



CATERPILLAR

777 Truck

Summary of features

- **77 metric ton** (85 U.S. ton) capacity. Dual-slope body with V-bottom provides large target, low loading height, excellent load retention.
- **Oil-cooled disc brakes** are fade-resistant . . . completely sealed against moisture and abrasives.
- **Oil-pneumatic suspension** . . . absorbs haul road and loading shocks to reduce stresses on frame and other components.
- **Cat D348 diesel Engine** delivers 650 kW (870 horsepower) at the flywheel. Low loaded-vehicle-weight-to-power ratio.
- **Cat-designed-and-built automatic transmission** . . . seven speeds forward and one reverse. Top speed loaded: 60 km/h (37 MPH).
- **CAT PLUS** . . . from your Caterpillar Dealer . . . the most comprehensive, total customer support system in the industry.



Caterpillar Engine

Kilowatts @ 1900 RPM 650
Horsepower 870

(Kilowatts (kW) 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, 20°C (85°F) and 995 mbar (29.38" Hg), using 35 API gravity fuel oil at 15.6°C (60°F). Vehicle engine equipment includes fan, air cleaner, water pump, lubricating oil pump, fuel pump and alternator. Engine will maintain specified power up to 2300 m (7500 ft.) altitude.

Cat 4-stroke-cycle D348 diesel Engine, 60° V-12 with 137 mm (5.4") bore, 165 mm (6.5") stroke and 29.3 liters (1786 cu. in.) displacement.

Precombustion chamber fuel system. Twin turbochargers and after-coolers, parallel manifold porting with two intake and two exhaust valves per cylinder. Stellite-faced valves, hard alloy steel seats, valve rotators.

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 cleaners with primary and safety elements.

24-volt direct electric starting system with glow plugs for preheating precombustion chambers. 50-amp alternator. Four 220-amp-hour, 12-volt batteries. Optional air starting arrangement available.

777

Truck



transmission

Caterpillar seven-speed, automatic transmission. Seven speeds forward and one reverse. First gear forward and reverse are torque converter drive. Second gear has both torque converter and direct drive. Gears three through seven are direct drive. Single-lever shift control provides automatic shifting in all gears up to the one selected by the control lever.



final drive

Type Planetary
Axle Full floating

Ratios:

Differential 2.74:1
Planetary 7.00:1
Total reduction 19.18:1



tires

Standard, front and dual rear:
24.00-49, 42 PR (E-3)

Optional, front and dual rear:

24.00-49, 42 PR (E-4)	27.00-49, 36 PR (E-4)
24.00-49, 48 PR (E-4)	27.00-49, 42 PR (E-4)
24.00-49 Radial steel cord	27.00-49 Radial steel cord



brakes

(System meets OSHA and MSHA regulations.)

Front — air-over-oil actuated, wedge-shoe type.

Brake lining surface 5367 cm² (832 sq. in.)

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 80 400 cm² (12,462 sq. in.)

Emergency/parking — spring applied and oil pressure disengaged.



steering

Separate hydraulic system with twin double-acting cylinders. Front suspension cylinders serve as king-pins. Manually controlled electric supplemental steering system is standard.

Turning diameter on front wheel track 24.3 m (79'7")

Vehicle clearance turning circle 26.8 m (88'0")

Steering angle (left or right) 30°



frame

Full box-section. Integral front bumper, torque tube crossmember, hoist cylinder attachment member and rear crossmember.



cab

Standard all steel ROPS sound-suppressed cab. Fully suspended seat with seat belts. Convenient dash arrangement for quick, easy observation. Heater/defroster, tinted glass, passenger seat and seat belts, sun visor, rear view mirror, dome light and courtesy light. Excellent visibility.



service refill capacities

	Liters	U.S. Gallons
Fuel tank	946	250
Cooling system	288	76
Crankcase	71	18.75
Differential and final drives	314	83
Steering tank	83	22
Steering system (includes tank)	108	28.5
Hydraulic tank	242	64
Hydraulic system (includes tank)	409	108



suspension

Independent, self-contained, oil-pneumatic suspension cylinders on each wheel. Variable rebound rate reduces impact, smooths ride.

