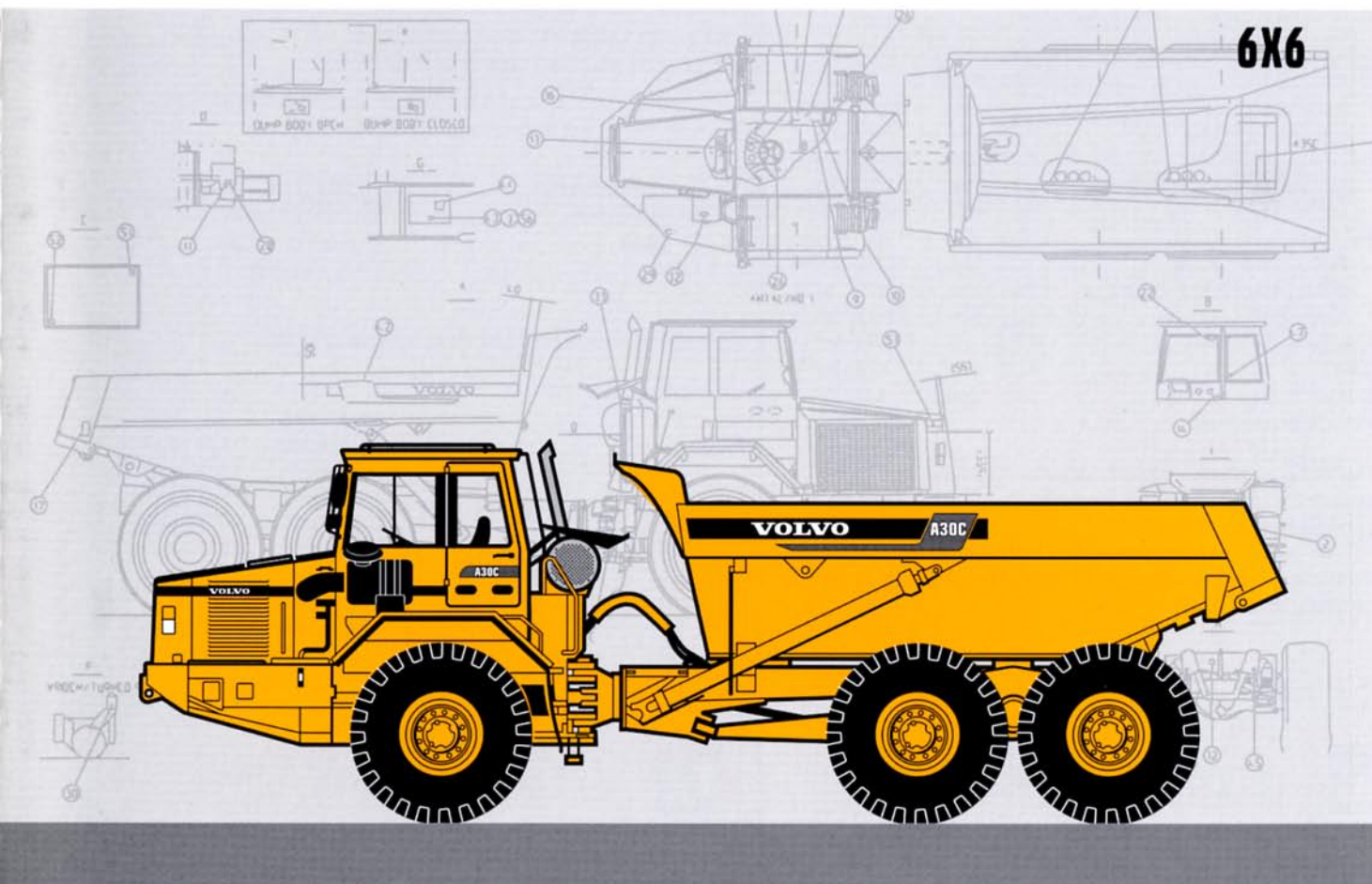


VOLVO ARTICULATED HAULER

A30C



- **Engine output SAE J1349:**
Net 221 kW 296 hp
Gross 224 kW 300 hp
- **Body volume:**
16,5 m³ 21.6 yd³
- **Load capacity:**
27 t 30 sh ton
- **Volvo High-performance, low-emission** direct-injected, intercooled, 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) federal non-road regulation step 1, California (CARB) step 1 and Europe (EU) step 1 emission regulations.

