

# 775D

## Quarry Truck



### Cat® 3412E Engine

Gross power	541 kW	725 hp
Flywheel power	517 kW	693 hp

### Maximum gross

machine weight	106 600 kg	235,000 lb
SAE 2:1 capacity:	41.5 m <sup>3</sup>	54.3 yd <sup>3</sup>
Payload capacity with	63.4 mt	69.9 tons
16 mm (0.63") 400 Brinell liner	62.1 mt	68.4 tons

# 775D Quarry Truck

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

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## Power Train

The power train is designed, tested and manufactured by Caterpillar, starting with the large displacement, electronic Caterpillar® 3412E Diesel Engine, through the seven-speed power shift transmission. Total design control helps assure these individual components perform together as an efficient unit.

**pg. 5**

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## 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. 6-7**

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## 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. 8**

## ***Top performance.***

*The 775D is designed for high production and low cost-per-ton hauling in quarry applications.*

## ***Reliable, durable operation.***

*Rugged construction and easy maintenance can help extend life with low operating costs.*



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### Structures

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

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### Flat Floor Body

The flat floor truck body of the 775D incorporates time-proven box beam and full-length stringer design for extended life. The Caterpillar flat floor body is designed to help quarry trucks achieve the rated payload and to provide an optimum match with Caterpillar Loaders. **pg. 11**

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### Operator Station

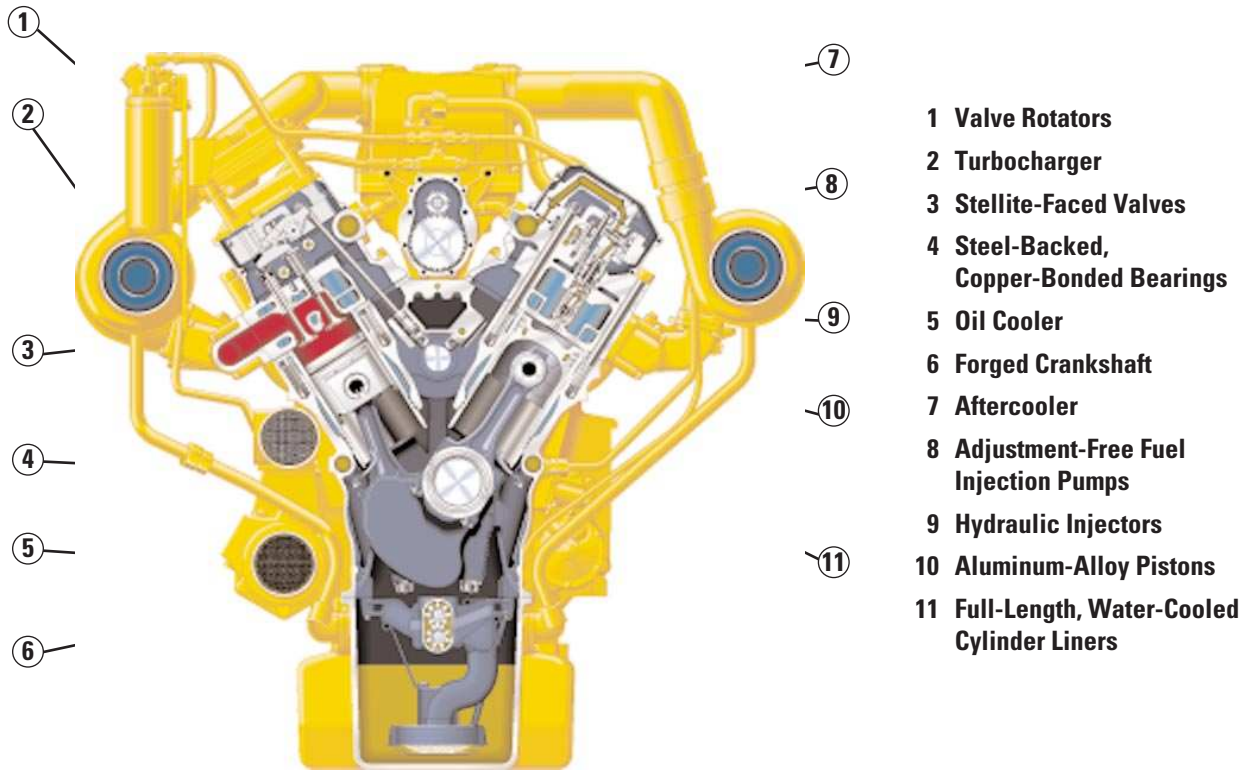
The 775D operating station is designed for total machine control in a comfortable and productive environment. Controls and gauges are positioned to maximize productivity and comfort. The cab includes air suspension seat and advanced electronic monitoring system. *Adjustable telescoping steering column, electric wipers, window and body controls reduce operator effort and simplify control.* **pg. 12-13**



✓ *New feature*

# Engine

*The twelve-cylinder, turbocharged and aftercooled engine is built for power, reliability, economy and with the HEUI fuel system, meets all worldwide emission standards.*



**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.

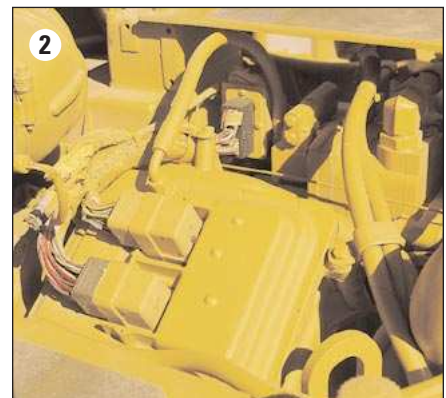
**The 19 percent torque rise** provides high lugging force during acceleration and less down-shifting on grade or in rough underfoot conditions. The torque rise effectively matches the transmission shift points to provide maximum efficiency and faster cycle times.

**The Hydraulic Electronic Unit Injector (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.

- **HEUI fuel system rate shaping technology** modifies the heat release characteristics of the combustion process for significant decreases in sound and emission levels.
- **Reduces specific fuel consumption** by up to 5 percent.
- **Exhaust smoke is significantly reduced** (by as much as 75 percent) through precise, electronic control of fueling limits and injection timing.

