E-series

Articulated Dump Trucks

B35E I B40E I B45E I B50E I B60E

Stage IV/Tier 4f Certified

BELL

Technical Data - B45E

ENGINE

Manufacturer
Mercedes Benz (MTU)

Model
OM471LA (MTU 6R 1300)

Configuration
Inline 6, turbocharged and intercooled.

Gross Power
390 kW (523 hp) @ 1 700 rpm

Net Power
369 kW (495 hp) @ 1 700 rpm

Gross Torque
2 460 Nm (1 814 lbft) @ 1 300 rpm

Displacement
12,8 litres (781 cu.in)

Auxiliary Brake
Engine Valve Brake

Fuel Tank Capacity
352 litres (93 US gal)

AdBlue® Tank Capacity
40 litres (11 US gal)

Certification
OM471LA (MTU 6R 1300) meets EU Stage IV / EPA Tier 4 Final emissions regulations.

TRANSMISSION

Manufacturer
Allison

Model
4700 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

Torque Control
Hydrodynamic with lock-up in all gears.

TRANSFER CASE

Manufacturer
Bell VGR

Model
18050

Layout
Remote mounted

Gear Layout
Three in-line helical gears

Output Differential
Interaxle 33/67 proportional differential. Automatic inter-axle differential lock.

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 and middle axles. Wet brake oil is circulated through a filtration and cooling system.

Maximum brake force:
327 kN (73 513 lbf)

Park & Emergency
Spring applied, air released driveline mounted disc.

Maximum brake force:
218 kN (49 008 lbf)

Auxiliary Brake
Automatic engine valve brake. Automatic retardation through electronic activation of wet brake system.

Total Retardation Power
Continuous: 442 kW (593 hp)
Maximum: 854 kW (1 145 hp)

WHEELS

Type
Radial Earthmover

Tyre
29.5 R 25 (875/65 R 29 optional)

FRONT SUSPENSION

Semi-independent, leading A-frame supported by hydro-pneumatic suspension struts.

Option: Electronically controlled adaptive suspension with ride height adjustment.

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 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
5

Steering Angle
42°

DUMPING SYSTEM

Two double-acting, single stage, dump cylinders.

Raise Time
11 seconds

Lowering Time
6 seconds

Tipping Angle
70 deg standard, or any lower angle programmable

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

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

CAB

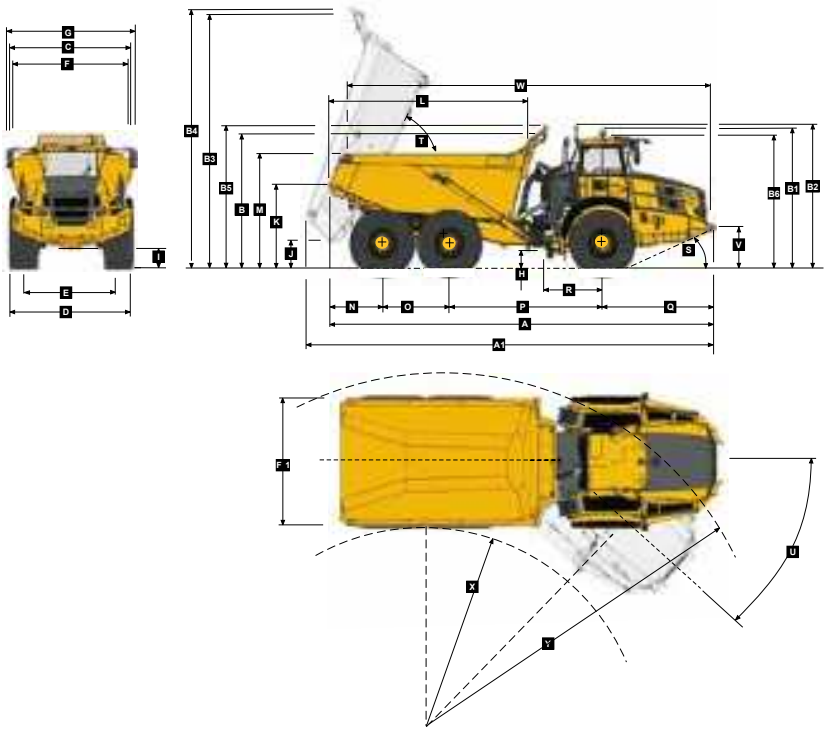
ROPS/FOPS certified 74 dBA internal sound level measured according to ISO 6396.

Load Capacity & Ground Pressure

OPERATING WEIGHTS		GROUND PRESSURE*		LOAD CAPACITY		OPTION WEIGHTS	
UNLADEN	kg (lb)	LADEN		BODY	m^3 (yd^3)		kg (lb)
Front	16 984 (37 443)	(No sinkage/Total Contact Area Method)		Struck Capacity	19,5 (25,5)	Bin liner	1 404 (3 095)
Middle	7 778 (17 148)	29.5 R 25	kPa (Psi)	SAE 2:1 Capacity	25 (33)	Tailgate	1 013 (2 233)
Rear	7 564 (16 676)	Front	321 (47)	SAE 1:1 Capacity	29,5 (38)	875/65 R29	
Total	32 326 (71 267)	Mid & Rear	370 (54)	SAE 2:1 Capacity		(per vehicle) Add	1 182 (2 606)
LADEN				with Tailgate	26 (34)		
Front	22 109 (48 742)	875/65 R29	kPa (Psi)			EXTRA WHEELSET	
Middle	25 715 (56 692)	Front	294 (43)	Rated Payload	41 000 kg	29.5 R 25	800 (1 764)
Rear	25 502 (56 222)	Mid & Rear	331 (48)		(90 390 lb)	875/65 R29	1 024 (2 258)
Total	73 326 (161 656)						

