

**Features:**

- **Performance** – The 785G 3512E HD engine gives you the choice of power ratings: 1,450 hp to match your current fleet performance or 1,600 hp for faster cycle times. Advanced Productivity Electronic Control Strategy for Transmission delivers a smoother ride, better acceleration and gear optimization.
- **Safety** – Standard Cat® Detect system, LED lighting, 600 mm (24 in) wide walkways, guarding of rotating components and hydraulic brake system with enhanced traction control system. Optional Working at Heights and Powered Access stairway.
- **Serviceability** – Modular HVAC system, modular radiator, improved ground level serviceability, oil sight glass, 1,000 hour hydraulic filter, and Tier 4 SCR system improves serviceability and reduces downtime.
- **Operator Environment** – New, quieter and larger, ergonomic deluxe cab. Electronic transmission controls and Cat comfort seats provides a smoother ride. Full size trainer door and improved head clearance on platform.
- **Operating Cost** – Improved 3512E HD engine meets U.S. EPA Tier 4 Final emission standards, and the features Cat Selective Catalytic Reduction (SCR) system that provides the least Total Fluid Consumption cost with greater reliability.
- **Tire Options** – With 36R51 tire option, particularly flat long haul high speed applications can take advantage of higher payload and higher TKPH.

### Specifications

#### Engine

<table>
<thead>
<tr>
<th>Engine Model</th>
<th>Cat 3512E HD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross Power – SAE J1995:2014</td>
<td>1193 kW 1,600 hp</td>
</tr>
<tr>
<td>Bore</td>
<td>170 mm 6.7 in</td>
</tr>
<tr>
<td>Stroke</td>
<td>215 mm 8.5 in</td>
</tr>
<tr>
<td>Displacement</td>
<td>58.56 L 3,573 in³</td>
</tr>
</tbody>
</table>

- Power rating conditions:
  - At 1,650 rpm rated speed based on SAE J1995:2014 standard air inlet conditions of 25° C (77° F) and 99 kPa (29.31 in Hg) dry barometric pressure.
  - Based on fuel of 35° API gravity (at 15.6° C or 60° F) having a LHV of 42,780 kJ/kg (18,390 Btu/lb) when used at 29° C (84.2° F).
- No engine derating required up to 2987 m (9800 ft) altitude per standard conditions.
- Meets U.S. EPA Tier 4 Final emissions standards.
- Selectable 1,450 hp configuration.

#### Weights – Approximate

| Empty Operating Chassis Weight | 84,668 kg 186,661 lb |
| Body Weight Range             | 21,275 kg- 46,903 lb- 30,623 kg 67,512 lb |

- Chassis weight includes standard mandatory attachments, 33R51 tires, all operating fluid levels full and 100% fuel.
- Estimated weight of debris is not included in operating chassis weight.
- Body weight varies depending on body selection and configuration.

#### Operating Specifications

| Gross Machine Operating Weight (GMW) (33R51 tires) | 249,476 kg 550,000 lb |
| Gross Machine Operating Weight (GMW) (36R51 tires) | 255,826 kg 564,000 lb |
| Nominal Payload Capacity (33.00R51 tires)* | 132 tonnes 146 tons |
| Nominal Payload Capacity (36.00R51 tires)* | 134 tonnes 148 tons |

- GMW depends on tire selection. Consult your tire manufacturer for maximum loaded top speed.
- Refer to the Cat Mining Truck 10/10/20 Overload Policy (AEXQ0250) for maximum gross machine weight limitations.
- Includes standard liners and MSD II (Mine Specific Design) body.

