

# B45E 4x4 Articulated Dump Truck



|   |   |  |   |     |         |          |     |       |        |     |       |         |     |        |         |     |        |         |     |        |         |     |        |         |   |         |        |
|---|---|--|---|-----|---------|----------|-----|-------|--------|-----|-------|---------|-----|--------|---------|-----|--------|---------|-----|--------|---------|-----|--------|---------|---|---------|--------|
| <div>ENGINE</div> <div>Manufacturer<br/>Mercedes Benz (MTU)</div> <div>Model<br/>OM471LA (MTU 6R 1300)</div> <div>Configuration<br/>Inline 6, turbocharged and intercooled</div> <div>Maximum net power<br/>523 hp (390 kW) @ 1,600 rpm in accordance with UN ECE R120</div> <div>Gross Torque<br/>1,917 lbf (2,600 Nm) @ 1,300 rpm</div> <div>Displacement<br/>781 cu.in (12.8 liters)</div> <div>Auxiliary Brake<br/>Jacobs Engine Brake®</div> <div>Fuel Tank Capacity<br/>93 US gal (352 liters)</div> <div>AdBlue® Tank Capacity<br/>11 US gal (40 liters)</div> <div>Certification<br/>OM471LA (MTU 6R 1300) meets EPA Tier 4 final / EU Stage V emissions regulations.</div> | <div>Torque Control<br/>Hydrodynamic with lock-up in all gears</div> <div>TRANSFER CASE<div>Manufacturer<br/>Kessler</div><div>Series<br/>W2400</div><div>Layout<br/>Remote mounted</div><div>Gear Layout<br/>Three in-line helical gears</div><div>Output Differential<br/>Interaxle 29/71 proportional differential. Automatic inter-axle differential lock.</div></div> <div>AXLES<div>Manufacturer<br/>Bell</div><div>Model<br/>Front: Bell 30T<br/>Rear: Kessler D106</div><div>Differential<br/>Front: High input controlled traction Differential with spiral bevel gears.<br/><br/>Rear: High input limited slip differential with spiral bevel gears. Traction control functionality provided through speed sensors and brake activation.</div><div>Final Drive<br/>Outboard heavy duty planetary on all axles</div></div> <div>BRAKING SYSTEM<div>Service Brake<br/>Dual circuit, full hydraulic actuation wet disc brakes on front and rear axles. Wet brake oil is circulated through a filtration and cooling system.<br/><br/>Maximum brake force: 79,132 lbf (352 kN)</div><div>Park &amp; Emergency<br/>Spring applied, air released driveline mounted disc</div></div> | <div>Maximum brake force:<br/>95,768 lbf (426 kN)</div> <div>Auxiliary Brake<br/>Jacobs Engine Brake®.<br/>Automatic retardation through electronic activation of wet brake system.</div> <div>Total Retardation Power<br/>Continuous: 593 hp (442 kW)<br/>Maximum: 1,145 hp (854 kW)</div> <div>WHEELS<div>Type<br/>Radial Earthmover</div><div>Tire<br/>Front: 775/65 R29 (26.5 R25 optional)<br/>Rear: 21.00 R35 Dual</div></div> <div>FRONT SUSPENSION<br/>Semi-independent, leading A-frame supported by hydropneumatic suspension struts.<br/><br/>Optional active dual springrate Comfort Ride suspension available, including height control.</div> <div>REAR SUSPENSION<br/>Trailing arm cradle supported by hydro-pneumatic suspension struts, with an additional lateral stabilizer.</div> <div>HYDRAULIC SYSTEM<br/>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.</div> <div>Pump Type<br/>Variable displacement load sensing piston</div> <div>Flow<br/>79 gal/min (300 L/min)</div> <div>Pressure<br/>4,060 psi (280 Bar)</div> <div>Filter<br/>5 microns</div> | <div>STEERING SYSTEM<br/>Double acting cylinders, with ground-driven emergency steering pump.</div> <div>Lock to lock turns<br/>5.5</div> <div>Steering Angle<br/>42°</div> <div>DUMPING SYSTEM<br/>Two double-acting, two stage telescopic, dump cylinders</div> <div>Raise Time<br/>18 s</div> <div>Lowering Time<br/>16.5 s</div> <div>Tipping Angle<br/>55° standard, or any lower angle programmable</div> <div>PNEUMATIC SYSTEM<br/>Air drier with heater and integral unloader valve, serving park brake and auxiliary functions.