

# Technical Data - B18E

## ENGINE

Mercedes Benz OM 924 LA  
 Gross Power  
 160 kW (214 hp) @ 2,200 rpm  
 Net Power  
 152 kW (204 hp) @ 2,200 rpm

Torque  
 810 Nm (597 lbft) @ 1,200 -1,600 rpm

Displacement  
 4,80 litres (293 cu.in)

Fuel Tank Capacity  
 200 l (53 US gal)

Auxiliary Brake  
 Exhaust brake  
 Engine Valve Brake (EVB)

Certification  
 OM 924 LA meets EU Stage IIIA/EPA Tier 3 emissions regulations

## TRANSMISSION

Standard Non-retarder: Allison 3000P ORS  
 Optional Retarder: Allison 3000PR ORS

Layout  
 Engine mounted

Gear Layout  
 Constant meshing planetary gears

Gears  
 Automatic: 6 Forward, 1 Reverse

Clutch Type  
 Hydraulically operated multidisc

Control Type  
 Electronic

Torque Control  
 Hydrodynamic, with lock-up in all gears

## TRANSFER BOX

Bell GR 8000

Layout  
 Remote mounted

Gear Layout  
 Three in-line helical gears

Output Differential  
 Interaxle torque proportional, 67/33 Automatic inter axle diff lock

## AXLES

Bell 18T  
 Axle housings: fabricated steel  
 Differentials: high input limited slip on front and middle axle.  
 Final drive: outboard planetary.

## BRAKING SYSTEM

Service Brake  
 Dual circuit, full hydraulic actuation  
 Dry disc brakes with 8 calipers (4F, 2M, 2R).

Maximum Brake Force  
 244 kN (54,720 lbf) with standard tyres.

Park & Emergency  
 Spring applied air released, driveline mounted disc

Maximum Brake Force  
 181,5 kN (40,802 lbf)

Auxiliary Brake  
 Automatic exhaust brake and Engine Valve Brake (EVB).  
 Variable Adjustable Hydraulic retarder in transmission.

Maximum Retardation  
 119 kW (159 hp)  
 540 kW (724 hp) with retarder option

## WHEELS

Type  
 Radial Earthmover

Tyre  
 20.5R25

## FRONT SUSPENSION

Semi-independent, leading A-frame supported by hydro-pneumatic (oil/nitrogen) suspension struts.

## REAR SUSPENSION

Pivoting walking beams with laminated rubber suspension blocks

## HYDRAULIC SYSTEM

Variable displacement load sensing  
 Flow  
 155 l/min (41,5 gal/min)  
 Pressure  
 27 MPa (3,915 psi)

