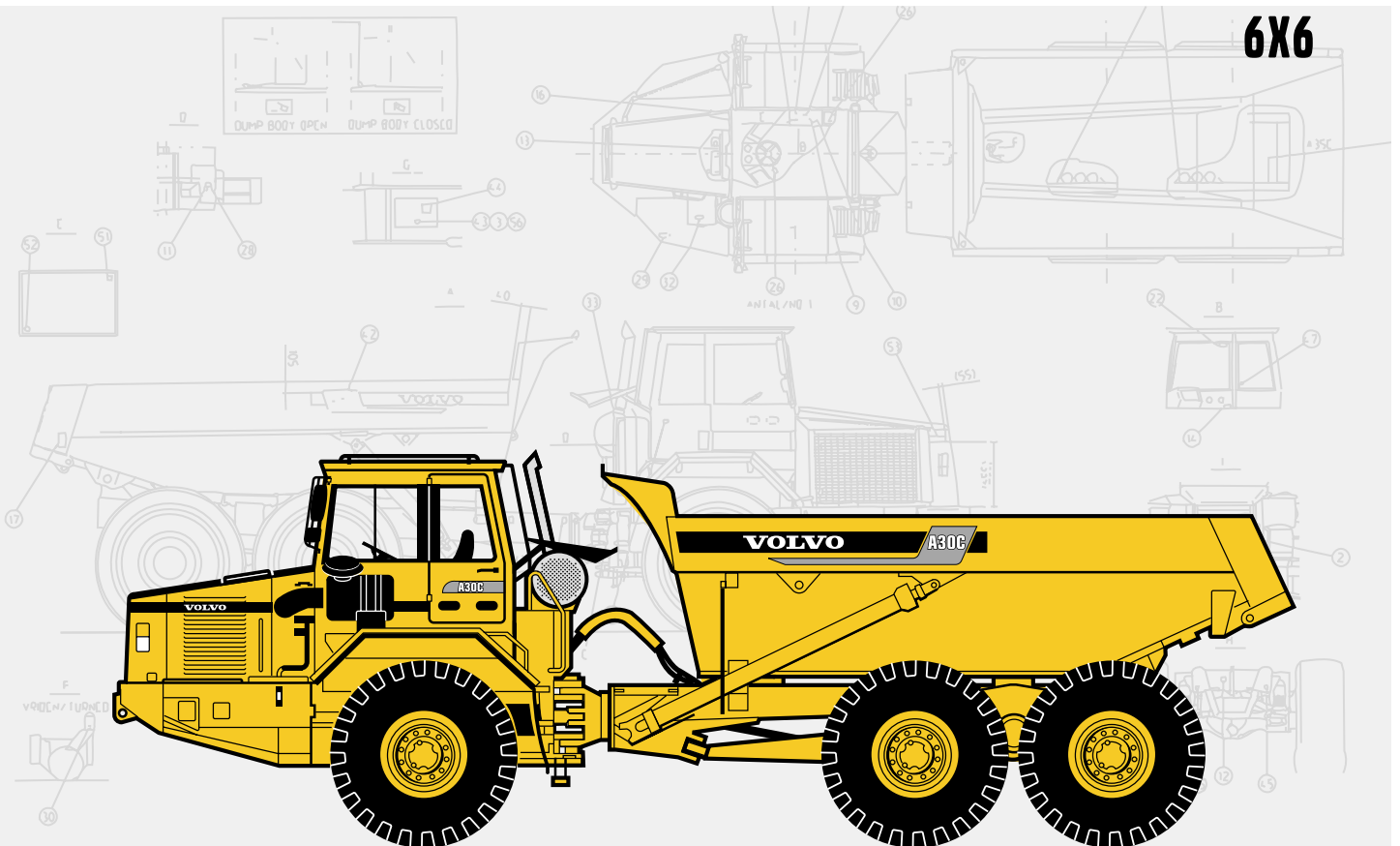


## VOLVO ARTICULATED HAULER

# A30C



- Engine output SAE J1349:  
Net 232 kW 311 hp  
Gross 235 kW 315 hp
- Body volume:  
16,5 m<sup>3</sup> 21.6 yd<sup>3</sup>
- Load capacity:  
27 t 30 sh ton
- Volvo High-performance, low-emission direct-injected, inter-cooled, turbocharged engine as standard.
- Electronically controlled, fully automatic powershift transmission.
- Variable hydraulic retarder as standard.
- Dropbox with longitudinal differential lock.
- 100% lock-up diff. locks. One longitudinal and three transverse diff. locks.
- Volvo rough terrain suspension, high ground clearance and individually oscillating bogie and front axle.
- Load and dump brake.
- Low interior noise level.
- Adjustable steering wheel.

# VOLVO



## ENGINE

Volvo 6-cylinder, in-line, direct-injected, turbocharged, inter-cooled 4-cycle low-emission diesel engine with overhead valves and wet replaceable cylinder linings.

Meets USA (EPA), California off-road regulation 1996 and European off-road regulation 1997.

**Fan:** Hydrostatic-driven, thermostatically controlled radiator fan, consuming power only when needed.

Make . . . . .	Volvo	
Model . . . . .	TD104 KAE	
Max power at . . . . .	36,7 r/s	<b>2200 rpm</b>
SAE J1349 Gross . . . . .	235 kW	<b>315 hp</b>
Flywheel power at . . . . .	36,7 r/s	<b>2200 rpm</b>
SAE J1349 Net . . . . .	232 kW	<b>311 hp</b>
DIN 6271* . . . . .	232 kW	<b>311 hp</b>
Max torque at . . . . .	18,3 r/s	<b>1100 rpm</b>
SAE J1349 Gross . . . . .	1460 Nm	<b>1077 lbf ft</b>
