

### 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.



### tires

Tractor, set of six:  
Standard:  
27.00-49, 36 PR (E-3)  
Optional:  
27.00-49, 36 PR (E-4)  
27.00-49 Radial  
steel cord



### brakes

(System meets OSHA regulations.)  
Front - air-over-oil actuated, wedge-shoe type.  
Brake lining surface 832 sq. in. (5370 cm<sup>2</sup>)  
Drive and wagon - Caterpillar oil-cooled, air-over-oil actuated disc brakes provide both service and retarder braking. Completely sealed against moisture and abrasives. Individually replaceable as units.  
Braking surface, all disc brakes 24,924 sq. in. (160,810 cm<sup>2</sup>)  
Emergency/parking - spring applied and oil disengaged.



### Summary of features

- 160-ton (145 t) capacity
- Oil-cooled disc brakes are fade resistant... completely sealed against moisture and abrasives. They provide service, retarder, parking and emergency brakes for the drive and wagon axles.
- Retarding capability... 1100 horsepower continuous retarding effort available.
- Oil-pneumatic suspension absorbs haul road and loading shocks on all three axles.
- Cat Diesel Engine delivers 870 flywheel horsepower... low loaded-vehicle-weight-to-HP ratio.
- Cat-designed-and-built automatic transmission... seven speeds forward and one reverse. Top speed: 39 MPH (63 km/h).



### Caterpillar Engine

Flywheel horsepower @ 1900 RPM 870

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" Hg (995 mbar), using 35 API gravity fuel oil at 60° F. (15.6° C). Vehicle engine equipment includes fan, air cleaner, muffler, water pump, lubricating oil pump, fuel pump and alternator. Engine will maintain specified power up to 7,500 ft. (2300 m) altitude.

Cat 4-stroke-cycle diesel Model D348 60° V-12 5.4" (137 mm) bore, 6.5" (165 mm) stroke and 1,786 cu. in. (29.3 litres) displacement.

Twin turbochargers, 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 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. Premium quality diesel fuel can be used but is not required.

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



### transmission

Caterpillar-built, 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.



SERIAL # 180 / 550

It is hereby certified the Cat 776 with RD160 Off-Highway Truck with the above serial number is an authentic registered Classic Construction Model produced in a strictly limited single edition.

Attested by:

Materials and specifications are subject to change without notice.



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# 776

## RD160 Off-Highway Truck

### steering

Separate hydraulics, with twin double-acting cylinders. Front suspension cylinders serve as kingpins. Manually controlled electric supplemental steering system is standard.

Turning diameter on front wheel track 80' (24.4 m)  
 Vehicle clearance turning circle 88'5" (27 m)  
 Steering angle (left or right) 30°

### frame

Full box-section. Integral front bumper, torque tube crossmember, upper and lower crossbeams and rear crossmember.

### suspension

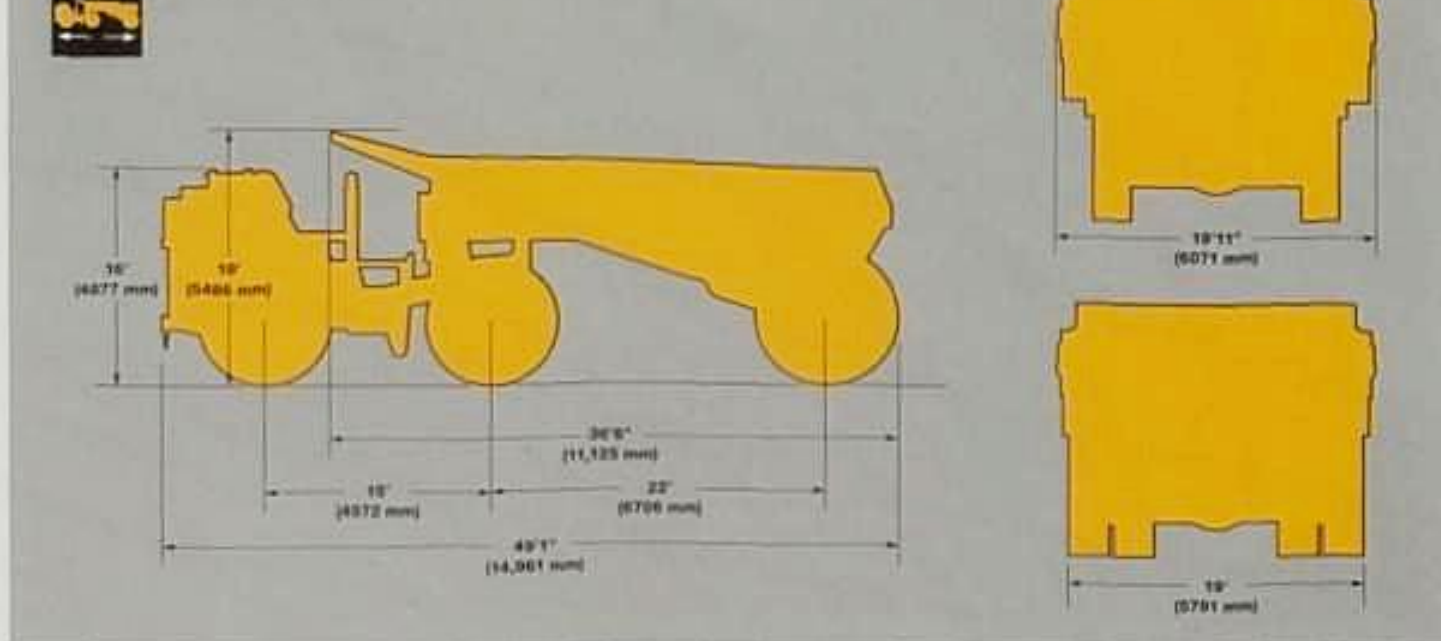
Independent, self-contained, oil-pneumatic suspension cylinders on each wheel. Variable rebound rate reduces impact, smooths ride.

