

CAT® 789(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 43,588 gallon (165 000 liter) capacity water tank from a 3rd party provider.

These partial machine configurations allow construction, quarry, and mining customers to purchase complete solutions from our global Cat® dealer network — with support every step of the way.

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 towing 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 mechanical drive powertrain and power shift transmission provides unmatched operating efficiency and control on steep grades, in poor underfoot conditions, and on haul roads with high rolling resistance. The 23% net torque rise provides unequaled lugging force during acceleration, on steep grades and in rough underfoot conditions.

SERVICE WITH EASE

Easy access to daily service points simplifies servicing and reduces time spent on regular maintenance procedures. Enhanced serviceability and 500-hour service intervals are designed to increase machine availability and productivity.

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)

789 (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® 3516C – HD	
Rated Engine Speed	1,750 rpm	
Gross Power – SAE J1995	1566 kW	2,100 hp
Rated Net Power – ISO 9249	1468 kW	1,969 hp
Emissions Rating	Fuel Optimized	
Bore	170 mm	6.7 in
Stroke	215 mm	8.5 in
Displacement	78.1 L	4,766 in^3

Optional Engine

Engine Model	Cat 3516B – EUI	
Rated Engine Speed	1,750 rpm	
Gross Power – SAE J1995	1417 kW	1,900 hp
Rated Net Power – ISO 9249	1320 kW	1,770 hp
Emissions Rating	Fuel Optimized	
Bore	170 mm	6.7 in
Stroke	190 mm	7.5 in
Displacement	69 L	4,211 in^3

Net Power advertised is the power available at the flywheel when the engine is equipped with air intake system, exhaust system, direct drive fan, and alternator.

- Power ratings apply at 1,750 rpm when tested under the specific
- conditions for the specified standard.
- Ratings based on SAE J1995 standard air conditions of 25° C (77° F) and 99 kPa (29.32 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).
- 3516B engine, no derate required up to 2300 m (7,500 ft) altitude.
- 3516C engine, no engine derate required up to 3658 m (12,000 ft).

Weights – Approximate

Rated Gross Machine Weight (RGMW)	324 319 kg	715,000 lb
Nominal Rated Payload (NRP)	194 tonnes	214 tons

- Consult your tire manufacturer for maximum tire load.

Weight Distributions – Approximate

Front Axle – Empty	50%
Front Axle – Loaded	50%
Rear Axle – Empty	33%
Rear Axle – Loaded	67%

Operating Weights – with Hoist Cylinders

Bare Chassis Weight	103 700 kg	228,619 lb
Payload	216 300 kg	476,859 lb
Front Axle Bare Chassis Weight	57 657 kg	127,112 lb
Front Axle Payload	49 223 kg	108,518 lb
Rear Axle Bare Chassis Weight	46 043 kg	101,507 lb
Rear Axle Payload	167 077 kg	368,341 lb

Operating Weights – without Hoist Cylinders

Bare Chassis Weight	101 140 kg	222,975 lb
Payload	218 860 kg	482,503 lb
Front Axle Bare Chassis Weight	56 234 kg	123,975 lb
Front Axle Payload	50 646 kg	111,655 lb
Rear Axle Bare Chassis Weight	44 906 kg	99,000 lb
Rear Axle Payload	168 214 kg	370,848 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	2.35:1
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

- Maximum travel speeds with standard 37.00-R57 tires.

Braking System

Brake Surface – Front	81 693 cm^2	12,662 in^2
Brake Surface – Rear	134 522 cm^2	20,851 in^2
Brake Standards		ISO 3450:2011
Service Brakes: Four-Corner, Wet Multi-disc, Oil Cooled, air over hydraulic actuated.		
Parking Brake: Four-corner, Wet Multi-disc, Spring applied, Hydraulically Released.		

Hoist Cylinders

Twin, two-stage hydraulic cylinders with snubbing valve		
Pump Flow – High Idle	699 L/min	184 gal/min
Relief Valve Setting – Raise	18 950 kPa	2,750 psi
Body Raise Time – High Idle	18.9 seconds	
Body Lower Time – Float	17.3 seconds	
Body Lower Time – Power Down	15.6 seconds	

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Suspension

Self-contained nitrogen/oil cylinders, pin-to-pin mounting, top and bottom double shear clevis attachments		
Effective Cylinder Stroke - Front	105 mm	4 in
Effective Cylinder Stroke - Rear	93 mm	3.5 in
Rear Axle Oscillation	+/- 5.4 °	

