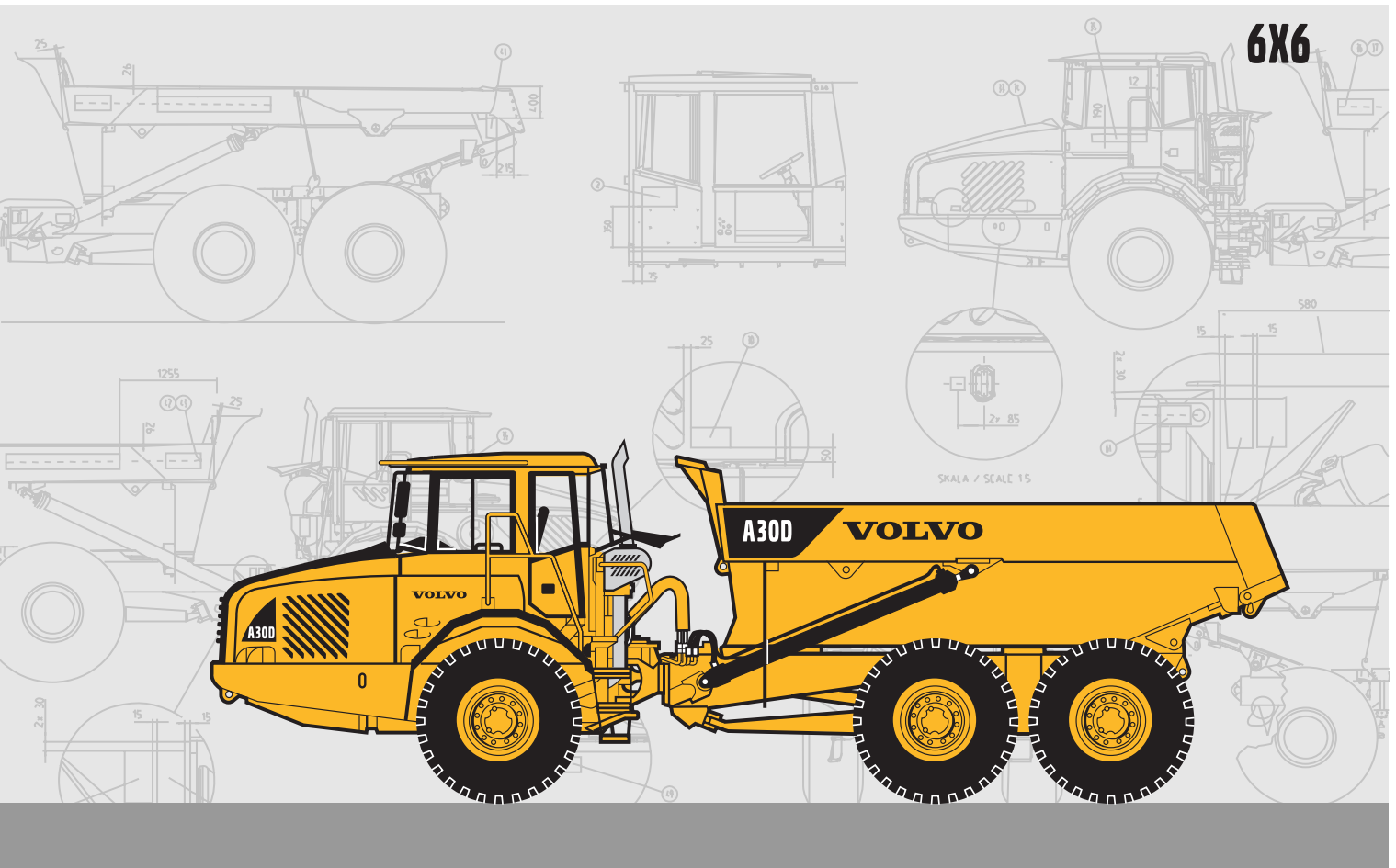


## VOLVO ARTICULATED HAULER

# A300



- **Engine output:**  
**SAE J1995, Gross 242 kW (324 hp)**  
**SAE J1349, Net 241 kW (323 hp)**
- **Body volume, heaped:**  
**17.5 m<sup>3</sup> (22.9 yd<sup>3</sup>)**
- **Load capacity:**  
**28.0 t (30.9 sh tn)**
- **Volvo cab designed** for high operator visibility, ergonomics and comfort.
- **Reduced maintenance.** No daily or weekly greasing, 250h grease points, 500h engine/1000h transmission oil change interval.
- **Contronic Communication System.**
- **Volvo high performance – low emission** electronically controlled direct injected, turbocharged, intercooled diesel engine.
- **Fully automatic planetary transmission,** electronically controlled.
- **Hydraulic transmission retarder.**
- **Dropbox with longitudinal differential lock.**
- **100% lock-up differentials.** One longitudinal and three transverse differential locks.
- **Front axle with maintenance free, three-point suspension.**
- **Volvo terrain bogie,** individually oscillating axles and high ground clearance.
- **Low profile tires 750/65R25.**
- **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 D10BAAE2*
Max power at . . . . .	33.3 r/s (2000 r/min)
SAE J1995 Gross . . . . .	242 kW (324 hp)
Flywheel power at . . . . .	33.3 r/s (2000 r/min)
SAE J1349 Net, DIN 6271*** . . . . .	241 kW (323 hp)
Max torque at . . . . .	22.5 r/s (1350 r/min)
SAE J1995 Gross . . . . .	1420 Nm (1047 lb ft)
SAE J1349 Net, DIN 6271*** . . . . .	1410 Nm (1040 lb ft)
Displacement total . . . . .	9.6 l (586 in <sup>3</sup> )
Bore . . . . .	120 mm (4.8 in)
Stroke . . . . .	140 mm (5.5 in)

\*) Meets US (EPA) step 2, California (CARB) step 2 and Europe (EU) step 2.