Effective cylinder stroke, front 12.5" (317 mm)  
 Drive 6.5" (165 mm)  
 Wagon 4.0" (102 mm)  
 Drive wheel oscillation ± 6"  
 Total of 12"  
 Wagon wheel oscillation ± 4"  
 Total of 8"

### service refill capacities

	Gallons	Litres
Fuel tank	250	(950)
Cooling system	76	(288)
Crankcase	18.7	(71)
Differential and final drive	83	(314)
Integral transmission, brake and door system	64	(242)
Steering system	19.0	(72)
Wagon wheels (each side)	3.0	(11.4)
Front wheels (each side)	2.1	(8)

### dimensions



### cab

Cat-designed steel cab with sound suppression standard. Fully suspended operator seat. Passenger seat. Seat belts. Convenient dash arrangement for quick, easy observation. Ventilated air circulation, heater/defroster, tinted glass, windshield wiper and washer, sun visor, floor mat, mirrors on both sides, dome light, courtesy light for left door and disconnect switch. Excellent visibility.

### oscillation

Hitch allows 12" oscillation to each side. Rear suspension allows 4" oscillation up or down on wagon and 6" up or down on tractor drive axle.

### weights (approximate)

	lb.	kg
Tractor, with hitch	108,000	48,990
Net weight	224,500	101,830
Payload	320,288	145,280
Gross weight	544,788	247,110

### Weight distribution:

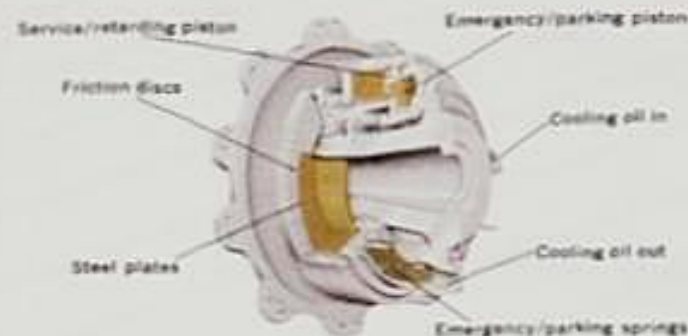
	Empty		Loaded	
	lb.	kg	lb.	kg
Front axle	61,390	27,850	82,798	37,560
Drive axle	89,710	40,690	197,038	89,370
Trailer axle	73,400	33,290	264,952	120,180
	224,500	101,830	544,788	247,110

### capacity

Tons	160 (145 t)
Cubic yards, struck (SAE)	80 (61 m <sup>3</sup> )
Heaped, 3:1 (SAE)	99 (76 m <sup>3</sup> )

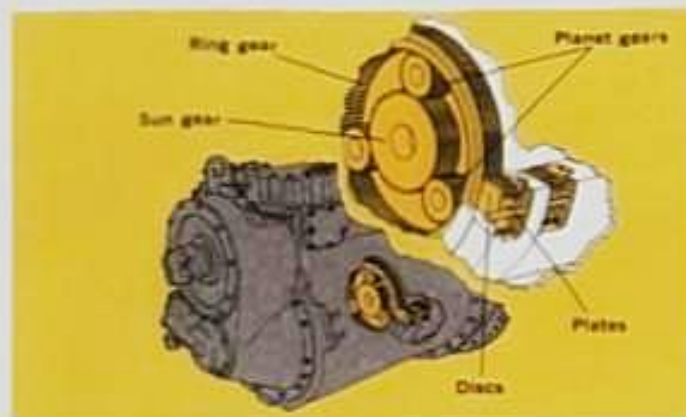
### final drive

Type	Planetary
Axle	Full floating
Ratio:	
Differential	2.74:1
Planetary	7.00:1
Total reduction	18.3:1

