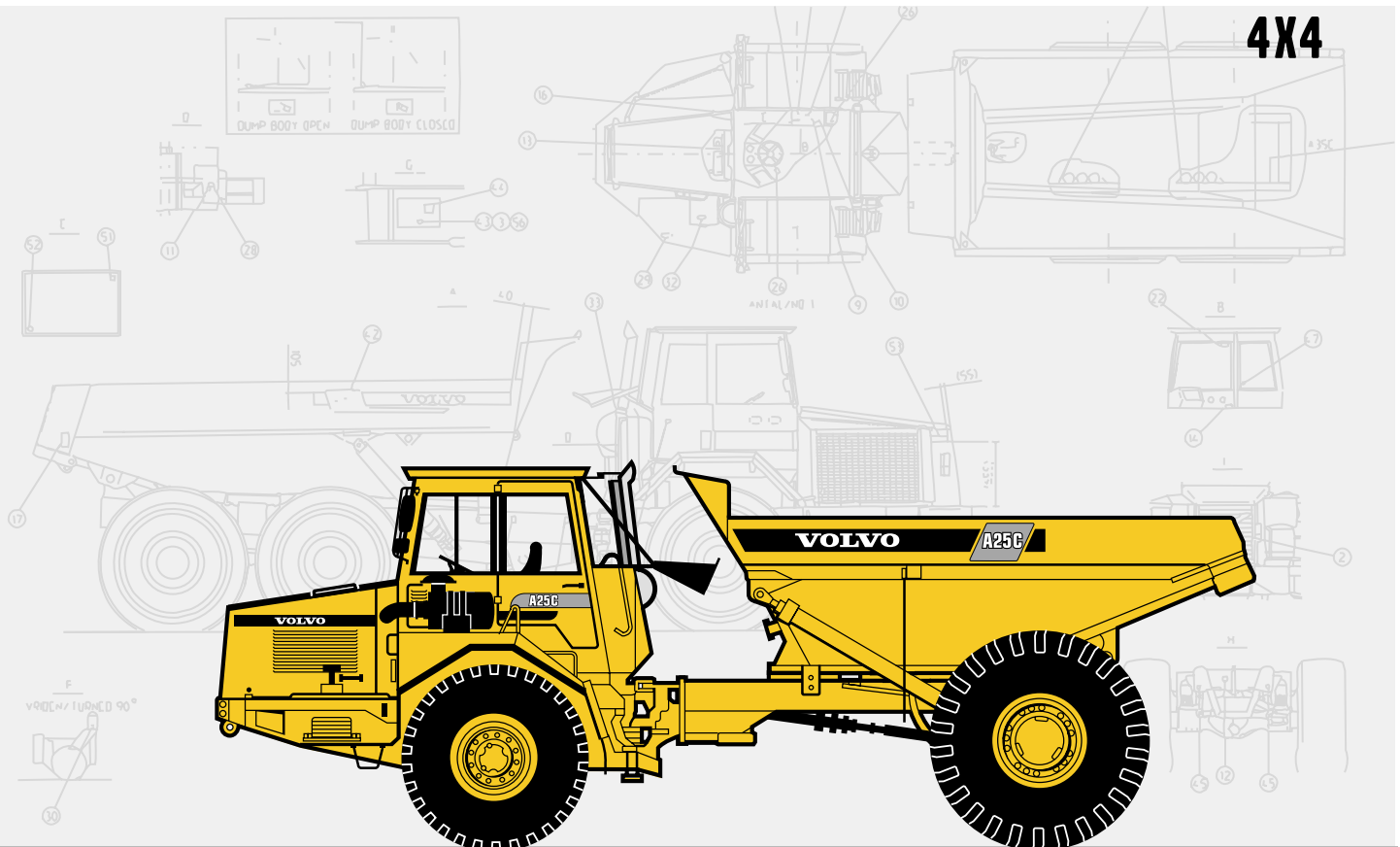


## VOLVO ARTICULATED HAULER

# A25C



- Engine output SAE J1349:  
Net 187 kW 251 hp  
Gross 190 kW 255 hp
- Body volume:  
13,8 m<sup>3</sup> 18.1 yd<sup>3</sup>
- Load capacity:  
22,5 t 25 sh tn
- Volvo High-performance, low-emission direct-injected, inter-cooled turbocharged diesel engine as standard.
- Electronically controlled, fully automatic power-shift transmission.
- Variable hydraulic retarder as standard.
- Dropbox with longitudinal diff. lock and high and low gear ranges.
- 100% lock-up diff. locks. One longitudinal and two transverse diff. locks.
- Front axle with 3-point suspension and effective shock absorption.
- 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) and California off-road regulation 1996.