</div> <div>System Pressure<br/>117 psi (8.1 Bar)</div> <div>ELECTRICAL SYSTEM<div>Voltage<br/>24 V</div><div>Battery Type<br/>Two AGM (Absorption Glass Mat) type</div><div>Battery Capacity<br/>2 X 75 Ah</div><div>Alternator Rating<br/>28V 100A</div></div> <div>VEHICLE SPEEDS<table><tr><td>1st</td><td>2.1 mph</td><td>3.5 km/h</td></tr><tr><td>2nd</td><td>5 mph</td><td>8 km/h</td></tr><tr><td>3rd</td><td>9 mph</td><td>15 km/h</td></tr><tr><td>4th</td><td>13 mph</td><td>21 km/h</td></tr><tr><td>5th</td><td>19 mph</td><td>31 km/h</td></tr><tr><td>6th</td><td>26 mph</td><td>42 km/h</td></tr><tr><td>7th</td><td>30 mph</td><td>48 km/h</td></tr><tr><td>R</td><td>3.7 mph</td><td>6 km/h</td></tr></table></div> <div>CAB<br/>ROPS/FOPS certified 77 dBA internal sound level measured according to ISO 6396.</div> | 1st | 2.1 mph | 3.5 km/h | 2nd | 5 mph | 8 km/h | 3rd | 9 mph | 15 km/h | 4th | 13 mph | 21 km/h | 5th | 19 mph | 31 km/h | 6th | 26 mph | 42 km/h | 7th | 30 mph | 48 km/h | R | 3.7 mph | 6 km/h |
| 1st   | 2.1 mph   | 3.5 km/h   |   |     |         |          |     |       |        |     |       |         |     |        |         |     |        |         |     |        |         |     |        |         |   |         |        |
| 2nd   | 5 mph   | 8 km/h   |   |     |         |          |     |       |        |     |       |         |     |        |         |     |        |         |     |        |         |     |        |         |   |         |        |
| 3rd   | 9 mph   | 15 km/h  |   |     |         |          |     |       |        |     |       |         |     |        |         |     |        |         |     |        |         |     |        |         |   |         |        |
| 4th   | 13 mph  | 21 km/h  |   |     |         |          |     |       |        |     |       |         |     |        |         |     |        |         |     |        |         |     |        |         |   |         |        |
| 5th   | 19 mph  | 31 km/h  |   |     |         |          |     |       |        |     |       |         |     |        |         |     |        |         |     |        |         |     |        |         |   |         |        |
| 6th   | 26 mph  | 42 km/h  |   |     |         |          |     |       |        |     |       |         |     |        |         |     |        |         |     |        |         |     |        |         |   |         |        |
| 7th   | 30 mph  | 48 km/h  |   |     |         |          |     |       |        |     |       |         |     |        |         |     |        |         |     |        |         |     |        |         |   |         |        |
| R   | 3.7 mph   | 6 km/h   |   |     |         |          |     |       |        |     |       |         |     |        |         |     |        |         |     |        |         |     |        |         |   |         |        |
| <div>TRANSMISSION</div> <div>Manufacturer<br/>Allison</div> <div>Model<br/>4700 ORS</div> <div>Configuration<br/>Fully automatic planetary transmission</div> <div>Layout<br/>Engine mounted</div> <div>Gear Layout<br/>Constant meshing planetary gears, clutch operated</div> <div>Gears<br/>7 Forward, 1 Reverse</div> <div>Clutch Type<br/>Hydraulically operated multi-disc</div> <div>Control Type<br/>Electronic</div>   |   |  |   |     |         |          |     |       |        |     |       |         |     |        |         |     |        |         |     |        |         |     |        |         |   |         |        |