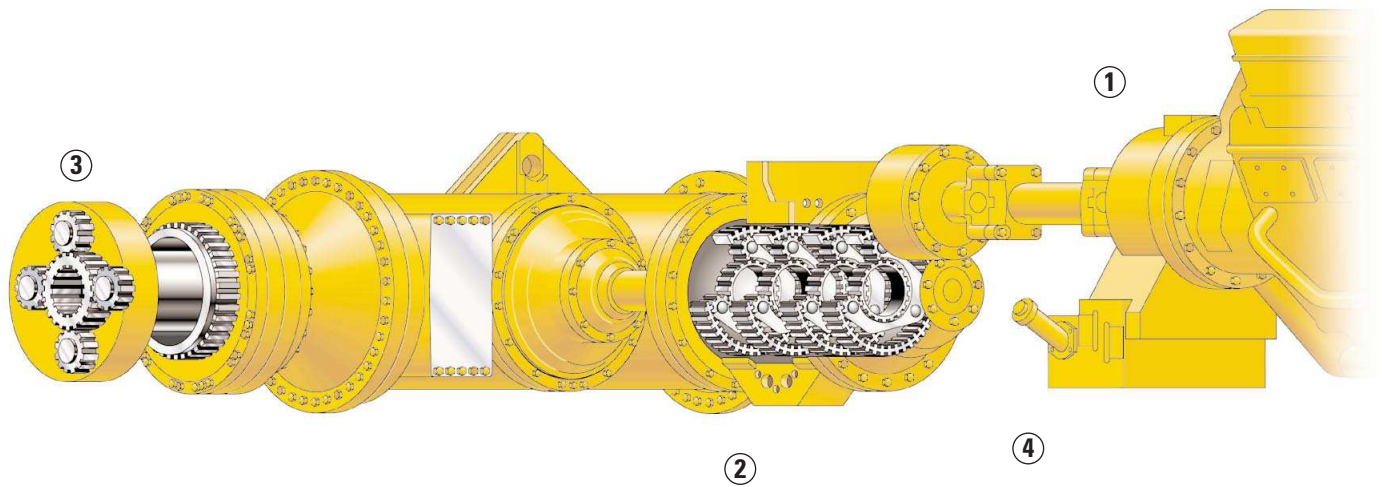
- **Improved reliability and durability** through elimination of the governor, reduction in mechanical linkages and incorporation of electronic protection strategies.

- 2 Electronic Control Module (ECM)** monitors key functions and logs critical indicators. The Electronic Technician can access this diagnostic information for easier maintenance and repair.



# Power Train

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



**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 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 wind-up, improving transmission life and increasing operator comfort.

**2 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** and differential torque multiplication of 17.48:1 further reduces stress on the drive train.

**4 Transmission and torque converter** share a common sump. The combined sump offers an easily accessible fill tube and site gauges.

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

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

**Transmission Chassis Controller (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.

**Caterpillar's power train 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.*

**Caterpillar's exclusive electronic integration** optimizes overall power train performance, reliability and component life for reduced power train operating cost.

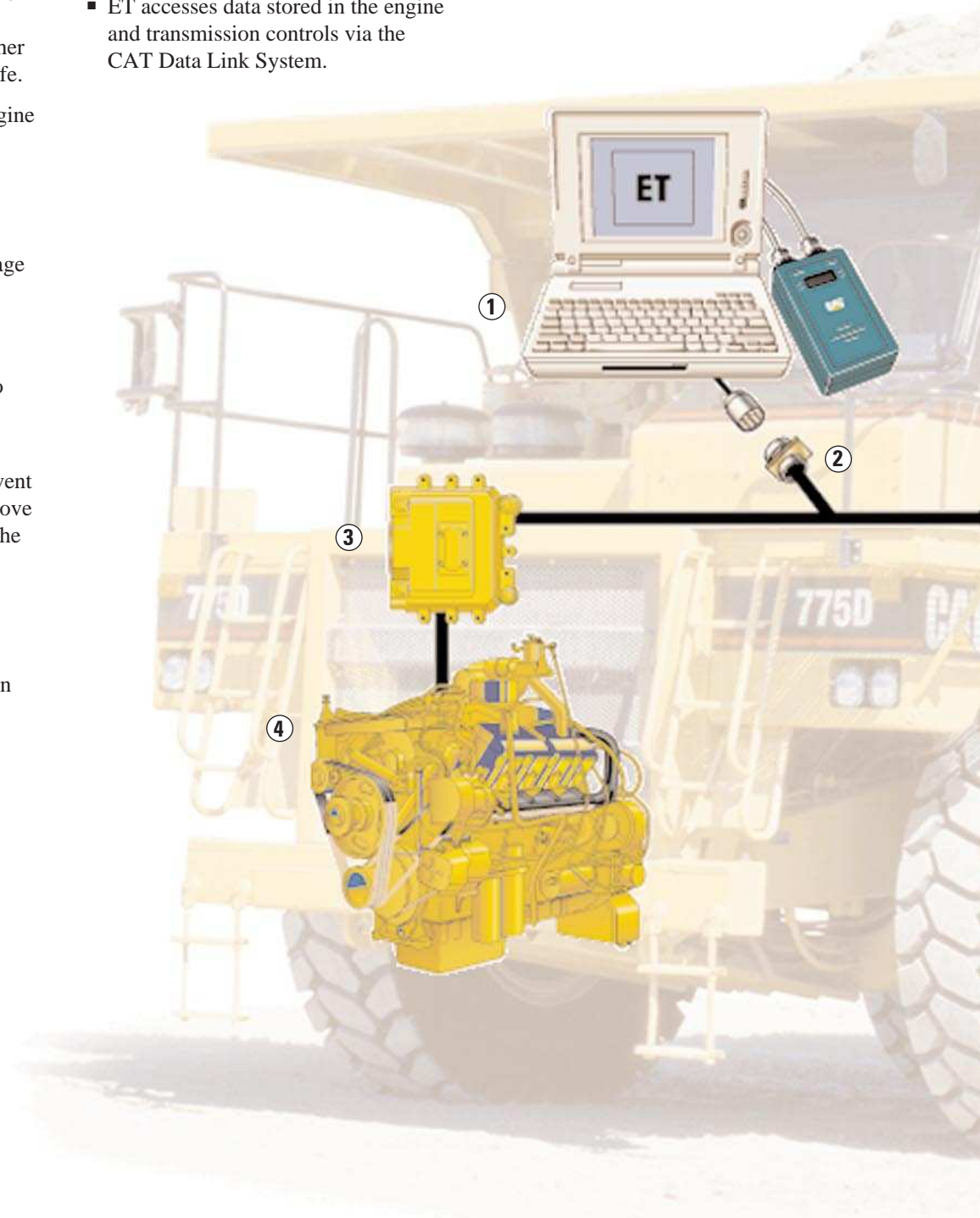
**The CAT Data Link** electronically integrates the machine's computer systems, which allows communications and provides the following benefits:

- **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 idle neutral coast inhibitor** helps prevent 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.

**Electronic Technician (ET) enhances diagnostics/serviceability.** The electronic engine and transmission controls provide exhaustive diagnostic capability for service technicians. The ability to store both active and intermittent indicators will simplify problem diagnosis and total repair time, resulting in improved mechanical availability and lower operating cost.

- ET accesses data stored in the engine and transmission controls via the CAT Data Link System.

- ET displays the status of all engine parameters including: throttle position, timing, and fuel flow.
- ET replaces 13 mechanical tools to perform functions like cylinder cut-out checks, injector solenoid tests and timing calibration.