Service Refill Capacities

Fuel Tank	2082 L	550 gal
Fuel Tank (optional)	3785 L	1,000 gal
Cooling System	725 L	192 gal
Crankcase	291 L	77 gal
Differentials and Final Drives	830 L	219 gal
Steering System (includes tank)	189 L	50 gal
Brake/Hoist System (includes tank)	909 L	241 gal
Transmission Tank	76 L	20 gal
Steering Tank	134 L	35 gal
Brake/Hoist Hydraulic Tank	540 L	142 gal

Steering

Steering Standards		ISO 5010:2019
Steer Angle	36.07°	
Turning Diameter (ISO 7457:1997)	30.34 m	99.5 ft

Tires

Standard Tire	37.00-R57
Optional Tire	40.00-R57

- 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	10.1 kW	34,462 BTU/hr
Operator Sound pressure level		78.5 dBA (Dynamic)
Tested to ISO 6394:2008 and ISO 6396:2008		
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
ROPS Certification Rating		Tractor ROPS Rating
789 OEM (Tractor)	117 000 kg	257,940 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.

Cat® Water Delivery System (WDS) - optional

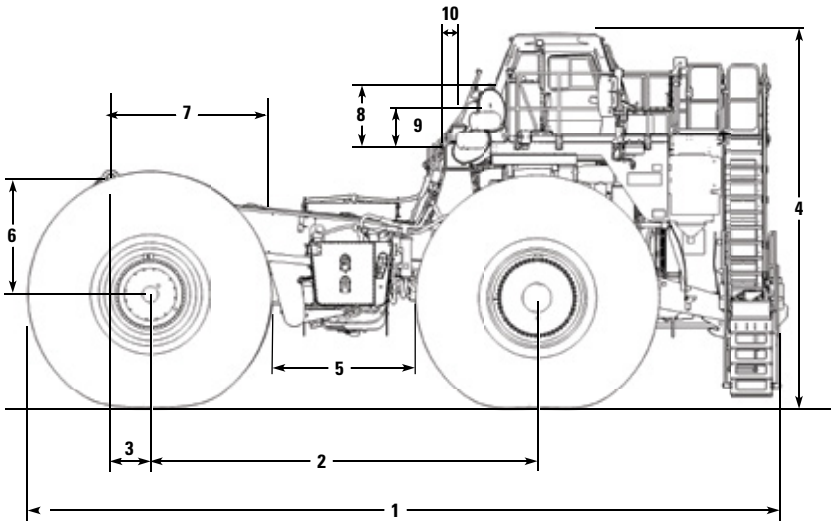
Operator selectable coverage	0.2-0.8 L/m² (4 kph - 40 kph)	0.05-0.2 gal/ft² (3 mph - 25 mph)
Maximum water flow	6814 L/min	1,800 gal/min
Water per spray head (minimum)	132.5 L/min	35 gal/min
Water per spray head (maximum)	2271 L/min	600 gal/min
Spray head opening range (minimum)	1 mm	0.04 in
Spray head opening range (maximum)	19 mm	0.75 in
Maximum size debris flushed through spray head	19 mm	0.75 in
Spray width per head (dependent on flow)	4.5-9.1 m	15-30 ft
Spray system hydraulic tank capacity	27.5 L	7.25 gal
Maximum number of rear spray heads	5	
Minimum number of rear spray heads	2	
Maximum number of front/side spray heads	2	
Minimum number of front/side spray heads	0	
Maximum water from cannon (idle)*	2271 L/min	600 gal/min
Maximum water from cannon (high idle)*	6246 L/min	1,650 gal/min
Maximum cannon spray distance*	61 m	200 ft
Wet water pump/hydraulic motor coupling		

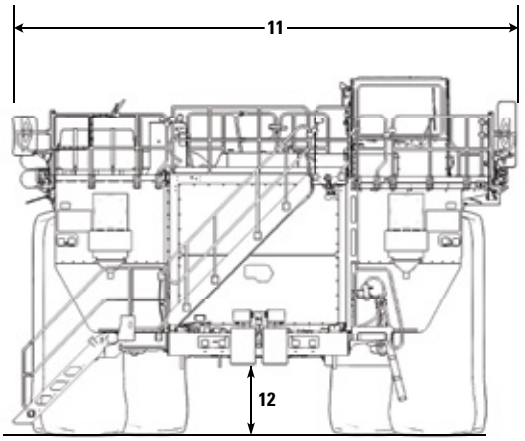
*Depends on nozzle orifice and pipe size.

