

PRODUCT SPECIFICATIONS FOR 785



WEIGHTS - APPROXIMATE

Nominal Rated Payload (33.00R51 Tires)	139 t
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Rated Gross Machine Weight (33.00R51 tires)	249476 kg
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Nominal Rated Payload (36.00R51 Tires)	142 t
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Rated Gross Machine Weight (36.00R51 tires)	255826 kg
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Chassis Weight (33.00R51 Tires)	84731 kg
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Chassis Weight (36.00R51 Tires)	87631 kg
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Body Weight	26208 kg
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Note (1)	Consult your tire manufacturer for maximum tire load
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Note (2)	Chassis weight with full fuel and fluids, standard & mandatory attachments, hoist, body mounting group, rims, and tires.
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Note (3)	Body weight varies depending on body selection and configuration.
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ENGINE

Gross Power - SAE J1995	1193 kW
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Net Power - SAE J1349	1125 kW
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Engine Model	Cat® 3512E
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Emissions Rating	Fuel Optimized
Bore	170 mm
Stroke	215 mm
Displacement	58.56 l
Note (1)	Net Power advertised is the power available at the flywheel when the engine is equipped with air intake system, exhaust system, and alternator.
Note (2)	U.S. EPA Tier 4 Final / EU Stage V available for applicable markets.
Note (3)	Additional fuel optimized selectable power ratings: 1,450 hp

WEIGHT DISTRIBUTIONS - APPROXIMATE

Front Axle - Empty	48%
Rear Axle - Empty	52%
Front Axle - Loaded	33%
Rear Axle - Loaded	67%
Note	Weight distributions optimized with Cat body.

FINAL DRIVES

Type	Double reduction, planetary with full floating axles.
Differential Ratio	2:10:01
Planetary Ratio	10.83:1
Total Reduction Ratio	22.75:1

TIRES

Standard Tire 33.00R51

Optional Tire 36.00R51

Rims 610 mm (24") Rims (standard). 660 mm (26") Rims (optional).

Note (1) Quick Change Rims optional.

Note (2) Caterpillar recommends the customer evaluate all job conditions and consult tire manufacturer for proper tire selection and TKPH (TMPH) capabilities.

BRAKING SYSTEM

Service Brakes Four-Corner, Wet Disc, Oil Cooled, Hydraulically Actuated

Front Wet Disc Brake Surface Area 61270 cm²

Rear - Wet Disc Brake Surface Area 89728 cm²

Standards Service and Secondary: ISO 3450:2011

Parking Brake Four corner, multi disc, spring applied, hydraulically released

CAPACITY - MSD II - 100% FILL FACTOR

Struck 72 m³ / 94 yd³

Heaped (SAE 2:1) 99 m³ / 129 yd³

Note Consult your local Cat dealer for body recommendations.

BODY HOISTS

Type Twin, two-stage hydraulic cylinders with snubbing valve.

Pump Flow - High Idle 729.6 l/min

Relief Valve Setting - Raise 17238 kPa

Body Raise Time - High Idle	15.2 s
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Body Lower Time - Float High Idle	15.9 s
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Body Lower Time - Float Low Idle	16.2 s
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Body Power Down- High Idle	15.9 s
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SUSPENSION

Type	Self-contained nitrogen/oil cylinders, pin-to-pin mounting, top & bottom double shear clevis attachments
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Effective Cylinder Stroke - Front	320 mm
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Effective Cylinder Stroke - Rear	165 mm
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Rear axle - Oscillation	+/- 5 degrees
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SERVICE REFILL CAPACITIES

Fuel Tank	1552 l
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Diesel Exhaust Fluid Tank	136 l
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Cooling System	379 l
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Crankcase	204 l
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Front Wheels - Each	30 l
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Differential - Final Drives	527 l
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Steering Tank	110 l
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Steering System - Includes Tank	170 l
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Brake/Hoist Tank	511 l
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Brake Hoist System - Includes Tank	606 l
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Torque Converter - Transmission System - Including Sump	175 l
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CAB