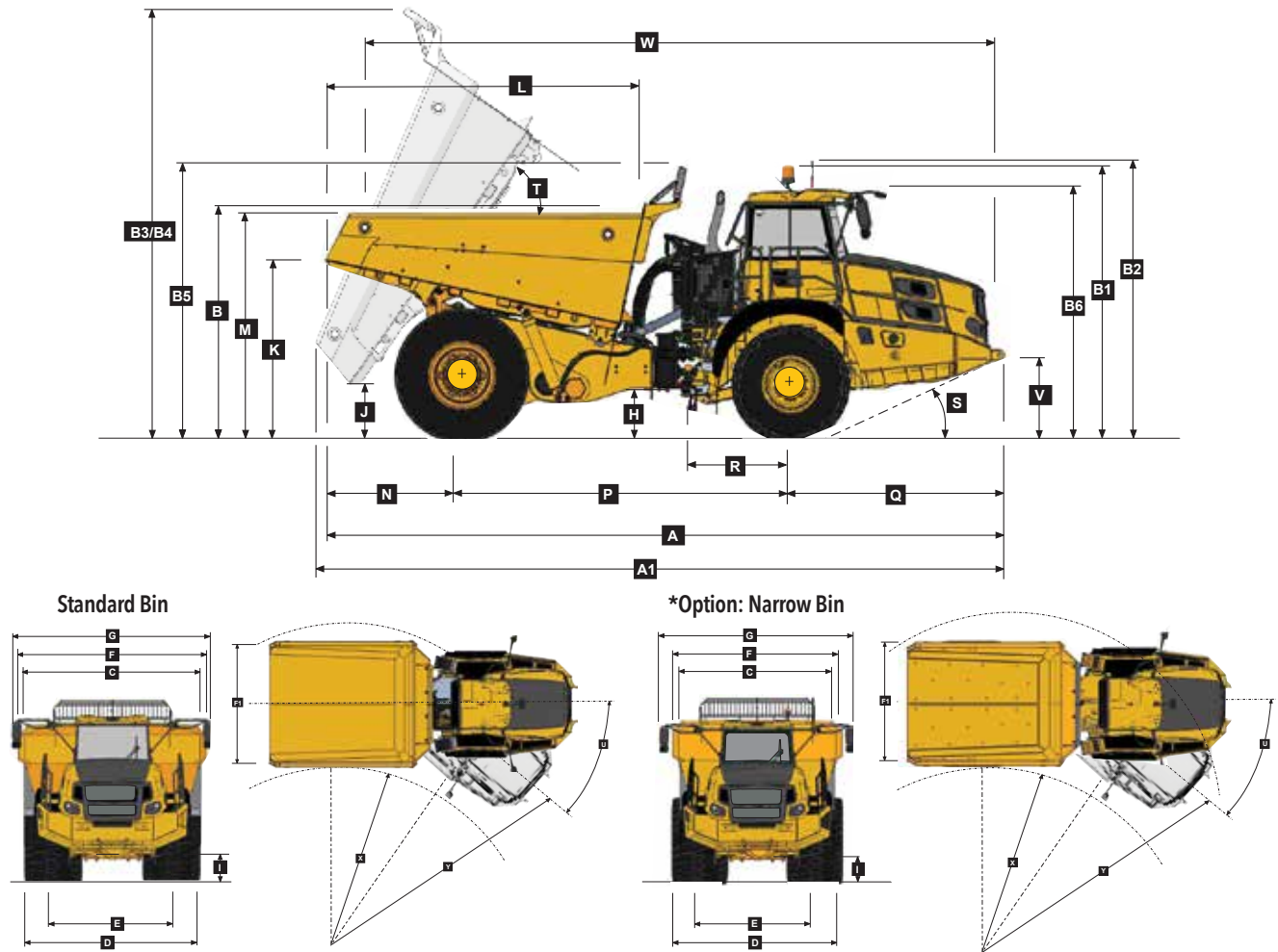
## Load Capacity & Ground Pressure

| OPERATING WEIGHTS |                  | GROUND PRESSURE               |            | LOAD CAPACITY                  |              | OPTION WEIGHTS |               |
|-------------------|------------------|-------------------------------|------------|--------------------------------|--------------|----------------|---------------|
| UNLADEN           | kg (lb)          | LADEN                         |            | BODY                           | m³ (yd³)     |                | kg (lb)       |
| Front             | 17,584 (38,766)  | No Sinkage/Total Contact Area |            | Struck Capacity                | 19.5 (25.5)  | Bin liner      | 1,022 (2,253) |
| Rear              | 17,411 (38,385)  | 775/65 R29                    | kPa (Psi)  | SAE 2:1 Capacity               | 25 (33)      | Tailgate       | 1,373 (3,026) |
| Total             | 34,995 (77,150)  | Front                         | 297 (43.1) | SAE 1:1 Capacity               | 29.5 (38)    |                |               |
|                   |                  |                               |            | SAE 2:1 Capacity with Tailgate | 26 (34)      | EXTRA WHEELSET |               |
| LADEN             |                  | 21.00 R35                     | kPa (Psi)  |                                |              | 775/65 R29     | 888 (1,958)   |
| Front             | 23,143 (51,022)  | Rear                          | 405 (58.7) |                                |              | 21.00 R35      | 1,012 (2,231) |
| Rear              | 52,852 (116,518) |                               |            | Rated Payload                  | 41,000 kg    |                |               |
| Total             | 75,995 (167,540) |                               |            |                                | (90,390 lbs) |                |               |

\* including additional equipment (tailgate)

