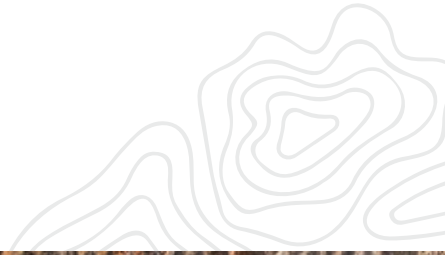




# 3900

HAULMAX SERIES



## Contents

Engine with ACERT™ Technology.....	2
Transmission .....	2
Suspension and Traction.....	3
Operator Comfort .....	4
Serviceability .....	5
Safety .....	6
Truck Specifications .....	7
Dimensions 41m <sup>3</sup> .....	9
Dimensions 59m <sup>3</sup> .....	10
Dimensions 90m <sup>3</sup> .....	11
Dimensions – Bare Chassis .....	12
Service Modules and Water Tanks .....	13
Dimensions – Tractor .....	14
Tow Tractors .....	15
Gradeability/Speed/Rimpull.....	16
Truck Operating Weights.....	17
Payload Management .....	18
Haulmax Payload and Tyre Pressure Monitoring System .....	19
Standard Equipment.....	20
Optional Equipment.....	21

# 3900 Features

- ▶ **Performance**
- ▶ **Productivity**
- ▶ **Extended Haulage**
- ▶ **95% CAT® Components**
- ▶ **Traction**
- ▶ **Stability**
- ▶ **Safety**
- ▶ **Vehicle Flexibility**
- ▶ **Operator Comfort**
- ▶ **Global Support**



With a narrow design that allows for use on haul roads around 15 metres (49 feet) wide, the Haulmax 3900 Series Truck was developed to operate on cycles of approximately 50km (30 miles). Simply put, narrower roads cost considerably less to build and maintain, the longer the distance, the larger the cost saving.

Further design enhancements include a dual axle rear wheel drive configuration, that offers a braking surface area of 100,568 sq cms (15,568 sq ins), allowing superior retardation in downhill applications.

The 3900 Series Truck offers excellent traction and stability in soft and slippery operations. The combination of the truck's narrow width, long chassis and eight wheel drive configuration provides safe and superior operator control.

Elphinstone works closely with Caterpillar® to ensure matched power train components optimise longevity, reliability and mechanical availability, resulting in improved productivity and reduced operating costs.

Haulmax trucks are sold and supported via the global Caterpillar Dealer Network providing unparalleled sales and aftermarket support.

Elphinstone endeavours to provide the latest technology. Design updates are constantly made to ensure industry expectations of reliability, safety and operator comfort are achieved.



# Engine

## Performance and productivity.

### C27 Engine With ACERT™ Technology

Caterpillar optimises engine performance while meeting US EPA Tier 2 and European Union Stage II standards.

### ACERT™ Technology

Reduces emissions during the combustion process by using advanced technology in the air and fuel systems, in conjunction with integrated electronics. Caterpillar meets emission regulations at the combustion source, rather than recycling exhaust.

### Electronic Control Module (ECM)

ECM uses advanced engine management software to monitor, control and protect the engine using self-diagnosing electronic sensors. The computerised system senses operating conditions and power requirements and adjusts the engine for peak performance and the most efficient operation at all times.

### MEUI Fuel System

Fuel delivery, provided by the MEUI mechanically actuated electronic unit injection system, involves a high degree of precision. Precisely shaping the combustion cycle lowers combustion chamber temperatures, generating fewer emissions.



# Transmission

## Application specific design.

### Cat Mechanical Power Train

The Cat mechanical drive power train and power shift transmission provides unmatched operating efficiency and control on steep grades, in poor underfoot conditions and on haul roads with high rolling resistance.

### Transmission

Pairing the Caterpillar seven-speed planetary power shift transmission with the C27 diesel engine with ACERT Technology, delivers constant power over a wide range of operating speeds.

### Lock-Up Torque Converter

Combines maximum rimpull and cushioned shifting of torque converter drive with the efficiency and performance of direct drive. The lock-up torque converter engages at approximately 8 km/h (5 mph), delivering more power to the wheels.



# Suspension and Traction

## Stability.

### Suspension System

Designed to handle mine site conditions enhancing a longer frame and service module life plus a more comfortable ride.

### Cylinders

Six independent self-contained, oil pneumatic, variable rebound suspension cylinders are designed to absorb shocks in the most severe applications.

### Durable Design

Rugged cylinders use a large diameter bore and low pressure nitrogen/oil design for long life with minimal maintenance.

### Front

Front cylinders with preset caster and camber are mounted to the frame and serve as steering kingpins for a tight turning radius with excellent maneuverability and low maintenance.

### Rear

Inverted rear cylinders allow independent axle oscillation absorbing bending and twisting stresses caused by uneven and rough haul roads rather than transmitting such to the frame and body.

### Traction and Control in Slippery Conditions

Chassis/wheel base symmetry allows improved operator control in slippery underfoot conditions:

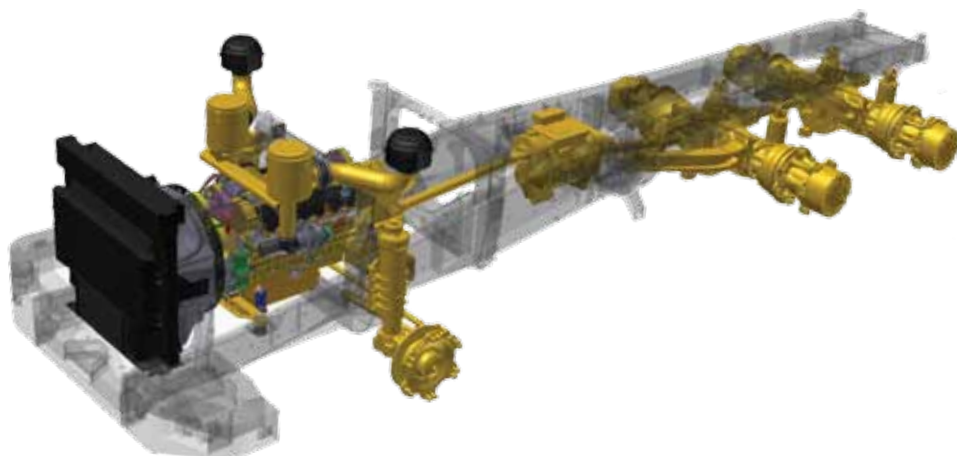
- ✓ Optimised weight distribution
- ✓ Dual rear axle drive - braking and traction control

### Box-Section Design

The 3900 frame uses a box-section design, incorporating castings in high-stress areas with deep penetrating and continuous wrap-around welds to resist damage from twisting loads. Castings move welds to lower stress areas for greater frame life.

### Technology Enhanced

Finite Element Analysis (FEA) has been carried out on various components of the chassis to ensure the design offers long life expectancy.



# Operator Comfort

## Productivity and operator confidence.

### Ride Comfort

The independent front suspension system and rear independently mounted 'A' frame axle assemblies, combined with a long wheel base, offers unrivalled levels of safety and comfort.

### Spacious Two-Person Cab (ROPS / FOPS Certified)

The 3900 features a large two-person cab, offering comfortable working space for both the operator and trainer or trainee.

### Air Suspension Seats

Air suspension seats for both operator and passenger, enhancing comfort with a cushioned upper high back, adjustable dampening with three settings, ride zone indicator and adjustable lumbar settings. Fully adjustable to provide the optimal and safe driving position.

### Ergonomic Layout

The 3900 operator station is ergonomically designed for total machine control in a comfortable, productive and safe environment. All controls, levers, switches and gauges are positioned to maximise productivity and minimise operator fatigue.





# Serviceability

## Increased uptime.

### Servicing Ease

Easy access to daily service points simplifies servicing and reduces time spent on regular maintenance procedures. Enhanced serviceability and extended 500-hour engine service intervals are designed to increase machine availability and productivity.

