

ARTICULATED TRUCKS

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Features:

- **Cat engines with ACERT™ Technology** meet Tier 3/Stage III engine emission requirements through 2010. The three core elements of meeting these regulations are:
 - I) Electronics, ADEM A4;
 - II) Fuel delivery, Mechanical-activated Electronic Unit Injection (MEUI);
 - III) Air Management, Wastegate Turbocharging, Air to Air Aftercooling (ATAAC) with the proven technology of a crossflow cylinder head.
- **Cat electronically controlled transmissions** ... Transmissions purpose built and designed for articulated trucks and their applications. Electronic controls provide complete integration with the engines for smooth shifting and efficient power delivery as well as offering advanced diagnostics and trouble shooting capabilities.

- **Articulating and fully oscillating hitch** ... Links front and rear frames for exceptional maneuverability and traction on uneven terrain while eliminating damaging twisting of the frames. Bolted hitch design allows optimum material choices for the cast hitch head and the hard-wearing tube. Bolted design allows easier rebuild and repair.
- **Three-point front suspension** ... Three-point front suspension with long-stroke, low-pressure suspension cylinders provide unparalleled ride quality for operator comfort and higher average haul speeds. Front and rear suspension together with the hitch provide for excellent traction in all conditions.
- **Wide, long and low dump body design** ... For excellent loadability and high fill factors, excellent machine stability and load retention as well as a good match for other Cat loading systems. Diverging flow design also gives excellent material ejection.
- **Standard ROPS/FOPS, low sound level cab** ... Two man cab common across the range. Large cab with excellent all around visibility, ergonomic control layout and plentiful storage.
- **High capacity low pressure tires in single formation** ... For superior traction and flotation in poor underfoot conditions.



MODEL	725		730		730 Ejector	
Gross Power — SAE J1995	230 kW	309 hp	242 kW	325 hp	242 kW	325 hp
Net Power — SAE J1349	225 kW	301 hp	237 kW	317 hp	237 kW	317 hp
Net Power — ISO 9249	227 kW	304 hp	239 kW	321 hp	239 kW	321 hp
Net Power — EEC 80/1269	227 kW	304 hp	239 kW	321 hp	239 kW	321 hp
Operating Weight (Empty)*	22 260 kg	49,075 lb	22 850 kg	50,376 lb	25 550 kg	56,328 lb
Top Speed (Loaded)	56.8 km/h	35.3 mph	55.3 km/h	34.4 mph	55.3 km/h	34.4 mph
GMW — Gross Machine Weight	45 850 kg	101,082 lb	50 970 kg	112,370 lb	53 670 kg	118,322 lb
Distribution Empty:						
Front		58.5%		57.5%		54.7%
Center		21.7%		21.9%		23.3%
Rear		19.8%		20.6%		22.0%
Distribution Loaded:						
Front		32.8%		31.1%		27.7%
Center		34.1%		34.7%		36.5%
Rear		33.1%		34.2%		35.8%
Max. Capacity**	23.6 t	26 T	28.1 t	31 T	28.1 t	31 T
Struck (SAE)	11.1 m ³	14.5 yd³	13.1 m ³	17.1 yd³	13.5 m ³	17.7 yd³
Heaped (2:1) (SAE)	14.3 m ³	18.7 yd³	16.9 m ³	22.1 yd³	16.9 m ³	22.1 yd³
Engine Model	ACERT C11		ACERT C11		ACERT C11	
No. Cylinders	6		6		6	
Bore	130 mm	5.1"	130 mm	5.1"	130 mm	5.1"
Stroke	140 mm	5.5"	140 mm	5.5"	140 mm	5.5"
Displacement	11.2 L	680 in³	11.2 L	680 in³	11.2 L	680 in³
Tires, Front, Center, Rear	23.5R25 Radials		23.5R25 Radials		750/65 Radials	
Circular Clearance Diameter	15.2 m	49'9"	15.2 m	49'9"	15.4 m	50'5"
Fuel Tank Refill Capacity	355 L	94 U.S. gal	355 L	94 U.S. gal	355 L	94 U.S. gal
General Dimensions (Empty):						
Height to Cab Top	3.44 m	11'3"	3.44 m	11'3"	3.45 m	11'3"
Wheel Base (Front-Center of Bogie)	4.67 m	15'4"	4.67 m	15'4"	4.67 m	15'4"
Overall Length	9.92 m	32'5"	9.92 m	32'5"	9.73 m	31'9"
Loading Height (Empty)	2.76 m	9'1"	2.89 m	9'5"	3.05 m	10'0"
Height at Full Dump	6.41 m	21'1"	6.50 m	21'3"	—	
Body Length	5.78 m	19'0"	5.84 m	19'2"	5.35 m	17'6"
Width (Operating — Over Mirrors)	3.54 m	11'7"	3.54 m	11'7"	3.54 m	11'7"
Front Tire Tread	2.28 m	7'5"	2.28 m	7'5"	2.28 m	7'5"

*Includes coolant, lubricant and full fuel tank.

**Rating dependent on optional equipment. Maximum gross weight (empty weight plus payload) should not be exceeded.



MODEL	735		740		740 Ejector	
Gross Power — SAE J1995	324 kW	435 hp	350 kW	469 hp	350 kW	469 hp
Net Power — SAE J1349	313 kW	419 hp	338 kW	453 hp	338 kW	453 hp
Net Power — ISO 9249	319 kW	424 hp	342 kW	458 hp	342 kW	458 hp
Net Power — EEC 80/1269	319 kW	424 hp	342 kW	458 hp	342 kW	458 hp
Operating Weight (Empty)*	31 391 kg	69,206 lb	33 100 kg	72,973 lb	35 610 kg	78,507 lb
Top Speed (Loaded)	51.3 km/h	31.9 mph	54.7 km/h	34 mph	54.7 km/h	34 mph
GMW — Gross Machine Weight	64 091 kg	141,297 lb	72 600 kg	160,055 lb	73 610 kg	162,282 lb
Distribution Empty:						
Front		60.5%		58.6%		55.6%
Center		20.8%		21.8%		23.1%
Rear		18.7%		19.6%		21.3%
Distribution Loaded:						
Front		34.9%		33.9%		29.1%
Center		33.1%		33.5%		35.9%
Rear		32.0%		32.6%		35.0%
Max. Capacity**	32.7 t	36 T	39.5 t	43.5 T	38 t	42 T
Struck (SAE)	14.5 m ³	19.0 yd³	18.5 m ³	24.2 yd³	17.8 m ³	23.3 yd³
Heaped (2:1) (SAE)	19.7 m ³	25.8 yd³	24 m ³	31.4 yd³	23.1 m ³	30.2 yd³
Engine Model	ACERT C15		ACERT C15		ACERT C15	
No. Cylinders	6		6		6	
Bore	137 mm	5.4"	137 mm	5.4"	137 mm	5.4"
Stroke	171.5 mm	6.75"	171.5 mm	6.75"	171.5 mm	6.75"
Displacement	15.2 L	926 in³	15.2 L	926 in³	15.2 L	926 in³
Tires, Front, Center, Rear	26.5R25 Radials		29.5R25 Radials		29.5R25 Radials	
Circular Clearance Diameter	17.2 m	56'5"	17.2 m	56'5"	18.2 m	59'6"
Fuel Tank Refill Capacity	532 L	140.5 U.S. gal	532 L	140.5 U.S. gal	532 L	140.5 U.S. gal
General Dimensions (Empty):						
Height to Cab Top	3.7 m	12'1"	3.75 m	12'3"	3.75 m	12'3"
Wheel Base (Front-Center of Bogie)	5.23 m	17'2"	5.23 m	17'2"	5.58 m	18'3"
Overall Length	10.89 m	35'7"	10.89 m	35'7"	11.59 m	38'0"
Loading Height (Empty)	2.98 m	9'8"	3.2 m	10'6"	3.07 m	10'1"
Height at Full Dump	6.81 m	22'4"	7.1 m	23'4"	—	
Body Length	6.09 m	20'0"	6.3 m	20'6"	6.73 m	22'1"
Width (Operating — Over Mirrors)	3.82 m	12'6"	3.82 m	12'6"	3.82 m	12'6"
Front Tire Tread	2.69 m	8'8"	2.69 m	8'8"	2.69 m	8'8"

*Includes coolant, lubricant and full fuel tank.

**Rating dependent on optional equipment. Maximum gross weight (empty weight plus payload) should not be exceeded.

Use of Ground Pressure Charts

Articulated trucks are normally equipped with wide base radial tires, for improved flotation in poor underfoot conditions. Ground pressure is a function of tire deflection and is also affected by tire penetration. The charts in this section provide a means to estimate ground pressure for 0 and 76 mm (3") tire penetration, when gross vehicle weight, axle load distribution and tire inflation pressure are known. The ground pressure charts on the following pages are based on Michelin XADN tire characteristics. Results may differ for other tread patterns.

Tire load can be calculated by the following formula:

$$\text{Tire load} = \frac{\text{Heaviest Axle Load}}{2}$$

Example

Find the ground pressure generated by a 725 fully loaded with zero and 76 mm (3") tire penetration. The machine is equipped with standard Michelin 23.5R25 tires, inflated to the recommended pressure.

$$725 \text{ Tire Load} = \frac{43\,680 \text{ kg} \times 0.34}{2} = 7426 \text{ kg}$$

$$725 \text{ Tire Load} = \frac{96,300 \text{ lb} \times 0.34}{2} = 16,371 \text{ lb}$$

From the tire section in this book, inflation pressure for the 725 is 325 kPa = 3.25 bar (47 psi).