# B45E 4x4

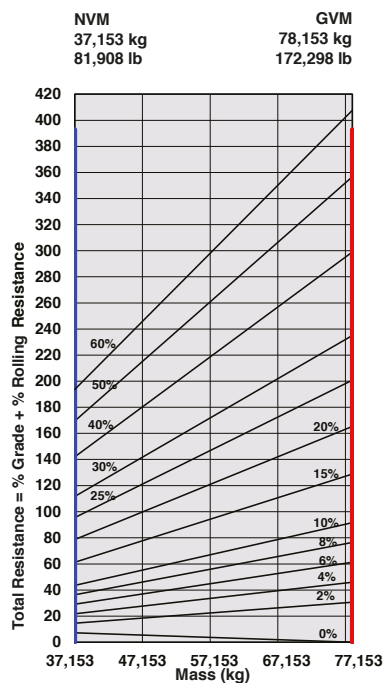
## Dimensions



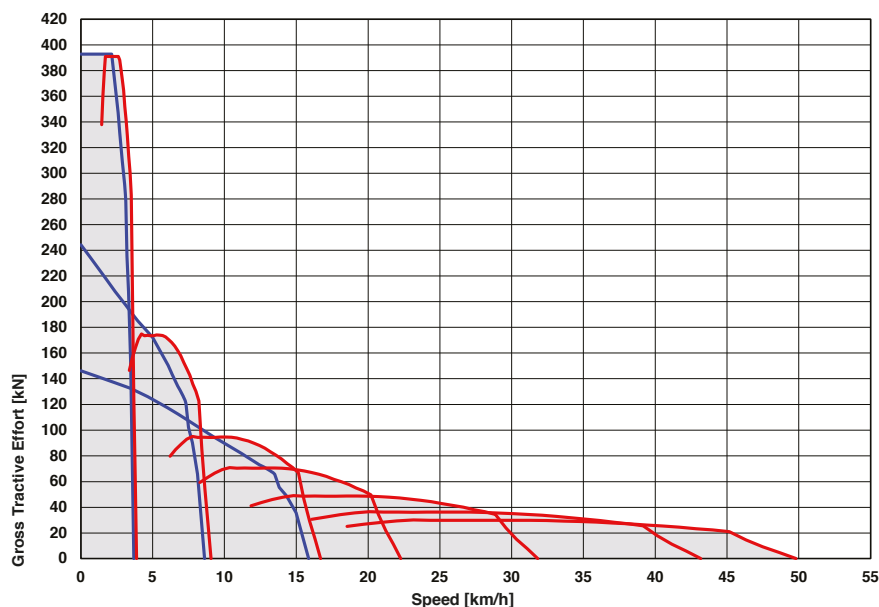
| Machine Dimensions |   |                            |
|--------------------|---|----------------------------|
| A                  | Length - Transport Position with Tailgate   | 10,405 mm (34 ft. 13 in.)  |
| A*                 | Option                                      | 10,352 mm (33 ft. 96 in.)  |
| A                  | Length - Transport Position w/o Tailgate    | 10,339 mm (33 ft. 11 in.)  |
| A*                 | Option                                      | 10,336 mm (33 ft. 91 in.)  |
| A1                 | Length - Bin Fully Tipped                   | 10,427 mm (34 ft. 20 in.)  |
| A1*                | Option                                      | 10,576 mm (34 ft. 70 in.)  |
| B                  | Height - Transport Position w/o Rock Guard  | 3,703 mm (12 ft. 14 in.)   |
| B*                 | Option                                      | 3,874 mm (12 ft. 71 in.)   |
| B                  | Height - Transport Position with Rock Guard | 4,176 mm (13 ft. 70 in.)   |
| B*                 | Option                                      | 4,374 mm (14 ft. 35 in.)   |
| B1                 | Height - Rotating Beacon                    | 4,038 mm (13 ft. 3 in.)    |
| B2                 | Height - Load Light                         | 4,127 mm (13 ft. 6 in.)    |
| B3                 | Bin Height - Fully Tipped w/o Rock Guard    | 6,228 mm (20 ft. 43 in.)   |
| B3*                | Option                                      | 6,327 mm (20 ft. 7.76 in.) |
| B4                 | Bin Height - Fully Tipped with Rock Guard   | 6,485 mm (21 ft. 27 in.)   |
| B4*                | Option                                      | 6,585 mm (21 ft. 60 in.)   |
| B5                 | Height - Rock Guard Operating Position      | 4,206 mm (13 ft. 79 in.)   |
| B5*                | Option                                      | 4,374 mm (14 ft. 35 in.)   |
| B6                 | Height - Cab                                | 3,802 mm (12 ft. 47 in.)   |
| C                  | Width over Mudguards                        | 4,000 mm (13 ft. 12 in.)   |
| C*                 | Option                                      | 3,603 mm (11 ft. 82 in.)   |
| D                  | Width over Front Tyres 775/65R29            | 3,556 mm (11 ft. 8 in.)    |
| D1                 | Width over Front Tyres 26.5R25              | 3,425 mm (11.2 ft.)        |
| D                  | Width over Rear Tyres 21.00R35              | 3,960 mm (13 ft.)          |
