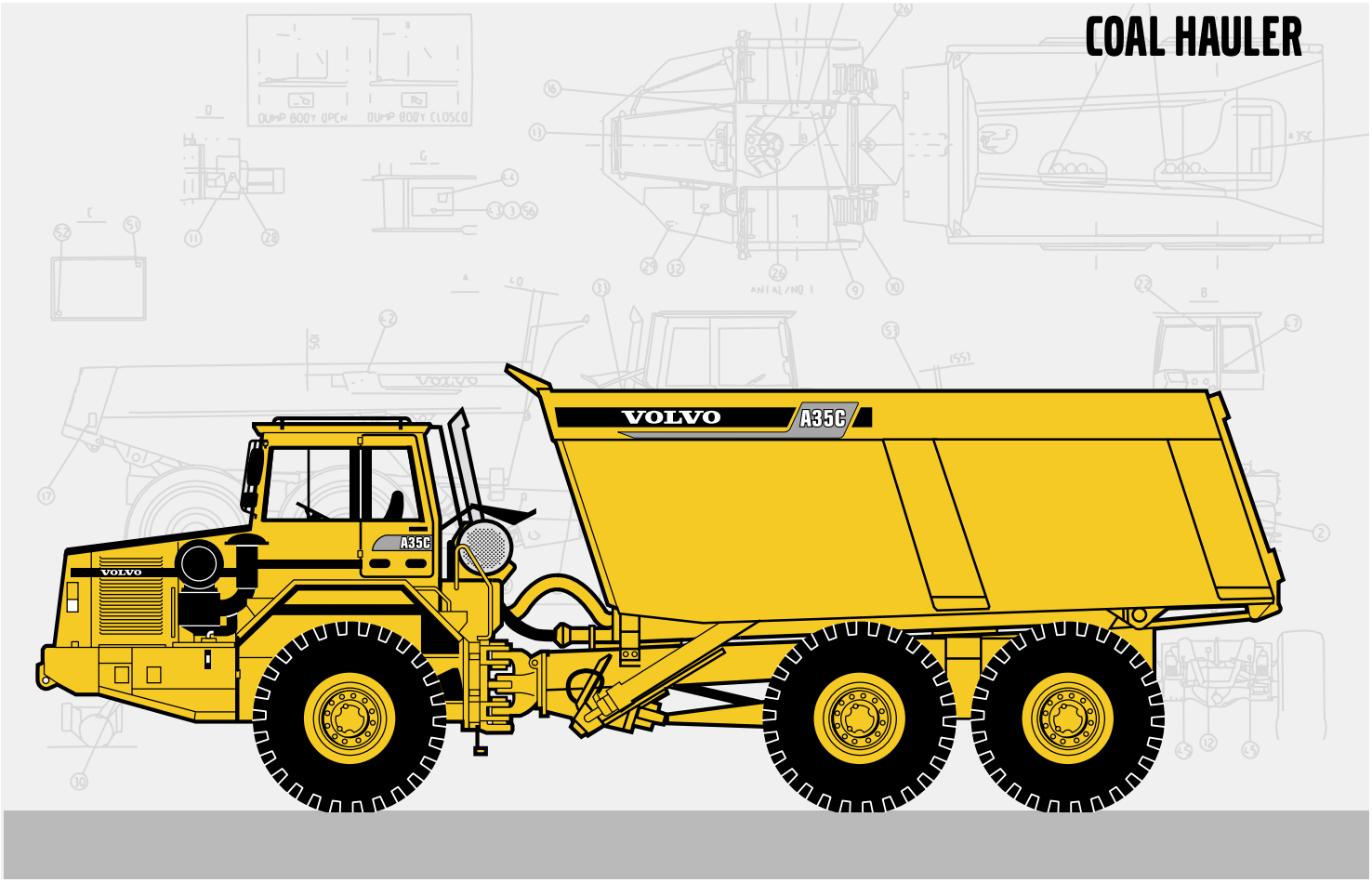
VOLVO ARTICULATED HAULER

A35C

COAL HAULER



- Engine output SAE J1349:
  Net 262 kW (351 hp)
  Gross 267 kW (358 hp)
- Body volume:
  36 m³ (47 yd³)
- Load capacity:
  32 t (35 sh tn)

- Volvo low emission direct-injected, turbocharged, inter-cooled high performance diesel engine.
- Fully automatic powershift transmission, electronically controlled.
- Hydraulic retarder as standard.
- Drop box with longitudinal differential lock and high and low gear ranges.

