

Product Specifications For 785



Weights - Approximate

Nominal Rated Payload (36.00R51 Tires)	147 t
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Rated Gross Machine Weight (36.00R51 tires)	255826 kg
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Nominal Rated Payload (33.00R51 Tires)	143 t
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Rated Gross Machine Weight (33.00R51 tires)	249476 kg
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Chassis Weight (33.00R51 Tires)	85156 kg
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Chassis Weight (36.00R51 Tires)	87525 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)	Unlined HP Body. 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

Capacity - HP Body - 100% Fill Factor

Heaped (SAE 2:1)*	110 m3 / 144 yd3
Struck	84 m3 / 110 yd3

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
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Total Reduction Ratio	22.75:1
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Tires

Optional Tires	33.00R51
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Optional Tire	36.00R51
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Rims	610 mm (24") Rims (optional). 660 mm (26") Rims (optional).
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Note (1)	Quick Change Rims optional.
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Note (2)	Caterpillar recommends the customer evaluate all job conditions and consult tire manufacturer for proper tire selection and TKPH (TMPH) capabilities.
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Braking System

Service Brakes	Four-Corner, Wet Disc, Oil Cooled, Hydraulically Actuated
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Front Wet Disc Brake Surface Area	61270 cm ²
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Rear - Wet Disc Brake Surface Area	89728 cm ²
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Standards	Service and Secondary: ISO 3450:2011
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Parking Brake	Four corner, multi disc, spring applied, hydraulically released
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Body Hoists

Type	Twin, two-stage hydraulic cylinders with snubbing valve.
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Pump Flow - High Idle	847 L/min
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Relief Valve Setting - Raise	17225 kPa
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Body Raise Time - High Idle	15 s
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Body Lower Time - Float	15.6 s
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Body Power Down- High Idle	15.5 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	+/- 5.4 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	476 l
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Crankcase	204 l
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Front Wheels - Each	27 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	117 l
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Brake/Hoist Tank	511 l
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Brake Hoist System - Includes Tank	541 l
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Cab

Air Conditioning	HFC - 134A refrigerant: 24,500 Btu/h
Heater / Defroster	33300 Btu/h
ROPS Standards (1)	ROPS (Rollover Protective Structure) meets ISO 3471:2008 for Operator and ISO 13459:2012 for Trainer.
FOPS Standards	FOPS (Falling Objects Protective Structure) meets ISO 3449:2005 Level II for Operator and ISO 13459:2012 Level II for Trainer.

Steering

Steer Angle	25.1 °
Turning Diameter - ISO 7457:1997 (33.00R51 tires)	29.4 m
Steering Standards	ISO 5010:2019

Dimensions (All Dimensions Are Approximate. MSD II Body, 33R51 Tires, Unloaded Machine.)

Height - Top of ROPS	5208 mm
Overall Body Length	11985 mm
Inside Body Length	8318 mm
Overall Length	11957 mm
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

Sound

Sound Standards	The operator sound pressure level, 77 dB(A) with direct drive and 75 dB9A) with optional clutch, tested to ISO 6396:2008.
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Transmission

Forward - 1	12 km/h
Forward - 2	16.2 km/h
Forward - 3	22.1 km/h

Forward - 4	29.8 km/h
Forward - 5	40.2 km/h
Forward - 6	57.2 km/h
Reverse	11.6 km/h
Top Speed - Loaded	57.2 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 Resistive Braking 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, Resistive braking, 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

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⁺S⁺ 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 Link⁺ 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

Turbine air starter with air tank, air horn and automatic lubrication system

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)
Minestar Command Autonomous-ready