# Articulated Dump Trucks - B60E 4x4

**BELL**

## Technical Data

### 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 lbft) @ 1 300 rpm

**Displacement**
15,6 litres (952 cu.in)

**Auxiliary Brake**
Engine Valve Brake

**Fuel Tank Capacity**
494 litres (130 US gal)

**AdBlue® Tank Capacity**
40 litres (11 US gal)

**Certification**
OM473LA (MTU 6R 1500) meets EU Stage V emissions regulations.

### 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

**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.

### AXLES

**Manufacturer**
Front - Bell
Rear - Kessler

**Model**
Front: 30T
Rear: 71T

**Differential**
Front: High input controlled traction differential with spiral bevel gears

Rear: Centre input open 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 rear axles. Wet brake oil is circulated through a filtration and cooling system.

Maximum brake force:
437 kN (98 242 lbf)

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

Maximum brake force:
379 kN (85 203 lbf)

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

**Total Retardation Power**
Continuous: 574 kW (770 hp)
Maximum: 983 kW (1 318 hp)

### WHEELS

**Type**
Radial Earthmover

**Tyre**
Front: 875/65 R29
Rear: Twin 24.00 R35

### FRONT SUSPENSION

Semi-independent, leading A-frame supported by hydro-pneumatic suspension struts. Suspension is electronically controlled adaptive suspension with ride height adjustment.

### REAR SUSPENSION

Trailing arm cradle supported by hydro-pneumatic suspension struts, with an additional lateral stabiliser.

### 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**
250 bar (3 626 psi)

**Filter**
5 microns

### STEERING SYSTEM

Double acting cylinders, with ground-driven emergency steering pump.

**Lock to lock turns**
4,9

**Steering Angle**
42º

### DUMPING SYSTEM

Two double-acting, two stage telescopic, dump cylinders.

**Raise Time**
17 seconds

**Lowering Time**
18 seconds

**Tipping Angle**
55 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 | 8 km/h | 5,6 mph |
| 3rd | 16 km/h | 10,6 mph |
| 4th | 21 km/h | 13,7 mph |
| 5th | 30 km/h | 20 mph |
| 6th | 41 km/h | 27 mph |
| 7th | 47 km/h | 32 mph |
| R | 6 km/h | 4 mph |

### CAB

ROPS/FOPS certified 77 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** | **m³ (yd³)** | | **kg (lb)** |
| Front | 20 211 (44 558) | (No sinkage/Total Contact Area Method) | | Struck Capacity | 27 (35,3) | Bin liner | 1 116 (2 460) |
| Rear | 22 265 (49 086) | **875/65 R29** | **kPa (Psi)** | SAE 2:1 Capacity | 35 (45,8) | Tailgate | 1 516 (3 342) |
| Total | 42 476 (93 644) | Front | 333 (48) | SAE 1:1 Capacity | 42 (54,9) | | |
| | | | | SAE 2:1 Capacity | | **EXTRA WHEELSET** | |
| **LADEN** | | **24.00 R35** | **kPa** | with Tailgate | 35,6 (46,6) | 875/65 R29 | 1 024 (2 258) |
| Front | 26 811 (59 108) | Rear | 469 (68) | | | 24.00 R35 | 1 240 (2 734) |
| Rear | 70 665 (155 768) | | | Rated Payload | 55 000 kg | | |
| Total | 97 476 (214 898) | | | | (121 254 lb) | | |

* Front ground pressure calculated with Michelin XAD65-1 tyre. Rear ground pressure calculated with Michelin XDT B tyre.