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

Make . . . . .	Volvo	
Model . . . . .	TD73 KCE	
Max power at . . . . .	40 r/s	<b>2400 rpm</b>
SAE J1349 Gross	190 kW	<b>255 hp</b>
Flywheel power at . . . . .	40 r/s	<b>2400 rpm</b>
SAE J1349 Net	187 kW	<b>251 hp</b>
DIN 6271*	187 kW	<b>251 hp</b>
Max torque at . . . . .	20 r/s	<b>1200 r/min</b>
SAE J1349 Gross	1090 Nm	<b>804 lbf ft</b>
SAE J1349 Net	1080 Nm	<b>796 lbf ft</b>
DIN 6271 **	1080 Nm	<b>796 lbf ft</b>
Displacement total . . . . .	6,73 l	<b>411 in<sup>3</sup></b>
Bore . . . . .	104,8 mm	<b>4.125 in</b>
Stroke . . . . .	130 mm	<b>5.12 in</b>
Compression ratio . . . . .	17,7:1	

\* with fan at normal speed. With fan operating at full speed, the flywheel power is 174 kW **233 hp**, which corresponds to DIN 70020.

\*\* with fan at normal speed. With fan operating at full speed, the maximum torque is 970 Nm **715 lbf ft**, which corresponds to DIN 70020.



## ELECTRICAL SYSTEM

Voltage . . . . .	24 V	
Battery capacity . . . . .	2x135 Ah	
Alternator . . . . .	1,65 kW	<b>60 A</b>
Starter motor . . . . .	5 kW	<b>6.7 hp</b>



## SERVICE CAPACITIES

Crankcase . . . . .	24 l	<b>6.3 US gal</b>
Cooling system . . . . .	37 l	<b>9.8 US gal</b>
Transmission . . . . .	16 l	<b>4.2 US gal</b>
Dropbox . . . . .	6 l	<b>1.6 US gal</b>
Front axle . . . . .	27 l	<b>7.1 US gal</b>
Rear axle . . . . .	48 l	<b>12.7 US gal</b>
Brake hydraulics . . . . .	2 l	<b>0.5 US gal</b>
Hydraulic system . . . . .	180 l	<b>47.6 US gal</b>
Hydraulic tank . . . . .	155 l	<b>41 US gal</b>
Fuel tank . . . . .	280 l	<b>74.0 US gal</b>



## DRIVETRAIN

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

**Transmission:** Fully automatic planetary transmission with 5 gears forward and 1 reverse.

**Dropbox:** Volvo with 2-stage design, power takeoff and differential locking.

**Axles:** Volvo. 4-wheel drive. Both axles have transverse diff. locks with 100% locking capability and fully floating axle shafts with planetary type hub reductions.

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

Torque converter . . . . .	2,4:1
Transmission . . . . .	Volvo PT 1051 (5HP 500)
Dropbox . . . . .	Volvo FL 652
Axles . . . . .	Volvo AH 54/AH 71

### Speeds

Low gear, forward		
1	6 km/h	<b>3.7 mph</b>
2	10 km/h	<b>5.6 mph</b>
3	17 km/h	<b>10.6 mph</b>
4	24 km/h	<b>14.9 mph</b>
5	34 km/h	<b>21.1 mph</b>
High gear, forward		
1	9 km/h	<b>5.6 mph</b>
2	15 km/h	<b>9.3 mph</b>
3	26 km/h	<b>16.2 mph</b>
4	37 km/h	<b>23.0 mph</b>
5	52 km/h	<b>32.3 mph</b>
Low gear, reverse		
1	7 km/h	<b>4.3 mph</b>
High gear, reverse		
1	11 km/h	<b>6.8 mph</b>



## SUSPENSION

*Volvo suspension system. Totally maintenance-free.*

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

**Rear axle:** No suspension.



## BRAKE SYSTEM

*Air-hydraulic disc brakes on both 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 rear axle.

**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.

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



## HYDRAULIC SYSTEM

**Pumps:** Three engine-dependent, variable piston pumps mounted on flywheel power takeoffs. One unused power takeoff available. Ground-dependent piston pump for supplementary steering mounted on dropbox.

**Filter:** Filtration of oil through two paper filters with magnetic cores.

Pump capacity per pump at shaft speed . . . . .	34 r/s	2040 rpm
engine dependent	100 l/min	26.4 US gpm
ground dependent	118 l/min	31.2 US gpm
Working pressure . . . . .	19,5 MPa	2830 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's seat:** Standard, with seat belt and back rest.