\*\*\*) with fan at normal speed. With fan operating at full speed, the flywheel power is 228 kW (306 hp) and maximum torque is 1321 Nm (974 lbf 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 Contronic 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 drains and drain hose 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 (2.2 US gal)
Hub . . . . .	5 l (1.3 US gal)
Front axle . . . . .	38 l (10 US gal)
First bogie axle . . . . .	40 l (10.6 US gal)
Second bogie axle . . . . .	38 l (10 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 a variable hydraulic retarder.

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

**Axles:** Volvo design. All axles 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
Type of tires . . . . .	750/65R25
Axles . . . . .	AH 64

### Speed

Forward	
1	8 km/h (5 mph)
2	12 km/h (7.5 mph)
3	22 km/h (13 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 with bottoming absorption on each side. Two shock absorbers on each side.

**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 transmission retarder, infinitely variable.

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

**Filtration:** Through one glass fiber filter with magnetic core.

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 6394                      74 dB (A)



## STEERING SYSTEM

Hydromechanical self-compensating articulated steering for safe and accurate high speed hauling. Fast acting, low effort steering with 3.4 lock-to-lock turns 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 . . . . .	70°
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. If equipped with 750/65R25 tires (optional), add 200 kg (441 lb) per axle.

**Operating weight:** with tires 23.5R25.

Unloaded	
Front	12 300 kg (27 116 lb)
Rear	10 360 kg (22 839 lb)
Total	22 660 kg (49 956 lb)
Payload . . . . .	28 000 kg (61 728 lb)

**Total weight:**

Front	14 790 kg (32 606 lb)
Rear	35 870 kg (79 078 lb)
Total	50 660 kg (111 684 lb)