| E                  | Tyre Track Width Front 775/65R29            | 2,905 mm (9.5 ft.)         |
| E1                 | Tyre Track Width Front 26.5R25              | 2,793 mm (9.2 ft.)         |
| E                  | Tyre Track Width Rear 21.00R35              | 2,677 mm (8.8 ft.)         |
| F                  | Width over Bin                              | 4,265 mm (13 ft. 99 in.)   |
| F*                 | Option                                      | 3,960 mm (12 ft. 99 in.)   |
| F1                 | Width over Tailgate                         | 4,639 mm (15 ft. 21 in.)   |
| F1*                | Option                                      | 4,275 mm (14 ft. 03 in.)   |
| G                  | Width over Mirrors - Operating Position     | 4,545 mm (14 ft. 91 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         | 890 mm (2 ft. 11 in.)      |
| K                  | Bin Lip Height - Transport Position         | 2,630 mm (8 ft. 62 in.)    |
| K*                 | Option                                      | 2,618 mm (8 ft. 59 in.)    |
| L                  | Bin Length                                  | 4,833 mm (15 ft. 10 in.)   |
| L*                 | Option                                      | 4,913 mm (16 ft. 12 in.)   |
| M                  | Load over Height                            | 3,485 mm (11 ft. 43 in.)   |
| M*                 | Option                                      | 3,671 mm (12 ft. 04 in.)   |
| N                  | Rear Axle Centre to Bin Rear                | 2,084 mm (6 ft. 10 in.)    |
| P                  | Rear Axle Centre to Front Axle Centre       | 5,000 mm (16.4 ft.)        |
| Q                  | Front Axle Centre to Machine Front          | 3,256 mm (10 ft. 8 in.)    |
| R                  | Front Axle Centre to Artic Centre           | 1,558 mm (5 ft. 1 in.)     |
| S                  | Approach Angle                              | 24°                        |
| T                  | Maximum Bin Tip Angle                       | 55°                        |
| U                  | Maximum Articulation Angle                  | 42°                        |
| V                  | Front Tie Down Height                       | 1,262 mm (4 ft. 2 in.)     |
| W                  | Machine Lifting Centres                     | 9,673 mm (31 ft. 73 in.)   |
| W*                 | Option                                      | 9,697 mm (31 ft. 81 in.)   |
| X                  | Inner Turning Circle Radius                 | 3,956 mm (12.9 ft.)        |
| Y                  | Outer Turning Circle Radius                 | 8,655 mm (28.4 ft.)        |

