

777G Off-Highway Truck

Weight/Payload Calculation – Tier 4 Final Examples

777G – X Body (flat floor)		327-0400 Body System		363-5111 Body + Steel Liner		363-5112 Body + HD Steel Liner		363-5113 Body + Rubber 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)		20/10/12 (0.79/0.39/0.47)		20/10/12 (0.79/0.39/0.47)	
Liner – Floor/Sidewall/Frontwall	mm in	NA		12/10/6 (0.47/0.39/0.24)		16/10/10 (0.63/0.39/0.39)		102/10/10 (4.02/0.39/0.39)	
Payload Capacity		64.1 m³ (83.8 yd³)		63.5 m³ (83.1 yd³)		63.3 m³ (82.8 yd³)		60.9 m³ (79.7 yd³)	
Target Gross Machine Weight	kg (lb)	164 654	(363,000)	164 654	(363,000)	164 654	(363,000)	164 654	(363,000)
Empty Chassis Weight	kg (lb)	51 286	(113,085)	51 286	(113,085)	51 286	(113,085)	51 286	(113,085)
Body System Weight	kg (lb)	15 878	(35,011)	20 564	(45,344)	22 094	(48,717)	22 938	(50,578)
Empty Machine Weight	kg (lb)	67 164	(148,096)	71 850	(158,428)	73 380	(161,802)	74 224	(163,663)
Attachments									
Fuel Tank Size	L (gal)	1136	(300)	1136	(300)	1136	(300)	1136	(300)
Fuel Tank – 100% Fill	kg (lb)	955	(2,106)	955	(2,106)	955	(2,106)	955	(2,106)
Debris Allowance – 2%	kg (lb)	1363	(3,004)	1456	(3,211)	1487	(3,278)	1504	(3,315)
Empty Operating Weight**	kg (lb)	68 119	(150,202)	72 805	(160,535)	74 335	(163,908)	75 179	(165,770)
Target Payload*	kg (lb)	95 172	(209,794)	90 393	(199,254)	88 832	(195,813)	87 971	(193,915)
Target Payload*	tonnes (tons)	95.2	(104.9)	90.4	(99.6)	88.8	(97.9)	88.0	(97.0)
10/10/20 Policy*									
Nominal Payload – 100%	kg (lb)	95 172	(209,794)	90 393	(199,254)	88 832	(195,813)	87 971	(193,915)
Maximum Working Payload – 110%	kg (lb)	104 690	(230,773)	99 432	(219,180)	97 715	(215,395)	96 768	(213,307)
Not to Exceed Payload – 120%	kg (lb)	114 207	(251,752)	108 471	(239,105)	106 599	(234,976)	105 565	(232,698)
Maximum Gross Machine Weight*	kg (lb)	182 326	(401,955)	181 276	(399,640)	180 934	(398,884)	180 744	(398,468)

777G – Dual Slope		242-3170 Body System		277-3212 Body + Steel Liner		277-3213 Body + Rubber 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)		20/10/12 (0.79/0.39/0.47)	
Liner – Floor/Sidewall/Frontwall	mm in	None		16/8/8 (0.63/0.31/0.31)		102/10/10 (4.02/0.39/0.39)	
Payload Capacity		60.1 m³ (78.6 yd³)		59.5 m³ (77.8 yd³)		57.0 m³ (74.6 yd³)	
Target Gross Machine Weight	kg (lb)	164 654	(363,000)	164 654	(363,000)	164 654	(363,000)
Empty Chassis Weight	kg (lb)	51 286	(113,085)	51 286	(113,085)	51 286	(113,085)
Body System Weight	kg (lb)	16 075	(35,445)	21 770	(48,003)	23 017	(50,752)
Empty Machine Weight	kg (lb)	67 361	(148,530)	73 056	(161,088)	74 303	(163,837)
Attachments							
Fuel Tank Size	L (gal)	1136	(300)	1136	(300)	1136	(300)
Fuel Tank – 100% Fill	kg (lb)	955	(2,106)	955	(2,106)	955	(2,106)
Debris Allowance – 2%	kg (lb)	1367	(3,013)	1480	(3,264)	1505	(3,319)
Empty Operating Weight**	kg (lb)	68 316	(150,637)	74 011	(163,194)	75 258	(165,944)
Target Payload*	kg (lb)	94 971	(209,351)	89 163	(196,542)	87 891	(193,737)
Target Payload*	tonnes (tons)	95.0	(105.9)	89.2	(98.3)	87.9	(96.9)
10/10/20 Policy							
Nominal Payload – 100%	kg (lb)	94 971	(209,351)	89 163	(196,542)	87 891	(193,737)
Maximum Working Payload – 110%	kg (lb)	104 469	(230,286)	98 079	(216,196)	96 680	(213,111)
Not to Exceed Payload – 120%	kg (lb)	113 966	(251,221)	106 995	(235,850)	105 469	(232,485)
Maximum Gross Machine Weight*	kg (lb)	182 282	(401,857)	181 006	(399,045)	180 727	(398,429)