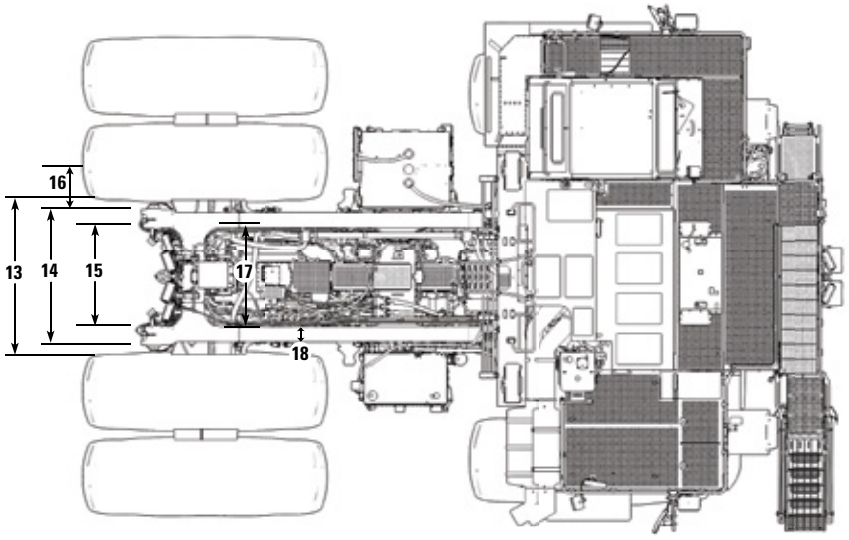
- Coverage rates above 0.6 L/m² may not be available at higher speeds depending on head count and configuration.
- The Auto Mode setting controls water coverage and automatically adjusts to the number of spray heads being used — independent of ground speed. This is an exclusive feature designed into the Cat® WDS software to help water more efficiently.
- Alternatively, manual mode allows the operator to set a water flow rate that is constant regardless of ground speed. This mode is not recommended for daily operation and will reduce watering efficiency and may increase fuel usage.
- Spray head opening is automatically controlled by the system to achieve Auto Mode Coverage or manual mode flow rate.
- Spray heads on competitive water distribution systems require tools and maintenance to change flow and spray pattern. Caterpillar is the only company to have variable active spray heads to regulate water spray.
- Water flow is continually adjusted during operation to conserve water and achieve desired coverage and flow rate.
- Water tanks are offered by local 3rd party providers with customization based on water application and regional customer requirements. Please contact your local Cat dealer, regional OEM Solutions Account manager, or email OEM_Solutions@cat.com for more information on water tank options and attachments.

