

773D

Off-Highway Truck



Engine

Engine Model	Cat [®] 3412E Engine	
Gross Power – SAE J1995	509 kW	682 hp
Flywheel Power	485 kW	650 hp

Operating Specifications

Nominal Payload Capacity	54.1 tonnes	60 tons
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Weights – Approximate

Target Gross Machine Operating Weight	99 340 kg	219,007 lb
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773D Off-Highway Truck

Engineered for performance, designed for comfort, built to last.

Power Train – Engine

The twelve-cylinder, turbocharged and aftercooled engine is built for power, reliability, economy and with the HEUI™ fuel system, meets U.S. EPA Tier 1 emission standards. **pg. 4**

Power Train – Transmission

The power train is designed and built by Caterpillar, starting with the high torque rise, electronic Caterpillar® 3412E Diesel Engine, through the seven-speed power shift transmission. This assures the highest standards for quality, performance and efficiency. Total design control helps assure these individual components perform together as an efficient unit. **pg. 5**

Engine/Power Train Integration

The Caterpillar® Data Link System electronically combines engine, transmission, brake and operational information to optimize overall truck performance. The Electronic Technician (ET) accesses stored diagnostic data, significantly reducing downtime. **pg. 6**

Structures

Caterpillar truck frames are built to resist the most severe twisting, high impact applications. Mild steel provides flexibility, durability and resistance to impact loads even in cold climates. The frame incorporates 21 castings and two forgings in high-stress areas, providing two-and-one-half to three times the strength of equivalent-sized fabricated structures. **pg. 10**

Truck Body

The 773D offers a dual-slope body to meet user applications. This incorporates time-proven box beam and full-length stringer design for extended life. **pg. 11**

Time proven iron and modern technology combine to provide a highly productive, durable, reliable off-highway truck, focused on our customers' greatest need...lowest cost-per-ton.



Oil-Cooled, Rear Disc Brakes

Caterpillar oil-cooled, multiple disc brakes offer exceptional, fade-resistant braking and retarding. The optional Automatic Retarder Control (ARC) and Traction Control System (TCS) use the oil-cooled rear brakes to enhance truck performance and productivity. **pg. 7**

Automatic Retarder Control (ARC) (Optional)

The ARC electronically controls braking on grade, enhancing truck performance and productivity while improving operator confidence. **pg. 8**

Traction Control System (TCS) (Optional)

Electronically controls wheel slippage for improved performance. **pg. 9**

Systems/Applications

The 773D is the industry leader working worldwide in a variety of conditions and applications. **pg. 12**

Operator's Station

The 773D operator's station is designed for total machine control in a comfortable and productive environment. Controls and gauges are positioned to maximize productivity and comfort. The cab includes air suspension seat and advanced electronic monitoring system. Adjustable telescoping steering column, electric wipers, window and body controls reduce operator effort and simplify control. **pg. 13**

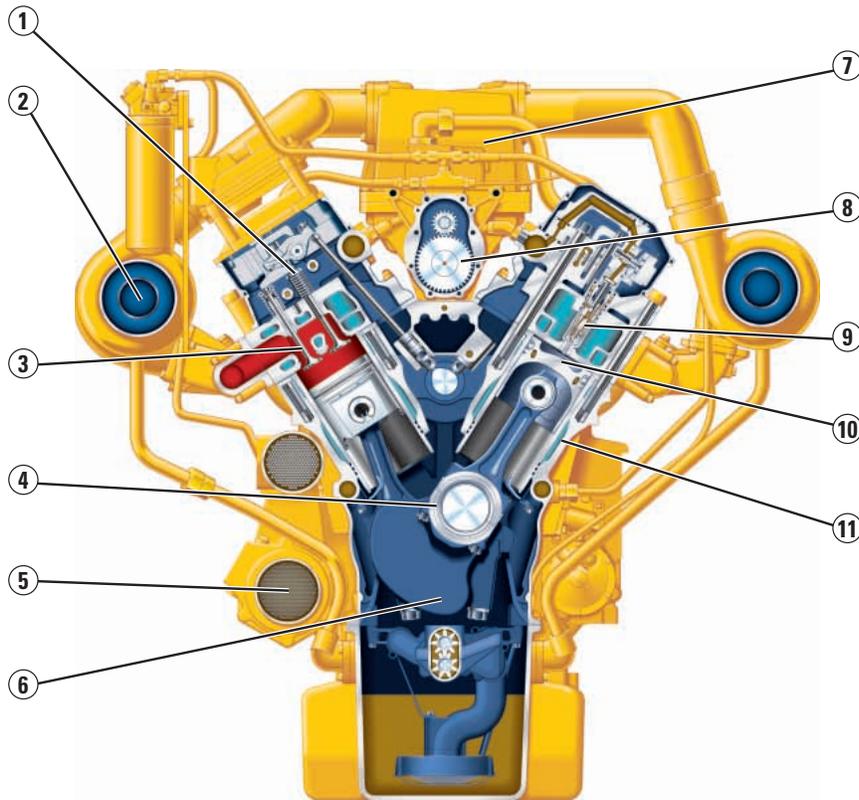
Serviceability/Total Customer Support

Simplified service and maintenance features combined with improved service access and on-board diagnostics are designed to reduce downtime. Caterpillar® dealers with expert technicians offer a wide range of service plans that will maximize uptime and return on your investment, and provide unmatched product support, anywhere in the world. **pg. 14**



Power Train – Engine

The twelve-cylinder, turbocharged and aftercooled engine is built for power, reliability, economy and with the HEUI™ fuel system, meets U.S. EPA Tier 1 emission standards.



- 1 Valve Rotators
- 2 Turbocharger
- 3 Stellite-Faced Valves
- 4 Steel-Backed, Copper-Bonded Bearings
- 5 Oil Cooler
- 6 Forged Crankshaft
- 7 Aftercooler
- 8 Adjustment-Free Fuel Injection Pumps
- 9 Hydraulic Injectors
- 10 Aluminum-Alloy Pistons
- 11 Full-Length, Water-Cooled Cylinder Liners

Engine. The Cat® 3412E Diesel Engine is a four-stroke design and uses long, effective power strokes for more complete fuel combustion and optimum efficiency. The 3412E is designed with high displacement and a low speed rating for long hours of service between scheduled overhauls and lower operating costs.

High Torque Rise. The 19 percent torque rise provides high lugging force during acceleration and less downshifting on grade or in rough underfoot conditions. The torque rise effectively matches the transmission shift points to provide maximum efficiency and faster cycle times.

Hydraulic Electronic Unit Injector (HEUI).

HEUI is a proven high-pressure, direct injection fuel system. This system electronically monitors operator and machine inputs to optimize engine performance. HEUI is unique in its ability to independently control injection pressure over the entire engine operating range. This allows complete control over injection timing, duration, rate and pressure for maximum performance and efficiency.

- Modifies the heat release characteristics of the combustion process for significant decreases in sound and emission levels.
- Reduces specific fuel consumption by up to five percent.
- Exhaust smoke is significantly reduced (by as much as 75 percent) through precise, electronic control of fueling limits and injection timing.

- Improved reliability and durability through elimination of the governor, reduction in mechanical linkages and incorporation of electronic protection strategies.

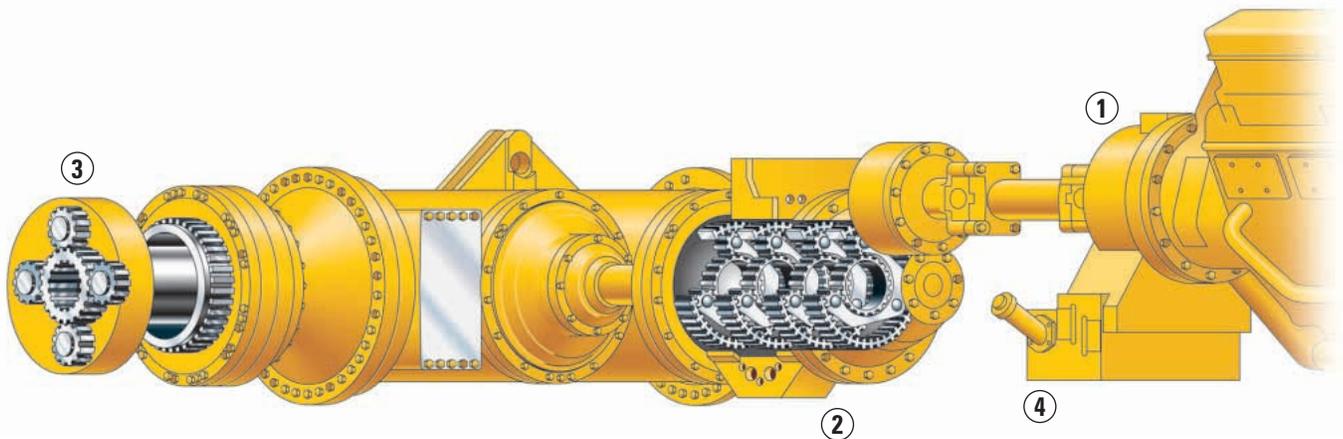
Electronic Control Module (ECM).

