



775G

Off-Highway Truck

Technical Specifications

Configurations and features may vary by region. Please consult your Cat® dealer for availability in your area.

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775G Off-Highway Truck Specifications

Engine		
Engine Model	Cat® C27	
Rated Speed	2,000 rpm	
Gross Power – SAE J1995	615 kW	825 hp
Net Power – SAE J1349	584 kW	783 hp
Net Power – ISO 9249	590 kW	791 hp
Net Power – 80/1269/EEC	590 kW	791 hp
Engine Power – ISO 14396	607 kW	813 hp
Peak Torque Speed	1,300 rpm	
Net Torque	3896 N·m	2,874 lb-ft
Bore	137 mm	5.4 in
Stroke	152 mm	6.0 in
Displacement	27 L	1,648 in ³

- Power rating applies at 2,000 rpm when tested under the specified condition for the specified standard.
- MIN NET SAE J1349/ISO 9249 Net power advertised is the power available at the flywheel when the engine is equipped with fan at maximum speed, air intake system, exhaust system, and alternator.
- Net power advertised is the power available at the flywheel when the engine is equipped with air intake system, exhaust system, and alternator.
- Advertised power is tested per the specified standard in effect at the time of manufacture.
- No engine derating required up to 3810 m (12,500 ft).
- Equivalent to U.S. EPA Tier 2.

Transmission		
Forward 1	10.8 km/h	6.7 mph
Forward 2	15.1 km/h	9.4 mph
Forward 3	20.4 km/h	12.7 mph
Forward 4	27.4 km/h	17.0 mph
Forward 5	37.0 km/h	23.0 mph
Forward 6	50.1 km/h	31.1 mph
Forward 7	67.6 km/h	42.0 mph
Reverse	14.1 km/h	8.8 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	17.49:1

Brakes		
Brake Surface – Front	655 cm ²	257 in ²
Brake Surface – Rear	61 269 cm ²	9,497 in ²
Brake Standards	ISO 3450:2011	

Body Hoists		
Pump Flow – High Idle	448 L/min	118 gal/min
Relief Valve Setting – Raise	17 250 kPa	2,502 psi
Relief Valve Setting – Lower	3450 kPa	500 psi
Body Raise Time – High Idle	9.5 Seconds	
Body Lower Time – Float	13.0 Seconds	
Body Power Down – High Idle	13.0 Seconds	

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Capacity – Dual Slope – 100% Fill Factor

Struck	32.6 m ³	42.7 yd ³
Heaped (SAE 2:1)*	42.2 m ³	55.5 yd ³

• Contact your local Cat dealer for body recommendation.

*ISO 6483:1980

Capacity – Flat Floor – 100% Fill Factor

Struck	32.3 m ³	42.2 yd ³
Heaped (SAE 2:1)*	42.2 m ³	55.2 yd ³

• Contact your local Cat dealer for body recommendation.

*ISO 6483:1980

Sound

Sound Standards

- The operator Equivalent Sound Pressure Level (Leq) is 76 dB(A) when SAE J1166:2008 is used to measure the value for an enclosed cab. This is a work cycle sound exposure level. The cab was properly installed and maintained. The test was conducted with the cab doors and the cab windows closed.
- The exterior sound pressure level for the standard machine measured at a distance of 15 m (49 ft) according to the test procedures specified in SAE J88:2006, mid-gear moving operation is 86 dB(A).
- 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.

Air Conditioning System

The air conditioning system on this machine contains the fluorinated greenhouse gas refrigerant R134a (Global Warming Potential = 1430). The system contains 2.0 kg (4.4 lbs) of refrigerant, which has a CO₂ equivalent of 2.86 metric tonnes (3.152 tons).

Service Refill Capacities

Fuel Tank	795 L	210.0 gal
Cooling System	171 L	45.0 gal
Crankcase	90 L	24.0 gal
Differentials and Final Drives	145 L	38.0 gal
Steering Tank	36 L	9.5 gal
Steering System (includes tank)	54 L	14.0 gal
Brake/Hoist Hydraulic Tank	176 L	46.5 gal
Brake Hoist System	322 L	85.0 gal
Torque Converter/Transmission System	61 L	16.0 gal

Steering

Steering Standards	ISO 5010:2007	
Steer Angle	31°	
Turning Diameter – Front	23.5 m	77 ft 1 in
Turning Circle Clearance Diameter	26.1 m	85 ft 8 in

Tires

Standard Tire	24.00R35 (E4)
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- Productive capabilities of the 775G 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

- Rollover Protective Structure (ROPS) for cab offered by Caterpillar meets ISO 3471:2008 for operator and ISO 13459:2012 for trainer ROPS criteria.
- Falling Objects Protective Structure (FOPS) meets ISO 3449:2005 Level II for operator and ISO 13459:2012 Level II for trainer FOPS criteria.