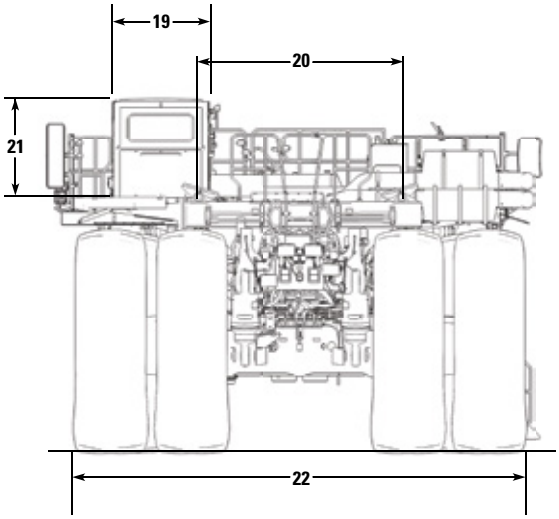
789 (04) OFF-HIGHWAY TRUCK BARE CHASSIS DIMENSIONS

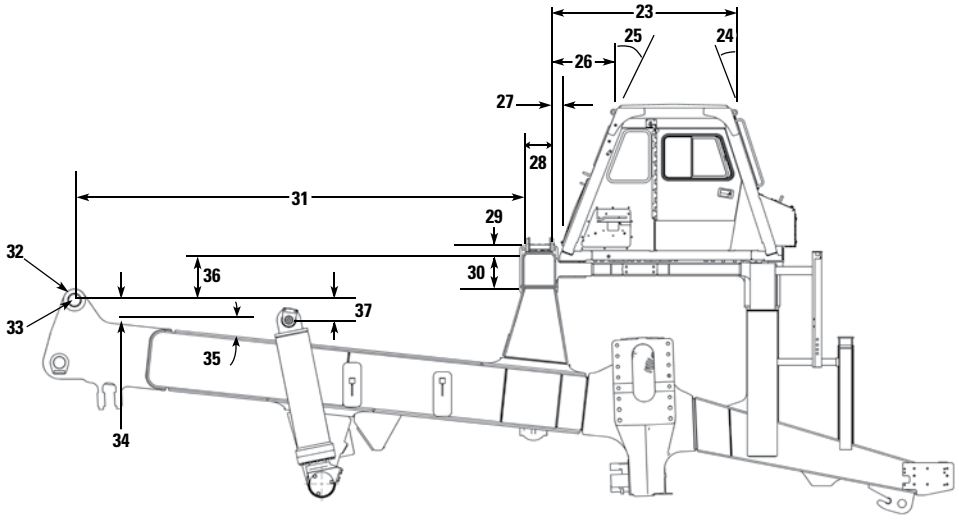
All dimensions are approximate.











789 (04) OFF-HIGHWAY TRUCK BARE CHASSIS DIMENSIONS

All dimensions are approximate.

Dimensions			
1	Overall Length ** (does not include Wheel Chocks)	10 860 mm	31 ft 11 in
2	Wheel Base	5700 mm	17 ft 0 in
3	Rear Axle to Body Pivot	592 mm	7 ft 1 in
4	Height to Top of ROPS **	5510 mm	17 ft 1 in
5	Distance Between Tires**	2230 mm	2 ft 1 in
6	Distance Between Body Pivot and Rear Axle	1678 mm	5 ft 4 in
7	Distance between Body Pivot and Hoist Cylinders - Horizontal	2360 mm	7 ft 5 in
8	Distance between Main Beam and Top of Air Cleaner	1293 mm	5 ft 8 in
9	Distance between Main Beam and Engine Hood - Vertical	422 mm	2 ft 2 in
10	Distance between Main Beam and Engine Hood - Horizontal	411 mm	0 ft 11 in
11	Overall Width	7757 mm	26 ft 7 in
12	Engine Guard Clearance **	1290 mm	3 ft 5 in
13	Distance Between Hoist Cylinders	2400 mm	7 ft 8 in
14	Distance Between Body Pivots - Outer	1885 mm	6 ft 2 in
15	Distance Between Body Pivots - Inner	1518 mm	5 ft 0 in
16	Body Pivot Bearing Width	183.5 mm	0 ft 7 in
17	Distance Between Frame Rails	1470 mm	4 ft 11 in
18	Frame Rail Width	192 mm	0 ft 8 in
19	Cab Width	1660 mm	6 ft 10 in
20	Distance between Rocker Pads	3180 mm	5 ft 11 in
21	Height of the Cab from Main Beam	1590 mm	9 ft 10 in
22	Overall Tire Width	6926 mm	20 ft 7 in
23	Distance Between Main Beam and Cab Front	1927 mm	6 ft 10 in
24	Cab Front Angle		18 degrees
25	Cab Rear Angle		21 degrees
26	Distance between Main Beam and Cab Roof	680 mm	3 ft 5 in
27	Distance Between Main Beam and Cab Rear	370 mm	0 ft 2 in
28	Main Beam Width	43 mm	1 ft 2 in
29	Rocker Pad Height	90 mm	12 ft 6 in
30	Main Beam Height	386 mm	0 ft 4 in
31	Distance Between Body Pivot and Main Beam	4925 mm	15 ft 4 in
32	Body Pivot Outer Radius	240 mm	0 ft 5 in
33	Body Pivot Pin Diameter	129 mm	0 ft 5 in
34	Distance Between Body Pivot and Frame	230 mm	0 ft 9 in
35	Frame Slope Angle		6 degrees
36	Distance between Main Beam and Body Pivot Pin	526 mm	1 ft 5 in
37	Distance between Body Pivot and Hoist Cylinders - Vertical	220 mm	0 ft 8 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.

