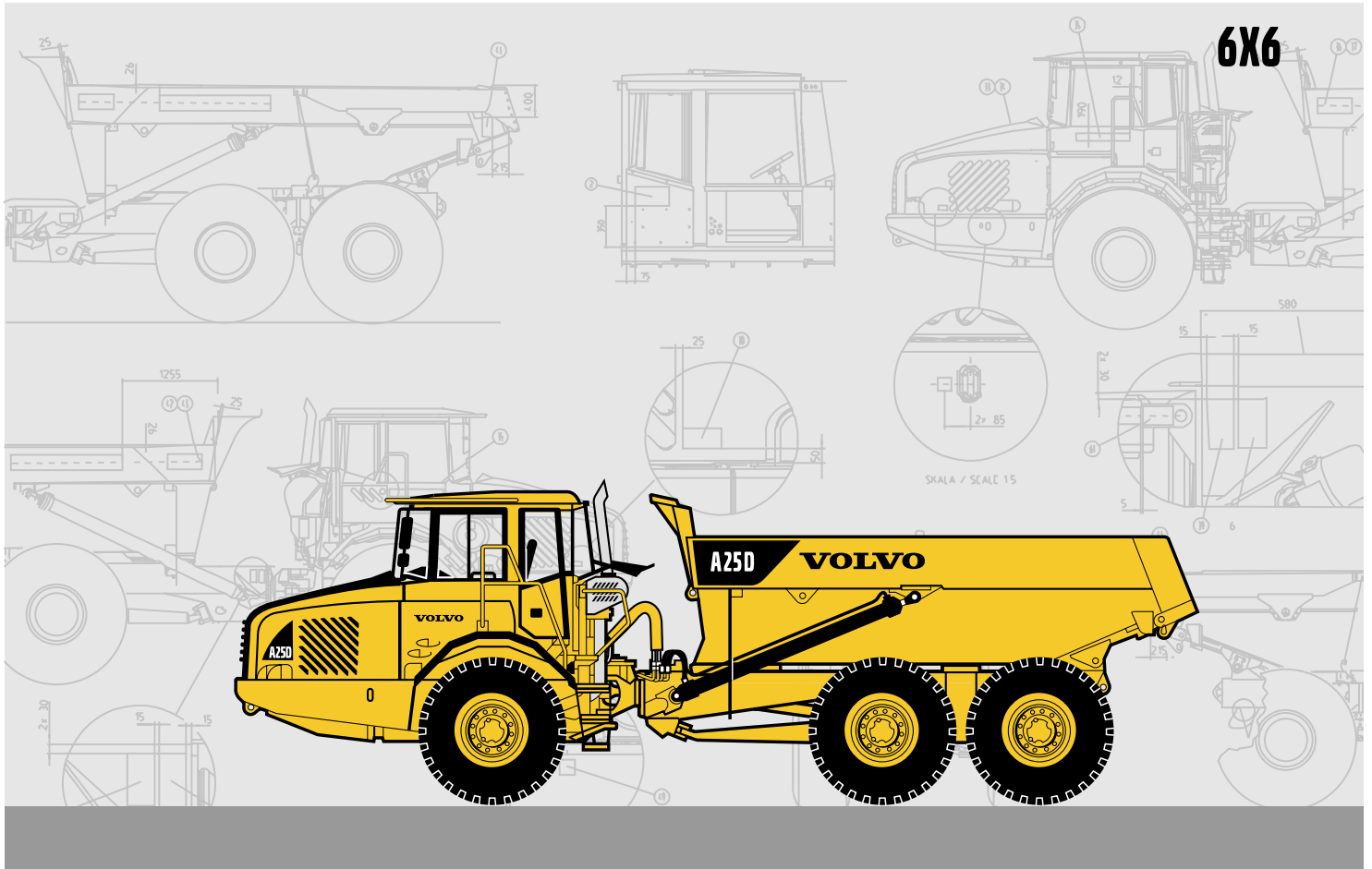


## VOLVO ARTICULATED HAULER

# A250



- **Engine output:**  
SAE J1995, Gross 228 kW (306 hp)  
SAE J1349, Net 227 kW (304 hp)
- **Body volume, heaped:**  
15.0 m<sup>3</sup> (19.6 yd<sup>3</sup>)
- **Load capacity:**  
24.0 t (26.4 sh tn)
- **Volvo cab designed** for high operator visibility, ergonomics and comfort.
- **Reduced maintenance time** with no daily or weekly grease points.
- **Electronic Operator's Communication System**
- **Volvo high performance – low emission** electronically controlled direct injected, turbocharged, intercooled diesel engine.
- **Fully automatic planetary transmission**, electronically controlled.
- **Hydraulic retarder** integral in transmission.
- **Dropbox with longitudinal differential lock.**
- **100% lock-up differentials.** One longitudinal and three transverse differential locks.
- **Front axle with three-point suspension.**
- **Volvo terrain bogie**, individually oscillating axles and high ground clearance.
- **Volvo Load & Dump Brake.**

# VOLVO



## ENGINE

Volvo inline 6-cylinder, direct injected electronic controlled, turbocharged, intercooled 4-cycle low emission diesel engine with wet replaceable cylinder linings.

**Fan:** Hydrostatically driven, thermostatically controlled, variable speed radiator fan consuming power only when needed.

**Engine brake:** Exhaust retarder.

Make, model. . . . .	Volvo D10BACE2*
Make, model. . . . .	Volvo D10BADE2**
Max power at . . . . .	33.3 r/s (2000 r/min)
SAE J1995 Gross	228 kW (306 hp)
Flywheel power at . . . . .	33.3 r/s (2000 r/min)
SAE J1349 Net, DIN 6271***	227 kW (304 hp)
Max torque at . . . . .	22.5 r/s (1350 r/min)
SAE J1995 Gross	1375 Nm (1014 lb ft)
SAE J1349 Net, DIN 6271***	1365 Nm (1007 lb ft)
Displacement total. . . . .	9.6 l (586 in <sup>3</sup> )
