49145

CATERPILLAR 769B Truck

The 769B is the truck with the low weight-to-horsepower ratio for performance. Yet it has plenty of strength for durability and long life. And it's the truck with the modern features: long-lived oil disc brakes with outstanding downhill performance, a wheel-loader-matched body with excellent load retention, oil-pneumatic suspension for a smooth haul, and short-turning capabilities for maneuverability.
Get performance, day in and day out, with the Cat 769B Truck.

35 tons capacity (32 t) . . . dual-slope body with V-bottom provides large target, low loading height . . . excellent load retention.

Oil-cooled disc brakes are fade resistant . . . completely sealed for life.

Retarding capability . . . 560 horsepower continuous retarding effort is available.

Oil-pneumatic suspension absorbs haul road and loading shocks.

Cat diesel engine delivers 415 flywheel horsepower . . . low 315:1 loaded-vehicle-weight-to-HP ratio.

Power shift transmission shifts automatically in three speed ranges to give nine forward speeds. Top speed: 43 MPH (69 km/h).

Caterpillar engine

Flywheel horsepower @ 1900 RPM	415
Kilowatts	309

(Kilowatts is the International System of Units equivalent of horsepower.)

The net power at the flywheel of the vehicle engine operating under SAE standard ambient temperature and barometric conditions, 85° F. (29° C) and 29.38″ (995 mbar) Hg., using 35 API gravity fuel oil at 60° F. (15.6° C). Vehicle engine equipment includes fan, air cleaner, water pump, lubricating oil pump, fuel pump, air compressor and alternator. Engine will maintain specified flywheel power up to 5,000 ft. (1500 m) altitude.

769B
Truck

engine (continued)

Caterpillar 4-stroke cycle diesel Model D343, with six cylinders, 5.4″ (137 mm) bore, 6.5″ (165 mm) stroke and 893 cu. in. (14.6 litres) piston displacement.

Precombustion chamber fuel system with individual adjustment-free injection pumps and valves. Pressure-ratio controlled turbocharger.

Intake air aftercooler. Parallel manifold porting with two intake and two exhaust valves per cylinder. Overhead camshafts actuate valves directly. Stellite-faced valves, hard alloy seats, valve rotators. Variable timing fuel injection system.

Cam-ground and tapered aluminum alloy pistons with 3-ring design, cooled by oil spray. Steel-backed aluminum bearings, Hi-Electro hardened crankshaft journals. Pressure lubrication with full-flow filtered and cooled oil. Dry-type air cleaner with primary and safety elements.

Uses economical No. 2 fuel oil (ASTM Specification D396), often called No. 2 furnace or burner oil, with a minimum cetane rating of 35. Expensive, premium-quality diesel fuel can be used, but is not required.

Choice of air starting or 24-volt direct electric starting.

transmission

Caterpillar-built planetary power shift. Three automatically selected speeds – torque divider drive, direct drive and overdrive – in each of three manually selected gear ranges, for a total of nine forward speeds, three reverse. Single lever shift control.

final drive

Type ..... Planetary
Axle ..... Full floating
Planet bearings ..... Double-row roller
Ratios (with standard tires):
Differential 2.74:1
Planetary 4.80:1
Total reduction 13.15:1

tires (tubeless)

Productive capabilities of the 769B Truck are such that, under certain job conditions, Ton-MPH* capabilities of standard or optional tires could be exceeded and, therefore, limit production. Caterpillar recommends the user evaluate all job conditions in order to make proper tire selection.