## 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.

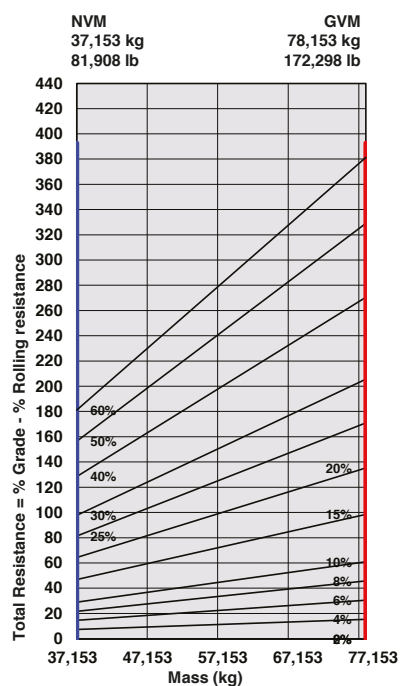


ADT, B45E 4X4 - Tractive Effort

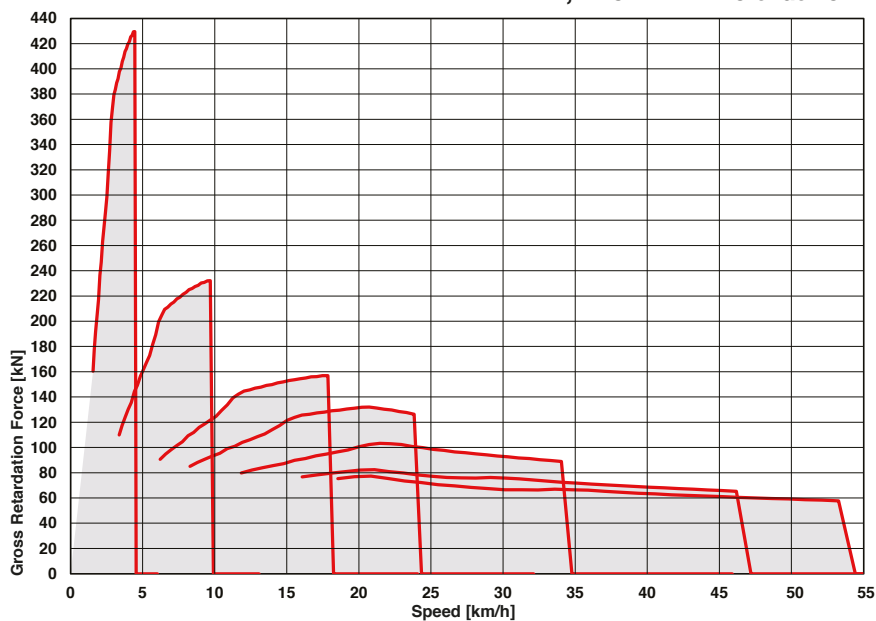


## Retardation

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.