Weight Distributions – Approximate

Front Axle – Empty	50%
Front Axle – Loaded	34%
Rear Axle – Empty	50%
Rear Axle – Loaded	66%

Suspension

Empty Loaded Cylinder Stroke Front	234 mm	9.2 in
Empty Loaded Cylinder Stroke Rear	149 mm	5.8 in
Rear Axle Oscillation	8.1°	

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Weight/Payload Calculation – Tier 2 Equivalent Examples

		Flat Floor							
Machine Weights Based on Configuration		Without Liner		With Liner		With Rubber Liner		Quarry Body	
Base: Floor/Sidewall/Frontwall	mm (in)	20/10/12 (0.79/0.39/0.47)		20/10/12 (0.79/0.39/0.47)		20/10/12 (0.79/0.39/0.47)		25/14/16 (0.98/0.55/0.62)	
Liner: Floor/Sidewall/Frontwall	mm (in)			16/8/10 (0.62/0.31/0.39)		102/8/8 (4.0/0.31/0.31)			
Body Volume	m ³ (yd ³)	42.2	(55.2)	41.6	(54.4)	39.8	(52.0)	41.9	(54.9)
Target Gross Machine Weight	kg (lb)	111 811	(246,502)	111 811	(246,502)	111 811	(246,502)	111 811	(246,502)
Empty Chassis Weight	kg (lb)	35 553	(78,380)	35 553	(78,380)	35 553	(78,380)	35 553	(78,380)
Body System Weight	kg (lb)	11 760	(25,926)	15 885	(35,021)	16 732	(36,888)	13 827	(30,483)
Empty Machine Weight	kg (lb)	47 313	(104,307)	51 438	(113,401)	52 285	(115,268)	49 380	(108,864)
Fuel Tank Size	L (gal)	795	(210)	795	(210)	795	(210)	795	(210)
Fuel Tank – 100% Fill	kg (lb)	669	(1,474)	669	(1,474)	669	(1,474)	669	(1,474)
Empty Operating Weight	kg (lb)	47 982	(105,782)	52 107	(114,876)	52 954	(116,743)	50 049	(110,339)
Target Payload (100%)*	kg (lb)	63 829	(140,718)	59 704	(131,624)	58 857	(129,757)	61 762	(136,161)
	tonnes (tons)	63.8	(70.3)	59.7	(65.8)	58.9	(64.9)	61.8	(68.1)
Target Payload Material Density	kg/m ³ (lb/yd ³)	1681	(2,833)	1595	(2,688)	1643	(2,769)	1638	(2,760)
Maximum Payload (110% of Target)*	kg (lb)	70 212	(154,790)	65 674	(144,786)	64 743	(142,733)	67 938	(149,777)
	tonnes (tons)	70.2	(77.4)	65.7	(72.4)	64.7	(71.4)	67.9	(74.8)
Maximum Payload Material Density	kg/m ³ (lb/yd ³)	1849	(3,117)	1754	(2,956)	1807	(3,046)	1802	(3,037)
Not to Exceed Payload (120% of target)*	kg (lb)	76 595	(168,863)	71 645	(157,950)	70 628	(155,708)	74 114	(163,393)
	tonnes (tons)	76.6	(84.4)	71.6	(78.9)	70.6	(77.8)	74.1	(81.7)
Not to Exceed Payload Material Density	kg/m ³ (lb/yd ³)	2017	(3,400)	1914	(3,226)	1972	(3,324)	1965	(3,312)

*Refer to Caterpillar 10/10/20 Payload Policy.

775G Off-Highway Truck Specifications

Weight/Payload Calculation – Tier 2 Equivalent Examples

		Dual Slope			
Machine Weights Based on Configuration		Without Liner		With Liner	
Base: Floor/Sidewall/Frontwall	mm (in)	20/10/12 (0.79/0.39/0.47)		20/10/12 (0.79/0.39/0.47)	
Liner: Floor/Sidewall/Frontwall	mm (in)			16/8/10 (0.62/0.31/0.39)	
Body Volume	m ³ (yd ³)	42.2	(55.2)	41.7	(54.5)
Target Gross Machine Weight	kg (lb)	111 811	(246,502)	111 811	(246,502)
Empty Chassis Weight	kg (lb)	35 553	(78,380)	35 553	(78,380)
Body System Weight	kg (lb)	11 466	(25,278)	15 482	(34,132)
Empty Machine Weight	kg (lb)	47 019	(103,659)	51 035	(112,512)
Fuel Tank Size	L (gal)	795	(210)	795	(210)
Fuel Tank – 100% Fill	kg (lb)	669	(1,474)	669	(1,474)
Empty Operating Weight	kg (lb)	47 688	(105,134)	51 704	(113,987)
Target Payload (100%)*	kg (lb)	64 123	(141,367)	60 107	(132,513)
	tonnes (tons)	64.1	(70.7)	60.1	(66.2)
Target Payload Material Density	kg/m ³ (lb/yd ³)	1688	(2,845)	1602	(2,700)
Maximum Payload (110% of Target)*	kg (lb)	70 535	(155,503)	66 118	(145,765)
	tonnes (tons)	70.5	(77.7)	66.1	(72.9)
Maximum Payload Material Density	kg/m ³ (lb/yd ³)	1857	(3,130)	1762	(2,970)
Not to Exceed Payload (120% of target)*	kg (lb)	76 948	(169,641)	72 128	(159,015)
	tonnes (tons)	76.9	(84.8)	72.1	(79.5)
Not to Exceed Payload Material Density	kg/m ³ (lb/yd ³)	2026	(3,415)	1922	(3,240)

*Refer to Caterpillar 10/10/20 Payload Policy.

