777-05

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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777-05 Off-Highway Truck Specifications

Engine

Engine Model	Cat® C32B	
Engine Speed	1,800 rpm	
Gross Power – SAE J1995	765 kW	1,025 hp
Net Power – SAE J1349/ ISO 9249	711 kW	953 hp
Net Torque @ 1,200 rpm	5130 N·m	3,784 lbf-ft
Net Torque Rise	36%	
Cylinders	12	
Bore	145 mm	5.7 in
Stroke	162 mm	6.4 in
Displacement	32.1 L	1,959 in^3

- Advertised power is tested per the specified standard in effect at the time of manufacture.
- Net power available at the flywheel when the engine is equipped with fan, air cleaner, muffler, and alternator with engine speed at 1,800 rpm.
- Power rating applies at 1,800 rpm when tested under the specified condition for the specified standard in effect at the time of manufacture.
- Ratings based on SAE J1349:2011 standard air conditions of 25°C (77°F) and 100 kPa (29.61 Hg) barometer. Power based on fuel having API gravity of 35 at 16°C (60°F) and an LHV of 42 780 kJ/kg (18,390 BTU/lb) when engine used at 30°C (86°F).
- No engine derating required up to 3048 m (10,000 ft) altitude.
- Meets China Nonroad Stage III emission standards equivalent to U.S. EPA Tier 2.

Operating Specifications

Target Payload (100%)	97.3 t	107.2 ton
Top Speed - Loaded	67.1 km/h	41.7 mile/h
Maximum Working Payload (110%)	107 005 kg	235,905 lbs
Not to Exceed Payload (120%)	116 732 kg	257,351 lbs

- Empty Operating weights may vary based on the machine configuration.
- Capacity with dual slope body without liner.
- Refer to Caterpillar 10/10/20 Payload Policy for maximum gross vehicle weight limitations.

Operating Weights

Target Gross Machine Weight	163 360 kg	360,147 lbs
Body Weight, Dual Slope	16 047 kg	35,378 lbs
Body Weight, Flat Floor	16 067 kg	35,422 lbs
Empty Operating Weight, Dual Slope	66 083 kg	145,688 lbs
Empty Operating Weight, Flat Floor	66 103 kg	145,732 lbs
Target Payload, Dual Slope	97 277 kg	214,459 lbs
Target Payload, Flat Floor	97 257 kg	214,415 lbs

- Empty operating weights may vary based on the machine configuration.

Capacity – Dual Slope – 100% Fill Factor

Struck	41.9 m^3	54.8 yd^3
Heaped Volume (SAE 2:1)*	60.1 m^3	78.6 yd^3

- Contact your local Cat dealer for body recommendation.

* ISO 6483:1980

Capacity – Flat Floor – 100% Fill Factor

Struck	43.1 m^3	56.4 yd^3
Heaped Volume (SAE 2:1)*	64.1 m^3	83.8 yd^3

- Contact your local Cat dealer for body recommendation.

* ISO 6483:1980

Weight Distribution – Approximate (Dual Slope)

Front Axle – Empty/Loaded	46% / 30%
Rear Axle – Empty/Loaded	54% / 70%

Weight Distribution – Approximate (Flat Floor)

Front Axle – Empty/Loaded	45% / 28%
Rear Axle – Empty/Loaded	55% / 72%

Transmission

Forward 1	10.9 km/h	6.8 mph
Forward 2	14.8 km/h	9.2 mph
Forward 3	20.1 km/h	12.5 mph
Forward 4	27.1 km/h	16.9 mph
Forward 5	36.8 km/h	22.9 mph
Forward 6	49.4 km/h	30.7 mph
Forward 7	67.1 km/h	41.7 mph
Reverse 1	12.1 km/h	7.5 mph

- Maximum travel speeds with standard 27.00R49 (E4) tires.

Final Drive

Differential Ratio	2.74:1
Planetary Ratio	7.00:1
Total Reduction Ratio	19.16:1

Brakes

Brake Surface – Front Dry	2787 cm^2	432 in^2
Brake Surface – Rear	102 116 cm^2	15,828 in^2
Brake Surface – Front Wet (optional)	40 225 cm^2	6,235 in^2
Brake Standard	ISO 3450:2011	

Body Hoist

Body Raise Time – High Idle	15 seconds
Body Lower Time – Float	13 seconds
Body Power Down – High Idle	13 seconds

Sound

Sound Standards	ISO 6396:2008

- The dynamic operator sound pressure level is 80 dB(A) as per ISO 6396:2008 for cab offered by Caterpillar. The cab was properly installed and maintained. The test was conducted with the cab doors and the cab windows closed.