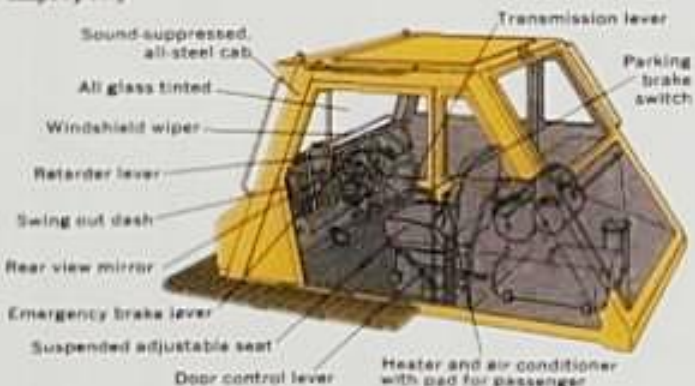


Cat oil-cooled disc brakes provide reliable, fade-resistant braking at both the tractor drive wheels and the wagon wheels. These brakes combine four braking functions: part of the service and emergency system and all of the parking and retarding systems. Braking surface area is 24,924 sq. in. (160,810 cm<sup>2</sup>).

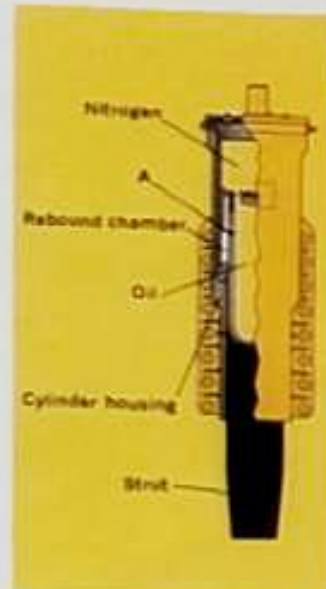
The wagon brakes are actuated by pedal with the tractor brakes; they can also be controlled separately by a hand lever. Wedge-type shoe brakes are standard on the front wheels. Separate jacket water oil coolers on each side of the engine constantly cool oil in both sets of disc brakes for long wear life and reliable performance.



Cat planetary automatic power shift, with seven speeds forward and one reverse, provides hauling speeds up to 39 MPH (63 km/h). 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 momentary torque converter drive to cushion gear engagement during shifts. Downshift inhibiting standard in forward gears to reduce engine overspeed possibility if manually downshifted improperly.



Standard all-steel structure is sound suppressed and is constructed of high-strength steel for durability. Easy-to-read dash gauges with international symbols all point to 3 o'clock in normal position for fast, at-a-glance checking. Operator's seat is fully suspended, adjustable. Includes cushioned passenger seat.



Oil-pneumatic suspension cylinders at all three axles absorb loading shocks and haul road bumps for a smoother ride, 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 forces oil into the rebound chamber through orifices at point A. When the wheel drops back down, compressed nitrogen pushes the strut smoothly back to the normal position. The orifices and a ball check valve control oil flow and rebound rate to prevent harsh rebounding. Two front suspension cylinders act as steering kingpins to give a short turning circle on front wheel track of 80' (24.4 m).



In-frame serviceability of engine and pump groups is convenient with unrestricted access. Rear section of the service deck tilts forward to open a completely accessible engine compartment - giving mechanics an uncluttered work area. Both the engine oil dipstick and the oil filler spout can be reached without raising the deck.

### standard equipment

Diesel engine electric starting. Oil disc brakes (rear tractor and wagon axle). Brake heat exchanger. Wedge-type shoe brakes (front) with shields. Parking brake. Emergency braking system. Supplemental steering system. Horn. Backup alarm. Backup light. Headlights with dimmer switch. Stop and tail lights. Directional signals. Air cleaner service indicators. Insulated and sound-suppressed cab. Vandalism protection locks. Dome light. Courtesy light. Crankcase guard. Drive line protection. Fenders. Heater/defroster. Mirrors, right and left. Sun visor. Full suspension seat. Passenger seat. Seat belts. Tinted glass. Windshield wiper and washer. Tachometer. Speedometer, including odometer. Hour meter and service meter. Floor mat. Muffler integral with turn stops. Tow pins. Downshift inhibitor. Starting receptacle, auxiliary.

### optional equipment

(with approximate installed weights)

Air conditioner	105 lb. (48 kg)
Air line drier	14 lb. (6 kg)
Air starting arrangement	95 lb. (43 kg)
Fast fuel filler	4 lb. (2 kg)
High-speed oil change	5 lb. (2 kg)
NoSPIN differential	-54 lb. (-24 kg)
Tachograph	13 lb. (6 kg)
Tires, each:	
Tractor:	
27.00-49, 36 PR (E-4)	320 lb. (145 kg)
27.00-49 Radial steel	186 lb. (84 kg)
Trailer:	
30.00-51, 40 PR (E-4)	470 lb. (213 kg)
30.00-51 Radial steel	185 lb. (84 kg)