Sideboards (optional)							
Height		Volume Add		Weight		Maximum (110%) Material Density**	
mm	(in)	m ³	(yd ³)	kg	(lb)	kg	(lb)
155	(6)	2.9	(3.8)	430	(948)	1681	(342)

**Based on Quarry Body at 90% Body Volume Fill.

Empty Chassis Weight is figured without fuel.

Payload Calculation: Definitions

Empty Machine Weight = Empty Chassis Weight + Body System Weight

Target Payload = Target Gross Machine Weight less Empty Machine Weight

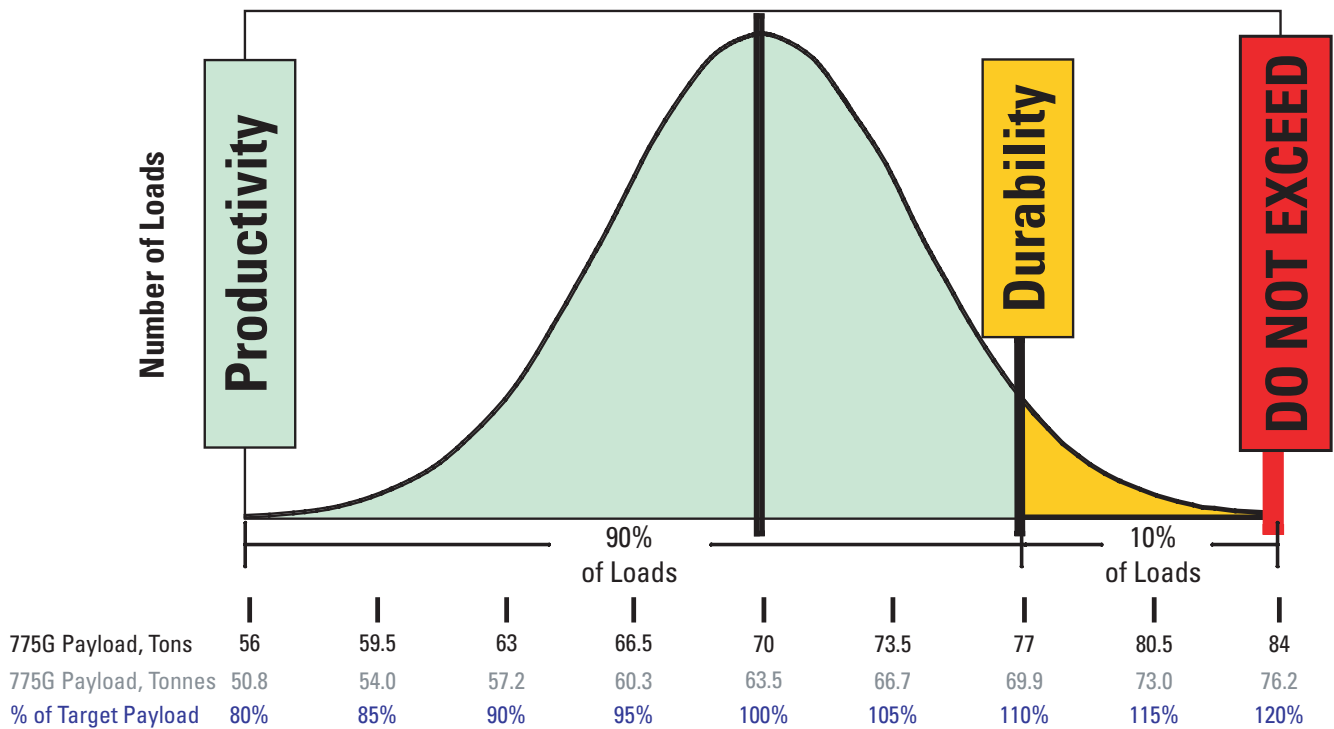
Maximum Payload = Target Payload × 1.10 (110%)

775G Off-Highway Truck Specifications

10/10/20 Payload Management Policy for Optimal Machine Life

The ideal hauling strategy that maximizes machine and machine component life is to *keep the mean of all payloads at or below the machine's rated target payload.*