### Maintenance Platform

Easy stairway access to engine, air filters and radiator. Platform access for hydraulics and steering.

### Ground Level and Filter Access

Allows convenient servicing to tanks, filters, evacuation points, battery disconnect and engine shutdown.

### Quick Evacuation System (Optional)

Oil change labour time is reduced by as much as 50% with this optional engine and system fluid evacuation system. It speeds the process of evacuating fluids. The system also enhances Contamination Control by ensuring complete filtration of fluids on refill.

### Automatic Lubrication (Optional)

This lubrication system is available as a factory installed option on the 3900. The system includes a central pump station which automatically delivers lubricant to clustered injector banks. Each injector serves only one lubrication point and may be accurately adjusted to deliver the precise amount of grease required.

### On-Board Diagnostic Systems

Electronic control system enables quick diagnosis of engine conditions and effective maintenance and repairs using the Electronic Technician (Cat ET) service tool. Instrument cluster - critical operating information on the 3900 is relayed via the Cat Data Link to five gauges, 18 LED indicator lights, and an LCD digital display.



# Safety

## Designed with safety as first priority.

### Integral ROPS Cab

Resiliently mounted to the frame to reduce vibration and sound, the integral ROPS structure provides “five-sided protection” for the operator and passenger.

### WAVS Camera (Optional)

An optional rear vision camera system provides visibility to the rear of the machine via LCD monitor in the cab. The monitor can be set to activate only when the truck is in reverse. The display is equipped with a sensor to detect ambient light, which automatically brightens or dims the display.

### High Intensity Discharge (HID) Lights

35 watt HID lights are standard. The powerful HID lights are almost two times brighter and 50 percent more efficient than halogen, improving night time visibility.

### Brake Systems

Cat hydraulically controlled dry front and rear oil-cooled multiple disc brakes provide exceptional, fade-resistant braking and retarding for maximum performance and productivity in all mine site conditions. The service brakes and retarding system are actuated by modulated hydraulic pressure, while secondary and parking brake functions are spring applied and hydraulically released. This reliable and durable system ensures braking in the event of complete hydraulic failure.

### Ladders

Two affixed access ways allow easy access to and from the operators cab. Easy egress to the engine is by way of fold up steps leading to the engine platforms.

### Engine Shutoff Switch

A secondary engine shutoff switch is located at ground level along with a hood tilt switch and other electrical isolators.



# 3900 Series Off-Highway Truck Specifications

## Engine

Engine Model	Cat® C27 ACERT™	
Rated Engine Speed	2,000 rpm	
Gross Power – SAE J1995	587kW	787 hp
Net Power – SAE J1349	552kW	740 hp
Net Power – ISO 9249	552kW	740 hp
Net Power – 80/1269/EEC	552kW	740 hp
Peak Torque	3501 Nm	2,582 lb ft
Bore	137 mm	5.4 in
Stroke	152 mm	6 in
Displacement	27 L	1,648 in <sup>3</sup>

- Power ratings apply at 2,000 rpm when tested under the specified condition for the specified standard
- Ratings based on SAE J1995 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 is used at 30°C (86° F)
- Compliant with US Environmental Protection Agency Tier 2 and European Union Stage II emissions standards

## Weights - Approximate

Gross Machine - Truck	135,000kg - 297,620lb
Mass (Empty) - Truck	*53,530kg - 122,356lb
Gross Machine - Tractor	230,000kg - 507,060lb
Mass (Empty) - Tractor	46,800kg - 103,180lb

- Operating mass with 100% fuel, hoist, body mounting group, rims and tires
- Body weight varies depending on how body is equipped:  
41m<sup>3</sup> body (54yd<sup>3</sup>) - 54,370kg (119,865lb)  
\*59m<sup>3</sup> body - as shown  
90m<sup>3</sup> body (118yd<sup>3</sup>) - 58,600kg (129,191lb)

## Operating Specifications

Nominal Payload (100%)	80 tonnes* (88 tons)
Maximum Payload (110%)	88 tonnes (97 tons)
Not to exceed Payload (120%)**	96 tonnes (106 tons)

\* Capacity of base machine with 59m<sup>3</sup> body.

## Transmission

Forward 1	12.8 km/h	7.8 mph
Forward 2	17.5 km/h	10.9 mph
Forward 3	23.8 km/h	14.8 mph
Forward 4	31.9 km/h	19.8 mph
Forward 5	42.8 km/h	26.6 mph
Forward 6	57.0 km/h	36.4 mph
Forward 7	76.4 km/h	47.5 mph
Reverse	16.5 km/h	10.2 mph

Maximum travel speeds with standard 21.00R35 (E2) tyres

## Drive Axles

Differential Ratio	2.74:1
Planetary	4.80:1
Total Reduction	13.15:1

## Brakes

Brake Surface Front	1,395 cm <sup>2</sup>	216 in <sup>2</sup>
Brake Surface Rear	100,560 cm <sup>2</sup>	15,587 in <sup>2</sup>
Brake Standards	ISO 3450 - 1996	

## Body Hoists

Pump Flow - High Idle	562 L/min	148 g/m
Relief Valve Setting - Raise	18,450 kPa	2,750 psi
Relief Valve Setting - Lower	3,450 kPa	500 psi
Body Raise Time High Idle	16 Sec.	
Body Lower Float - Float	30 Sec.	
Body Power Down - High Idle	14 Sec.	

## Suspension

Effective Cylinder Stroke - Front	234mm	9.2in
Effective Cylinder Stroke - Rear	149mm	5.9in
Rear Axle Oscillation	+/- 8 Degrees	

## Steering

Steering Standards	ISO5010:2007	
Steering Angle	31 Degrees	
Machine Clearance Diameter	36.8 mt	120.7 ft

## Tyres

Standard Tyre 21.00R35"

- Productive capabilities of the 3900 dump truck are such that under certain job conditions, TKPH (TMPH) capabilities of standard or optional tyres could be exceeded and therefore limit operational ability
- Elphinstone recommends the customer evaluate all job conditions and consult the tyre manufacturer for correct tyre selection



# 3900 Series Off-Highway Truck Specifications

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## Sound

The stationary operator sound pressure level for the enclosed cab is 74 dB(A) when measured according to ISO 6394:2008.

The dynamic operator sound pressure level for the enclosed cab is 76 dB(A) when measured according to ISO 6396:2008.

The stationary operator sound pressure level for the enclosed cab is 77 dB(A) when measured according to SAE J919 JAN2009, with the engine speed at high idle.

All testing was conducted with the cab properly installed and maintained and with the cab doors and the cab windows closed.

Hearing protection may be required when the machine is operated with an open operator station for extended periods or in a noisy environment. Hearing protection may be needed when the machine is operated with a cab that is not properly maintained, or when the windows are open for extended periods or in a noisy environment.

The stationary machine sound power level is 117 dB(A) when measured according to ISO 6393:2008.

The dynamic machine sound power level is 119 dB(A) when measured according to ISO 6395:2008.

The exterior sound pressure level is 86 dB(A) when measured according to SAE J88 FEB2006 - mid-gear moving test. The test was conducted at a distance of 15 m (49.2 ft).

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## SPECIAL PACKAGES

### Extra Quiet (EQ) Sound Suppression

For environments sensitive to sound, the EQ package reduces the spectator noise level of the hauler. This package includes noise reducing panels that enclose the engine compartment and sound reduction material within the radiator cowl and grille. A demand fan further enhances this package. Sound reduction material in the cab lining is standard on the truck.

The stationary machine sound power level is reduced to 113 dB (A) when measured according to ISO 6393:2008.

The dynamic machine sound power level is reduced to 116 dB (A) when measured according to ISO 6395:2008.

### Additional Brake Cooling

For applications which demand the primary haul to be over a negative (downhill) grade, over extended distances, and enhances speed on grade whilst under retardation.

