

# B40E Articulated Dump Truck



<div>ENGINE</div> <div>Manufacturer</div> <div>Mercedes Benz (MTU)</div> <div>Model</div> <div>OM471LA (MTU 6R 1300)</div> <div>Configuration</div> <div>Inline 6, turbocharged and intercooled</div> <div>Maximum Net Power</div> <div>380 kW (510 hp) @ 1,600 rpm in accordance with UN ECE R120</div> <div>Gross Torque</div> <div>2,600 Nm (1,917 lbft) @ 1,300 rpm</div> <div>Displacement</div> <div>12.8 liters (781 cu.in)</div> <div>Auxiliary Brake</div> <div>Jacobs Engine Brake®</div> <div>Fuel Tank Capacity</div> <div>443 liters (117 US gal)</div> <div>AdBlue® Tank Capacity</div> <div>40 liters (11 US gal)</div> <div>Certification</div> <div>OM471LA (MTU 6R 1300) meets EPA Tier 4 final / EU Stage V emissions regulations.</div>	<div>Torque Control</div> <div>Hydrodynamic with lock-up in all gears</div> <div>TRANSFER CASE</div> <div>Manufacturer</div> <div>Kessler</div> <div>Series</div> <div>W2400</div> <div>Layout</div> <div>Remote mounted</div> <div>Gear Layout</div> <div>Three in-line helical gears</div> <div>Output Differential</div> <div>Interaxle 29/71 proportional differential. Automatic inter-axle differential lock.</div>	<div>Total Retardation Power</div> <div>Continuous: 442 kW (593 hp) Maximum: 854 kW (1,145 hp)</div> <div>WHEELS</div> <div>Type</div> <div>Radial Earthmover</div> <div>Tire</div> <div>29.5 R 25 (875/65 R 29 optional)</div> <div>FRONT SUSPENSION</div> <div>Semi-independent, leading A-frame supported by hydro-pneumatic suspension struts.  Optional active dual springrate Comfort Ride suspension available, including height control.</div> <div>REAR SUSPENSION</div> <div>Pivoting walking beams with laminated rubber suspension blocks.  Optional passive dual-springrate Comfort Ride walking beam available.</div> <div>HYDRAULIC SYSTEM</div> <div>Full load sensing system serving the prioritized steering, body tipping and brake functions. A ground-driven, load sensing emergency steering pump is integrated into the main system.</div> <div>Pump Type</div> <div>Variable displacement load sensing piston</div> <div>Flow</div> <div>300 L/min (79 gal/min)</div> <div>Pressure</div> <div>310 Bar (4,500 psi)</div> <div>Filter</div> <div>5 microns</div> <div>STEERING SYSTEM</div> <div>Double acting cylinders, with ground-driven emergency steering pump</div> <div>Lock to lock turns</div> <div>4.5</div>	<div>Steering Angle</div> <div>42°</div> <div>DUMPING SYSTEM</div> <div>Two double-acting, single stage, dump cylinders</div> <div>Raise Time</div> <div>12 seconds</div> <div>Lowering Time</div> <div>11 