CAT® 777(07)
WATER TRUCK

THE CHALLENGE: DUST. THE ANSWER: CAT® WATER SOLUTIONS.

Cat® Water Solutions helps you efficiently reduce haul road dust to enhance safety and increase productivity at your job site, quarry, or mine site. An integrated truck, tank, and water delivery system – paired with scalable levels of connectivity – helps you solve overwatering and underwatering issues with a focus on sustainable operations.

The exclusive Auto Mode feature enables operators to deliver a more efficient watering technique with enhanced precision and control – helping solve watering issues common with traditional manual watering operation.
This solution is sold and supported by the local Cat dealer you know and trust.

INTEGRATED DESIGN – DELIVERING PROVEN PERFORMANCE

+ Built on a proven Cat 777 truck platform.
+ Integrated design: truck, tank, and Cat Water Delivery System (WDS) connected with Cat MineStar™ technology.
+ Ergonomically designed in-cab controls for ease of use.

GAIN EFFICIENCY WITH THE CAT WATER DELIVERY SYSTEM (WDS)

+ Auto Mode provides variable water flow based on truck speed and determines appropriate flow to conserve water.
+ Automatic start and stop helps eliminate overwatering at road intersections.
+ Maintenance-free and self-cleaning water spray heads reduce truck downtime.

SCALABLE CONNECTIVITY WITH CAT MINESTAR™

+ Take control with near-real-time information hosted in the cloud.
+ Monitor water source and distribution, report status to remote management.
+ Service-based offering with scalable levels of connectivity to fit your needs: select between Basic or upgrade to Premium for a higher level of data-driven insights.

REDUCE COSTS, SUSTAINABLY

+ Gain more control of your operations using less water.
+ Auto Mode can help conserve water and reduce fuel costs.
+ Advanced technology connected to our water delivery system increases efficiency to help optimize your water truck fleet size.

ENHANCE SAFETY & PRODUCTIVITY AT YOUR QUARRY OR MINE SITE

+ Lower dust levels, increase visibility, maintain haul road safety.
+ Know where and when to water using advanced technology.
+ With automated water delivery, the operator can remain focused on traffic and driving.

CUSTOMIZATION WITH OPTIONS TO FIT YOUR OPERATIONS

+ We can help you choose a cannon nozzle, water tank, and spray head configuration based on your region and specific watering requirements.
  - » Choose number of spray heads mounted on rear spray bar, add optional side spray heads on the water tank for additional coverage, select cannon nozzle, and more.
  - » Hoist cylinder mounting enhances serviceability by raising the water tank for easier maintenance.
+ Optional WDS Camera System: includes a camera to view spray bar on back of water tank and two cameras on top of tank for water fill positioning.

SUPPORTED & BACKED BY THE ONE YOU TRUST

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

777 (07) Water Solutions Truck Specifications

Configurations and features may vary by region. Please consult your Cat® dealer for availability in your area.
Specifications shown include the bare chassis and Cat Water Delivery System. Water tank specifications not included.

Engine

Engine Model	Cat® C32B	
Rated Engine Speed	1,800 rpm	
Gross Power – SAE J1995:2014	765 kW	1,025 hp
Net Power – SAE J1349:2011/ISO 9249:2007 (HRC)	683 kW	916 hp
Net Power – SAE J1349:2011/ISO 9249:2007 (LRC)	704 kW	945 hp
Net Torque Rise	36%	
Net Torque Speed @ 1,200 rpm (HRC)	5101 N·m	3,762 lb-ft
Net Torque Speed @ 1,200 rpm (LRC)	5114 N·m	3,772 lb-ft
Cylinders	12	
Bore	145 mm	5.7 in
Stroke	162 mm	6.4 in
Displacement	32.1 L	1,959 in^3

- Net Power advertised is the power available at the flywheel when the engine is equipped with fan, air cleaner, muffler, and alternator with engine speed at 1,800 rpm.
- Power rating applies at 1,800 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 100 kPa (29.61 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).
- No engine derating required up to 2286 m (7,500 ft) for HRC and 4572 m (15,000 ft) for LRC machines.
- Available as Tier 4 Final/Stage V equivalent or Noncertified configuration that is equivalent to U.S. EPA Tier 2.