*Refer to Caterpillar 10/10/20 overload policy.

**Includes weight of all attachments.

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Weight/Payload Calculation – Tier 4 Final Examples

777G – Gateless Coal Body		321-5400 Body System		321-5410 Body System		321-5500 Body System		321-5500 Body System	
Base – Floor/Sidewall/Frontwall	mm in	14/10/10 (0.55/0.39/0.39)		14/10/10 (0.55/0.39/0.39)		14/10/10 (0.55/0.39/0.39)		14/10/10 (0.55/0.39/0.39)	
Liner – Floor/Sidewall/Frontwall	mm in	None		None		None		None	
Payload Capacity		89.3 m ³ (116.8 yd ³)		106 m ³ (138.6 yd ³)		110 m ³ (143.9 yd ³)		125.9 m ³ (164.7 yd ³)	
Target Gross Machine Weight	kg (lb)	164 654	(363,000)	164 654	(363,000)	164 654	(363,000)	164 654	(363,000)
Empty Chassis Weight	kg (lb)	51 286	(113,085)	51 286	(113,085)	51 286	(113,085)	51 286	(113,085)
Body System Weight	kg (lb)	16 710	(36,839)	17 826	(39,300)	17 712	(39,048)	18 915	(41,700)
Empty Machine Weight	kg (lb)	67 996	(149,924)	69 112	(152,385)	68 998	(152,133)	70 200	(154,785)
Attachments									
Fuel Tank Size	L (gal)	1136	(300)	1136	(300)	1136	(300)	1136	(300)
Fuel Tank – 100% Fill	kg (lb)	955	(2,106)	955	(2,106)	955	(2,106)	955	(2,106)
Debris Allowance – 2%	kg (lb)	1379	(3,041)	1402	(3,090)	1399	(3,085)	1423	(3,138)
Empty Operating Weight**	kg (lb)	68 951	(152,030)	70 067	(154,491)	69 953	(154,239)	71 156	(156,891)
Target Payload*	kg (lb)	94 324	(207,929)	93 185	(205,419)	93 302	(205,676)	92 075	(202,971)
Target Payload*	tonnes (tons)	94.3	(104.0)	93.2	(102.7)	93.3	(102.8)	92.1	(101.5)
10/10/20 Policy									
Target Payload – 100%	kg (lb)	94 324	(207,929)	93 185	(205,419)	93 302	(205,676)	92 075	(202,971)
Target Payload – 110%	kg (lb)	103 756	(228,722)	102 504	(225,961)	102 632	(226,244)	101 282	(223,268)
Target Payload – 120%	kg (lb)	113 189	(249,515)	111 822	(246,503)	111 962	(246,811)	110 490	(243,565)
Maximum Gross Machine Weight*	kg (lb)	182 140	(401,545)	181 890	(400,994)	181 915	(401,050)	181 646	(400,456)

*Refer to Caterpillar 10/10/20 overload policy.