Effective cylinder stroke, front 317 mm (12.5")

Rear 165 mm (6.5")

Rear wheel oscillation ±6°



body

Dual-slope main floor with V-bottom. Ten box-sectioned, wrap-around ribs form framework for single-thickness, high-tensile, heat-treated steel side, front and bottom plates with 6205 bar (90,000 psi) yield strength. Exhaust heating standard. Canopy plate thickness, 6 mm (0.25")

Optional body for high density material

	Standard	
Weight	12 930 kg (28,500 lb)	13 520 kg (29,800 lb)
with optional 152 mm (6") top extension add	408 kg (900 lb)	
Plate thickness:		
Sidewall	10 mm (0.38")	10 mm (0.38")
Front	12 mm (0.47")	12 mm (0.47")
Bottom	20 mm (0.79")	25 mm (1.0")
Operating width	4.88 m (16'0")	4.88 m (16'0")
Loading height (empty)	4.14 m (13'7")	3.94 m (12'11")
with optional top extension add	152 mm (6")	
Other optional body dimensions are same as standard.		



body hoists

Twin, two-stage hydraulic cylinders.

Pump capacity 492 liters/min (130 gpm)

Relief valve setting 172 bar (2500 psi)



weights (approximate)

Standard body and 10% fuel.

	Kg	Lb
Total empty weight	55 610	122,600
Chassis with hoists	42 680	94,100
Body, empty	12 930	28,500
Weight distribution, empty:		
Front axle — 46%	25 860	57,000
Rear axle — 54%	29 750	65,600
Loaded, based on 77 100 kg (170,000 lb) load:		
Front axle — 33%	44 270	97,600
Drive axle — 67%	88 440	195,000
Total gross weight	132 710	292,600

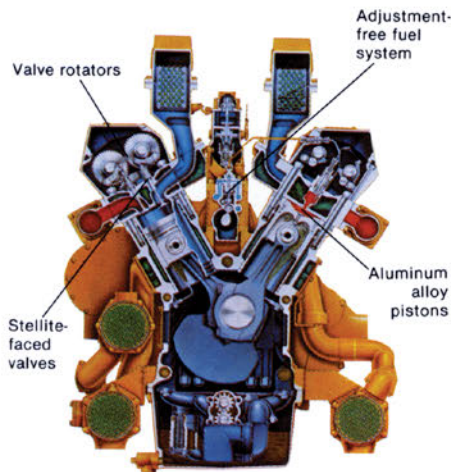


ROPS

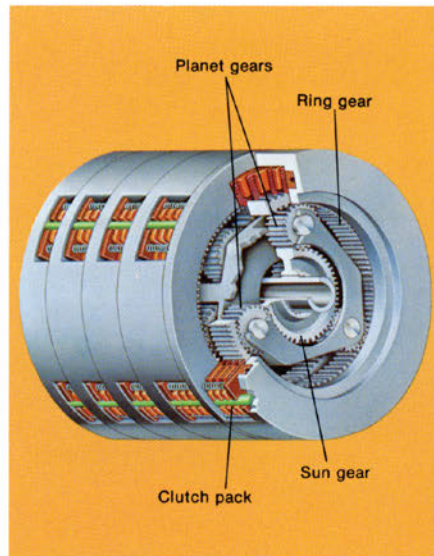
(ROPS cab is standard.)

ROPS (Rollover Protective Structure) offered by Caterpillar for this machine meets ROPS criteria: SAE J1040a.

Reliable Cat power train — efficient and responsive.