ECM monitors key functions and logs critical indicators. The Electronic Technician can access this diagnostic information for easier maintenance and repair.



Power Train – Transmission

The Caterpillar® power train gets the job done smoothly and quickly.



Transmission. The Cat seven-speed power shift transmission, matched with the direct injection Cat 3412E Diesel Engine, provides constant power over a wide range of operating speeds.

1) Lock-up Torque Converter. The lock-up torque converter combines the maximum rimpull and cushioned shifting of torque converter drive with the efficiency and performance of direct drive.

- It engages at approximately 6.9 km/h (4.3 mph), delivering more power to the wheels.
- The lock-up clutch will quickly release and re-engage during shifts, maintaining power windup, improving transmission life and increasing operator comfort.

2) Planetary Power Shift Transmission.

The seven-speed, planetary power shift transmission utilizes a modulating pressure valve to regulate clutch pressure rise and fall to ease clutch engagement. This reduces shock loads on power train components.

- Large diameter clutches and robust planetary gears and bearings.
- Patented rotating clutch pressure seals minimize drag losses and improve reliability.
- 35 percent gear splits between all gears match Cat engine design for optimum use of engine power with minimized shifting and torque converter use.

3) Final Drive. Final drive and differential torque multiplication of 17.48:1 further reduces stress on the drive train.

Axles. Full floating axles are shot peened to relieve internal stresses and increase durability. Rolled splines also provide increased service life.

Wheels and Rims. Cast rear wheels and Cat center-mount rims are mounted using studs and nuts to minimize maintenance and maximize durability.

4) Transmission and Torque Converter.

The transmission and torque converter have independent sumps, which eliminates cross contamination.

Transmission Chassis Controller (TCC).

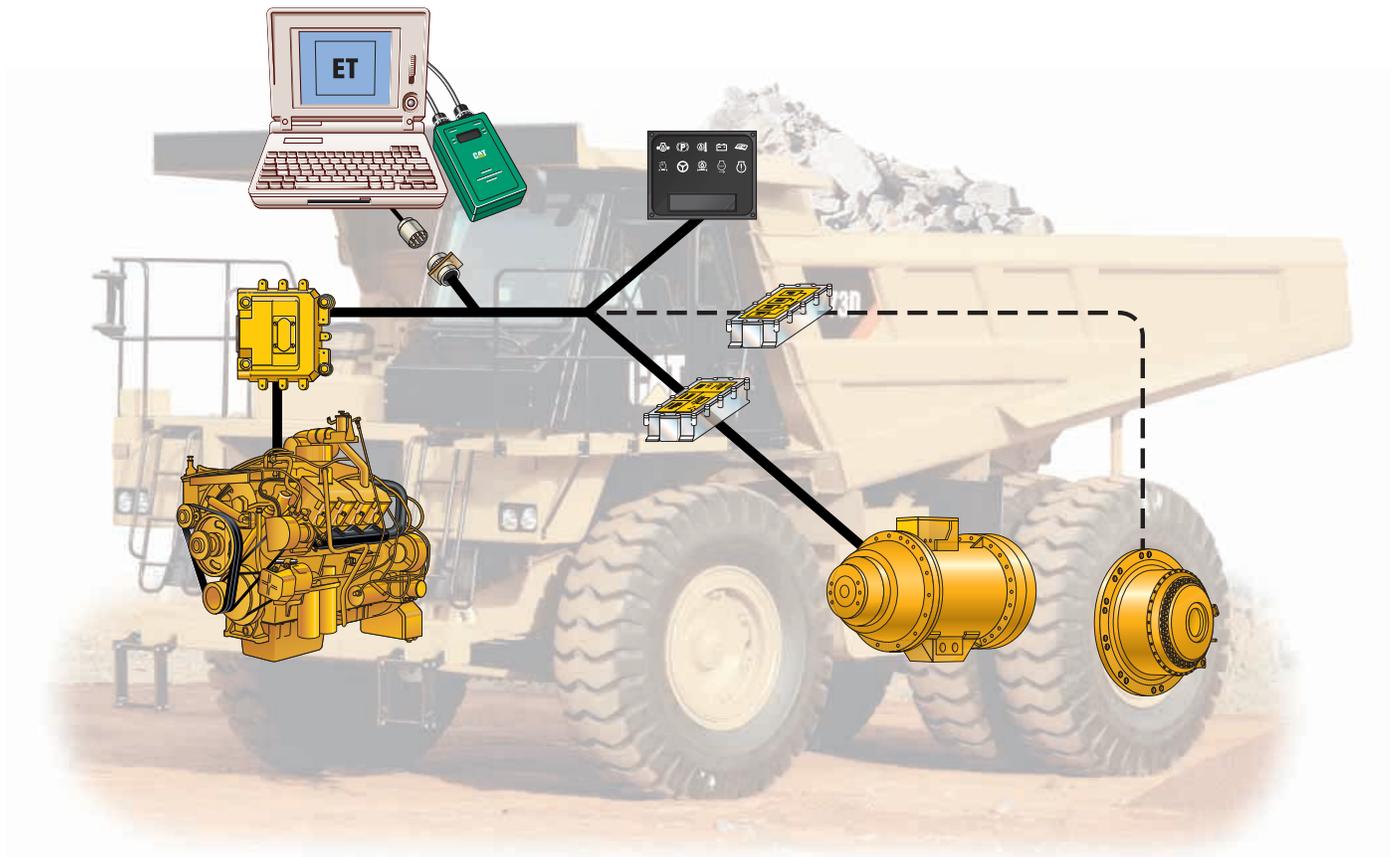
TCC uses electronically transferred engine rpm data to execute shifts at preset points for optimum performance and efficiency. This integration allows:

- Programmable top gear limit.
- Control throttle shifting.
- Directional shift management.
- Neutral coast inhibitor.
- Economy shift mode.

Power Train Integration. Caterpillar power train's integration provides increased component life and operator comfort.

Engine/Power Train Integration

Combining the electronic Engine Control Module (ECM) with the Caterpillar Transmission Chassis Controller (TCC) allows critical power train components to work more intelligently.



Integration. The electronic integration system designed by Caterpillar optimizes overall power train performance, reliability and component life for reduced power train operating cost.

- 1) Electronic Technician
- 2) Cat Data Link System
- 3) Engine Control Module
- 4) Engine
- 5) Transmission Chassis Controller
- 6) Automatic Retarder Control, Traction Control System and Integrated Brake Controller
- 7) Caterpillar Electronic Monitoring System
- 8) Transmission
- 9) Oil-Cooled Brakes

Cat Data Link. The Cat Data Link electronically integrates the machine's computer systems, which allows communications and provides the following benefits:

- **Controlled Throttle Shifting.** Engine rpm is regulated during a shift to reduce driveline stress for smoother shifts and extended component life.
- **Economy Shift Mode.** Modifies engine maps, resulting in improved fuel consumption.
- **Directional Shift Management.** Regulates engine speed during directional shifts to prevent damage caused by high speed directional changes.

• **Elevated Neutral Coast Inhibitor.**

Helps prevent the transmission from shifting to neutral at speeds above 6.5 km/h (4 mph).

• **Body Up-Shift Inhibitor.** Helps prevent the transmission from shifting above a pre-programmed gear without the body fully lowered.

• **Event Memory.** Records machine management data that can be accessed using the Electronic Technician. Recorded information includes:

- Shift histograms.
- Operator-induced events.
- Lock-up clutch counter.
- Machine overspeed.
- Transmission overspeed.

Oil-Cooled, Rear Disc Brakes

Reliable braking lets the operator concentrate on the haul road.

Brakes. Caterpillar forced oil-cooled, multiple disc brakes are continuously cooled for exceptional, fade-resistant braking and retarding. The optional ARC and TCS utilize the oil-cooled rear brakes to enhance truck performance and increase productivity.

Oil-Cooled Disc Brakes. Designed and built for reliable, adjustment-free operation providing superior performance and service life in comparison to shoe-type and dry-disc systems.