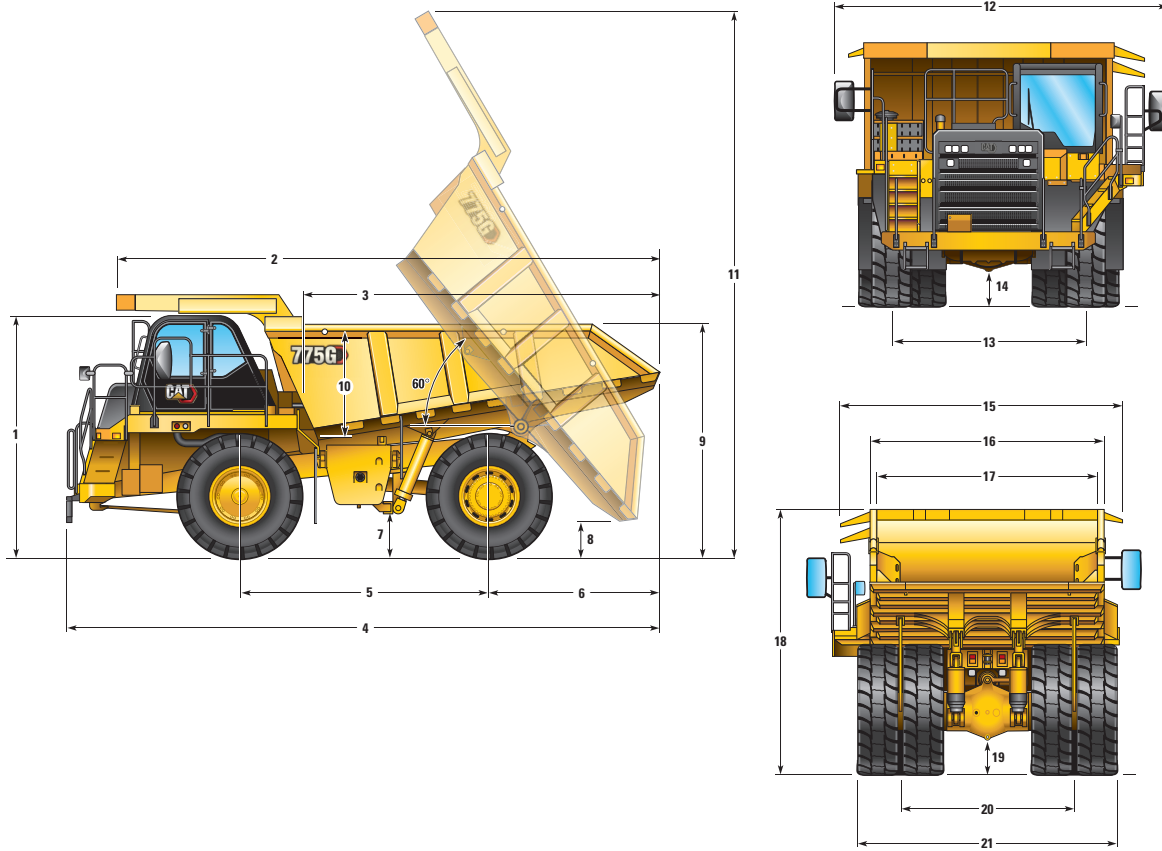
- 90% of loads should fall into this range
- No more than 10% of loads should exceed 10% of the target payload
- No loads should be above 20% of the target payload



775G Off-Highway Truck Specifications

Dimensions

All dimensions are approximate.