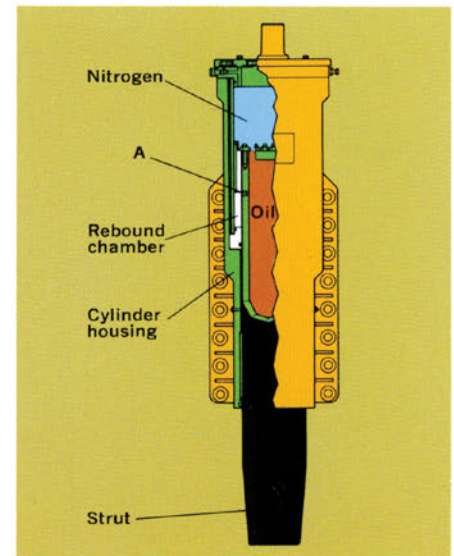


Cat-designed-and-built D348 V-12 Engine delivers smooth, fast performance. This engine develops 650 kilowatts (870 horsepower) at 1900 RPM for a low weight-to-power ratio. The D348 has many reliability features you've come to expect: cam-ground and tapered aluminum alloy pistons for tough, lightweight performance. Stellite-faced valves that resist warping, valve rotators to increase valve life, adjustment-free fuel system with individual pumps for each cylinder and rubber engine mounts to reduce vibration for quieter operation.



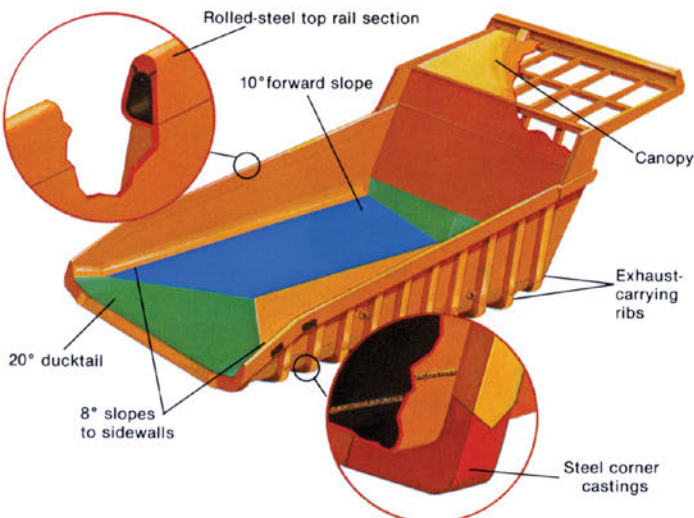
Cat planetary automatic power shift, with seven speeds forward and one reverse, provides hauling speeds up to 60 km/h (37 MPH). Controlled by a single lever, the transmission will automatically shift up and down between first and the top gear selected by the operator. Reverse, first and the lower range of second are torque converter drive. Gears three through seven are all efficient direct drive, with brief torque converter drive to cushion gear engagement during shifts. Standard downshift inhibiting feature reduces possibility of engine overspeeding in forward gears should operator improperly downshift.

Built-in convenience, comfort and protection.