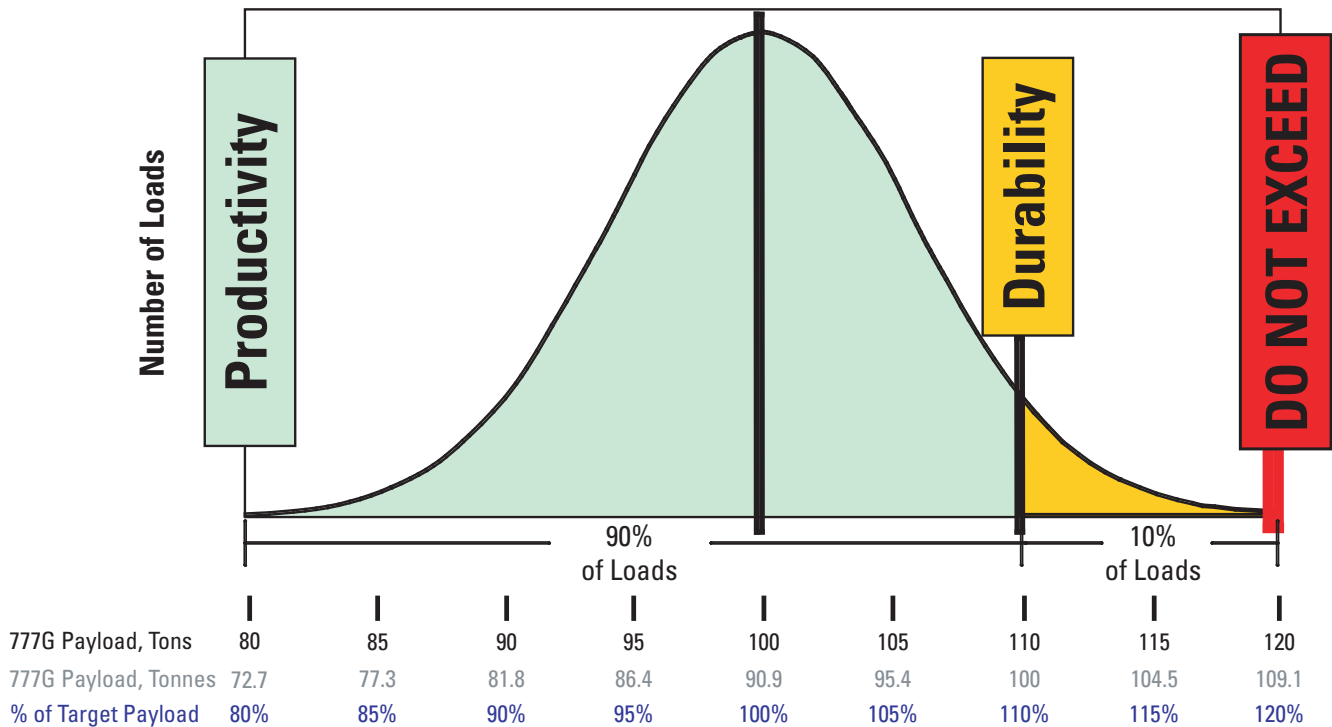
**Includes weight of all attachments.