From the ground pressure chart for 23.5R25 tires, Ground pressure = 3.1 kg/cm² (44 psi) with zero tire penetration.

Ground pressure = 1.4 kg/cm² (21 psi) with 76 mm (3") tire penetration.

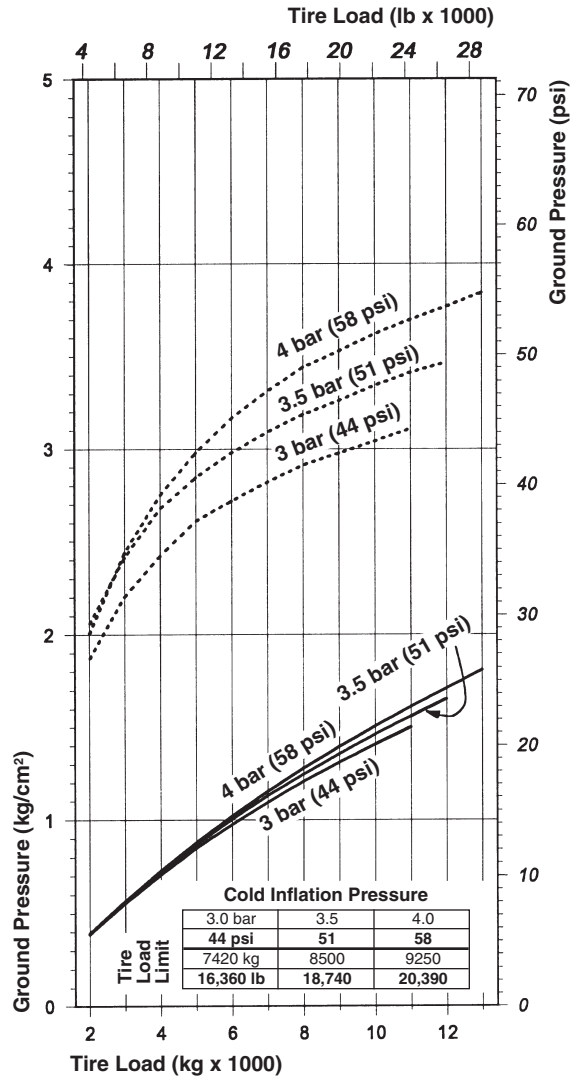
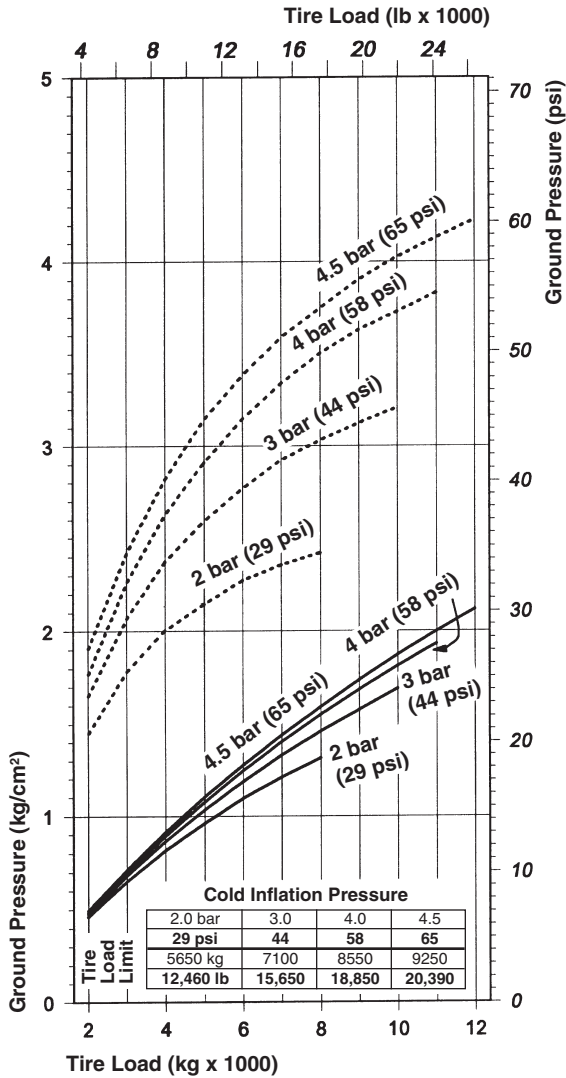
See the Wheel Tractor Scraper section for explanation on using:

- Rimpull-Speed-Gradeability Curves
- Retarder Curves
- Travel Time Charts

See the Construction and Mining Trucks section for Hauling Unit Fixed Times.

23.5R25 Tires*

30/65R25 Tires*

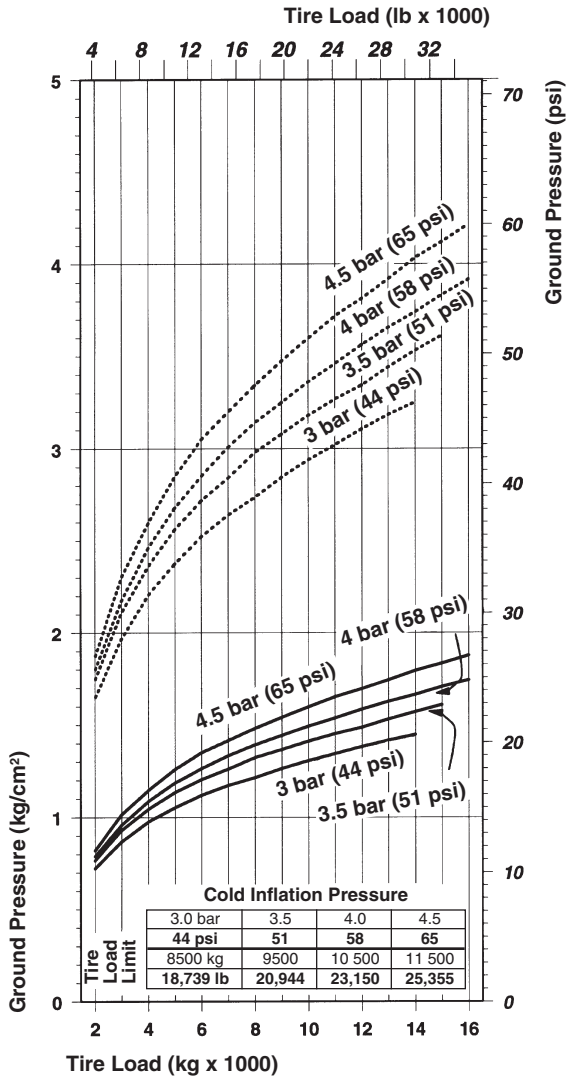


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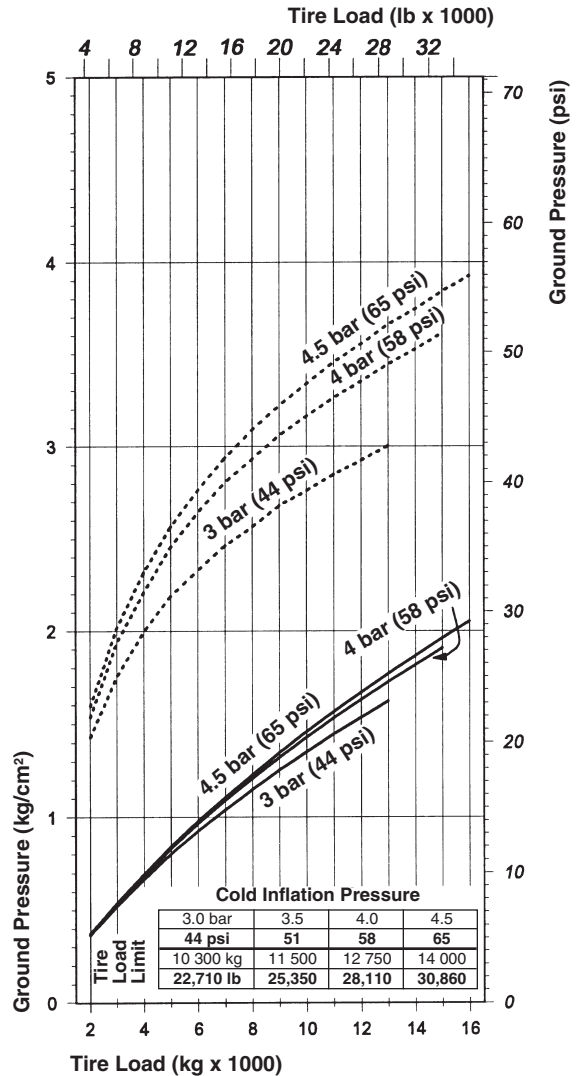
- Zero Penetration (Flat Plate)
- 76 mm (3") Penetration

*Charts based on Michelin XADN tire characteristics. Results may differ for other tread patterns and/or brands. Charts are to be used to calculate ground pressure. To determine the inflation as a function of load and conditions or when loads exceed tire load limit, contact your tire manufacturer representative.