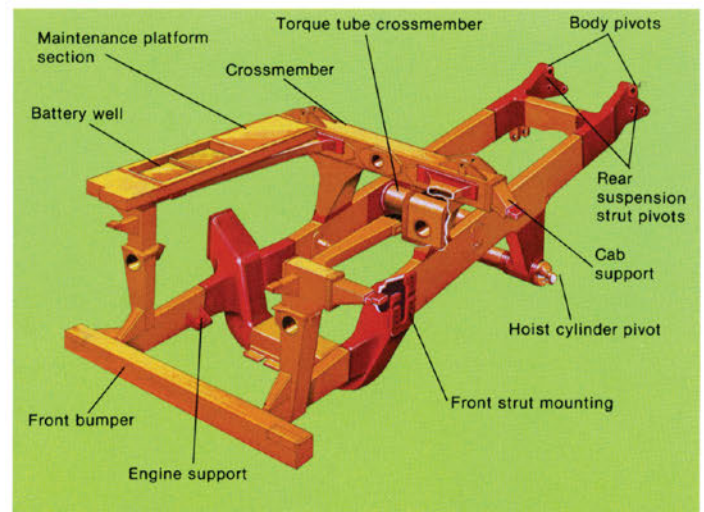


Oil-pneumatic suspension cylinders at all four wheels absorb loading shocks and haul road bumps for a smoother ride and reduced stress on components. Rolling over a bump forces the strut into the cylinder housing, compressing nitrogen in the main cylinder to absorb the impact. This also forces oil into the rebound chamber through orifices and ball check valve at point A. When the wheel drops back down, the oil in the rebound chamber returns to the inner chamber at a restricted rate, controlling rebound.

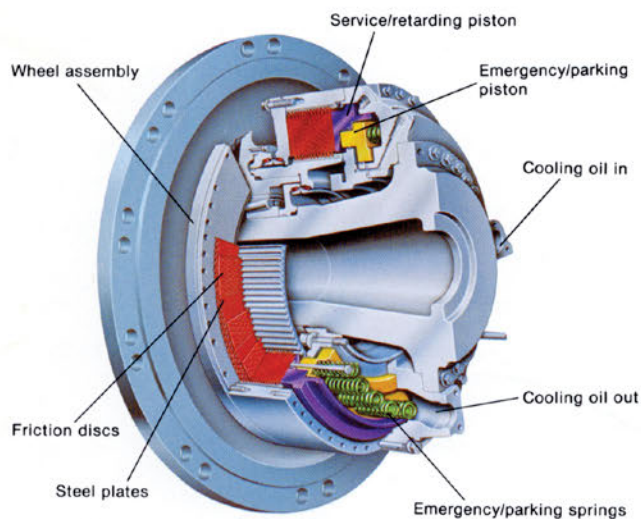
Rugged components — for rugged work.



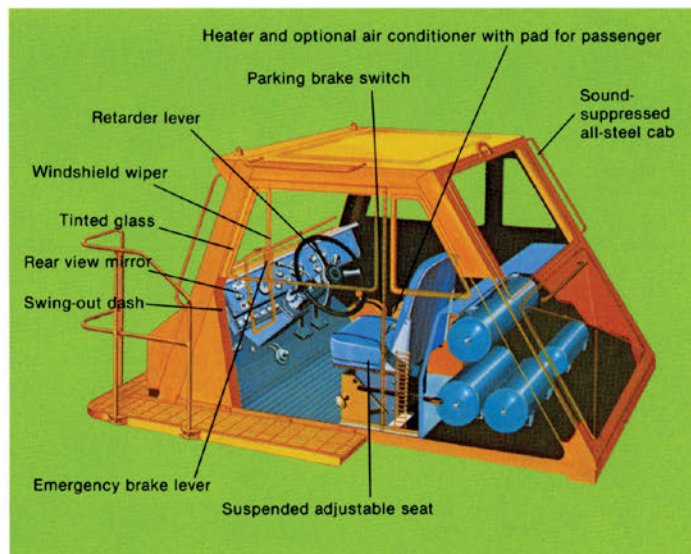
Familiar dual-slope Cat body has ten box-sectioned, wrap-around ribs to reinforce the body against loading stresses. Steel corner castings are welded to the floor and sidewalls to add strength and durability in this high stress area. And heavy rolled-steel top rail sections reinforce the sidewalls for greater impact strength. A 20° slope on the ducktail and 10° forward body slope help retain loads on the haul road, and the 8° slope from the center of the bed to the sidewalls helps deflect loading shocks.



Box-sectioned frame is designed with heavy steel plates, all with yield strength of 290 MPa (42,000 psi) for rigidity and durability. Steel castings (in red) are used in the frame construction to provide additional strength in critical stress areas.