SAE J1349 Net . . . . .	1455 Nm	<b>1073 lbf ft</b>
DIN6271** . . . . .	1455 Nm	<b>1073 lbf ft</b>
Displacement total . . . . .	9,6 l	<b>586 in<sup>3</sup></b>
Bore . . . . .	120 mm	<b>4.7 in</b>
Stroke . . . . .	140 mm	<b>5.5 in</b>
Compression ratio . . . . .	18:1	

\* with fan at normal speed. With fan operating at full speed the flywheel power is 218 kW **292 hp**, which corresponds to DIN 70020.

\*\* with fan at normal speed. With fan operating at full speed the maximum torque is 1310 Nm, **969 lbf ft**, which corresponds to DIN 70020



## DRIVETRAIN

**Torque converter:** Single stage with free-wheeling stator and automatic lock-up in all ranges.

**Transmission:** Electronically controlled, fully automatic planetary transmission with six gears forward and two in reverse.

**Dropbox:** Volvo single-stage, power take-off and 100% differential locking.

**Axles:** Volvo. 6-wheel drive. All axles have transversal diff. locks with 100% locking capability and fully floating axle shafts with planetary type hub reductions.

**Differential locks:** One longitudinal and three transverse. All with 100% locking capability.

Torque converter . . . . .	2.36:1
Transmission . . . . .	Volvo PT 1663
Dropbox . . . . .	Volvo FL 650B
Axles . . . . .	Volvo AH 63

### Speeds with tires 30/65 R 25 and 23.5 R 25

Forward		
1	8,2 km/h	<b>5.1 mph</b>
2	11,9 km/h	<b>7.4 mph</b>
3	21,5 km/h	<b>13.4 mph</b>
4	31,1 km/h	<b>19.3 mph</b>
5	39,5 km/h	<b>24.5 mph</b>
6	52,3 km/h	<b>32.7 mph</b>
Reverse		
1	7,6 km/h	<b>4.7 mph</b>
2	13,1 km/h	<b>8.1 mph</b>