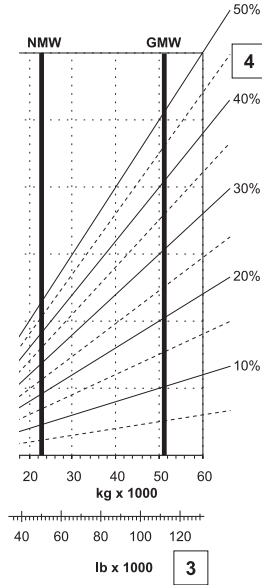
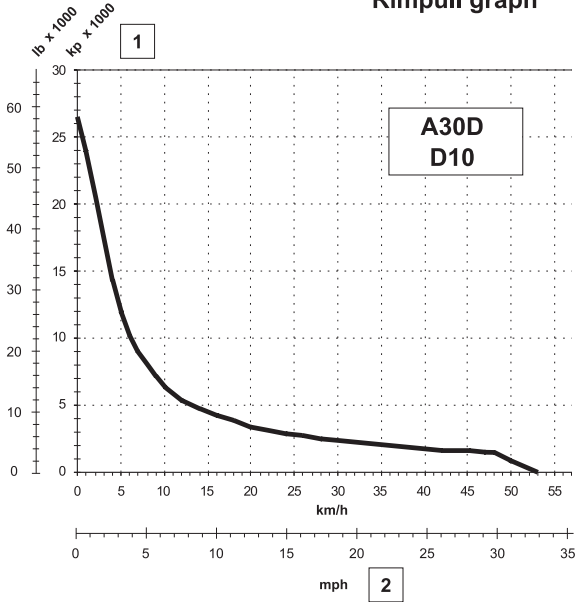
## GROUND PRESSURE

At 15% sinkage of unloaded radius and specified weights.

<b>With tires:</b>	<b>750/65R25</b>	<b>23.5R25 (optional)</b>
Unloaded		
Front	101 kPa (14.6 psi)	127 kPa (18.4 psi)
Rear	43 kPa (6.2 psi)	54 kPa (7.8 psi)
Loaded		
Front	121 kPa (17.5 psi)	152 kPa (22.0 psi)
Rear	146 kPa (21.2 psi)	183 kPa (26.5 psi)

# RIMPULL & RETARDATION Volvo A30D 6x6

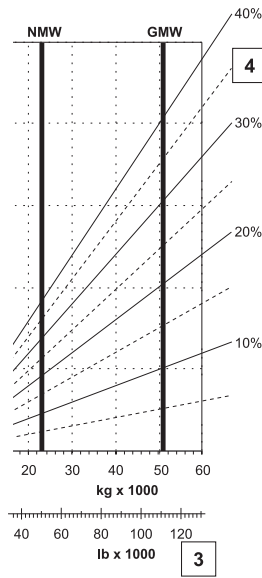
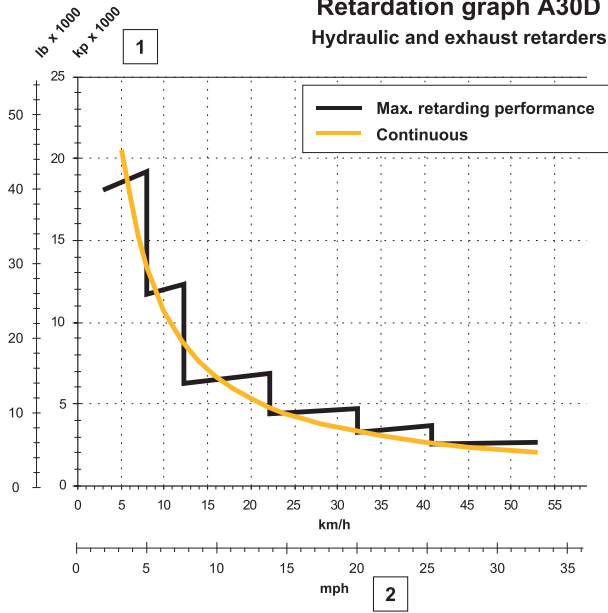
Rimpull graph



## RIMPULL

1. Rimpull in kp (lbf).
2. Speed in km/h (mph).
3. Machine weight in kg (lb).
4. Grade in % + rolling resistance in %.

Retardation graph A30D  
Hydraulic and exhaust retarders



## RETARDATION PERFORMANCE (Transmission and exhaust retarders)

1. Braking effort in kp (lbf).
2. Speed in km/h (mph).
3. Machine weight kg (lb).
4. Grade in % - rolling resistance in %.

