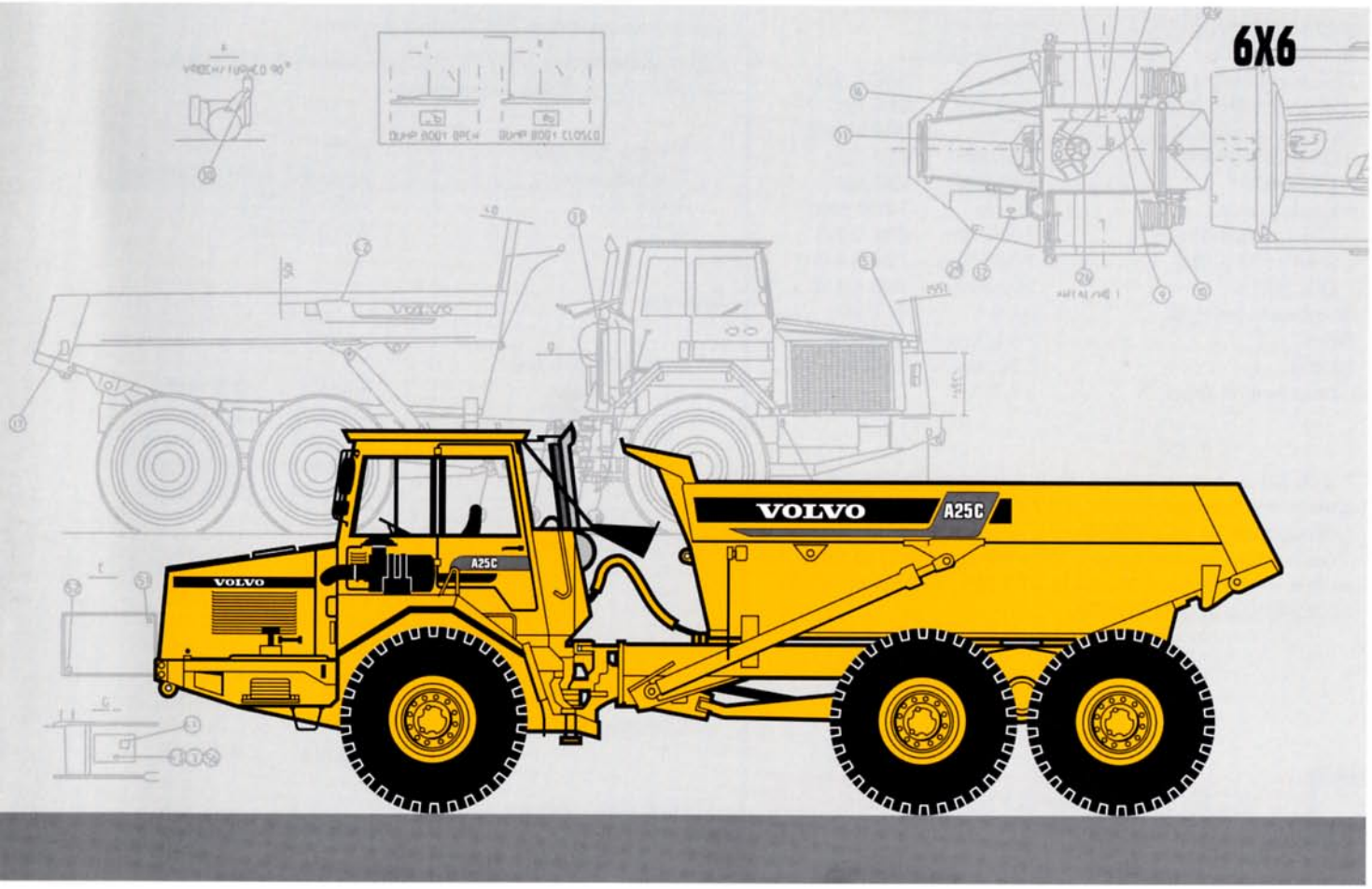
VOLVO ARTICULATED HAULER

A25C



- **Engine output SAE J1349:**
  Net 187 kW **251 hp**
  Gross 190 kW **255 hp**
- **Body volume:**
  13,5 m³ **17.7 yd³**
- **Load capacity:**
  22,5 t **25 sh tn**

- **Volvo High-performance, low-emission** direct-injected, intercooled, 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 three transverse diff. locks.
- **Volvo rough terrain suspension,** high ground clearance and individually oscillating bogie and front axles.
- **Load and dump brake.**
- **Low interior noise level.**
- **Adjustable steering wheel.**

