

B50E Articulated Dump Truck

ENGINE Manufacturer Mercedes Benz (MTU) Model OM473LA (MTU 6R 1500) Configuration Inline 6, turbocharged and intercooled Gross Power 430 kW (577 hp) @ 1,700 rpm Net Power 405 kW (543 hp) @ 1,700 rpm Gross Torque 2,750 Nm (2,028 lbf) @ 1,300 rpm Displacement 15.6 liters (952 cu.in) Auxiliary Brake Jacobs Engine Brake® Fuel Tank Capacity 494 liters (130 US gal) AdBlue® Tank Capacity 40 liters (11 US gal) Certification OM473LA (MTU 6R 1500) meets EPA Tier 4 final/Stage V emissions regulations	Torque Control Hydrodynamic with lock-up in all gears TRANSFER CASE Manufacturer Kessler Series W2400 Layout Remote mounted Gear Layout Three in-line helical gears Output Differential Interaxle 29/71 proportional differential. Automatic inter-axle differential lock.	Total Retardation Power Continuous: 546 kW (732 hp) Maximum: 963 kW (1,291 hp) WHEELS Type Radial Earthmover Tire 875/65 R 29 (29.5 R 25 optional) FRONT SUSPENSION Semi-independent, leading A-frame supported by hydro-pneumatic suspension struts. Suspension is electronically controlled adaptive suspension with ride height adjustment.	Steering Angle 42° DUMPING SYSTEM Two double-acting, single stage, dump cylinders Raise Time 11.5 seconds Lowering Time 6 seconds Tipping Angle 70 deg standard, or any lower angle programmable																								
TRANSMISSION Manufacturer Allison Model 4800 ORS Configuration Fully automatic planetary transmission Layout Engine mounted Gear Layout Constant meshing planetary gears, clutch operated Gears 7 Forward, 1 reverse Clutch Type Hydraulically operated multi-disc Control Type Electronic	AXLES Manufacturer Bell Model 30T Differential High input controlled traction differential with spiral bevel gears Final Drive Outboard heavy duty planetary on all axles BRAKING SYSTEM Service Brake Dual circuit, full hydraulic actuation wet disc brakes on front, middle and rear axles. Wet brake oil is circulated through a filtration and cooling system. Maximum brake force: 488 kN (109,707 lbf) Park & Emergency Spring applied, air released driveline mounted disc Maximum brake force: 215.5 kN (48,446 lbf) Auxiliary Brake Automatic Jacobs Engine Brake®. Automatic retardation through electronic activation of wet brake system.	REAR SUSPENSION Pivoting walking beams with laminated rubber suspension blocks Option: Comfort Ride suspension walking beams, with two-stage sandwich block HYDRAULIC SYSTEM Full load sensing system serving the prioritized steering, body tipping, suspension and brake functions. A ground-driven, load sensing emergency steering pump is integrated into the main system. Pump Type Variable displacement load sensing piston Flow 330 L/min (87 gal/min) Pressure 315 bar (4,569 psi) Filter 5 microns STEERING SYSTEM Double acting cylinders, with ground-driven emergency steering pump Lock to lock turns 4.9	PNEUMATIC SYSTEM Air drier with heater and integral unloader valve, serving park brake and auxiliary functions System Pressure 810 kPa (117 psi) ELECTRICAL SYSTEM Voltage 24 V Battery Type Two AGM (Absorption Glass Mat) type Battery Capacity 2 X 75 Ah Alternator Rating 28V 80A MAX. VEHICLE SPEED <table border="1"> <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> CAB ROPS/FOPS certified 77 dBA internal sound level measured according to ISO 6396	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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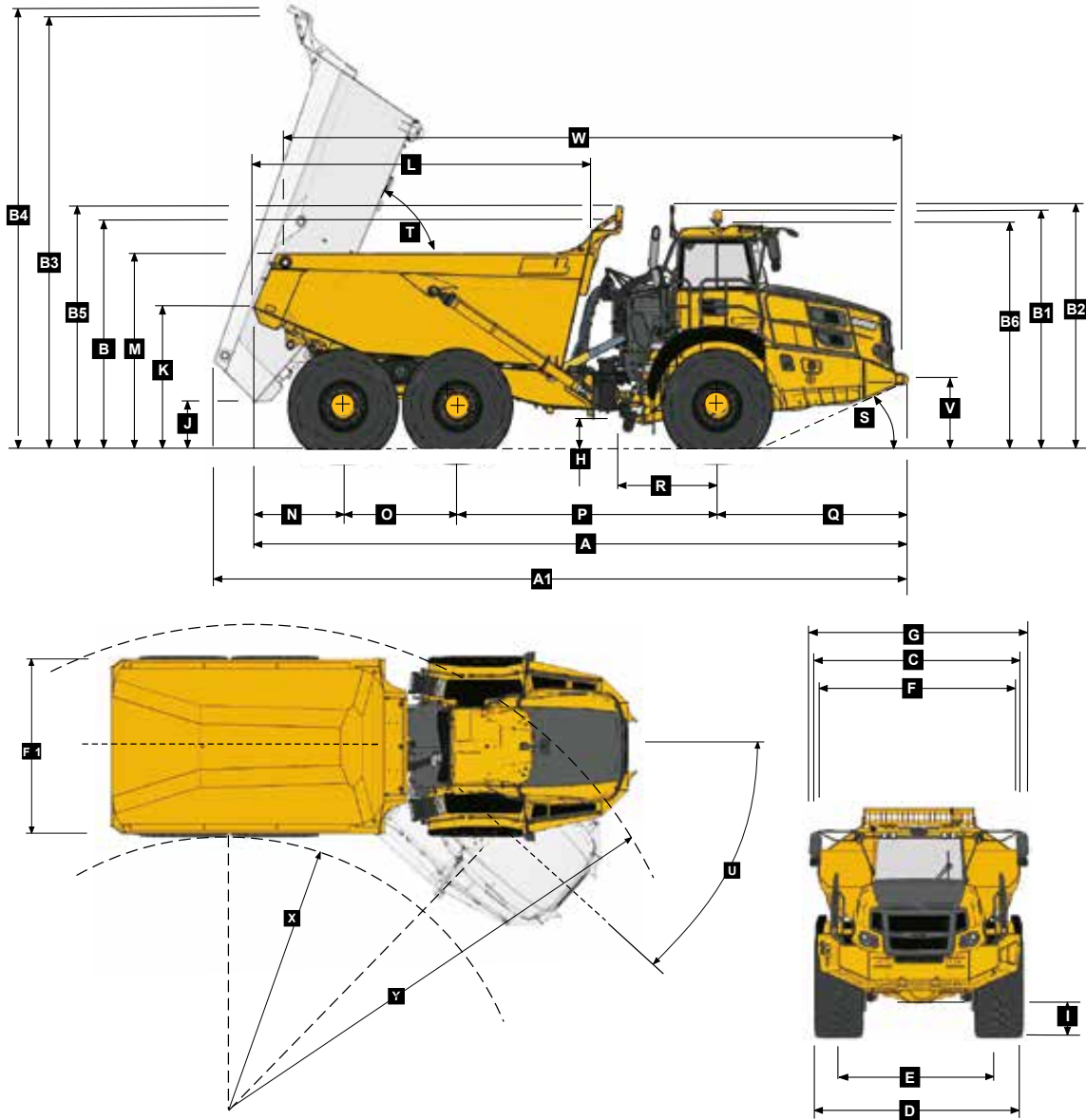
Load Capacity & Ground Pressure