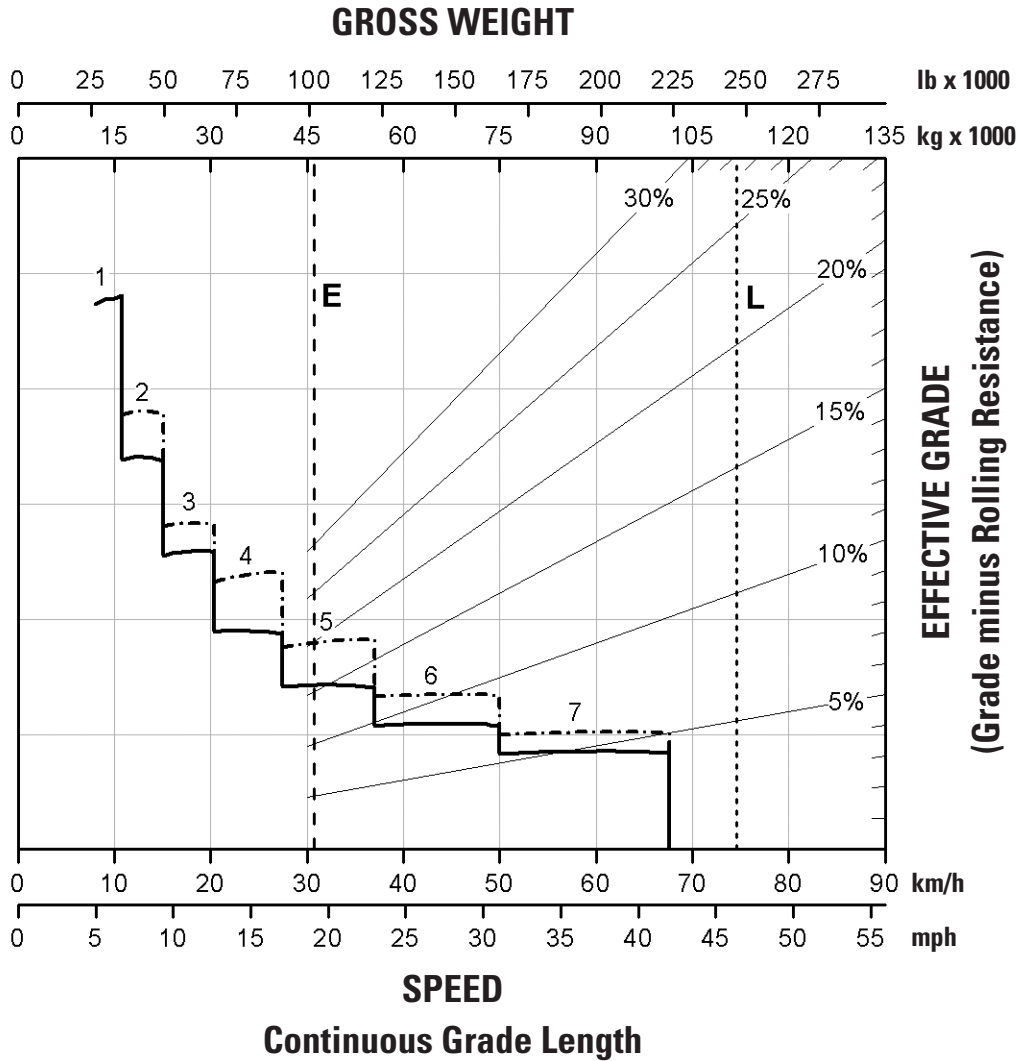
	Dual Slope		Flat Floor		Quarry	
1 Height to Top of ROPS	4108 mm	13.48 ft	4108 mm	13.48 ft	4108 mm	13.48 ft
2 Overall Body Length	9215 mm	30.23 ft	9293 mm	30.49 ft	9295 mm	30.50 ft
3 Inside Body Length	6100 mm	20.01 ft	6100 mm	20.01 ft	6100 mm	20.01 ft
4 Overall Length	10 073 mm	33.05 ft	10 151 mm	33.30 ft	10 151 mm	33.30 ft
5 Wheelbase	4215 mm	13.83 ft	4215 mm	13.83 ft	4215 mm	13.83 ft
6 Rear Axle to Tail	2925 mm	9.60 ft	3005 mm	9.86 ft	3005 mm	9.86 ft
7 Ground Clearance	759 mm	2.49 ft	759 mm	2.49 ft	759 mm	2.49 ft
8 Dump Clearance	650 mm	2.13 ft	639 mm	2.10 ft	639 mm	2.10 ft
9 Loading Height – Empty	3963 mm	13.00 ft	3964 mm	13.01 ft	3968 mm	13.02 ft
10 Inside Body Depth – Maximum	1945 mm	6.38 ft	1892 mm	6.21 ft	1892 mm	6.21 ft
11 Overall Height – Body Raised	9279 mm	30.44 ft	9279 mm	30.44 ft	9283 mm	30.46 ft
12 Operating Width	5673 mm	18.61 ft	5673 mm	18.61 ft	5673 mm	18.61 ft
13 Centerline Front Tire Width	3205 mm	10.52 ft	3205 mm	10.52 ft	3205 mm	10.52 ft
14 Engine Guard Clearance	703 mm	2.31 ft	703 mm	2.31 ft	703 mm	2.31 ft
15 Overall Canopy Width	5012 mm	16.44 ft	5012 mm	16.44 ft	5012 mm	16.44 ft
16 Outside Body Width	4254 mm	13.96 ft	4254 mm	13.96 ft	4254 mm	13.96 ft
17 Inside Body Width	3986 mm	13.08 ft	3986 mm	13.08 ft	3986 mm	13.08 ft
18 Front Canopy Height	4459 mm	14.63 ft	4457 mm	14.62 ft	4463 mm	14.64 ft
19 Rear Axle Clearance	560 mm	1.84 ft	560 mm	1.84 ft	560 mm	1.84 ft
20 Centerline Rear Dual Tire Width	2929 mm	9.61 ft	2929 mm	9.61 ft	2929 mm	9.61 ft
21 Overall Tire Width	4411 mm	14.47 ft	4411 mm	14.47 ft	4411 mm	14.47 ft