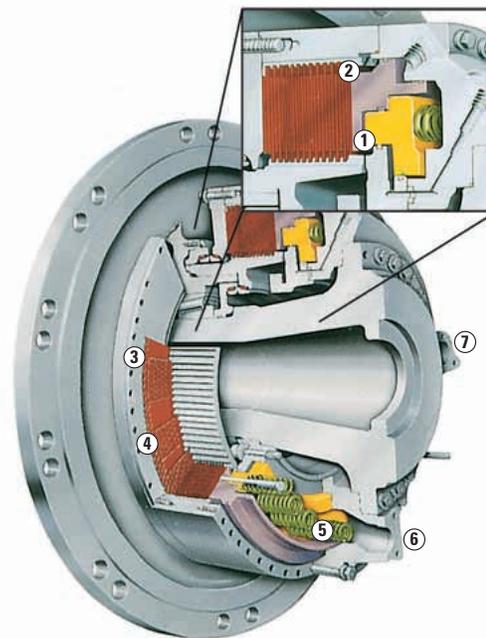
Oil Film. Prevents direct contact between the discs. Absorbing the braking forces by shearing oil and carrying heat away, this design extends brake life.

Pistons. A Caterpillar patented, two-piston design combines the service, secondary, parking brake and retarding functions.

- The primary piston hydraulically actuates both service and retarding functions.
- The secondary piston is spring applied and is held in the disengaged position by hydraulic pressure.
- If hydraulic system pressure drops below a certain level, the spring applied secondary piston automatically applies the brakes.

Retarding. The Cat retarding system has an intermittent rating of 1119 kW (1,500 hp) and a continuous rating of 526 kW (705 hp).

- When retarding, the engine runs against compression on downhill hauls, resulting in minimal fuel burn.

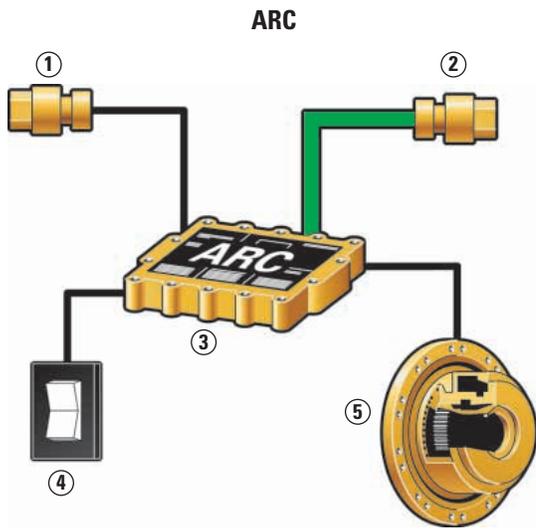


- 1 Parking/Secondary Piston
- 2 Service/Retarding Piston
- 3 Friction Discs
- 4 Steel Plates
- 5 Actuating Springs
- 6 Cooling Oil In
- 7 Cooling Oil Out

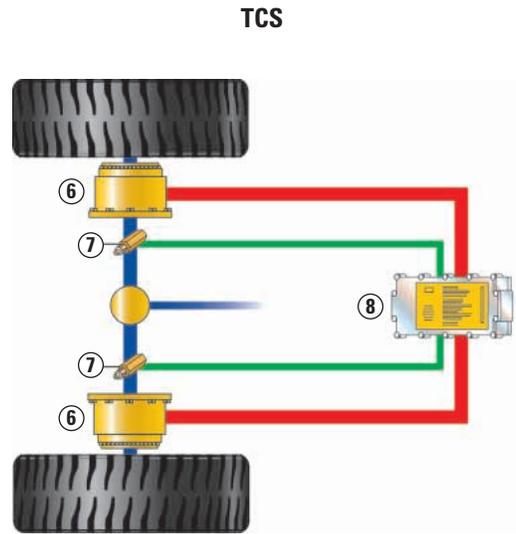
- Retarding forces and heat are absorbed through the oil. The retarding system generates lower drive line stresses than drive line retarding systems.

Automatic Retarder Control (ARC) (Optional)

Electronically controls braking on grades for improved engine and brake component life.



- 1 Service Brake Sensor
- 2 Engine Sensor
- 3 ARC
- 4 ARC Switch
- 5 Brakes

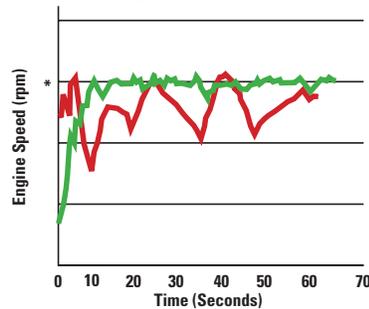


ARC Benefits. Include:

- Increased operating efficiency with faster downhill speeds. By maintaining consistently higher engine speeds, average truck speed will be higher than a manually controlled truck.
- Excellent controllability and reduced operator effort. Automatic brake modulation provides a smoother ride over manual modulation, allowing the operator to focus more on truck operation down the haul road.
- Improved component life, optimized system cooling capability and reduced torque fluctuations result from the precision of ARC.
- Faster troubleshooting and diagnosis with self-diagnostic capability and the ability to communicate with ET through the Cat Data Link System.

- Operator awareness through electronic integration and the CEMS, alerting the operator to overspeed conditions and critical machine functions.

ARC Operating Efficiency Advantages



- Automatic Retarder Control (Maintains Engine rpm between 2160-2300)
- Manual Retarder Control (Wide Variation in Engine rpm)
- * Optimum Engine rpm

Automatic Retarder Control (ARC).

The ARC electronically controls braking on grade to maintain approximately 2,230 rpm (engine rpm is adjustable from 2,150-2,300 rpm in increments of 10 rpm). ARC is deactivated when the operator applies the brakes or throttle.

Engine Overspeed Protection.

With the accelerator depressed and/or ARC turned off, ARC will automatically activate at 2,475 rpm to help avoid potentially destructive and often costly engine overspeeds.

Traction Control System (TCS) (Optional)

Electronically controls wheel slippage for improved performance.

Integrated Braking Control (IBC) (Optional). Caterpillar offers IBC (optional) combining ARC and TCS into one electronic control.

Traction Control System. Monitors wheel slip so if the wheel slip exceeds the set limit, the oil-cooled disc brakes are automatically applied to slow the spinning wheel.

Operator Awareness. Provides operator awareness through an on-dash indicator, signifying TCS is engaged.

Differential Action. Utilizes normal differential action to provide superior maneuvering in poor underfoot conditions.

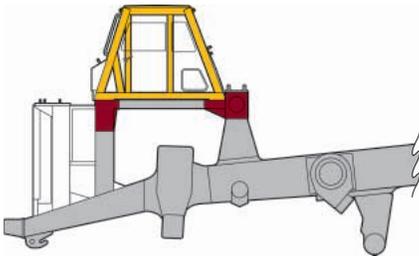
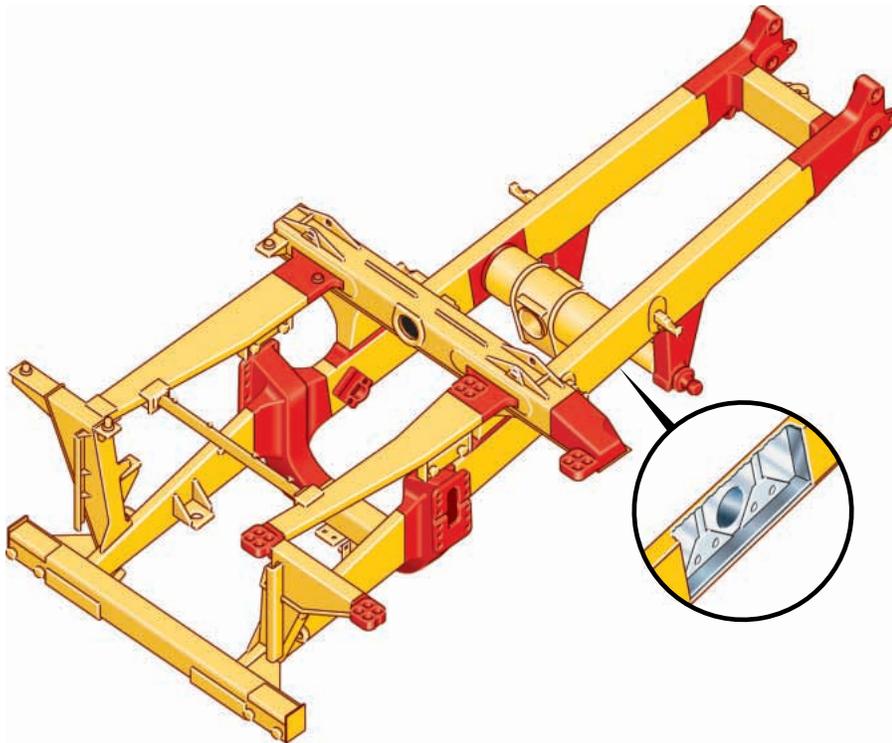
- Reduces tire scuffing as compared to positive lock differentials used on other systems.

Torque. Divides torque equally to reduce stress created on final drives and axles when torque is transferred to one side.

System Back-up. Maintains the back-up design. Should the sensors fail, normal differential action is still available to maintain control and steering.

Structures

The backbone of the Cat truck.



