



CAT[®] 785D

WATER SOLUTIONS 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 quarry or mine site. A fully integrated truck, tank, sprayer, and water delivery system – connected with scalable levels of technology helps you solve overwatering and underwatering issues with a focus on sustainable operations. **This turnkey solution with Cat branded tank offerings is sold and supported by the local Cat dealer you know and trust.**

FULLY INTEGRATED CAT WATER TRUCK

- + Built on a proven Cat 785D truck platform
- + Full system integration: truck, tank, and Cat Water Delivery System (WDS) connected with Cat MineStar Edge™ technology
- + Supported, offered, and validated by Caterpillar

SCALABLE CONNECTIVITY WITH CAT MINESTAR EDGE™

- + Gain an Edge with real-time information hosted in the cloud
- + Monitor water source and distribution, report status to remote management
- + Service-based offering with scalable levels of technology to fit your needs

GAIN EFFICIENCY WITH THE CAT WATER DELIVERY SYSTEM (WDS)

- + Provides variable water flow based on truck speed and determines appropriate flow to conserve water
- + Automatic start and stop eliminates overwatering at road intersections
- + Maintenance-free and self-cleaning water spray heads reduce truck downtime
- + The water cannon operates at idle, reducing fuel consumption by 50%

REDUCE COSTS, SUSTAINABLY

- + Gain more control of your operations using less water
- + Control water, control cost
- + 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
- + With automated water delivery, the operator can remain focused on traffic and driving

CAT BRANDED TANK OFFERINGS WITH OPTIONS

- + Cat branded tanks include additional features and options commonly selected by customers in the industry
 - Splash guards, fill chute, and rock ejectors are standard
- + Hoist cylinder mounting on all tank offerings enhances serviceability
- + Manufactured and supplied by recognized tank providers – covered by a Caterpillar warranty

SUPPORTED & BACKED BY THE ONE YOU TRUST

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



785D Water Solutions Truck Specifications

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

Engine

Engine Model	Cat® 3512C HD	
Rated Engine Speed	1,750 rpm	
Gross Power – SAE J1995	1082 kW	1,450 hp
Net Power – SAE J1349	1005 kW	1,348 hp
Emissions Rating	Fuel Optimized	
Torque Rise	23%	
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 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).
- 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
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- Consult your tire manufacturer for maximum tire load.

Weight Distributions – Approximate

Front Axle – Empty*	45-46 %
Front Axle – Loaded	33 %
Rear Axle – Empty*	54-55 %
Rear Axle – Loaded	67 %

*Depends on configuration.

Final Drives

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

Brake Surface – Front	61 270 cm ²	9,497 in ²
Brake Surface – Rear	89 729 cm ²	13,908 in ²
Brake Standards	ISO 3450:2011	

Body Hoists

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 – High Idle	15.9 seconds	
Body Lower Time – Float	16.2 seconds	
Body Power Down – High Idle	15.9 seconds	

- Twin, two-stage hydraulic cylinders mounted inside main frame; double-acting cylinders in second stage.
- Power raise in both stages; power down in second stage.

Suspension

Effective Cylinder Stroke - Front	306.5 mm	12.1 in
Effective Cylinder Stroke - Rear	165 mm	6.5 in
Rear Axle Oscillation	+/- 5°	

Service Refill Capacities

Fuel Tank	1893 L	500 gal
Cooling System	379 L	100 gal
Crankcase	204 L	54 gal
Differentials and Final Drives	436 L	115 gal
Steering Tank	90 L	24 gal
Steering System (includes tank)	117 L	31 gal
Brake/Hoist System	337 L	89 gal
Brake Hoist System (includes tank)	641 L	169 gal
Torque Converter/Transmission System (includes sump)	248 L	65.5 gal

Steering

Steering Standards	ISO 5010:1992	
Steer Angle	36°	
Turning Diameter – Front	29.8 m	97.7 ft
Machine Clearance Diameter	33.2 m	108.9 ft

Tires

Standard Tire	33.00-R51 (E3 & E4)
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- Productive capabilities of the 785D 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.