Standard, front and dual rear:
18.00-25 (32 PR) ..... 125 TMPH rating (182 tkm/h)*
Optional, front and dual rear:
18.00-25 (32 PR) Extra tread ..... 100 TMPH rating (146 tkm/h)*
18.00-25 (28 PR) Radial steel cord ..... 175 TMPH rating (255 tkm/h)*
18.00-33 (24 PR) ..... 140 TMPH rating (204 tkm/h)*
18.00-33 (24 PR) Extra tread ..... 125 TMPH rating (182 tkm/h)*
18.00-33 (28 PR) ..... 140 TMPH rating (204 tkm/h)*
18.00-33 (32 PR) Radial steel cord ..... 240 TMPH rating (350 tkm/h)*

*Estimated Ton Mile Per Hour rating @ 100° F. (38° C) ambient temperature. Use as a guide only – consult tire manufacturers for precise data.

brakes

Front – Air-over-oil actuated, expander tube type. Brake lining surface ..... 496 sq. in. (3200 cm²)
Rear – Caterpillar oil-cooled, air-over-oil actuated disc brakes provide both service and retarder braking. Completely sealed from dirt and water. Individually replaceable as units.
Braking surface ..... 7,869 sq. in. (5.07 m²)
Parking – Internal expanding shoe-type brake with over-center lever engagement on transmission output shaft. Adjustable from seat.
Emergency – Air-over-oil actuated. Has independent air reservoirs for front and rear brakes. If air pressure drops below 80 psi (5.5 bar), a horn sounds to warn the operator. If air pressure drops to 45 psi (3.1 bar), brakes automatically apply to stop the 769B.
System meets OSHA regulations (SAE J166).

steering

Separate system, fully hydraulic, with twin double acting cylinders. Front suspension cylinders serve as kingpins. Optional emergency steering system – manually controlled switch activates electric steering pump if standard system fails.
Turning circle on front wheel track ..... 52′ 7″ (16 m)
Vehicle clearance turning circle ..... 59′ 1″ (18 m)
Steering angle (left or right) ..... 39°

frame

Full box section, special-rolled top and bottom members, box section and torque tube cross members, integral front bumper.

suspension

Independent, self-contained pneumatic-oil suspension cylinders on each wheel. Variable rebound rate reduces impact, smooths ride.
Effective cylinder stroke, front ..... 9.3″ (236 mm)
rear ..... 7.5″ (190 mm)
Rear wheel oscillation (maximum) ..... 8°

cab

Constructed of steel. Includes sound suppression materials. Tinted glass standard. Ventilated air circulation. Twin wipers and washer. Electric gauges, sealed against dust. Walkway entrance. Mounting ladders in front on both sides. Heater, defroster, floor mat, sun visor, mirrors on both sides.

service refill capacities

	U. S. Gallons	(Litres)
Fuel tank	135	(510)
Cooling system	27	(102)
Crankcase	9.25	(35)
Differential	16	(61)
Final drives (each side)	3.25	(12)
Integral transmission, brake and hoist system	60	(227)
Steering system	12.75	(48)

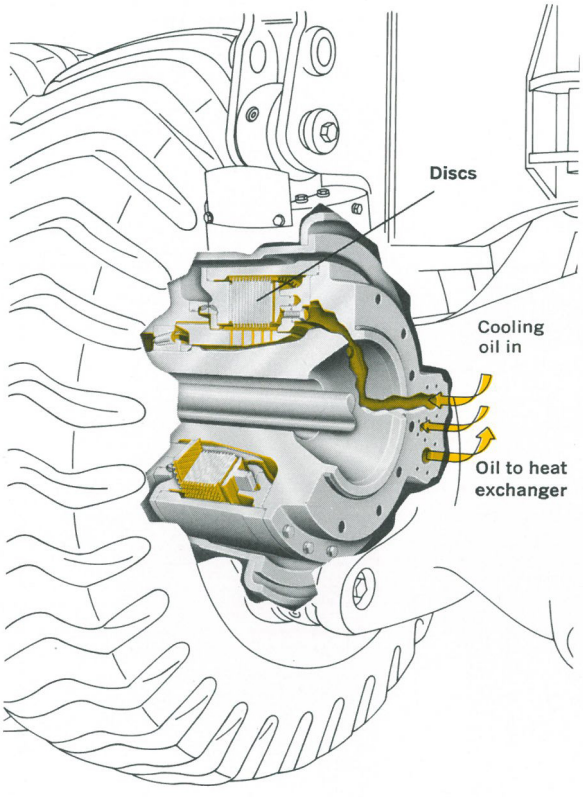
Standard four-wheel service brakes on the 769B include front wheel expander tubes and oil-cooled rear discs. The disc brakes resist fading even with repeated braking. Their life greatly exceeds that of conventional drum-and-shoe brakes. They are completely sealed and require no periodic adjustment. If pressure drops below 60 psi (4.1 bar) in the service/retarder system, a buzzer and red light warn the operator. (Dash-mounted switch enables operator to lock front brakes out of system.) The entire system conforms to OSHA regulations.