Weights – Approximate

Target Gross Machine Weight (GMW)	164 654 kg	363,000 lb
Chassis Weight (CW) - HRC	51 286 kg	113,066 lb
Chassis Weight (CW) - LRC	51 141 kg	112,747 lb

Transmission

Forward 1	10.9 km/h	6.8 mph
Forward 2	14.8 km/h	9.2 mph
Forward 3	20.1 km/h	12.5 mph
Forward 4	27.1 km/h	16.9 mph
Forward 5	36.8 km/h	22.9 mph
Forward 6	49.4 km/h	30.7 mph
Forward 7	67.1 km/h	41.7 mph
Reverse	12.0 km/h	7.5 mph

- Maximum travel speeds with standard 27.00R49 (E4) tires.

Final Drives

Differential Ratio	2.736:1
Planetary Ratio	7.0:1
Total Reduction Ratio	19.1576:1

Braking System

Brake Surface – Front	40 846 cm^2	6,331 in^2
Brake Surface – Rear	102 116 cm^2	15,828 in^2
Brake Standards	ISO 3450:2011	

Body Hoists

Pump Flow – High Idle	458 L/min	120.9 gal/min
Relief Valve Setting – Raise	18 950 kPa	2,750 psi
Relief Valve Setting – Lower	3450 kPa	500 psi
Body Raise Time – High Idle	15.0 seconds	
Body Lower Time – Float	13.0 seconds	
Body Power Down – High Idle	13.0 seconds	

Weight Distributions – Approximate

Front Axle – Empty	42%
Front Axle – Loaded	33%
Rear Axle – Empty	58%
Rear Axle – Loaded	67%

Suspension

Empty Loaded Cylinder Stroke Front	74.7 mm	2.9 in
Empty Loaded Cylinder Stroke Rear	66.0 mm	2.5 in
Rear Axle Oscillation	+/- 5.4 °	

Steering

Steering Standards	ISO 5010:2019	
Steer Angle	30.5°	
Turning Diameter – Front	25.3 mm	83 ft
Turning Circle Clearance Diameter	28.4 m	93 ft

Tires

Standard Tire	27.00R49 (E4)

- Productive capabilities of the 777 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.

Service Refill Capacities

Fuel Tank	1136 L	300 gal
Fuel Tank (optional)	1325 L	350 gal
Cooling System – Tier 4 Final	231 L	61 gal
Cooling System – Tier 2	219 L	57.9 gal
Crankcase	109 L	28.7 gal
Differentials	227 L	59.9 gal
Final Drives (each)	76 L	20 gal
Steering System (includes tank)	53.6 L	14.1 gal
Hoist and Brake Hydraulic System	444 L	117 gal
Front Wheels (each)	7.5 L	1.98 gal
Torque Converter/Transmission System	138.5 L	36.5 gal

Cab

Operator Sound Pressure Level (ISO 6396:2008)		70 dB(A)
ROPS Certification Rating		Tractor ROPS Rating
777 WTR (Tractor)	60 365 kg	133,082 lb

- The operator sound pressure level was measured according to ISO 6396:2008.The measurement was conducted at 70% of the maximum engine cooling fan speed.
- 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 for cab offered by Caterpillar meets ISO 3471:2008 for operator and ISO 13459:2012 for trainer.
- Falling Objects Protective Structure (FOPS) meets ISO 3449:2005 Level II for operator and ISO 13459:2012 Level II for trainer.
- The air conditioning system on this machine contains the fluorinated greenhouse gas refrigerant R1234yf. Refer to the machine labeling for identification of the gas.
- If equipped with R1234yf (Global Warming Potential = 0.501), the system contains 1.85 kg (4.1 lb) of refrigerant which has a CO2 equivalent of 0.001 metric tonnes (0.001 tons).