Filter  
 5 microns

## STEERING SYSTEM

Double-acting cylinders with ground driven emergency steering pump

Lock to lock turns  
 4.32

Steering Angle  
 45°

## DUMPING SYSTEM

Double-acting, single stage cylinders

Raise Time  
 10 s

Lowering Time  
 5,5 s

Tipping Angle  
 70°

## 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  
 28 V 80 A

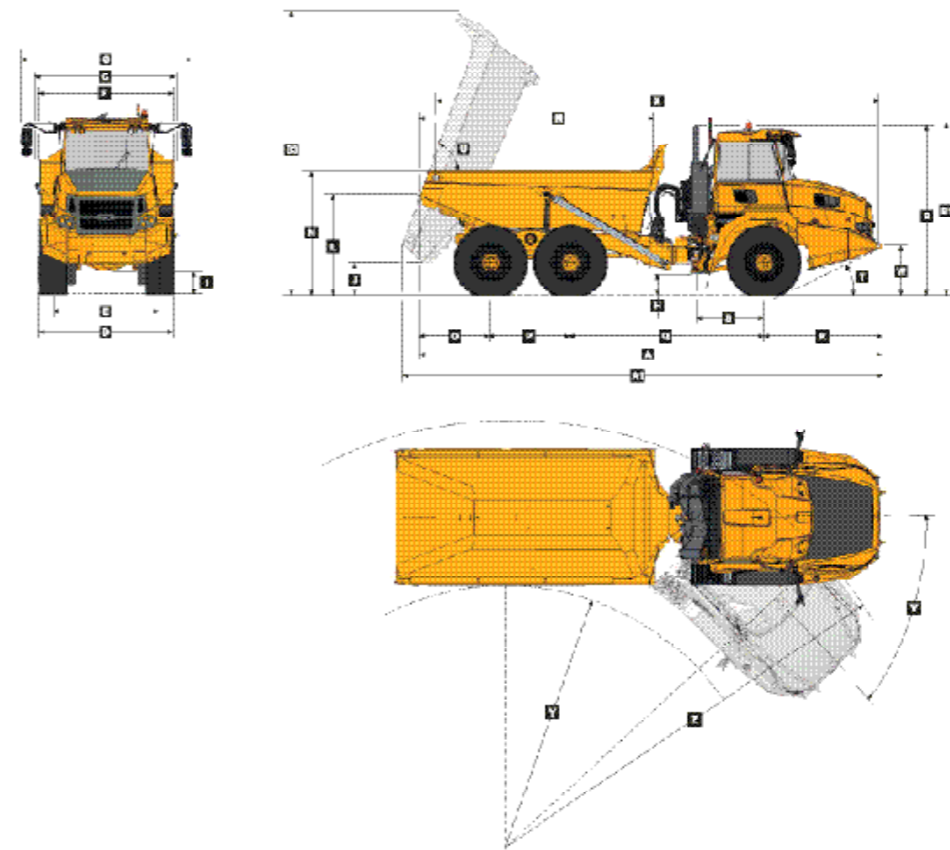
## VEHICLE SPEEDS

1st	11 km/h	7 mph
2nd	20 km/h	12 mph
3rd	27 km/h	17 mph
4th	38 km/h	24 mph
5th	50 km/h	31 mph
6th	50 km/h	31 mph
R	7 km/h	4 mph

## CAB

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

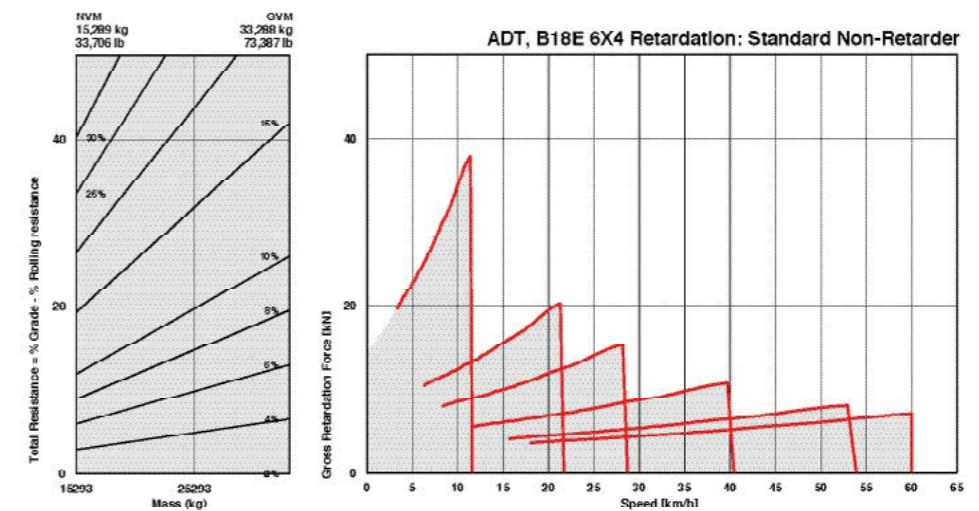
# Dimensions



Machine Dimensions		
A	Length - Transport Position	8271 mm
A1	Length - Bin Fully Tipped	9673 mm
B	Height - Transport Position	3424 mm
B1	Height - Rotating Swivel	3995 mm
B2	Height - Load Light	3630 mm
B3	Bin Height - Fully Tipped	5743 mm
C	Width over Mudguards	2885 mm
D	Width over Tyres - 20.5R25	2550 mm
E	Tyre Track Width - 20.5R25	2022 mm
F	Width over Bin	2540 mm
G	Width over Mirrors - Operating Position	3280 mm
H	Ground Clearance - Artic	470 mm
I	Ground Clearance - Front Axle	444 mm
J	Ground Clearance - Bin Fully Tipped	704 mm
K	Ground Clearance - Under Run Bar	10/A
L	Bin Lip Height - Transport Position	2060 mm
M	Bin Length	4700 mm
N	Load over Height	2933 mm
O	Rear Axle Centre to Bin Rear	1489 mm
P	Mid Axle Centre to Rear Axle Centre	1800 mm
Q	Mid Axle Centre to Front Axle Centre	3855 mm
R	Front Axle Centre to Machine Front	2357 mm
S	Front Axle Centre to Artic Centre	1391 mm
T	Approach Angle	26 °
U	Maximum Bin Tip Angle	70 °
V	Maximum Articulation Angle	46 °
W	Front Tie Down Height	1828 mm
X	Machine Lifting Centre	8845 mm
Y	Inner Turning Circle Radius - 20.5R25	3854 mm
Z	Outer Turning Circle Radius - 20.5R25	7309 mm

