Technical Data - B20E

ENGINE
Manufacturer
Mercedes Benz

Model
OM924LA

Configuration
Inline 4, turbocharged and intercooled.

Gross Power
160 kW (214 hp) @ 2 200 rpm

Net Power
152 kW (204 hp) @ 2 200 rpm

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

Displacement
4,80 litres (293 cu.in)

Auxiliary Brake
Exhaust Valve Brake
Engine Valve Brake

Fuel Tank Capacity
200 litres (53 US gal)

Certification
OM924LA meets Euro III emissions regulations

TRANSMISSION
Manufacturer
Allison

Model
Standard Non Retarder: 3000P ORS
Optional Retarder: 3000PR ORS

Configuration
Fully automatic planetary transmission with integral retarder.

Layout
Engine mounted

Gear layout
Constant meshing planetary gears, clutch operated

Gears
6 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
W1400

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
15T

Differential
High input limited slip differential with spiral bevel gears.

Final Drive
Outboard heavy duty planetary on all axles

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)

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

Maximum brake force:
182 kN (40 802 lbf)

Auxiliary Brake
Automatic exhaust valve brake and engine valve brake.
Optional automatic, adjustable, integral, hydrodynamic transmission retarder. Output shaft speed dependant.

Total Retardation Power
99kW (133 hp) Continuous non-retarder.
144kW (193 hp) Continuous retarder.
99kW (133 hp) Maximum non-retarder.
505kW (677 hp) Maximum retarder.

WHEELS
Type
Radial Earthmover

Tyre
20.5 R 25

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

REAR SUSPENSION
Pivoting walking beams with laminated rubber suspension blocks

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
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
Two double-acting, single stage, dump cylinders

Raise Time
10 s

Lowering Time
5,5 s

Tipping Angle
70° 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
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 74 dBA internal sound level measured according to ISO 6396.

Load Capacity & Ground Pressure

OPERATING WEIGHTS				GROUND PRESSURE		LOAD CAPACITY		OPTION WEIGHTS	
UNLADEN*		LADEN*		LADEN (No sinkage)		BODY	m³ (yd³)		kg (lb)
	Tare kg (lb)**		ISO 6016 kg (lb)***	20.5 R 25	kPa (Psi)	Struck Capacity	9 (11)	Bin liner	493 (1 087)
Front	7 720 (17 020)	Front	9 790 (21 583)	Front	223 (32)	SAE 2:1 Capacity	11 (14,5)	Extra wheelset	355 (783)
Middle	3 860 (8 510)	Middle	11 830 (26 081)	Middle	300 (44)	SAE 1:1 Capacity	13,5 (17,5)		
Rear	3 450 (7 606)	Rear	11 640 (25 662)	Rear	300 (44)				
Total	15 020 (33 113)	Total	33 260 (73 326)			Rated Payload	18 000 kg		
	ISO 6016 kg (lb)***			LADEN (15% sinkage)			(39 683 lbs)		
Front	7 990 (17 615)			20.5 R 25	kPa (Psi)				
Middle	3 840 (8 466)			Front	203 (29)				
Rear	3 430 (7 562)			Middle	248 (36)				
Total	15 260 (33 113)			Rear	248 (36)				

* Note that the axle loading quoted is for the lightest configuration of machine. Addition of options will add to this mass. ** No fuel, no operator. *** Full fuel and operator