785D Water Solutions Truck Specifications

Cab

Air Conditioning	42 780 kJ/kg	18,390 BTU/lb
Heater / Defroster	11 070 kCal	43,930 BTU
Sound Standards	ANSI/SAE J1166 MAY90 SAE J88 APR95	
ROPS Certification Rating	Tractor ROPS Rating	
785D WTR (Tractor)	94 000 kg	207,234 lb

- The operator sound exposure Leq (equivalent sound pressure level) measured according to work cycle procedures specified in ANSI/SAE J1166 MAY90 is 80 dB(A) for cab offered by Caterpillar, when properly installed, maintained and tested with doors and windows closed.
- The exterior sound pressure level for the standard machine measured at a distance of 15 m (49 ft) according to the test procedures specified in SAE J88 APR95, mid-gear moving operation is 89 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.
- The ROPS (Rollover Protective Structure) for the offered by Caterpillar meets ISO 3471:2008 ROPS criteria.
- The 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)

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.

785D Water Solutions Truck Specifications

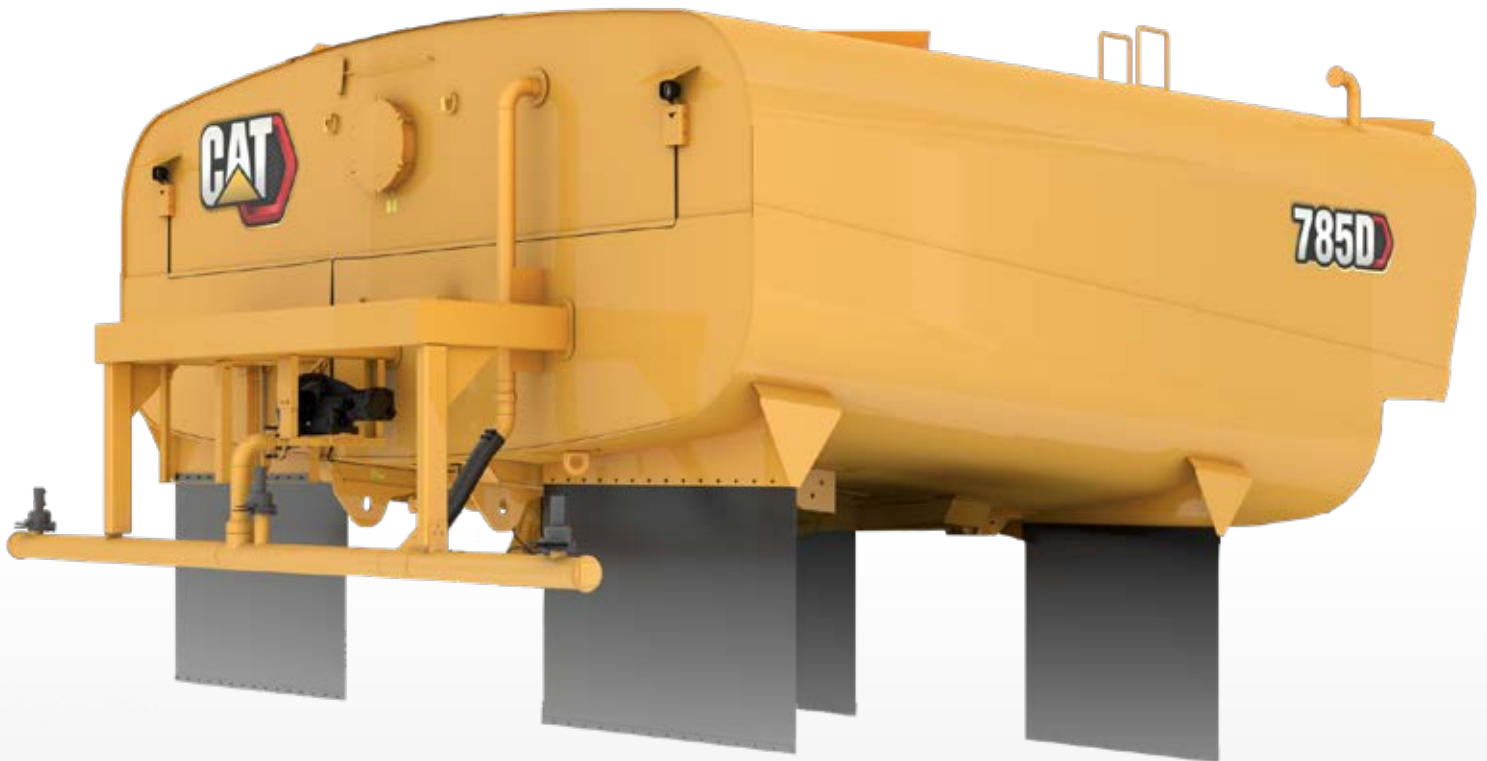
Tank Configurations

Multiple tank configurations are offered based on customer preference and regional locations.