Rear disc brakes work as service brakes and retarders – absorbing high torque loads **at the wheels,** reducing stress on the power train. The adjustment-free discs in each rear brake are fade resistant because the oil which surrounds them is continuously cooled by a water-to-oil heat exchanger. A lever on the steering column lets the operator modulate the retarding capacity to descend grades at optimum productive speeds. The operator can also upshift or downshift without releasing the retarder – or he can override the retarder simply by depressing the foot pedal, if more braking is needed. There's a light on the dash to remind the operator the retarder is in use.

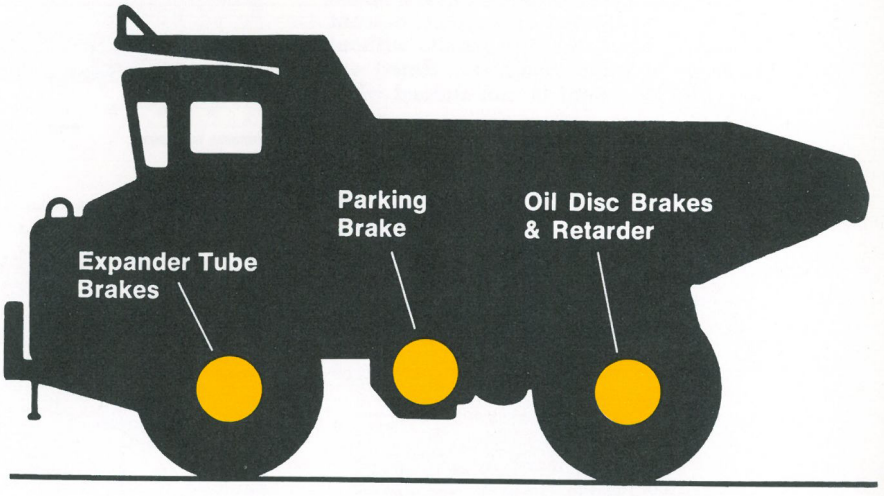
Parking brake is a hand-lever-operated, mechanical shoe brake mounted on the transmission.

Separate air and oil control circuits . . . one for front service brakes, another for rear service, a third for retarder. The service and retarder systems are connected through check valves. If oil pressure drops in one system above the check valve, the other system will activate the rear brakes.

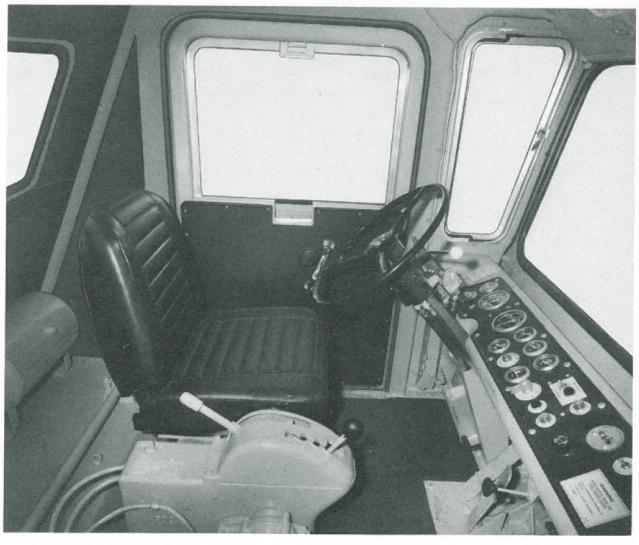
Emergency braking is provided by two independent air reservoirs. The system allows axle-by-axle control for reserve braking on at least one set of wheels. A hand lever on the left side of the steering column allows modulated application of these brakes. If air pressure drops below 80 psi (5.5 bar) in the emergency system, a horn warns the operator. And if pressure in the emergency system after repeated application drops to 45 psi (3.1 bar), the brake will automatically be applied.