26.5R25 Tires*



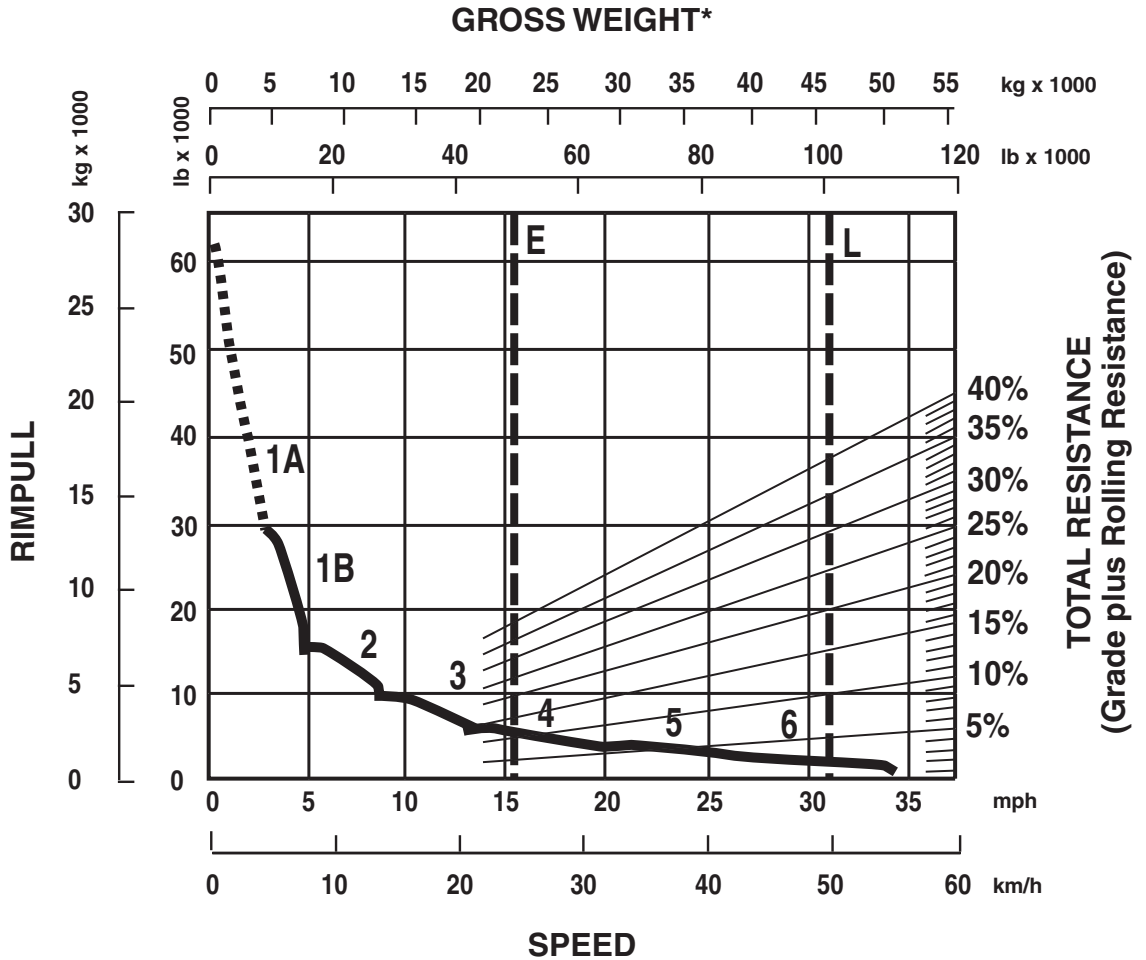
29.5R25 Tires*



KEY

- Zero Penetration (Flat Plate)
- 76 mm (3") Penetration

*Charts based on Michelin XADN tire characteristics. Results may differ for other tread patterns and/or brands. Charts are to be used to calculate ground pressure. To determine the inflation as a function of load and conditions or when loads exceed tire load limit, contact your tire manufacturer representative.



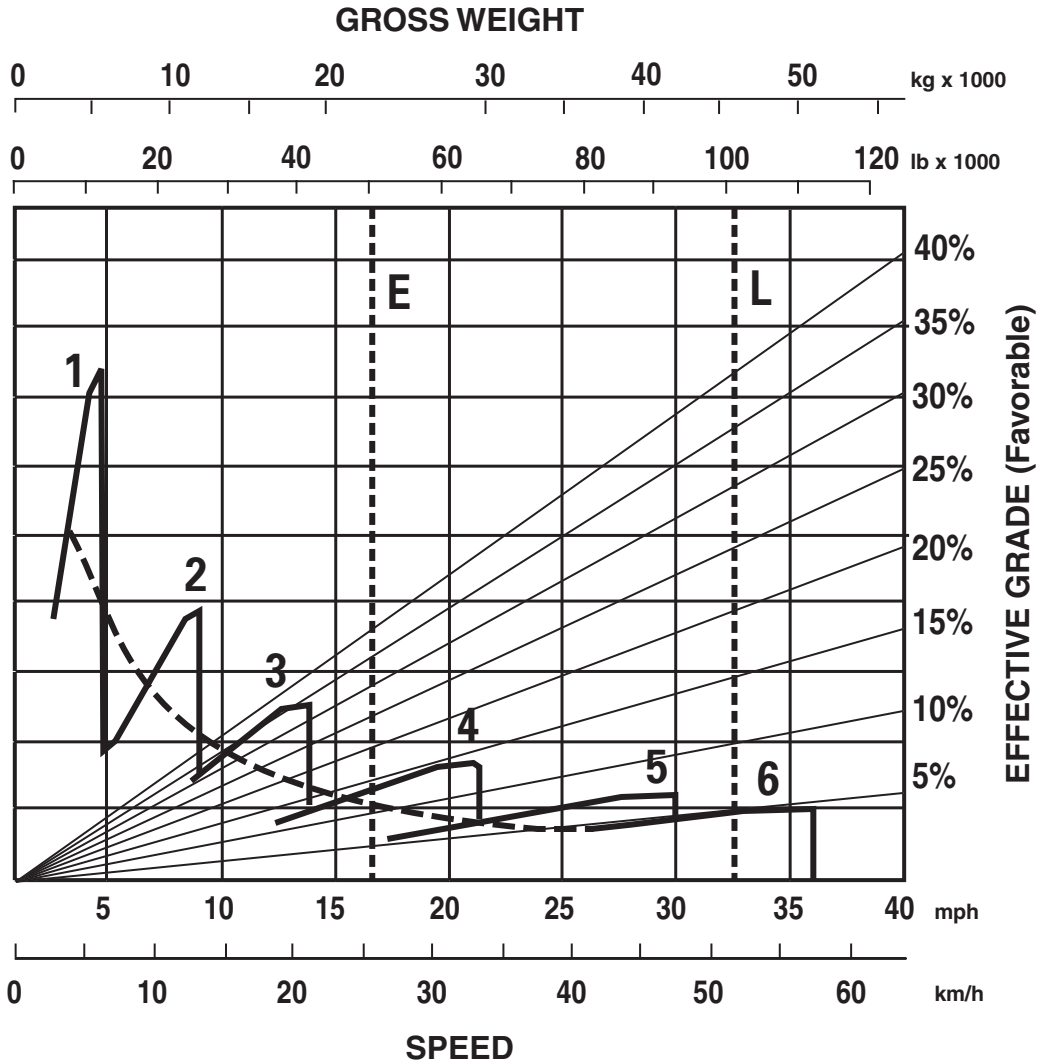
KEY

- 1A — 1st Gear (Converter Drive)
- 1B — 1st Gear (Direct Drive)
- 2 — 2nd Gear
- 3 — 3rd Gear
- 4 — 4th Gear
- 5 — 5th Gear
- 6 — 6th Gear

KEY

- E — Empty 22 260 kg (49,075 lb)
- L — Loaded 45 850 kg (101,082 lb)

*At sea level.