Standard and Optional Equipment

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

POWERTRAIN	Standard	Optional
Engine, 1566 kW (2,100 hp) 3516C, HD, EUI	•	
Engine, 1417 kW (1,900 hp) 3516B, EUI		○
Diesel engine/turbocharged/aftercooled	•	
Ground level engine shutdown	•	
Ether starting aid (automatic)	•	
Aftercooler	•	
Elevated low idle control	•	
Automatic starter protection	•	
Multi-point oil pressure sensing	•	
Pre-lube		○
Filtration for oil cooler		○
Oil renewal system		○
Muffler	•	
Muffler, extended exhaust		○
Exhaust deflector		○
Fan, conventional drive	•	
Fan, variable speed, rockford for use in freezing weather operations		○
Air start		○
Electric start	•	

TRANSMISSION	Standard	Optional
Controlled throttle shifting	•	
Individual clutch modulation	•	
Body-up shift inhibitor	•	
Directional shift management	•	
Downshift/reverse shift inhibitor	•	
Oil level sensor	•	
Neutral start switch/coast inhibitor	•	
Body-up reverse neutralizer	•	
Programmable top gear	•	
Lock-up torque converter	•	
Rear axle continuous lubrication/filtration	•	

ELECTRICAL	Standard	Optional
Back up alarm	•	
Alternator 105 ampere	•	
Batteries, 12V (2), 93 amp-hour	•	
Converter, 12V electrical	•	
Electrical system, 24V, 15 amp	•	
LED Lighting system:		
• Backup and hazard lights	•	
• Directional signals, front and rear	•	
• Engine compartment lights	•	
• External payload lights	•	
• Headlights and fog lights	•	
• Lo-hi beam selector	•	
• Ladder light and service deck lights	•	
• Left-hand ladder/Service deck -Stop/ taillights VIMS, blue light	•	
Lock out transmission at ground level		○
Lighting auxiliary at catwalk and passenger platform		○
Lighting at body rear for signals and stop/tail lights		○
Payload indicator lights	•	

BRAKING SYSTEM	Standard	Optional
Brake release motor (towing)	•	
Oil-cooled, multi-disc (front and rear)/ (service, resistive braking, parking, secondary)	•	
Automatic resistor control	•	
Engine overspeed protection	•	
Extended life brake disc material	•	

OPERATOR ENVIRONMENT	Standard	Optional
Air conditioner	•	
Auxiliary power connection/cigarette lighter	•	
Diagnostic connection port	•	
Dome courtesy light	•	
Entertainment radio ready: 5-amp converter, speakers, antenna, and wiring	•	
Air cleaner service indicator	•	
Gauge panel: Air pressure, Brake oil temperature, Engine coolant temperature, Fuel level	•	
Electric hour meter	•	
Electric engine control fault indicator	•	
Mirrors, right and left	•	
Speedometer and tachometer	•	
Supplemental steering (automatic)	•	
Traction control system	•	
Transmission gear indicator	•	
Vital Info Management System (VIMS)	•	

CAT TECHNOLOGY PRODUCTS	Standard	Optional
Product Link™ cellular	•	
Product Link satellite		○
Cat MineStar Command		○
Cat Water Delivery System software		○
Cat MineStar™ hardware and connectivity packages:		
• Level 1 – Basic (Equipment Tracking)		○
• Level 2 – Premium (Equipment Tracking + Production Recording)		○

OBJECT DETECTION SYSTEM	Standard	Optional
Radar and camera	•	
Camera only (radar ready)		○
Omission, camera and radar		○

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

Standard and Optional Equipment

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

FUEL SYSTEMS	Standard	Optional
Fast fill fuel system	•	
2082 L (550 gal) capacity fuel tank and fast fill system	•	
3785 L (1,000 gal) capacity fuel tank and fast fill system		○
Fuel filter basic screen	•	
Fuel filter with separator		○
Fuel filter with separator and heater		○

FLUIDS	Standard	Optional
Antifreeze protection to –35° C (–30° F)	•	
Antifreeze protection to –50° C (–58° F)		○

RIMS AND WHEELS	Standard	Optional
37R57		○
37R57 quick change		○
40R57		○
40R57 quick change		○
Rim diffuser		○
Hub odometer		○
Wheel chocks		○
Brake wear indicator		○

MUD GUARDS	Standard	Optional
Mud guards for standard hydraulic and fuel tanks		○
Mud guards for standard hydraulic and large fuel tank		○

ACCESS	Standard	Optional
Fixed ladder	•	
Powered staircase		○

FRAMES	Standard	Optional
Mirror heated	•	
Mirror wide and heated		○
Lift assist struts for front and rear hoods		○
Driveline guard	•	

COLD WEATHER	Standard	Optional
Starting, cold weather		○
Brake oil recirculating		○

SERVICE	Standard	Optional
Service center		○
Quick connect fitting for engine oil		○
Grease injector	•	

CAT WATER DELIVERY SYSTEM (WDS) - OPTIONAL ATTACHMENT	Standard	Optional
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		○

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

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

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