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## Service Fill Capacities

Fuel Tank	1,000L	264 gal
Cooling System	146L	39 gal
Engine Oil with Filter	95L	25 gal
Differentials/Final Drives (per Axle)	160L	42 gal
Steering and Hydraulic System	45L	12 gal
Hydraulic and Brake System	600L	158 gal
Transmission and Torque Converter System	65L	17 gal

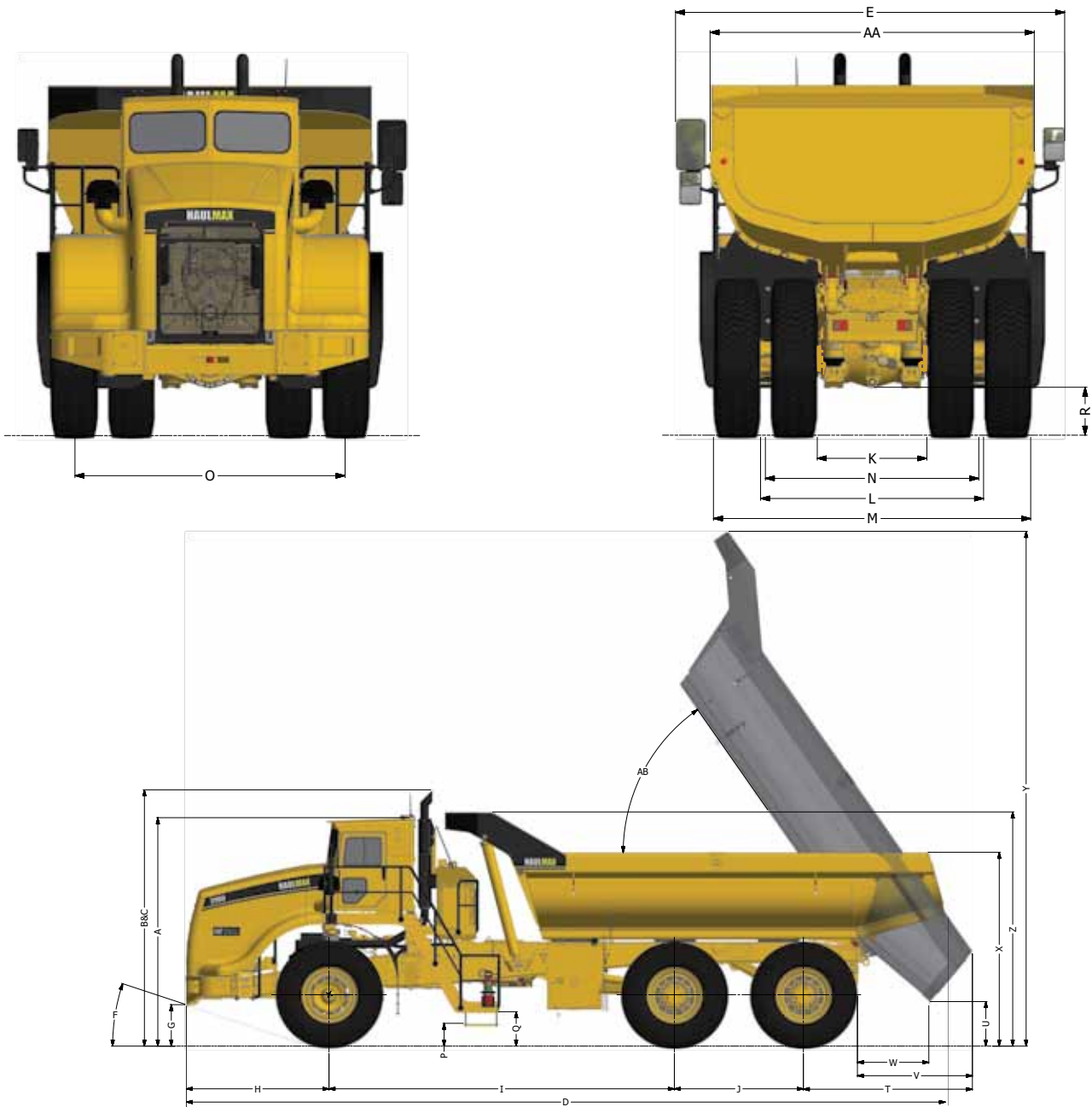
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## ROPS

### ROPS/FOPS Standards

- ✓ ROPS (Rollover Protective Structure) for cab offered by Elphinstone meets ISO 3471:2008 ROPS criteria
  - ✓ FOPS (Falling Objects Protective Structure) meets ISO3449:2005 Level II FOPS criteria
-