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 CO_2 equivalent of 2.86 metric tonnes (3.152 tons).

Cab

Rollover Protective Structure (ROPS)/Falling Objects Protective Structure (FOPS)	ROPS meets ISO 3471:2008 for operator and ISO 13459:2012 for trainer. FOPS meets ISO 3449:2005 Level II for operator and ISO 13459:2012 Level II for trainer.

Steering

Steering Standard	ISO 5010:2019	
Steering Angle	30.5°	
Turning Diameter – Front	25.3 m	83 ft
Turning Circle Clearance Diameter	28.4 m	93.2 ft

- Separate hydraulic system prevents cross contamination.

Tires

Standard Tire	27.00R49 (E4)

- Productive capabilities of the 777-05 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.

Suspension

Effective Cylinder Stroke – Front	318 mm	12.5 in
Effective Cylinder Stroke – Rear	165 mm	6.5 in
Rear Axle Oscillation	±5.4°	

Service Refill Capacities

Fuel Tank	1140 L	300 gal
Cooling System	212 L	56 gal
Crankcase	115 L	30 gal
Differentials	222 L	59 gal
Final Drives (each)	42 L	11 gal
Steering System (includes tank)	60 L	16 gal
Brake/Hoist System	420 L	110 gal
Torque Converter/ Transmission System	125 L	33 gal
Front wheel (each)	7.5 L	2 gal

777-05 Off-Highway Truck Specifications

Weight/Payload Calculation

		DUAL SLOPE					
		Without Liner		With Liner		With Tail End Liner	
Machine Weights Based on Configuration							
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)	
Liner: Floor/Sidewall/Frontwall	mm (in)			16/8/8 (0.63/0.31/0.31)		25 (0.98)	
Body Capacity	m^3 (yd^3)	60.1	78.6	59.5	77.8	59.9	78.3
Target Gross Machine Weight	kg (lb)	163 360	360,147	163 360	360,147	163 360	360,147
Empty Chassis Weight	kg (lb)	49 067	108,174	49 067	108,174	49 067	108,174
Body System Weight	kg (lb)	16 047	35,378	21 548	47,505	17 467	38,508
Empty Machine Weight	kg (lb)	65 114	143,552	70 615	155,679	66 534	146,682
Fuel Tank Size	L (gal)	1140	300	1140	300	1140	300
Fuel Tank – 100% Fill	kg (lb)	969	2,136	969	2,136	969	2,136
Empty Operating Weight	kg (lb)	66 083	145,688	71 584	157,815	67 503	148,818
Target Payload	kg (lb)	97 277	214,459	91 776	202,332	95 857	211,329
	tonnes (tons)	97.3	107.2	91.8	101.2	95.9	105.7
Maximum Payload (110% of Target)*	kg (lb)	107 005	235,905	100 954	222,565	105 443	232,462
	tonnes (tons)	107.0	118.0	101.0	111.3	105.4	116.2
Not to Exceed Payload (120% of Target)*	kg (lb)	116 732	257,351	110 131	242,798	115 028	253,595
	tonnes (tons)	116.7	128.7	110.1	121.4	115.0	126.8

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

Payload Calculation: Definitions

Target Payload = Target Gross Machine Weight less Empty Operating Weight
Empty Operating Weight = Empty Chassis Weight + Body System Weight + Fuel
Maximum Payload = Target Payload × 1.10 (110%)

Empty operating weights may vary based on the machine configuration.