#### Tires

| Standard Tire | 33.00R51 (E3 and E4) |
| Optional Tire  | 36.00R51 (Michelin and Bridgestone) |

- Productive capabilities of the 785G truck are such that, under certain job conditions, TKPH (TMPH) capabilities could be exceeded and, therefore, limit production.
- Caterpillar recommends the customer evaluate all job conditions and consult the tire manufacturer for proper tire selection.
Transmission

<table>
<thead>
<tr>
<th>Mode</th>
<th>Speed (km/h)</th>
<th>Speed (mph)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forward 1</td>
<td>12.1</td>
<td>7.5</td>
</tr>
<tr>
<td>Forward 2</td>
<td>16.3</td>
<td>10.2</td>
</tr>
<tr>
<td>Forward 3</td>
<td>22.2</td>
<td>13.8</td>
</tr>
<tr>
<td>Forward 4</td>
<td>29.9</td>
<td>18.6</td>
</tr>
<tr>
<td>Forward 5</td>
<td>40.6</td>
<td>25.2</td>
</tr>
<tr>
<td>Forward 6</td>
<td>54.8</td>
<td>34.0</td>
</tr>
<tr>
<td>Reverse</td>
<td>11.0</td>
<td>6.8</td>
</tr>
</tbody>
</table>

Total Final Drive Reduction Ratio: 22.75:1

- Maximum drive speeds with standard 33.00-R51 tires.

Suspension

| Cylinder Stroke – Front | 320 mm | 12.6 in |
| Cylinder Stroke – Rear  | 165 mm | 6.5 in  |

Body Hoists

- Body Raise Time – High Idle: 15.2 Seconds
- Body Lower Time – Float High Idle: 15.9 Seconds
- Body Lower Time – Float Low Idle: 16.2 Seconds
- Body Power Down – High Idle: 15.9 Seconds

- Twin, two-stage hydraulic cylinder mounted outside main frame; double-acting cylinders in second stage.
- Power raise in both stages; power down in second stage.
- Automatic body lower modulation reduces impact on frame.

Braking System

- Brake Surface – Front: 61,270 cm², 9,487 in²
- Brake Surface – Rear: 89,728 cm², 13,908 in²

Standards: ISO 3450:2011

- Oil cooled four corner hydraulic actuated disc brakes.

Weight Distributions – Approximate

<table>
<thead>
<tr>
<th>Axle</th>
<th>Empty</th>
<th>Loaded (target)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Front Axle</td>
<td>48%</td>
<td>33%</td>
</tr>
<tr>
<td>Rear Axle</td>
<td>52%</td>
<td>67%</td>
</tr>
</tbody>
</table>

Body

- Standard Dual Slope Weight: 23,538 kg, 51,892 lb
- Standard Dual Slope Volume (SAE 2:1): 78 m³, 102 yd³
- Standard MSD Weight: 21,188 kg, 46,711 lb
- Standard MSD Volume (SAE 2:1): 99 m³, 130 yds³

- Body weight only. Does not include liners.
- Contact your local Cat dealer for site specific body recommendations.

Service Refill Capacities

<table>
<thead>
<tr>
<th>Component</th>
<th>Fuel Tank</th>
<th>DEF Tank</th>
<th>Cooling System</th>
<th>Engine Crankcase</th>
<th>Differentials and Final Drives</th>
<th>Steering Tank</th>
<th>Steering System (includes tank)</th>
<th>Brake/Hydraulic Tank</th>
<th>Brake/Hoist System (includes tank)</th>
<th>Torque Converter/Transmission System (includes sump)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capacity (L)</td>
<td>1552</td>
<td>136</td>
<td>379</td>
<td>204</td>
<td>527</td>
<td>110</td>
<td>170</td>
<td>511</td>
<td>606</td>
<td>175</td>
</tr>
<tr>
<td>Capacity (gal)</td>
<td>410</td>
<td>36</td>
<td>100</td>
<td>54</td>
<td>139</td>
<td>29</td>
<td>45</td>
<td>135</td>
<td>160</td>
<td>46</td>
</tr>
</tbody>
</table>

- Separate steering system and separate torque converter/transmission system prevents cross contamination.
- Contact your local Cat dealer for DEF infrastructure recommendations.

Steering

- Turning Diameter: 29.8 m, 97 ft 9 in
- Machine Clearance Diameter: 33.2 m, 108 ft 11 in
- Steering Angle: 36 degrees

ROPS

- ROPS (Rollover Protective Structure) for cab offered by Caterpillar meets ISO 3471:2008 ROPS and ISO 13459:2012 criteria.