Cat® Water Delivery System (WDS)

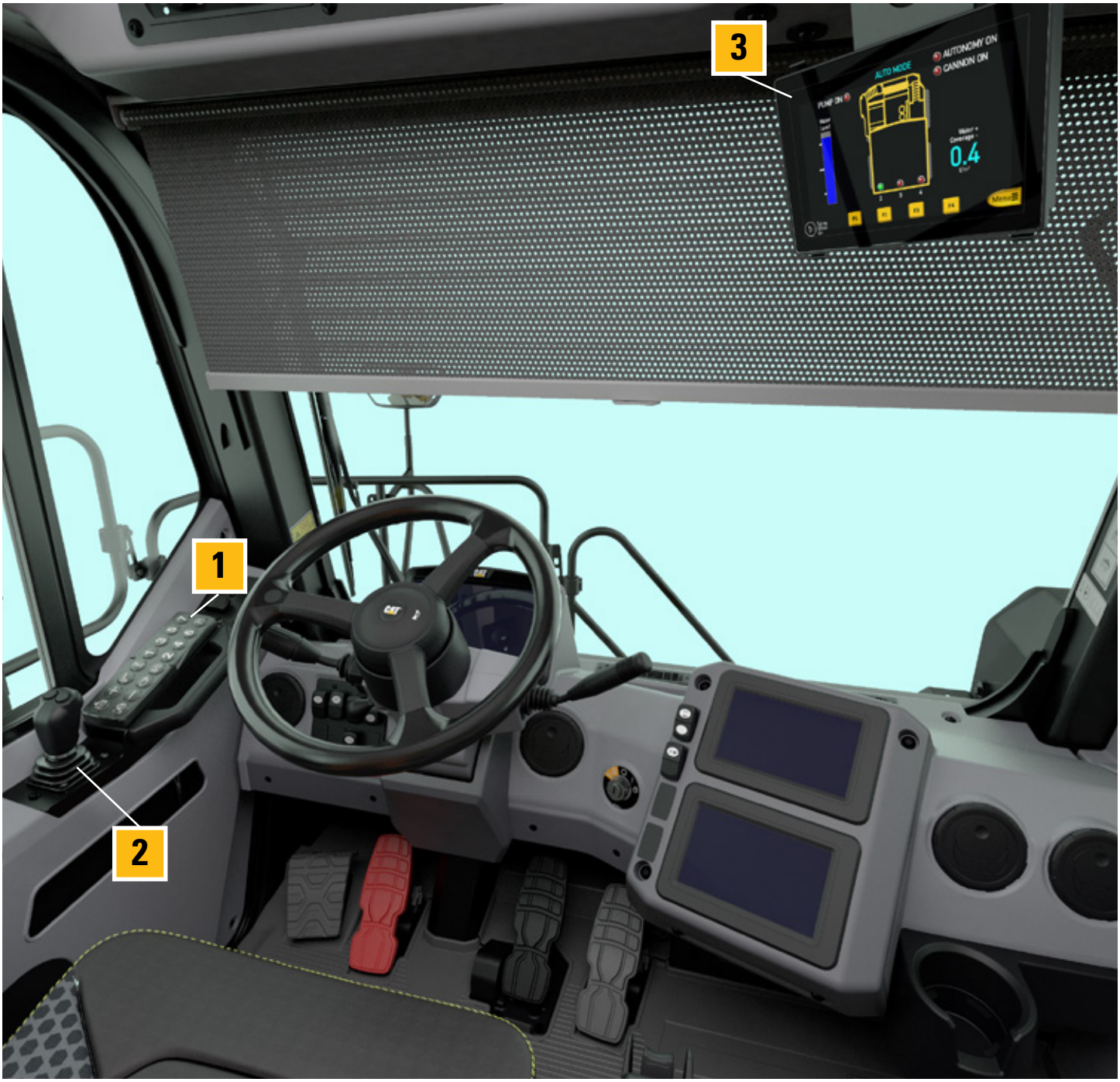
Operator selectable coverage	0.2-0.8 L/m² (4 kph - 40 kph)	0.05-0.2 gal/ft² (3 mph - 25 mph)
Maximum water flow	6814 L/min	1,800 gal/min
Water per spray head (minimum)	132.5 L/min	35 gal/min
Water per spray head (maximum)	2271 L/min	600 gal/min
Spray head opening range (minimum)	1 mm	0.04 in
Spray head 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 (3 recommended)	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.