Weight/Payload Calculation

		FLAT FLOOR BODY					
		Without Liner		With Liner		With Sideboard	
Machine Weights Based on Configuration							
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)	
Sideboard Capacity	m^3 (yd^3)			16/8/8 (0.63/0.31/0.31)		5.1	6.7
Body Capacity	m^3 (yd^3)	64.1	83.8	63.5	83.1	69.2	91
Target Gross Machine Weight	kg (lb)	163 360	360,147	163 360	360,147	163 360	360,147
Empty Chassis Weight	kg (lb)	49 067	108,174	48 133	106,115	49 067	108,174
Body System Weight	kg (lb)	16 067	34,945	20 586	45,384	16 517	36,414
Empty Machine Weight	kg (lb)	65 134	143,596	68 719	151,499	65 584	144,588
Fuel Tank Size	L (gal)	1140	300	1140	300	1140	300
Fuel Tank – 100% Fill	kg (lb)	969	2,136	946	2,086	969	2,136
Empty Machine Operating Weight	kg (lb)	66 103	145,732	69 665	153,585	66 553	146,724
Target Payload	kg (lb)	97 257	214,415	93 695	206,562	96 807	213,423
	tonnes (tons)	97.2	107.2	93.7	103.2	96.8	106.7
Maximum Payload (110% of Target)*	kg (lb)	106 983	235,857	103 065	227,218	106 488	234,765
	tonnes (tons)	106.9	117.9	103.1	113.6	106.4	117.4
Not to Exceed Payload (120% of Target)*	kg (lb)	116 708	257,298	112 434	247,874	116 168	256,107
	tonnes (tons)	116.7	128.6	112.4	123.9	116.1	128.1

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

Payload Calculation: Definitions

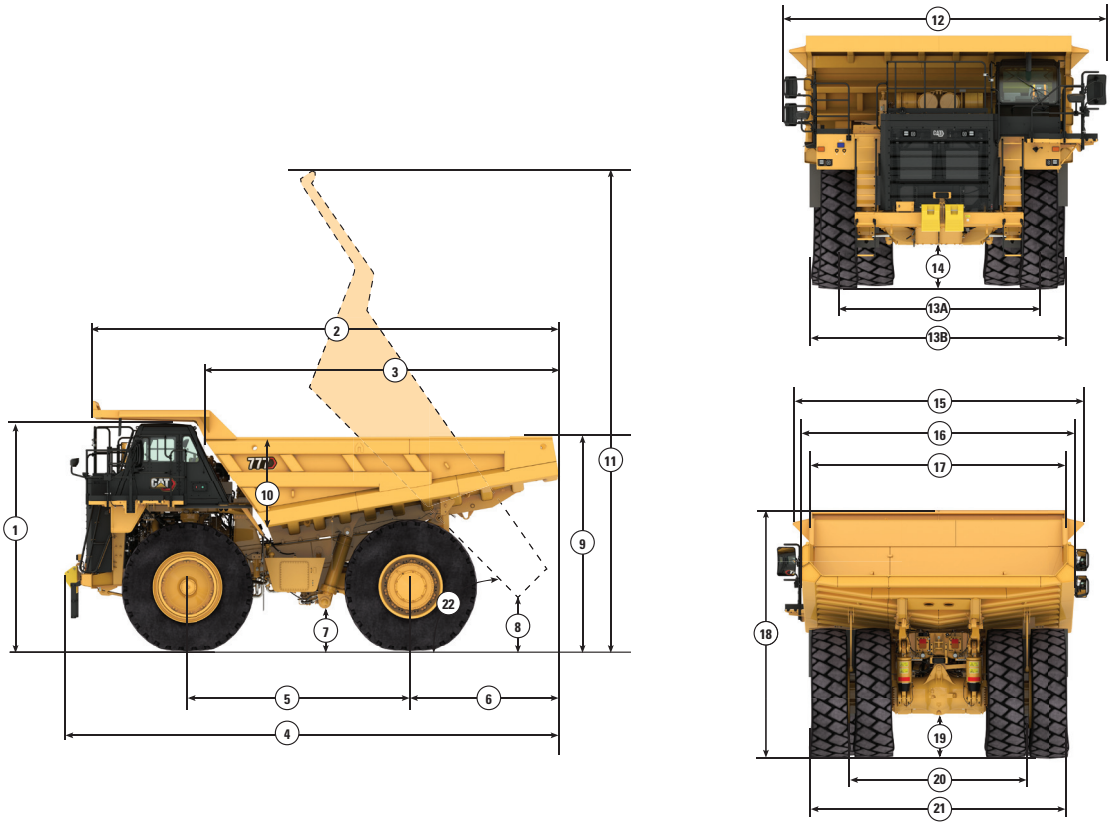
Target Payload = Target Gross Machine Weight less Empty Operating Weight
Empty Operating Weight = Empty Chassis Weight + Body System Weight + Fuel
Maximum Payload = Target Payload × 1.10 (110%)

Empty operating weights may vary based on the machine configuration.

777-05 Off-Highway Truck Specifications

Dimensions

All dimensions are approximate.