# Dimensions
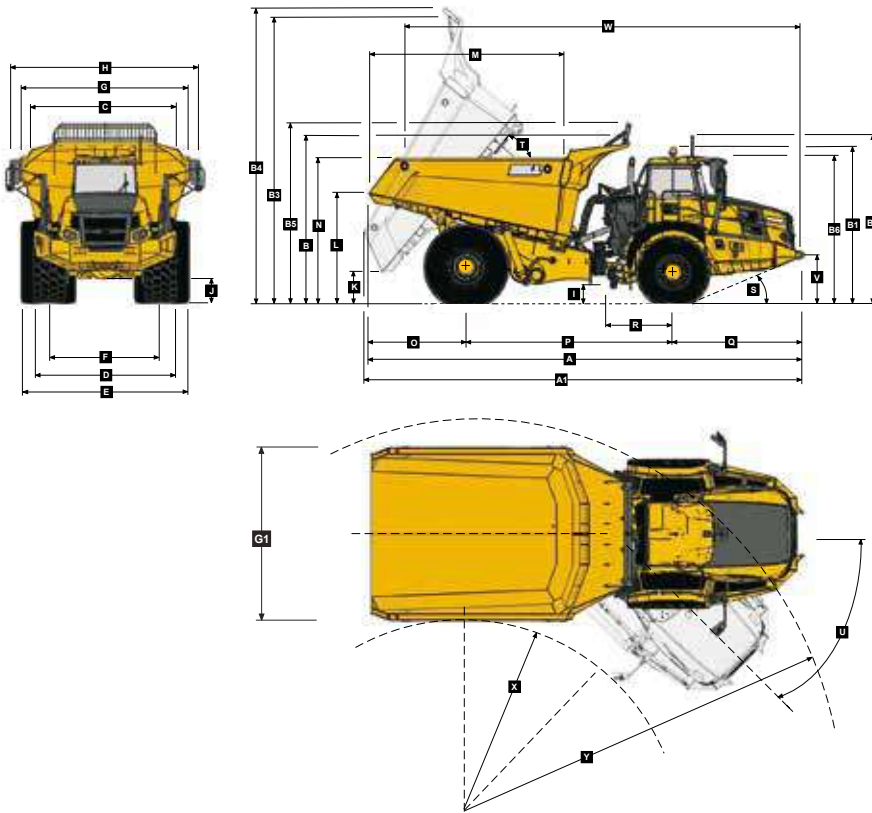
| Machine Dimensions | | |
|---|---|---|
| A | Length - Transport Position | 11 114 mm (36 ft. 6 in.) |
| A1 | Length - Bin Fully Tipped | 11 178 mm (36 ft. 8 in.) |
| B | Height - Transport Position w/o Rock Guard | 4 209 mm (13 ft.10 in.) |
| B | Height - Transport Position with Rock Guard | 4 212 mm (13 ft.10 in.) |
| B1 | Height - Rotating Beacon | 4 050 mm (13 ft. 3 in.) |
| B2 | Height - Load Light | 4 333 mm (14 ft. 2 in.) |
| B3 | Bin Height - Fully Tipped w/o Rock Guard | 7 476 mm (24 ft. 6 in.) |
| B4 | Bin Height - Fully Tipped with Rock Guard | 7 692 mm (25 ft. 3 in.) |
| B5 | Height - Rock Guard Operating Position | 4 675 mm (15 ft. 4 in.) |
| B6 | Height - Cab | 3 813 mm (12 ft. 6 in.) |
| C | Width over Mudguards | 3 790 mm (12 ft. 5 in.) |
| D | Width over Tyres - Front - 875/65 R29 | 3 832 mm (12 ft. 7 in.) |
| E | Width over Tyres - Rear - 24.00R35 | 4 444 mm (14 ft. 7 in.) |
| F | Tyre Track Width - Front | 2 949 mm (9 ft. 8 in.) |
| F | Tyre Track Width - Rear | 2 992 mm (9 ft. 10 in.) |
| G | Width over Bin | 4 487 mm (14 ft. 9 in.) |
| G1 | Width over Tailgate | 4 800 mm (15 ft. 9 in.) |
| H | Width over Mirrors - Operating Position | 5 242 mm (17 ft. 2 in.) |
| I | Ground Clearance - Artic | 561 mm (22. 09 in.) |
| J | Ground Clearance - Front Axle | 554 mm (21. 81 in.) |
| K | Ground Clearance - Bin Fully Tipped | 851 mm (33. 5 in.) |
| L | Bin Lip Height - Transport Position | 2 952 mm (9 ft. 8 in.) |
| M | Bin Length | 5 036 mm (16 ft. 6 in.) |
| N | Load over Height | 3 824 mm (12 ft. 7 in.) |
| O | Rear Axle Centre to Bin Rear | 2 477 mm (8 ft. 2 in.) |
| P | Rear Axle Centre to Front Axle Centre | 5 285 mm (17 ft. 4 in.) |
| Q | Front Axle Centre to Machine Front | 3 352 mm (11 ft.) |
| R | Front Axle Centre to Artic Centre | 1 558 mm (5 ft. 1 in.) |
| S | Approach Angle | 22 ° |
| T | Maximum Bin Tip Angle | 55 ° |
| U | Maximum Articulation Angle | 42 ° |
| V | Front Tie Down Height | 1 263 mm (4 ft. 2 in.) |
| W | Machine Lifting Centres | 10 116 mm (33 ft. 2 in.) |
| X | Inner Turning Circle Radius | 4 246 mm (13 ft.11 in.) |
| Y | Outer Turning Circle Radius | 9 216 mm (30 ft. 3 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.
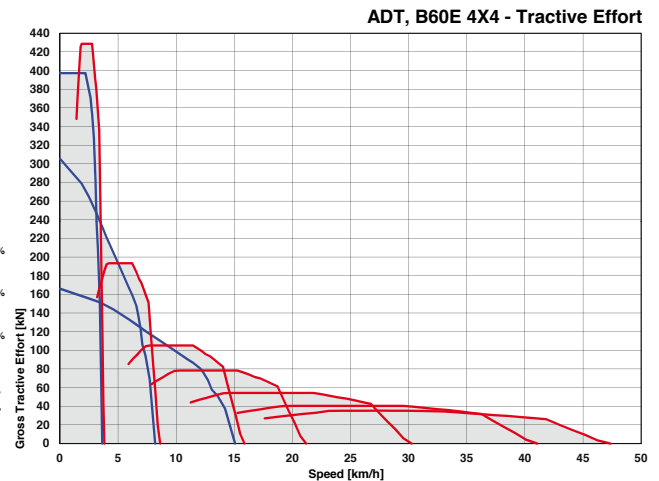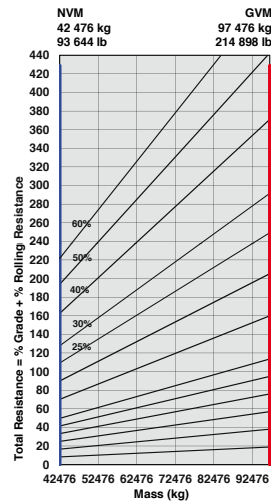
# Retardation

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.