VOLVO

ENGINE

Volvo 6-cylinder, in-line, turbocharged, direct-injected, intercooled, 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	**2400 rpm**
SAE J1349 Gross	190 kW	**255 hp**
Flywheel power at	40 r/s	**2400 rpm**
SAE J1349 Net	187 kW	**251 hp**
DIN 6271*	187 kW	**251 hp**
Max torque at	20 r/s	**1200 rpm**
SAE J1349 Gross	1090 Nm	**804 lbf ft**
SAE J1349 Net	1080 Nm	**796 lbf ft**
DIN 6271**	1080 Nm	**796 lbf ft**
Displacement total	6,73 l	**411 in³**
Bore	104,8 mm	**4.125 in**
Stroke	130 mm	**5.12 in**
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	**60 A**
Starter motor	5 kW	**6.7 hp**

SERVICE CAPACITIES

Crankcase	24 l	**6.3 US gal**
Cooling system, exchange	37 l	**9.8 US gal**
Cooling system, total	40 l	**10.6 US gal**
Transmission	16 l	**4.2 US gal**
Dropbox	6 l	**1.6 US gal**
Front axle	27 l	**7.1 US gal**
First bogie axle	28 l	**7.4 US gal**
Second bogie axle	27 l	**7.1 US gal**
Brake hydraulics	2 l	**0.5 US gal**
Hydraulic tank	155 l	**41 US gal**
Hydraulic system	180 l	**47.6 US gal**
Fuel tank	280 l	**74.0 US gal**

DRIVETRAIN

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

Transmission: Electronically controlled, fully automatic planetary transmission with five gears forward and one in reverse.

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

Axles: Volvo, 6-wheel drive. All axles have transverse 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	2.4:1
Transmission	Volvo PT 1051 (5HP 500)
Dropbox	Volvo FL 652
Axles	Volvo AH 54

Speeds

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

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 oscillation in rough terrain.

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

BRAKE SYSTEM

Dual circuit system with air-hydraulic disc brakes on both axles. Designed to comply with ISO 3450 and SAE J1473 at total 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.

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. 3,4 lock-to-lock turns.

Cylinders: Two double-acting steering cylinders.

Supplementary steering: Standard. Designed to comply with 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	15 s	
Lowering time	12 s	
Body, plate thickness		
Front	8 mm	**5/16 in**
Sides	12 mm	**1/2 in**
Bottom/chute	14 mm	**9/16 in**
Yield strength	1000 N/mm^2	**145,000 psi**
Tensile strength	1250 N/mm^2	**181,000 psi**
Hardness min.	360 – 440 HB	

WEIGHTS

Operating weight includes all fluids and operator.

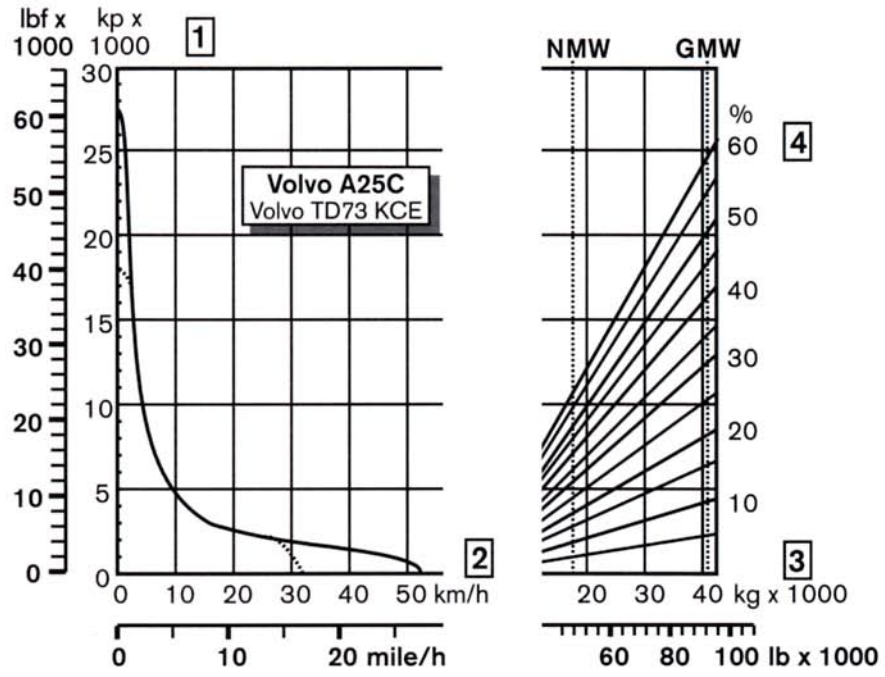
Operating weight:

Front	9040 kg	**19,930 lb**
Rear	8730 kg	**19,246 lb**
Total	17770 kg	**39,176 lb**
Payload	22500 kg	**49,603 lb**
Total weight		
Front	11500 kg	**25,353 lb**
Rear	28770 kg	**63,426 lb**
Total	40270 kg	**88,779 lb**

GROUND PRESSURE

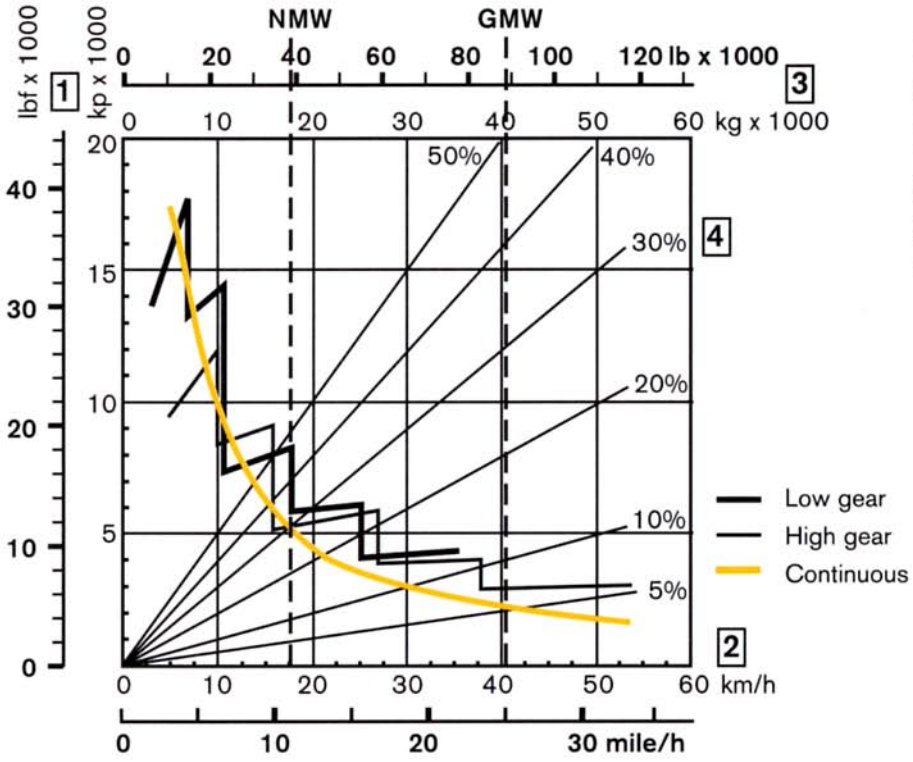
At 15% sinkage of unloaded radius and specified weights.

Unloaded		
Front	91 kPa	**13.2 psi**
Rear	44 kPa	**6.4 psi**
Loaded		
Front	116 kPa	**16.8 psi**
Rear	145 kPa	**21.0 psi**



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 PERFORMANCE
(Exhaust retarder + hydraulic transmission retarder)

1 Braking effort in kp **lbf**
2 Speed in km/h **mph**
3 Machine weight in kg **lb**
4 Grade in % – rolling resistance in %