Box-Section Design. The 773D frame uses a box-section design, incorporating 21 castings in high-stress areas, with deep-penetrating and continuous wrap-around welding. Mild steel is used throughout.

- Mild steel provides flexibility, durability, and resistance to impact loads even in cold climates.

Castings. Castings have large radii with internal reinforcing ribs to dissipate stress. Castings move welds to lower stress areas and provide two to three times the strength of equivalent-sized fabricated structures.

Frame Features. The 773D frame provides for ease of serviceability.

- The box-section frame allows simple access to power train components. This “open design” reduces overall removal and installation time, lowering repair costs.
- Transmission access is excellent under the raised and pinned body.
- Repairs can be made without preheating in ambient temperatures above 16° C (60° F) using readily available welding supplies.

Rollover Protection Structure (ROPS).

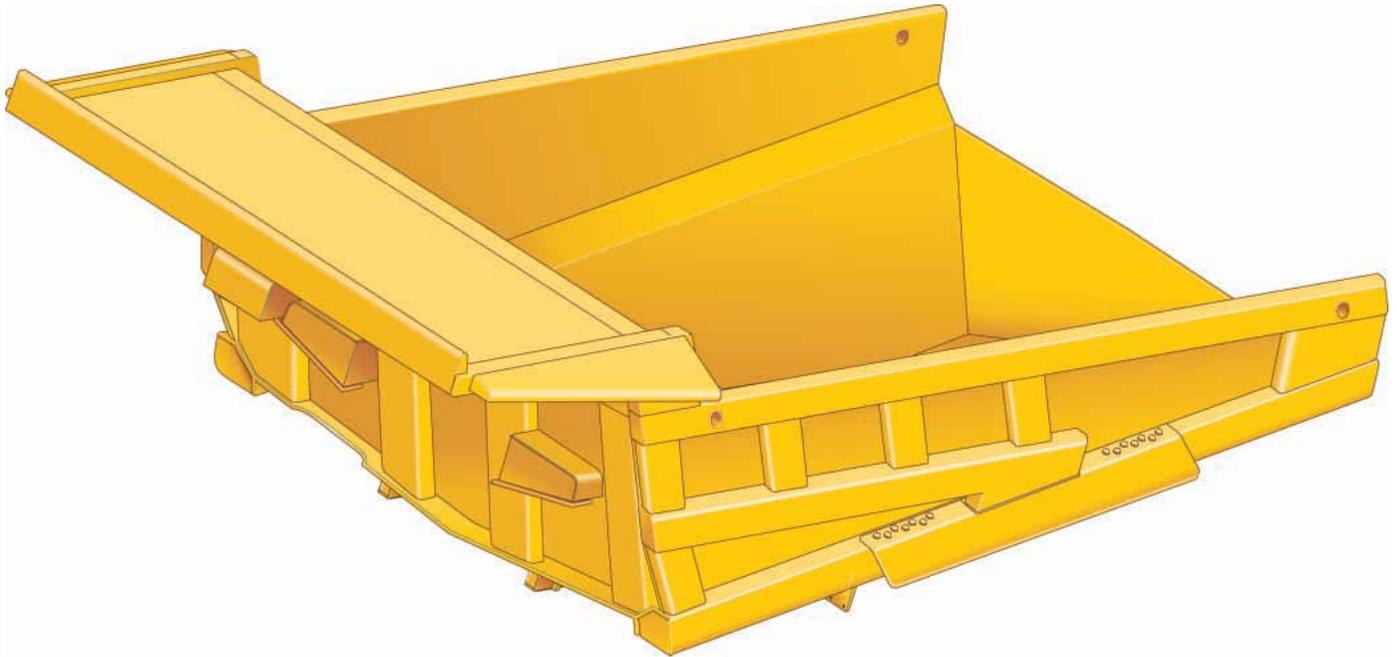
ROPS attaches securely to four castings welded into the frame.

Suspension System. Designed to dissipate haul road and loading impacts for extended frame life.

- Four, independent, variable-rebound, suspension cylinders absorb shocks.
- Rear cylinders allow axle oscillation and absorb the bending and twisting stresses.
- Front cylinders, mounted to the frame, serve as steering kingpins, providing excellent maneuverability and reduced maintenance. Caster and camber are preset.

Truck Body

Caterpillar builds rugged, durable bodies to perform in the toughest mining applications.



Design. Designed to handle a variety of material densities. Maximum payload is reached in three to five passes from a matched Cat loader in 1700 kg/m^3 ($2,900 \text{ lb/yd}^3$) material and higher.

Sidewall and Floor Junctions. Joined by five-sided beams to resist impact loading and sustained hauling stresses.

Box-Section Beams. Offer increased durability in the floor, sidewalls, top rail, corner and cab canopy areas.

400 Brinell Steel. Wear surfaces provide excellent wear resistance and are easily welded without preheating procedures.

Two-Stage Hoist Cylinders. Provide fast dump cycle times:

- Raise – 9.5 seconds.
- Lower – 12.5 seconds.

Standard Body. Comes exhaust heated with options including a full-time muffler or exhaust diverter.

Dual Slope Body. The dual-slope body offers the lowest cost-per-ton option in most construction and mining applications.

- The dual-slope body performs efficiently under most haul road conditions, but its strength comes from higher levels of production in sites with rough haul roads and steeper grades.
- Body floor construction uses an 8° “V” bottom for increased load retention, a low center of gravity, and reduced shock loading. It also aids in centering the load.
- An 18° ducktail and 9° forward body slope retains the load on grades up to 15 percent and higher. This design also helps maintain proper load distribution.

Systems/Applications

The 773D is designed for versatility.



Machine Configuration Options.

The 773D is the industry leader working worldwide in a variety of conditions and applications. By offering a variety of machine configuration options, Caterpillar helps meet customer needs.

Tire Options. Representing various tire manufacturers, Caterpillar offers a full line of tire options to maximize performance and life for specific applications.

Attachments. Attachments give the customer options to tailor trucks for specific application requirements, including:

- Truck Production Management System.
- Automatic Retarder Control.
- Traction Control System.
- Exhaust Diverter.

System Approach. The Caterpillar system approach means increased efficiencies through “common design.” Haul trucks, loaders, excavators, tractors, engines for generator sets and pumps – all designed by Caterpillar – use common components, parts and design. This commonality reduces customer parts stock, improves parts availability, reduces training/maintenance and improves diagnostics. This system approach adds up to lower cost-per-ton. Dealer support is available to address customer needs regardless of the component.

Caterpillar Product Analysis Team (PAT).

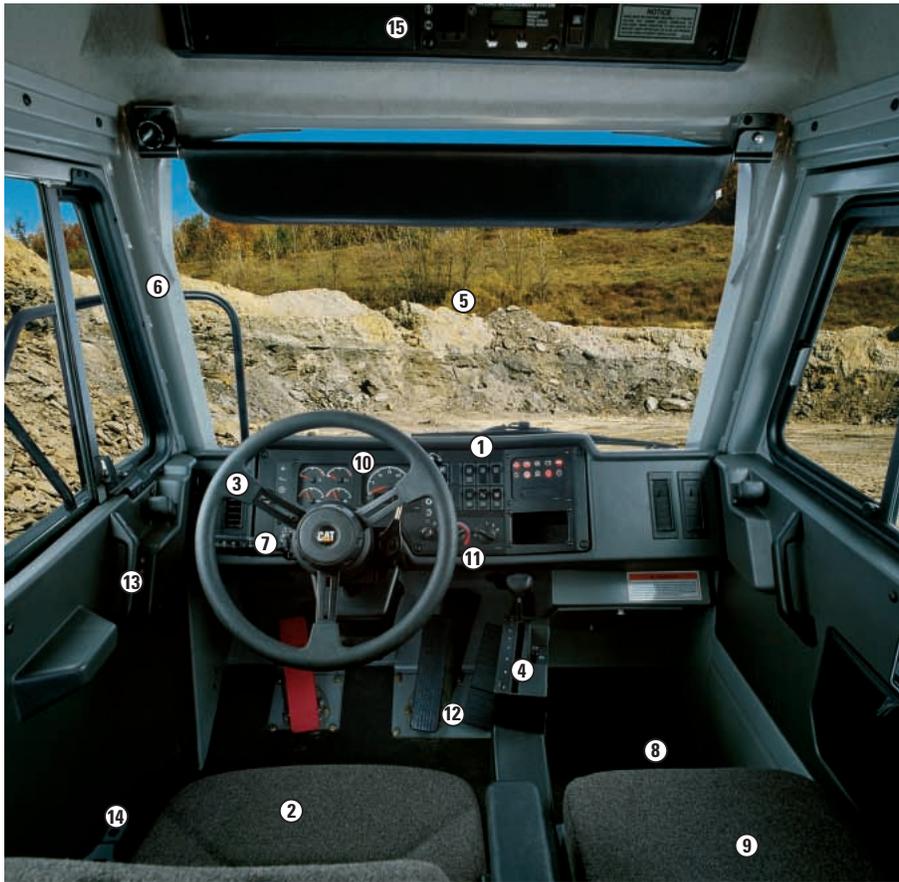
The Caterpillar Production Analysis Team (PAT) and Caterpillar software programs can assist customers with detailed, application evaluation.