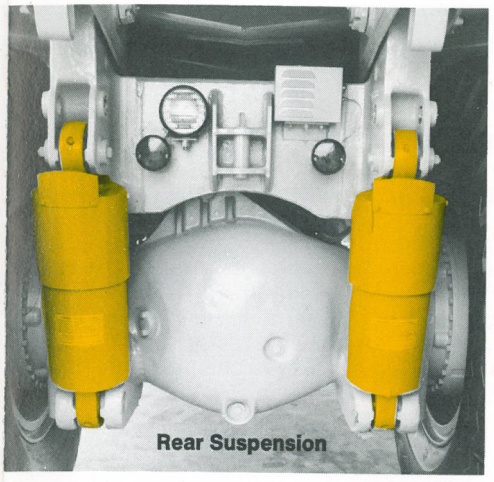


Oil Disc Brakes

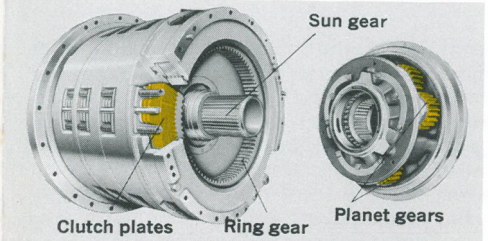


769B cab now features as standard all-steel construction and sound suppression material. Operator noise level for an 8 hour period complies with OSHA noise exposure limits in effect at the date of manufacture. This compliance was obtained by measuring operator noise exposure while working in a test cycle representative of the type of work usually performed by these machines. (Variables encountered on the job, such as nearby noise sources or noise reflecting surfaces, may reduce the compliance period. If this occurs, ear protective devices may be required for short periods.)