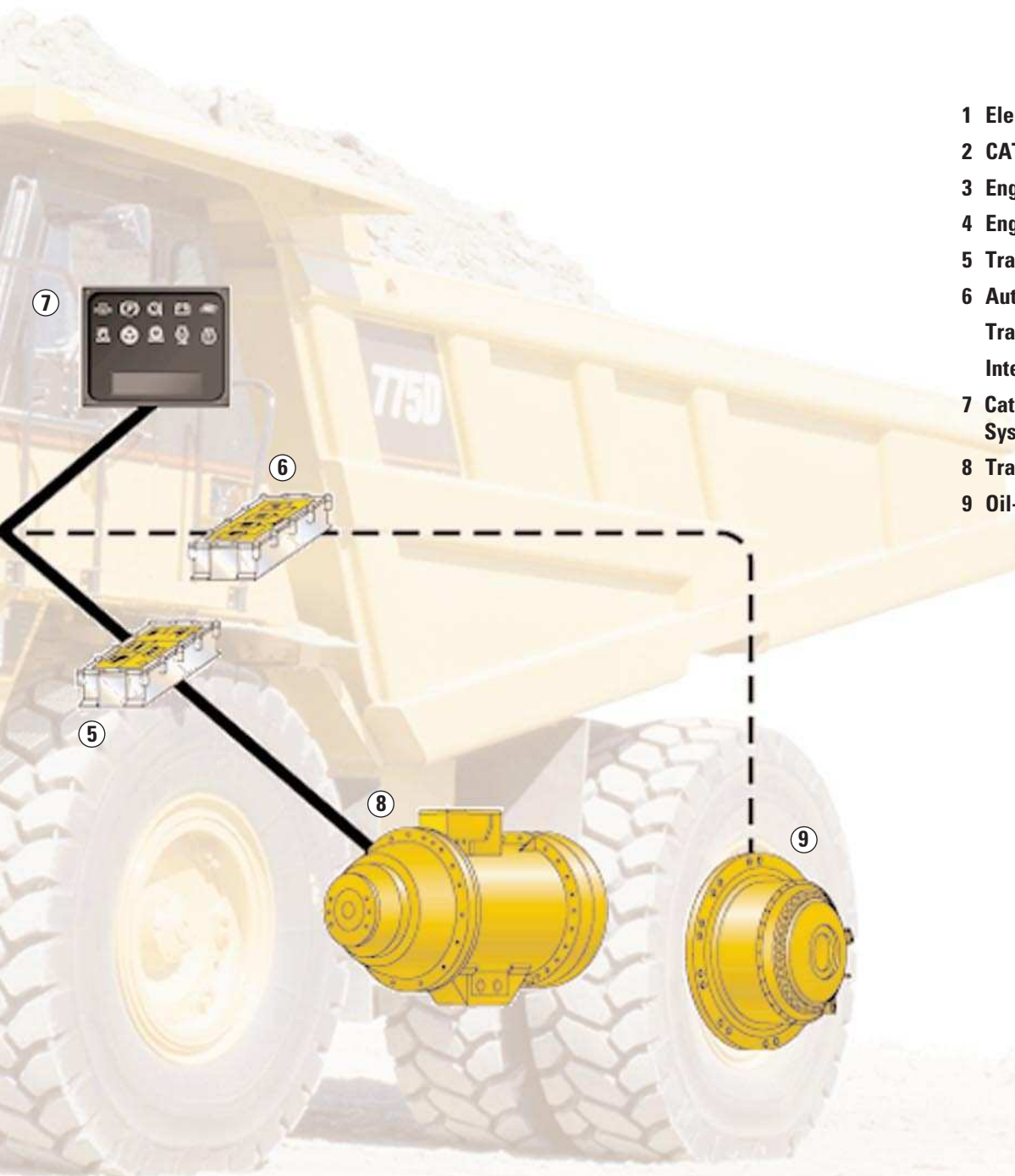


**Caterpillar Electronic Monitoring System (CEMS)** allows the operator to view requested information and utilizes a three-category warning system to alert the operator to abnormal machine conditions.

**Caterpillar offers optional attachments** that integrate with the CAT Data Link System:

- **Automatic Retarder Control (ARC)** works with other electronic components to automatically control retarding on grade, maintaining approximately 2,230 rpm.

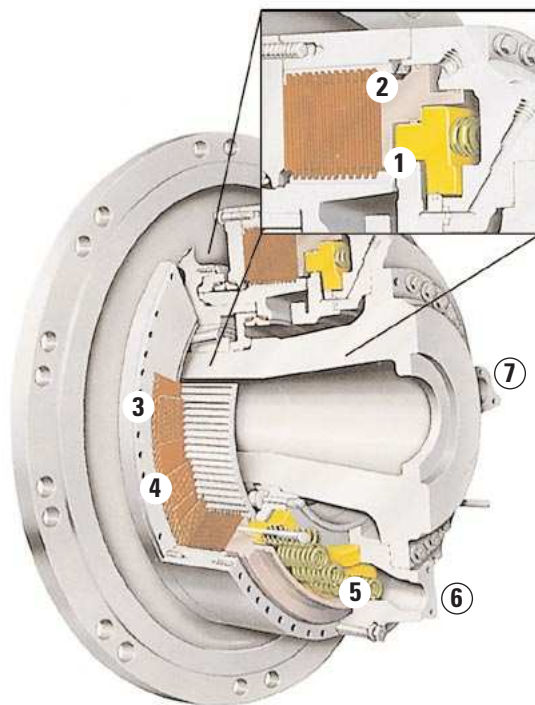
- **Traction Control System (TCS)** improves performance in poor underfoot conditions by electronically monitoring and controlling wheel slippage.
- **Integrated Brake Controller (IBC)** combines ARC and TCS, reducing the number of electronic components and electrical lines.



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

## Oil-cooled Rear Disc Brakes

*Reliable braking lets the operator concentrate on the haul road.*



- 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

**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** are designed and built for reliable, adjustment-free operation providing superior performance and service life in comparison to shoe-type and dry-disc systems.

**An oil film** prevents direct contact between the discs. Absorbing the braking forces by shearing oil and carrying heat away, this design extends brake life.

**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.

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

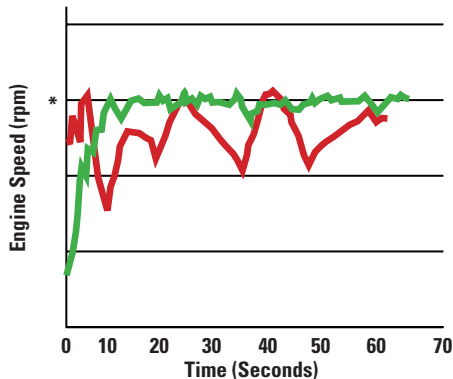
- When retarding, the engine runs against compression on downhill hauls, resulting in minimal fuel burn.
- Retarding forces and heat are absorbed through the oil. The retarding system generates lower drive line stresses than drive line retarding systems.



## Automatic Retarder Control (ARC) (Optional)

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

### ARC Operating Efficiency Advantages



■ Automatic Retarder Control  
(Maintains Engine rpm between 2,160-2,300)

■ Manual Retarder Control  
(Wide Variation in Engine rpm)

\* Optimum Engine rpm

**The Automatic Retarder Control (ARC)** electronically controls braking on grade to maintain approximately 2,230 engine rpm (engine rpm is adjustable from 2,160-2,300 rpm in increments of 10 rpm). ARC is deactivated when the operator applies the brakes or the 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.

**ARC results in:**

- **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.

## Traction Control System (TCS) (Optional)

*Electronically controls wheel slippage for improved performance.*

**Monitors wheel slip.** If wheel slip exceeds the set limit, the oil-cooled disc brakes are automatically applied to slow the spinning wheel.