Loader Match. Designed to work as part of a system, the 773D is best matched to the following Caterpillar loaders:

- 988F – five pass/match.
- 990 – three pass/match.

Operator's Station

Control ease and comfort maximizes productivity.



Operator's Station. The 773D operator station is rated highly by operators. Everything needed for top performance is at the operator's finger tips.

1) Wraparound Dash Panel. Provided in an easy line-of-sight arrangement, using LED backlit rocker switches.

2) Caterpillar Contour Series Air Suspension Seat. The Caterpillar Contour Series Air Suspension seat is standard. The seat is fully adjustable and includes an adjustable right-hand armrest.

3) Tilt/Telescoping Steering Wheel. Improves comfort and control.

- New steering system reduces operator effort by 55 percent.
- Enhanced turn signal lever with high beam actuator and electric windshield wiper controls.
- Ergonomically designed retarder lever.

4) Transmission Console. Includes LED backlit gear numbers and ergonomic shift knob.

5) Visibility. Exceptional all-around visibility reduces fatigue and improves productivity.

6) Integral, Sound-Suppressed ROPS/FOPS Cab. The ROPS/FOPS Cab is resiliently mounted, providing a quiet, protected work environment.

- Radio-ready cab with speakers, wiring harness, antenna and mounting bracket.

7) Front Brake Cut-Out Switch. Increases front brake component life.

8) Large Storage Compartment. Large storage compartment 0.10 m³ (3.5 ft³) is located under the trainer's seat.

9) Trainer's Seat. Increased hip/shoulder room, back rest and retractable seat belt.

10) Caterpillar Electronic Monitoring System (CEMS). CEMS provides critical data. The system features three separate displays:

- A four-gauge cluster with coolant temperature, oil temperature, brake air pressure, fuel level.
- Tachometer, digital speedometer/actual gear indicator.
- Message center module.

11) Optional Heater and Air Conditioner. Includes a four-speed fan and nine vents.

12) Foot Pedals. Ergonomically designed foot pedals for increased operator comfort.

- Secondary brake moved to floor.

13) Electric Power Windows. Simplify operations.

14) Electrohydraulic Hoist Lever. Finger tip actuated and provides low-impact, body-down snubbing.

15) Truck Production Management System (TPMS) (optional). The optional TPMS provides payload and cycle time data.

- Cat developed technology utilizes strut pressure sensors and an on-board microprocessor to determine payload weight.
- Accurate under normal loading conditions to within ± 5 percent over a normal operating shift.
- Delivers consistent accurate payloads and improves efficiency by minimizing overloading and underloading.
- On-board computer stores 1,400 cycles for further analysis of: payload weight, cycle segment times, cycle segment distances and actual clock time and date of each cycle.
- External lights signal loading tool operator when payload is reached.
- Internal troubleshooting and fault recording for easier maintenance.

Serviceability/Total Customer Support

Purchase of a Caterpillar machine includes a total commitment to customer support.

Machine Platform. Provides access to air tanks, brake master cylinder, and make-up tank; engine oil level; air filters; steering hydraulic tank; and battery compartment.



Ground-Level Battery Disconnect Switch. Facilitates safe, convenient servicing and maintenance.

On-Board Diagnostics. With CEMS, provides the machine operator with a three-category warning system and quick access to stored diagnostic data.

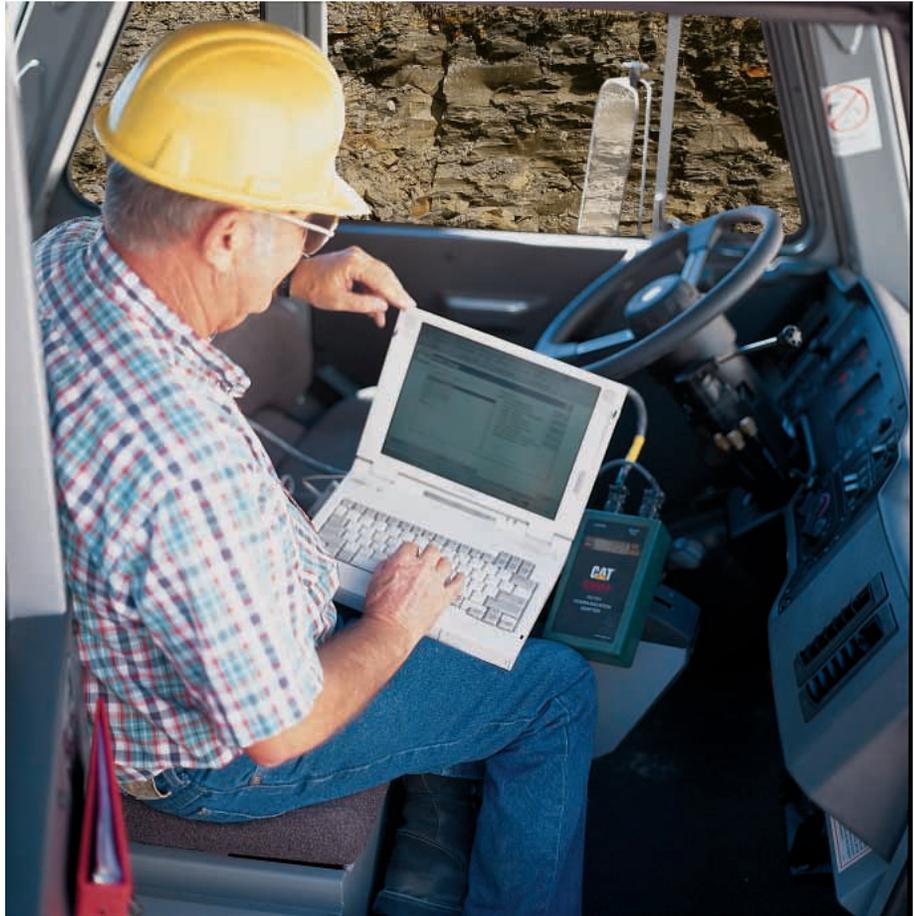
Off-Board Diagnostics. With ET, allows service technicians access to stored diagnostics data reducing down time and lowering operating costs.

- ET stores engine parameter information such as timing, throttle position and fuel flow.
- Transmission data is available through ET via access to the Cat Data Link System.

Radial Seal Filters. Easy to change, reducing air filter maintenance times.

Vertical Spin-On Filters. Simplified servicing.

Quick Coupler Pressure Taps. Quick coupler pressure taps, located in all hydraulic systems, provide clear, quick pressure checks. S•O•SSM Oil and Coolant Sampling Valves make oil sampling quick, clean, and easy.



Sealed Electrical Connectors. Lockout dust and moisture. The color-coding for wires is standard for the entire Cat product line.

Machine Management Service.

Cat Dealers help manage equipment investments with:

- Vehicle systems analysis to help match the right machine to the job.
- Preventative maintenance programs.
- S•O•S Fluid Analysis and Technical Analysis programs.

- Repair option analysis.
- Training for operators and mechanics.
- TPMS data analysis.

Parts Availability. The Caterpillar worldwide computer network locates parts instantly to minimize machine downtime.

Literature Support. Caterpillar manuals are easy to use and help provide the full value of an equipment investment.

Engine

Engine Model	Cat® 3412E Engine	
Rated Engine Speed	2,000 rpm	
Gross Power – SAE J1995	509 kW	682 hp
Net Power – SAE J1349	480 kW	643 hp
Net Power – Caterpillar	485 kW	650 hp
Flywheel Power	485 kW	650 hp
Net Power – ISO 9249	485 kW	650 hp
Net Power – 80/1269/EEC	485 kW	650 hp
Number of Cylinders	12	
Net Torque	2314 N•m	1,707 lbf
Bore	137 mm	5.4 in
Stroke	152 mm	6 in
Displacement	27 L	1,649 in ³

Power rating conditions:

- Based on standard air conditions of 25° C (77° F) and 99 kPa (29.32 Hg) dry barometer.
- Used 35° C (95° F) API gravity fuel having an LHV of 42 780 kJ/kg (18,390 BTU/lb) when used at 30° C (86° F) [ref. a fuel density of 838.9 g/L (7.001 lb/U.S. gal)].
- Net power advertised is the power available at the flywheel when the engine is equipped with fan, air cleaner, muffler and alternator.
- No derating required up to 2300 m (7,500 ft) altitude.