Number of exits . . . . .	2
Internal sound level acc. to ISO 6394 at max. speed . . .	78 dB (A)



## STEERING SYSTEM

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

**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 . . . . .	12 s
Lowering time . . . . .	10 s
Body, plate thickness	
Front	10 mm      3/8 in
Sides	12 mm      1/2 in
Bottom	12 mm      1/2 in
Chute	16 mm      5/8 in
Yield strength . . . . .	1000 N/mm <sup>2</sup> 145,000 psi
Tensile strength . . . . .	1250 N/mm <sup>2</sup> 181,000 psi
Hardness min. . . . .	360 – 440 HB



## WEIGHTS

Operating weight includes all fluids and operator.

### Operating weight

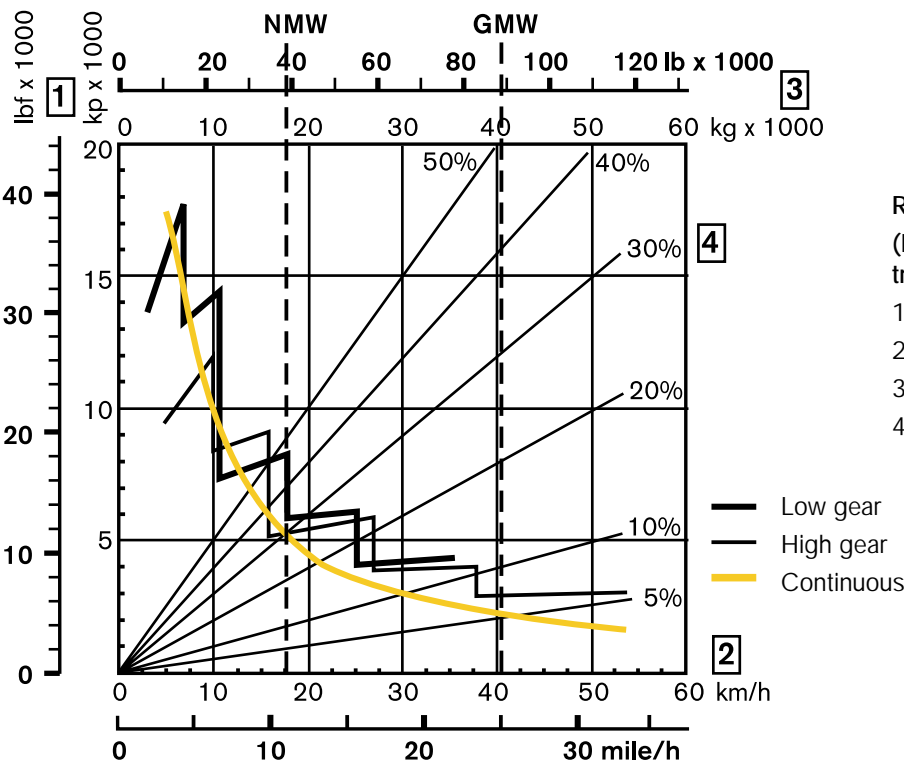
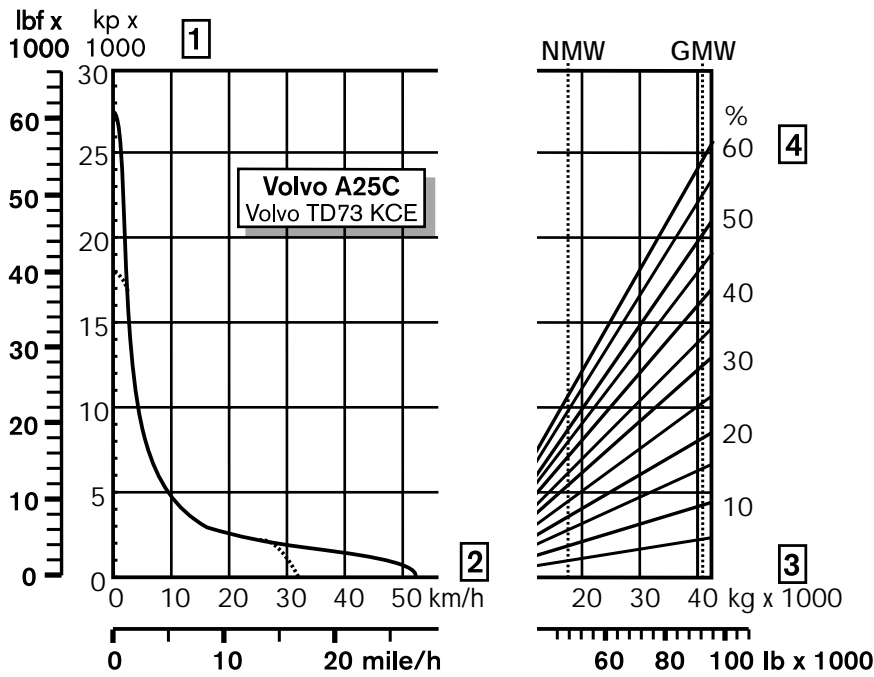
Front	9150 kg	20,172 lb
Rear	6620 kg	14,595 lb
Total	15770 kg	34,767 lb
Payload . . . . .	22500 kg	49,603 lb
Total weight		
Front	12550 kg	27,668 lb
Rear	25720 kg	56,702 lb
Total	38270 kg	84,370 lb