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

**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.

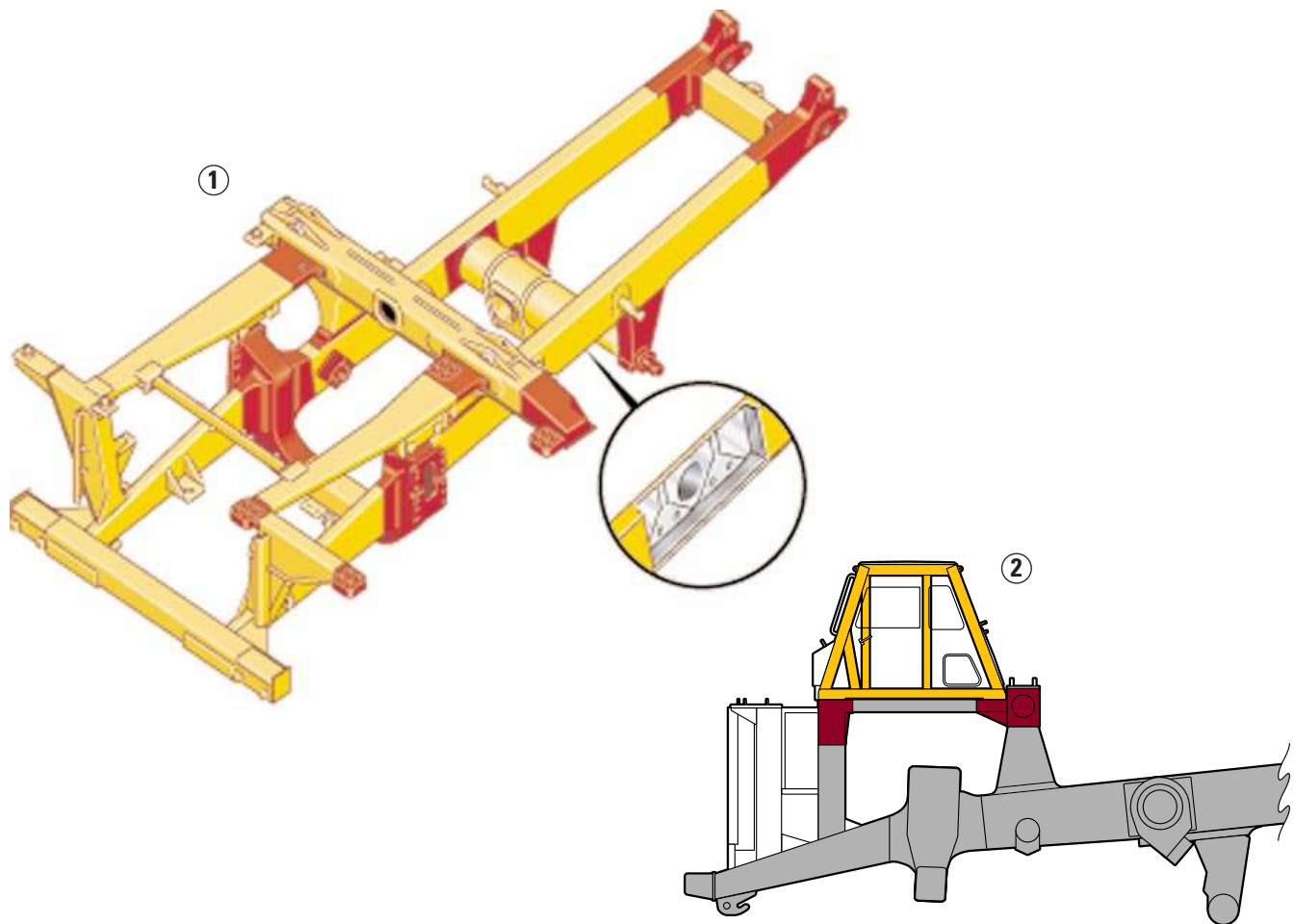
**Divides torque equally** to reduce stress created on final drives and axles when torque is transferred to one side.

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

**NOTE:** Caterpillar offers Integrated Braking Control (IBC) (optional), combining ARC and TCS into one electronic control.

# Structures

*The backbone of the Cat truck.*



**The 775D 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.

**1 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.

**The 775D 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 pre-heating in ambient temperatures above 16° C (60° F) using readily available welding supplies.

**2 The Rollover Protection Structure (ROPS)** attaches securely to four castings welded into the frame.

**The suspension system** is 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 – Flat Floor

*Caterpillar offers excellent wear characteristics in a flat floor design.*



**The flat floor quarry body** offers excellent load retention on grades up to 12 percent and on smoother haul road conditions.

**775D bodies** are designed to handle a variety of material densities. Maximum payload is reached in four to five passes from a matched Cat loader in 1620 kg/m<sup>3</sup> (2,700 lb/yd<sup>3</sup>) material and higher.

**Body floor construction** uses a 12° single slope, offering excellent wear characteristics and uniform dumping into hoppers, crushers and feeders.

**Sidewall and floor junctions** are 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.

**HARDOX 400 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.

**Custom attachments** including tail extensions, liner packages, sideboards, and other custom designs are offered to help ensure rated payload.

# Operator Station

*Control ease and comfort maximizes productivity.*

The 775D operator station is rated highly by operators. Everything needed for top performance is at the operator's finger tips.

- 1 **The wraparound dash panel** is provided in an easy line-of-sight arrangement, using LED backlit rocker switches.
- 2 **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** with ergonomic grip 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** has LED backlit gear numbers and ergonomic shift knob.
- 5 **Exceptional all-around visibility** reduces fatigue and improves productivity.
- 6 **Integral, sound-suppressed 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**  
0.10 m<sup>3</sup> (3.5 ft<sup>3</sup>) is located under the trainer's seat.

**9 Trainer's seat** with increased hip/shoulder room, back rest and retractable seat belt.

**10 Caterpillar Electronic Monitoring System (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 A standard heater and optional air conditioner** with four-speed fan and nine vents.

**12 Ergonomically designed foot pedals** for increased operator comfort.

- Secondary brake moved to floor.

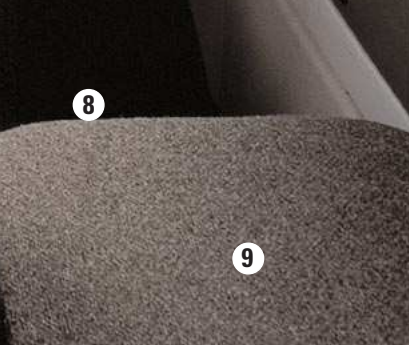
**13 Electric power window** for simplified operation.

**14 Electrohydraulic hoist lever** is finger tip actuated and provides low-impact, body-down snubbing.



**15 Truck Production Management System (TPMS) (optional)** 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  $\pm 5$  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.



## Systems/Applications

The 775D quarry truck is designed for quarry applications.



The **775D** 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.

- **Body options** include a full line of standard and custom designs based on specific customer preference, material density, loading tool, and site conditions.
- **Tire options.** A full line of tire options, representing various manufacturers, is offered by Caterpillar to maximize performance and life for specific applications.

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

- Truck Production Management System.
- Automatic Retarder Control.
- Traction Control System.
- Muffler/exhaust diverter.
- Custom product offerings.