# Dimensions - Dump Truck 41m<sup>3</sup> (54 yd<sup>3</sup>)

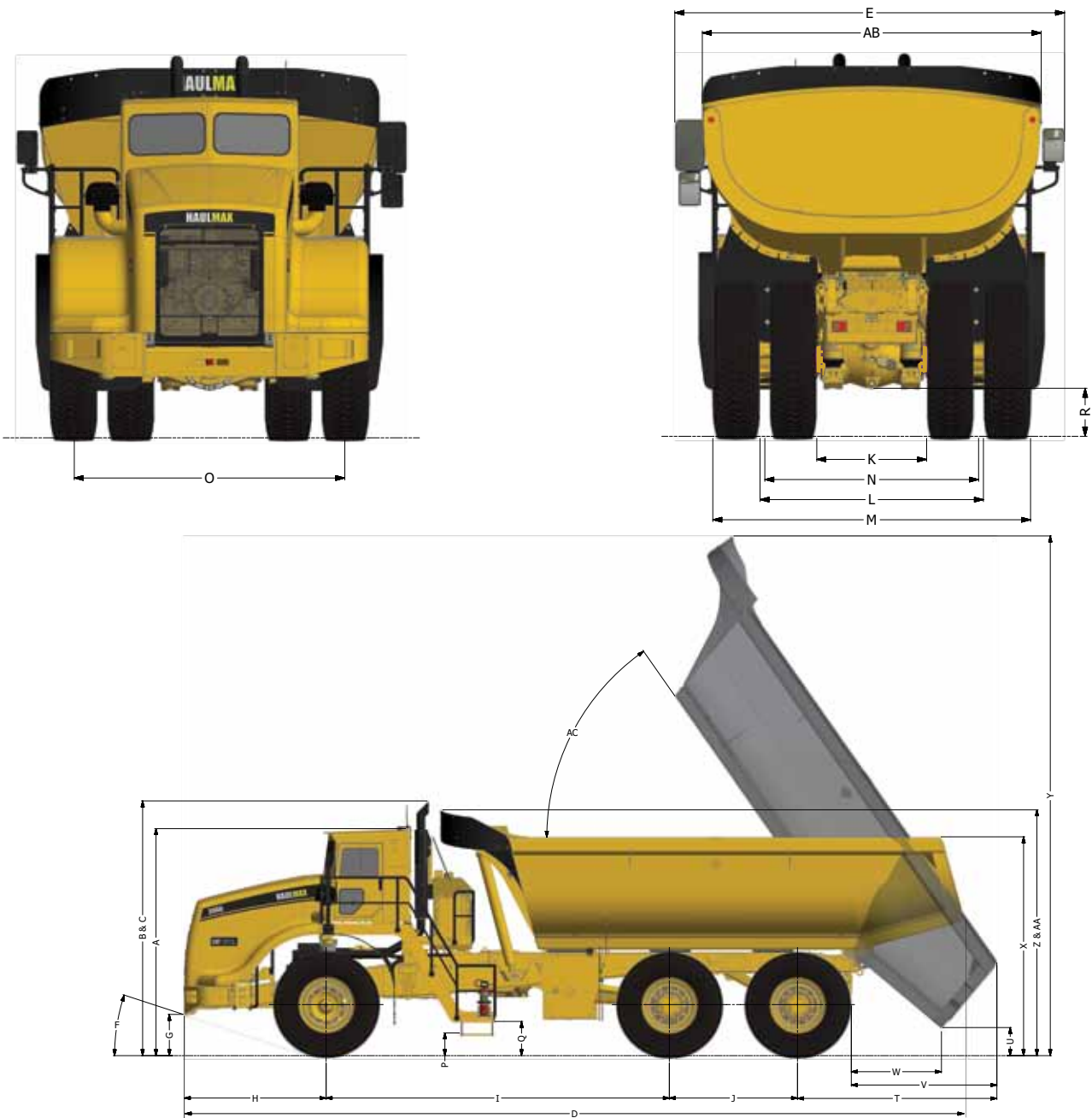


## General Dimensions

A	Height-Top of ROPS *	4250 mm	167.4 in	P	First Step from Ground Level *	400 mm	15.8 in
B	Height-Top of Exhaust Stack (Standard) *	4770 mm	187.8 in	Q	Ground Clearance *	640 mm	25.2 in
C	Height-Top of Exhaust Stack (Long) *	5245 mm	206.5 in	R	Rear Axle Clearance *	600 mm	23.7 in
D	Overall Length	14130 mm	556.3 in	S	Clearance Circle Diameter	33900 mm	1334.7 in
E	Overall Width (Across Mirrors)	4850 mm	191.0 in	T	Rear Axle to Body Tail – Body Raised	3150 mm	124.1 in
F	Approach Angle *	20°	20°	U	Dump Clearance *	830 mm	32.7 in
G	Bottom of Bumper to Ground Level *	775 mm	30.6 in	V	Rear Tyres to Body Clearance – Body Raised *	2140 mm	84.3 in
H	Front of Bumper to Front Axle	2655 mm	104.6 in	W	Rear Tyres to Body Dump Clearance – Body Raised *	1330 mm	52.4 in
I	Front Axle to Centre Axle	6430 mm	253.2 in	X	Loading Height *	3605 mm	142.0 in
J	Centre Axle to Rear Axle	2400 mm	94.5 in	Y	Overall Height – Body Raised *	9575 mm	377.0 in
K	Inner Tyres – Inside Width *	1365 mm	53.8 in	Z	Overall Height – Body Lowered *	4360 mm	171.7 in
L	Outer Rear / Front Tyres – Inside Width *	2780 mm	109.5 in	AA	Overall Body Width	4040 mm	159.1 in
M	Outer Rear / Front Tyres – Outside Width *	3955 mm	155.7 in	AB	Tip Angle	55°	55°
N	Track Width – Rear	2660 mm	104.8 in				
O	Track Width – Front	3370 mm	132.7 in				



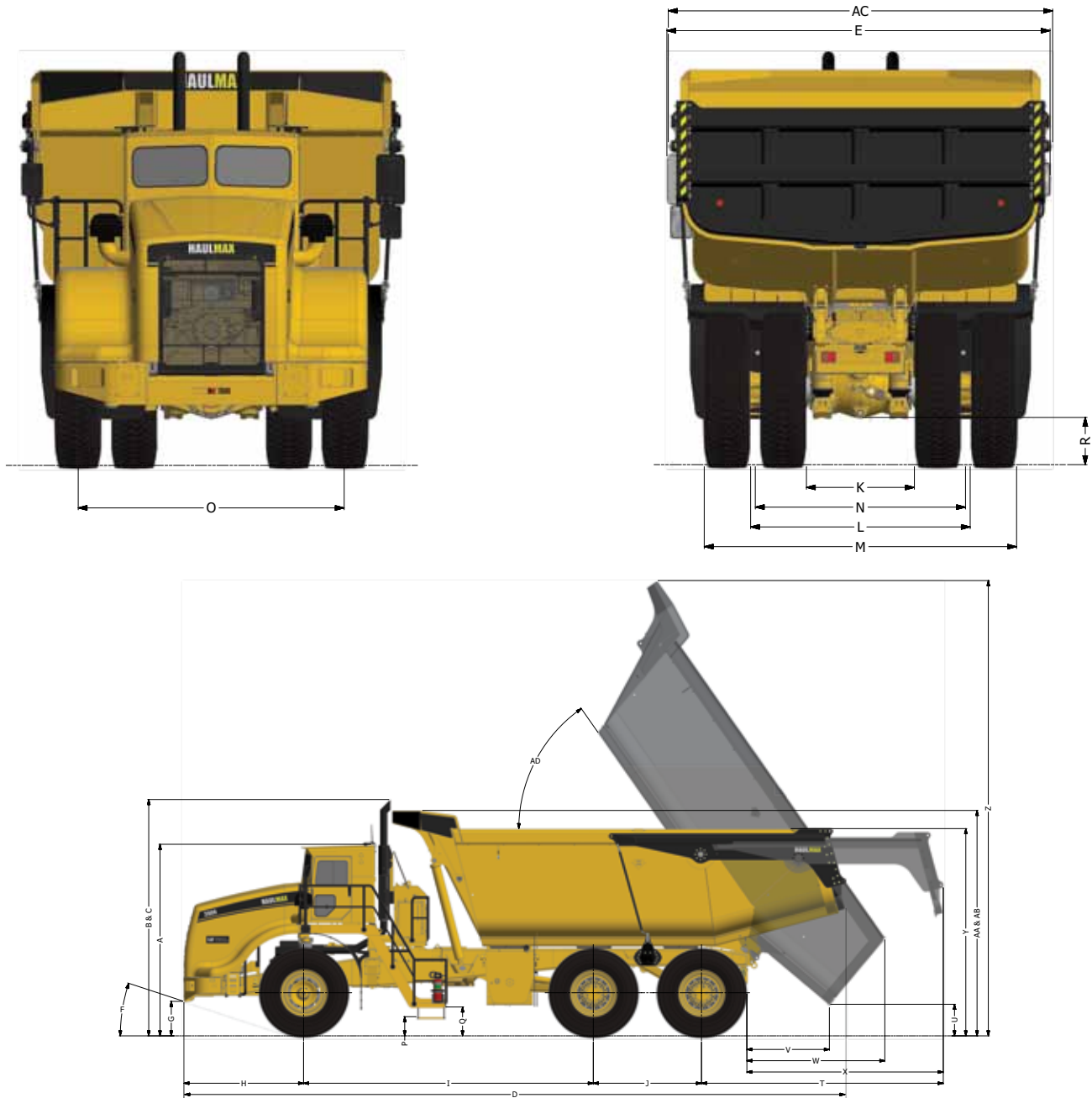
# Dimensions - Dump Truck 59m<sup>3</sup> (77 yd<sup>3</sup>)



## General Dimensions

A	Height-Top of ROPS *	4250 mm	167.4 in	P	First Step from Ground Level *	400 mm	15.8 in
B	Height-Top of Exhaust Stack (Standard) *	4770 mm	187.8 in	Q	Ground Clearance *	640 mm	25.2 in
C	Height-Top of Exhaust Stack (Long) *	5245 mm	206.5 in	R	Rear Axle Clearance *	600 mm	23.7 in
D	Overall Length	14585 mm	574.3 in	S	Clearance Circle Diameter	33900 mm	1334.7 in
E	Overall Width (Across Mirrors)	4850 mm	191.0 in	T	Rear Axle to Body Tail – Body Raised	3730 mm	146.9 in
F	Approach Angle *	20°	20°	U	Dump Clearance *	525 mm	20.7 in
G	Bottom of Bumper to Ground Level *	775 mm	30.6 in	V	Rear Tyres to Body Clearance – Body Raised *	2730 mm	107.5 in
H	Front of Bumper to Front Axle	2655 mm	104.6 in	W	Rear Tyres to Body Dump Clearance – Body Raised *	1690 mm	66.6 in
I	Front Axle to Centre Axle	6430 mm	253.2 in	X	Loading Height *	4100 mm	161.5 in
J	Centre Axle to Rear Axle	2400 mm	94.5 in	Y	Overall Height – Body Raised *	9730 mm	383.1 in
K	Inner Tyres – Inside Width *	1365 mm	53.8 in	Z	Overall Height – Body Lowered *	4600 mm	181.1 in
L	Outer Rear / Front Tyres – Inside Width *	2780 mm	109.5 in	AA	Overall Height – Optional Shipping Height *****	4360 mm	171.7 in
M	Outer Rear / Front Tyres – Outside Width *	3955 mm	155.7 in	AB	Overall Body Width	4220 mm	166.2 in
N	Track Width – Rear	2660 mm	104.8 in	AC	Tip Angle	55°	55°
O	Track Width – Front	3370 mm	132.7 in				

