector	•	
Dual [LM2] [TS3] dryer for compressed air system	•	
Auto lube	•	
Auxiliary steering quick connect (towing)	•	
Auxiliary "buddy" dump quick connect	•	

CAT WATER DELIVERY SYSTEM (WDS) - OPTIONAL ATTACHMENT

Controls:

• Factory installed	•	
• Integrated into cab	•	

Water System Monitor:

• Integrated into cab	•	
• Programmable spray configurations	•	
• Automatic diagnostic messages	•	

Variable Hydraulic Pump Drive:

• 1,800 gpm at speeds of 3 - 25 mph (4 - 40 kph)	•	
• Auto shut-off	•	
• Soft startup	•	

Stainless Steel Spray Heads:

• Resists corrosion	•	
• Maintenance free	•	
• Patented design	•	

Independent Hydraulic Cooling System:

• Minimizes overheating	•	
-------------------------	---	--

Water Cannon:

• Hydraulically controlled	•	
• Optional nozzles		•
• Integrated joystick with cab controls	•	

WDS Camera System: includes three cameras, three camera washers and cable assemblies

Parts & service available through global Cat dealer network

For more information on Cat Truck Bare Chassis, contact OEM Solutions:

oem_solutions@cat.com | www.cat.com/oemsolutions

© 2026 Caterpillar

All rights reserved

Materials and specifications are subject to change without notice. Featured machines in photos may include additional equipment. See your Cat dealer for available options.

CAT, CATERPILLAR, LET'S DO THE WORK, their respective logos, "Caterpillar Corporate Yellow," the "Power Edge" and Cat "Modern Hex" trade dress as well as corporate and product identity used herein, are trademarks of Caterpillar and may not be used without permission.

AEXJ0177 (01-2026)

Build Number: 04

(South America, Africa, Middle
East, Australia, New Zealand)