## ELECTRICAL SYSTEM

Voltage . . . . .	24 V	
Battery capacity . . . . .	2x170 Ah	
Alternator . . . . .	1,65 kW	<b>60 A</b>
Starter motor . . . . .	6,6 kW	<b>8.8 hp</b>



## SERVICE CAPACITIES

Crankcase . . . . .	23 l	<b>6.1 US gal</b>
Cooling system, exchange . . .	42 l	<b>11.1 US gal</b>
Cooling system, total . . . . .	70 l	<b>18.5 US gal</b>
Transmission total . . . . .	40 l	<b>10.6 US gal</b>
Dropbox . . . . .	6 l	<b>1.6 US gal</b>
Front axle . . . . .	29 l	<b>7.7 US gal</b>
First bogie axle . . . . .	30 l	<b>7.9 US gal</b>
Second bogie axle . . . . .	29 l	<b>7.7 US gal</b>
Brake hydraulics . . . . .	2 l	<b>0.5 US gal</b>
Hydraulic tank . . . . .	150 l	<b>39.6 US gal</b>
Hydraulic system . . . . .	194 l	<b>51.3 US gal</b>
Fuel tank . . . . .	360 l	<b>95.1 US gal</b>



## SUSPENSION

Volvo suspension system. Totally maintenance-free.

**Front axle:** One rubber spring with bottoming absorption on each side. Stabilizer. Two shock absorbers on each side. The front axle is suspended at three points, allowing oscillation in rough terrain.

**Bogie:** Volvo's unique rough terrain bogie, which permits individual oscillation between the axles.



## BRAKE SYSTEM

*Air-hydraulic disc brakes on all axles. Two circuits. Designed to comply with ISO 3450 and SAE J1473 at gross machine weight.*

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

**Parking brake:** Spring-applied, air-released 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.

**Load and dump brake:** With the engine running, the service brake on the bogie axles is applied together with the parking brake.

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

**Transmission retarder:** Hydraulic, integrated in transmission as standard. Infinitely variable with the retarder pedal or full effect applied via the service brake pedal.

**Exhaust retarder:** Standard.

For retarding capability, including hydraulic transmission retarder, engine and exhaust retarder, see graph on page 4.



## HYDRAULIC SYSTEM

**Pumps:** Four engine-dependent, variable piston pumps mounted on flywheel power takeoffs. One ground-dependent hydraulic pump for supplementary steering mounted on drop-box.

**Filtration:** Through two paper filters with magnetic cores.

Pump capacity per pump at shaft speed . . . . .	36 r/s 109 l/min	2160 rpm 28.8 US gpm
Working pressure. . . . .	19 MPa	2758 psi



## CAB

*Volvo cab, tested and approved according to ROPS standard ISO 3471 and SAE J1040/APR 88, FOPS standard ISO 3449 and SAE J231. Mounted on rubber pads which effectively reduce vibrations. Adjustable steering wheel. Radio/Contronic console in ceiling.*

**Heater and defroster:** Filtered air and pressurized cab. Three-speed fan.

**Operator's seat:** Ergonomically designed adjustable seat with air suspension, electric heating, flameproof upholstery and retractable seat belt.

**Trainer seat:** Standard, with seat belt and back rest.

Number of exits . . . . .	2
Internal sound level acc. to ISO 6394 at max. speed . . .	76 dB (A)



## STEERING SYSTEM

*Hydromechanical articulated steering with mechanical feed-back. 3,4 turns lock-to-lock.*

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

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

**Steering angle:** ±45°



## BODY

**Body:** Hardened and tempered steel body with high-impact strength.

**Cylinders:** Two single-stage, double-acting hoist cylinders.

Tipping angle . . . . .	70°
Tipping time with load . . . . .	14 s
Lowering time . . . . .	13 s
Body, plate thickness	
Front	8 mm      5/16 in
Side	12 mm     1/2 in
Bottom/chute	14 mm     9/16 in
Yield strength. . . . .	1000 N/mm <sup>2</sup> 145,000 psi
Tensile strength . . . . .	1250 kN/mm <sup>2</sup> 181,000 psi
Hardness min. . . . .	360 – 440 HB



## WEIGHTS

Operating weight includes all fluids and operator.