# Dimensions - Dump Truck 90m<sup>3</sup> (118 yd<sup>3</sup>)

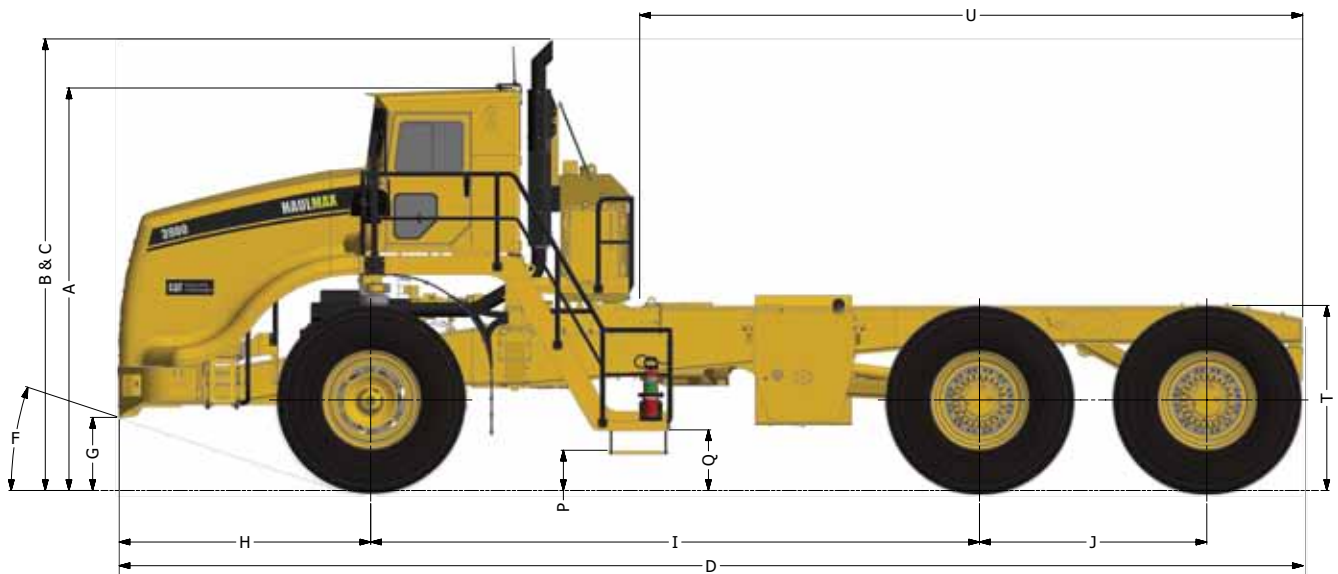
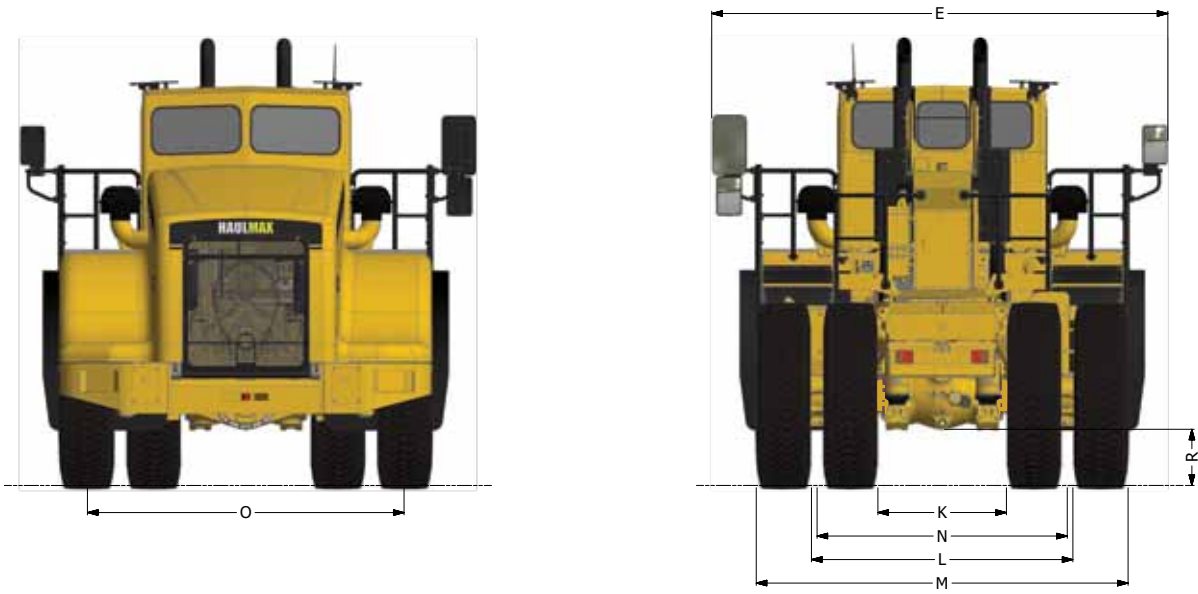


## General Dimensions

A	Height-Top of ROPS *	4250 mm	167.4 in	P	First Step from Ground Level *	400 mm	15.8 in
B	Height-Top of Exhaust Stack (Standard) *	4770 mm	187.8 in	Q	Ground Clearance *	640 mm	25.2 in
C	Height-Top of Exhaust Stack (Long) *	5245 mm	206.5 in	R	Rear Axle Clearance *	600 mm	23.7 in
D	Overall Length	14650 mm	576.8 in	S	Clearance Circle Diameter	33900 mm	1334.7 in
E	Overall Width (Across Mirrors)	4850 mm	191.0 in	T	Rear Axle to Body Tail – Body Raised	5365 mm	211.3 in
F	Approach Angle *	20°	20°	U	Dump Clearance *	700 mm	27.6 in
G	Bottom of Bumper to Ground Level *	775 mm	30.6 in	V	Rear Tyres to Body Clearance – Body Raised *	1830 mm	72.1 in
H	Front of Bumper to Front Axle	2655 mm	104.6 in	W	Rear Tyres to Body Dump Clearance – Body Raised *	3065 mm	120.7 in
I	Front Axle to Centre Axle	6430 mm	253.2 in	X	Rear Tyres to Body Tailgate – Body Raised	4360 mm	171.7 in
J	Centre Axle to Rear Axle	2400 mm	94.5 in	Y	Loading Height *	4600 mm	181.1 in
K	Inner Tyres – Inside Width *	1365 mm	53.8 in	Z	Overall Height – Body Raised *	10100 mm	397.7 in
L	Outer Rear / Front Tyres – Inside Width *	2780 mm	109.5 in	AA	Overall Height – Body Lowered *	5000 mm	196.9 in
M	Outer Rear / Front Tyres – Outside Width *	3955 mm	155.7 in	AB	Overall Height – Optional Shipping Height *****	4600 mm	181.1 in
N	Track Width – Rear	2660 mm	104.8 in	AC	Overall Body Width	4850 mm	191.0 in
O	Track Width – Front	3370 mm	132.7 in	AD	Tip Angle	55°	55°