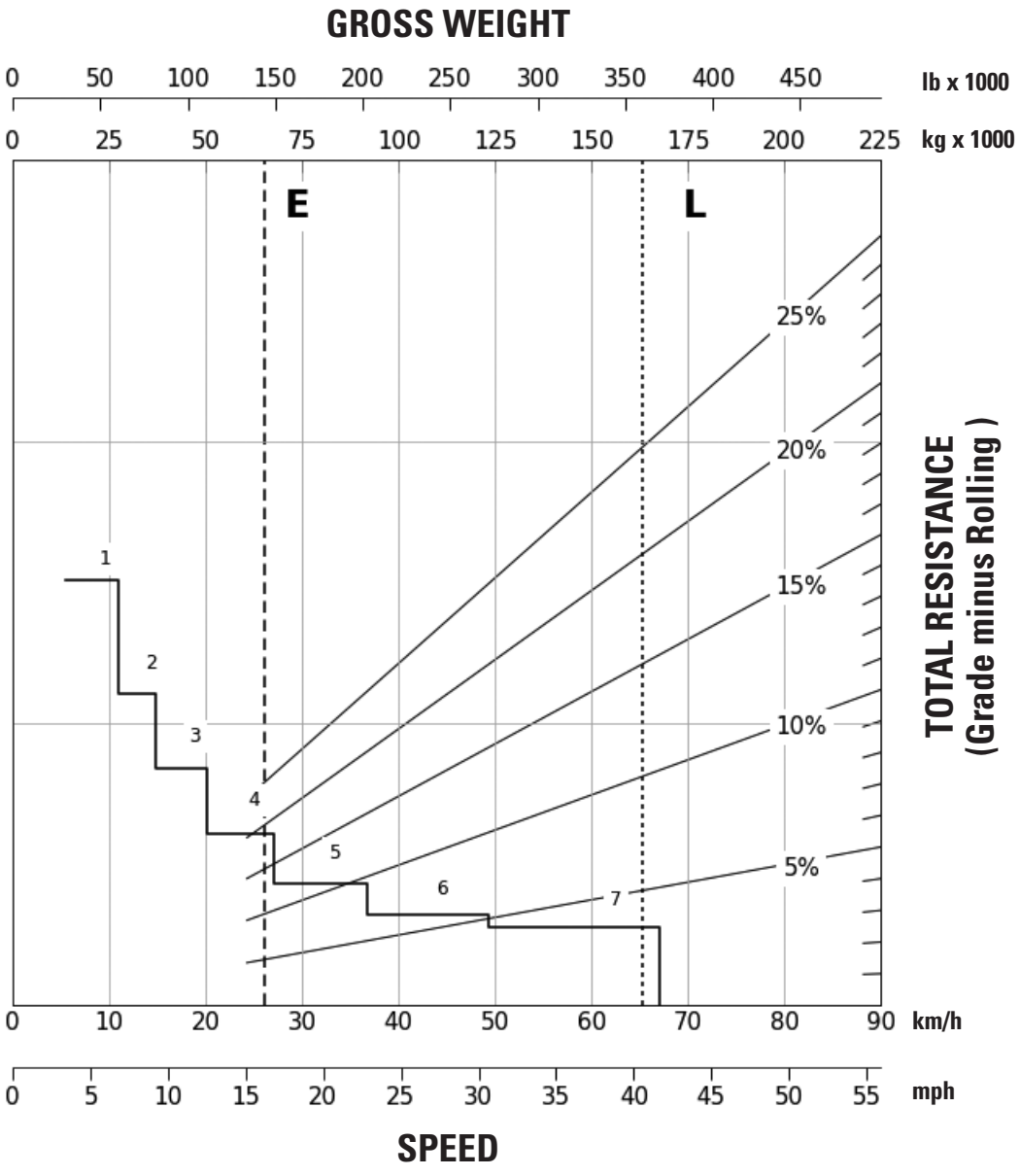


	Dual Slope Body		Flat Floor Body	
	mm	ft	mm	ft
1 Height to Top of ROPS – Loaded	4730	15.52	4730	15.52
2 Overall Body Length	9555	31.35	10 070	33.04
3 Inside Body Length	6920	22.70	7186	23.58
4 Overall Length	10 004	32.82	10 227	33.55
5 Wheel Base	4570	14.99	4570	14.99
6 Rear Axle to Tail	3045	9.99	3265	10.71
7 Ground Clearance	896	2.94	896	2.94
8 Dump Clearance	890	2.92	818	2.68
9 Loading Height – Empty	4380	14.37	4429	14.53
10 Inside Body Depth – Maximum	1895	6.22	1777	5.83
11 Overall Height – Body Raised	9953	32.65	10 071	33.04
12 Operating Width Extended Catwalk	6545	21.47	6545	21.47
13A Center Line Front Tire Width	4163	13.66	4163	13.66
13B Overall Front Tire Width	4961	16.28	4961	16.28
14 Engine Guard Clearance	864	2.83	864	2.83
15 Overall Canopy Width	6200	20.34	6200	20.34
16 Outside Body Width	5524	18.12	5689	18.66