**Operating weight with tires 23.5 R 25**

Front	11500 kg	25,350 lb
Rear	9400 kg	20,720 lb
Total	20900 kg	46,080 lb
Payload . . . . .	27000 kg	59,520 lb
Total weight		
Front	15250 kg	33,620 lb
Rear	32650 kg	71,980 lb
Total	47900 kg	105,600 lb

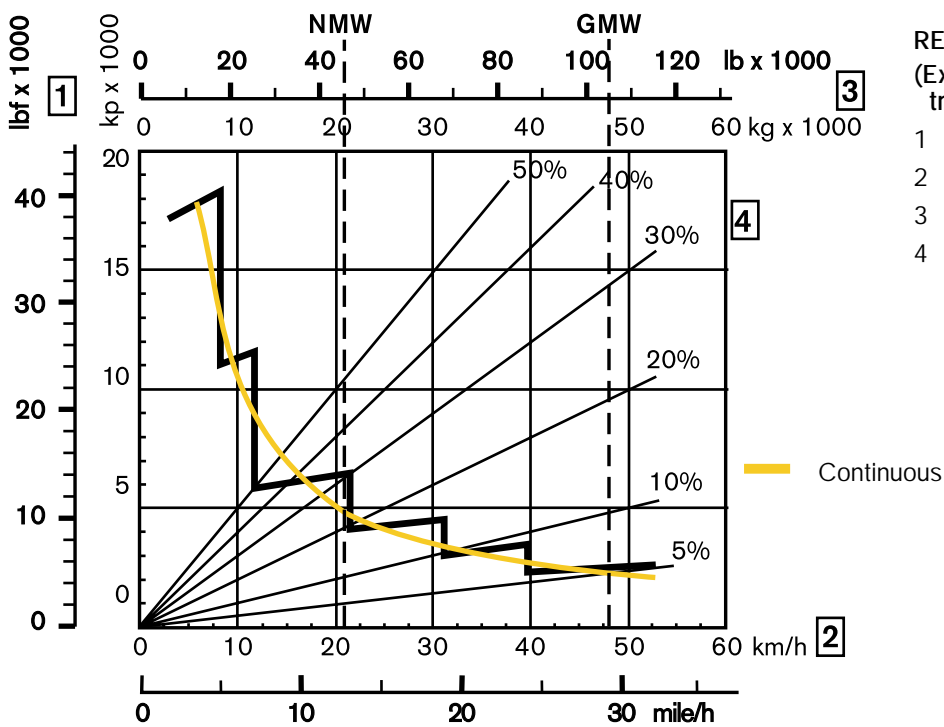
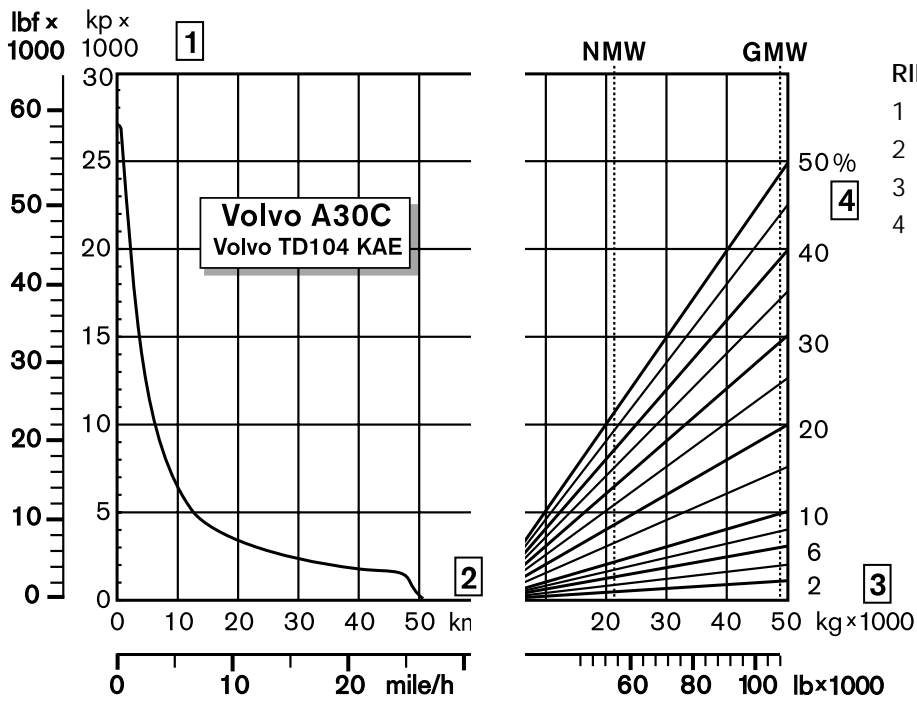
A30C equipped with 30/65 R 25 tires, add 200 kg 440 lb per axle.