# Dimensions - Bare Chassis



## General Dimensions

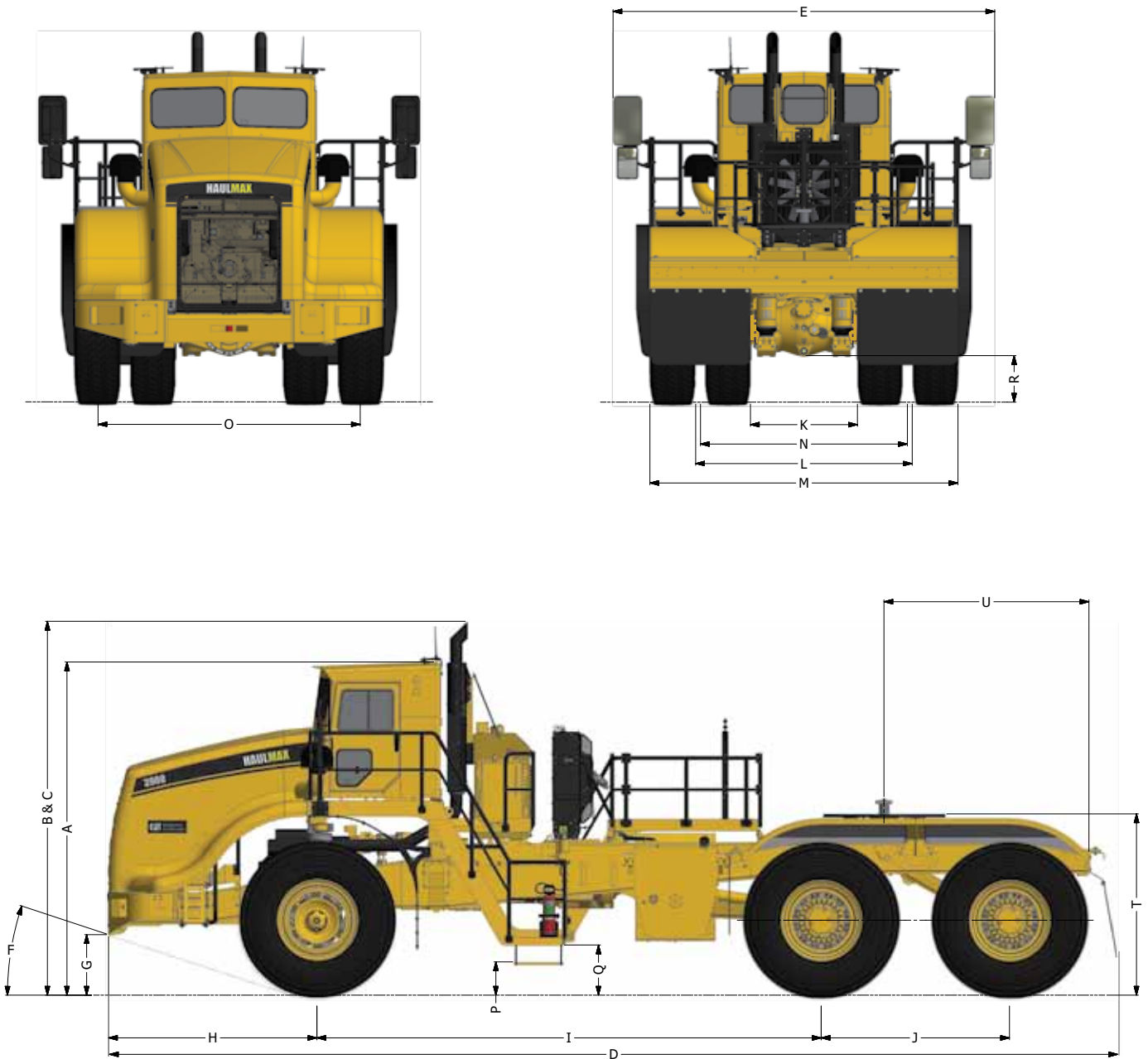
A	Height-Top of ROPS *	4250 mm	167.4 in	L	Outer Rear / Front Tyres – Inside Width *	2780 mm	109.5 in
B	Height-Top of Exhaust Stack (Standard) *	4770 mm	187.8 in	M	Outer Rear / Front Tyres – Outside Width *	3955 mm	155.7 in
C	Height-Top of Exhaust Stack (Long) *	5245 mm	206.5 in	N	Track Width – Rear	2660 mm	104.8 in
D	Overall Length	12500 mm	492.2 in	O	Track Width – Front	3370 mm	132.7 in
E	Overall Width (Across Mirrors)	4850 mm	191.0 in	P	First Step from Ground Level *	400 mm	15.8 in
F	Approach Angle *	20°	20°	Q	Ground Clearance *	640 mm	25.2 in
G	Bottom of Bumper to Ground Level *	775 mm	30.6 in	R	Rear Axle Clearance *	600 mm	23.7 in
H	Front of Bumper to Front Axle	2655 mm	104.6 in	S	Clearance Circle Diameter	33900 mm	1334.7 in
I	Front Axle to Centre Axle	6430 mm	253.2 in	T	Deck Height from Ground Level *	1955 mm	77.0 in
J	Centre Axle to Rear Axle	2400 mm	94.5 in	U	Maximum Usable Deck Length	7000 mm	275.6 in
K	Inner Tyres – Inside Width *	1365 mm	53.8 in				

# Service Modules and Water Tanks





# Dimensions - Tractor



## General Dimensions

A	Height-Top of ROPS *	4250 mm	167.4 in	L	Outer Rear / Front Tyres – Inside Width *	2780 mm	109.5 in
B	Height-Top of Exhaust Stack (Standard) *	4770 mm	187.8 in	M	Outer Rear / Front Tyres – Outside Width *	3955 mm	155.7 in
C	Height-Top of Exhaust Stack (Long) *	5245 mm	206.5 in	N	Track Width – Rear	2660 mm	104.8 in
D	Overall Length	12855 mm	506.1 in	O	Track Width – Front	3370 mm	132.7 in
E	Overall Width (Across Mirrors)	4900 mm	193.0 in	P	First Step from Ground Level *	400 mm	15.8 in
F	Approach Angle *	20°	20°	Q	Ground Clearance *	640 mm	25.2 in
G	Bottom of Bumper to Ground Level *	775 mm	30.6 in	R	Rear Axle Clearance *	600 mm	23.7 in
H	Front of Bumper to Front Axle	2655 mm	104.6 in	S	Clearance Circle Diameter	33900 mm	1334.7 in
I	Front Axle to Centre Axle	6430 mm	253.2 in	T	Turntable Top Face from Ground Level *	2315 mm	91.2 in
J	Centre Axle to Rear Axle	2400 mm	94.5 in	U	Turntable Pin Centre to End of Chassis	2615 mm	103.0 in
K	Inner Tyres – Inside Width *	1365 mm	53.8 in				