Bore . . . . .	120 mm (4.7 in)
Stroke. . . . .	140 mm (5.5 in)

\*) Meets US (EPA) step 2, California (CARB) step 2 and Europe (EU) step 2.  
 \*\*) Meets Europe (EU) step 2.  
 \*\*\*) with fan at normal speed. With fan operating at full speed, the flywheel power is 214 kW (287 hp) and maximum torque is 1276 Nm (941 lb ft) which corresponds to DIN 70020.



## ELECTRICAL SYSTEM

All cables, sockets and pins are identified. Cables are enclosed in plastic conduit and secured to main frame. Halogen lights. Prewired for options. Connectors meet IP67 standard for watertightness as necessary.

Voltage. . . . .	24 V
Battery capacity . . . . .	2x170 Ah
Alternator . . . . .	1.54 kW (55 A)
Starter motor . . . . .	6.6 kW (8.8 hp)



## SERVICE

The computerized information system monitors all fluid levels, minimizing daily and weekly service times. Time to next service and the status of vital vehicle systems is shown to the operator on a display in the instrument panel.

**Service accessibility:** Fold down front grill with access ladder to remote filter bank, located in front of engine. Large, 90° opening hood for total engine access. Remote drain hoses and swing out radiator for easy cleaning.

### Fill capacities

Crankcase . . . . .	38 l (10 US gal)
Fuel tank. . . . .	400 l (105.7 US gal)
Cooling system . . . . .	80 l (21.1 US gal)
Transmission total . . . . .	48 l (12.7 US gal)
Dropbox. . . . .	8.5 l (2.1 US gal)
Hub . . . . .	3 l (0.8 US gal)
Front axle . . . . .	32 l (8.5 US gal)
First bogie axle. . . . .	36 l (9.5 US gal)
Second bogie axle. . . . .	32 l (8.5 US gal)
Brake hydraulics . . . . .	2 l (0.53 US gal)
Hydraulics system . . . . .	260 l (68.7 US gal)
Hydraulics tank . . . . .	180 l (47.6 US gal)



## DRIVETRAIN

Volvo components, specifically designed for hauler applications.