775G Off-Highway Truck Specifications

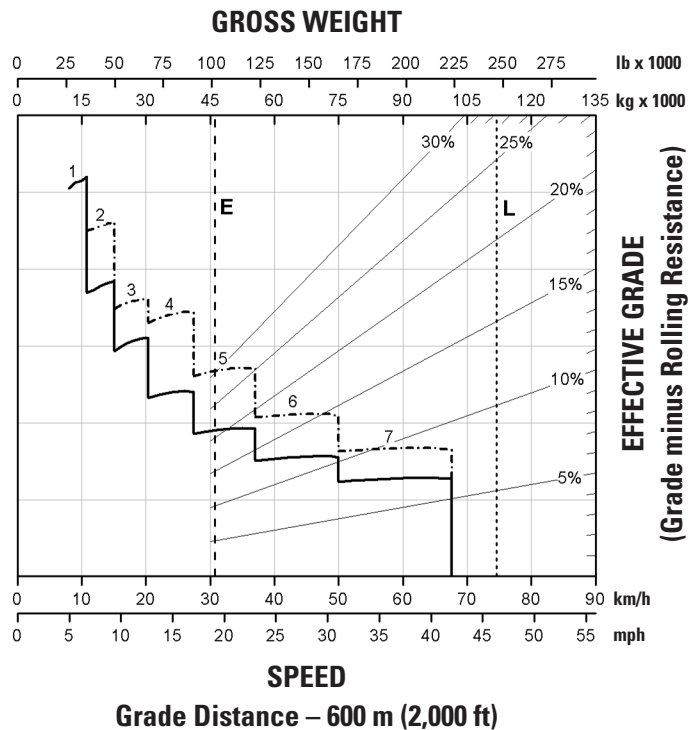
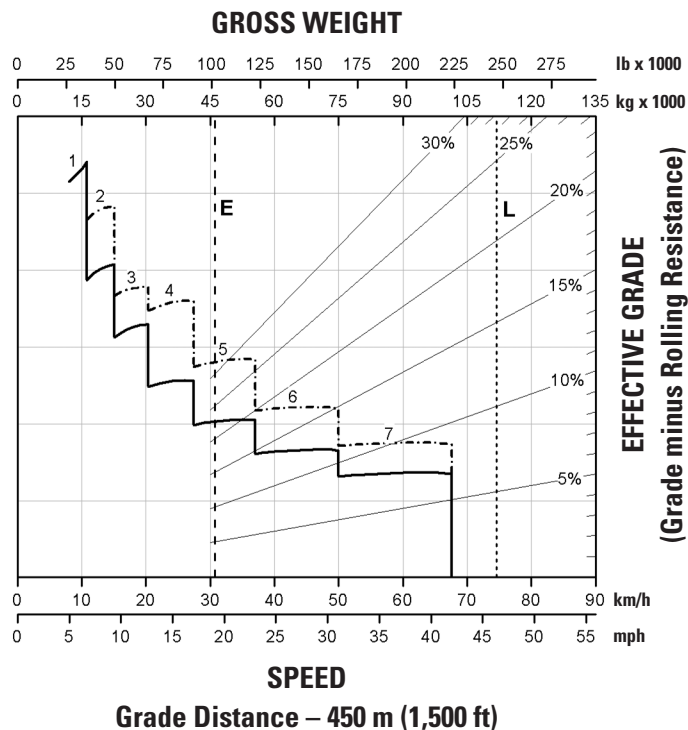
Retarding Performance

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/t (20 lb/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 24.00R35 (E4) tires.

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.



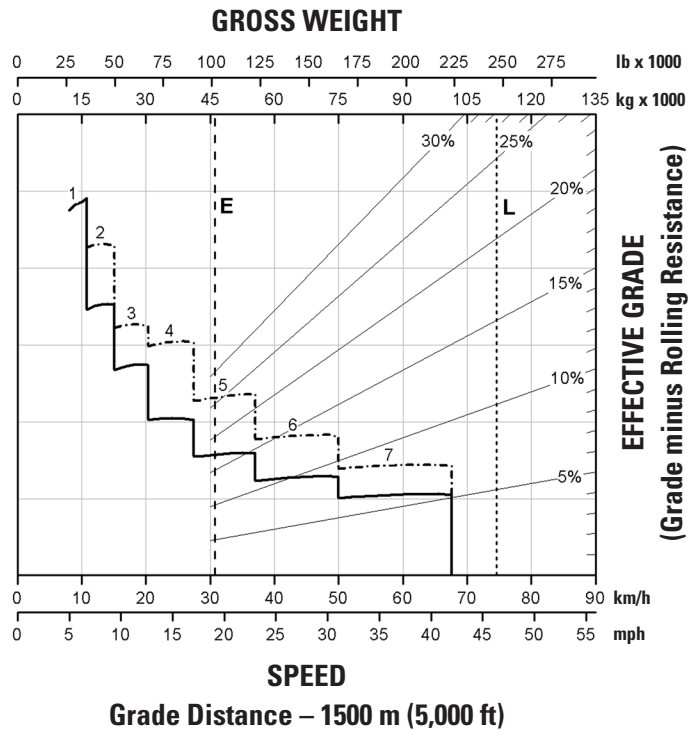
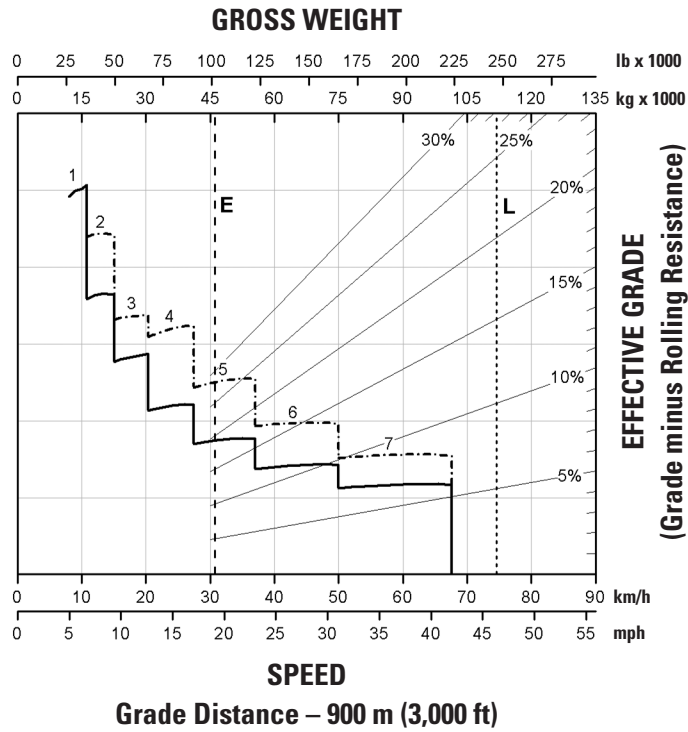
Retarding Performance