ADT, B45E 4x4 - Retardation



| B30E 4x4                 | B45E 4x4 | B60E 4x4 |  |
|--------------------------|----------|----------|--|
| <b>ENGINE</b>            |          |          |  |
| ●                        | ●        | ●        | Jacobs Engine Brake®   |
| ●                        | ●        | ●        | Dual element air cleaner with dust ejector valve               |
| ●                        | ●        | ●        | Pre-cleaner with automatic dust scavenging                     |
| ●                        | ●        | ●        | Water separator  |
| ●                        | ●        | ●        | Serpentine drive belt with automatic tensioner                 |
| ●                        | ●        | ●        | Provision for fast fill  |
|                          | ●        | ●        | Wet-sleeve cylinder liners                                     |
| <b>COOLING</b>           |          |          |  |
| ●                        | ●        | ●        | Crankshaft mounted electronically controlled viscous fan drive |
| ●                        | ●        | ●        | Fan guard  |
| <b>PNEUMATIC SYSTEM</b>  |          |          |  |
| ●                        | ●        | ●        | Engine-mounted compressor                                      |
| ●                        | ●        | ●        | Air drier with heater  |
| ●                        | ●        | ●        | Integral unloader valve  |
| <b>ELECTRICAL SYSTEM</b> |          |          |  |
| ●                        | ●        | ●        | Battery disconnect   |
| ●                        | ●        | ●        | Halogen drive lights   |
|                          | ▲        | ●        | LED drive lights   |
| ●                        | ●        | ●        | Air horn   |
| ●                        | ●        | ●        | Reverse alarm  |
| ▲                        | ▲        | ▲        | White noise reverse alarm                                      |
| ●                        | ●        | ●        | Rotating beacon  |
| ●                        | ●        | ●        | Pitch roll sensor  |
| ▲                        | ▲        | ●        | LED Artic reverse light  |
| ●                        | ●        | ●        | Halogen artic reverse lights                                   |
| ●                        | ●        | ●        | LED reverse lights   |
| <b>STEERING SYSTEM</b>   |          |          |  |
| ●                        | ●        | ●        | Bi-directional ground-driven secondary steering pump           |
| <b>CAB</b>               |          |          |  |
| ●                        | ●        | ●        | ROPS/FOPS certification  |
| ●                        | ●        | ●        | Tilt cab   |
| ●                        | ●        | ●        | Gas strut-supported door                                       |
| ●                        | ●        | ●        | I-Tip programmable dump-body tip settings                      |
| ●                        | ●        | ●        | HVAC Climate control system                                    |
| ●                        | ●        | ●        | AM/FM radio with Aux + USB                                     |
| ●                        | ●        | ●        | Rear window guard  |
| ●                        | ●        | ●        | Wiper/washer with intermittent control                         |
| ●                        | ●        | ●        | Tilt and telescoping steering wheel                            |
| ●                        | ●        | ●        | Center-mount air-suspension seat                               |
| ●                        | ●        | ●        | Halogen work lights  |
| ▲                        | ▲        | ●        | LED work lights  |
| ▲                        | ▲        | ▲        | Rotating beacon: seat belt installation                        |
| ▲                        | ▲        | ▲        | Remote engine and machine isolation                            |
| ●                        | ●        | ●        | Remote battery jump start                                      |
| ●                        | ●        | ●        | Retractable 3 point seat belt                                  |
| ●                        | ●        | ●        | Heated seat  |
| ●                        | ●        | ●        | Foldaway trainer seat with retractable seat belt               |
| ●                        | ●        | ●        | 12-volt power outlet   |
| ●                        | ●        | ●        | Cab utility bin (removable)                                    |
| ●                        | ●        | ●        | Cup holder   |
| ●                        | ●        | ●        | Cooled/heated lunch box  |
|                          | ▲        | ●        | Heated mirrors   |