**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.

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

**Designed to work as part of a system,** the 775D is best matched to the following Caterpillar loaders:

- 990 - 4 pass/match.
- 992G - 3 pass/match.
- 5130B - 3 to 4 pass/match.

## Serviceability/Total Customer Support

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

**1 The maintenance platform** provides access to:

- Air tanks, brake master cylinder, and make-up tank.
- Engine oil level.
- Air filters.
- Steering hydraulic tank.
- Battery compartment.

**2 A 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 air filters are easy to change**, reducing air filter maintenance times.

**Vertical, spin-on oil filters** provide for simplified servicing.

**Quick coupler pressure taps**, located in all hydraulic systems, provide clear, quick pressure checks. **S•O•S** oil analysis points 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 oil 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

Four-stroke cycle, twelve cylinder 3412E turbocharged and aftercooled diesel engine.

Ratings at 2,000 rpm*	kW	hp
Gross power	541	725
Net power	517	693

The following ratings apply at 2,000 rpm when tested under the specified standard conditions for the specified standard:

Gross power	kW	hp	PS
ISO 3046-2	541	725	—
Net power			
Caterpillar	517	693	—
ISO 9249	517	693	—
SAE J1349 (1/90)	512	686	—
EEC 80/1269	517	693	—
DIN 70020	—	—	718

Max torque:

2758 Nm (2,034 lb-ft) at 1,200 rpm

Torque rise: 19%

### Dimensions

Bore	137 mm	5.4 in
Stroke	152 mm	6.0 in
Displacement	27.0 liters	1,649 in <sup>3</sup>

### \*Power rating conditions

- based on standard air conditions of 25° C (77° F) and 99 kPa (29.32 in Hg) dry barometer
- used 35° C 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

### Features

- high pressure injection
- full electronic control
- cam-turned and tapered, cast aluminum-alloy pistons have three rings and are cooled by oil spray
- copper-bonded crankshaft bearings
- hardened crankshaft journals
- dry-type radial seal air cleaners with primary and secondary elements and precleaner
- direct-electric 24-volt starting system with 50-amp alternator and four 172-amp-hour, low maintenance, high output, 12-volt batteries

## Transmission

Caterpillar seven-speed, electronically controlled, automatic power shift transmission.

### Maximum travel speeds (standard 24.00-R35)

		km/h	mph
Forward	1	10.0	6.2
	2	13.9	8.6
	3	18.7	11.6
	4	25.1	15.6
	5	34.0	21.1
	6	45.9	28.5
	7	65.8	41.1
Reverse		12.0	7.5

### Features

- seven speeds forward and one reverse
- reverse is torque converter driven
- first gear has both torque converter drive and direct drive
- second through seventh are direct drive
- single-lever shift control provides automatic shifting in all gears up to the one selected by the control lever
- each shift is individually modulated for maximum smoothness
- separate hydraulic circuit with cooler
- electronic control has built in diagnostics and fault code memory, event memory and programmable features
- control throttle shifting
- economy shift mode

## Brakes

Meets the SAE J1473 OCT90, ISO 3450-1985 standards up to 106 600 kg (235,100 lb) gross operating weight.

Brake surface	
Front	1395 cm <sup>2</sup> (216 in <sup>2</sup> )
Rear	61 265 cm <sup>2</sup> (9,496 in <sup>2</sup> )

### Features

- retarding rating system:
  - continuous 526 kW (705 hp)
  - intermittent 1119 kW (1,500 hp)
- secondary braking
  - spring applied, hydraulically released, oil cooled disc brakes on rear axle
  - front brakes will activate as part of the secondary system, even if switched out of service system

- parking brakes
  - spring-applied, hydraulically released
  - uses wet disc brakes in service system
  - toggle switch activated

## Final Drives

Planetary, full-floating.

### Ratios

Differential	3.64:1
Planetary	4.80:1
Total reduction	17.48:1

## Frame

Full box-section with torque tube crossmember.

### Features

- integral front bumper
- front box beams for suspension cylinder and ROPS support
- box-section rear crossmember for body and ROPS support with attachment points for maintenance platform and rear engine hood hinge support
- castings are used to provide additional strength in critical stress areas
- mild-steel plates [290 MPa (42,000 psi) minimum yield strength] and castings [241 MPa (35,000 psi) minimum yield strength] provide:
  - flexibility
  - durability
  - easy field maintenance

## Service Refill Capacities

	L	U.S. Gallons
Fuel tank	700	185
Cooling system	151	40
Crankcase	68	18
Differentials and final drives	155	41
Steering tank	34	9
Steering system (includes tank)	60	16
Brake/hoist Hydraulic tank	133	35
Brake/hoist system (includes tank)	307	81
Torque converter/ Transmission sump	53	14
Torque converter/ Transmission system (includes sump)	72	19

## ROPS

Integral ROPS cab is standard.

### Features

- ROPS (Rollover Protection Structure) offered by Caterpillar for the machine meets ROPS criteria SAE J1040 APR88
- when properly installed and maintained, the cab offered by Caterpillar when tested with doors and windows closed as per work cycle procedures specified in ANSI/SAE J1166 MAY90, results in an operator sound exposure  $L_{eq}$  (equivalent sound level) of 79 dB(A)
- this operator A-weighted sound exposure level can be used in conjunction with OSHA, MSHA and EEC Occupational Noise Exposure Criteria

## Body Hoists

Twin, two-stage hydraulic cylinders mounted inside the main frame, double acting in second stage.

### Features

- pump flow at high idle is 562 L/min (148 gpm)
- relief valve settings are 17 225 kPa (2,750 psi) for raise and 3445 kPa (500 psi) for lower
- body raise time (at high idle) is 9.5 sec.
- body lower time
  - float 12.5 sec.
- power raise in both stages and power down in second stage

## Suspension

Independent, self-contained, oil-pneumatic suspension cylinder on each wheel.

Effective cylinder stroke:

Front	209 mm	8.2"
Rear	149 mm	5.9"
Rear axle oscillation		±8.0°

## Steering

Separate hydraulic system.

### Features

- twin, double-acting cylinders
- front suspension cylinders serve as kingpins
- automatically controlled, electric supplemental steering system is standard (meets SAE J1511 OCT90 and ISO 5010-1992)
- turning diameter on front wheel track 22 m (72' 2")
- machine clearance turning circle 24 m (78' 9")
- steering angle (left or right) 31°
- separate hydraulic system prevents cross contamination
- lower steering wheel effort and reduced steering wheel cycle times with a new variable-displacement, piston-type steering pump

## Tires

Standard: 24.00-R35 (E4)

- productive capabilities of the 775D 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 user evaluate all job conditions and consult the tire manufacturer to make proper tire selection