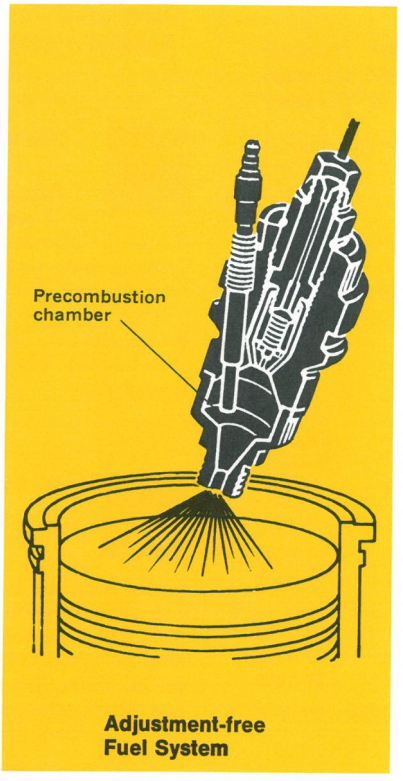




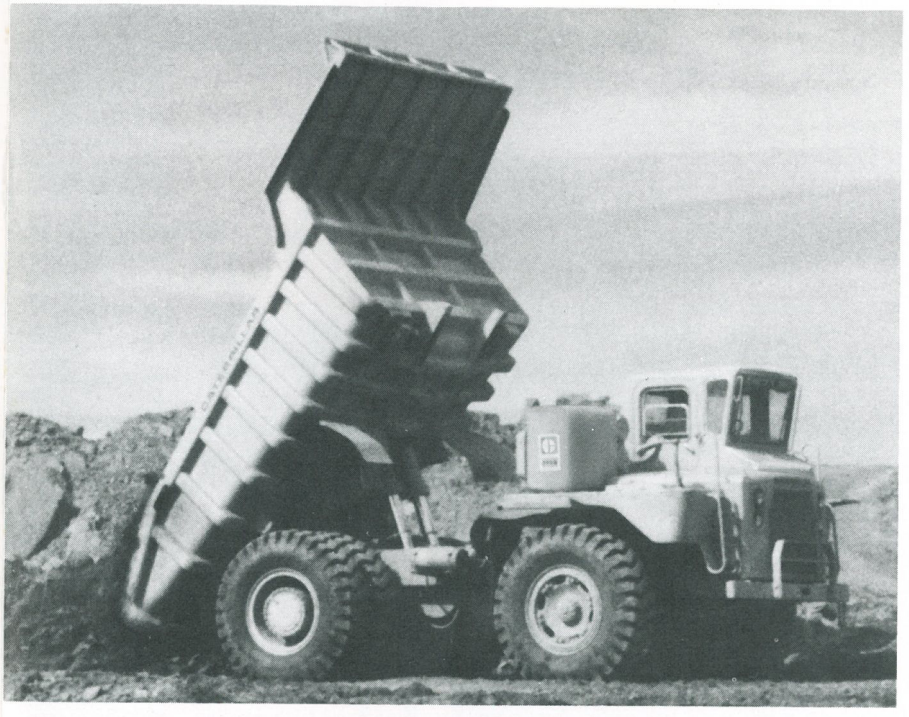
Rear Suspension



Planetary Transmission



Adjustment-free Fuel System



Dual-slope body is designed to retain heaped loads on upslopes with a main floor that slopes forward 8° and a 20° ducktail plate. An 8° longitudinal "V" in the bed lowers the center of the load for more stability and lessens the impact of loaded rock.

Body toughness and strength are built in with 100,000 psi (689 MPa) yield steel for all front, side and bottom plates as well as for body ribs. The 769B has **eight** wrap around ribs closely spaced to give greater side wall support. Optional body liners offer extra protection against extremely abrasive materials and high impact loading. Exhaust, piped through the ribs, heats the body for cleaner dumping of wet, sticky loads.

Cat 415 FWHP D343 diesel has the power to climb steep grades and move fast over the long haul. You can work in altitudes to 5,000 ft. (1500 m) and the 769B will still deliver its full horsepower. Caterpillar's adjustment-free fuel injection system burns fuel efficiently. Individual pumps feed fuel into precombustion chambers for full atomization and efficient burning of all fuels. You don't need to run on premium diesel fuels.

Four-wheel oil-pneumatic suspension smooths the ride for operator comfort and less wear on the truck itself. Suspension cylinders use oil and nitrogen gas under pressure to absorb shocks, reducing twisting forces on the body, frame, and tires. The two rear cylinders are mounted between the frame and the oscillating rear axle; they allow either rear dual to drop or rise 8° to keep all wheels firmly on the ground while rolling over a bump. A rear axle sway bar absorbs lateral thrusts.

Two front suspension cylinders act as steering kingpins to give a short turning circle of 59′ 1″ (18 m) for excellent maneuverability. Optional electric steering lets the operator turn the wheels with a dead engine for emergency control.

Single shift lever controls three forward gear ranges and one reverse range. Within each range a speed sensing valve automatically shifts through torque divider drive, direct drive and overdrive. So you get nine speeds forward and three reverse with only three moves of the control lever. For increased safety, a special valve automatically neutralizes the transmission when the engine is off. This prevents the truck from being started in gear. In addition, the transmission cannot be shifted until the parking brake is released.

Rugged planetary design, with gears 120° apart, reduces load stresses. Gear sets are encircled by large clutch packs which have a surface contact area of 3408 in.^{2} (21 988 cm^2). The plates are continuously cooled and pressure lubricated by oil for longer life.