seconds</div> <div>Tipping Angle</div> <div>70 deg standard, or any lower angle programmable</div> <div>PNEUMATIC SYSTEM</div> <div>Air drier with heater and integral unloader valve, serving park brake and auxiliary functions</div> <div>System Pressure</div> <div>8.1 Bar (117 psi)</div> <div>ELECTRICAL SYSTEM</div> <div>Voltage</div> <div>24 V</div> <div>Battery Type</div> <div>Two AGM (Absorption Glass Mat) type</div> <div>Battery Capacity</div> <div>2 X 75 Ah</div> <div>Alternator Rating</div> <div>28V 100A</div> <div>MAX. VEHICLE SPEED</div> <table><tr><td>1st</td><td>4 km/h</td><td>2.5 mph</td></tr><tr><td>2nd</td><td>9 km/h</td><td>6 mph</td></tr><tr><td>3rd</td><td>17 km/h</td><td>11 mph</td></tr><tr><td>4th</td><td>23 km/h</td><td>14 mph</td></tr><tr><td>5th</td><td>33 km/h</td><td>21 mph</td></tr><tr><td>6th</td><td>44 km/h</td><td>27.3 mph</td></tr><tr><td>7th</td><td>51 km/h</td><td>32 mph</td></tr><tr><td>R</td><td>7 km/h</td><td>4 mph</td></tr></table> <div>CAB</div> <div>ROPS/FOPS certified 77 dBA internal sound level measured according to ISO 6396</div>	1st	4 km/h	2.5 mph	2nd	9 km/h	6 mph	3rd	17 km/h	11 mph	4th	23 km/h	14 mph	5th	33 km/h	21 mph	6th	44 km/h	27.3 mph	7th	51 km/h	32 mph	R	7 km/h	4 mph
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<div>TRANSMISSION</div> <div>Manufacturer</div> <div>Allison</div> <div>Model</div> <div>4700 ORS</div> <div>Configuration</div> <div>Fully automatic planetary transmission</div> <div>Layout</div> <div>Engine mounted</div> <div>Gear Layout</div> <div>Constant meshing planetary gears, clutch operated</div> <div>Gears</div> <div>7 Forward, 1 reverse</div> <div>Clutch Type</div> <div>Hydraulically operated multi-disc</div> <div>Control Type</div> <div>Electronic</div>	<div>AXLES</div> <div>Manufacturer</div> <div>Bell</div> <div>Model</div> <div>30T</div> <div>Differential</div> <div>High input controlled traction differential with spiral bevel gears.</div> <div>Final Drive</div> <div>Outboard heavy duty planetary on all axles</div> <div>BRAKING SYSTEM</div> <div>Service Brake</div> <div>Dual circuit, full hydraulic actuation wet disc brakes on front and middle axles. Wet brake oil is circulated through a filtration and cooling system.  Maximum brake force: 327 kN (73,513 lbf)</div> <div>Park &amp; Emergency</div> <div>Spring applied, air released driveline mounted disc  Maximum brake force: 218 kN (49,008 lbf)</div> <div>Auxiliary Brake</div> <div>Jacobs Engine Brake®. Automatic retardation through electronic activation of wet brake system.</div>																										