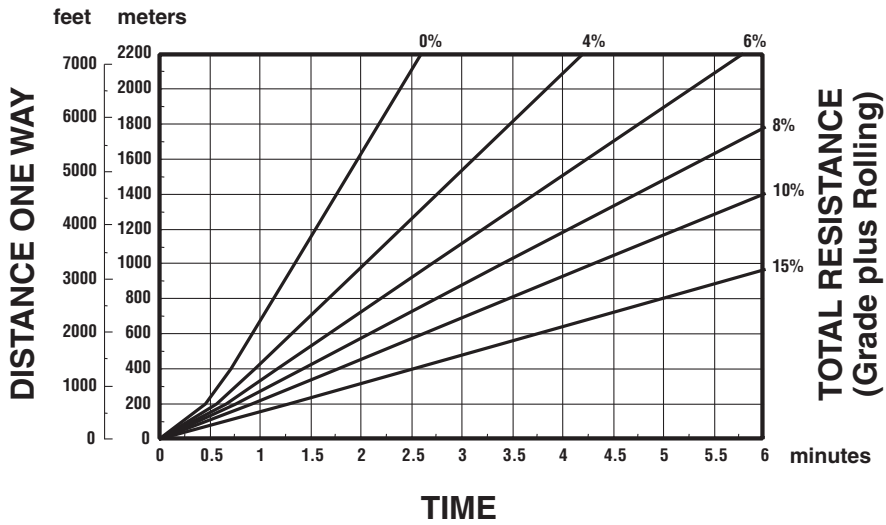
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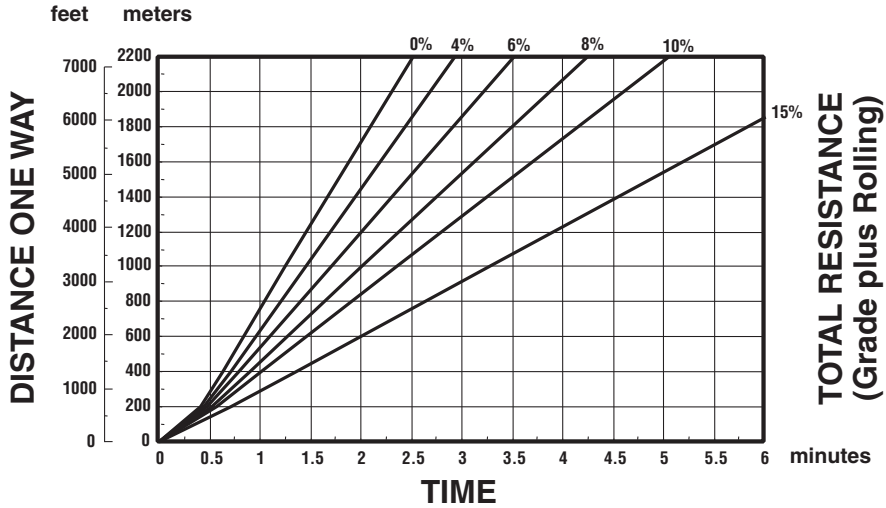
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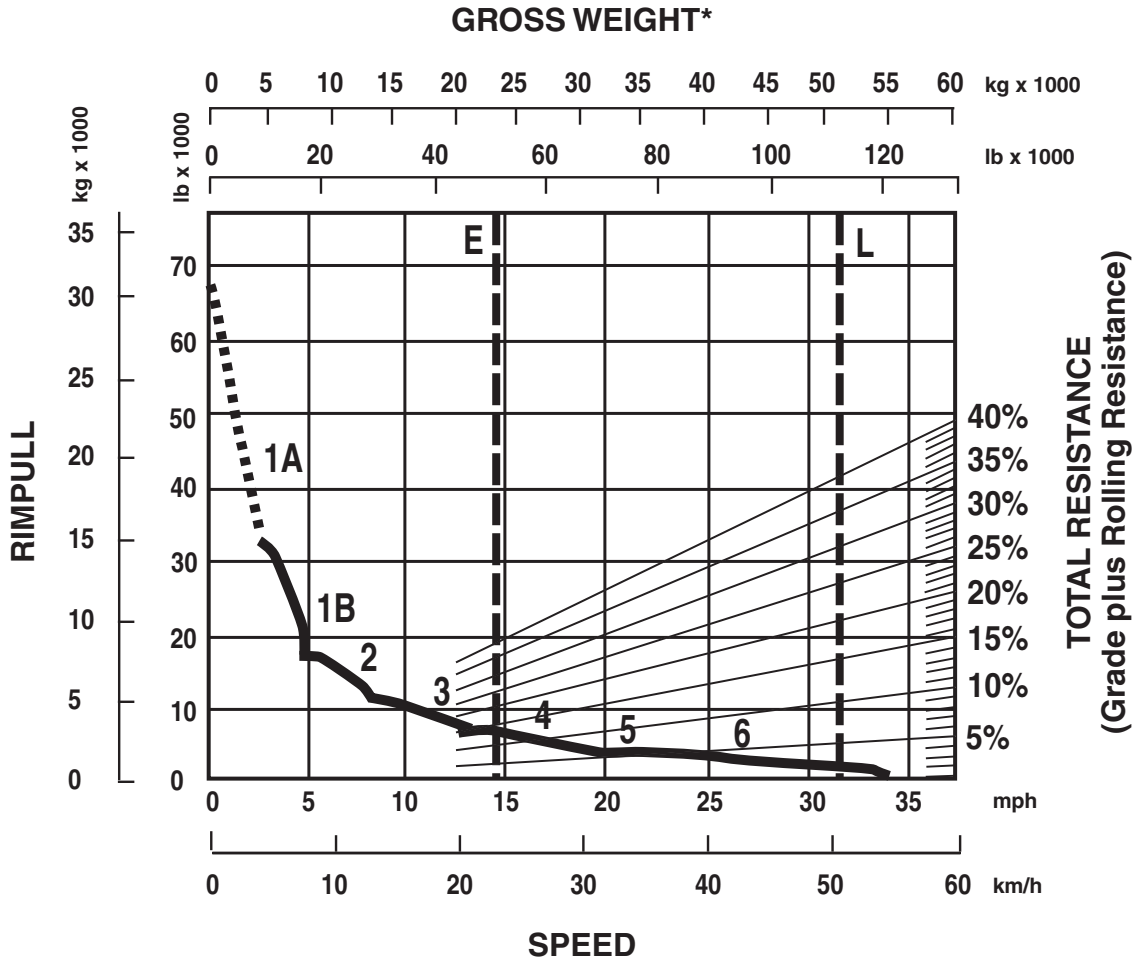
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- L — Loaded 45 850 kg (101,082 lb)

LOADED



EMPTY





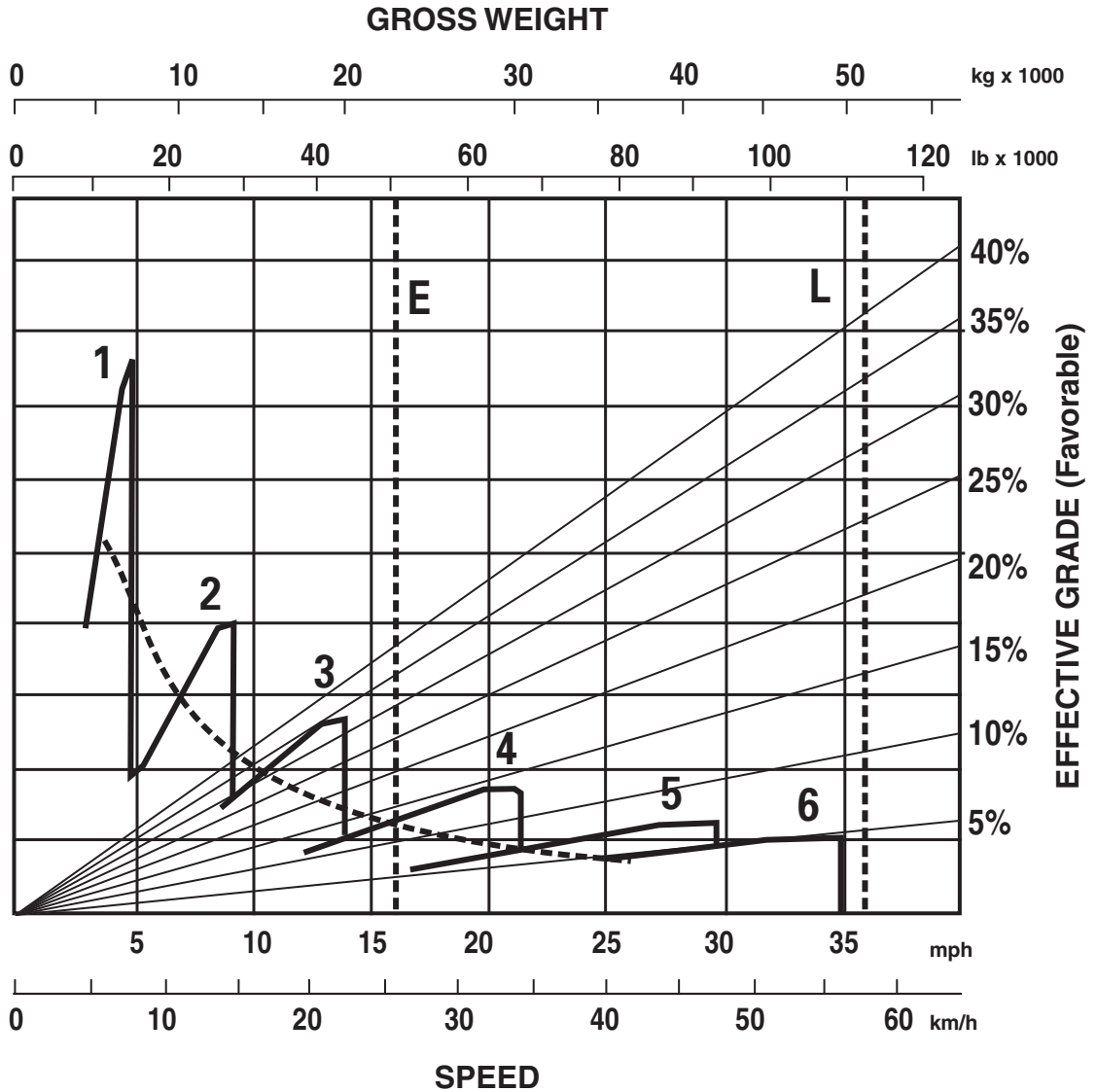
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KEY

- E — Empty 22 850 kg (50,376 lb)
- L — Loaded 50 970 kg (112,370 lb)

*At sea level.