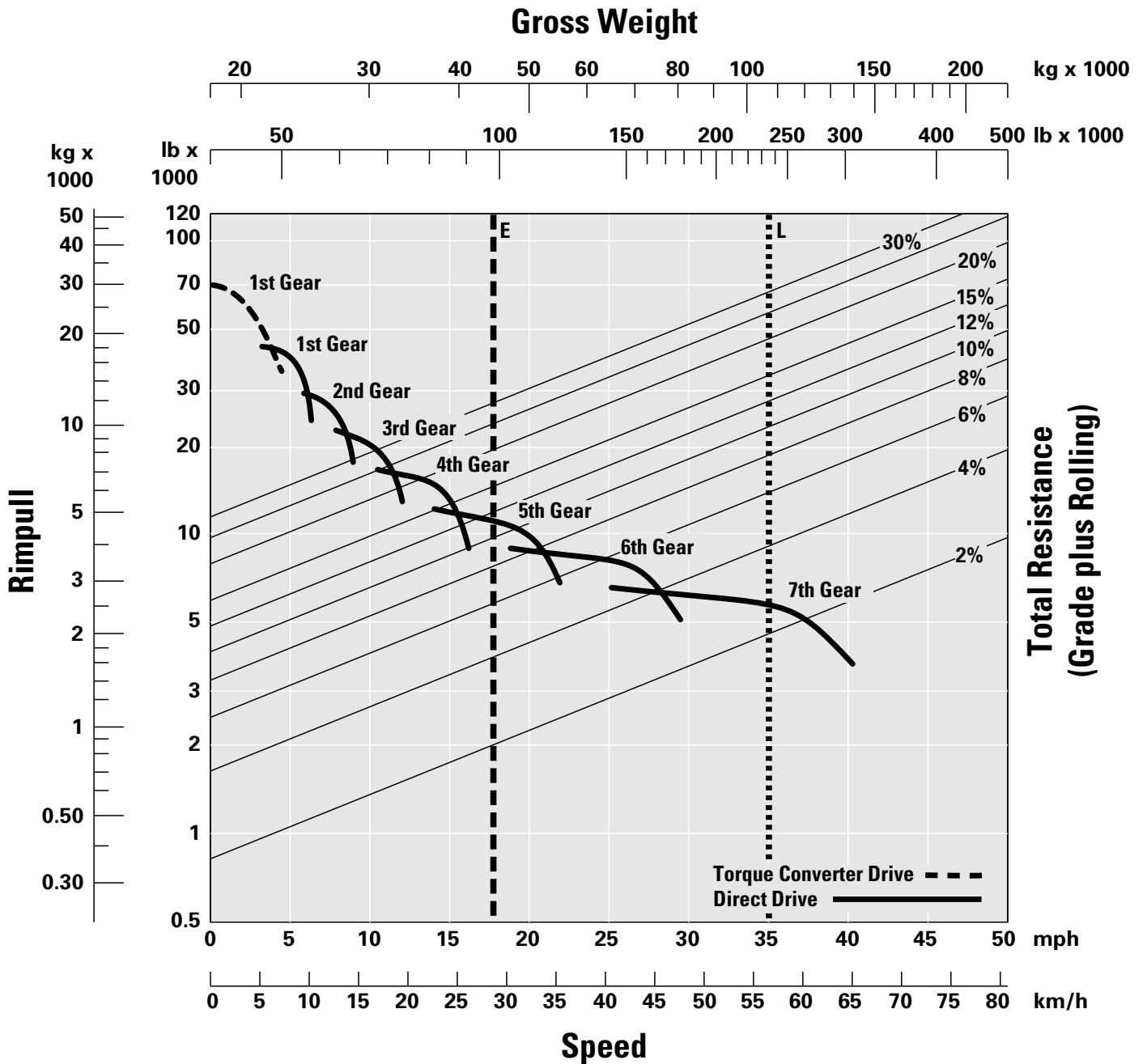
## Exterior Sound Rating

This machine, in a standard configuration, when measured and operated as per the prescribed modes in ANSI/SAE J88 JUN86, has 15 m sound pressure level of 84 dB(A) for the mode that gives the highest level.