## GROUND PRESSURE

At 15% sinkage of unloaded radius and specified weights.

<b>With tires:</b>	<b>23.5 R 25</b>	<b>30/65 R 25</b>
Unloaded		
Front	112 kPa 16.2 psi	94 kPa 13.6 psi
Rear	46 kPa 6.7 psi	40 kPa 5.8 psi
Loaded		
Front	150 kPa 21.7 psi	124 kPa 18.0 psi
Rear	164 kPa 23.8 psi	135 kPa 19.6 psi



### INSTRUCTIONS

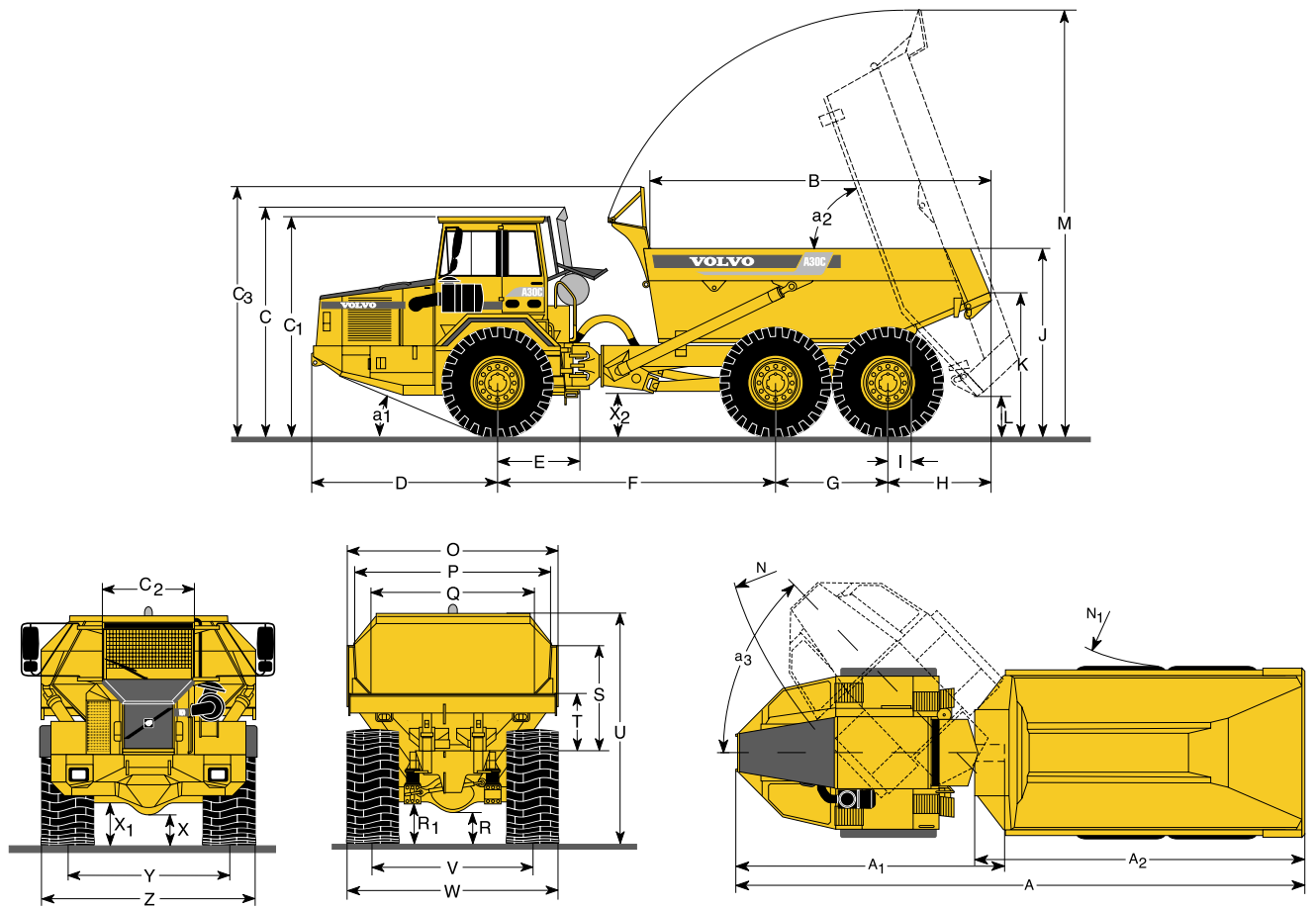
Diagonal lines represent total resistance (grade % plus rolling resistance %).