777 (07) Water Solutions Truck Specifications

In-Cab Water Controls



1	Keypad to select and control the number of spray heads with buttons for intermittent spray, head cleaning, pump on / off, water cannon on / off, tank fill percentage, and adjustments for water flow rate.
2	Joystick for cannon control with adjustable spray selection. Choose a stream or fan spray when watering the pile or mining face. The cannon may also be used for fire mitigation.
3	Integrated touchscreen with user interface for configuring the water delivery system with real-time indicator of water tank level, cannon, and spray head operation. Optional Cat WDS cameras may also be viewed in this screen.

Cat MineStar Connectivity comes standard on all new Cat Water Solutions trucks with two package options.

MINESTAR CONNECTIVITY FEATURES*	LEVEL 1: BASIC** Equipment Tracking	LEVEL 2: PREMIUM Equipment Tracking + Production Recording
Near-real-time and historical reporting.	●	●
Truck location / utilization data: routes, starts, and stops.	●	●
Fuel and water level.	●	●
Whether or not the truck is spraying water.	●	●
Water Delivery System Utilization. (Auto Mode vs. manual mode)	●	●
Home Page View.	●	●
Home Page View with Cumulative and Hourly graphs.		●
Water Distribution Map.		●
Volume of water put down over time and area covered.		●
Water distribution rate, water delivery system setting by location, truck, and conditions.		●
Activity breakdown including time and distance: watering, not watering, stopped, etc.		●
Water dispensed by time/rate and mode, last 5 water activities, water dispensed by age.		●
View and export at least 8 weeks of historical water activity data.		●
Replay provides the ability to review and replay shifts by selecting a historical date and time. Review water level, pump on/off, heads on/off, cannon on/off, WDS Mode (Manual or Auto Mode), and coverage rates.		●
In-cab reporting to operator on water coverage and need: route, heat map, decay map.		●

*Based on equipment connectivity via WiFi or cellular data.**Basic Connectivity Package comes standard on new truck purchase with a 6-month complimentary service-based offering for better data insights.

777 (07) Water Solutions Truck Specifications

Standard and Optional Equipment

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

	Standard	Optional
POWERTRAIN		
Air filter with precleaner (2)	•	
Air-to-Air Aftercooler (ATAAC)	•	
Automatic cold mode idle control	•	
Autostall	•	
Braking system: extended life brakes, brake wear indicator, Automatic Retarder Control (ARC) (utilizes oil-cooled, multiple disc brakes), brake release motor (towing), manual retarder (utilizes oil-cooled, multiple disc brakes), oil cooled and multiple disc (front/rear), parking, secondary, service	•	
Cat® C32B Engine (Tier 4 Final / EU Stage V / Tier 2 / EU Stage II)	•	
Cat engine compression brake		•
Cold weather packages		•
Electric cold weather start (two starters and four batteries)	•	
Electric priming pump	•	
Engine Idle Shutdown	•	
Ether starting aid	•	
Extended life coolant to -35° C (-30° F)	•	
Fan - variable speed (Tier 4)	•	
Fan - variable speed (Tier 2)		•
Fuel filter/water separator	•	
Muffler, exhaust (Tier 2)	•	
Muffler, sound suppression (Tier 2)		•
Transmission: 7-speed automatic powershift with Electronic Clutch Pressure Control (ECPC), torque shift management, part throttle shifting, body upshift inhibitor, directional shift management, downshift inhibitor, neutral start switch, neutral coast inhibitor, reverse shift inhibitor, reverse neutralizer during dumping, programmable top gear selection, Advanced Productivity Electronic Control Strategy (APECS software), auto neutral Idle	•	
Turbocharger (2)	•	
ELECTRICAL		
Alarm, backup	•	
Alternator, 115 amperes	•	
Auxiliary jump start receptacle	•	
Batteries, maintenance-free, 12V (4), 200 amp-hour	•	
Electrical system, 25 amp, 24V to 12V converter	•	
Lighting system (LED): backup light, directional signals/hazard warning (front and rear), headlights, payload – indicator lights, operator access courtesy lights, side profile lights, stop/tail lights, service lights	•	