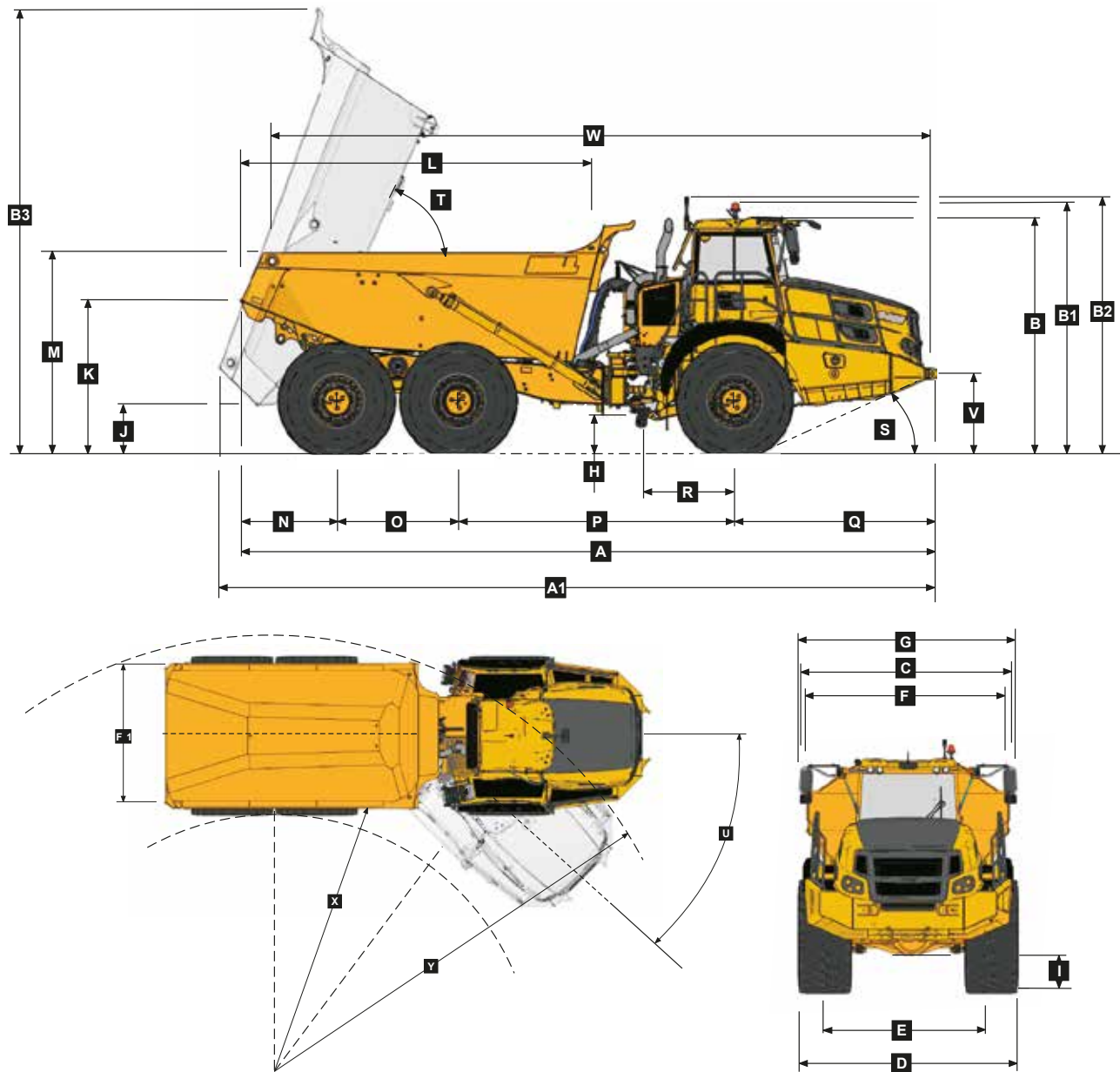
## Load Capacity & Ground Pressure

OPERATING WEIGHTS		GROUND PRESSURE*				LOAD CAPACITY		OPTION WEIGHTS	
UNLADEN	kg (lb)	LADEN				BODY	m³ (yd³)		kg (lb)
Front	16,816 (37,072)	No sinkage/Total Contact Area (as recommended by tyre manufacturer)		Calculation method used by competition		Struck Capacity	19 (25)	Bin liner	1,369 (3,018)
Middle	8,997 (19,834)					SAE 2:1 Capacity	24 (31)	Tailgate	1,002 (2,209)
Rear	8,784 (19,365)	29.5 R 25	kPa (Psi)	29.5 R 25	kPa (Psi)	SAE 1:1 Capacity	28.5 (37)	Wheelset 875/65 R29	
Total	34,596 (76,271)	Front	310 (45)	Front	151 (21.9)	SAE 2:1 Capacity	24.5 (32)	(per vehicle) Add	1,338 (2,950)
LADEN		Mid/Rear	367 (53.2)	Rear	169 (24.5)	with Tailgate		EXTRA WHEELSET	
Front	21,691 (47,820)							29.5 R 25	
Middle	26,059 (57,450)	875/65 R29		875/65 R29		Rated Payload	39,000 kg	(per vehicle) Add	516 (1,138)
Rear	25,846 (56,981)	Front	293 (42.5)	Front	131 (19)		(85,980 lb)	875/65 R29	
Total	73,596 (162,251)	Mid/Rear	329 (47.7)	Rear	149 (21.6)			(per vehicle) Add	1,338 (2,950)

\* 29.5R25 Groundpressures calculated with Michelin XADN+ Tire. 875/65R29 Groundpressures calculated with Michelin XAD65-1 Tire.