	South America, Africa, Middle East		South America, Africa, Middle East, Australia / New Zealand		Australia / New Zealand	
Water Tank Capacity	121 133 L	32,000 gal	114 000 L	30,000 gal	120 000 L	31,700 gal
Bare Chassis Weight	82 022 kg	180,827 lb	82 022 kg	180,827 lb	82 022 kg	180,827 lb
Water Tank - Max Empty Weight (no WDS)	28 966 kg	63,860 lb	21 550 kg	47,500 lb	30 286 kg	66,769 lb
Empty Machine Weight (with water tank)	110 988 kg	244,687 lb	101 572 kg	228,327 lb	112 308 kg	247,597 lb
Machine Weight (with water tank full)	235 976 kg	520,237 lb	217 602 kg	479,727 lb	232 305 kg	512,145 lb
Fuel tank capacity	1893 L	500 gal	1893 L	500 gal	1893 L	500 gal
Fuel tank - 100% fill	1588 kg	3,500 lb	1588 kg	3,500 lb	1588 kg	3,500 lb
Empty Machine Operating Weight (without water / with fuel)	112 576 kg	248,187 lb	103 160 kg	231,837 lb	113 896 kg	251,098 lb
Target Gross Machine Weight (GMW)*	249 476 kg	550,000 lb	249 476 kg	550,000 lb	249 476 kg	550,000 lb

NOTE: Machine weights based on configuration. *Target GMW not to exceed weight in above table after attachments are installed.

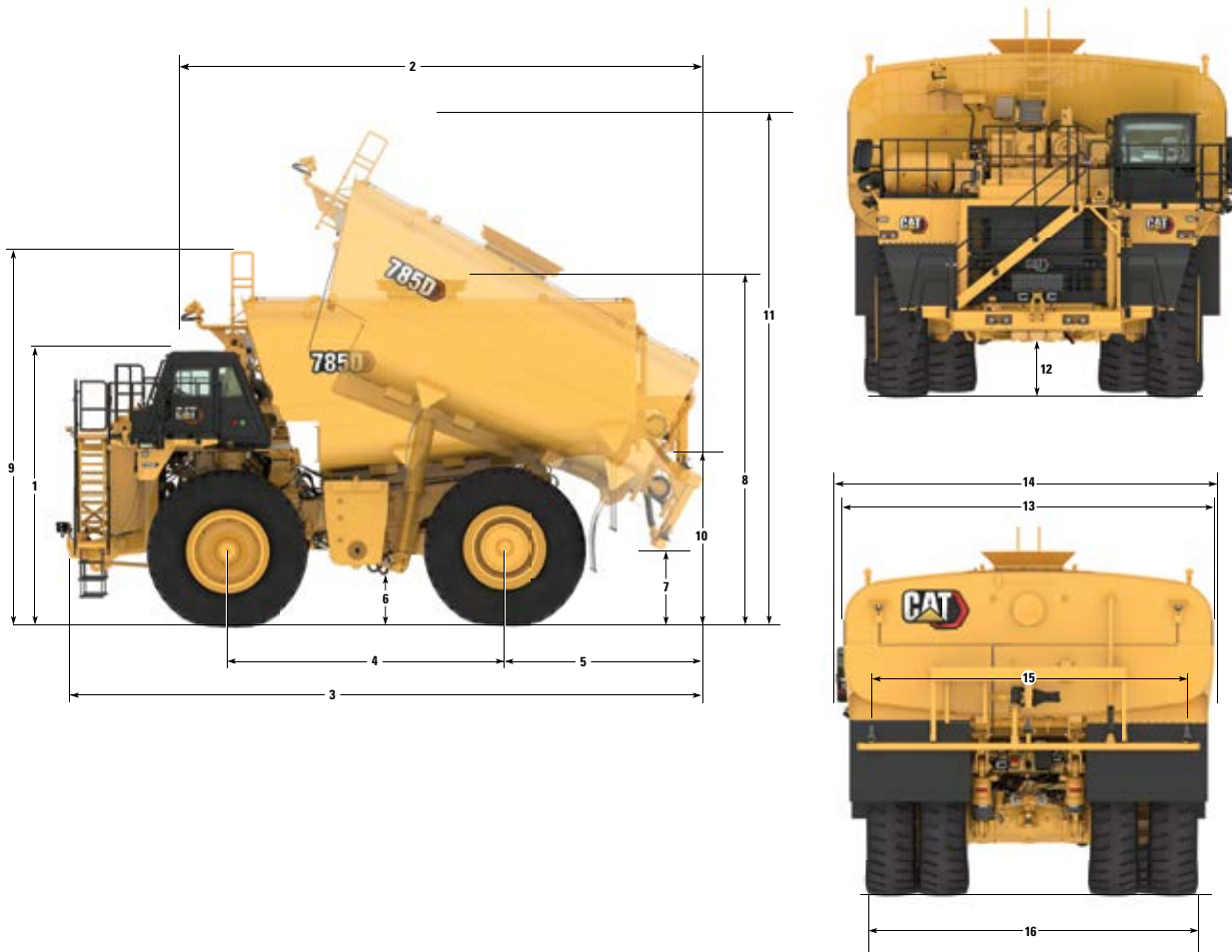
For truck rimpull and retarding curves, please reference the 785D Off-Highway technical specifications document.