# Tow Tractors

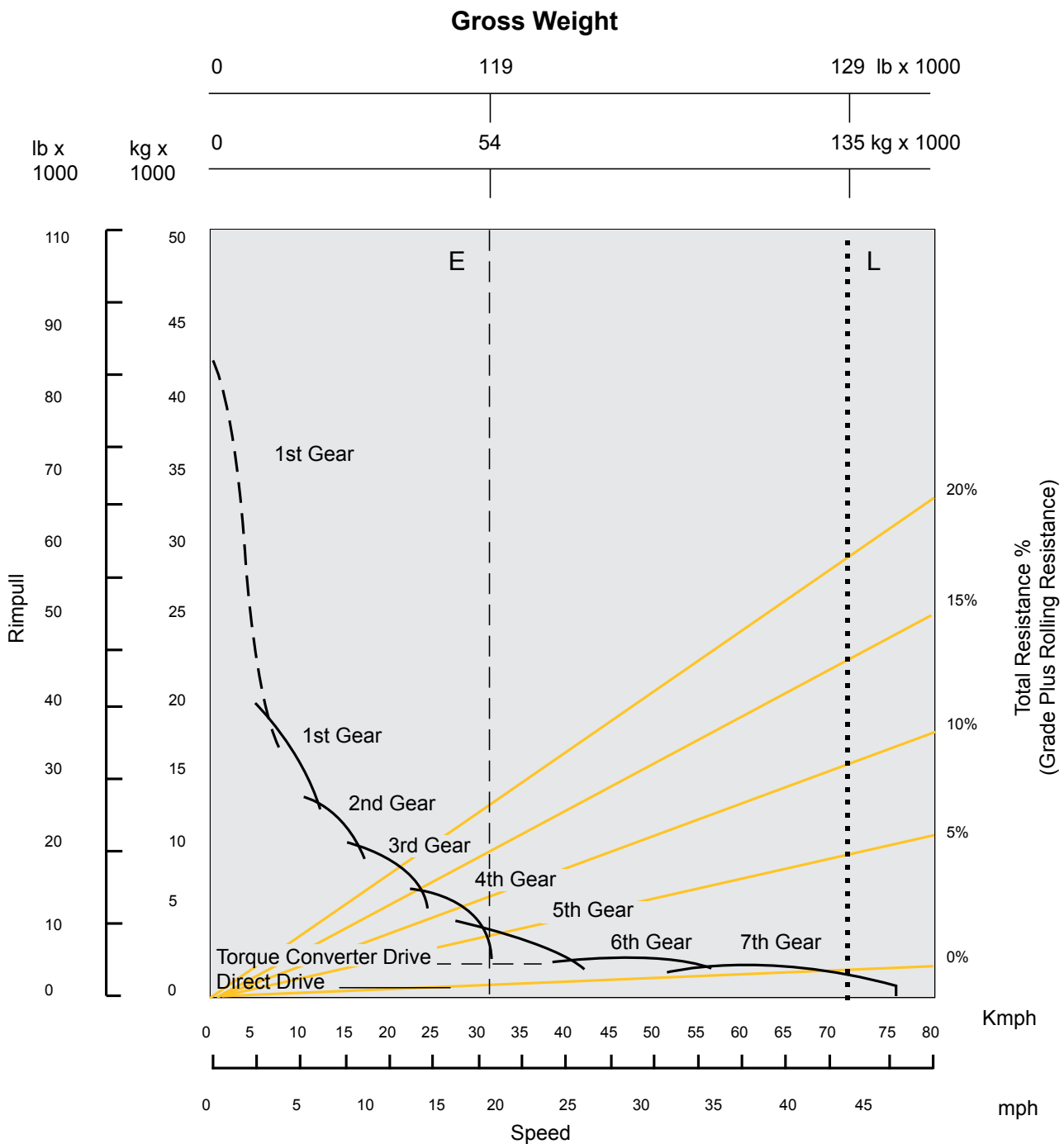


# Gradeability / Speed / Rimpull

Read from gross weight down to the percentage 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.

E – Typical Field Empty Weight

L – Target Gross Machine Operating Weight 135,000 kg (297,000 lb)





# Truck Operating Weights

Configuration		Dump Truck 41 m <sup>3</sup> (54 yd <sup>3</sup> )	Dump Truck 59 m <sup>3</sup> (77 yd <sup>3</sup> )	Dump Truck 90 m <sup>3</sup> (118 yd <sup>3</sup> )	Bare Chassis (Water/Service module)	Tractor (Mine Transporter)
Floor / Sidewall / Frontwall	mm	16/16/12	16/12/12	12/12/12	-	-
	(in)	(0.63/0.63/0.47)	(0.63/0.47/0.47)	(0.47/0.47/0.47)	-	-
Target Gross Machine Weight	kg	135000	135000	135000	135000	230000
	(lbs)	297620	297620	297620	297620	507060
Empty Chassis Weight - Base Machine (includes full fuel tank & operator)*	kg	55770	54820	59520	43900	46800
	(lbs)	122950	120860	131220	96780	103180
Norminal Payload 100%**	kg	79230	80180	75480	91100	183200
	(lbs)	174670	176760	166400	200840	403880
Max Working Payload 110%***	kg	87150	88200	83030	100210	201520
	(lbs)	192130	194450	183050	220920	444270

\* Fitted with Goodyear RL3+ tyres

\*\* Normal Payload & Max Working Payload includes the weight of the water / service module or transporter trailer in the case of a Bare Chassis & Tractor configurations.

\*\*\* Refer to 10/10/20 policy.

Weight Distribution - Approximate	Dump Truck 41 m <sup>3</sup> (54 yd <sup>3</sup> )	Dump Truck 59 m <sup>3</sup> (77 yd <sup>3</sup> )	Dump Truck 90 m <sup>3</sup> (118 yd <sup>3</sup> )	Bare Chassis (Water/Service module)	Tractor (Mine Transporter)
Front Axle - Empty	35.5%	35.1%	30.8%	41.5%	39.4%
Front Axle - Loaded	17.9%	16.9%	15.1%	16 - 18%	16 - 18%
Rear Tandem - Empty	64.5%	64.9%	69.2%	58.5%	60.2%
Rear Tandem - Loaded	82.1%	83.1%	84.9%	82.0%	82.0%

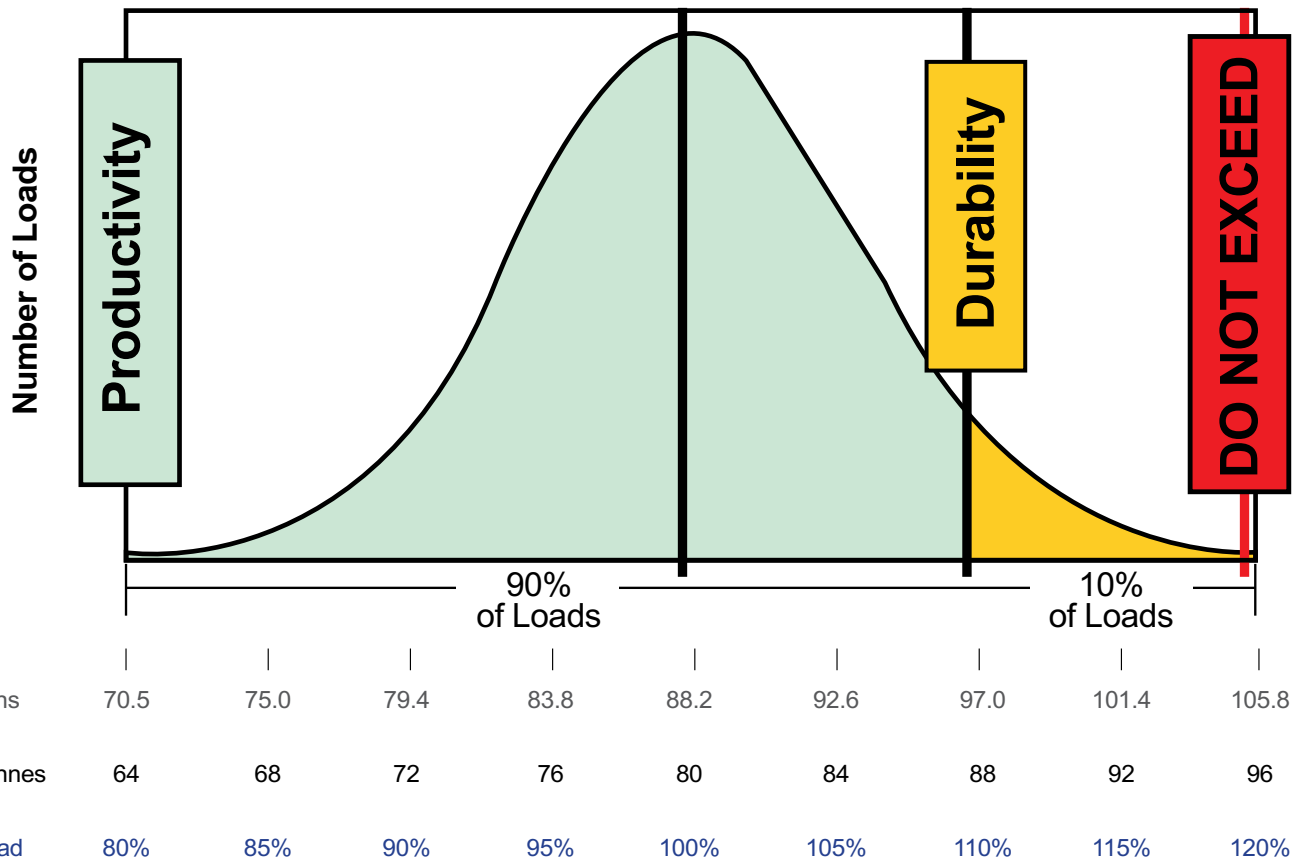


# Payload Management

## \*\*10/10/20 Payload Management Policy

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



# Haulmax Payload and Tyre Pressure Monitoring System

The integrated Haulmax Payload and Tyre Pressure Monitoring System (TPMS) is designed to measure, display and record live payload data, providing maximum productivity over extended distance hauls. Utilising proven hardware and strut mounted sensors, the system achieves a consistent accuracy of + / - 5%.