## Dimensions

**B40E**

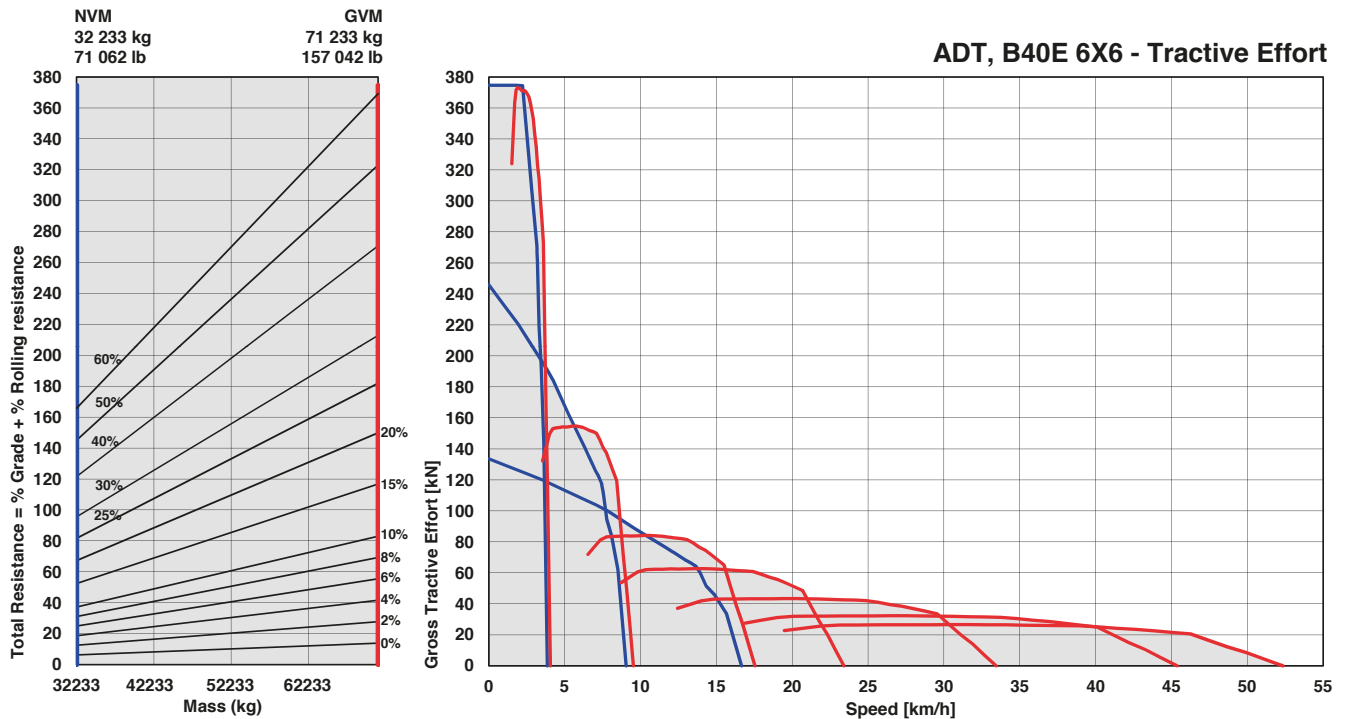


### Machine Dimensions

A	Length - Transport Position with Tailgate	11,197 mm (36 ft. 9 in.)	K	Bin Lip Height - Transport Position	2,519 mm (8 ft. 3 in.)
A	Length - Transport position w/o Tailgate	11,186 mm (36 ft. 8 in.)	L	Bin Length	5,742 mm (18 ft. 10 in.)
A1	Length - Bin Fully Tipped	11,742 mm (38 ft. 6 in.)	M	Load over Height	3,271 mm (10 ft. 9 in.)
B	Height - Transport Position	3,804 mm (12 ft. 6 in.)	N	Rear Axle Center to Bin Rear	1,543 mm (5 ft.)
B1	Height - Rotating Beacon	4,040 mm (13 ft. 3 in.)	O	Mid Axle Center to Rear Axle Center	1,950 mm (6 ft. 5 in.)
B2	Height - Load Light	4,129 mm (13 ft. 7 in.)	P	Mid Axle Center to Front Axle Center	4,438 mm (14 ft. 7 in.)
B3	Bin Height - Fully Tipped	7,316 mm (24 ft.)	Q	Front Axle Center to Machine Front	3,255 mm (10 ft. 8 in.)
C	Width over Mudguards	3,495 mm (11 ft. 6 in.)	R	Front Axle Center to Artic Center	1,558 mm (5 ft. 1 in.)
D	Width over Tires - 875/65 R29	3,656 mm (12 ft.)	S	Approach Angle	24 °
D	Width over Tires - 29.5R25	3,487 mm (11 ft. 5 in.)	T	Maximum Bin Tip Angle	70 °
E	Tire Track Width - 875/65 R29	2,773 mm (9 ft. 1 in.)	U	Maximum Articulation Angle	42 °
E	Tire Track Width - 29.5R25	2,725 mm (8 ft. 11 in.)	V	Front Tie Down Height	1,265 mm (4 ft. 2 in.)
F	Width over Bin	3,372 mm (11 ft.)	W	Machine Lifting Centers	10,594 mm (34 ft. 9 in.)
F1	Width over Tailgate	3,662 mm (12 ft.)	X	Inner Turning Circle Radius - 875/65R29	4,782 mm (15 ft. 8 in.)
G	Width over Mirrors - Operating Position	3,614 mm (11 ft. 10 in.)	X	Inner Turning Circle Radius - 29.5R25	4,866 mm (16 ft.)
H	Ground Clearance - Artic	545 mm (21.5 in.)	Y	Outer Turning Circle Radius - 875/65R29	9,320 mm (30 ft. 7 in.)
I	Ground Clearance - Front Axle	545 mm (21.5 in.)	Y	Outer Turning Circle Radius - 29.5R25	9,235 mm (30 ft. 4 in.)
J	Ground Clearance - Bin Fully Tipped	876 mm (34.5 in.)			