OPERATING WEIGHTS		GROUND PRESSURE*		LOAD CAPACITY		OPTION WEIGHTS	
UNLADEN	kg (lb)	LADEN		BODY	m ³ (yd ³)	kg (lb)	
Front	18,484 (40,750)	(No sinkage/Total Contact Area Method)		Struck Capacity	21.5 (28)	Bin liner	1,495 (3,296)
Middle	8,648 (19,066)	875/65 R29	kPa (Psi)	SAE 2:1 Capacity	27.5 (36)	Tailgate	1,117 (2,463)
Rear	8,543 (18,834)	Front	296 (43)	SAE 1:1 Capacity	33 (43)	29.5 R 25	
Total	35,675 (78,650)	Mid & Rear	366 (53)	SAE 2:1 Capacity with Tailgate	29 (38)	(per vehicle) Minus	1,182 (2,606)
LADEN						EXTRA WHEELSET	
Front	24,204 (53,361)	29.5 R 25	kPa (Psi)			29.5 R 25	800 (1,764)
Middle	28,488 (62,805)	Front	326 (47)	Rated Payload	45,400 kg	875/65 R29	1,024 (2,258)
Rear	28,383 (62,574)	Mid & Rear	395 (57)		(100,090 lb)		
Total	81,075 (178,740)						