**Torque converter:** Single stage with free wheeling stator and automatic lock up on all gears.

**Transmission:** Fully automatic planetary transmission with six forward gears and two reverse gears, with an integral variable hydraulic retarder.

**Dropbox:** Volvo design, single stage. Power take-off and differential with 100% lock up function.

**Axes:** Volvo design. All axes have transversal differential locks with 100% lock-up and fully floating axle shafts with planetary type hub reductions.

**Differential locks:** One longitudinal and three transverse with 100% lock-up function, operator selectable on the move.

**Configuration:** 6x4 or 6x6 drive, operator selectable on the move.

Torque converter . . . . .	2,37:1
Transmission . . . . .	Volvo PT 1560
Dropbox. . . . .	Volvo IL 1
Axes. . . . .	Volvo AH 56

### Speed

Forward	
1	8 km/h ( 5 mph)
2	12 km/h ( 7.5 mph)
3	22 km/h (13.7 mph)
4	31 km/h (19.3 mph)
5	40 km/h (24.8 mph)
6	53 km/h (32.9 mph)
Reverse	
1	8 km/h ( 5 mph)
2	13 km/h ( 8.1 mph)



## SUSPENSION

Volvo's unique maintenance free 3-point suspension system. The axles are suspended at three points, which results in independent movement needed in rough terrain.

**Front axle:** One rubber spring per side. Two hydraulic shock absorbers on each side. Requires no regular maintenance.

**Bogie:** Volvo's unique terrain bogie, which permits individual oscillation between the axles. High axle displacement keeps the body level retaining the load.



## BRAKE SYSTEM

Dual circuit system with air-hydraulic disc brakes. Complies with ISO 3450 and SAE J1473 at total machine weight.

**Service brakes:** Dry discs on all wheels.

**Circuit division:** One circuit for front axle and one for bogie axles.

**Parking brake:** Spring-applied disc brake on the propeller shaft, designed to hold a loaded machine on a grade up to 18%. When the parking brake is applied, the longitudinal differential is locked.

**Compressor:** Gear driven by engine transmission.

**Retarder:** Hydraulic, infinitely variable, integrated in transmission.

**Total retarding capability including transmission retarder and exhaust retarder, see graph.**



## HYDRAULIC SYSTEM

Load-sensing variable displacement piston pumps that consume power only when needed.

**Pumps:** Engine driven pumps mounted on flywheel power take-off. One ground-dependent piston pump for supplementary steering mounted on the dropbox.

**Filter:** One fiber glass filter with magnetic core.

### Pump capacity per pump:

Engine dependent . . . . .	105 l/min (27.7 US gpm)
Ground dependent . . . . .	142 l/min (37.5 US gpm)
at shaft speed . . . . .	52.5 r/s (3150 r/min)
Working pressure . . . . .	25 MPa (3628.4 psi)



## CAB

Volvo cab, designed for high operator visibility, ergonomics and comfort. Wide threshold-free door opening and ergonomic instep. Isolation rubber pads to reduce vibrations. Tilt/ telescopic steering wheel. Overhead console for radio and storage. Dash-mounted Operator's Communication System. Storage bins.

**Standard:** ROPS/FOPS tested and approved. (ISO 3471, SAE J1040) / (ISO 3449, SAE J231) standards.

**Heater and defroster:** Filtered fresh air, four speed fan and pressurized cab to maintain a clean operating environment. Multi-level air outlets and separate defroster vents for all windows.

**Operator's seat:** Adjustable operator's seat with flameproof upholstery. Retractable seat belt.

Internal sound level, ISO 6396	74 dB (A)
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## STEERING SYSTEM

Hydromechanical self-compensating articulated steering for safe and accurate high speed hauling. Fast acting, low effort steering with 3.4 turns lock-to-lock for slow speed maneuverability.