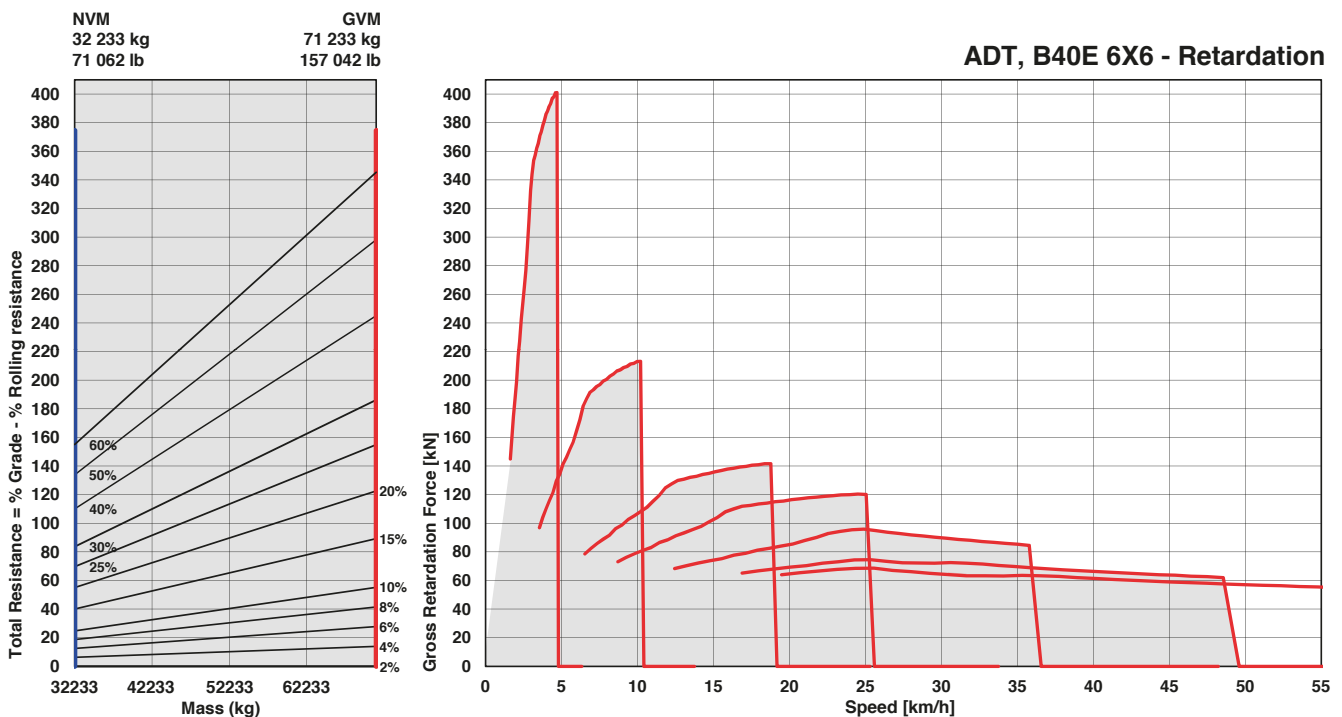
## Gradeability/Rimpull

1. Determine tractive resistance by finding intersection of vehicle mass line and grade line. NOTE: 2% typical rolling resistance is already assumed in chart and grade line.
2. From this intersection, move straight right across charts until line intersects rimpull curve.
3. Read down from this point to determine maximum speed attained at that tractive resistance.



## Retardation

1. Determine retardation force required by finding intersection of vehicle mass line.
2. From this intersection, move straight right across charts until line intersects the curve. NOTE: 2% typical rolling resistance is already assumed in chart.
3. Read down from this point to determine maximum speed.