	Standard	Optional
OPERATOR ENVIRONMENT		
Air conditioning	•	
Ashtray and cigarette lighter	•	
Auto temp control	•	
Coat hook	•	
Cup holders (4)	•	
Diagnostic connection port, 24V	•	
Electric left side window control	•	
Entertainment radio ready: 5 amp converter, speakers, antenna, wiring harness	•	
Foot rest	•	
Gauges/indicators: brake oil temperature, coolant temperature, hour meter, tachometer, engine overspeed indicator, fuel level, speedometer with odometer, transmission gear indicator	•	
Heater/defroster (11 070 kCal/43,930 BTU)		
Integrated hoist and transmission control	•	
Horn, electric	•	
Lights: dome, courtesy	•	
Load counter, automatic	•	
Mirrors, convex		•
Mirrors, heated	•	
Power port, 12V (2)	•	
ROPS cab, insulated/sound suppressed	•	
Seat, Cat Next Gen Deluxe, retractable 4-point seat belt with shoulder harness and seat belt reminder	•	
Spare rim		•
Steering wheel, padded/tilt/telescopic	•	
Storage compartment	•	
Sun visor	•	
Throttle lock	•	
Tinted, laminated glass	•	
Truck Production Management System (TPMS)	•	
Touchscreen display, 7-inch	•	
Trainer seat, lap belt, with seat belt reminder	•	
Visibility package (meets ISO 5006 requirements)		•
Window, right side, hinged access/egress	•	
Windshield wiper, intermittent, and washer	•	

Standard and Optional Equipment

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

	Standard	Optional
CAT TECHNOLOGY PRODUCTS		
Cat Water Delivery System software	•	
Adaptive economy mode	•	
Advanced health	•	
Object detection (4 cameras)		•
Product Link™ ready (Level 1)	•	
Road analysis control (RAC)		•
Work Area Vision System (WAVS)		•
Cat MineStar™ hardware and connectivity packages:		
• Level 1 - Basic (Equipment Tracking)*	•	
• Level 2 – Premium (Equipment Tracking + Production Recording)		•

*Basic connectivity package comes standard on all new Cat Water Solutions trucks with a 6-month complimentary service-based offering

	Standard	Optional
CAT WATER DELIVERY SYSTEM (WDS)		
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 4 - 40 kph (3 - 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 and service available through global Cat dealer network

	Standard	Optional
OTHER EQUIPMENT		
Auto-lube grease fittings		•
Body down indicator	•	
Body mounting group	•	
Body safety pin (secures body in up position)	•	
Cab precleaner		•
Center-mounted rims	•	
Clustered grease fittings	•	
Control, hoist		•
Driveline guards	•	
Engine crankcase guards	•	
Engine sound suppression (XQ) (Tier 4)		•
Fan and AC guards	•	
Fire suppression ready	•	
Fire suppression arrangement		•
Fluid fill service center		•
Fuel level monitoring		•
Fuel tank (1136 L / 300 gal)	•	
Fuel tank (1325 L / 350 gal)		•
Ground-level battery disconnect	•	
Ground-level engine shutdown	•	
Ground-level grease fittings	•	
Mud protection package		•
Oil Renewal System		•
Rear Axle Filtration (RAX)		•
Reservoirs (separate): brake/hoist, steering, transmission/torque converter	•	
Rims 19.5 x 49	•	
Rock ejectors	•	
Supplemental steering, automatic	•	
Tie down eyes	•	
Tow hooks, front/tow pin, rear	•	
Traction Control System (TCS) (new version)		•
Vandalism protection locks	•	
Wheel chocks		•
Wiggins fast fuel	•	

WATER TANKS		
Water tanks are offered by local 3rd party providers with customization based on water application and regional customer requirements.		•
Options include: tie offs, ladders, splash guards, fill chute, rock ejectors, hose reels, working lights, and other options based on request.		•
Spray bar for 3-5 Cat WDS spray heads		•
Side spray mounting for Cat WDS spray heads		•

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.

For more information on Cat products, dealer services, and industry solutions, contact your local Cat dealer or Caterpillar OEM Solutions **oem_solutions@cat.com** | **www.cat.com/oemsolutions.**

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(Build Number: 07C)
(Global)

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