**Cylinders:** Two double-acting steering cylinders.

**Supplementary steering:** Complies with ISO 5010 at total machine weight.

**Steering angle:** ± 45°



## BODY

**Load and dump brake:** With the engine running, the service brakes on bogie axles are applied and transmission shifted to neutral.

**Body:** Hardened and tempered steel body, flat plate design fabricated from Hardox 400.

**Cylinders:** Two single stage double acting cylinders.

Tipping angle . . . . .	74°
Tipping time with load . . . . .	12 s
Lowering time . . . . .	9 s
Body, plate thickness	
Front	8 mm (0.31 in)
Sides	12 mm (0.47 in)
Bottom	14 mm (0.55 in)
Chute	14 mm (0.55 in)
Yield strength . . . . .	900 N/mm <sup>2</sup> (130000 psi)
Tensile strength . . . . .	1250 N/mm <sup>2</sup> (181000 psi)
Hardness min. . . . .	360 HB



## WEIGHTS

Operating weight includes all fluids and operator.

**Type of tires:** 23.5R25.

### Operating weight:

Unloaded	
Front	12 160 kg ( 26 808 lb)
Rear	9 400 kg ( 20 723 lb)
Total	21 560 kg ( 47 531 lb)
Payload . . . . .	24 000 kg ( 52 910 lb)

### Total weight

Front	14 140 kg ( 31 173 lb)
Rear	31 420 kg ( 69 268 lb)
Total	45 560 kg (100 441 lb)



## GROUND PRESSURE

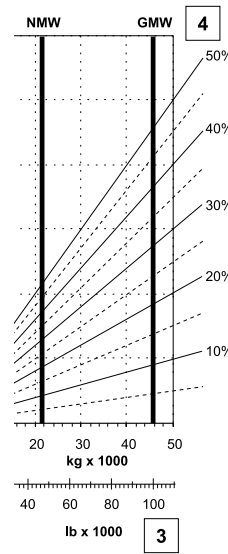
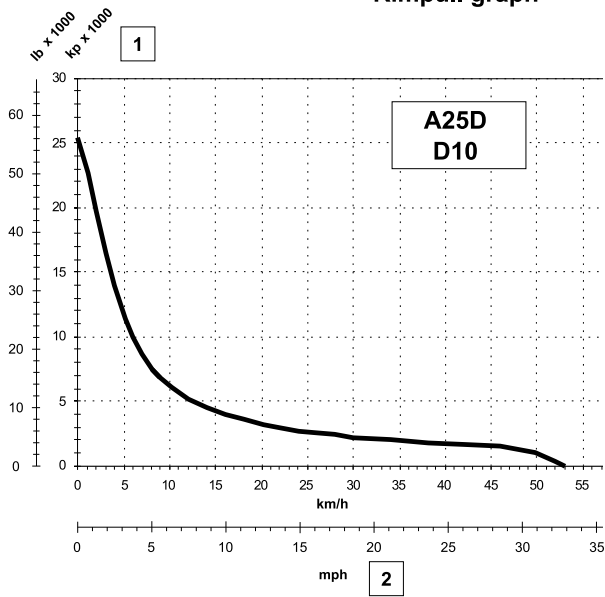
At 15% sinkage of unloaded radius and specified weights.

### With tires 23.5 R25

Unloaded	
Front	123 kPa (17.8 psi)
Rear	48 kPa ( 7.0 psi)
Loaded	
Front	144 kPa (20.9 psi)
Rear	159 kPa (23.1 psi)