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

Make	Volvo		
Model	TD104	KBE	
Max power at	36,7	r/s	2200 rpm
SAE J1995 Gross	224	kW	300 hp
Flywheel power at	36,7	r/s	2200 rpm
ISO 9249, SAE J1349 Net	221	kW	296 hp
DIN 6271*	221	kW	296 hp
Max torque at	18,3	r/s	1100 rpm
SAE J1995 Gross	1365	Nm	1006 lbf ft
ISO 9249, SAE J1349 Net	1359	Nm	1002 lbf ft
DIN6271**	1359	Nm	1002 lbf ft
Displacement total	9,6	l	586 in ³
Bore	120	mm	4.7 in
Stroke	140	mm	5.5 in
Compression ratio	18:1		

* with fan at normal speed. With fan operating at full speed the flywheel power is 207 kW **277 hp**, which corresponds to DIN 70020.

** with fan at normal speed. With fan operating at full speed the maximum torque is 1215 Nm, **896 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	5.1 mph
2	11,9 km/h	7.4 mph
3	21,5 km/h	13.4 mph
4	31,1 km/h	19.3 mph
5	39,5 km/h	24.5 mph
6	52,3 km/h	32.7 mph
Reverse		
1	7,6 km/h	4.7 mph
2	13,1 km/h	8.1 mph



ELECTRICAL SYSTEM

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



SERVICE CAPACITIES

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



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 dropbox.

Filtration: Through two paper filters with magnetic cores.

Pump capacity per pump		
at shaft speed	36,7 r/s	2200 rpm
	109 l/min	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 feedback for self compensation. 3,4 turns lock-to-lock.

Cylinders: Two double-acting steering cylinders.

Supplementary steering: Standard ground. 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 ²	145,000 psi
Tensile strength	1250 kN/mm ²	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

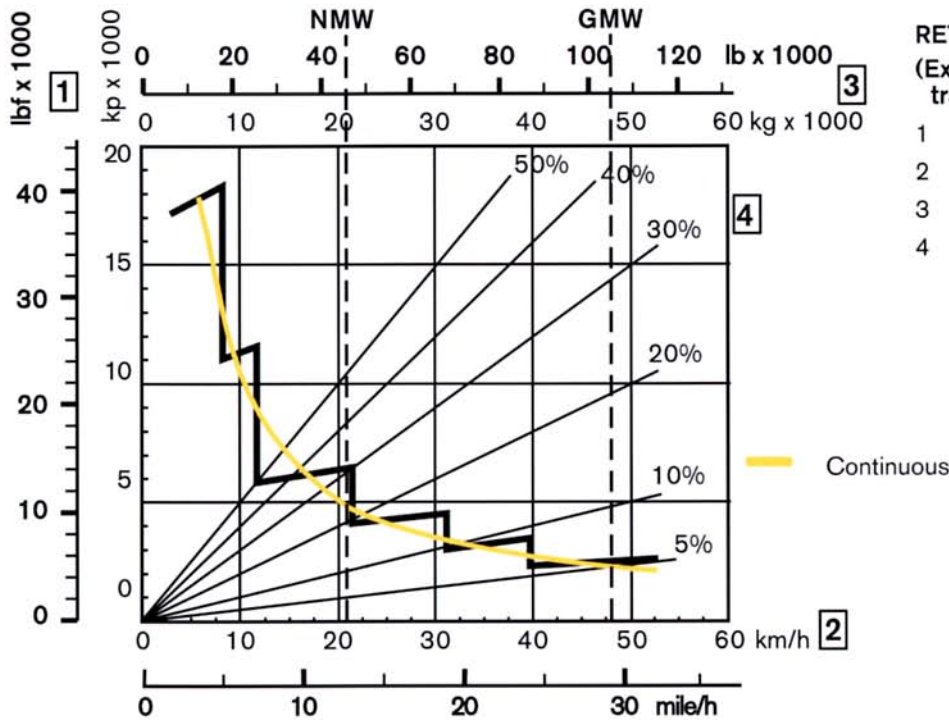
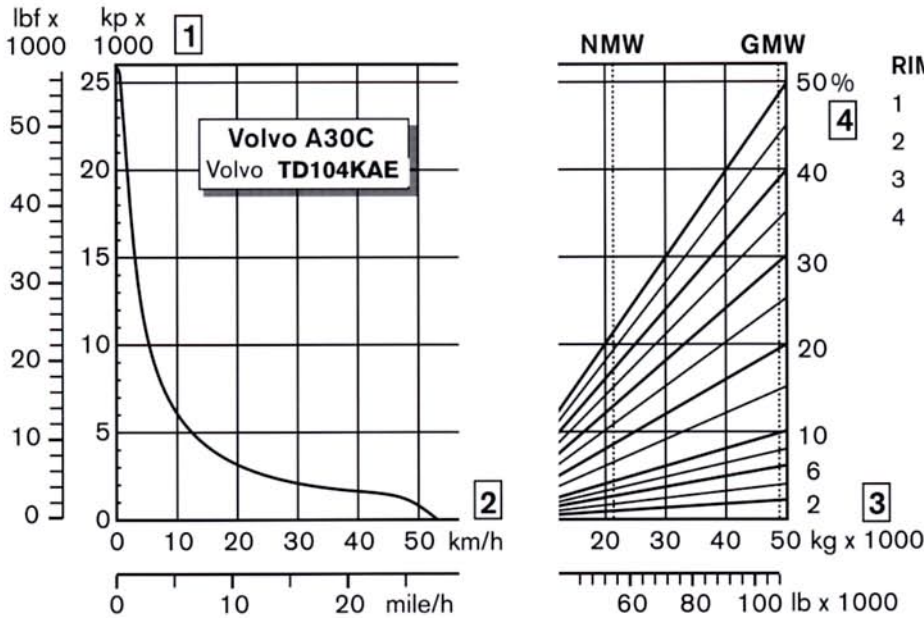
For A30C equipped with 30/65 R 25 tires, add 200 kg 440 lb per axle.