Air Conditioning	HFC - 134A refrigerant: 24,500 Btu/h
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Heater / Defroster	33300 Btu/h
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Note	The operator sound pressure level, 77 dB(A) with direct drive and 75 dB(A) with optional clutch, tested to ISO 6396:2008.
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ROPS Standards (1)	ROPS (Rollover Protective Structure) meets ISO 3471:2008 for Operator and ISO 13459:2012 for Trainer.
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FOPS Standards	FOPS (Falling Objects Protective Structure) meets ISO 3449:2005 Level II for Operator and ISO 13459:2012 Level II for Trainer.
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STEERING

Steer Angle	36 °
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Turning Diameter - ISO 7457:1997 (33.00R51 tires)	29.8 m
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Steering Standards	ISO 5010:2007
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DIMENSIONS (ALL DIMENSIONS ARE APPROXIMATE. MSD II BODY 33R51 TIRES, UNLOADED MACHINE.)

Height - Top of ROPS	5208 mm
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Overall Body Length	11985 mm
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Inside Body Length	8318 mm
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Overall Length	11957 mm
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Wheel Base	5180 mm
Rear Axle - Tail	3829 mm
Ground Clearance	1004 mm
Dump Clearance	1128 mm
Loading Height - Empty	5299 mm
Inside Body Depth - Maximum	2790 mm
Overall Height - Body Raised	12032 mm
Operating Width	7535 mm
Centerline Front Tire Width	4850 mm
Engine Guard Clearance	1038 mm
Overall Canopy Width	7562 mm
Outside Body Width	6714 mm
Inside Body Width	6010 mm
Front Canopy Height	6035 mm
Rear Axle - Clearance	990 mm
Centerline of Rear Dual Tire Width	4285 mm
Overall Tire Width	6277 mm

TRANSMISSION

Forward - 1	12.1 km/h
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Forward - 2	16.3 km/h
Forward - 3	22.2 km/h
Forward - 4	29.9 km/h
Forward - 5	40.6 km/h
Forward - 6	54.8 km/h
Reverse	11 km/h
Top Speed - Loaded	54.8 km/h

Note Maximum travel speeds with standard 33.00-R51 tires.

785 STANDARD EQUIPMENT

ELECTRICAL

24V electrical system, low maintenance batteries (2) 93 amp-hour

Alarm, backup

Brushless alternator, 225 amp

Ground accessible power control box: Ethernet VIMS™ port and VIMS lamp; Engine starter; transmission and battery lockouts

Jump start/battery charge receptacle

LED payload indicator lamps

LED Lighting system: Back-up and hazard lights, Curb lights, (one) RH side, (one) LH side, Turn signals (front and rear), Engine compartment lights, Headlights with low-high beam selector, Ladder light and service deck lights, Stop/tail lights

FLUIDS

Extended Life Coolant to — 35° C (— 30° F)

OPERATOR ENVIRONMENT

5V USB charging port

12V auxiliary power connection

Cup holders

Diagnostic connection port COM3 and Ethernet

Delayed Engine Shutdown

Dome courtesy light and map lights

Entertainment radio ready: Speakers, Optional Antenna (AM/FM/WB/satellite radio), Radio mounting provisions and 12V power supply

Fire suppression ready
Floor mat, multi-piece & replaceable
Gauges and indicators panel: Critical oil and coolant temperatures; Fuel and DEF level (if applicable); Engine system, brake and transmission fault indicators; Operator selectable max. machine speed by rotary dial; Speedometer, Tachometer
Heated mirrors, right and left
Hoist, body control
Interactive touchscreen vehicle information display: Day/night mode; Action alarm; Quad gauge display
Operator and trainer air suspension seats
Operator Door Power Window
Provision for customer accessory mounting
Push button secure start
Retractable front visor
ROPS cab, insulated/sound suppressed
Stairway and walkway access, 600 mm (24 in)
Steering wheel, tiltable, telescopic
Self-filling to windshield washer fluid from AC condensate
Storage locations for operator gear
Three point seat belt for operator seat
Windshield wiper, intermittent control / washer
Unitized hydraulic powered HVAC with automatic temperature control
Ventilated operator seat