777G Off-Highway Truck

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.***

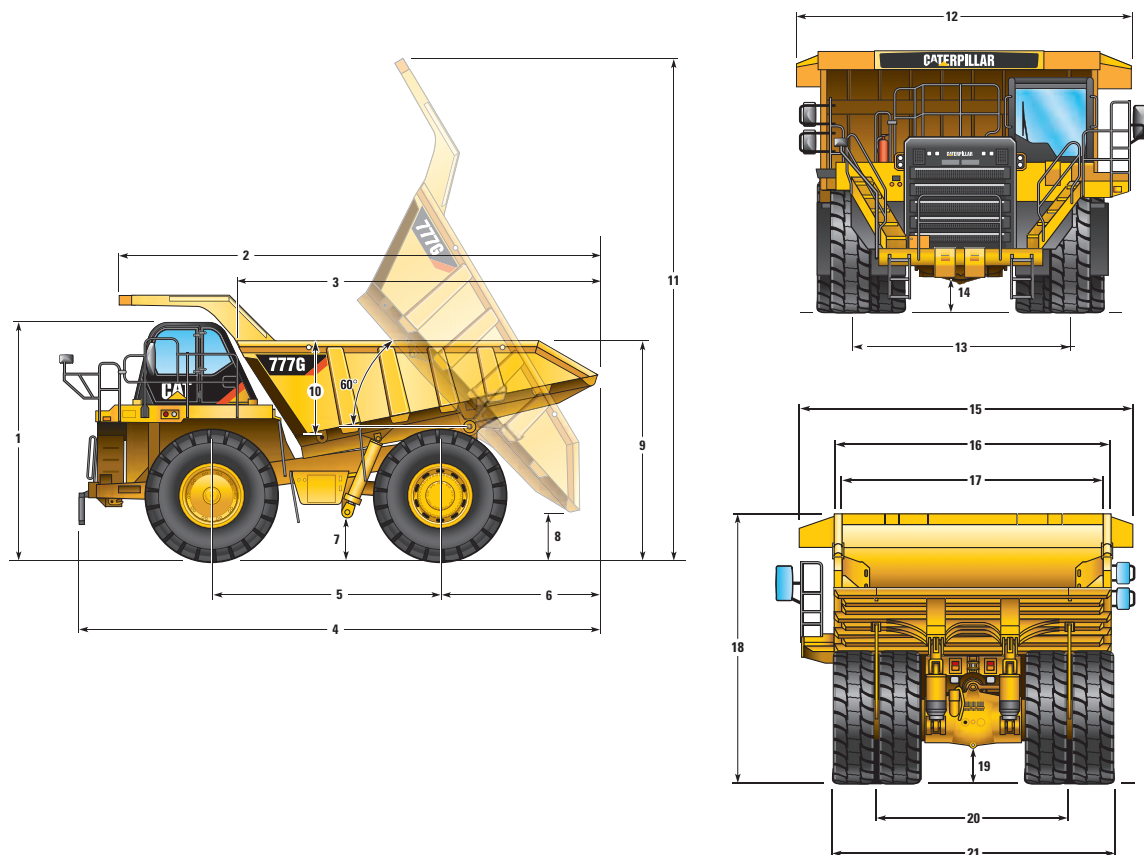
- 90% of loads should fall into this range
- No more than 10% of loads should exceed 10% of the target payload
- No loads should be above 20% of the target payload



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Dimensions

All dimensions are approximate.



	Dual Slope		X Body		Coal Body 1		Coal Body 2	
1 Height to Top of ROPS	4730 mm	15.50 ft	4730 mm	15.50 ft	4730 mm	15.50 ft	4730 mm	15.50 ft
2 Overall Body Length	9830 mm	32.20 ft	10 070 mm	33.04 ft	10 274 mm	33.71 ft	10 445 mm	34.27 ft
3 Inside Body Length	6580 mm	21.50 ft	7037 mm	23.09 ft	7562 mm	24.81 ft	7734 mm	25.37 ft
4 Overall Length	10 535 mm	34.50 ft	10 758 mm	35.30 ft	10 968 mm	35.98 ft	11 140 mm	36.55 ft
5 Wheelbase	4560 mm	14.90 ft	4560 mm	14.96 ft	4560 mm	14.96 ft	4560 mm	14.96 ft
6 Rear Axle to Tail	3062 mm	10.00 ft	3263 mm	10.71 ft	3473 mm	11.39 ft	3644 mm	11.96 ft
7 Ground Clearance	896 mm	2.90 ft	896 mm	2.94 ft	896 mm	2.94 ft	896 mm	2.94 ft
8 Dump Clearance	965 mm	3.10 ft	893 mm	2.93 ft	935 mm	3.07 ft	821 mm	2.69 ft
9 Loading Height – Empty	4380 mm	14.30 ft	4429 mm	14.53 ft	4851 mm	15.92 ft	5321 mm	17.46 ft
10 Inside Body Depth – Maximum	1895 mm	6.20 ft	1777 mm	5.83 ft	2223 mm	7.29 ft	2693 mm	8.84 ft
11 Overall Height – Body Raised	9953 mm	32.60 ft	10 071 mm	33.04 ft	10 319 mm	33.85 ft	10 319 mm	33.85 ft
12 Operating Width	6687 mm	21.90 ft	6687 mm	21.94 ft	6706 mm	22.00 ft	6706 mm	22.00 ft
13 Front Tire Width	4170 mm	13.60 ft	4170 mm	13.68 ft	4170 mm	13.68 ft	4170 mm	13.68 ft
14 Engine Guard Clearance	864 mm	2.80 ft	864 mm	2.83 ft	864 mm	2.83 ft	864 mm	2.83 ft
15 Overall Canopy Width	6200 mm	20.30 ft	6200 mm	20.34 ft	6404 mm	21.01 ft	6404 mm	21.01 ft
16 Outside Body Width	5524 mm	18.10 ft	5682 mm	18.64 ft	6365 mm	20.88 ft	6368 mm	20.89 ft
17 Inside Body Width	5200 mm	17.00 ft	5450 mm	17.88 ft	6150 mm	20.18 ft	6150 mm	20.18 ft
18 Front Canopy Height	5200 mm	17.00 ft	5370 mm	17.62 ft	5840 mm	19.16 ft	5840 mm	19.16 ft
19 Rear Axle Clearance	902 mm	2.90 ft	902 mm	2.96 ft	902 mm	2.96 ft	902 mm	2.96 ft
20 Rear Dual Tire Width	3576 mm	11.70 ft	3576 mm	11.73 ft	3576 mm	11.73 ft	3576 mm	11.73 ft
21 Overall Tire Width	5223 mm	17.10 ft	5223 mm	17.14 ft	5223 mm	17.14 ft	5223 mm	17.14 ft