Cat oil-cooled rear disc brakes are time-proven design that provide reliable fade-resistant braking. These brakes act on the 777 rear wheels to combine four braking functions: service, emergency, parking and retarding. Emergency and parking functions are hydraulically released, spring applied for assurance of braking ability even if oil pressure is lost. Braking surface area is a massive 80 400 cm² (12,642 sq. in). Wedge shoe brakes are standard on the front wheels and can be switched out when not needed. Separate jacket water oil coolers on each side of the engine constantly cool oil for long wear life and reliable brake performance.



Standard heavy duty all-steel sound-suppressed ROPS cab when properly installed and maintained, the cabs meet OSHA and MSHA requirements for operator sound exposure limits in effect at the date of manufacture. The cab features easy-to-read dash gauges with international symbols. All gauges point to 3 o'clock in normal position for fast, at-a-glance checking. There's a fully adjustable suspension seat for the operator, and a cushioned passenger seat — both with seat belts. Heater, defroster, windshield wiper and washer, rear view mirrors are all standard equipment. Air conditioning is optional.

Serviceability — less maintenance, more work time.



Rear section of the service deck tilts forward to open a completely accessible engine compartment — giving mechanics an uncluttered work area around the engine. A brace holds the door upright. And both the engine oil dipstick and the oil filler spout can be reached without raising the deck.



In-frame service of engine and pump groups is convenient with unrestricted access. Raise the dump body and insert self-storing retaining pins for access to torque converter, drive shaft, transmission and differential.



CAT PLUS — the most comprehensive, total customer support system in the industry — comes with every 777. Your Caterpillar Dealer provides product application counseling and flexible finance planning before you buy, and these services after:

- Planned inspection programs.
- Preventive maintenance programs.
- Parts support.
- Parts Exchange Service.
- In-field service.
- Machine customizing services.
- Complete range of technical assistance.
- Personnel training for operators and mechanics.
- Cat Care seminars.



capacity

Standard body and optional high density material body have 77 metric ton (85 U.S. ton) capacity.

Capacities	Struck		Heaped 2:1 (SAE)	
	M ³	Yd ³	M ³	Yd ³
Standard rock body	36.3	47.5	51.3	67.1
with 6" (152 mm)				
top extension	40.8	53.3	55.2	72.2
High density				
material body	29.7	38.8	45.2	59.1
with 6" (152 mm)				
top extension	34.2	44.7	49.4	64.6



standard equipment

24-volt direct electric starting. 50-amp alternator. Automatic power shift transmission with down shift inhibitor. Oil disc brakes (rear). Brake heat exchanger. Wedge shoe brakes (front) with shields. Parking brake. Emergency braking system. Supplemental steering system. Horn. Back up alarm. Back up light. Headlights with dimmer switch. Stop and tail lights. Directional signals. Air cleaner service indicators. Insulated and sound-suppressed all-steel ROPS cab. Vandalism protection locks. Dome light. Courtesy light. Crankcase guard. Driveline protection. Heater/defroster. Mirrors, right and left.

Rock ejectors. Sun visor. Full suspension seat. Passenger seat. Seat belts. Tinted glass. Windshield wiper and washer. Tachometer. Speedometer with odometer. Electric hour meter. Tow pins, front and rear. Body down indicator. 24.00-49, 42PR (E-3) tires.



