



CAT[®] 789D

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 tank capacity is 42,288 gallons (160 000 liters). 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)



789D 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

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

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.

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*	46%
Front Axle – Loaded	54%
Rear Axle – Empty*	33%
Rear Axle – Loaded	67%

*Depends on configuration.

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	134 590 cm ²	20,862 in ²
Brake Standards	ISO 3450:2011	

Body Hoists

Pump Flow – High Idle	731 L/min	193 gal/min
Relief Valve Setting – Raise	17 238 kPa	2,500 psi
Body Raise Time – High Idle	18.9 seconds	
Body Lower Time – Float	17.3 seconds	
High Idle Body Lower Time – Power	15.6 seconds	

Suspension

Effective Cylinder Stroke - Front	105 mm	4 in
Effective Cylinder Stroke - Rear	93 mm	3.5 in
Rear Axle Oscillation	+/- 5.6°	

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	583 L	154 gal
Steering System	189 L	50 gal
Brake/Hoist System	909 L	241 gal
Transmission Tank	76 L	20 gal

789D Off-highway Truck Bare Chassis Specifications

Steering

Steering Standards	ISO 5010:2019	
Steer Angle	36°	
Turning Diameter – Front	27.53 m	90.32 ft
Machine Clearance Diameter	30.23 m	99.18 ft

Tires

Standard Tire	37.00-R57
Optional Tire	40.00-R57

- Productive capabilities of the 789D 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.

Cab

ROPS Certification Rating	Tractor ROPS Rating	
789D WTR (Tractor)	117 000 kg	257,940 lb

- The operator sound pressure levels are measured according to work cycle procedures specified in ISO 6394:2008 and ISO 6396:2008 is 78 dB(A).
- The exterior sound power level for the standard machine is tested using ISO 6393:2008 and ISO 6395:2008 procedures is 121 dB(A).
- 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.
- ROPS (Rollover Protective Structure) for cab offered by Caterpillar meets ISO 3471:2008 ROPS criteria.
- FOPS (Falling Objects Protective Structure) meets ISO 3449:2005 Level II FOPS criteria.
- 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.

Cat® Water Delivery System (WDS) - optional

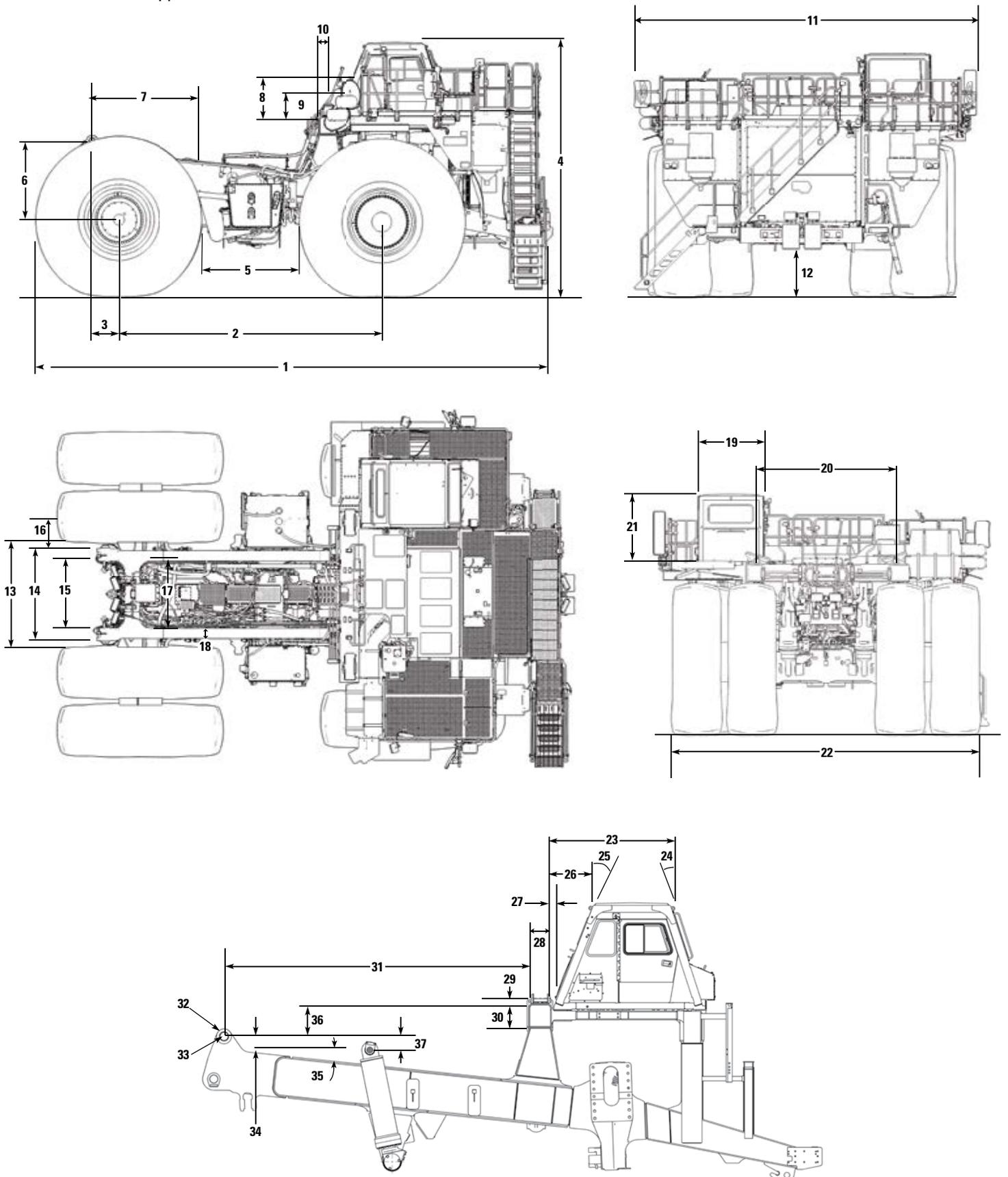
Operator selectable coverage	0.2-0.8 L/m ² (4 kph - 40 kph)	0.5-0.2 gal/ft ² (3 mph - 25 mph)
Maximum water flow	3785 L/min	1,200 gal/min
Water per spray head (minimum)	130 L/min	35 gal/min
Water per spray head (maximum)	2270 L/min	600 gal/min
Spray head opening range (minimum)	1 mm	0.04 in
Spray head 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	7	
Minimum number of rear spray heads	3	
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)	4732 L/min	1,250 gal/min
Maximum cannon spray distance	61 m	200 ft
Wet water pump/hydraulic motor coupling		