Sound

<table>
<thead>
<tr>
<th>Component</th>
<th>Direct Drive</th>
<th>Optional Clutch</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operator Sound Level</td>
<td>77 dBA</td>
<td>75 dBA</td>
</tr>
<tr>
<td>Machine Sound Level</td>
<td>121 dBA</td>
<td>120 dBA</td>
</tr>
</tbody>
</table>

- Testing done per specified standard work cycle procedures and conditions with 50% HVAC blower fan speed. Optional clutch control fan measurement done at 70% of maximum engine cooling fan speed.
- Hearing protection may be needed when operating with an open operator station/cab (when not properly maintained or doors/windows open) for extended periods or in a noisy environment.
### Dimensions (All dimensions are approximate. MSD II Body, 33R51 tires, unloaded machine.)

<table>
<thead>
<tr>
<th>Dimension Description</th>
<th>Dimension 1</th>
<th>Dimension 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Height to Top of ROPS</td>
<td>5208 mm</td>
<td>17 ft 1 in</td>
</tr>
<tr>
<td>2 Overall Body Length</td>
<td>11 985 mm</td>
<td>39 ft 4 in</td>
</tr>
<tr>
<td>3 Inside Body Length</td>
<td>8318 mm</td>
<td>27 ft 3 in</td>
</tr>
<tr>
<td>4 Overall Length</td>
<td>11 957 mm</td>
<td>39 ft 3 in</td>
</tr>
<tr>
<td>5 Wheelbase</td>
<td>5180 mm</td>
<td>17 ft 0 in</td>
</tr>
<tr>
<td>6 Rear Axle to Tail</td>
<td>3829 mm</td>
<td>12 ft 7 in</td>
</tr>
<tr>
<td>7 Ground Clearance</td>
<td>1004 mm</td>
<td>3 ft 4 in</td>
</tr>
<tr>
<td>8 Dump Clearance</td>
<td>1126 mm</td>
<td>3 ft 8 in</td>
</tr>
<tr>
<td>9 Loading Height – Empty</td>
<td>5299 mm</td>
<td>17 ft 5 in</td>
</tr>
<tr>
<td>10 Rear Sidewall Height</td>
<td>874 mm</td>
<td>2 ft 10 in</td>
</tr>
<tr>
<td>11 Inside Body Depth – Maximum</td>
<td>2790 mm</td>
<td>9 ft 2 in</td>
</tr>
<tr>
<td>12 Overall Height – Body Raised</td>
<td>12 032 mm</td>
<td>39 ft 6 in</td>
</tr>
<tr>
<td>13 Operating Width</td>
<td>7535 mm</td>
<td>24 ft 9 in</td>
</tr>
<tr>
<td>14 Centerline Front Tire Width</td>
<td>4850 mm</td>
<td>15 ft 11 in</td>
</tr>
<tr>
<td>15 Engine Guard Clearance</td>
<td>1038 mm</td>
<td>3 ft 5 in</td>
</tr>
<tr>
<td>16 Overall Canopy Width</td>
<td>7562 mm</td>
<td>24 ft 10 in</td>
</tr>
<tr>
<td>17 Outside Body Width</td>
<td>6714 mm</td>
<td>22 ft 0 in</td>
</tr>
<tr>
<td>18 Inside Body Width</td>
<td>6010 mm</td>
<td>19 ft 9 in</td>
</tr>
<tr>
<td>19 Front Canopy Height</td>
<td>6035 mm</td>
<td>19 ft 10 in</td>
</tr>
<tr>
<td>20 Rear Axle Clearance</td>
<td>990 mm</td>
<td>3 ft 3 in</td>
</tr>
<tr>
<td>21 Centerline Rear Dual Tire Width</td>
<td>4285 mm</td>
<td>14 ft 1 in</td>
</tr>
<tr>
<td>22 Overall Tire Width</td>
<td>6277 mm</td>
<td>20 ft 7 in</td>
</tr>
</tbody>
</table>