17 Inside Body Width	5197	17.05	5450	17.88
18 Front Canopy Height – Loaded	5177	16.98	5370	17.62
19 Rear Axle Clearance	902	2.96	902	2.96
20 Center Line Rear Dual Tire Width	3576	11.73	3576	11.73
21 Overall Tire Width	5262	17.26	5262	17.26
22 Body Dump Angle	49.4°		49.4°	

777-05 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 27.00R49 (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.



1 — 1st Gear
2 — 2nd Gear
3 — 3rd Gear
4 — 4th Gear
5 — 5th Gear
6 — 6th Gear
7 — 7th Gear

E — Empty 65 149 kg (143,629 lb)
L — Target GMW 163 360 kg (360,147 lb)

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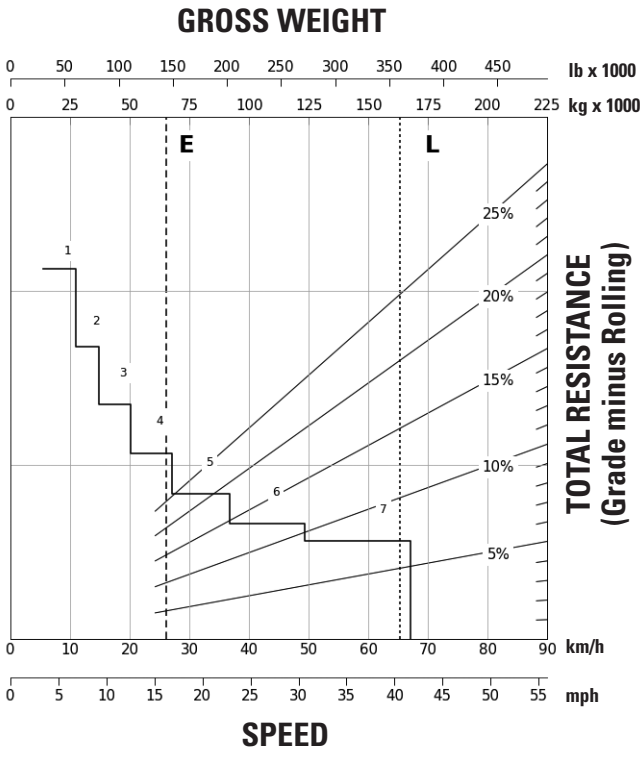
777-05 Retarding – 450 m (1,500 ft)

E — Empty 65 149 kg (143,629 lb)
L — Target GMW 163 360 kg (360,147 lb)

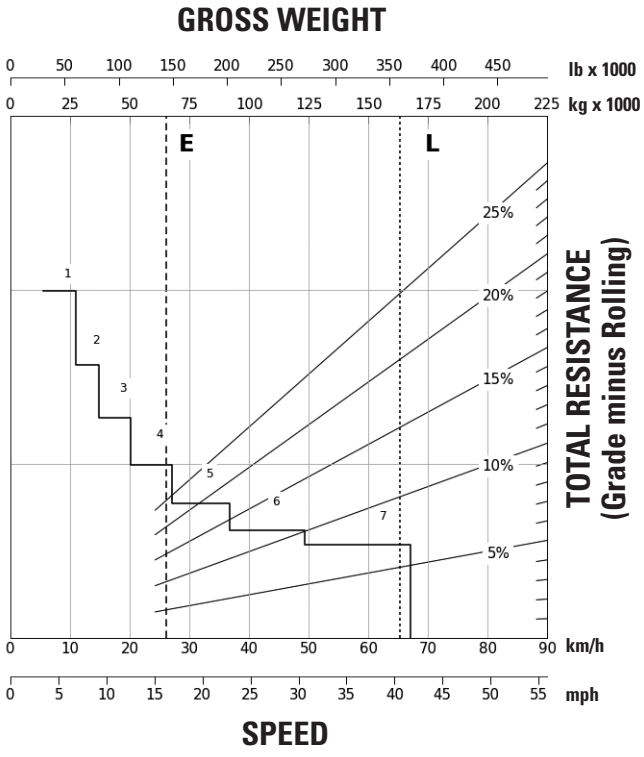
1 — 1st Gear
2 — 2nd Gear
3 — 3rd Gear
4 — 4th Gear
5 — 5th Gear
6 — 6th Gear
7 — 7th Gear