# 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  
 ..... 106 600 kg-Load (235,000 lbs)



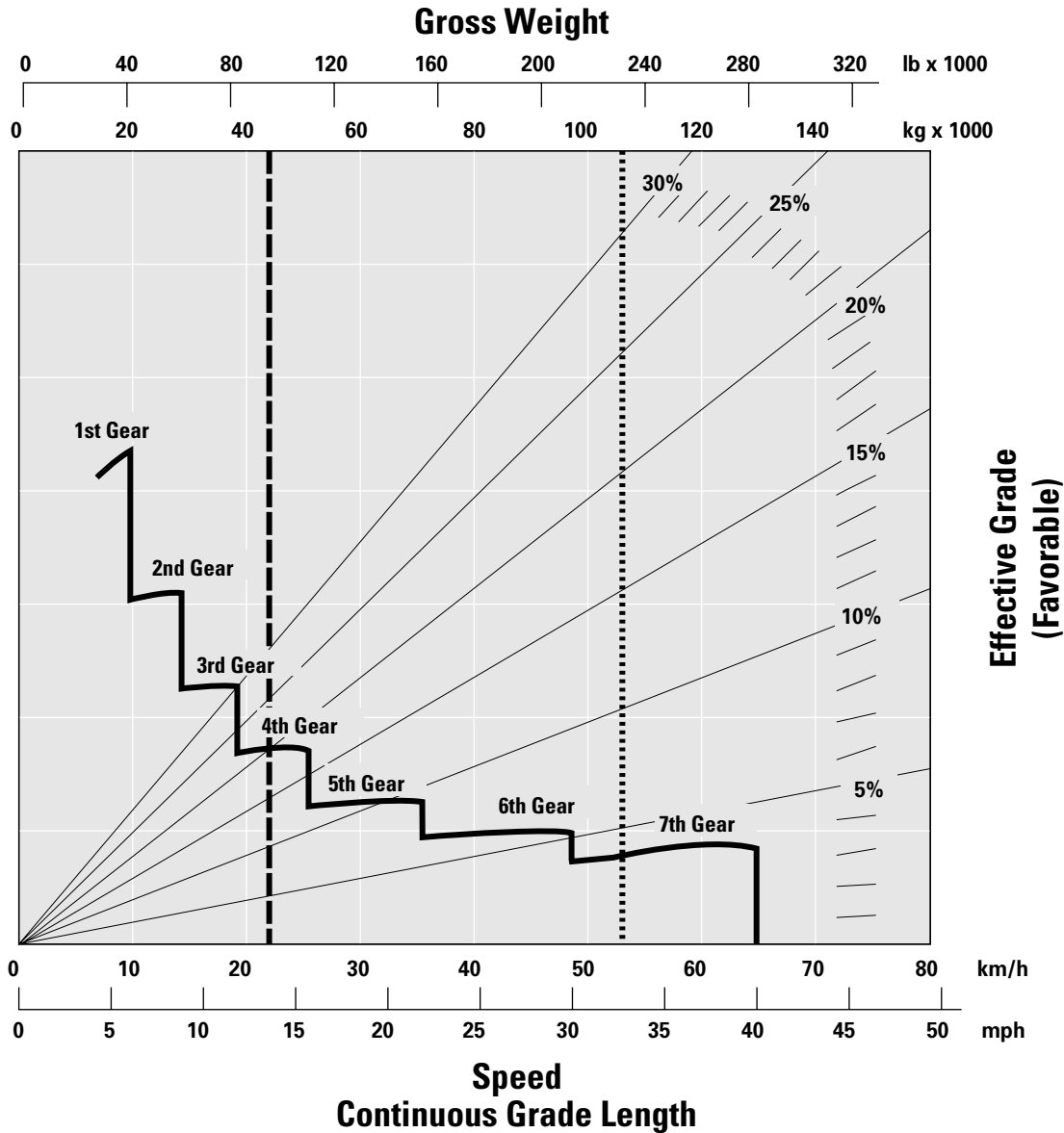
# Retarding Performance

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

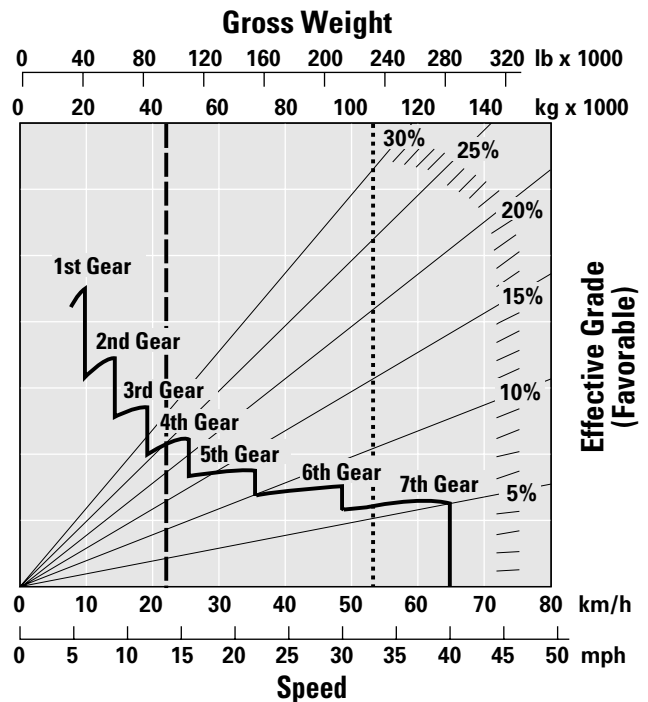
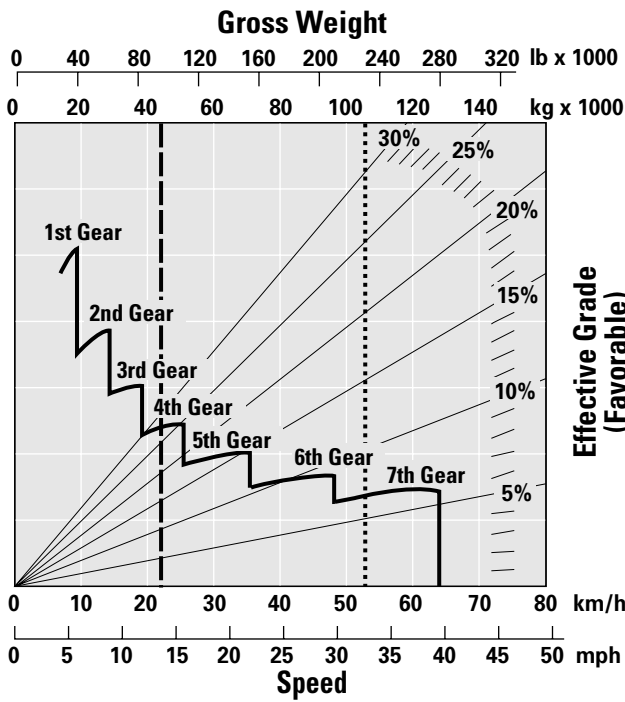
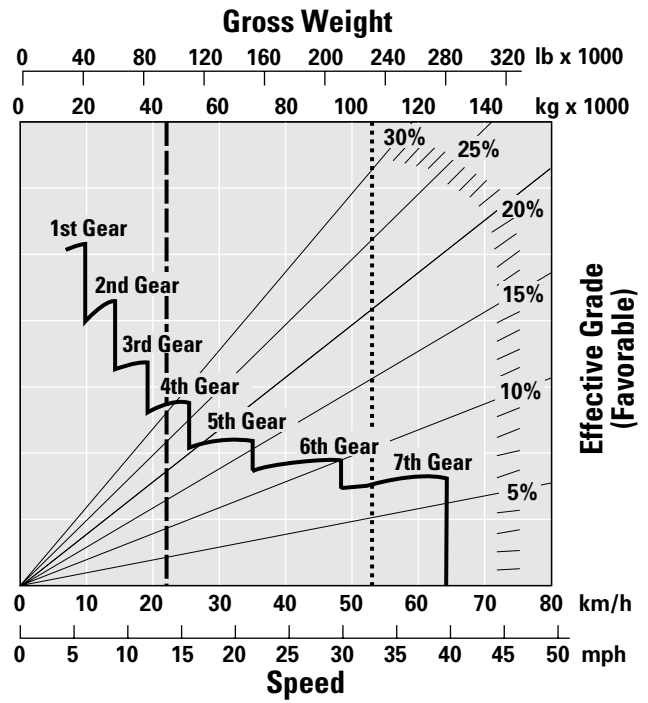
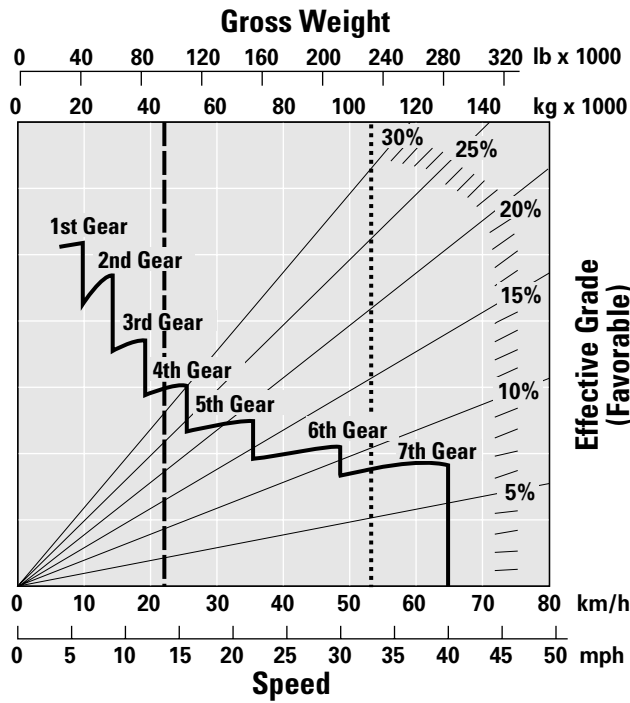
without exceeding cooling capacity. The following charts are based on these conditions: 32° C (90° F) ambient temperature, at sea level, with 24.00-R35 tires and a properly maintained cooling system.