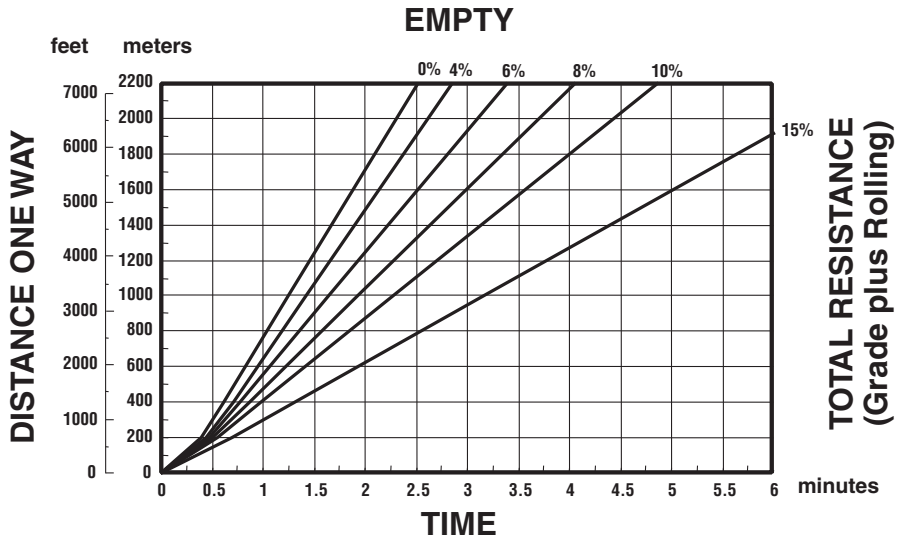
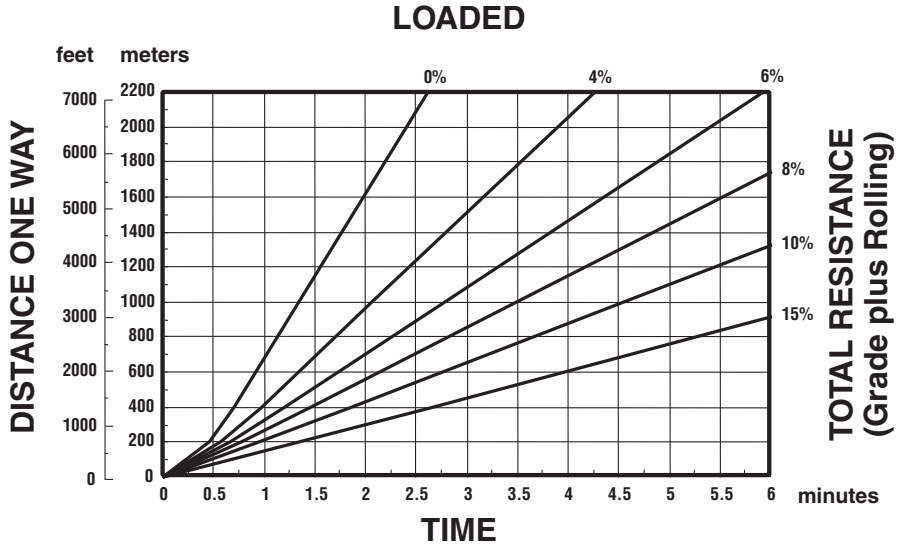
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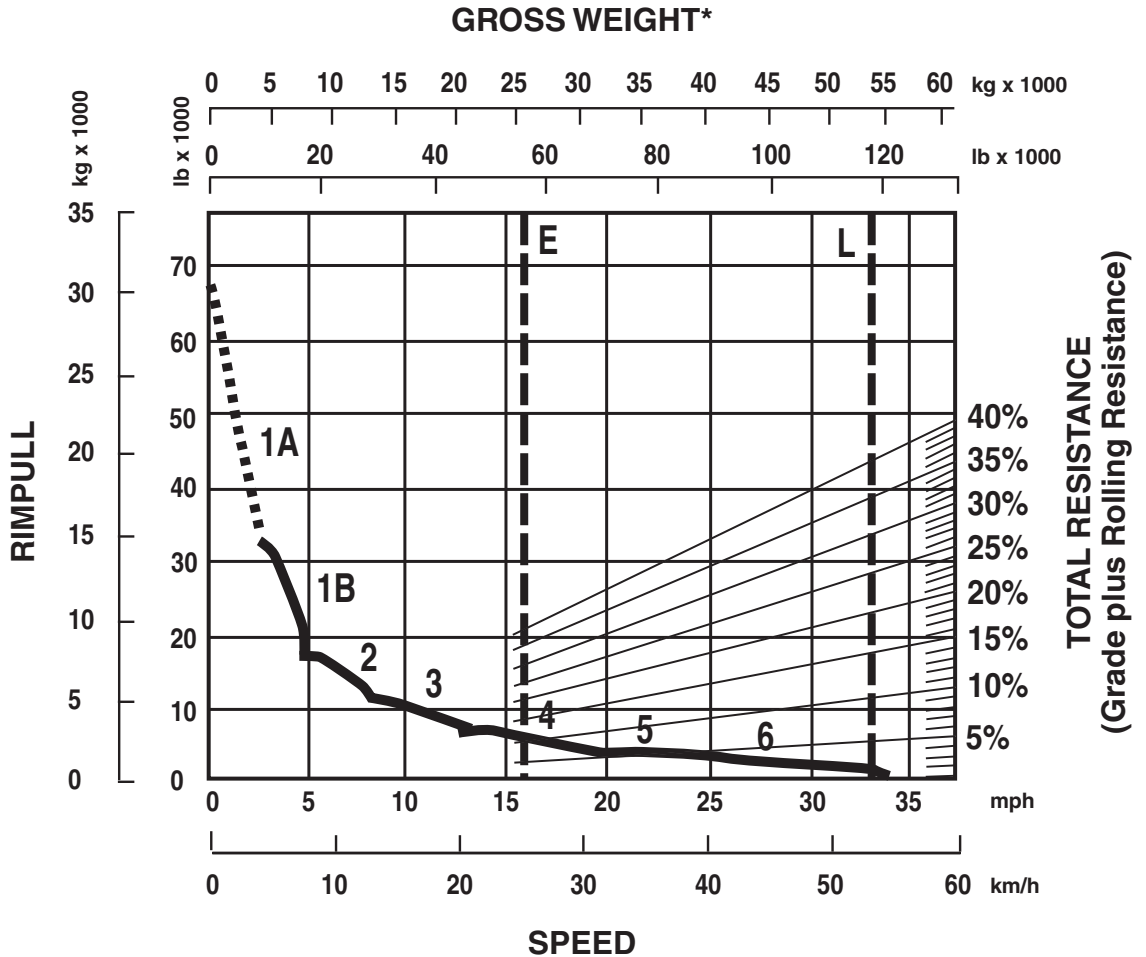
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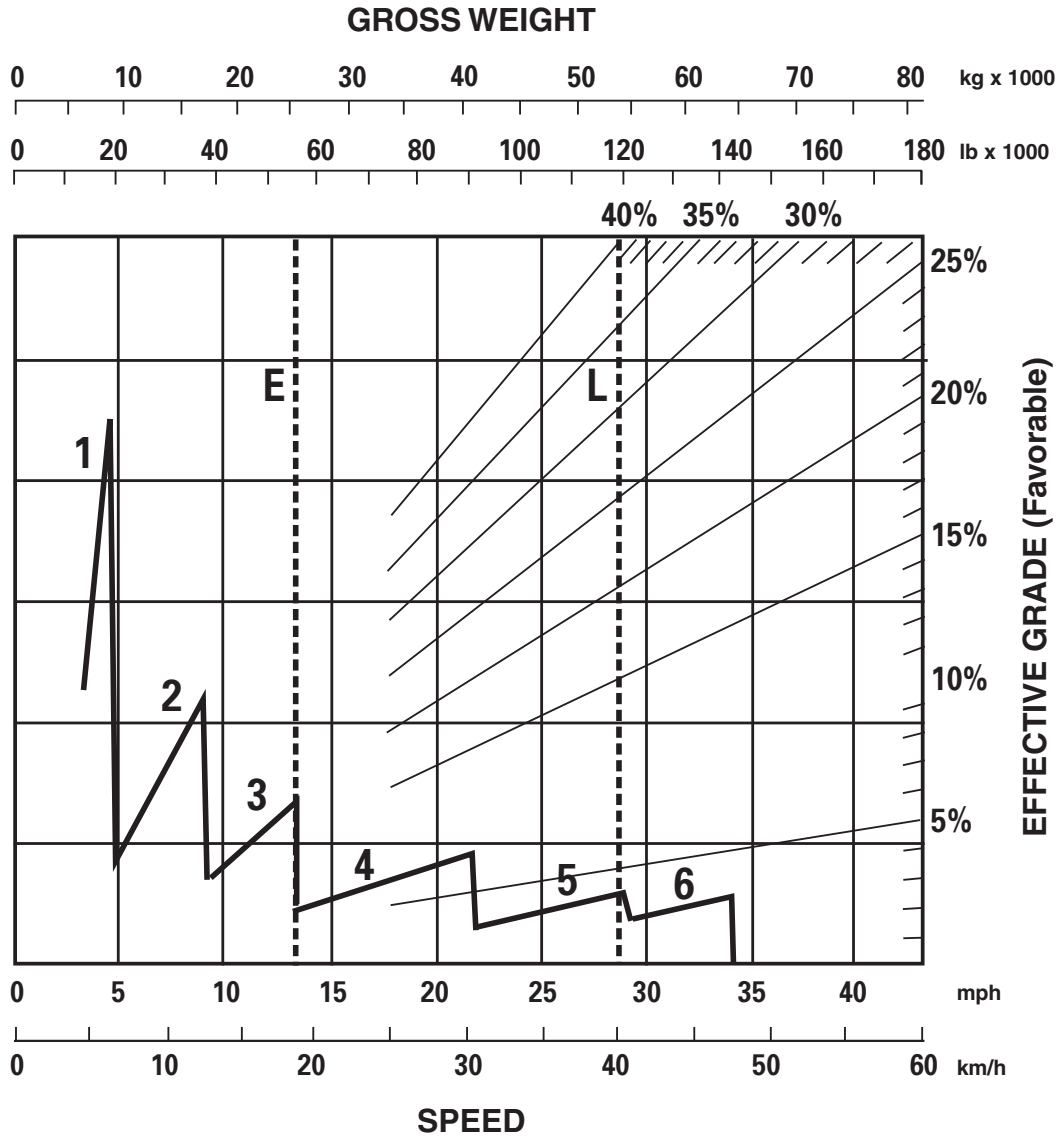
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KEY

- E — Empty 25 550 kg (56,328 lb)
- L — Loaded 53 670 kg (118,322 lb)

*At sea level.