# RIMPULL & RETARDATION Volvo A25D 6x6

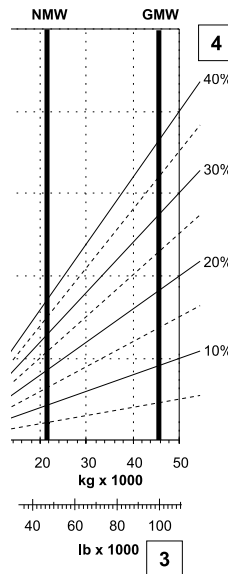
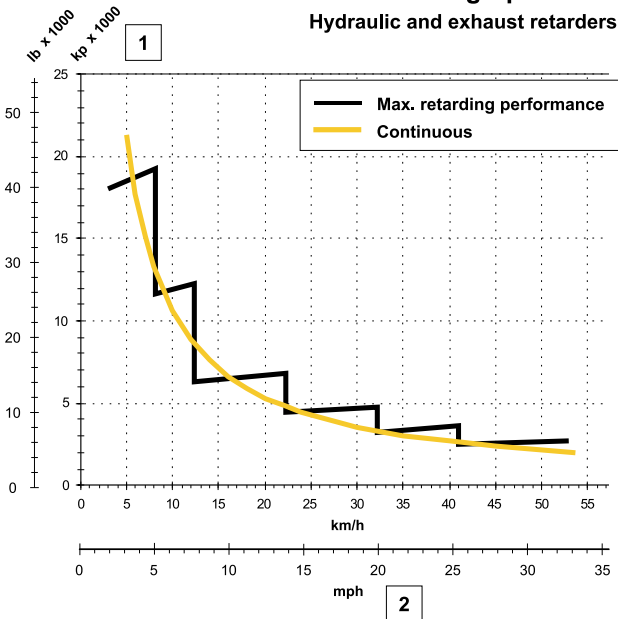
Rimpull graph



## RIMPULL

1. Rimpull in metric ton (kp x 1000).
2. Speed in km/h.
3. Machine weight in metric ton.
4. Grade in % + rolling resistance in %.

Retardation graph A25D  
Hydraulic and exhaust retarders



## RETARDATION PERFORMANCE (Transmission and exhaust retarders)

1. Braking effort in metric ton (kp x 1000).
2. Speed in km/h.
3. Machine weight metric ton.
4. Grade in % - rolling resistance in %