Weights – Approximate

Target Gross Machine Operating Weight	99 340 kg	219,007 lb
Operating Weight – Empty	39 500 kg	87,082 lb
Chassis Weight	30 200 kg	66,580 lb
Body Weight	9300 kg	20,503 lb

- Chassis weight with 10% fuel, hoist, body mounting group, rims and tires.
- Body weight varies depending on how body is equipped.

Operating Specifications

Nominal Payload Capacity	54.1 tonnes	60 tons
Top Speed – Loaded	62.2 km/h	38.6 mph
Body Capacity – SAE 2:1	35.2 m ³	46 yd ³

- Refer to the Caterpillar 10/10/20 Payload Guidelines for maximum gross machine weight limitations.
- Capacity with dual slope body.

Transmission

Forward 1	9.9 km/h	6.2 mph
Forward 2	13.9 km/h	8.6 mph
Forward 3	18.8 km/h	11.6 mph
Forward 4	25.2 km/h	15.6 mph
Forward 5	34.1 km/h	21.1 mph
Forward 6	45.9 km/h	28.5 mph
Forward 7	62.2 km/h	38.6 mph
Reverse	13.1 km/h	8.1 mph

- Maximum travel speeds with standard 24.00R35 (E4) tires.

Final Drives

Differential Ratio	3.64:1
Planetary Ratio	4.80:1
Total Reduction Ratio	17.48:1

Brakes

Brake Surface – Front	1395 cm ²	216 in ²
Brake Surface – Rear	61 269 cm ²	9,496 in ²
Brake Standards	ISO 3450: 1996	

- Meets the SAE J1473 OCT90, ISO 3450-1985 standards up to 99 340 kg (219,007 lb) gross operating weight.

Body Hoists

Pump Flow – High Idle	560 L/min	148 gal/min
Relief Valve Setting – Raise	17 225 kPa	2,500 psi
Relief Valve Setting – Lower	3450 kPa	500 psi
Body Raise Time – High Idle	9.5 Seconds	
Body Lower Time – Float	12.5 Seconds	
Body Power Down – High Idle	12.5 Seconds	

Capacity – Dual Slope – 100% fill factor

Struck	26.6 m ³	34.8 yd ³
Heaped 2:1 (SAE)	35.2 m ³	46 yd ³

Weight Distributions – Approximate

Front Axle – Empty	47.3%
Front Axle – Loaded	33.3%
Rear Axle – Empty	52.7%
Rear Axle – Loaded	66.7%

Suspension

Effective Cylinder Stroke – Front	209 mm	8.2 in
Effective Cylinder Stroke – Rear	149 mm	5.9 in
Rear Axle Oscillation	8°	

Service Refill Capacities

Fuel Tank	700 L	185 gal
Cooling System	137 L	36 gal
Engine Oil With Filter	76 L	20 gal
Differentials and Final Drives	140 L	37 gal
Steering Tank	34 L	9 gal
Steering System (Includes Tank)	58 L	15.3 gal
Torque Converter/ Transmission Sump	53 L	14 gal
Brake/Hoist Hydraulic Tank	133 L	35 gal

Tires

Standard Tire	24.00R35 (E4)
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- Productive capabilities of the 773D 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.

ROPS

ROPS/FOPS Standards	SAE J1040 MAY94, ISO 3741:1994
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- ROPS (Rollover Protective Structure) for cab offered by Caterpillar meets ISO 3471:1994 ROPS criteria.
- FOPS (Falling Objects Protective Structure) meets ISO 3449:1992 Level II FOPS criteria.

Sound

Sound Standards

- The operator sound pressure level measured according to work cycle procedures specified in ANSI/SAE J1166 MAY90 is 78 dB(A) for cab offered by Caterpillar, when properly installed and maintained and tested with doors and windows closed.
- 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.

Steering

Steering Standards	SAE J1511 FEB94 ISO 5010:1992
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Steer Angle	31°
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Turning Diameter Front Wheel Track	22 m	72 ft 3 in
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Turning Circle Clearance Diameter	25 m	82 ft
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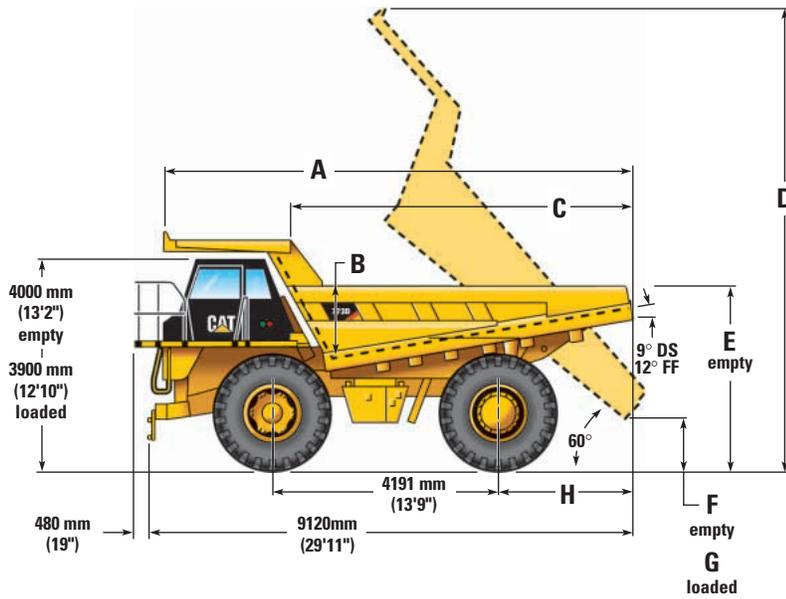
- Target Gross Machine Operating Weight is 99 340 kg (219,007 lb).

Dimensions

- Dimension listed reflect the Dual Slope Body System.

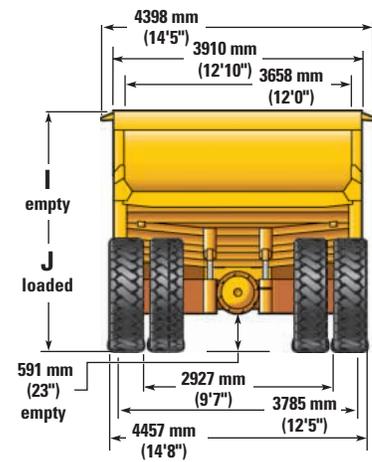
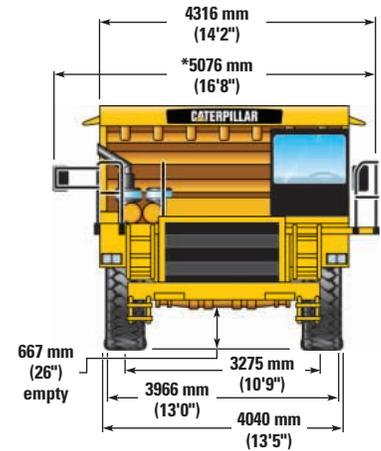
Dimensions

All dimensions are approximate.



Dual-slope

A	8535 mm	28'0"
B	1805 mm	5'11"
C	6400 mm	21'0"
D	8787 mm	28'10"
E	3773 mm	12'5"
F	676 mm	2'2"
G	566 mm	1'11"
H	2782 mm	9'1"
I	4393 mm	14'5"
J	4350 mm	14'4"



Weight/Payload Calculation*

(Example)

	Dual Slope		Dual Slope w/Liner	
CHASSIS				
Empty Chassis Weight +10% fuel – kg (lb)	30 200	(66,579)	30 200	(66,579)
Fuel Correction (90% × 185 gal × 7 lb/gal) – kg (lb)	529	(1,166)	529	(1,166)
Debris Allowance (4% of empty chassis weight) – kg (lb)	<u>+1208</u>	<u>(+2,663)</u>	<u>+ 1208</u>	<u>(+2,663)</u>
Total Chassis Weight – kg (lb)	31 937	(70,408)	31 937	(70,408)
BODY				
Body Weight – kg (lb)	9300	(20,503)	9300	(20,503)
Body Attachment Weights – kg (lb)			3965	(8,741)
Total Body Weight – kg (lb)	+9300	(+20,503)	+13 265	(+29,244)
Total Empty Operating Weight – kg (lb)	41 237	(90,911)	45 202	(99,652)
Target Payload – kg (lb)	<u>58 103</u>	<u>(128,094)</u>	<u>54 138</u>	<u>(119,353)</u>
Gross Machine Operating Weights – kg (lb)	<u>99 340</u>	<u>(219,005)</u>	<u>99 340</u>	<u>(219,005)</u>

* Refer to Caterpillar's 10/10/20 Payload Policy for Quarry and Construction Trucks