KEY

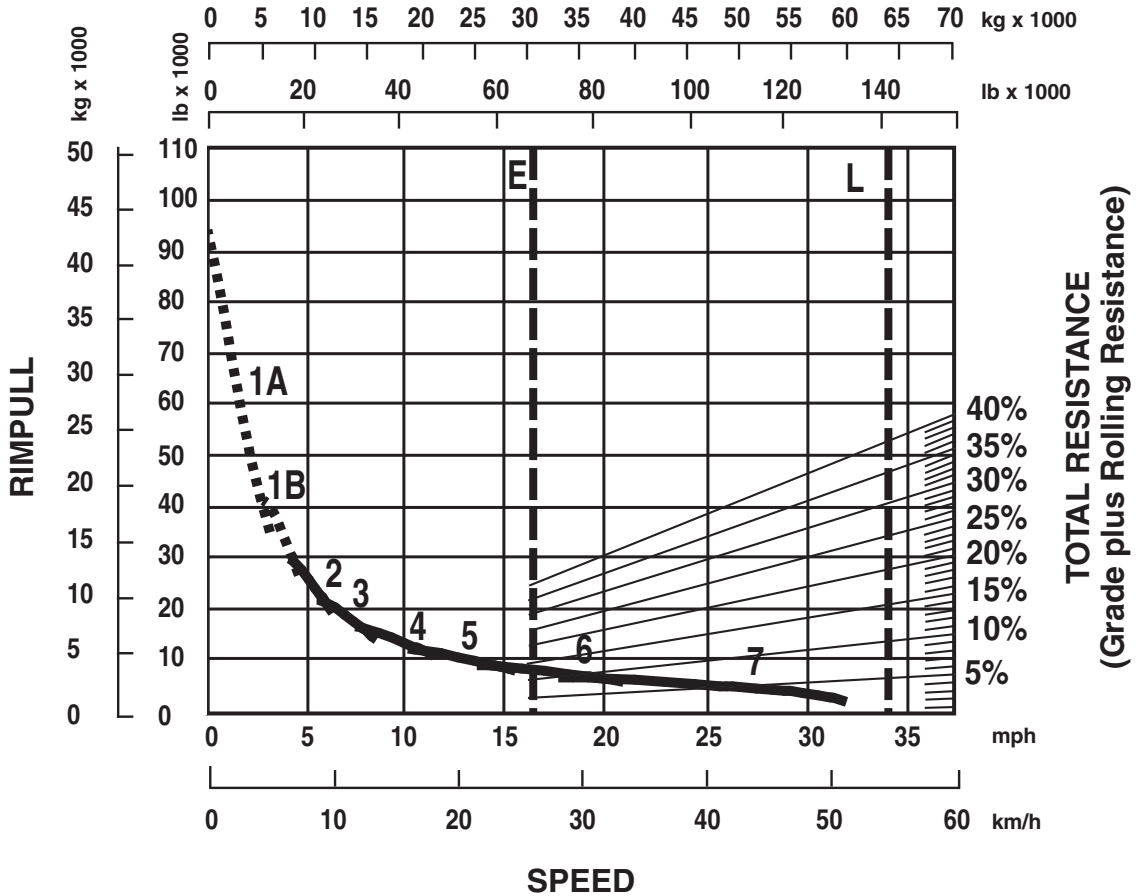
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STANDARD*

GROSS WEIGHT



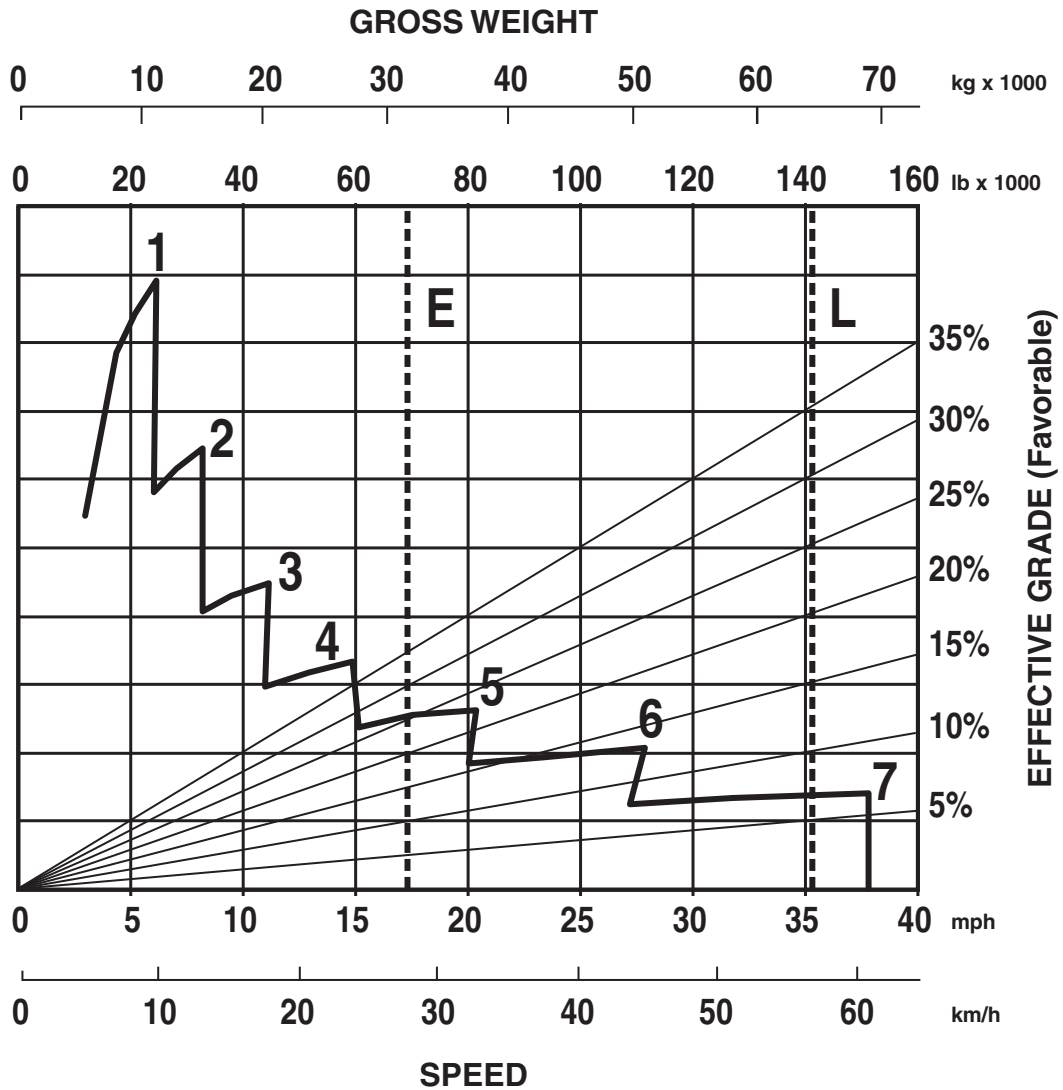
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- 7 — 7th Gear

KEY

- E — Empty 31 391 kg (69,206 lb)
- L — Loaded 64 090 kg (141,297 lb)

*At sea level.