GROUND PRESSURE

At 15% sinkage of unloaded radius and specified weights.

With tires:	23.5 R 25	30/65 R 25
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

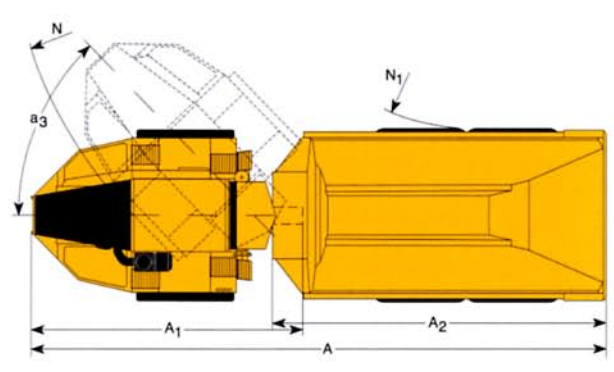
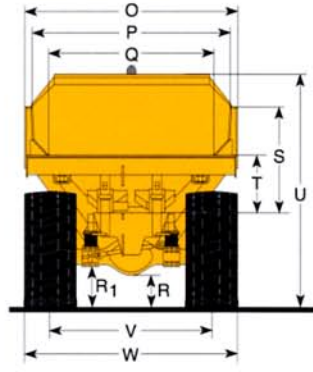
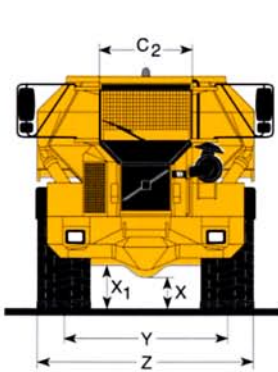
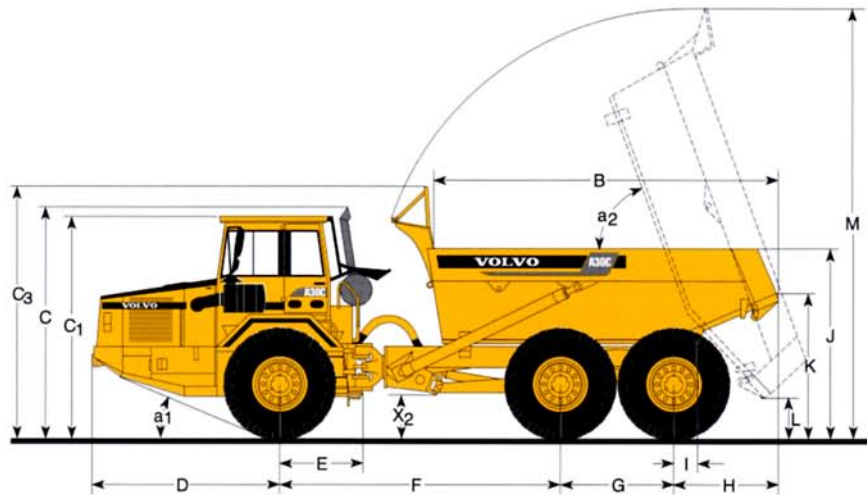
Diagonal lines represent total resistance (grade % plus rolling resistance %).