### STANDARD EQUIPMENT

#### POWER TRAIN
- 33R51 power train with standard rims
- Cat 3512E high displacement Tier 4 Final engine and aftertreatment
  - Automatic engine and DEF thermal management
  - 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, adjustable
- Oil-cooled, multi-disc (front and rear)
  - Service, retarding, parking, secondary
- Anti roll back strategy
- Engine over speed protection
- Park brake integrated with gear selector
- Brake release motor (towing)
- Extended life brake disc material

#### 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

(Continued on next page)
785G Mining Truck

STANDARD EQUIPMENT (Continued)

**ELECTRICAL**
- Jump start/battery charge receptacle
- Ground accessible power control box
  - Ethernet VIMSTM port and VIMSTM lamp
  - Engine starter, transmission and battery lockouts
- Brushless alternator, 225 amp
- Alarm, backup
- 24V electrical system, low maintenance batteries (2) 93 amp-hour
- LED payload indicator lamps
- LED lighting system:
  - Backup 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

**OPERATOR ENVIRONMENT**
- Unitized hydraulic powered HVAC with automatic temperature control
- Four point seat belt for operator seat
- Power windows
- Heated mirrors, right and left
- Heated and ventilated operator seat
- Operator and trainer air suspension seats
- Storage locations for operator gear
- Provision for customer accessory mounting
- Diagnostic connection port COM3 and Ethernet
- Dome courtesy light and map lights
- Fire suppression ready
- Delayed Engine Shutdown
- Integrated object detection system with touchscreen display
- Interactive touchscreen vehicle information display
  - Day/night mode
  - Action alarm
  - Quad gauge display
- Gauges and indicators panel:
  - Critical oil and coolant temperatures
  - Fuel and DEF level
  - Engine system, brake and transmission fault indicators
  - Speedometer, Tachometer
- Entertainment radio ready:
  - Speakers
  - Antenna (AM/FM/WB/satellite radio)
  - Radio mounting provisions and 12V power supply
- Retractable front visor
- 12V auxiliary power connection
- ROPS cab, insulated/sound suppressed
- Hoist, body control (electric)
- Stairway and walkway access, 600 mm (24 in)
- Steering wheel, tiltable, telescopic
- Windshield wiper, intermittent control
- Self-filling to windshield washer fluid from AC condensate

**FLUIDS**
- Extended Life Coolant, –35° C (~30° F)

**TECHNOLOGY PRODUCTS**
- Product Link™ Elite

**OTHER STANDARD EQUIPMENT**
- Turbine air starter with air tank, air horn and automatic lubrication system
- Auxiliary “buddy” dumping quick connect
- Auxiliary steering quick connect (towing)
- Hydraulic Filters, 1,000 hours
- Guards for rotating components
- Fast fill fuel and DEF remote fill system
- Secondary steering (automatic)
- Tie off points
- Tow hooks (front) and tow pin (rear)
- Vital Information Management System (VIMS)
- Auxiliary connection ‘user defined shutdown’
- Sight glasses for hydraulic oils
- S∙O∙SSM ports

**OPTIONAL EQUIPMENT**

**POWER TRAIN**
- Quick change rings
- 36R51 larger tire power train arrangement
- Prelube, engine
- Rear axle cooler
- Clutch control, variable speed cooling fan

**BODY**
- MSD volume: 99 m³ (130 yd³)
- 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

**ELECTRICAL**
- Electronic Throttle Lock
- Digital Payload Display
- Auxiliary rear work lights, (one) RH side, (one) LH side
- No air – electric starter with 93-amp hour batteries (four), electric horn and automatic lubrication system

**OTHER ATTACHMENTS**
- Fire Suppression System – ANSUL® LVS
- Powered access stairway
- Fuel heater, fuel water separator
- Road Analysis Control (RAC)
- Cold weather start (block heater)
- Ground accessible fluid service center, hydraulic and coolant
- Bumper towing – center pin kit
- Communication Ar – Minestar™ radio
- Miscellaneous:
  - Fire extinguisher, portable
  - Hub odometer, kilometers
  - Wheel chocks
  - Gauge, brake wear indicator
  - Five piece crankcase guards
  - Working at heights protection

**ANTIFREEZE**
- Coolant, –50° C (~58° F)