Dimensions
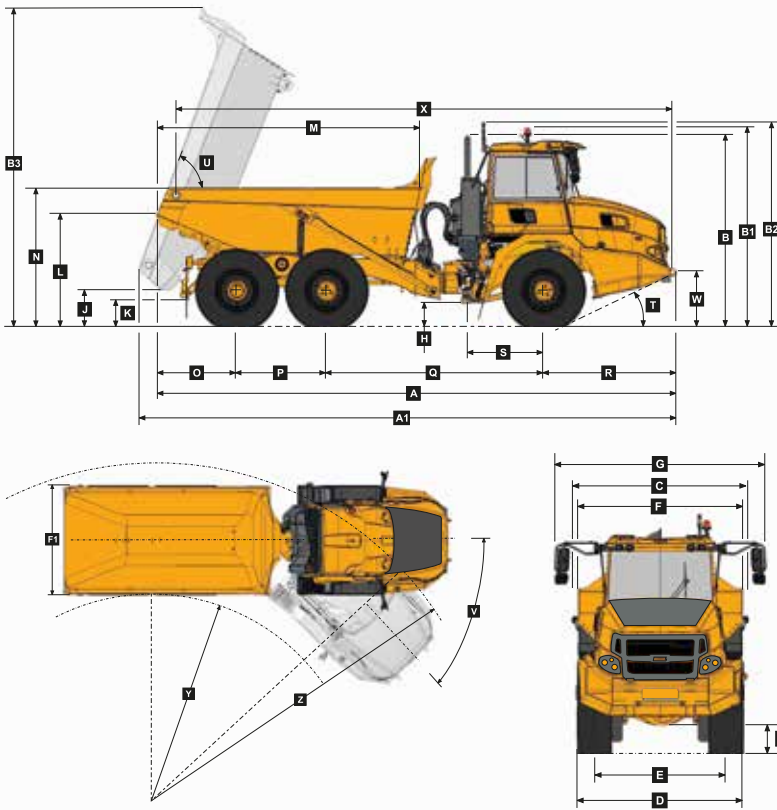
| Machine Dimensions		
A	Length - Transport Position	9271 mm
A1	Length - Bin Fully Tipped	9573 mm
B	Height - Transport Position	3454 mm
B1	Height - Rotating Beacon	3595 mm
B2	Height - Load Light	3689 mm
B3	Bin Height - Fully Tipped	5743 mm
C	Width over Mudguards	2568 mm
D	Width over Tyres - 20.5R25	2550 mm
E	Tyre Track Width - 20.5R25	2022 mm
F	Width over Bin	2540 mm
F1	Width over Tail Lights	2582 mm
G	Width over Mirrors - Operating Position	3260 mm
H	Ground Clearance - Artic	479 mm
I	Ground Clearance - Front Axle	444 mm
J	Ground Clearance - Bin Fully Tipped	704 mm
K	Ground Clearance - Under Run Bar	535 mm
L	Bin Lip Height - Transport Position	2060 mm
M	Bin Length	4709 mm
N	Load over Height	2533 mm
O	Rear Axle Centre to Bin Rear	1449 mm
P	Mid Axle Centre to Rear Axle Centre	1600 mm
Q	Mid Axle Centre to Front Axle Centre	3865 mm
R	Front Axle Centre to Machine Front	2357 mm
S	Front Axle Centre to Artic Centre	1361 mm
T	Approach Angle	26 °
U	Maximum Bin Tip Angle	70 °
V	Maximum Articulation Angle	45 °
W	Front Tie Down Height	1028 mm
X	Machine Lifting Centres	8845 mm
Y	Inner Turning Circle Radius - 20.5R25	3954 mm
Z	Outer Turning Circle Radius - 20.5R25	7309 mm

Grade Ability/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.
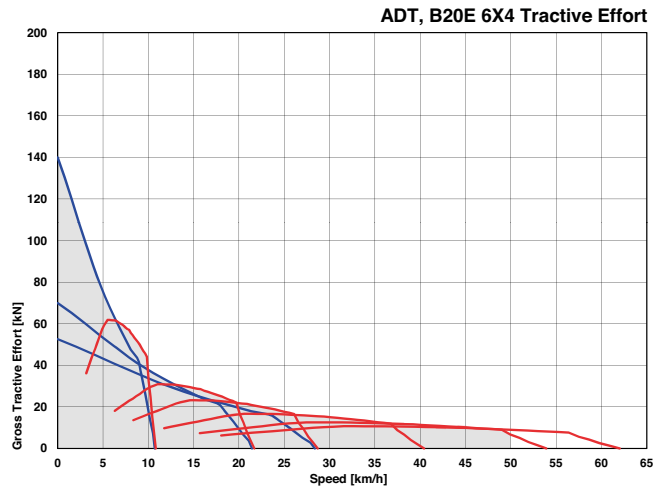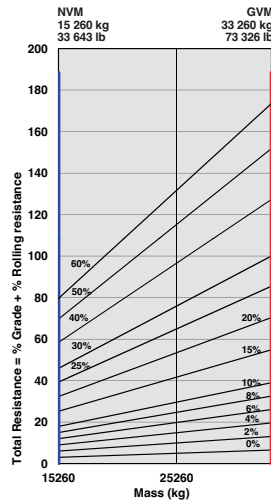
Retardation

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.