Dual-slope main floor with V-bottom. Eight box-section ribs form framework for single thickness, high-tensile, heat-treated steel side, front and bottom plates with 100,000 psi (689 MPa) yield strength. Exhaust heating is standard.

Sidewall plate thickness	.38″ (10 mm)
Front plate thickness	.38″ (10 mm)
Bottom plate thickness	.75″ (19 mm)
Operating width with bolt-on canopy side guards	12′ 10″ (3900 mm)

body hoists

Twin, three-stage hydraulic cylinders, double-acting in third stage.

Pump capacity and pressure	110 gpm@ 2000 psi (416 litres/min @ 138 bar)

weights (approx.)

	lb.	(kg)
Total empty weight	60,760	(27 560)
Chassis with hoists	44,760	(20 300)
Body, empty	16,000	(7260)
Weight distribution		
Empty,		
Front axle, 49%	30,000	(13 600)
Drive axle, 51%	30,760	(13 950)
Loaded (based on 70,000 lb. (31 800 kg) load)		
Front axle, 33%	43,590	(19 770)
Drive axle, 67%	87,170	(39 540)
Total gross weight	130,760	(59 310)

Dimensions are based on 18.00-25 tires. Increase vertical dimensions 3.75″ (95 mm) for 18.00-33 tires.

capacity

Tons	35 (32 t)
Cubic yards, struck (SAE)	22.0 cu. yd. (17 m³)
Heaped (3:1) (SAE)	26.9 cu. yd. (20.5 m³)
Heaped (2:1) (SAE)	29.4 cu. yd. (22.5 m³)
Heaped (1:1) (SAE)	36.4 cu. yd. (28 m³)