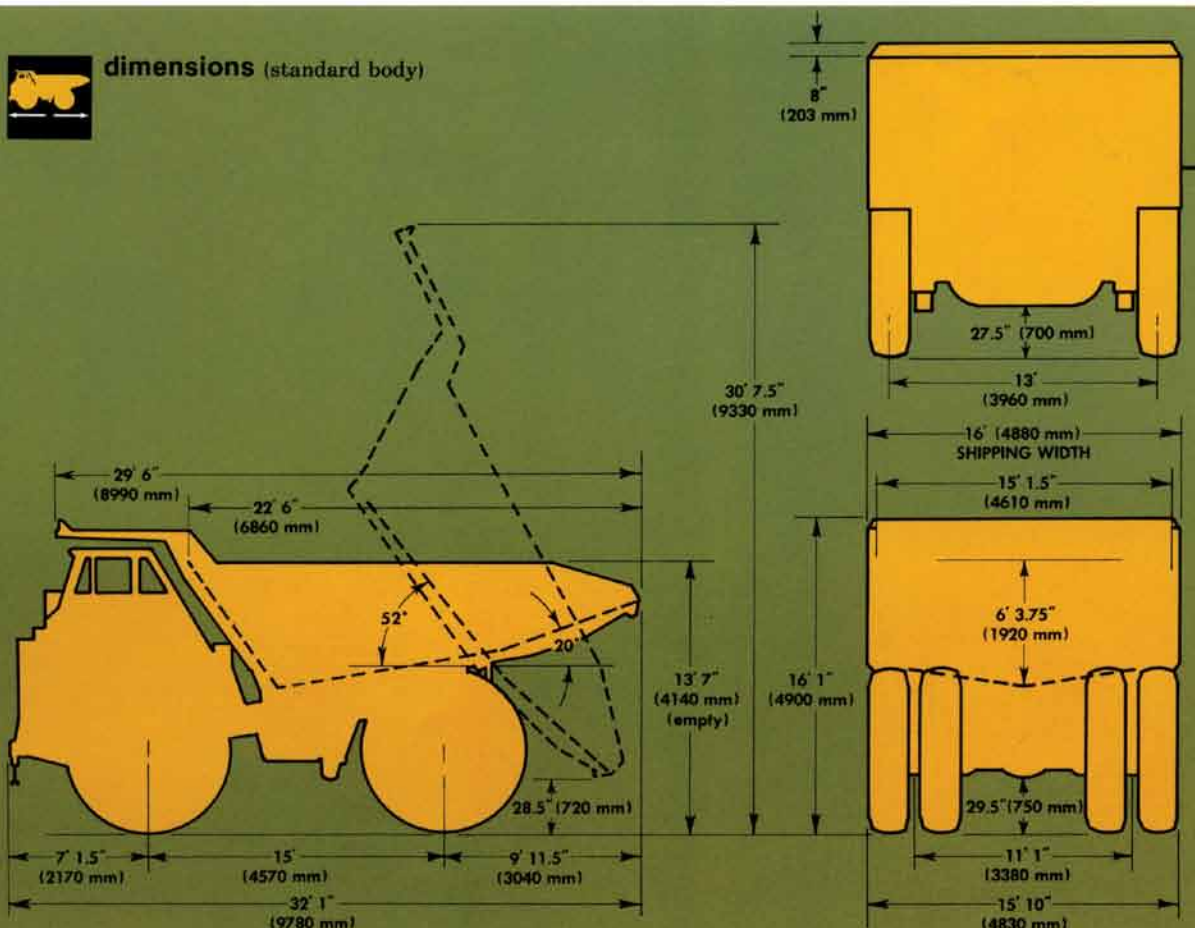
optional equipment

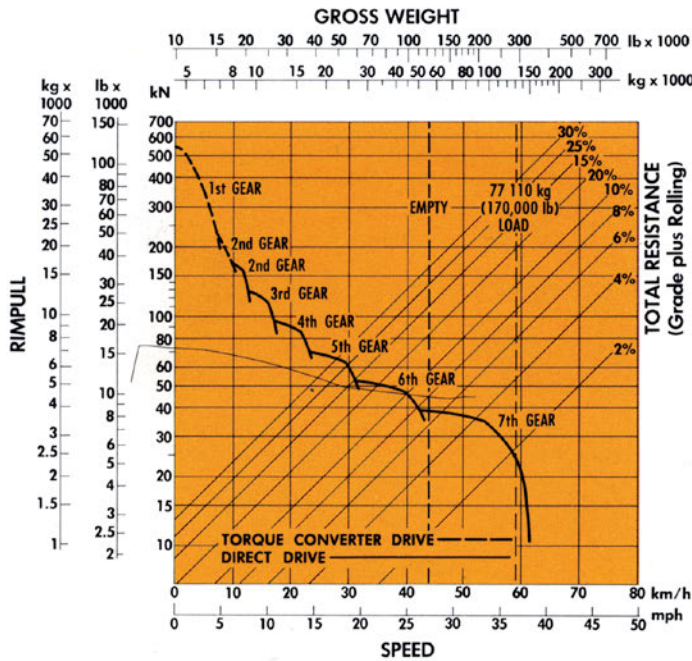
(with approx. change in operating weight)