## GROUND PRESSURE

At 15% sinkage of unloaded radius and specified weights.

Unloaded		
Front	95 kPa	13.8 psi
Rear	47 kPa	6.8 psi
Loaded		
Front	131 kPa	19.0 psi
Rear	183 kPa	26.5 psi



#### INSTRUCTIONS

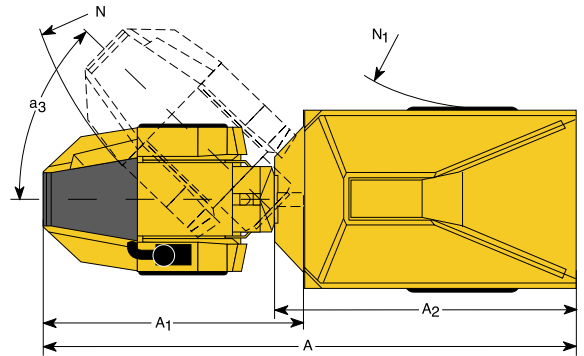
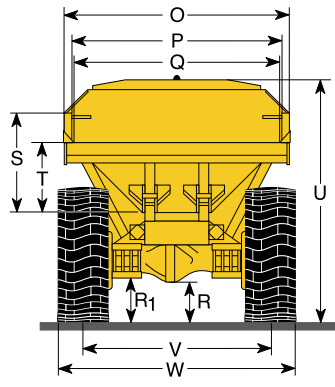
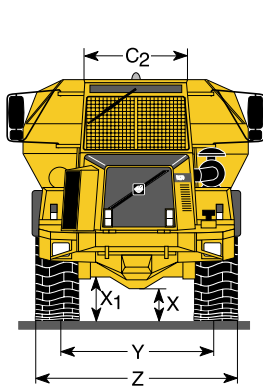
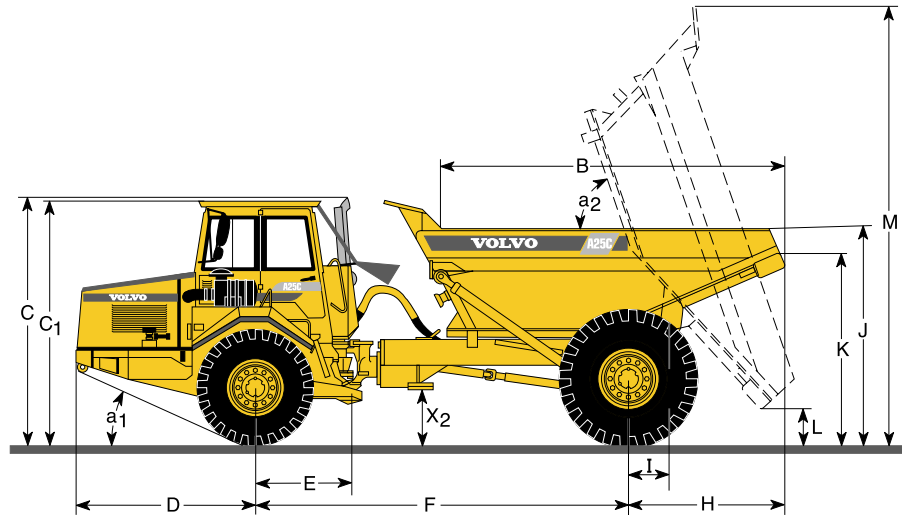
Diagonal lines represent total resistance (grade % plus rolling resistance %).

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

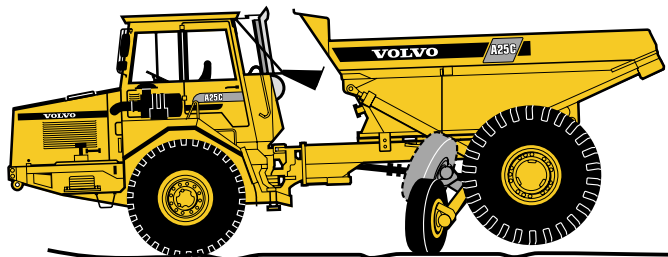
In the retardation chart, the diagonal lines represent the "total resistance" as well (here in downhill grades it is the total extra pushing force), which is the grade in % minus the rolling resistance in %.