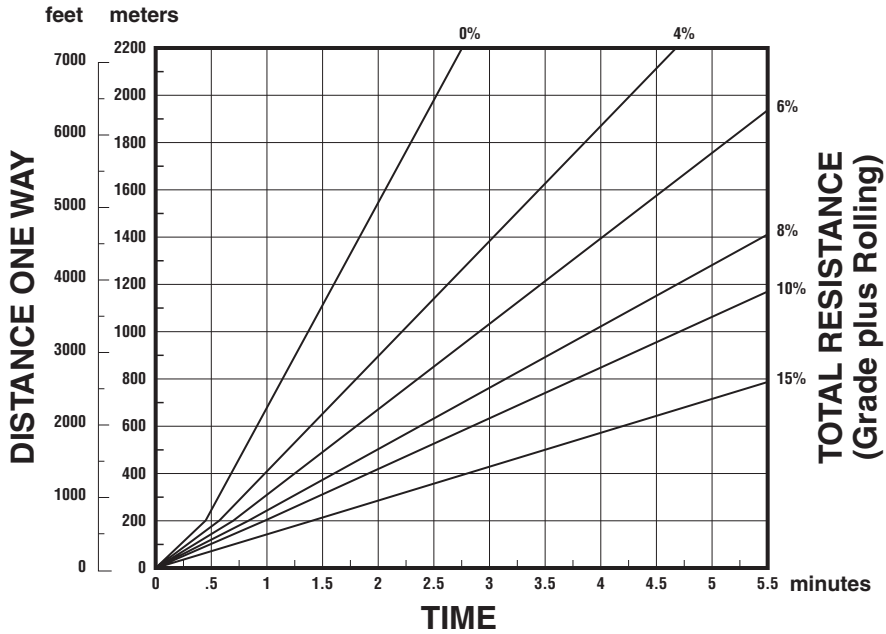
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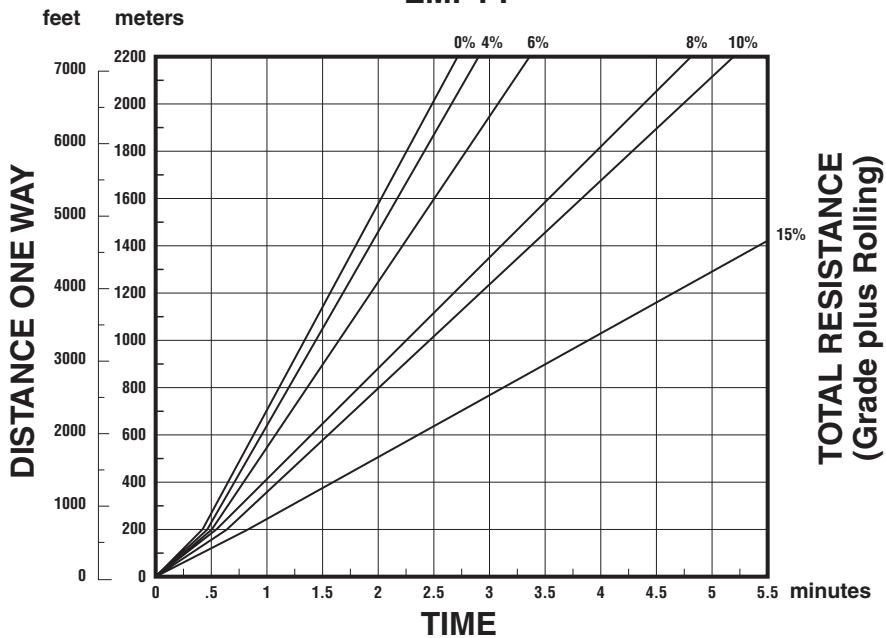
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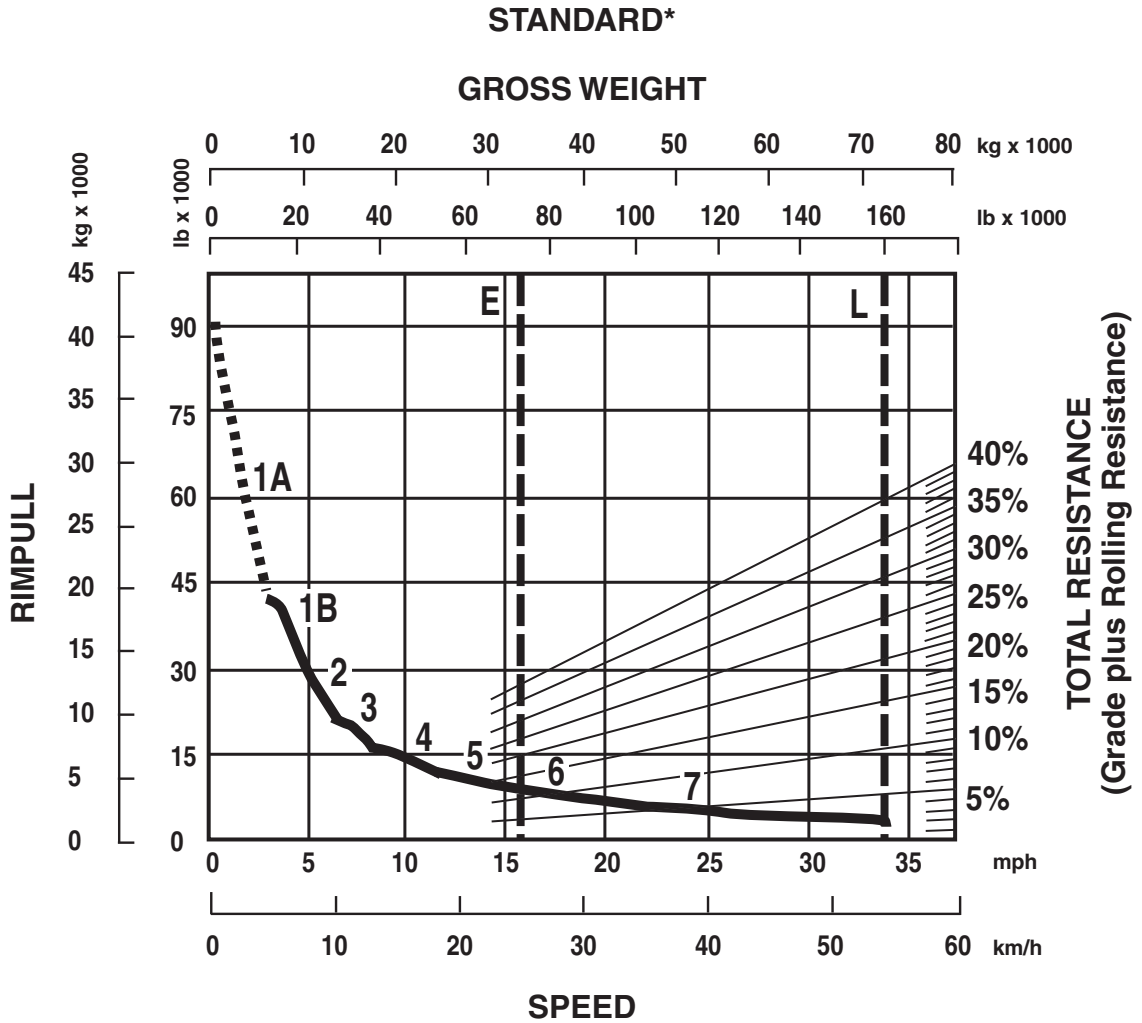
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LOADED



EMPTY





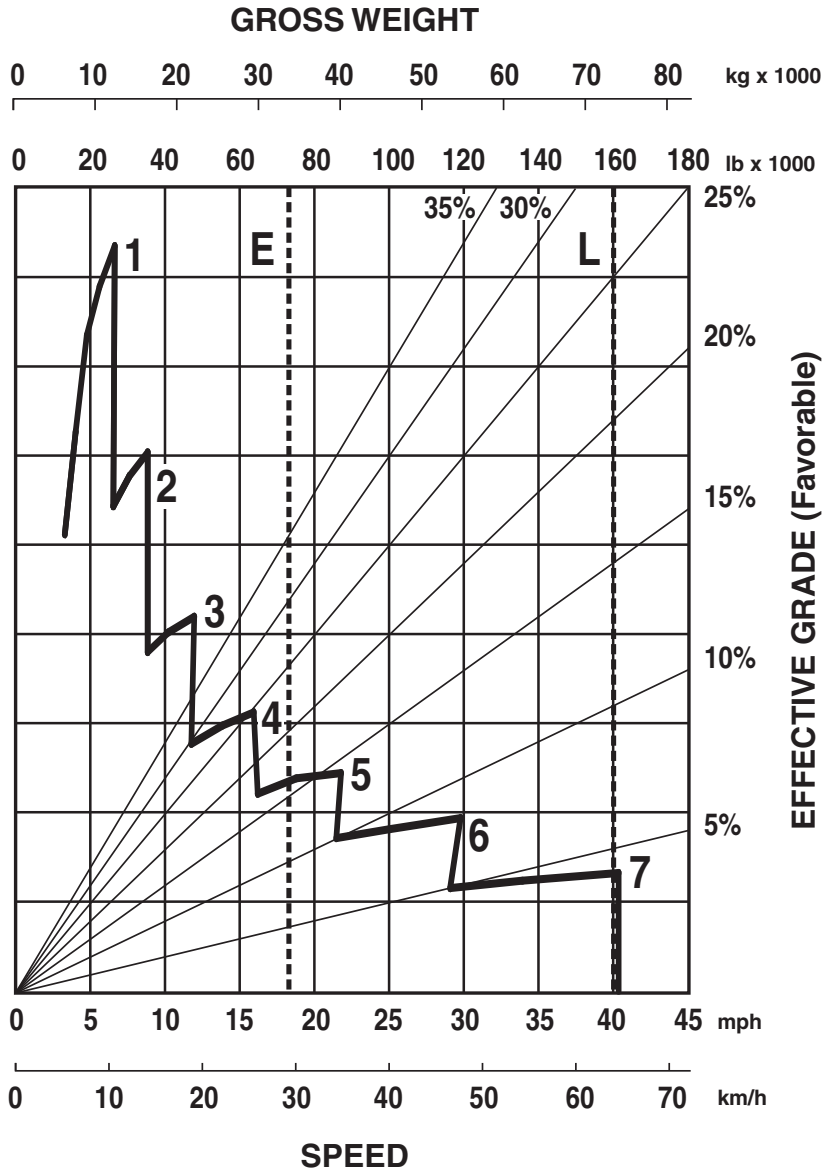
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- 7 — 7th Gear

KEY

- E — Empty 33 100 kg (72,973 lb)
- L — Loaded 72 600 kg (160,055 lb)

*At sea level.