- Coverage rates above 0.6 L/m² may not be available at higher speeds depending on head count and configuration.
- Opening is automatically controlled by the system to achieve AutoMode Coverage or Manual Mode Flow Rate.
- AutoMode Spray controls water coverage automatically to the number of heads being used and ground speed achieved.
- Manual Mode allows the operator to set a water flow rate that is constant regardless of ground speed.
- 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.

789D Off-highway Truck Bare Chassis Specifications

Dimensions

All dimensions are approximate.



789D Off-highway Truck Bare Chassis Specifications

Dimensions

1	Overall Length ** (does not include Wheel Chocks)	10 860 mm	427.56 in
2	Wheel Base	5700 mm	224.4 in
3	Rear Axle to Body Pivot	592 mm	23.3 in
4	Height to Top of ROPS **	5510 mm	216.9 in
5	Distance Between Tires**	2230 mm	87.8 in
6	Distance Between Body Pivot and Rear Axle	1678 mm	66.06 in
7	Distance between Body Pivot and Hoist Cylinders - Horizontal	2360 mm	92.9 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	422 mm	16.6 in
10	Distance between Main Beam and Engine Hood - Horizontal	411 mm	16.2 in
11	Overall Width	7757 mm	305.4 in
12	Engine Guard Clearance **	1290 mm	50.79 in
13	Distance Between Hoist Cylinders	2400 mm	94.5 in
14	Distance Between Body Pivots - Outer	1885 mm	74.21 in
15	Distance Between Body Pivots - Inner	1518 mm	59.79 in
16	Body Pivot Bearing Width	183.5 mm	7.22 in
17	Distance Between Frame Rails	1470 mm	57.87 in
18	Frame Rail Width	192 mm	7.56 in
19	Cab Width	1660 mm	65.35 in
20	Distance between Rocker Pads	3180 mm	125.2 in
21	Height of the Cab from Main Beam	1590 mm	62.6 in
22	Overall Tire Width	6926 mm	27.68 in
23	Distance Between Main Beam and Cab Front	1927 mm	75.86 in
24	Cab Front Angle		18 degrees
25	Cab Rear Angle		21.33 degrees
26	Distance between Main Beam and Cab Roof	680 mm	26.77 in
27	Main Beam Width	370 mm	14.56 in
28	Distance Between Main Beam and Cab Rear	43 mm	1.69 in
29	Rocker Pad Height	90 mm	3.54 in
30	Main Beam Height	386 mm	15.2 in
31	Distance Between Body Pivot and Main Beam	4925 mm	193.9 in
32	Body Pivot Outer Radius	240 mm	9.45 in
33	Body Pivot Pin Diameter	129 mm	5.10 in
34	Distance Between Body Pivot and Frame	230 mm	9.06 in
35	Frame Slope Angle		6 degrees
36	Distance between Main Beam and Body Pivot Pin	526 mm	20.7 in
37	Distance between Body Pivot and Hoist Cylinders - Vertical	220 mm	8.66 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. The 789D truck comes with the single body hoist retention cast mount on axle housing.