# Retardation

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

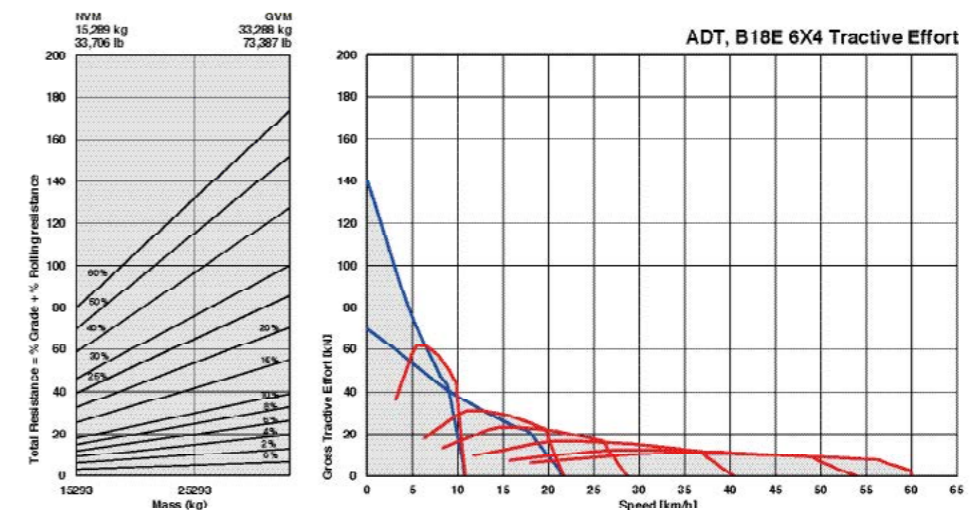


# Load Capacity & Ground Pressure

OPERATING WEIGHTS		GROUND PRESSURE				LOAD CAPACITY		OPTION WEIGHTS	
UNLADEN	kg (lb)	LADEN (No sinkage)		LADEN (15% sinkage)		BODY	m <sup>3</sup> (yd <sup>3</sup> )	Bin liner	kg (lb)
Front	8,075 (17,802)	20.5R25	kPa (Psi)	20.5R25	kPa (Psi)	Struck Capacity	9 (11)		802 (1,768)
Middle	3,885 (8,565)	Front	221 (32)	Front	145 (21)	SAE 2:1 Capacity	11 (14,5)		
Rear	3,329 (7,339)	Middle	302 (44)	Middle	185 (27)	SAE 1:1 Capacity	13,5 (17,5)		
Total	15,289 (33,706)	Rear	302 (44)	Rear	185 (27)				
LADEN						Rated Payload	18,000 kg (39,683 lbs)		
Front	10,023 (22,097)								
Middle	11,815 (26,048)								
Rear	11,450 (25,243)								
Total	33,288 (73,387)								

# Gradeability / Rimpull

- 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.
- From this intersection, move straight left across charts until line intersects rimpull curve.
- Read down from this point to determine maximum speed attained at that tractive resistance.



# Technical Data - B20E

## ENGINE

Mercedes Benz OM 924 LA  
Gross Power  
160 kW (214 hp) @ 2,200 rpm  
Net Power  
152 kW (204 hp) @ 2,200 rpm

Torque  
810 Nm (597 lbft) @ 1,200 -1,600 rpm

Displacement  
4,80 litres (293 cu.in)

Fuel Tank Capacity  
200 l (53 US gal)

Auxiliary Brake  
Exhaust brake  
Engine Valve Brake (EVB)

Certification  
OM 924 LA meets EU Stage IIIA/EPA Tier 3 emissions regulations

## TRANSMISSION

Standard Non-retarder: Allison 3000P ORS  
Optional Retarder: Allison 3000PR ORS

Layout  
Engine mounted

Gear Layout  
Constant meshing planetary gears

Gears  
Automatic: 6 Forward, 1 Reverse

Clutch Type  
Hydraulically operated multidisc

Control Type  
Electronic

Torque Control  
Hydrodynamic, with lock-up in all gears

## TRANSFER BOX

Bell GR 8000

Layout  
Remote mounted

Gear Layout  
Three in-line helical gears

Output Differential  
Interaxle torque proportional, 67/33  
Automatic inter axle diff lock

## AXLES

Bell 18T  
Axle housings: fabricated steel  
Differentials: high input limited slip on front and middle axle.  
Final drive: outboard planetary.

## BRAKING SYSTEM

Service Brake  
Dual circuit, full hydraulic actuation  
Dry disc brakes with 8 calipers (4F, 2M, 2R).