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

Dimensions

B50E

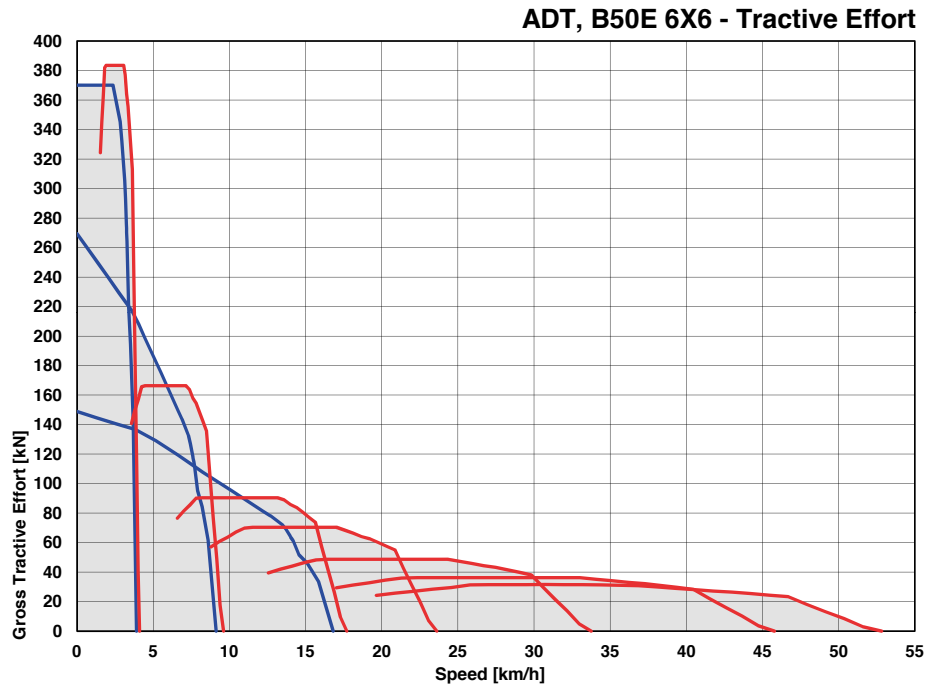
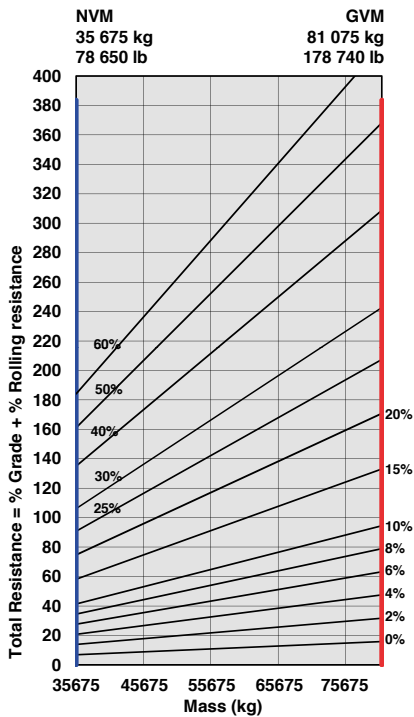


Machine Dimensions

A	Length - Transport Position with Tailgate	11,272 mm	(37 ft.)	I	Ground Clearance - Front Axle	555 mm	(21.9 in.)
A	Length - Transport Position w/o Tailgate	11,272 mm	(37 ft.)	J	Ground Clearance - Bin Fully Tipped	907 mm	(35.7 in.)
A1	Length - Bin Fully Tipped	11,916 mm	(39 ft. 1 in.)	K	Bin Lip Height - Transport Position	2,542 mm	(8 ft. 4 in.)
B	Height - Transport Position w/o Rock Guard	3,822 mm	(12 ft. 6 in.)	L	Bin Length	5,714 mm	(18 ft. 9 in.)
B	Height - Transport Position with Rock Guard	3,870 mm	(12 ft. 8 in.)	M	Load over Height	3,390 mm	(11 ft. 1 in.)
B1	Height - Rotating Beacon	4,050 mm	(13 ft. 3 in.)	N	Rear Axle Center to Bin Rear	1,533 mm	(5 ft.)
B2	Height - Load Light	4,141 mm	(13 ft. 7 in.)	O	Mid Axle Center to Rear Axle Center	1,950 mm	(6 ft. 5 in.)
B3	Bin Height - Fully Tipped w/o Rock Guard	7,325 mm	(24 ft.)	P	Mid Axle Center to Front Axle Center	4,438 mm	(14 ft. 7 in.)
B4	Bin Height - Fully Tipped with Rock Guard	7,430 mm	(24 ft. 5 in.)	Q	Front Axle Center to Machine Front	3,351 mm	(11 ft.)
B5	Height - Rock Guard Operating Position	4,148 mm	(13 ft. 7 in.)	R	Front Axle Center to Artic Center	1,558 mm	(5 ft. 1 in.)
B6	Height - Cab	3,813 mm	(12 ft. 6 in.)	S	Approach Angle	23°	
C	Width over Mudguards	3,790 mm	(12 ft. 5 in.)	T	Maximum Bin Tip Angle	70°	
D	Width over Tires - 875/65 R29	3,832 mm	(12 ft. 7 in.)	U	Maximum Articulation Angle	42°	
D	Width over Tires - 29.5R25	3,714 mm	(12 ft. 2 in.)	V	Front Tie Down Height	1,269 mm	(4 ft. 2 in.)
E	Tire Track Width - 875/65 R29	2,949 mm	(9 ft. 8 in.)	W	Machine Lifting Centers	10,632 mm	(34 ft. 11 in.)
E	Tire Track Width - 29.5R25	2,952 mm	(9 ft. 8 in.)	X	Inner Turning Circle Radius - 875/65R29	4,694 mm	(15 ft. 5 in.)
F	Width over Bin	3,735 mm	(12 ft. 3 in.)	X	Inner Turning Circle Radius - 29.5R25	4,753 mm	(15 ft. 7 in.)
F1	Width over Tailgate	4,057 mm	(13 ft. 4 in.)	Y	Outer Turning Circle Radius - 875/65R29	9,408 mm	(30 ft. 10 in.)
G	Width over Mirrors - Operating Position	4,027 mm	(13 ft. 3 in.)	Y	Outer Turning Circle Radius - 29.5R25	9,349 mm	(30 ft. 8 in.)
H	Ground Clearance - Artic	558 mm	(22 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.