The Remote Loader Display Screen is fitted to the loading unit, ensuring load placement is accurate and target payload is achieved. Relaying payload information to the loader operator in real-time results in every truck leaving the pit with the target payload, correctly placed.



**PAYLOAD DISPLAY  
(TPMS VIEW)**

## Tyre Pressure Monitoring System (TPMS)

Tyre maintenance is critical when hauling extended distances to ensure that all the tyres are maintained correctly, throughout the haul cycle. Utilising a sensor on each tyre, live pressure and temperature information is displayed to the operator.



# 3900 Series Off-Highway Truck

## Standard equipment.

### OPERATOR ENVIRONMENT

- Air conditioning
- Coat hooks (2)
- Cup holder
- Diagnostic connection port – 24V
- Entertainment radio ready:
  - 20 Amp converter
  - Speakers
  - Antenna
  - Wiring harness
- Gauges/indicators:
  - Air cleaner service indicator
  - Brake oil temperature gauge
  - Coolant temperature gauge
  - Engine overspeed indicator
  - Fuel level
  - Hour meter
  - Speedometer/odometer
  - Tachometer
  - Transmission gear indicator, oil and pressure gauge
- Heater/defroster
- Hoist lever
- Horn
- Light, dome/courtesy
- Power port, 12V and 24V
- Rops cab, insulated/sound suppressed
- Seat, caterpillar comfort:
  - Full air suspension
  - Retractable, 3-point seat belt with shoulder harness
  - For operator and passenger
- Steering wheel, padded, tilt and telescopic
- Storage compartment
- Sun visor, tinted glass
- Window, door, sliding (both sides)
- Windshield wiper (intermittent) and washer

### POWER TRAIN

- Cat® C27 engine with Acert™ technology
- 12-Cylinder diesel
- Air-to-air after cooler (ATAAC)
- Air cleaner with pre cleaner (2)
- Automatic cold mode idle control
- Direct drive fan
- Electric priming pump
- Fuel filter/water separator
- Turbocharger (2)

### GUARDS

- Engine crankcase
- Driveline
- Fan and air conditioning
- Muffler and exhaust heat shields

### ANTIFREEZE

- Extended life coolant to -35° c (-30° f)

### BRAKING SYSTEM

- Automatic retarder control (ARC) (utilises rear oil-cooled brakes)
- Extended life disc brakes
- Brake release motor (towing)
- Manual retarder (utilises rear oil-cooled brakes)
- Oil-cooled, multiple disc (rear)
- Front dry disc brakes

### TRANSMISSION

- 7-Speed automatic powershift
- Body up shift inhibitor
- Controlled throttle shifting
- Directional shift management
- Downshift inhibitor
- Neutral start switch
- Neutral coast inhibitor
- Reverse shift inhibitor
- Reverse neutraliser during dumping
- Programmable top gear selection

### ELECTRICAL

- Alarm, backup
- Alternator, 95-amp
- Auxiliary jump start receptacle
- Batteries, maintenance-free, 12V, 1,000 CCA, 145 - amp-hour
- Electrical system, 20-amp, 24V to 12V converter
- Product link (cellular/satellite)
- Backup light (halogen)
- Directional signals/hazard warning, (front/rear LED)
- Headlights, 2 x hid low beam and 2 x mid high beam
- Operator access courtesy lights (halogen)
- Stop/tail lights (LED)

### OTHER STANDARD EQUIPMENT

- Body safety pin (secures body in up position)
- Body up indicator
- Centre mounted rims
- Fuel tank, 1000 l (264 gal)
- Ground level battery disconnect
- Ground level engine shutdown
- Hood hydraulic tilt
- Low level alarms/indicators:
  - Fuel
  - Hydraulic
  - Steering
- Parts book (USB)
- Rims (35 x 15.00/3.0)
- Service platforms and fold down steps (engine)
- Service platform level steering, hoist and brake
- Supplemental steering (automatic)
- Oil sample adapters
- Tow point, front
- Tow points, rear
- Transmission, hoist and steering disable switch
- Wheel chocks

# 3900 Series Off-Highway Truck

## Optional equipment.

Additional brake cooling package  
Automatic lubrication system  
Cab heater (diesel)  
Cab insulation – arctic conditions  
Cab pressuriser  
Cat® engine brake  
Customer id plate (rear)  
Drive shaft guard (fully enclosed)  
Electric cold weather starter  
Electrical control (dual pole isolation)  
Electrical control box (fully enclosed, stainless steel)  
Engine coolant heater  
Engine idle timer (factory integrated)  
Engine shutdown – cab  
Fan – demand drive clutch (rockford)  
Fan guards (fully enclosed)  
Fast fuel – non pressurising  
Film – hazard  
Fire extinguisher – hand held  
High speed fluid evacuation  
Hub odometer  
Intake air restriction gauges (dash)  
Lighting:  
    Cab access/stairway (HID/LED)  
    Flashing/rotating strobe  
    Front upper grille – high/low beam (LED)  
    Rear reversing (HID/LED)  
    Rear strobe/warning (LED)  
    Supplemental reverse (side)(HID/LED)  
    Under body (rear brake/tail)(LED)  
    Under bumper – rearward facing (HID)  
    Under hood service (halogen/HID/LED)  
    Windrow (side) (halogen/HID/LED)

### OPTIONAL EQUIPMENT - DUMP TRUCK

Body liner, high impact - 41m<sup>3</sup> (54yd<sup>3</sup>) & 59m<sup>3</sup> (77yd<sup>3</sup>)  
Remote payload display system (loader)  
Truck payload management system

### OPTIONAL EQUIPMENT - SUPPORT TRUCK

Access platform – rear (tow tractor)  
Air compressor (float/low bed braking applications)  
Fifth wheel/turntable/kingpost  
Hoist cylinders  
Installation kit (service body mounting)  
Mudguards - rear (tow tractor)

# Notes



# OVER 45 YEARS IN THE MINING INDUSTRY.

Elphinstone Pty Ltd is an established Caterpillar Original Equipment Manufacturer with over 45 years' experience in the mining industry. Elphinstone specialises in the design, manufacture and support of quality equipment for the global underground and surface mining industries.

The Elphinstone range of Underground Mining Support Vehicles combines practical design, the latest technology and quality manufacturing to ensure reliable performance.

The current product range includes specialised underground support vehicles, mine extraction devices, extended distance off-highway haulage trucks and water tanks customised to suit Caterpillar articulated trucks.

As an established Caterpillar Original Equipment Manufacturer, all Elphinstone products are sold and supported via the global Cat® dealer network.



## HAULMAX 3900 SERIES

For more complete information on Elphinstone products, dealer services, and industry solutions, visit [www.elphinstone.com](http://www.elphinstone.com) or contact your local Cat dealer.

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