**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  
 106 600 kg (235,000 lbs)

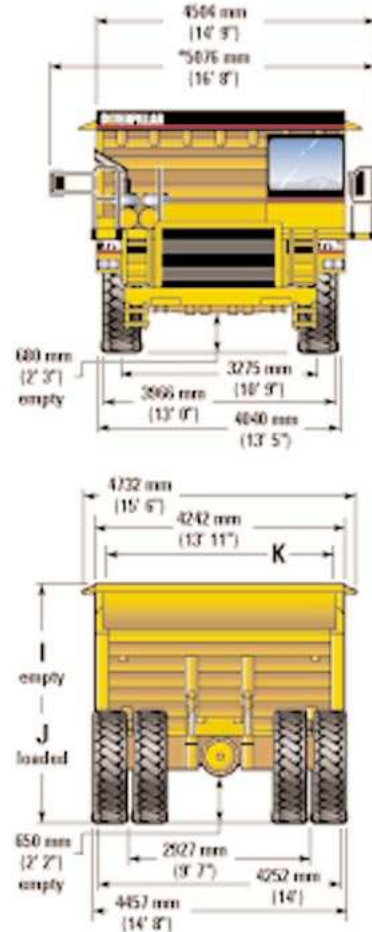
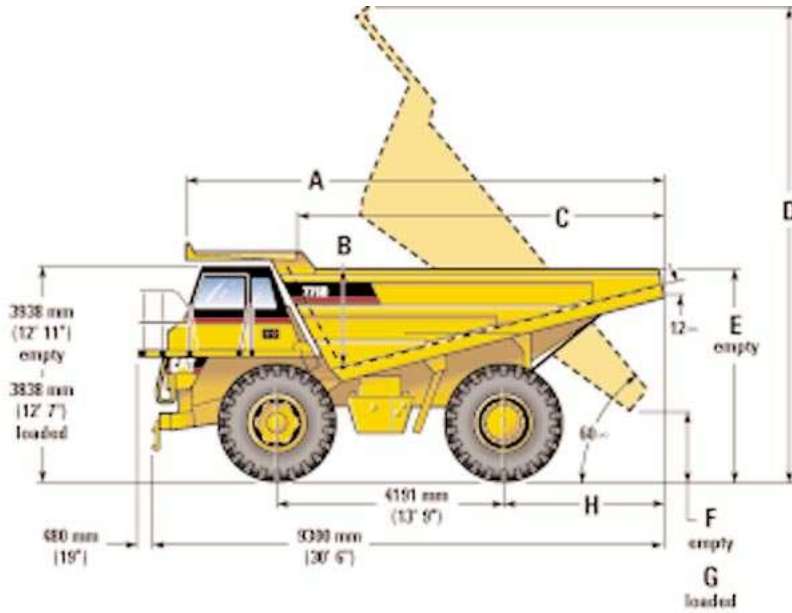


# Retarding Performance



# Dimensions

All dimensions are approximate.



\* Operating width to r.h. mirror

	Quarry		Quarry - Lined	
<b>A</b>	8625 mm	28' 4"	8625 mm	28' 4"
<b>B</b>	1904 mm	6' 3"	1896 mm	6' 3"
<b>C</b>	6537 mm	21' 5"	6513 mm	21' 5"
<b>D</b>	8796 mm	28' 11"	8796 mm	28' 11"
<b>E</b>	3912 mm	12' 10"	3912 mm	12' 10"
<b>F</b>	660 mm	2' 2"	660 mm	2' 2"
<b>G</b>	550 mm	1' 9"	550 mm	1' 9"
<b>H</b>	2872 mm	9' 5"	2872 mm	9' 5"
<b>I</b>	4410 mm	14' 6"	4410 mm	14' 6"
<b>J</b>	4335 mm	14' 2"	4335 mm	14' 2"
<b>K</b>	3990 mm	13' 1"	3974 mm	13' 1"

# Weights

(Approximate)

	Quarry		Quarry - Lined	
	kg	lb	kg	lb
Gross vehicle weight	106 600	235,000	106 600	235,000
Chassis	30 400	67,000	30 400	67,000
Body	12 800	28,300	14 100	31,200
Max payload	63 400	139,700	62 100	136,800
Std liner	—	—	—	—
Payload with std liner	—	—	62 100	136,800

Weight Distribution:

	Empty	Loaded	Empty	Loaded
Front axle	44.3%	31.2%	44.3%	31.2%
Rear axle	55.7%	68.8%	55.7%	68.8%

# Capacity

**Quarry - 100% fill factor**

	m <sup>3</sup>	yd <sup>3</sup>
Struck	31.4	41.1
Heaped 3:1	38.3	50.1
Heaped 2:1 (SAE)	41.5	54.3
Heaped 1:1	50.9	66.6

**Quarry - Lined 100% fill factor**

	m <sup>3</sup>	yd <sup>3</sup>
Struck	31.2	40.8
Heaped 3:1	37.8	49.4
Heaped 2:1 (SAE)	41.2	53.9
Heaped 1:1	50.3	65.8

## Standard Equipment

Standard equipment may vary. Consult a Caterpillar Dealer for specifics.

Air horn, electric	Electrical system, 24-volt	Retarder
Air line dryer	Electronic Monitoring System	Rock ejectors
Alternator, 50-amp	Filters, spin-on	Seat belts, retractable
Auxiliary jump start receptacle	Gauges:	Seat, passenger
Back up alarm	Actual Gear Indicator	Service platform, bolt-on
Battery disconnect switch, ground level	Air pressure	Sound reduction switch, body-up
Body mounting group	Brake oil temperature	Starting, electric
Brakes:	Coolant temperature	Steering, automatic supplemental, electric
Caliper disc (front)	Fuel gauge	Steering wheel, padded, tilt, telescopic
Oil-disc (rear)	Hour meter, electric	Tires, 24.00-35, radial
Parking	Odometer	Tow hooks, front
Secondary	Speedometer	Tow pin, rear
Brake (front) disconnect switch	Tachometer	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
Brake heat exchanger	Heater/defroster 11 070 kCal. (43,930 Btu)	Vandalism protection locks
Brake release motor for towing	Hoist lever, finger tip-actuated	Window, electric power (operator)
Cab, ROPS:	Lighting system:	Windshield wipers and washer, electric intermittent
Caterpillar Contour Series air suspension seat	Back up light	
Coat hook	Dome/courtesy light	
Insulated and sound-suppressed	Hazard and directional signals, LED	
Radio ready	Headlights, Halogen, with dimmer	
Storage compartment	Stop/tail lights, LED	
Sun visor	Mirrors, right and left	
Tinted glass	Power port, 24-volt	
Crankcase guard	Precleaner	
Diagnostic connection port, 24-volt	Reservoirs (separate):	
Drive line guard	Brake/hoist	
	Steering	
	Transmission/torque converter	

## Optional Equipment

With approximate changes in operating weights.

Optional equipment may vary. Consult a Caterpillar Dealer for specifics.

	kg	lb		kg	lb
Air conditioning	90	200	Fuel heater kit	5	12
Automatic lube system	60	135	Integrated brake control	55	120
Automatic Retarder Control (ARC)	6	13	Muffler	55	120
Clustered grease fittings	20	50	Spare rim 432 mm (17")	390	860
Engine coolant heater - 120-volt	3	7	Traction Control System (TCS)	50	110
Engine coolant heater - 240-volt	4	9	Truck Production Management System (TPMS)	100	225
Engine prelubrication system	45	100	Wheel chocks	25	50
Ether starting aid	5	10	Wiggins fast fuel change	2	5
Exhaust diverter/muffler	75	170	Wiggins high-speed oil change	1	2
Flexxaire fan	110	250			

# 775D Quarry Truck

AEHQ5139-02 (11-98)  
Replaces AEHQ5139-01

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Featured machines may include additional equipment only for special applications.  
See your authorized Caterpillar Dealer for available options.  
Materials and specifications are subject to change without notice.