777-05 Retarding – 600 m (2,000 ft)

E — Empty 65 149 kg (143,629 lb)
L — Target GMW 163 360 kg (360,147 lb)

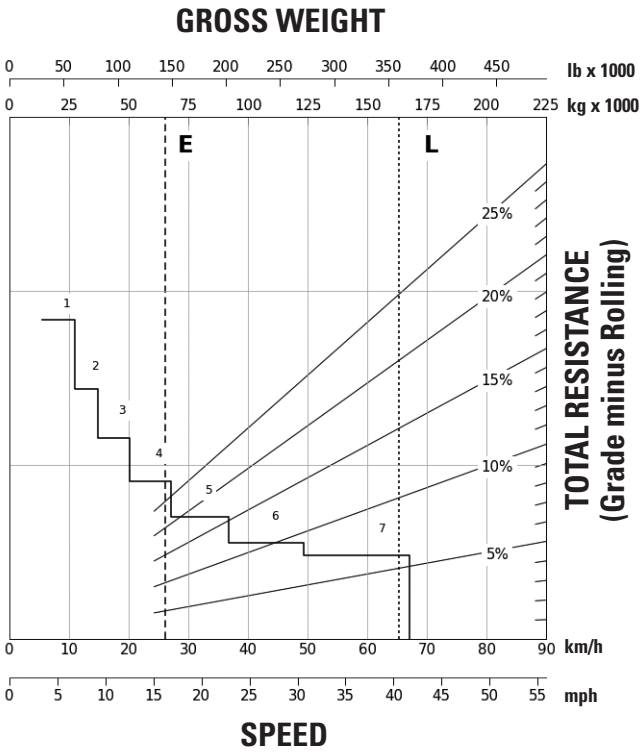
1 — 1st Gear
2 — 2nd Gear
3 — 3rd Gear
4 — 4th Gear
5 — 5th Gear
6 — 6th Gear
7 — 7th Gear



777-05 Retarding – 900 m (3,000 ft)

E — Empty 65 149 kg (143,629 lb)
L — Target GMW 163 360 kg (360,147 lb)

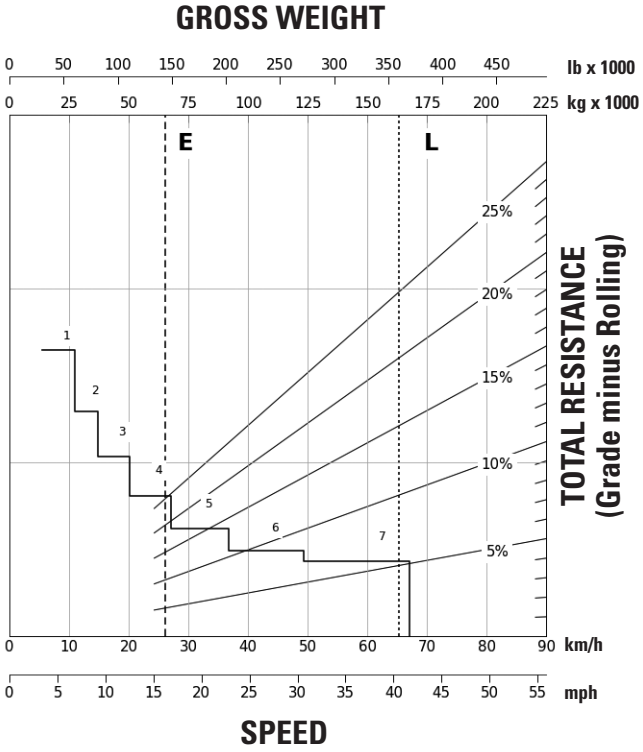
1 — 1st Gear
2 — 2nd Gear
3 — 3rd Gear
4 — 4th Gear
5 — 5th Gear
6 — 6th Gear
7 — 7th Gear



