

# PRODUCT SPECIFICATIONS FOR 785



**Gross Power - SAE J1995** 1193 kW

**Net Power - SAE J1349** 1125 kW

**Engine Model** Cat® 3512E

**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

**Nominal Rated Payload (33.00R51 Tires)** 139 t

**Rated Gross Machine Weight (33.00R51 tires)** 249476 kg

**Nominal Rated Payload (36.00R51 Tires)** 142 t

**Rated Gross Machine Weight (36.00R51 tires)** 255826 kg

<b>Chassis Weight (33.00R51 Tires)</b>	84731 kg
<b>Chassis Weight (36.00R51 Tires)</b>	87631 kg
<b>Body Weight</b>	26208 kg
<b>Note (1)</b>	Consult your tire manufacturer for maximum tire load
<b>Note (2)</b>	Chassis weight with full fuel and fluids, standard & mandatory attachments, hoist, body mounting group, rims, and tires.
<b>Note (3)</b>	Body weight varies depending on body selection and configuration.
<b>Front Axle - Empty</b>	48%
<b>Rear Axle - Empty</b>	52%
<b>Front Axle - Loaded</b>	33%
<b>Rear Axle - Loaded</b>	67%
<b>Note</b>	Weight distributions optimized with Cat body.
<b>Type</b>	Double reduction, planetary with full floating axles.
<b>Differential Ratio</b>	2:10:1
<b>Planetary Ratio</b>	10.83:1
<b>Total Reduction Ratio</b>	22.75:1

<b>Forward - 1</b>	12.1 km/h
<b>Forward - 2</b>	16.3 km/h
<b>Forward - 3</b>	22.2 km/h
<b>Forward - 4</b>	29.9 km/h
<b>Forward - 5</b>	40.6 km/h
<b>Forward - 6</b>	54.8 km/h
<b>Reverse</b>	11 km/h
<b>Top Speed - Loaded</b>	54.8 km/h
<b>Note</b>	Maximum travel speeds with standard 33.00-R51 tires.

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

<b>Service Brakes</b>	Four-Corner, Wet Disc, Oil Cooled, Hydraulically Actuated
<b>Front Wet Disc Brake Surface Area</b>	61270 cm <sup>2</sup>
<b>Rear - Wet Disc Brake Surface Area</b>	89728 cm <sup>2</sup>

**Standards**

Service and Secondary: ISO 3450:2011

**Parking Brake**

Four corner, multi disc, spring applied, hydraulically released

**Struck**72 m<sup>3</sup> / 94 yd<sup>3</sup>**Heaped (SAE 2:1)**99 m<sup>3</sup> / 129 yd<sup>3</sup>**Note**

Consult your local Cat dealer for body recommendations.

**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

**Body Lower Time - Float High Idle**

15.9 s

**Body Lower Time - Float Low Idle**

16.2 s

**Body Power Down- High Idle**

15.9 s

**Type**

Self-contained nitrogen/oil cylinders, pin-to-pin mounting, top &amp; bottom double shear clevis attachments

**Effective Cylinder Stroke  
- Front**

320 mm

**Effective Cylinder Stroke  
- Rear**

165 mm

**Rear axle - Oscillation**

+/- 5 degrees

<b>Fuel Tank</b>	1552 l
<b>Diesel Exhaust Fluid Tank</b>	136 l
<b>Cooling System</b>	379 l
<b>Crankcase</b>	204 l
<b>Front Wheels - Each</b>	30 l
<b>Differential - Final Drives</b>	527 l
<b>Steering Tank</b>	110 l
<b>Steering System - Includes Tank</b>	170 l
<b>Brake/Hoist Tank</b>	511 l
<b>Brake Hoist System - Includes Tank</b>	606 l
<b>Torque Converter - Transmission System - Including Sump</b>	175 l
<b>Air Conditioning</b>	HFC - 134A refrigerant: 24,500 Btu/h
<b>Heater / Defroster</b>	33300 Btu/h
<b>Note</b>	The operator sound pressure level, 77 dB(A) with direct drive and 75 dB9A) with optional clutch, tested to ISO 6396:2008.
<b>ROPS Standards (1)</b>	ROPS (Rollover Protective Structure) meets ISO 3471:2008 for Operator and ISO 13459:2012 for Trainer.
<b>FOPS Standards</b>	FOPS (Falling Objects Protective Structure) meets ISO 3449:2005 for Operator and ISO 13459:2012 Level II for Trainer.

<b>Steer Angle</b>	36 °
<b>Turning Diameter - ISO 7457:1997 (33.00R51 tires)</b>	29.8 m
<b>Steering Standards</b>	ISO 5010:2007
<b>Height - Top of ROPS</b>	5208 mm
<b>Overall Body Length</b>	11985 mm
<b>Inside Body Length</b>	8318 mm
<b>Overall Length</b>	11957 mm
<b>Wheel Base</b>	5180 mm
<b>Rear Axle - Tail</b>	3829 mm
<b>Ground Clearance</b>	1004 mm
<b>Dump Clearance</b>	1128 mm
<b>Loading Height - Empty</b>	5299 mm
<b>Inside Body Depth - Maximum</b>	2790 mm
<b>Overall Height - Body Raised</b>	12032 mm
<b>Operating Width</b>	7535 mm
<b>Centerline Front Tire Width</b>	4850 mm
<b>Engine Guard Clearance</b>	1038 mm

<b>Overall Canopy Width</b>	7562 mm
<b>Outside Body Width</b>	6714 mm
<b>Inside Body Width</b>	6010 mm
<b>Front Canopy Height</b>	6035 mm
<b>Rear Axle - Clearance</b>	990 mm
<b>Centerline of Rear Dual Tire Width</b>	4285 mm
<b>Overall Tire Width</b>	6277 mm

## **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•S<sup>SM</sup> ports  
Vital Information Management System (VIMS)

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 m<sup>3</sup> (131 yd<sup>3</sup>)

Dual slope body: 78 m<sup>3</sup> (102 yd<sup>3</sup>)

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

Dim Diffuser

MINI DISCUS

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)