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 23.5 R 25 tires)



<table border="0"> <tr><td>A</td><td>10200 mm</td><td>33'6"</td></tr> <tr><td>A₁</td><td>4862 mm</td><td>15'11"</td></tr> <tr><td>A₂</td><td>5856 mm</td><td>19'3"</td></tr> <tr><td>B</td><td>5167 mm</td><td>16'11"</td></tr> <tr><td>C</td><td>3410 mm</td><td>11'2"</td></tr> <tr><td>C₁</td><td>3260 mm</td><td>10'8"</td></tr> <tr><td>C₂</td><td>1331 mm</td><td>4'4"</td></tr> <tr><td>C₃</td><td>3802 mm</td><td>12'6"</td></tr> <tr><td colspan="3">with optional spill guard in upright position</td></tr> </table>	A	10200 mm	33'6"	A ₁	4862 mm	15'11"	A ₂	5856 mm	19'3"	B	5167 mm	16'11"	C	3410 mm	11'2"	C ₁	3260 mm	10'8"	C ₂	1331 mm	4'4"	C ₃	3802 mm	12'6"	with optional spill guard in upright position			<table border="0"> <tr><td>D</td><td>2770 mm</td><td>9'1"</td></tr> <tr><td>E</td><td>1210 mm</td><td>4'</td></tr> <tr><td>F</td><td>4173 mm</td><td>13'8"</td></tr> <tr><td>G</td><td>1670 mm</td><td>5'6"</td></tr> <tr><td>H</td><td>1587 mm</td><td>5'2"</td></tr> <tr><td>I</td><td>430 mm</td><td>1'5"</td></tr> <tr><td>J</td><td>2834 mm</td><td>9'4"</td></tr> <tr><td>K</td><td>2180 mm</td><td>7'2"</td></tr> <tr><td>L</td><td>594 mm</td><td>1'11"</td></tr> <tr><td>M</td><td>6494 mm</td><td>21'4"</td></tr> </table>	D	2770 mm	9'1"	E	1210 mm	4'	F	4173 mm	13'8"	G	1670 mm	5'6"	H	1587 mm	5'2"	I	430 mm	1'5"	J	2834 mm	9'4"	K	2180 mm	7'2"	L	594 mm	1'11"	M	6494 mm	21'4"	<table border="0"> <tr><td>N</td><td>8047 mm</td><td>26'5"</td></tr> <tr><td>N₁</td><td>4021 mm</td><td>13'2"</td></tr> <tr><td>O</td><td>2932 mm</td><td>9'7"</td></tr> <tr><td>P</td><td>2720 mm</td><td>8'11"</td></tr> <tr><td>Q</td><td>2286 mm</td><td>7'6"</td></tr> <tr><td>R</td><td>530 mm</td><td>1'9"</td></tr> <tr><td>R₁</td><td>567 mm</td><td>1'10"</td></tr> <tr><td>S</td><td>1464 mm</td><td>4'10"</td></tr> <tr><td>T</td><td>810 mm</td><td>2'8"</td></tr> <tr><td>U</td><td>3305 mm</td><td>10'10"</td></tr> </table>	N	8047 mm	26'5"	N ₁	4021 mm	13'2"	O	2932 mm	9'7"	P	2720 mm	8'11"	Q	2286 mm	7'6"	R	530 mm	1'9"	R ₁	567 mm	1'10"	S	1464 mm	4'10"	T	810 mm	2'8"	U	3305 mm	10'10"	<table border="0"> <tr><td>V</td><td>2216 mm</td><td>7'3"</td></tr> <tr><td>W</td><td>2820 mm</td><td>9'3"</td></tr> <tr><td>W*</td><td>2980 mm</td><td>9'9"</td></tr> <tr><td>X</td><td>485 mm</td><td>1'7"</td></tr> <tr><td>X₁</td><td>522 mm</td><td>1'8"</td></tr> <tr><td>X₂</td><td>670 mm</td><td>2'2"</td></tr> <tr><td>Y</td><td>2216 mm</td><td>7'3"</td></tr> <tr><td>Z</td><td>2820 mm</td><td>9'3"</td></tr> <tr><td>Z*</td><td>2980 mm</td><td>9'9"</td></tr> <tr><td>a₁</td><td>23°</td><td></td></tr> <tr><td>a₂</td><td>70°</td><td></td></tr> <tr><td>a₃</td><td>45°</td><td></td></tr> </table>	V	2216 mm	7'3"	W	2820 mm	9'3"	W*	2980 mm	9'9"	X	485 mm	1'7"	X ₁	522 mm	1'8"	X ₂	670 mm	2'2"	Y	2216 mm	7'3"	Z	2820 mm	9'3"	Z*	2980 mm	9'9"	a ₁	23°		a ₂	70°		a ₃	45°	
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* 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 ³	16.9 yd ³
heaped	16,5 m ³	21.6 yd ³

With overhung tailgate (optional)			
Body, struck	13,2 m ³	17.3 yd ³	
heaped	17,2 m ³	22.5 yd ³	

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
 Air-conditioning
 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

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.

VOLVO

**Volvo Construction Equipment
 North America Inc.**

One Volvo Drive, Asheville, N.C. 28803-3447

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