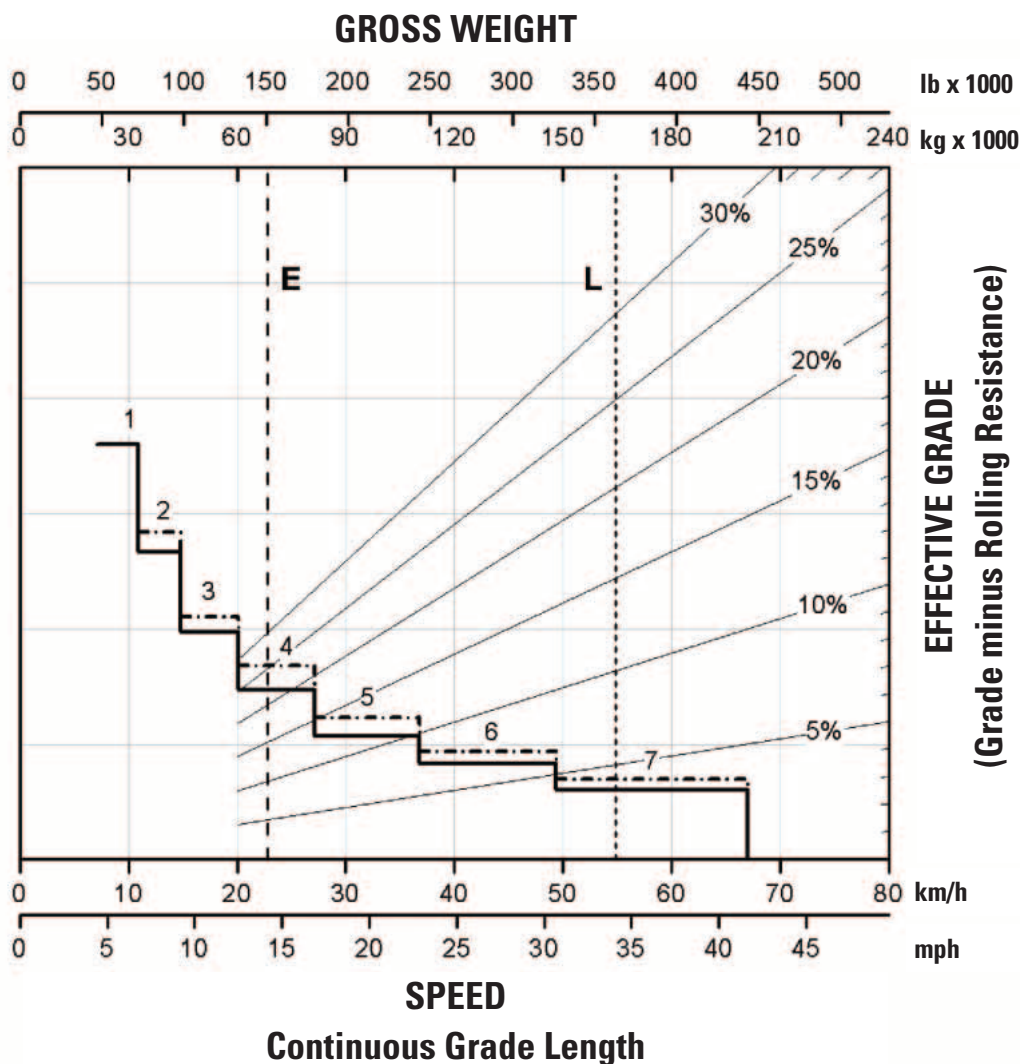
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Retarding Performance (Tier 4 Final)