Maximum Brake Force  
244 kN (54,720 lbf) with standard tyres.

Park & Emergency  
Spring applied air released, driveline mounted disc

Maximum Brake Force  
181,5 kN (40,802 lbf)

Auxiliary Brake  
Automatic exhaust brake and Engine Valve Brake (EVB).  
Variable Adjustable Hydraulic retarder in transmission.

Maximum Retardation  
119 kW (159 hp)  
540 kW (724 hp) with retarder option

## WHEELS

Type  
Radial Earthmover

Tyre  
20.5R25

## FRONT SUSPENSION

Semi-independent, leading A-frame supported by hydro-pneumatic (oil/nitrogen) suspension struts.

## REAR SUSPENSION

Pivoting walking beams with laminated rubber suspension blocks

## HYDRAULIC SYSTEM

Variable displacement load sensing  
Flow  
155 l/min (41,5 gal/min)  
Pressure  
27 MPa (3,915 psi)  
Filter  
5 microns

## STEERING SYSTEM

Double-acting cylinders with ground driven emergency steering pump

Lock to lock turns  
4.32

Steering Angle  
45°

## DUMPING SYSTEM

Double-acting, single stage cylinders

Raise Time  
10 s

Lowering Time  
5,5 s

Tipping Angle  
70°

## 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  
28 V 80 A

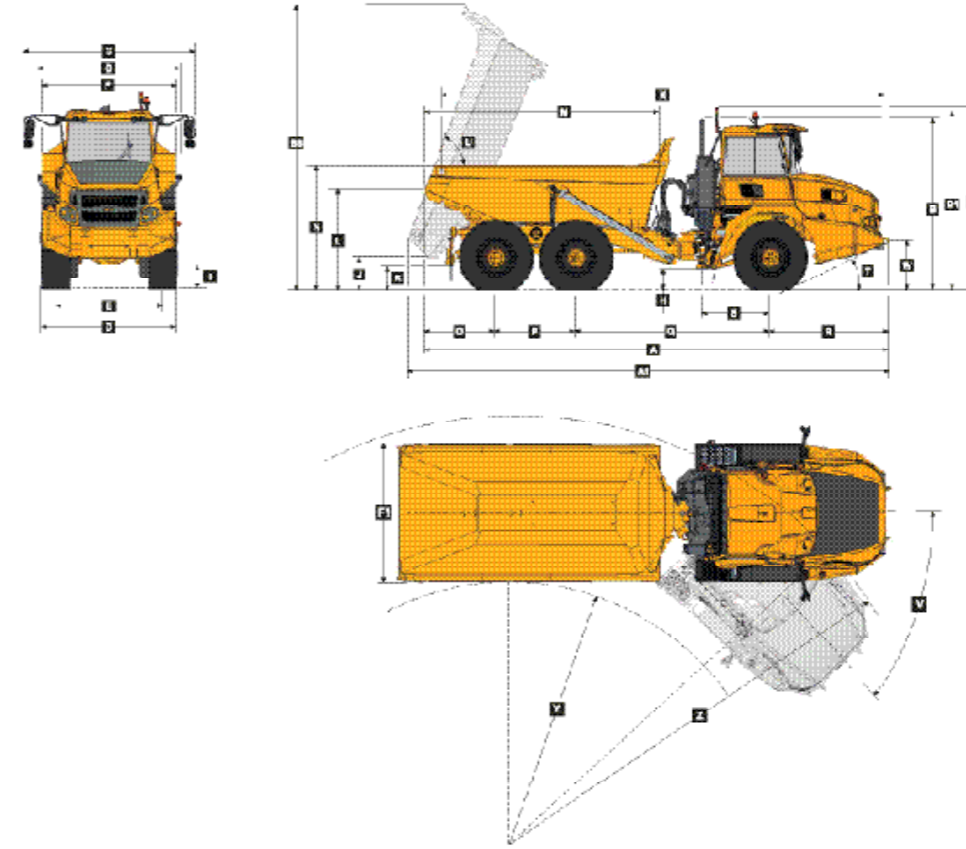
## VEHICLE SPEEDS

1st	11 km/h	7 mph
2nd	20 km/h	12 mph
3rd	27 km/h	17 mph
4th	38 km/h	24 mph
5th	50 km/h	31 mph
6th	50 km/h	31 mph
R	7 km/h	4 mph