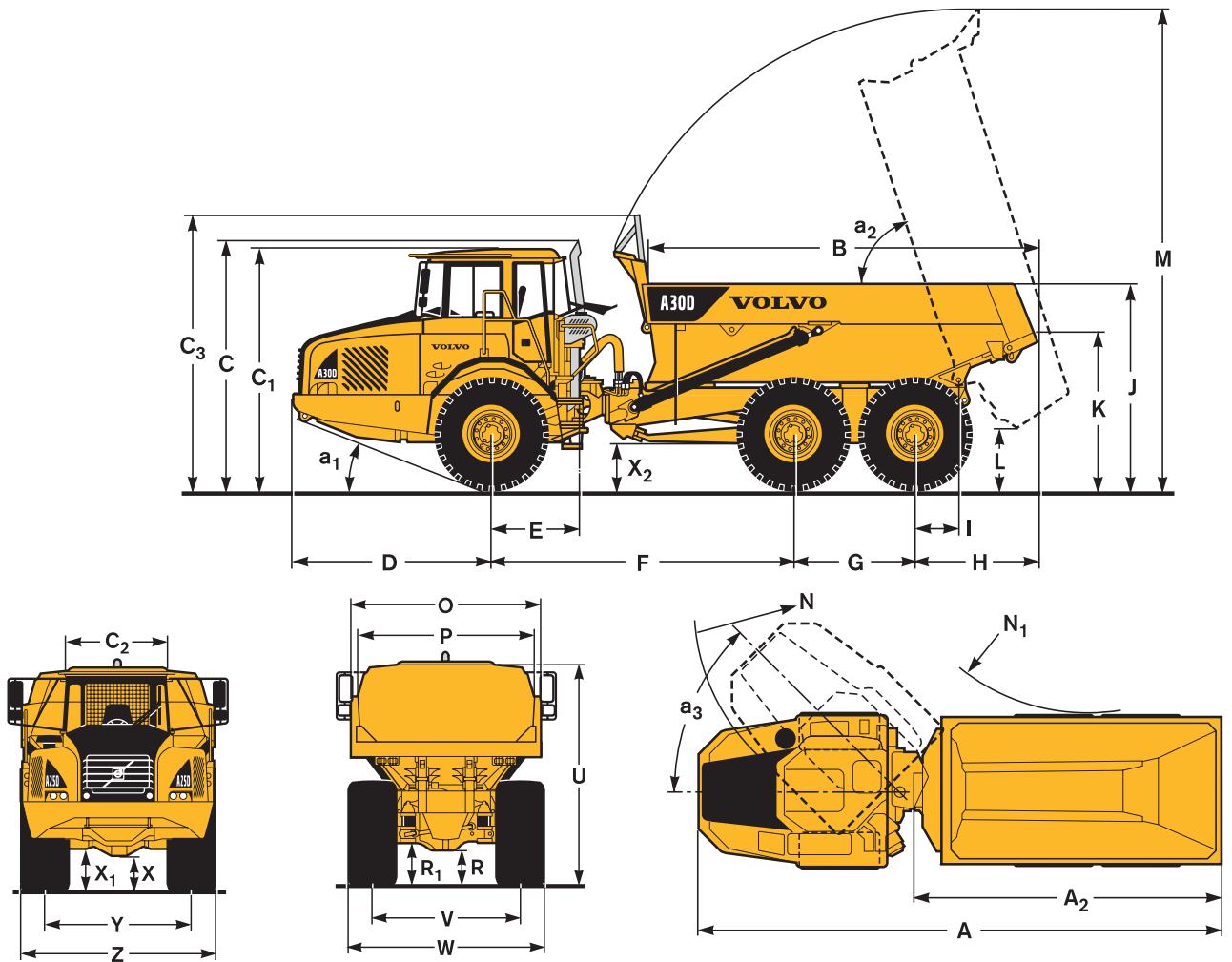
## INSTRUCTIONS

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 A30D 6x6 (unloaded with 750/65R25 tires)



A	10394 mm (34'1")	F	4175 mm (13'8")	O	2900 mm (9'6")	a <sub>1</sub>	23.5°
A <sub>2</sub>	6032 mm (19'9")	G	1670 mm (5'6")	P	2706 mm (8'11")	a <sub>2</sub>	70°
B	5339 mm (17'6")	H	1688 mm (5'6")	R	513 mm (1'8")	a <sub>3</sub>	45°
C	3428 mm (11'3")	I	608 mm (2'0")	R <sub>1</sub>	635 mm (2'1")		
C <sub>1</sub>	3318 mm (10'11")	J	2856 mm (9'4")	U	3310 mm (10'10")		
C <sub>2</sub>	1768 mm (5'10")	K	2181 mm (7'2")	V	2216 mm (7'3")	2258 mm (7'5")*	
C <sub>3</sub>	3834 mm (12'7")	L	686 mm (2'3")	W	2941 mm (9'8")	2859 mm (9'5")*	
D	2764 mm (9'1")	M	6592 mm (21'8")	X	456 mm (1'6")		
E	1210 mm (4'0")	N	8105 mm (26'7")	X <sub>1</sub>	582 mm (1'11")		
		N <sub>1</sub>	4037 mm (13'3")	X <sub>2</sub>	659 mm (2'2")		
				Y	2216 mm (7'3")	2258 mm (7'5")*	
				Z	2941 mm (9'8")	2859 mm (9'5")*	