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.

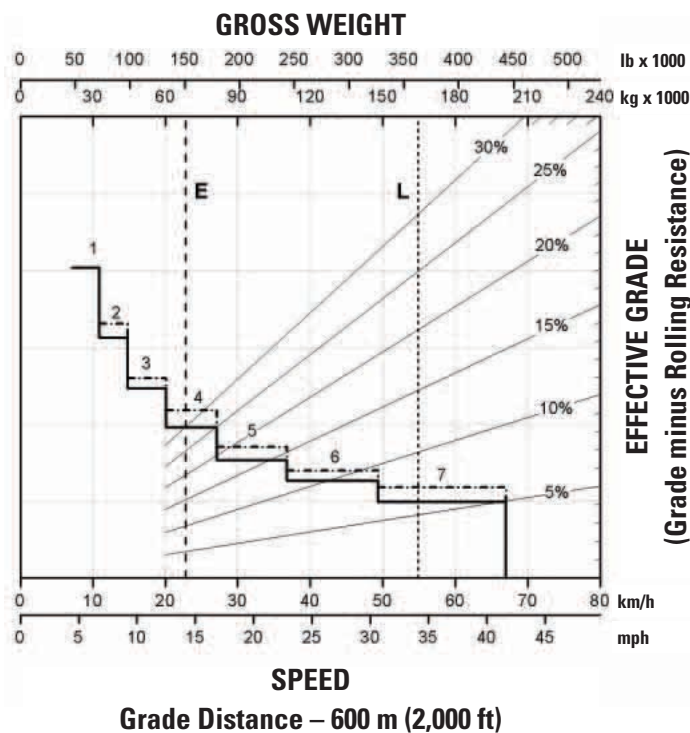
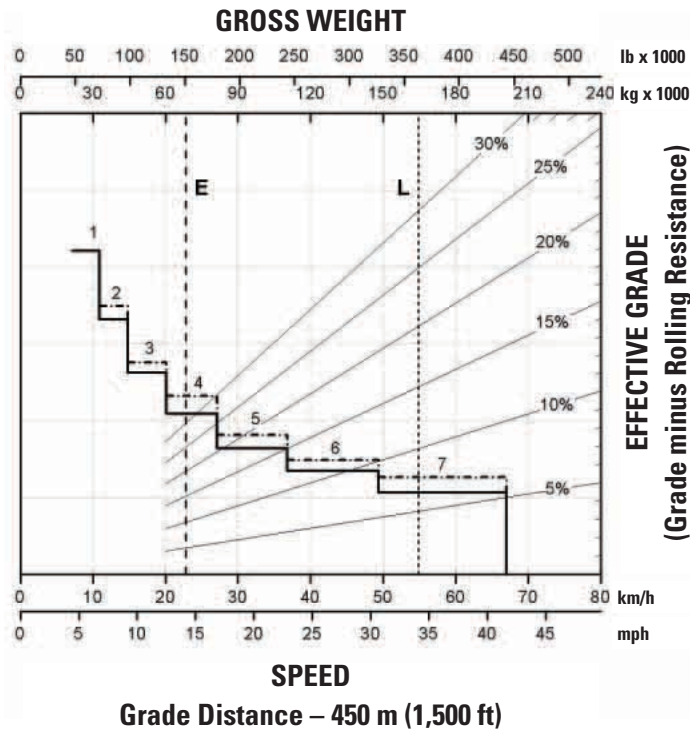
NOTE: Select the proper gear to maintain engine rpm at the highest possible level, without overspeeding the engine.