| B30E 4x4               | B45E 4x4 | B60E 4x4 |   |
|------------------------|----------|----------|---|
| <b>CAB (continued)</b> |          |          |   |
| ●                      | ●        | ●        | Electrically adjusted and heated mirrors  |
| ●                      | ●        | ●        | Deluxe 10" color LCD:   |
|                        |          |          | Speedometer / Fuel gauge /  |
|                        |          |          | Transmission oil temperature gauge /  |
|                        |          |          | Engine coolant temperature gauge /  |
|                        |          |          | LED function/warning indicators and audible alarm / Transmission gear selection / |
|                        |          |          | Tachometer / Battery voltage / Hour meter /                                       |
|                        |          |          | Odometer / Fuel consumption / Tip counter /                                       |
|                        |          |          | Trip timer / Trip distance / Metric/English units /                               |
|                        |          |          | Service codes/diagnostics   |
| ●                      | ●        | ●        | Backlit sealed switch module functions with:                                      |
|                        |          |          | Wiper control / Lights / Heated mirrors /   |
|                        |          |          | Retarding aggressiveness / Transfer case  |
|                        |          |          | differential lock / Transmission gear hold /                                      |
|                        |          |          | Dump-body tip limit / Automatic dump-body   |
|                        |          |          | tip settings / Air conditioner/ Heater controls /                                 |
|                        |          |          | Preselected Speed Control   |
| <b>DUMP BODY</b>       |          |          |   |
| ●                      | ●        | ●        | Dump body mechanical lock   |
| ▲                      | ▲        | ▲        | Partial body liner  |
| ▲                      | ▲        | ▲        | Tailgate  |
| ▲                      | ▲        | ▲        | Body heater   |
| ▲                      | ▲        | ▲        | Less dump body and cylinders  |
|                        | ▲        | ▲        | Bin pole lockout  |
|                        | ●        | ●        | Narrow bin body   |
|                        |          |          | Rear wheel mudguards  |
| <b>OTHER</b>           |          |          |   |
| ●                      | ●        | ●        | Automatic Traction Control (ATC)  |
| ●                      | ●        | ●        | Wet disc brakes   |
| ●                      | ●        | ●        | 23.5 R25 Radial Earthmover tires (Front)  |
|                        | ●        | ●        | 775/65 R29 Radial Earthmover tires (Front)  |
|                        | ●        | ●        | 875/65 R29 Radial Earthmover tires (Front)  |
|                        | ▲        | ●        | 26.5 R25 Radial Earthmover tires (Front-optional)                                 |
| ●                      | ●        | ●        | 875/65 R29 Radial Earthmover tires (Rear)   |
|                        | ●        | ●        | 21.00 R35 Dual (Rear)   |
|                        | ●        | ●        | 24.00 R35 Dual (Rear)   |
| ●                      | ●        | ●        | Remote grease banks   |
| ▲                      | ●        | ●        | Automatic greasing  |
| ●                      | ●        | ●        | Onboard weighing  |
| ▲                      | ▲        | ●        | Load lights: stack  |
| ▲                      | ●        | ●        | Comfort ride suspension (Front)   |
|                        | ●        | ●        | Comfort ride suspension (Rear)  |
| ▲                      | ●        | ●        | Reverse camera  |
| ●                      | ●        | ●        | Hand rails  |
| ●                      | ●        | ●        | Cab peak  |
| ●                      | ●        | ●        | High pressure hydraulic filter  |
| ▲                      | ▲        | ▲        | Fuel heater   |
| ●                      | ●        | ●        | Belly cover   |
| ●                      | ●        | ●        | Cross member cover  |
| ▲                      | ▲        | ●        | Remote transmission filters   |
| ●                      | ●        | ●        | Engine and transmission remote drain-gravity                                      |
|                        | ▲        | ▲        | Engine and transmission remote drain-scavenge                                     |
| ▲                      | ▲        | ▲        | Window smash button   |
| ●                      | ●        | ●        | High visibility mirrors   |
| ●                      | ●        | ●        | Fleetm@tic® Classic Package for 5 years   |
| ●                      | ●        | ●        | Electronic bonnet opening   |