777-05 Retarding – 1500 m (5,000 ft)

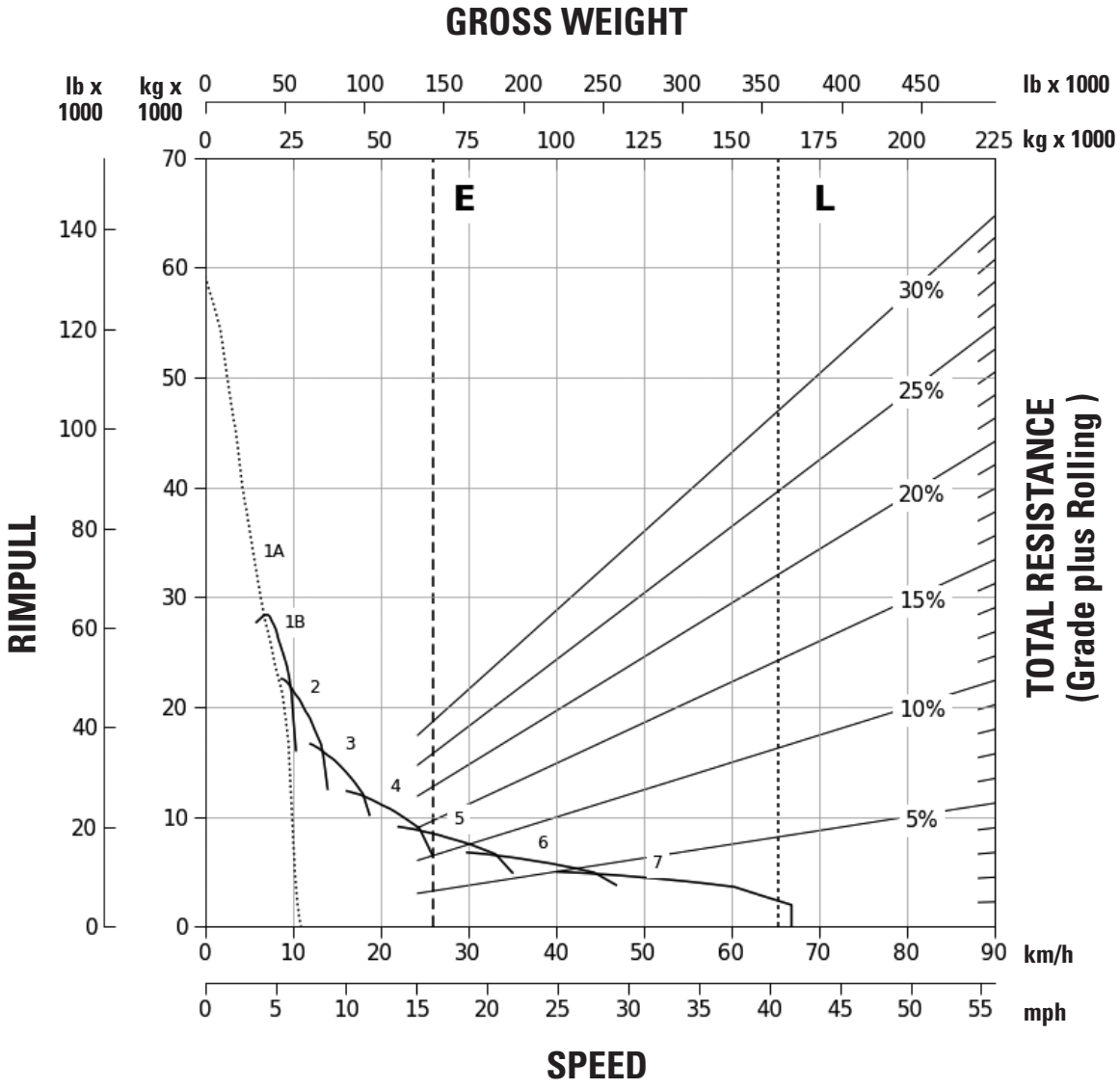
E — Empty 65 149 kg (143,629 lb)
L — Target GMW 163 360 kg (360,147 lb)

1 — 1st Gear
2 — 2nd Gear
3 — 3rd Gear
4 — 4th Gear
5 — 5th Gear
6 — 6th Gear
7 — 7th Gear



777-05 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.