785D Water Solutions Truck Specifications

Dimensions

All dimensions are approximate. Shown with Ground Force Tank.



	Ground Force		Mega		SVA	
	60 degree raised	60 degree raised	60 degree raised	60 degree raised	60 degree raised	60 degree raised
1 Height to Top of ROPS	5122 mm	16' 10"	5122 mm	16' 10"	5122 mm	16' 10"
2 Overall Tank Length	9579 mm	31' 5"	9368 mm	30' 8"	9065 mm	29' 9"
3 Overall Machine Length	11 669 mm	38' 3"	12 248 mm	40' 8"	11 677 mm	38' 4"
4 Wheelbase	5180 mm	17' 0"	5180 mm	17' 0"	5180 mm	17' 0"
5 Rear Axle to Tail	3483 mm	11' 5"	4195 mm	13' 7"	3488 mm	11' 8"
6 Ground Clearance	1010 mm	3' 4"	1010 mm	3' 4"	1010 mm	3' 4"
7 Ground Clearance (tank raised)	506 mm	1' 8"	1101 mm	3' 9"	460 mm	1' 6"
8 Height to Tank Fill/Coaming	6597 mm	21' 8"	6934 mm	22' 10"	7114 mm	23' 4"
9 Height to Tank Handrails / Ladder on Top	7024 mm	23' 1"	7429 mm	24' 1"	7441 mm	24' 5"
10 Ground Height to Spray Heads	2968 mm	9' 9"	3417 mm	11' 9"	3084 mm	10' 1"
11 Overall Height (tank raised)	10 260 mm	33' 8"	10 060 mm	32' 4"	10 155 mm	33' 4"
12 Engine Guard Clearance	980 mm	3' 3"	980 mm	3' 3"	980 mm	3' 3"
13 Base Fabricated Tank Width	6842 mm	22' 5"	6287 mm	20' 11"	6738 mm	22' 1"
14 Standard Truck Operating Width to Outside Mirrors	7703 mm	25' 3"	7703 mm	25' 3"	7703 mm	25' 3"
15 Outside Spray Head Centerline Width	5842 mm	19' 2"	5772 mm	18' 0"	5977 mm	19' 7"
16 Overall Tire Width	6277 mm	20' 7"	6277 mm	20' 7"	6277 mm	20' 7"