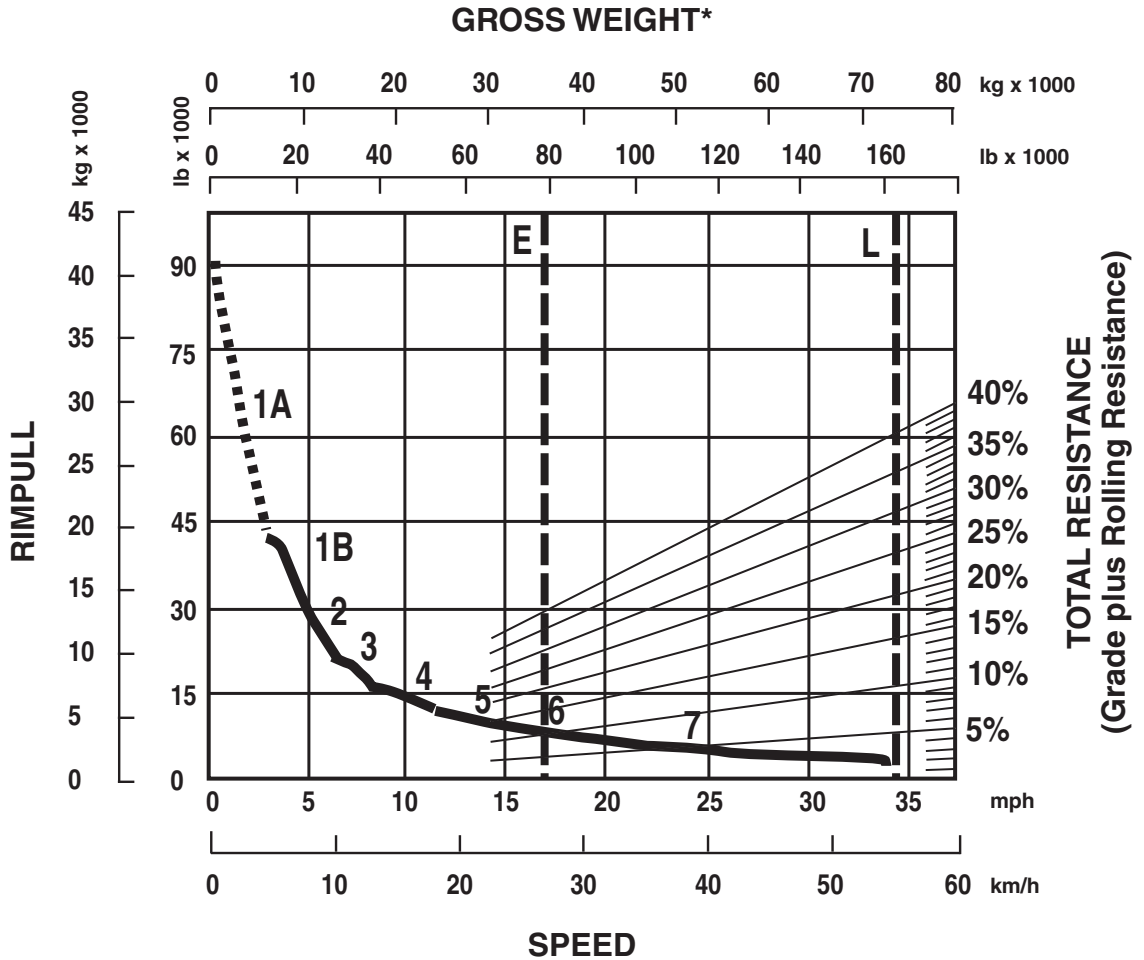


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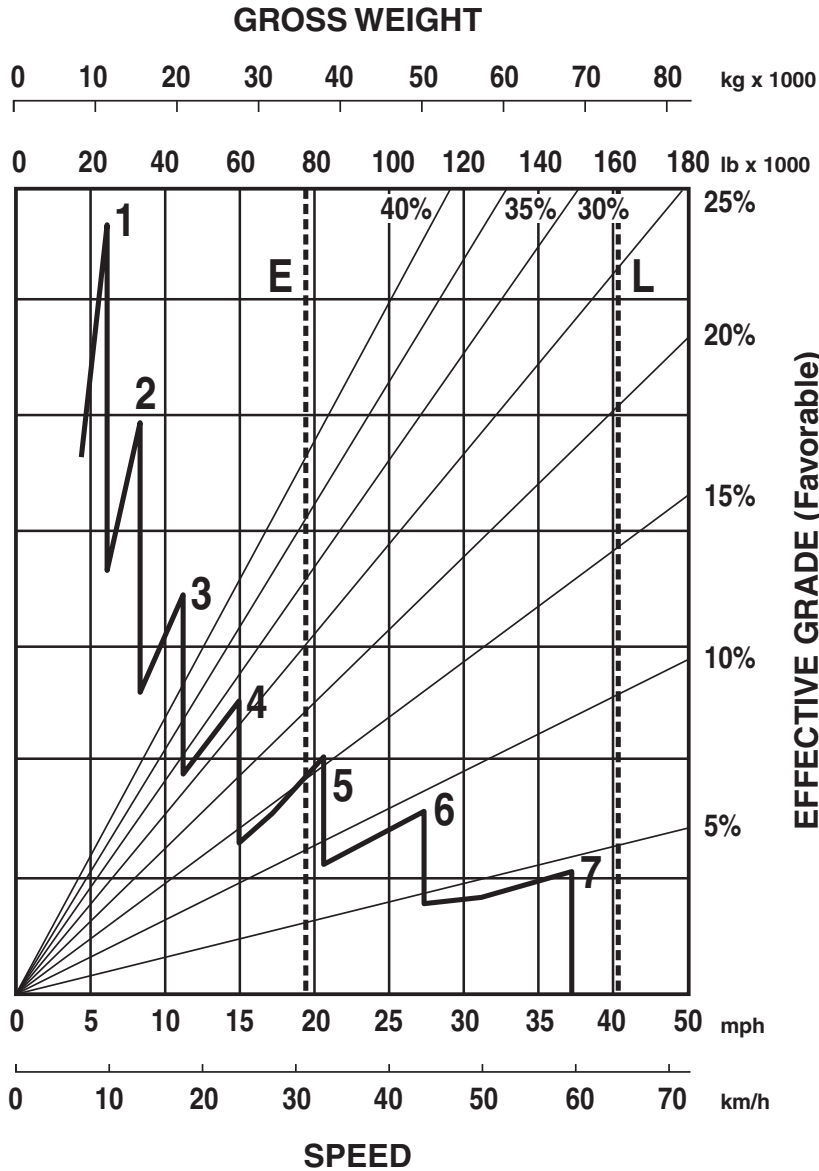
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- 6 — 6th Gear
- 7 — 7th Gear

KEY

- E — Empty 35 610 kg (78,507 lb)
- L — Loaded 73 610 kg (162,282 lb)

*At sea level.



KEY

- 1 — 1st Gear
- 2 — 2nd Gear
- 3 — 3rd Gear
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KEY

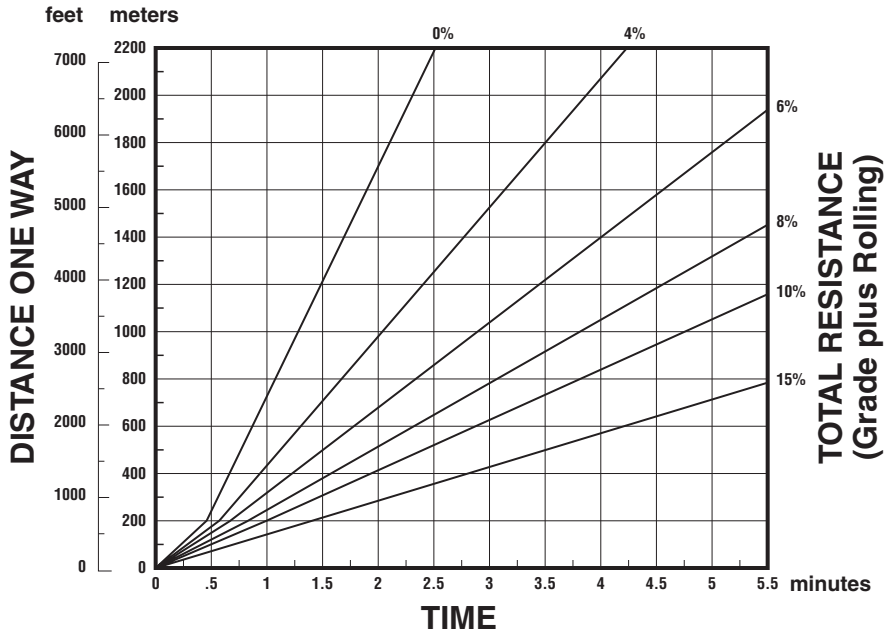
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Articulated Trucks

740 Travel Time — Loaded/Empty

- 29.5R25 Tires
- Preliminary Information

LOADED



EMPTY