INSTRUCTIONS

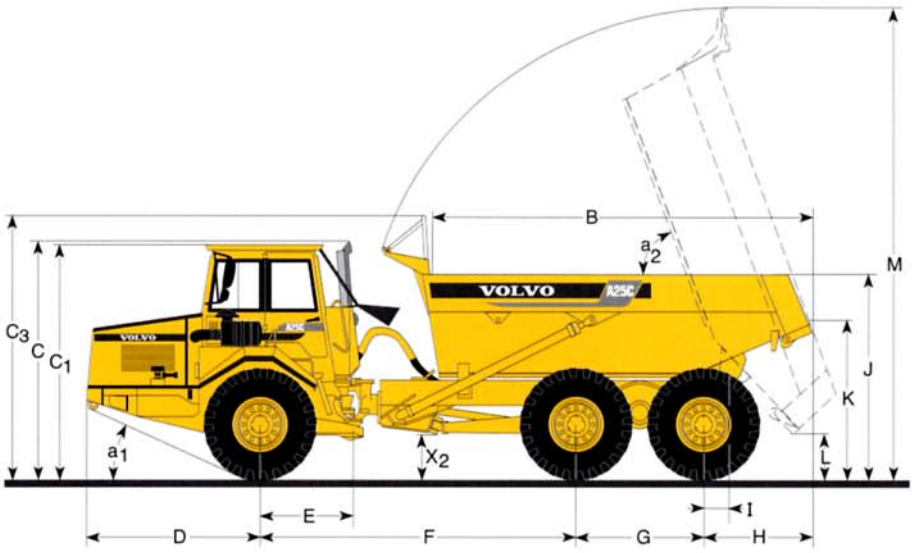
Diagonal lines represent total resistance (grade % **plus** rolling resistance %).

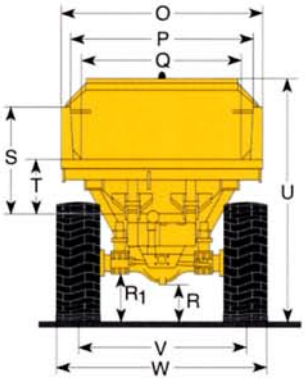
Chart based on 0% rolling resistance, standard tires and gearing, unless otherwise stated.

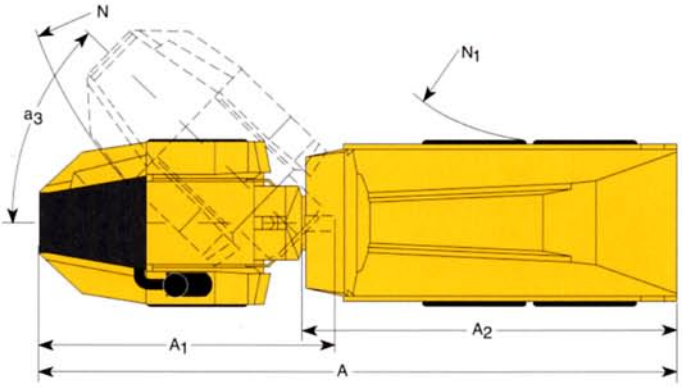
In the retardation chart, the diagonal lines represent the "total resistance" as well (here in downhill grades it is the total extra pushing force), which is the grade in % **minus** the rolling resistance in %.

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

DIMENSIONS Volvo A25C 6x6 (unloaded)







A	9675 mm	**31'9"**
A_1	4495 mm	**14'9"**
A_2	5710 mm	**18'3"**
B	5000 mm	**16'5"**
C	3285 mm	**10'9"**
C_1	3210 mm	**10'6"**
C_2	1320 mm	**4'4"**
C_3	3571 mm	**11'9"**
with optional spill guard in upright position		

D	2415 mm	**7'11"**
E	1200 mm	**3'11"**
F	4165 mm	**13'8"**
G	1670 mm	**5'6"**
H	1425 mm	**4'8"**
I	385 mm	**1'3"**
J	2780 mm	**9'1"**
K	2150 mm	**7'1"**
L	640 mm	**2'1"**
M	6400 mm	**21'**
N	7850 mm	**25'9"**
N_1	4250 mm	**13'11"**

O	2500 mm	**8'2"**
P	2300 mm	**7'7"**
Q	2100 mm	**6'11"**
R	520 mm	**1'8"**
R_1	620 mm	**2'**
S	1340 mm	**4'5"**
T	710 mm	**2'4"**
U	2995 mm	**9'10"**
V	2150 mm	**7'6"**
W	2795 mm	**9'2"**

X	480 mm	**1'7"**
X_1	610 mm	**2'**
X_2	660 mm	**2'2"**
Y	2150 mm	**7'6"**
Z	2795 mm	**9'2"**
a_1	26°	
a_2	70°	
a_3	45°	

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

US body load capacity	22 500 kg	**25 sh tn**
Body, struck.....	10,6 m^3	**13.9 yd^3**
heaped	13,5 m^3	**17.7 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
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 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

Body
Body with exhaust ducts

Tires
23.5 R 25

OPTIONAL EQUIPMENT

Service and maintenance
Toolbox
Central lubrication

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

Electrical
Work lights, roof-mounted

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

External
Towing hitch

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

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