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

Dimensions

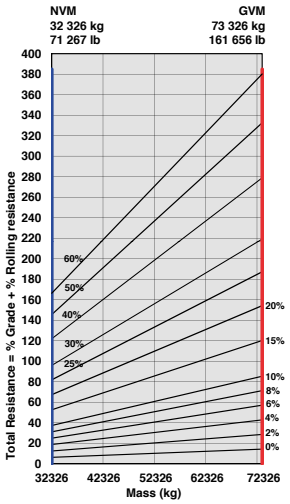


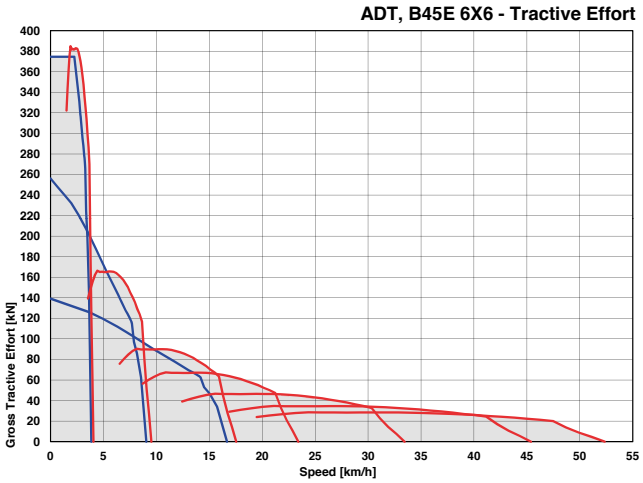
Machine Dimensions

A	Length - Transport Position with Tailgate	11184 mm	(36 ft. 8 in.)
A	Length - Transport Position w/o Tailgate	11184 mm	(36 ft. 8 in.)
A1	Length - Bin Fully Tipped	11778 mm	(38 ft. 8 in.)
B	Height - Transport Position w/o Rock Guard	3802 mm	(12 ft. 6 in.)
B	Height - Transport Position with Rock Guard	3844 mm	(12 ft. 7 in.)
B1	Height - Rotating Beacon	4038 mm	(13 ft. 3 in.)
B2	Height - Load Light	4127 mm	(13 ft. 6 in.)
B3	Bin Height - Fully Tipped w/o Rock Guard	7340 mm	(24 ft. 1 in.)
B4	Bin Height - Fully Tipped with Rock Guard	7448 mm	(24 ft. 5 in.)
B5	Height - Rock Guard Operating Position	4123 mm	(13 ft. 6 in.)
B6	Height - Cab	3802 mm	(12 ft. 6 in.)
C	Width over Mudguards	3495 mm	(11 ft. 6 in.)
D	Width over Tyres - 875/65 R29	3656 mm	(12 ft.)
D	Width over Tyres - 29.5R25	3487 mm	(11 ft. 5 in.)
E	Tyre Track Width - 875/65 R29	2773 mm	(9 ft. 1 in.)
E	Tyre Track Width - 29.5R25	2725 mm	(8 ft. 11 in.)
F	Width over Bin	3448 mm	(11 ft. 4 in.)
F1	Width over Tailgate	3738 mm	(12 ft. 3 in.)
G	Width over Mirrors - Operating Position	4027 mm	(13 ft. 3 in.)
H	Ground Clearance - Artic	545 mm	(21.46 in.)
I	Ground Clearance - Front Axle	543 mm	(21.34 in.)
J	Ground Clearance - Bin Fully Tipped	880 mm	(34.65 in.)
K	Bin Lip Height - Transport Position	2521 mm	(8 ft. 3 in.)
L	Bin Length	5753 mm	(18 ft. 10in.)
M	Load over Height	3316 mm	(10 ft. 11 in.)
N	Rear Axle Centre to Bin Rear	1540 mm	(5 ft.)
O	Mid Axle Centre to Rear Axle Centre	1950 mm	(6 ft. 5 in.)
P	Mid Axle Centre to Front Axle Centre	4438 mm	(14 ft. 7 in.)
Q	Front Axle Centre to Machine Front	3256 mm	(10 ft. 8 in.)
R	Front Axle Centre to Artic Centre	1558 mm	(ft. 1 in.)
S	Approach Angle	24 °	
T	Maximum Bin Tip Angle	70 °	
U	Maximum Articulation Angle	42 °	
V	Front Tie Down Height	1262 mm	(4 ft. 2 in.)
W	Machine Lifting Centres	10569 mm	(34 ft. 8 in.)
X	Inner Turning Circle Radius - 875/65R29	4782 mm	(15 ft. 8 in.)
X	Inner Turning Circle Radius - 29.5R25	4866 mm	(16 ft.)
Y	Outer Turning Circle Radius - 875/65R29	9320 mm	(30 ft. 7 in.)
Y	Outer Turning Circle Radius - 29.5R25	9235 mm	(30 ft. 4 in.)

Grade Ability/Rimpull

1. Determine tractive force 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 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 the curve.
3. Read down from this point to determine maximum speed.