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

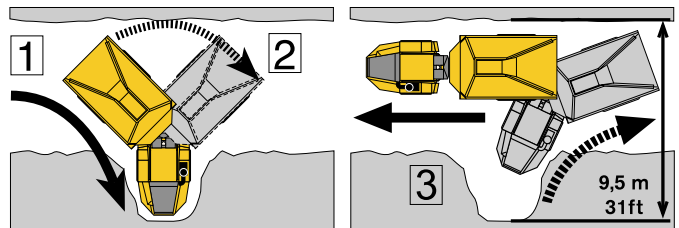
## DIMENSIONS Volvo A25C 4x4 (unloaded)



A	8955 mm	29'5"	F	4650 mm	15'3"	O	2980 mm	9'9"	W	3180 mm	10'5"
A <sub>1</sub>	4495 mm	14'9"	H	1890 mm	6'2"	P	2800 mm	9'2"	X	480 mm	1'7"
A <sub>2</sub>	4985 mm	16'4"	I	590 mm	2'1"	Q	2680 mm	8'9"	X <sub>1</sub>	610 mm	2'
B	4500 mm	14'9"	J	2730 mm	8'11"	R	555 mm	1'10"	X <sub>2</sub>	770 mm	2'6"
C	3285 mm	10'9"	K	2335 mm	7'8"	R <sub>1</sub>	695 mm	2'3"	Y	2150 mm	7'1"
C <sub>1</sub>	3210 mm	10'6"	L	650 mm	2'2"	S	1405 mm	4'7"	Z	2795 mm	9'2"
C <sub>2</sub>	1320 mm	4'4"	M	5700 mm	18'5"	T	1030 mm	3'5"			
D	2415 mm	7'11"	N	7500 mm	24'7"	U	3165 mm	10'5"	a <sub>1</sub>	26°	
E	1200 mm	3'11"	N <sub>1</sub>	3550 mm	11'8"	V	2370 mm	7'9"	a <sub>2</sub>	70°	



Turnaround system (optional)  
This system is hydraulically operated from the cab and makes the machine highly effective in confined spaces.



This system enables the machine to easily turn 180° in a width of only 9,5 m 31 ft.

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

US body load capacity . . . . .	22 500 kg	25 sh tn
Body, struck . . . . .	11 m <sup>3</sup>	14.3 yd <sup>3</sup>
heaped	13,8 m <sup>3</sup>	18.1 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  
 • Front axle diff. lock  
 • Longitudinal diff. lock  
 • Lights  
 • High beam  
 • Preheating coil  
 • High/low gear  
 • Exhaust retarder  
 • Service brake

### Warning lamps for:

- Air cleaner, engine
- Battery charging
- Body up
- Brake hydraulics
- Brake air pressure
- Coolant level
- Engine oil pressure
- Engine overspeed
- Engine temperature
- Engine-dependent steering pump
- Ground-dependent steering pump
- Hydraulic oil level
- Parking brake
- Transmission oil temperature

### Central warning for:

- Air cleaner, engine
- Battery charging
- Brake hydraulics
- Brake air pressure
- Engine oil pressure
- Engine overspeed
- Engine temperature
- Hydraulic oil level
- Steering function
- Transmission oil temperature

### Drivetrain

Torque converter with automatic lock-up  
 Fully automatic transmission  
 Hydraulic, variable transmission retarder  
 Dropbox, high/low gear range  
 Longitudinal differential lock  
 Differential lock front axle  
 Differential lock rear 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

### Body

Body with exhaust ducts

### Tires

Front: 23.5 R 25  
 Rear: 29.5 R 25

## OPTIONAL EQUIPMENT

### Service and maintenance

Toolbox

### Engine

Coolant filter  
 Extra fuel filters  
 Engine coolant pre-heater, 120V  
 Oil-bath air cleaner

### Electrical

Work lights, roof-mounted

### Cab

Air-conditioning (22 200 BTU)  
 Electrically heated rearview mirrors  
 Kit for radio installation

### External

Towing hitch  
 Turn-around system

### Body

Body heating  
 Rock liner

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 Group

One West Pack Square, Asheville, NC 28801

Ref. No 22 2 669 4088  
 Printed in USA 4/98 – 5.0  
 Volvo Asheville

SNA