- with ARC only
- - - - - ARC and Engine Brake
- E – Typical Field Empty Weight
- L – Target Gross Machine Operating Weight 111 811 kg (246,500 lb)

775G Off-Highway Truck Specifications

Retarding Performance

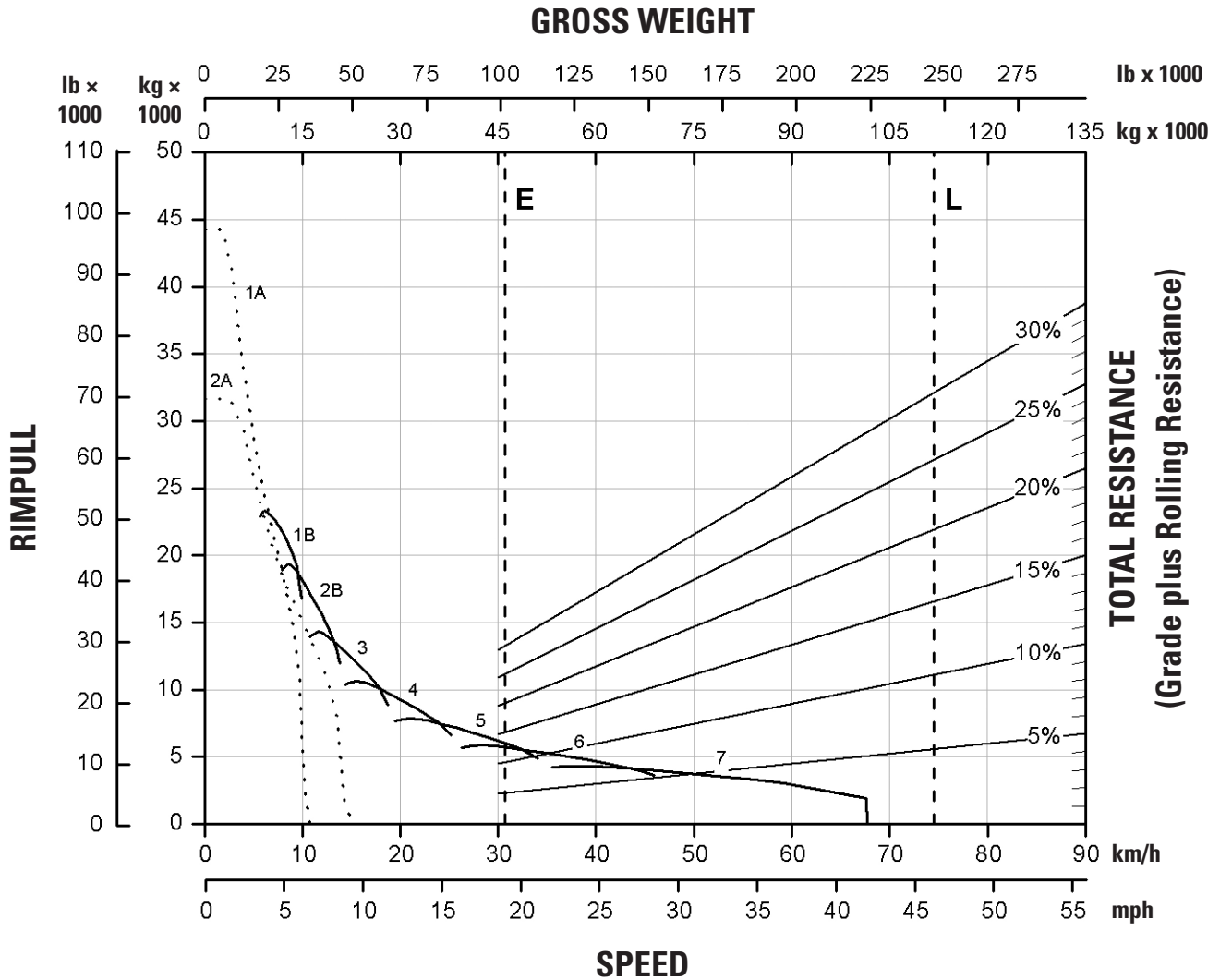


- with ARC only
- - - - - ARC and Engine Brake
- E – Typical Field Empty Weight
- L – Target Gross Machine Operating Weight 111 811 kg (246,500 lb)

775G Off-Highway Truck Specifications

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 gear, then down to maximum speed. Usable rimpull will depend upon traction available and weight on drive wheels.