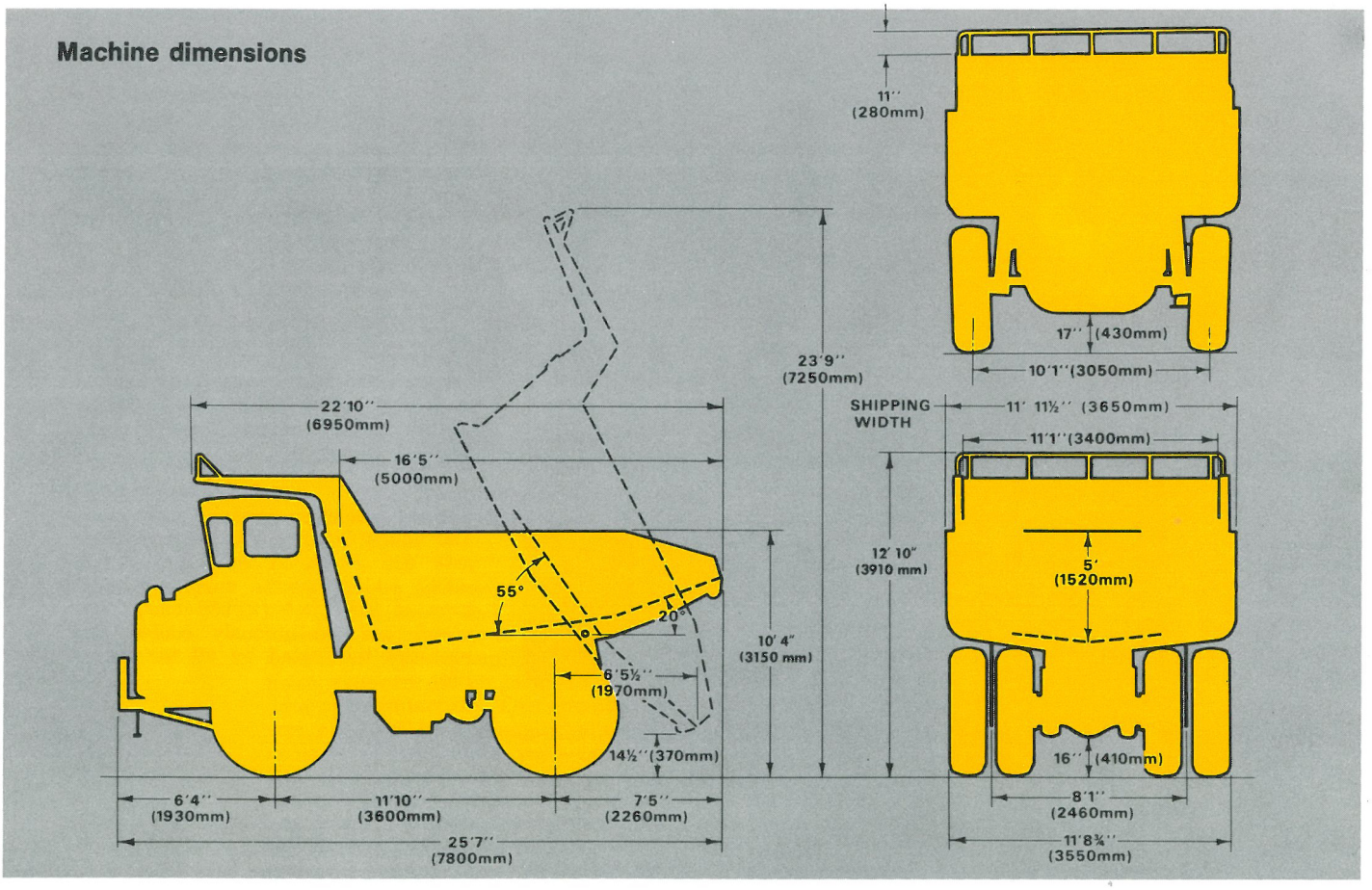
standard equipment

Oil disc brakes (rear). Expander tube brakes (front). Parking brake. Emergency brake system. Back-up alarm. Brake heat exchanger. Crankcase guard. Canopy side guards, bolt-on (shipped not installed). Engine tachometer. Air cleaner service indicator. Heater and defroster. Mirrors, right and left. Adjustable seat. Tinted glass. Rock ejector bars. Sound suppression material. Sun visor. Windshield wipers and washer. Vandalism protection locks. Seat belt.

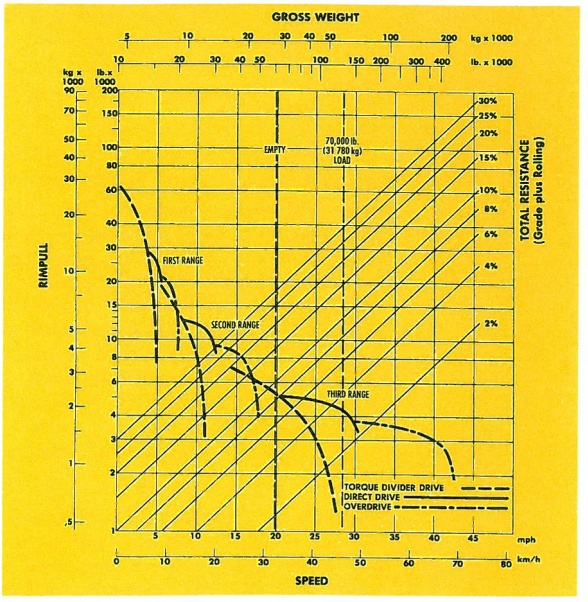
optional equipment

Differential, automatic locking. Downshift inhibitor. Fenders. Fast fuel filler, manual or automatic shutoff. Full suspension seat. Liners, body wear: .38″ (10 mm) bottom and .25″ (6 mm) sides and front, or .75″ (19 mm) bottom and .38″ (10 mm) sides and front. Oil change system, for vacuum drain, pump fill. Recording tachograph. Seat, passenger (includes seat belt). Start receptacle, auxiliary, electric. Steering system, emergency. Tires (see page 2). Tool kit.