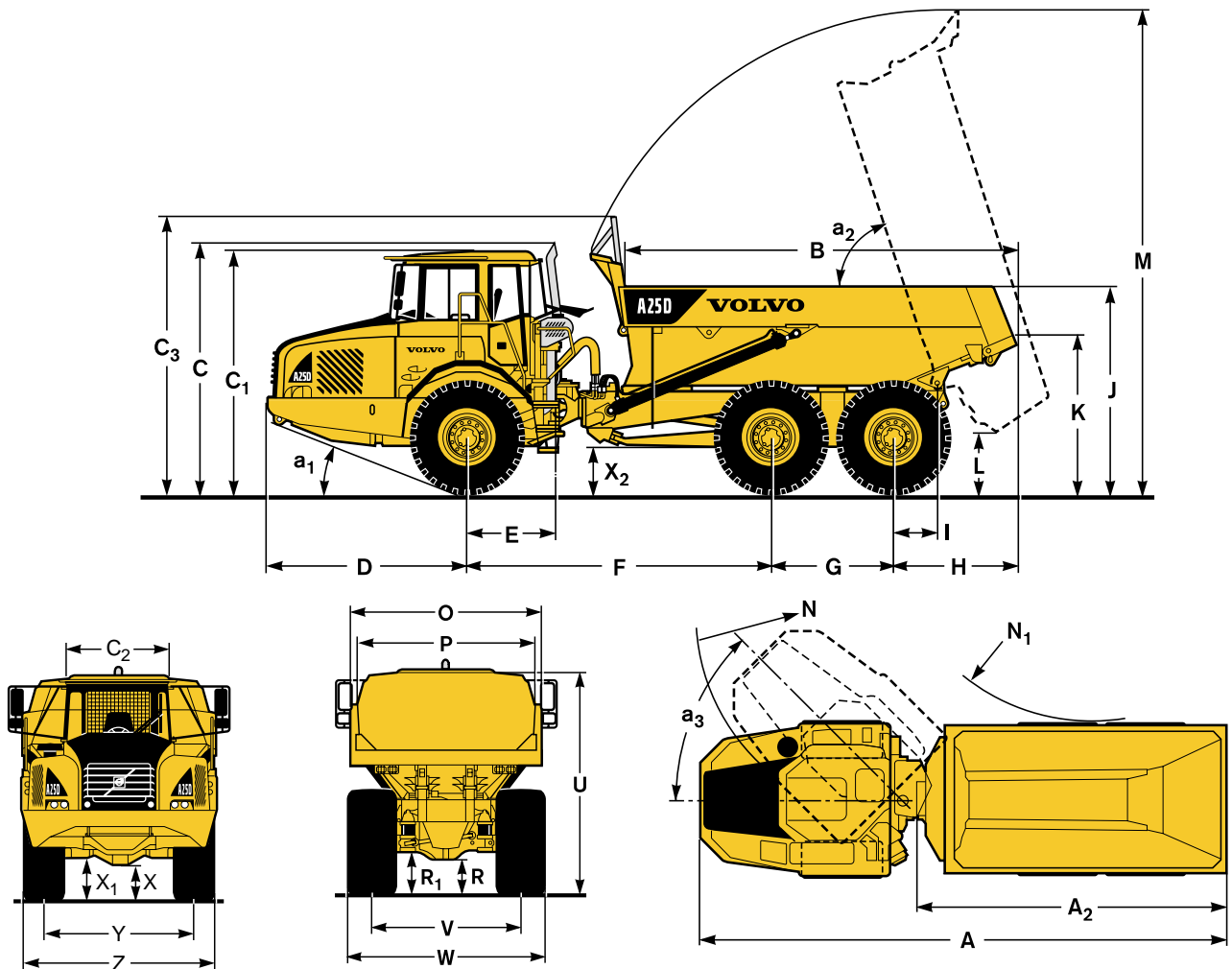
## INSTRUCTIONS

Diagonal lines represent total resistance (grade % plus rolling resistance %).

Charts based on 0% rolling resistance, standard tires and gearing, unless otherwise stated.

- Find the diagonal line with the appropriate total resistance on the right-hand edge of the chart.
- Follow the diagonal line downward until it intersects the actual machine weight line, NMW or GMW.
- Draw a new line horizontally to the left from the point of intersection until the new line intersects the rimpull or retardation curve.
- Read down for vehicle speed.

## DIMENSIONS Volvo A25D 6x6 (unloaded with 23.5R25 tires)



A	10220 mm (33'6")	F	4175 mm (13'8")	O	2700 mm (8'10")	a <sub>1</sub>	23.5°
A <sub>1</sub>	4954 mm (16'3")	G	1670 mm (5'6")	P	2490 mm (8'2")	a <sub>2</sub>	74°
A <sub>2</sub>	5764 mm (18'11")	H	1610 mm (5'3")	R	512 mm (1'8")	a <sub>3</sub>	45°
B	5152 mm (16'11")	I	608 mm (1'12")	R <sub>1</sub>	634 mm (2'1")		
C	3428 mm (11'3")	J	2778 mm (9'1")	U	3257 mm (10'8")		
C <sub>1</sub>	3318 mm (10'11")	K	2102 mm (6'11")	V	2258 mm (7'5")		
C <sub>2</sub>	1768 mm (5'10")	L	677 mm (2'3")	W	2859 mm (9'5")		
C <sub>3</sub>	3760 mm (12'4") with optional spillguard upright	M	6559 mm (21'6")	X	456 mm (1'6")		
D	2764 mm (9'1")	N	8105 mm (26'7")	X <sub>1</sub>	581 mm (1'11")		
E	1210 mm (4'0")	N <sub>1</sub>	4079 mm (13'5")	X <sub>2</sub>	659 mm (2'2")		
				Y	2258 mm (7'5")		
				Z	2859 mm (9'5")		

## LOAD CAPACITY (Body volume according to SAE 2:1)

Load capacity..... 24 000 kg (26 sh tn)  
 Body, struck..... 11.7 m<sup>3</sup> (15.3 yd<sup>3</sup>)  
 Body, heaped..... 15 m<sup>3</sup> (19.6 yd<sup>3</sup>)

**With overhung tailgate**  
 Body, struck..... 12.1 m<sup>3</sup> (15.8 yd<sup>3</sup>)  
 Body, heaped..... 15.6 m<sup>3</sup> (20.4 yd<sup>3</sup>)