- 100% lock-up differential locks. One longitudinal and three transverse diff-locks.
- Front axle with three-point suspension and effective shock absorption.
- Volvo terrain bogie, individually oscillating axles and high ground clearance.
- Load and dump brake
- Low interior noise level
- Adjustable steering wheel

VOLVO

ENGINE

Volvo 6-cylinder, inline, direct-injected, turbocharged, intercooled 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 regulation1997.

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

Make	Volvo
Model	TD 122 KME
Max power at	35 r/s (2100 r/min)
SAE J1349 Gross	267 kW (358 hp)
Flywheel power at	35 r/s (2100 r/min)
SAE J1349 Net	262 kW (351 hp)
DIN 6271*	262 kW (351 hp)
Max torque at	18,3 r/s (1100 r/min)
SAE J1349 Gross	1595 Nm (1176 lbf ft)
SAE J1349 Net	1585 Nm (1169 lbf ft)
DIN 6271 **	1585 Nm (1169 lbf ft)
Displacement total	12 l (732 in^3)
Bore	130 mm (5.1 in)
Stroke	150 mm (5.9 in)
Compression ratio	16:1

*) with fan at normal speed. With fan operating at full speed, the flywheel power is 249 kW (333 hp) which corresponds to DIN 70020.
**) with fan at normal speed. With fan operating at full speed, the maximum torque is 1450 Nm (1069 lbf ft) which corresponds to DIN 70020.

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	31 l (8.2 US gal)
Cooling system, exchange	63 l (16.6 US gal)
Cooling system, total	90 l (23.8 US gal)
Transmission	40 l (10.6 US gal)
Drop box	8 l (2.1 US gal)
Front axle	39 l (10.3 US gal)
First bogie axle	41 l (10.8 US gal)
Second bogie axle	39 l (10.3 US gal)
Brake hydraulics	31 l (8.2 US gal)
Hydraulic tank	150 l (39.6 US gal)
Hydraulic system, total	194 l (51.3 US gal)
Fuel tank, total	360 l (95.1 US gal)

DRIVETRAIN

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

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

Drop box: Volvo with 2-stage design, power take-off, differential with lock-up function and drop box oil cooling.

Axles: Volvo. 6-wheel drive. All axles have transverse diff-locks with 100% lock-up and fully floating axle shafts with planetary type hub reductions.

Differential locks: One longitudinal and three transverse. All with 100% lock-up.

Torque converter	2,37:1
Transmission	Volvo PT 1761
Dropbox	Volvo FL 762
Axles	Volvo AH 63

Speeds with tires 26.5R25

Low gear forward	
1	5,3 km/h (3.3 mile/h)
2	7,6 km/h (4.7 mile/h)
3	13,8 km/h (8.6 mile/h)
4	19,9 km/h (12.4 mile/h)
5	25,3 km/h (15.7 mile/h)
6	33,6 km/h (20.9 mile/h)
High gear forward	
1	8,6 km/h (5.3 mile/h)
2	12,4 km/h (7.7 mile/h)
3	22,3 km/h (13.9 mile/h)
4	32,3 km/h (20.1 mile/h)
5	41,0 km/h (25.5 mile/h)
6	54,4 km/h (33.8 mile/h)
Low gear reverse	
1	8,5 km/h (5.3 mile/h)
High gear reverse	
1	8,0 km/h (5.0 mile/h)
2	13,8 km/h (8.6 mile/h)

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

Fully 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 toghether with the parking brake.

Compressor: Gear-driven by engine 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 incl. retarder, engine and exhaust brake, see graph on page 4.

HYDRAULIC SYSTEM

Pumps: Four engine-dependent, variable piston pumps mounted on flywheel power take-offs.