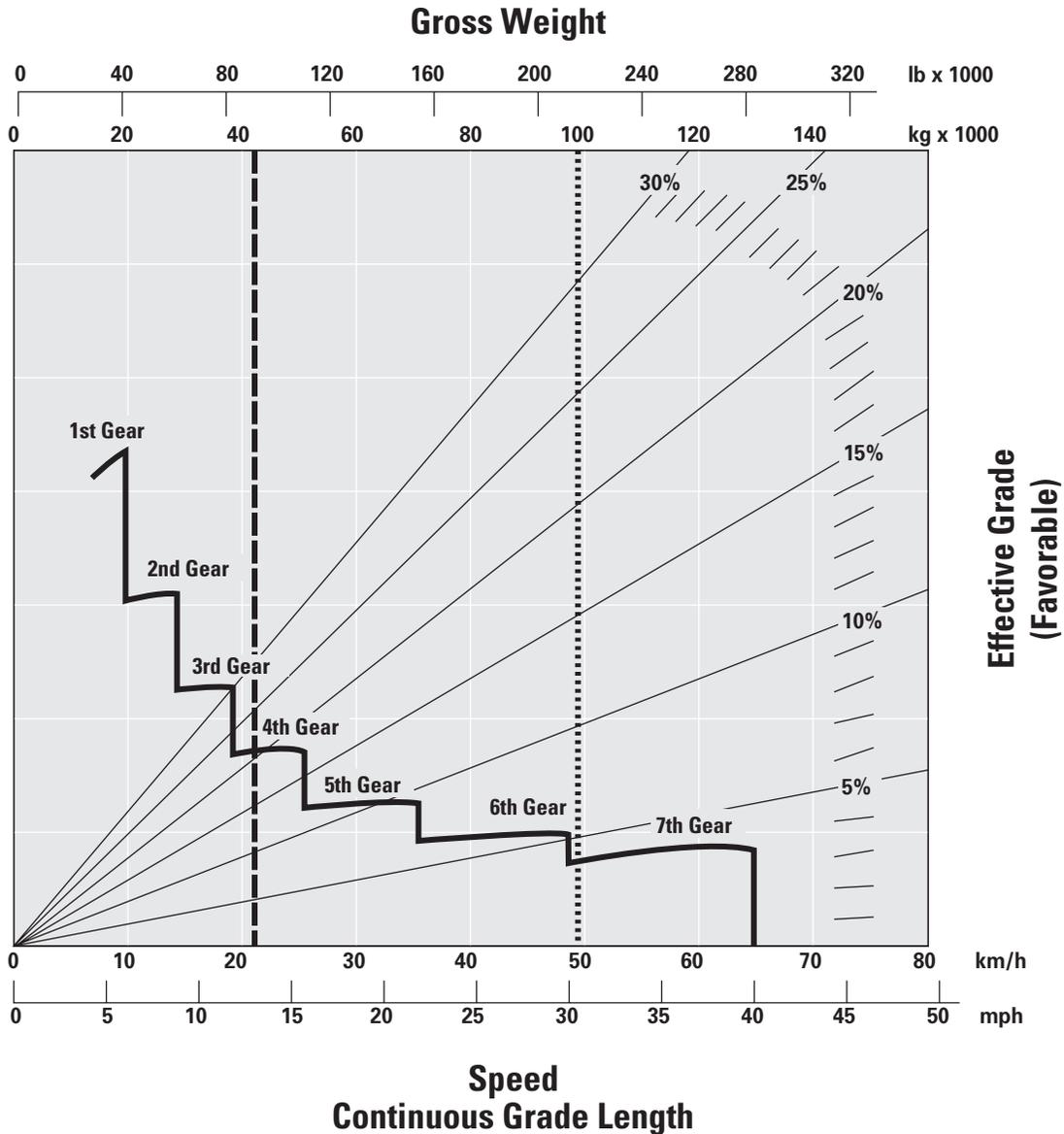
Retarding Performance

To determine retarding performance: Add lengths of all downhill segments and, using this total, refer to proper retarding chart. Read from gross weight down to the percent effective grade. Effective grade equals actual % grade minus 1% for each 10 kg/metric ton (20 lb./U.S. ton) of rolling resistance. From this weight-effective grade point, read horizontally to the curve with the highest obtainable gear, then down to maximum descent speed brakes can properly handle

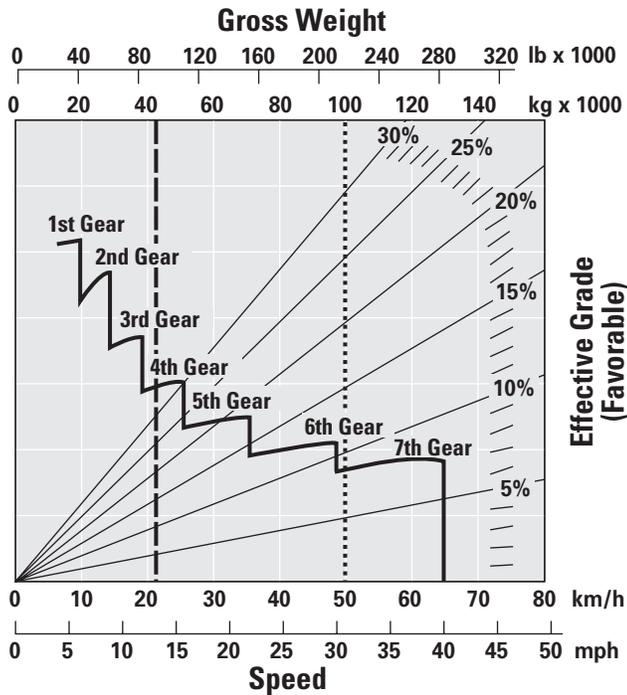
without exceeding cooling capacity. The following charts are based on these conditions: 32° C (90° F) ambient temperature, at sea level, with 24.00-R35 tires and a properly maintained cooling system.

NOTE: Select the proper gear to maintain engine rpm at the highest possible level, without overspeeding the engine. If cooling oil overheats, reduce ground speed to allow transmission to shift to the next lower speed range.

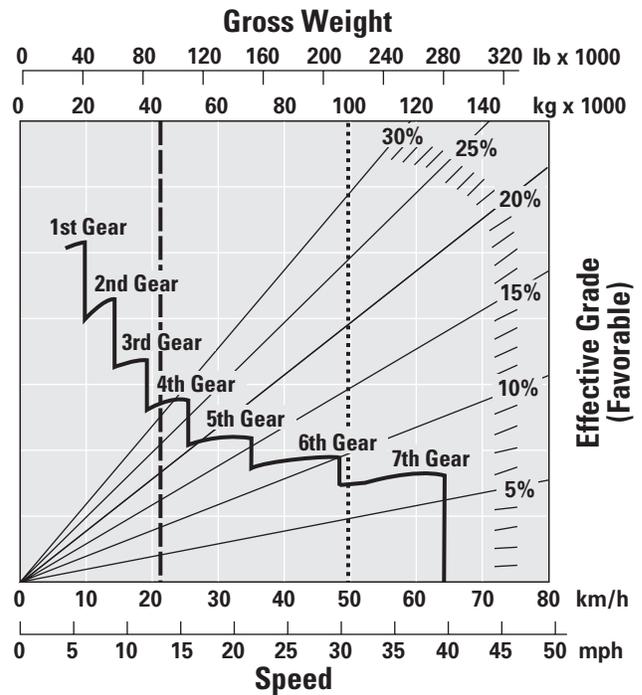
- Empty Weight
- Operating Weight
99,340 kg (219,007 lbs)