1A — 1st Gear (Torque Converter)
1B — 1st Gear
2 — 2nd Gear
3 — 3rd Gear
4 — 4th Gear
5 — 5th Gear
6 — 6th Gear
7 — 7th Gear

E — Empty 65 149 kg (143,629 lb)
L — Target GMW 163 360 kg (360,147 lb)

Standard and Optional Equipment

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

	Standard	Optional
POWERTRAIN		
Auto electric fuel priming pump	✓	
Biodiesel compatibility, B40	✓	
Brake release motor (towing)	✓	
Braking system: Hydraulically actuated brakes with oil cooled multiple disc (rear) and caliper disc (front), hydraulically applied and spring released	✓	
Cat C32B Engine	✓	
Cat transmission: 7F/1R speed planetary powershift, ECPC control, APECS software, programmable top gear/speed selection, body upshift inhibitor, directional shift management, neutral start switch, neutral coast inhibitor, reverse shift inhibitor, body-up reverse neutralizer, 2nd gear drive, torque shift management, and part throttle shifting	✓	
Economy mode/adaptive economy mode	✓	
Emergency/parking brake, spring applied and hydraulically released	✓	
Engine overspeed protection	✓	
Retarder control – manual	✓	
Water/fuel separator	✓	
Front oil cooled disc brake		✓
Traction control system		✓
Retarder control – automatic		✓
OPERATOR ENVIRONMENT		
Advisor, touchscreen display	✓	
Ash tray	✓	
Coat hook	✓	
Combined gear shift/hoist/park brake lever	✓	
Cup/bottle holder	✓	
Diagnostic connection port	✓	
Horn electric	✓	
HVAC	✓	
Liquid crystal display (LCD), cluster gauge: brake oil temperature, transmission oil temperature, engine coolant temperature, hour meter, tachometer, fuel level gauge, speedometer	✓	
Left side power window	✓	
Mirrors, left and right	✓	
Radio ready	✓	
Right side access door	✓	
ROPS/FOPS cabin	✓	
Seat, trainer with lap belt	✓	
Seat: operator – fully adjustable, air suspension, 4-point seat belt with reminder	✓	
Storage compartment	✓	
Sun visor	✓	
Switches: throttle lock, wipers/washers, hazard lights, headlights, secondary steering, back light adjust, AC on/off, spare, economy mode, egress lamp, Product Link™ disconnect	✓	
Tilt and telescopic steering wheel	✓	
Blind spot mirror		✓
Heated mirror		✓

	Standard	Optional
ELECTRICAL SYSTEM		
Alternator, 150 amp	✓	
Auxiliary jump start receptacle	✓	
Backup alarm	✓	
Backup light, LED	✓	
Directional signal/hazard warning, LED lights	✓	
Electrical system, 10 amp, 24V to 12V converter	✓	
Four batteries, 12V, 190 amp-hour	✓	
Ground-level battery disconnect switch	✓	
Ground-level engine shutdown switch	✓	
Headlights with dimmer, LED	✓	
Operator courtesy lights, LED	✓	
Stop/taillights, LED	✓	
Product Link	✓	
Switch, engine lockout	✓	
Switch, machine lockout	✓	
Two starter motors	✓	
Working lights, LED	✓	
Audio visual backup alarm		✓
Camera system		✓
Cat Detect system		✓
Fog lamp		✓
Truck production management system (TPMS)		✓
Vital Information Management System (VIMS™)		✓
OTHER FEATURES		
Body down indicator	✓	
Body mounting group	✓	
Body safety pin	✓	
Driveline guard	✓	
Engine crankcase guard	✓	
Exhaust body heat system	✓	
Extended life coolant to -35°C (-30°F)	✓	
Ground-level grease fittings		✓
Hydropneumatic suspension	✓	
Load counter	✓	
Rock ejectors	✓	
Tie down eyes/tow down hooks	✓	
Vandalism protection lock	✓	
Automatic lubrication system (27 kg/40 kg)		✓
Body liner		✓
Body sideboards		✓
Cluster/grouped lubrication system	✓	
Cold weather package		✓
Exhaust muffler		✓
Fast fluid fill system		✓
Fast fuel fill system		✓
Fire extinguisher		✓
Fuel tank 1325 L		✓
Hoist quick disconnect		✓
Oil change system – high speed		✓
Spare rim		✓
Wheel chocks		✓

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.

AEXQ2677-04 (08-2025)
Replaces AEXQ2677-03
Build Number: 05
(Afr-ME, Asia Pacific,
SE Asia, S. Am)