785D Water Solutions Truck Specifications

Standard and Optional Equipment

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

	Standard	Optional
POWERTRAIN		
Cat 3512C HD-EUI diesel engine:		
• Air Cleaner with Precleaner (2)	•	
• Engine Shutdown	•	
• Ether starting aid	•	
• Air to air aftercooler (ATAAC)	•	
• Elevated low idle control	•	
• Auto starter protection	•	
• Multi-point oil pressure sensing	•	
• Antifreeze, extended life coolant –35° C (–30° F)	•	
• Engine pre-lube		•
Braking System:		
• Brake release motor (towing)	•	
• Oil-cooled, Multiple-disc (front and rear), (service, retarding, parking, secondary)	•	
• Automatic retarder control	•	
• Engine overspeed protection	•	
• Extended life brake disc	•	
Transmission:		
• 6-speed automatic powershift with electric control (TCC)	•	
• Body-up shift inhibitor	•	
• Controlled throttle shifting	•	
• Directional shift management	•	
• Downshift/reverse shift inhibitor	•	
• Individual clutch modulation	•	
• Neutral coast inhibitor/start switch	•	
• Body-up reverse neutralizer	•	
• Programmable top gear	•	
• Lock-up torque convertor	•	
• Caterpillar flexible core radiator	•	
Oil quick disconnect	•	
Oil cooler, rear axle		•
Oil renewal system		•
ELECTRICAL		
Alarm, Back-up	•	
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	•	
• Left-hand ladder/service deck	•	
• Stop/tail lights	•	
• Engine compartment	•	
• VIMS, blue light	•	
Payload, indicator lights	•	
Payload, digital display		•

	Standard	Optional
OPERATOR ENVIRONMENT		
Air Conditioner	•	
Coat hook	•	
Diagnostic connection port	•	
Dome courtesy light	•	
Entertainment radio ready: 5 amp converter, speakers, antenna, wiring harness	•	
Footrest, operator		•
Gauges/Indicators:		
• Air cleaner service indicator	•	
• Quad gauge panel: Air pressure, Brake oil temperature, Engine coolant temperature, Fuel level	•	
• Electric engine control fault indicator	•	
• Electric hour meter/tachometer	•	
• Speedometer	•	
• Tachometer	•	
• Transmission gear indicator	•	
• VIMS message center with universal gauge	•	
• VIMS keypad	•	
• Heater/defroster	•	
Horn	•	
Hose, cab clean-out		•
ROPS cab insulated/sound suppressed	•	
Storage compartment	•	
Seatbelt, 75 mm (3 in), retractable	•	
Steering wheel, tilt, padded, telescopic	•	
Sun visor	•	
Tinted glass	•	
Window, electric powered, operator	•	
Windshield wiper, intermittent control, and washer	•	
Vacuum, cab clean-out		•
Deluxe Cab: includes suspended operator seat, suspended companion seat, retractable front windshield visor, cab cleanout vacuum, and operator footrest.		•

CAT TECHNOLOGY PRODUCTS

Object Detection System (cameras and radar)	•	
Product Link™ Elite	•	
Control, Road Analysis (RAC)		•
Cat MineStar Edge™ :		
• Level 1 - Basic (Equipment Tracking)*	•	
• Level 2 - Premium (Production Recording)		•

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

785D Water Solutions Truck Specifications

Standard and Optional Equipment

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

	Standard	Optional
OTHER EQUIPMENT		
Air Line Dryer (2)	•	
Body Mounting Group	•	
Auto lubrication system (Lincoln)	•	
Dumping, Auxiliary Quick Connect for "Buddy Dumping"	•	
Steering, Auxiliary Quick Connect for Towing	•	
Continuous rear axle filtration	•	
Diagonal stairway, 600 mm (24 in)	•	
Driveline Operator Safety Guard	•	
Fast-fill Fuel System	•	
VIMS Dataport	•	
Battery Disconnect	•	
High speed crankcase oil change	•	
Grease injector	•	
Reservoirs (separate): Brake/converter/hoist, Steering, Transmission	•	
S•O•S SM sample ports	•	
Supplemental steering, automatic	•	
Tie down eyes	•	
Tow hooks, front/tow pin, rear	•	
Traction control system	•	
Vital Information Management System (VIMS)	•	
Mounting, Water with Hoist Cylinder	•	
Mounting, Water without Hoist Cylinder		•
Brake Wear Indicator		•
Fire extinguisher, portable		•
Larger Fuel Tank: 2,498 Liter (660 gallon fuel tank) with a non-pressurizing fast fill system		•
Hub Odometer, Kilometers		•
Hub Odometer, Miles		•
Wheel Chocks		•
Quick Change Rims		•
Heater, Diesel fuel		•
Powered Stairway		•
Starting, Cold Weather		•
Service Center, Wiggins		•
Working at Heights		•

	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:		
• 1,200 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 contact OEM Solutions:

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