## CAB

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

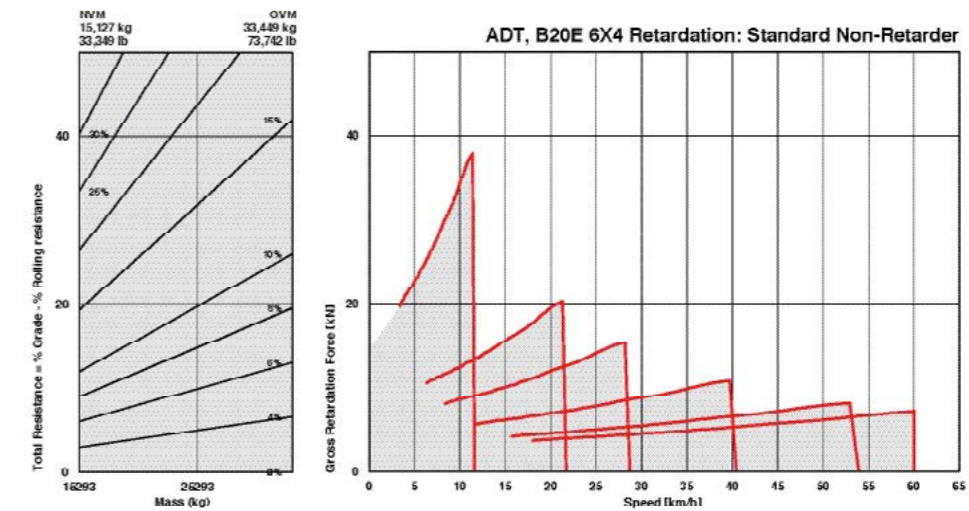
# Dimensions



Machine Dimensions	Value
A Length - Transport Position	8271 mm
A1 Length - Bin Fully Tipped	9573 mm
B Height - Transport Position	3454 mm
B1 Height - Raising Basecan	3525 mm
B2 Height - Load Light	3695 mm
B3 Bin Height - Fully Tipped	4742 mm
C Width over Mudguards	2520 mm
D Width over Tyres - 20.5R25	2190 mm
E Tyre Track Width - 20.5R25	2022 mm
F Width over Bin	2540 mm
F1 Width over Tail Lights	2592 mm
G Width over Mirrors - Operating Position	1290 mm
H Ground Clearance - Artic	470 mm
I Ground Clearance - Front Axle	444 mm
J Ground Clearance - Bin Fully Tipped	794 mm
K Ground Clearance - Under Run Bar	695 mm
L Bin Lip Height - Transport Position	2890 mm
M Bin Length	4709 mm
N Load over Height	2883 mm
O Rear Axle Centre to Bin Rear	1440 mm
P Mid Axle Centre to Front Axle Centre	1830 mm
Q Mid Axle Centre to Front Axle Centre	1895 mm
R Front Axle Centre to Machine Front	2357 mm
S Front Axle Centre to Artic Centre	1381 mm
T Approach Angle	26°
U Maximum Bin Tip Angle	70°
V Maximum Articulation Angle	25°
W Front Tie Down Height	1828 mm
X Machine Lifting Centre	1446 mm
Y Inner Turning Circle Radius - 20.5R25	3854 mm
Z Outer Turning Circle Radius - 20.5R25	7396 mm

# Retardation

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



# Load Capacity & Ground Pressure

OPERATING WEIGHTS		GROUND PRESSURE				LOAD CAPACITY		OPTION WEIGHTS	
UNLADEN	kg (lb)	LADEN (No sinkage)		LADEN (15% sinkage)		BODY	m <sup>3</sup> (yd <sup>3</sup> )	Bin liner	kg (lb)
Front	7,698 (16,971)	20.5R25	kPa (Psi)	20.5R25	kPa (Psi)	Struck Capacity	9 (11)		497 (1,096)
Middle	3,984 (8,783)	Front	221 (32)	Front	145 (21)	SAE 2:1 Capacity	11 (14,5)		
Rear	3,445 (7,595)	Middle	302 (44)	Middle	185 (27)	SAE 1:1 Capacity	13,5 (17,5)		
Total	15,127 (33,349)	Rear	302 (44)	Rear	185 (27)				
LADEN						Rated Payload	18,000 kg		
Front	10,023 (22,097)						(39,683 lbs)		
Middle	11,895 (26,224)								
Rear	11,531 (25,422)								
Total	33,449 (73,742)								

Note: The B20E is a road legal truck and as such, the unladen weight is quoted without operator and fuel. All other Bell machines are quoted with operator and full fuel.

# Gradeability / Rimpull

- 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.
- From this intersection, move straight left across charts until line intersects rimpull curve.
- Read down from this point to determine maximum speed attained at that tractive resistance.