	Kg	Lb
Air conditioner	34	75
Air line dryer	27	60
Air starting arrangement	162	357
Body liners, 19 mm (0.75") floor and		
10 mm (0.38") front and side walls	5470	12,060
(48 PR tires or equivalent recommended)		
Fast fuel filler, automatic	1.8	4
Manual	1.8	4
Heating, arctic arrangement	23	50
Heater, engine coolant	1.8	4
High density material body	590	1300
High-speed oil change	2.7	6
Muffler	145	320
NoSPIN differential	-20	-44
Reverse inhibitor	2.3	5
Sideboards, 152 mm (6") standard body	420	925
Optional high density body	470	1035
Tachograph	2.3	5
Tires, set of six:	See tires section — page 2	



dimensions (standard body)





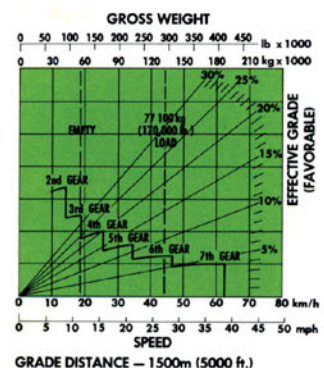
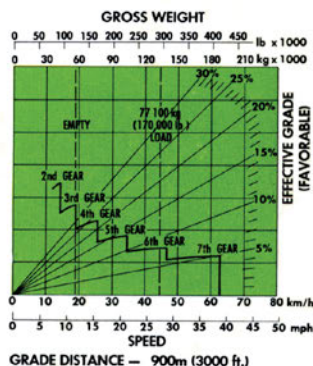
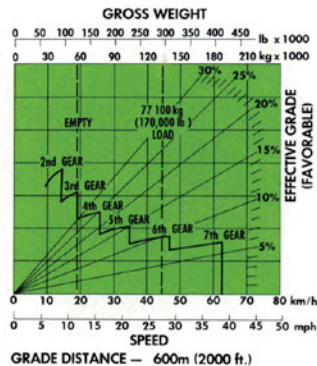
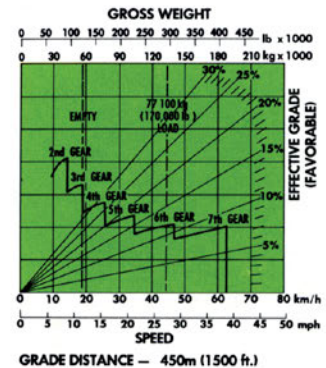
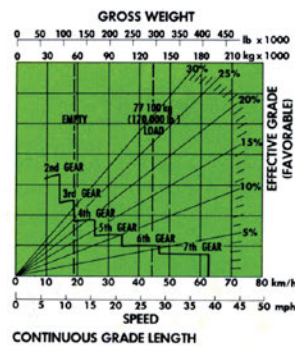
gradeability/speed/rimpull

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/t (20 lb/ton) 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 % grade minus 1% for each 10 kg/t (20 lb/ton) of rolling resistance.) From this weight-effective grade 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.

Note: Select the proper gear range 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.



Materials and specifications are subject to change without notice.