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

In the retardation chart, the diagonal lines represent the "total resistance" as well (here in downhill grades it is the total extra pushing force), which is the grade in % minus the rolling resistance in %.

- 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 the intersection until the new line intersects the rimpull or retardation curve.
- Read down for vehicle speed.

## DIMENSIONS Volvo A30C 6x6 (unloaded with 23.5R25 tires)



A	10200 mm	33'6"	D	2770 mm	9'1"	N	8047 mm	26'5"	V	2216 mm	7'3"
A <sub>1</sub>	4862 mm	15'11"	E	1210 mm	4'	N <sub>1</sub>	4021 mm	13'2"	W	2820 mm	9'3"
A <sub>2</sub>	5856 mm	19'3"	F	4173 mm	13'8"	O	2932 mm	9'7"	W*	2980 mm	9'9"
B	5167 mm	16'11"	G	1670 mm	5'6"	P	2720 mm	8'11"	X	485 mm	1'7"
C	3410 mm	11'2"	H	1587 mm	5'2"	Q	2286 mm	7'6"	X <sub>1</sub>	522 mm	1'8"
C <sub>1</sub>	3260 mm	10'8"	I	430 mm	1'5"	R	530 mm	1'9"	X <sub>2</sub>	670 mm	2'2"
C <sub>2</sub>	1331 mm	4'4"	J	2834 mm	9'4"	R <sub>1</sub>	567 mm	1'10"	Y	2216 mm	7'3"
C <sub>3</sub>	3802 mm	12'6"	K	2180 mm	7'2"	S	1464 mm	4'10"	Z	2820 mm	9'3"
	with optional spill guard in upright position		L	594 mm	1'11"	T	810 mm	2'8"	Z*	2980 mm	9'9"
			M	6494 mm	21'4"	U	3305 mm	10'10"	a <sub>1</sub>		23°
								a <sub>2</sub>		70°	
								a <sub>3</sub>		45°	