If cooling oil overheats, reduce ground speed to allow transmission to shift to the next lower speed range.



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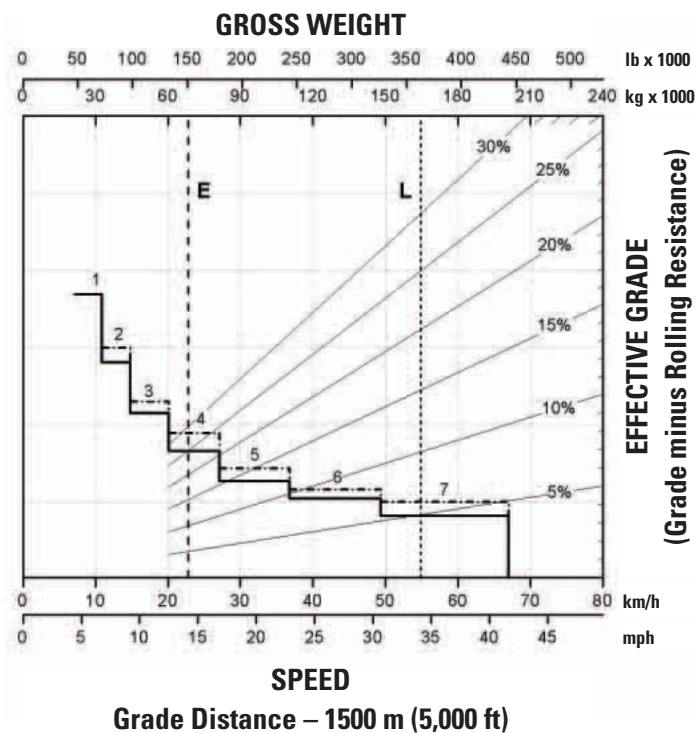
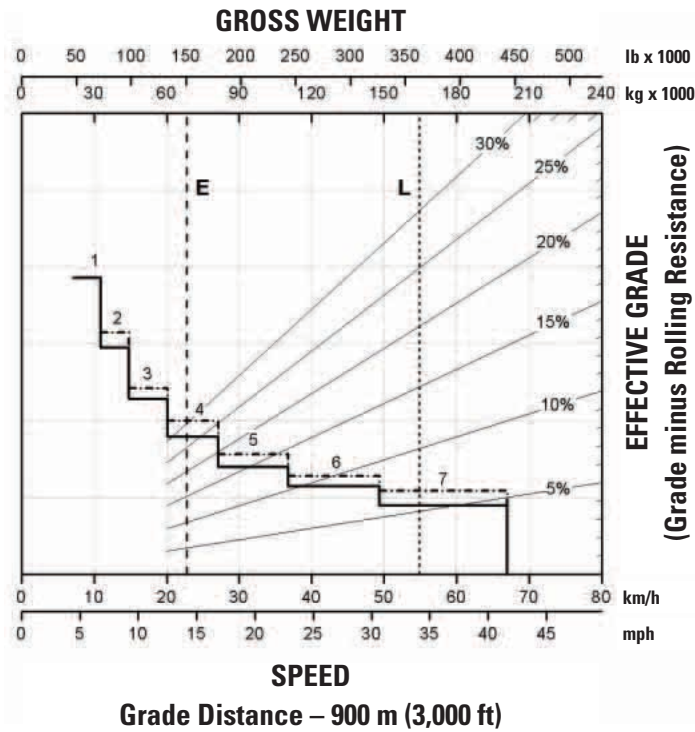
Retarding Performance (Tier 4 Final)



----- Engine Brake

777G Off-Highway Truck

Retarding Performance (Tier 4 Final)



----- Engine Brake

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Gradeability/Speed/Rimpull (Tier 4 Final)

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.