**With underhung tailgate**  
 Body, struck..... 12 m<sup>3</sup> (15.7 yd<sup>3</sup>)  
 Body, heaped..... 15.3 m<sup>3</sup> (20 yd<sup>3</sup>)

## STANDARD EQUIPMENT

### Safety

ROPS/ FOPS protected cab  
 Service platform for ease of service  
 Anti-slip material on hood and fenders  
 Hazard lights  
 Horn  
 Protective grille for rear window  
 Rear view mirrors  
 Retractable 3 inch safety belt  
 Secondary steering  
 Steering joint locking assembly  
 Dump body lock  
 Windshield wipers with intermittent  
 Windshield washers

### Comfort

Tilt/telescopic steering wheel  
 Cab heater with filtered fresh air and defroster  
 Overhead console for radio and storage  
 Sun visor  
 Tinted glass  
 Can holder /storage tray  
 Cigarette lighter  
 Ashtray  
 Space for lunch cooler  
 Storage box

### Engine

Direct injected, electronically controlled  
 Turbocharged, intercooled  
 Remote oil drainage plug  
 Remote oil filters ease of access  
 Preheater for easier cold starts

### Electric system

55 A alternator  
 Battery disconnect switch  
 Extra 24 V socket for lunch cooler  
 Lights:  
 • Headlights  
 • Parking lights  
 • Direction indicators  
 • Rear lights  
 • Reverse lights  
 • Brake lights  
 • Cab lighting  
 • Instrument lighting

### Operator information interface

Gauges:  
 • Speedometer  
 • Tachometer  
 • Brake pressure  
 • Fuel  
 • Transmission oil temperature  
 Pilot lamps for all switches  
 Warning lamps grouped and easy to read  
 Central warning (3 levels) for all vital functions  
 Central positioned information display:  
 • Automatic pre-start checks  
 • Operation information, easy-to-find menu  
 • Trouble shooting diagnostics  
 • Hour meter  
 • Clock  
 • Machine settings

### Drivetrain

Automatic transmission  
 Torque converter with automatic lock-up  
 Drop box, single stage  
 Hydraulic variable retarder  
 6x4 or 6x6 operator selectable drive modes  
 100% longitudinal differential lock  
 100% differential locks in all axles

### Brakes

Air-hydraulic disc brakes  
 Two circuit brake system  
 Parking brake on prop shaft

### Body

Body prepared for exhaust heating  
 Load and Dump brake

### Tires

23.5R25

### Other

Air drier

## OPTIONAL EQUIPMENT

### Service and Maintenance

Tool kit with tire inflation unit  
 Electrical hood opening

### Engine

Engine coolant pre-heater (120V or 240V)  
 Extra air cleaner, heavy duty  
 External emergency engine stop  
 Delayed engine stop

### Electrical

Work lights, roof-mounted  
 Work lights, reverse, fender-mounted  
 Rotating beacon, collapsible mount  
 Reverse alarm  
 Rear vision system  
 Anti-theft system (prevents engine start)  
 Head lights for left hand side traffic  
 Alternator, heavy duty 80 A

### Cab

Air suspended, electrically heated operator's seat  
 Instructor seat with safety belt  
 Electrically heated rear-view mirrors  
 Air conditioning  
 Radio installation kit  
 Radio  
 Cable kit for cab heater (120V or 240V)  
 Solar guard film

### Safety

Fire-extinguisher and first aid kit

### External

Rear mudflaps

### Body

Body exhaust heating kit  
 Underhung tailgate, link operated  
 Overhung tailgate, link operated (only in combination with underhung gate)  
 Overhung tailgate, wire operated  
 Wear plates  
 Extra front spillguard  
 Upper side extension, 200 mm

### Other

Synthetic hydraulic oil (biologically degradable)  
 Arctic oil kit  
 Toolbox

*Under our policy of continual product improvement, we reserve the right to change specifications and design without prior notice. The illustrations do not necessarily show the standard version of the machine.*