\* with tires 30/65 R 25

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

US body load capacity . . . . . 27000 kg    30 sh tn  
 Body, struck . . . . . 12,9 m<sup>3</sup>    16.9 yd<sup>3</sup>  
 heaped                                    16,5m<sup>3</sup>    21.6 yd<sup>3</sup>

With overhung tailgate (optional)  
 Body, struck . . . . . 13,2 m<sup>3</sup>    17.3 yd<sup>3</sup>  
 heaped                                    17,2 m<sup>3</sup>    22.5 yd<sup>3</sup>

## STANDARD EQUIPMENT

### Safety

ROPS/FOPS cab  
 Anti-slip material on hood and fenders  
 Hazard flashers  
 Horn  
 Protective grille for rear window  
 Rearview mirrors  
 Reverse alarm  
 Secondary steering  
 Speedometer, electric  
 Steering joint locking assembly  
 Trainer's seat with seat belt and back rest  
 Windshield wipers with interval  
 Windshield washers

### Comfort

Adjustable steering wheel  
 Ashtray  
 Cab heater with filtered fresh air and defroster  
 Cigarette lighter  
 Cup holder  
 Contronic information display  
 Ergonomically designed and adjustable operator's seat with air suspension, electric heating and retractable seat belt  
 Radio/Contronic console in ceiling  
 Sun visor  
 Tinted glass

### Engine

Exhaust retarder  
 Intercooler  
 Low-emission engine  
 Oil drainage hose  
 Preheating coil  
 Turbocharger

### Electric system

Alternator  
 Battery disconnect switch  
 Electrical outlet 24V  
*Lights:*  
 • Headlights, high/low beam  
 • Parking lights  
 • Turn signals  
 • Rear lights  
 • Brake lights  
 • Reverse lights  
 • Cab lighting  
 • Instrument lighting  
 • Control panel lighting  
*Gauges for:*  
 • Air pressure  
 • Engine temperature  
 • Engine rpm  
 • Fuel  
 • Hours  
 • Transmission oil temperature  
*Pilot lamps for:*  
 • Turn signals  
 • Bogie axles diff. lock  
 • Front axle diff. lock  
 • Longitudinal diff. lock  
 • Lights  
 • High beam  
 • Preheating coil

### Warning lamps for:

- Air cleaner, engine
- Battery charging
- Body up
- Brake pressure
- Brake fluid level
- Coolant level
- Engine oil pressure
- Engine temperature
- Engine-dependent steering pump
- Ground-dependent steering pump
- Parking brake
- Transmission malfunction

### Central warning for:

- Battery charging
- Brake oil level
- Brake pressure
- Body up
- Engine oil pressure
- Engine overspeed
- Steering function
- Transmission malfunction

### Drivetrain

Torque converter with automatic lock-up  
 Fully automatic transmission  
 Hydraulic, variable transmission retarder  
 Dropbox, single stage  
 Longitudinal differential lock  
 Differential lock front axle  
 Differential lock first bogie axle  
 Differential lock second bogie axle

### Brakes

Two circuits  
 Air-hydraulic disc brakes  
 Brake shields  
 Load and dump brake  
 Parking brake  
 Retarder activation in brake pedal

### External

Rear mudflaps  
 Mudguard wideners, front 9' 9"

### Body

Body with exhaust ducts

### Tires

23.5 R 25

## OPTIONAL EQUIPMENT

### Service and maintenance

Toolbox  
 Central lubrication

### Engine

Coolant filter  
 Oil-bath air cleaner  
 Engine coolant preheater, 120 V

### Electrical

Work lights, roof-mounted

### Cab

Air-conditioning  
 Electrically heated rearview mirrors  
 Kit for radio installation

### External

Fender wideners

### Body

Body heating  
 Extra front spill guard  
 Overhung tailgate, wire-operated  
 Rock liner

### Tires

30/65 R 25

*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.*