\*with 23.5R25 Tire

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

Load capacity..... 28 000 kg (31 sh tn)  
 Body, struck..... 13.6 m<sup>3</sup> (17.8 yd<sup>3</sup>)  
 Body, heaped..... 17.5 m<sup>3</sup> (22.9 yd<sup>3</sup>)

### With overhung tailgate

Body, struck..... 14 m<sup>3</sup> (18.3 yd<sup>3</sup>)  
 Body, heaped..... 18.1 m<sup>3</sup> (23.7 yd<sup>3</sup>)

## STANDARD EQUIPMENT

<p><b>Safety</b>          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          Rearview mirrors          Retractable 3 inch safety belt          Secondary steering          Steering joint locking          Dump body lock          Windshield wipers with intermittent          Windshield washers          Reverse alarm</p> <p><b>Comfort</b>          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          Air suspended, electrically heated operator's seat</p>	<p>Instructor seat with safety belt          Electrically heated rearview mirrors          Air conditioning          Radio installation kit          Radio, AM/FM Cassette</p> <p><b>Engine</b>          Direct injected, electronically controlled          Turbocharged, intercooled          Remote oil drainage plug          Remote oil filters ease of access          Preheater for easier cold starts</p> <p><b>Electric system</b>          55 A alternator          Battery disconnect switch          Extra 24V socket for lunch cooler          Lights:          • Headlights          • Parking lights          • Direction indicators          • Rear lights          • Reverse lights          • Brake lights          • Cab lighting          • Instrument lighting</p>	<p><b>Operator information interface</b>          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          • Troubleshooting diagnostics          • Hour meter          • Clock          • Machine settings</p>	<p><b>Drivetrain</b>          Automatic transmission          Torque converter with automatic lock-up          Dropbox, single stage          Hydraulic variable retarder          6x4 or 6x6 operator selectable drive modes          Longitudinal differential lock          100% differential locks in all axles</p> <p><b>Brakes</b>          Air-hydraulic disc brakes          Two circuit brake system          Parking brake on prop shaft</p> <p><b>Body</b>          Body prepared for exhaust heating          Load and Dump brake</p> <p><b>Tires</b>          750/65R25 or 23.5R25</p> <p><b>Other</b>          Air drier          Electrical hood opening          Rear mudflaps          Toolbox</p>
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## OPTIONAL EQUIPMENT

<p><b>Service and Maintenance</b>          Tool kit with tire inflation unit</p> <p><b>Engine</b>          Engine coolant pre-heater (120V or 240V)          Extra long life service free endurance air filter          External emergency engine stop          Delayed engine stop          High idle speed</p> <p><b>Electrical</b>          Work lights, roof-mounted          Work lights, reverse, fender-mounted          Rotating beacon, collapsible mount          Rear vision system – monochrome or color display          Anti-theft system (prevents engine start)          Alternator, heavy duty 80 A</p>	<p><b>Cab</b>          Cable kit for cab heater 120V          Radio with CD player          Electric heated mirrors          Vandalism protection</p>	<p><b>External</b>          Front mudguard wideners (for 750/65R25)</p>	<p><b>Body</b>          Body exhaust heating kit          Exhaust body heating, front exit          Overhung tailgate, wire operated          Wear plates          Extra front spillguard</p> <p><b>Other</b>          Synthetic hydraulic oil (biologically degradable)          Arctic oil kit          Towing hitch          Lifting tools          Brake guards</p>
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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

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Ref. No. 22 1 669 4153 English  
 Printed in USA 01/03 – 5,0  
 Volvo, Asheville