Machine dimensions



CATERPILLAR

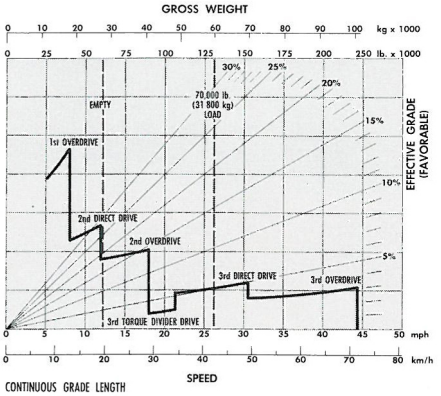


Gradeability-Speed-Rimpull

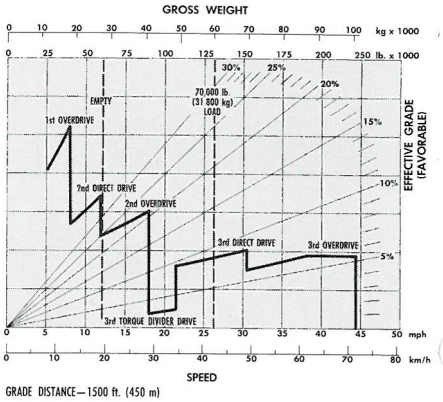
To determine gradeability performance:
Read from gross weight down to the percent of total resistance. (Total resistance equals actual percent grade plus 1% for each 20 lb./ton (10 kg/t) of rolling resistance.) From this weight-resistance point, read horizontally to the curve with the highest obtainable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

Brake Performance

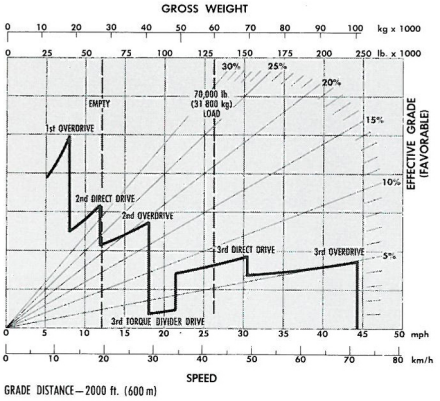
To determine brake performance:
Read from gross weight down to the percent effective grade. (Effective grade equals actual percent grade, minus 1% for each 20 lb./ton (10 kg/t) of rolling resistance.) From this weight-effective grade point, read horizontally to the curve with the highest obtainable speed range, then down to maximum descent speed brakes can safely handle without exceeding cooling capacity. Rated engine RPM should be maintained when braking.



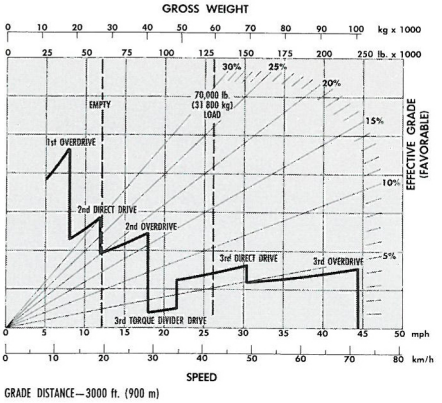
CONTINUOUS GRADE LENGTH



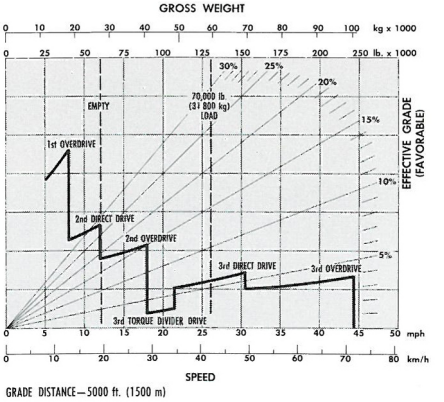
GRADE DISTANCE—1500 ft. (450 m)



GRADE DISTANCE—2000 ft. (600 m)



GRADE DISTANCE—3000 ft. (900 m)



GRADE DISTANCE—5000 ft. (1500 m)

Materials and specifications are subject to change without notice.

AE049145 (3-74)
Replaces AE043697