789D 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			OPERATOR ENVIRONMENT		
Cat 3516C HD-EUI diesel engine:			Air Conditioner	•	
• Ground level engine shutdown	•		Auxiliary power connection/cigarette lighter	•	
• Ether starting aid (automatic)	•		Diagnostic connection port	•	
• Aftercooler (separate circuit or air to air)	•		Dome courtesy light	•	
• Elevated low idle control	•		Entertainment radio ready: 5 amp converter, speakers, antenna, wiring harness	•	
• Automatic starter protection	•		Footrest, operator		•
• Multi-point oil pressure sensing	•		Gauges/Indicators:		
Braking System:			• Air cleaner service indicator	•	
• Brake release motor (towing)	•		• Quad gauge panel: Air pressure, Brake oil temperature, Engine coolant temperature, Fuel level	•	
• Oil-cooled, Multiple-disc (front and rear), (service, retarding, parking, secondary)	•		• Electric engine control fault indicator	•	
• Automatic retarder control	•		• Electric hour meter/tachometer	•	
• Engine overspeed protection	•		• Speedometer	•	
• Extended life brake disc	•		• Tachometer	•	
Prelube, engine		•	• Transmission gear indicator	•	
Transmission:			• VIMS message center with universal gauge	•	
• 6-speed automatic powershift with electric control (TCC)	•		• VIMS keypad	•	
• Body-up shift inhibitor	•		• Heater/defroster	•	
• Controlled throttle shifting	•		Hoist, body control (electric)	•	
• Directional shift management	•		Horn	•	
• Downshift/reverse shift inhibitor	•		Mirrors, right and left (heated)	•	
• Individual clutch modulation	•		ROPS cab insulated/sound suppressed	•	
• Neutral coast inhibitor/start switch	•		Seatbelt, operator, park brake safety / seatbelt trainer	•	
• Body-up reverse neutralizer	•		Stairway and walkway access, 600 mm	•	
• Programmable top gear	•		Steering wheel, tilt, padded, telescopic	•	
• Lock-up torque convertor	•		Window, electric powered, operator	•	
• Oil level sensor	•		Windshield wiper, intermittent control, and washer	•	
• Rear axle continuous lubrication/filtration	•		Deluxe Cab		•
Oil renewal system		•	CAT TECHNOLOGY PRODUCTS		
Extended life coolant to -35° C (-30° F)	•		Object Detection System (cameras and radar)	•	
ELECTRICAL			Product Link™ Elite	•	
Alarm, Back-up	•		Control, Road Analysis (RAC)		•
Alternator, 105 ampere	•				
Batteries, 12V (2), 93 amp/hour	•				
Converter, 12V electrical	•				
Electrical system, 24V, 15 amp	•				
Lighting System, LED:					
• Backup and hazard lights	•				
• Directional signals, front and rear	•				
• Headlights and foglights	•				
• Lo-hi beam selector	•				
• Ladder light/service deck	•				
• Stop/tail lights	•				
• Engine compartment	•				
• VIMS, blue light	•				
Lockout transmission, ground level		•			
Auxiliary work lights (1) RH side, (1) LH side		•			
Payload, indicator lights	•				
Payload, digital display		•			

789D Off-highway Truck Bare Chassis Specifications

Standard and Optional Equipment

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

	Standard	Optional
OTHER EQUIPMENT		
Grease injector	•	
Air line dryer	•	
Auto lubrication system	•	
Aux "buddy" dumping quick connect	•	
Aux steering quick connect (towing)	•	
Body mounting group	•	
Center mounted rims (6) (29x57)--(Used for 37.00 R57 tires)	•	
Driveline guard (fully enclosed)	•	
Fast-fill Fuel System	•	
Ground level VIMS data port	•	
Ground level battery disconnect	•	
Rock ejectors	•	
Supplemental steering (automatic)	•	
Tow hooks (front)/tow pin (rear)	•	
Traction control system	•	
Vital Info Management System (VIMS)	•	
Mounting, Water without Hoist Cylinder		•
Powered Stairway		•
Working at Heights		•
Rear axle, cooler		•
Cold weather:		
• Brake oil, recirculating		•
• Cold weather start		•
Service center:		
• Service, 3516C, standard volume		•
• Service, 3516C, large volume		•
• Service, engine oil, standard		•
Fire extinguisher, portable		•
Hub odometer, kilometers		•
Wheel chocks		•
Gauge, brake wear indicator		•
Coolant, -50° C (-58° F)		•

	Standard	Optional
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:		
• 1,200 gpm at speeds of 3 to 25 mph	•	
• 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

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