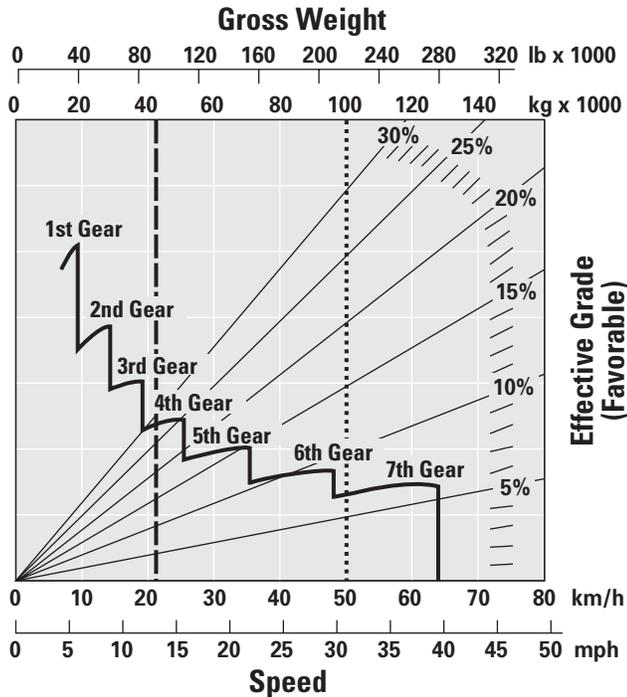
Retarding Performance



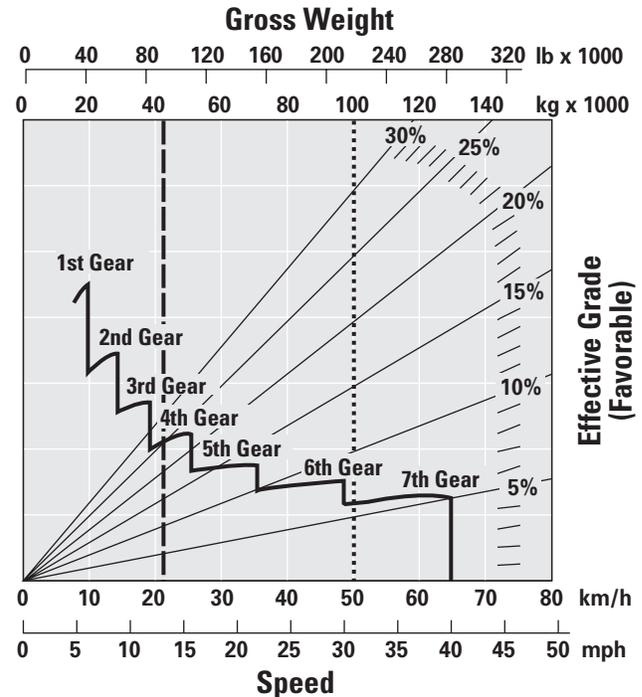
Grade Distance — 450 m (1500 ft)



Grade Distance — 600 m (2000 ft)



Grade Distance — 900 m (3000 ft)

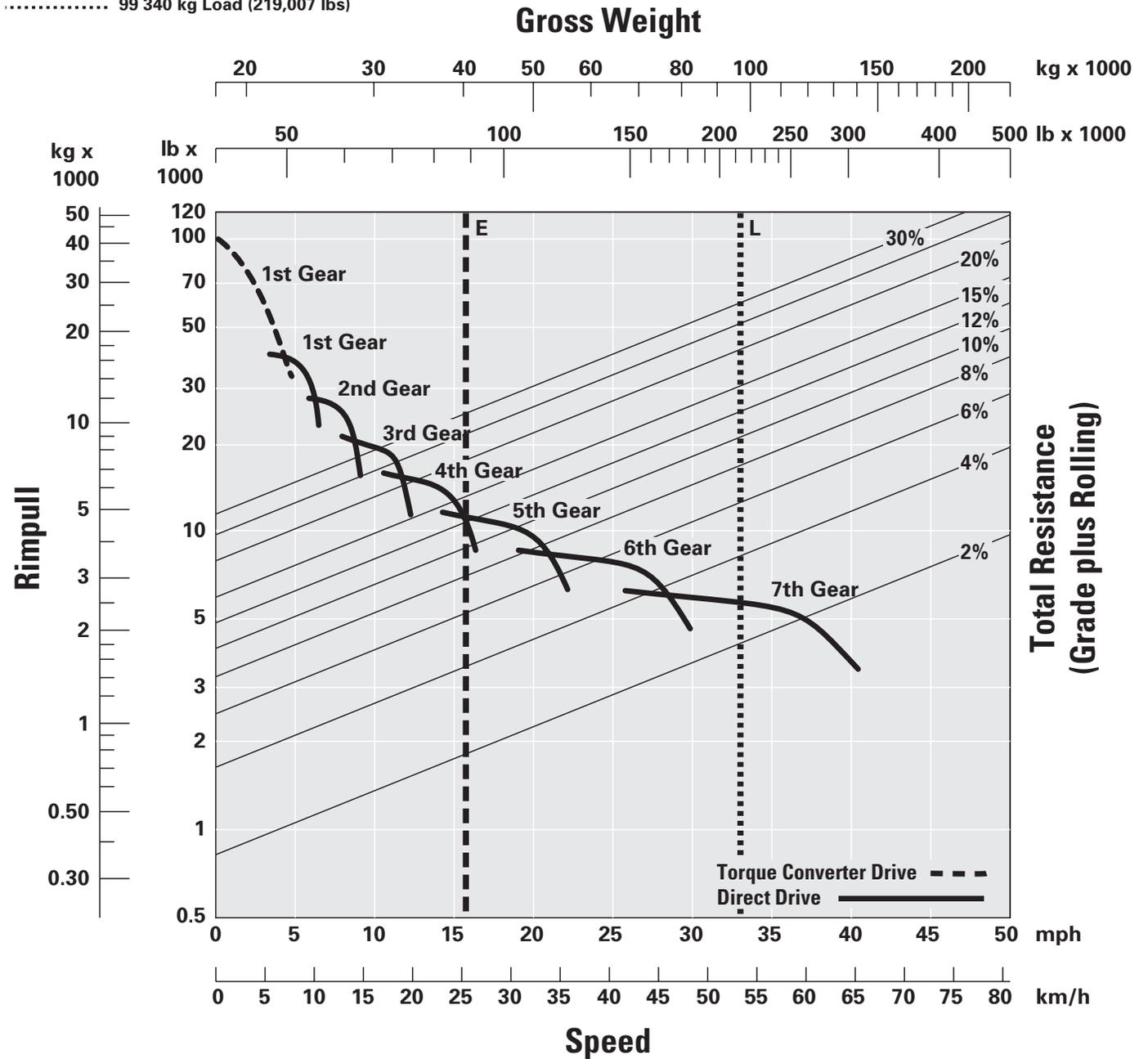


Grade Distance — 1500 m (5000 ft)

Gradeability/Speed/Rimpull

To determine gradeability performance:
 Read from gross weight down to the percent of total resistance. Total resistance equals actual percent grade plus 1% for each 10 kg/metric ton (20 lb./U.S. ton) of rolling resistance. From this weight-resistance point, read horizontally to the curve with the highest obtainable gear, then down to maximum speed. Usable rimpull will depend upon traction available and weight on drive wheels.

----- Empty Weight
 99 340 kg Load (219,007 lbs)



Standard Equipment

Standard equipment may vary. Consult your Caterpillar dealer for details.

- Air horn, electric
- Air line dryer
- Alternator, 50-amp
- Auxiliary jump start receptacle
- Back up alarm
- Battery disconnect switch, ground level
- Body mounting group
- Brakes:
 - Caliper disc (front)
 - Oil-disc (rear)
 - Parking
 - Secondary
- Brake (front) disconnect switch
- Brake heat exchanger
- Brake release motor, for towing
- Cab, ROPS:
 - Caterpillar Contour Series air suspension seat
 - Coat hook
 - Insulated and sound-suppressed
 - Radio ready
 - Storage compartment
 - Sun visor
 - Tinted glass
- Crankcase guard
- Diagnostic connection port, 24-volt
- Drive line guard
- Electrical system, 24-volt
- Electronic Monitoring System
- Filters, spin-on
- Gauges:
 - Actual Gear Indicator
 - Air pressure
 - Brake oil temperature
 - Coolant temperature
 - Fuel gauge
 - Hour meter, electric
 - Odometer
 - Speedometer
 - Tachometer
- Hoist lever, finger tip-actuated
- Lighting system:
 - Back up light
 - Dome/courtesy light
 - Hazard and directional signals, LED
 - Headlights, Halogen, with dimmer
 - Stop/tail lights, LED
- Mirrors, right and left
- Power port, 24-volt
- Precleaner
- Reservoirs (separate):
 - Brake/hoist
 - Steering
 - Transmission/torque converter
- Retarder
- Rock ejectors
- Seat belts, retractable
- Seat, passenger
- Service platform, bolt-on
- Sound reduction switch, body-up
- Starting, electric
- Steering, automatic supplemental, electric
- Steering wheel, padded, tilt, telescopic
- Tires, 24.00-35, radial
- Tow hooks, front
- Tow pin, rear
- Transmission, electronically controlled automatic power shift
 - with downshift/reverse shift inhibitor, neutralizer during dumping, neutral start switch, engine overspeed protection, directional shift management, programmable top gear, body-up shift limiter, economy shift mode and control throttle shifting
- Vandalism protection locks
- Window, electric power (operator)
- Windshield wipers and washer, electric intermittent

Optional Equipment

Optional equipment may vary. Consult your Caterpillar dealer for details.

Air conditioning
Automatic lube system
Automatic Retarder Control (ARC)
Engine coolant heater – 240 volt
Fuel fast fill adapter
Fuel heater
Integrated brake control
Muffler
Spare rim, 432 mm (17")
Traction Control System (TCS)

Truck Body:
Dual-slope body
Body tail end liner for dual-slope body
[Liner thickness – 16 mm (0.063") floor]
Truck Production Management System (TPMS)
Wiggins Service Center

773D Off-Highway Truck

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See your Caterpillar dealer for available options.

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