POWER TRAIN

33R51 power train with standard rims
Cat 3512E engine: Automatic engine and DEF thermal management (if applicable); Automatic low voltage idle management; Air cleaner with precleaner (two); Turbocharging (four) with air-to-air aftercooler; Mechanical Electronic Unit Injector (MEUI™-A) fuel system; Automatic starter protection; Automatic ether starting aid
Hydraulic braking system: Automatic retarder control (ARC), adjustable and automatic; Brake release motor (towing); Engine over speed protection; Extended life brake disc material; Hill start assist/Anti roll back strategy; Oil-cooled, multi-disc (front and rear) — Service, retarding, parking, secondary; Park brake integrated with gear selector
Transmission :Six-speed, automatic power shift with Electronic Clutch Pressure Control (ECPC); Advanced Productivity Electronic Control Strategy (APECS); Body-up reverse neutralizer; Body-up shift inhibitor; Downshift/reverse shift inhibitor; Directional shift management; Enhanced Traction Control System; Programmable top gear; Oil level sensor; Neutral coast inhibitor; Neutral start switch; Lock-up torque converter; Rear axle continuous lubrication/filtration
Turbine air starter with air tank, air horn and automatic lubrication system

OTHER EQUIPMENT

Auxiliary "buddy" dumping quick connect
Auxiliary connection 'user defined shutdown'
Auxiliary steering quick connect (towing)
eOMM
Fast fill fuel and DEF remote fill system
Guards for rotating components

Hill Start Assist
Hydraulic Filters, 1,000 hours
Remote flash software and troubleshooting
Secondary steering (automatic)
Tie off points
Tow hooks (front) and tow pin (rear)
Sight glasses for hydraulic oils
S•O•SSM ports
Vital Information Management System (VIMS)

CAT TECHNOLOGY PRODUCTS

Cyber security
Integrated object detection system with touchscreen display
Tire Payload Monitoring System 2 (TPMS 2)
Product LinkTM Elite

785 OPTIONAL EQUIPMENT

ELECTRICAL

Auxiliary rear work lights, (one) LH side
Digital Payload Display
LED Lighting system: Additional lighting package, Auxiliary VIMS, Body rear, Seat & park brake
Workshop horn

TRUCK BODIES

MSD II body: 100 m³ (131 yd³)
Dual slope body: 78 m³ (102 yd³)
Body specific side wall and tail extensions
Customizable body liner packages
Body heat exhaust
Rock ejectors
Rear body lighting group: Directional signals, Stop/tail lights

FLUIDS

Extended Life Coolant to — 50° C (— 58° F)

OPERATOR ENVIRONMENT

Emergency stop
Deluxe Cab: Advanced cabin filtration system; Catwalk and handrails for rear cab access; Heated, cooled and ventilated front seat; Power right side window; Suspended companion seat; Storage tray

POWER TRAIN

No air – electric starter with 93-amp hour batteries (four), electric horn and automatic lubrication system
Hydraulic braking system: Advanced ground control with Anti-lock Braking System (ABS) and Dynamic Stability Control (DSC)

Variable speed fan drive

Transmission: Engine pre-lubrication system; Rear axle continuous lubrication/filtration with cooler

OTHER EQUIPMENT

2560 L (676 gal) fuel tank (non-Tier 4)

Body heat exhaust

Bumper towing – center pin kit

Cold weather start (block heater)

Communication Ar – Minestar™ radio

Fire extinguisher, portable

Five piece crankcase guards

Fuel heater, fuel water separator

Fuel tank mud guard

Gauge, brake wear indicator

Ground accessible fluid service center, hydraulic and coolant

Hub odometer, kilometers

Powered access stairway

Rim Diffuser

Wheel chocks

Wireless Electronic Technician (ET)

Working at heights protection

CAT TECHNOLOGY PRODUCTS

Cruise control

360 degree surround view camera

4G cellular/satellite dual mode

Connectivity bundle (includes: wireless operator ID, bluetooth key FOB to start)

Driver Safety System (DSS) 4.0 Ready

Minestar GPS

Minestar communication group (enables: Minestar Fleet, Aux, and Truck Spotting)

Oil Renewal System (ORS) (non-Tier 4)

Road Analysis Control (RAC)