- with ARC only
- - - - - ARC and Engine Brake
- E – Typical Field Empty Weight
- L – Target Gross Machine Operating Weight 111 811 kg (246,500 lb)

775G Off-Highway Truck Standard and Optional Equipment

Standard and Optional Equipment

Standard and optional equipment may vary. Consult your Cat dealer for details.

	Standard	Optional		Standard	Optional
POWER TRAIN			OPERATOR ENVIRONMENT (CONTINUED)		
C27 Tier 2 compliant diesel engine: air cleaner with precleaner (2), air-to-air aftercooler (ATAAC), electric start, engine idle shutdown, ether starting aid, exhaust muffler, NGMR radiator	✓		Cab precleaner		✓
Braking system: extended life brakes, automatic retarder control (ARC), manual retarder (utilizes rear oil-cooled, multiple disc brakes), brake release motor (towing), dry disc brakes (front), front brake disconnect switch (front), oil-cooled multiple disc brakes (rear), brake wear indicator (rear), parking brake, secondary brake, service brake	✓		Coat hook	✓	
Cat® engine brake		✓	Cup holders (4)	✓	
Direct drive fan, MEUI™-A fuel system	✓		Diagnostic connection port, 24V	✓	
Transmission: 7-speed automatic powershift with – Electronic Clutch Pressure Control (ECPC), Advanced Productivity Electronic Control Strategy (APECS); automatic neutral idle, autostall, second gear start	✓		Entertainment radio ready: 5 amp converter, speakers, antenna, wiring harness	✓	
ELECTRICAL			Foot rest	✓	
Alarm, backup	✓		Gauges/indicators: brake oil temperature gauge, coolant temperature gauge, engine overspeed indicator, fuel level, hour meter, speedometer with odometer, tachometer, transmission gear indicator	✓	
Alternator, 120 ampere	✓		Hoist lever	✓	
Autolube power supply ready	✓		Horn	✓	
Batteries, maintenance-free, 12V (2), 1,400 CCA combined	✓		Light: courtesy, dome	✓	
Electrical system, 25 amp, 24V to 12V converter	✓		Lights: HID		✓
Lighting system: backup light (halogen), directional signals/hazard warning (front and rear LED), engine compartment light, headlights (halogen) with dimmer, operator access courtesy lights, side profile lights, stop/tail lights (LED)	✓		Mirrors: convex, heated		✓
Service center containing: battery jump start, breakers with spare fuses, lockout switch, ports – ET and VIMS™, service lockout switch (power without engine start)	✓		Mirrors, non-heated	✓	
OPERATOR ENVIRONMENT			Power port, 24V and 12V (2)	✓	
Advisor display: air cleaner service indicator, fluid level monitoring, fuel level monitoring, display languages (market based)	✓		Rollover Protection (ROPS)/ Falling Object Protection (FOPS)	✓	
Air conditioning/heat	✓		Seat, Cat Comfort Series III: full air suspension, retractable 3-point seat belt with shoulder harness	✓	
Ashtray and cigarette lighter	✓		Seat, training with lap belt	✓	
Automatic temperature control	✓		Steering wheel, padded, tilt and telescopic	✓	
			Storage compartment	✓	
			Sun visor	✓	
			Throttle lock	✓	
			Visibility package (meets ISO 5006 requirements)		✓
			Window, hinged, right side (emergency exit)	✓	
			Window, powered, left side	✓	
			Windshield wiper, intermittent, and washer		
			Work Area Vision System (WAVS)		✓
			TECHNOLOGY PRODUCTS		
			Economy modes, standard and adaptive	✓	
			Product Link™, cellular or satellite	✓	
			Traction Control System (TCS)	✓	
			Truck Production Management System	✓	
			Advanced Health	✓	

775G Off-Highway Truck Standard and Optional Equipment

Standard and Optional Equipment

Standard and optional equipment may vary. Consult your Cat dealer for details.

OTHER

Antifreeze	✓
Body: heat, liner, sideboards	✓
Body down indicator	✓
Body safety pin (secures body in up position)	✓
Center-mounted rims	✓
Clustered grease fittings	✓
Cold weather packages	✓
Driveline guards	✓
Engine crankcase guards	✓
Extended life coolant to -34° C (-30° F)	✓
Fan guards	✓
Fluid fill service center	✓
Fuel tank, 795 L (210 gal)	✓
Ground level battery disconnect	✓

OTHER (CONTINUED)

Ground level engine shutdown	✓
Ground level grease fittings	✓
Grouped ground-level filters	✓
Operator Maintenance Manual (OMM)	✓
Rims 17 × 35	✓
Rock ejectors	✓
Secondary steering (electric)	✓
Spare rim	✓
Suspension, front and rear (EU compliant)	✓
Tie down eyes	✓
Tow hooks, front/tow pin, rear	✓
Wheel chocks	✓
Vandalism protection locks	✓



For more complete information on Cat products, dealer services, and industry solutions, visit us on the web at www.cat.com.

Materials and specifications are subject to change without notice. Featured machines in photos may include additional equipment. See your Cat dealer for available options.

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AEXQ2675-00 (7-2022)
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