# Features and Options

● STANDARD ▲ OPTION

B40E	B45E	B50E	
			<b>ENGINE</b>
●	●	●	Jacobs Engine Brake®
●	●	●	Dual element air cleaner with dust ejector valve
●	●	●	Precleaner with automatic dust scavenging
●	●	●	Water separator
●	●	●	Serpentine drive belt with automatic tensioner
●	●	●	Provision for fast fill
●	●	●	Wet-sleeve cylinder liners
			<b>COOLING</b>
●	●	●	Crankshaft mounted electronically controlled viscous fan drive
●	●	●	Fan guard
			<b>PNEUMATIC SYSTEM</b>
●	●	●	Engine-mounted compressor
●	●	●	Air drier with heater
●	●	●	Integral unloader valve
			<b>ELECTRICAL SYSTEM</b>
▲	▲	▲	PDS Hardware
●	●	●	Battery disconnect
●	●	●	Halogen drive lights
▲	▲	▲	LED drive lights
●	●	●	Air horn
●	●	●	Reverse alarm
▲	▲	▲	White noise reverse alarm
●	●	●	Rotating beacon
●	●	●	Pitch Roll Sensor
●	●	●	Halogen Artic reverse light
▲	▲	▲	LED Artic reverse light
●	●	●	LED reverse lights
			<b>STEERING SYSTEM</b>
●	●	●	Uni-directional pump
▲	▲	▲	Bi-directional pump
			<b>CAB</b>
●	●	●	ROPS/FOPS certification
●	●	●	Tilt cab
●	●	●	Gas strut-supported door
●	●	●	I-Tip programmable dump-body tip settings
●	●	●	HVAC Climate control system
●	●	●	AM/FM radio with Aux + USB
●	●	●	Rear window guard
●	●	●	Wiper/washer with intermittent control
●	●	●	Tilt and telescoping steering wheel
●	●	●	Centre-mount air-suspension seat
●	●	●	Halogen work lights
▲	▲	▲	LED work lights
▲	▲	▲	Rotating beacon: seat belt installation
▲	▲	▲	Remote engine and machine isolation
●	●	●	Remote battery jump start
●	●	●	Retractable 3-point seat belt
●	●	●	Heated seat
●	●	●	Foldaway trainer seat with retractable seat belt
●	●	●	12-volt power outlet
●	●	●	Cab utility bin (removable)
●	●	●	Cup holder
●	●	●	Cooled/heated lunch box

B40E	B45E	B50E	
			<b>CAB (continued)</b>
			Manually adjusted mirrors
			Heated mirrors
●	●	●	Electrically adjusted and heated mirrors
●	●	●	Deluxe 10" color LCD:
			Speedometer / Fuel gauge / Transmission oil temperature gauge / Engine coolant temperature gauge / LED function/warning indicators and audible alarm / Transmission gear selection / Tachometer / Battery voltage / Hour meter / Odometer / Fuel consumption / Tip counter / Trip timer / Trip distance / Metric/English units / Service codes/diagnostics
●	●	●	Backlit sealed switch module functions with:
			Wiper control / Lights / Heated mirrors / Retarding aggressiveness / Transfer case differential lock / Transmission gear hold / Dump-body tip limit / Automatic dump-body tip settings / Airconditioner/ Heater controls / Preselected Speed Control
			<b>DUMP BODY</b>
●	●	●	Dump body mechanical locks (x2).
			Partially up and fully up
▲	▲	▲	Body liner
▲	▲	▲	Tailgate
▲	▲	▲	Body heater
▲	▲	▲	Less dump body and cylinders
▲	▲	▲	Bin extensions
▲	▲	▲	Bin pole lockout
			<b>OTHER</b>
●	●	●	Automatic Traction Control (ATC)
●	●	●	Wet disc brakes
●	●	▲	29.5 R 25 Radial Earthmover tires
▲	▲	●	875/65 R 29 Radial Earthmover tires
●	●		Remote grease banks
▲	▲	●	Automatic greasing
●	●	●	Onboard weighing
▲	▲	▲	Load lights: stack
▲	▲	●	Comfort ride suspension (front)
▲	▲	▲	Comfort ride suspension (rear)
▲	▲	▲	Reverse camera
●	●	●	Hand rails
▲	▲	▲	HSE hand rails
●	●	●	Cab peak
▲	▲	▲	High pressure hydraulic filter
▲	▲	▲	Fuel heater
●	●	●	Belly plate
▲	▲	▲	Belly covers
▲	▲	▲	Remote transmission filters
●	●	●	Engine and transmission remote drain-gravity
▲	▲	▲	Engine and transmission remote drain-scavenge
▲	▲	▲	Window smash button
●	●	●	High visibility mirrors
●	●	●	Fleetm@tic® Classic package for 5 years
●	●	●	Electronic hood opening