Ground-dependent hydraulic pump for supplementary steering mounted on dropbox.

Filtration: Through two paper filters with magnetic cores.

Pump capacity per pump	100 l/min (26.4 US gpm)
at shaft speed	34 r/s (2040 r/min)
Working pressure	21 MPa (3048 psi)

CAB

Volvo cab, tested and approved according to ROPS standard ISO/3471 and SAE J1040/APR 88.
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 and adjustable operator´s seat with flameproof upholstery. Retractable seat belt.

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

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

STEERING SYSTEM

Hydromechanical articulated steering with mechanical feedback. 3.4 turns lock-to-lock.

Cylinders: Two double-acting steering cylinders.

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

Steering angle: ± 45°

BODY

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

Cylinders: Two 3-stage, of which one stage is double-acting.

Tipping angle	73°
Tipping time with load	15 s
Lowering time	18 s
Body, plate thickness	
Front	8 mm (0.31 in)
Sides	8 mm (0.31 in)
Bottom/chute	16 mm (0.63 in)
Yield strength	1000 N/mm^2 (145000 psi)
Tensile strength	1250 N/mm^2 (181000 psi)
Hardness min.	360–440 HB

WEIGHTS

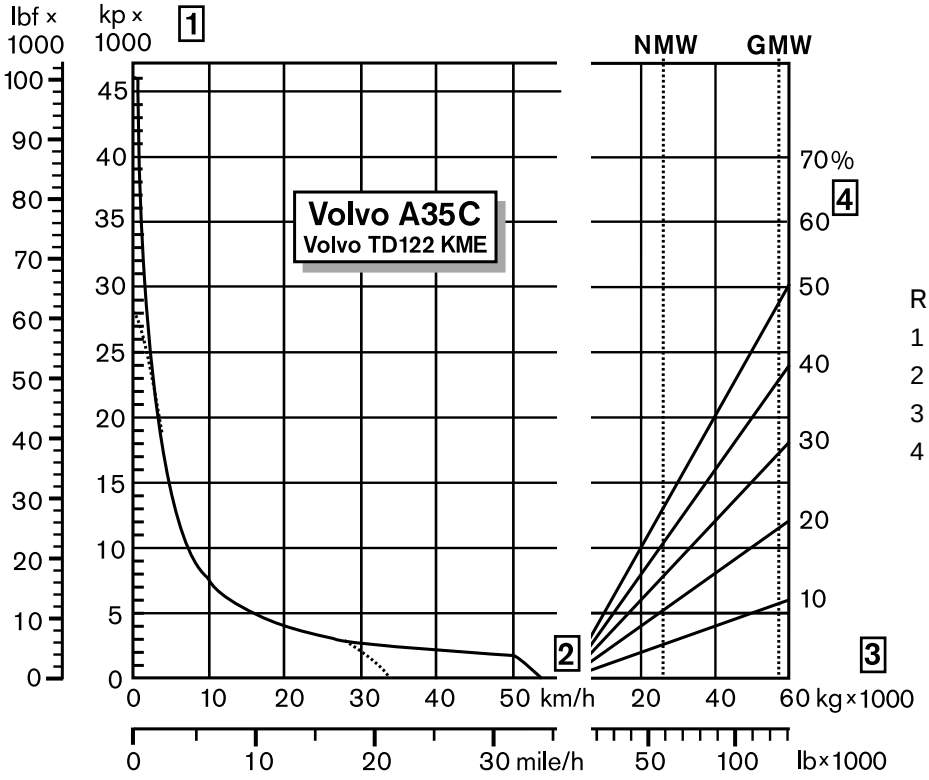
Operating weight includes all fluids and operator.
A35C with coal body.

Operating weight:	
Front	13480 kg (29718 lb)
Rear	14830 kg (32694 lb)
Total	28310 kg (62412 lb)
Payload	32000 kg (70547 lb)
Total weight	
Front	16680 kg (36772 lb)
Rear	436300 kg (96186 lb)
Total	60310 kg (132959 lb)

GROUND PRESSURE

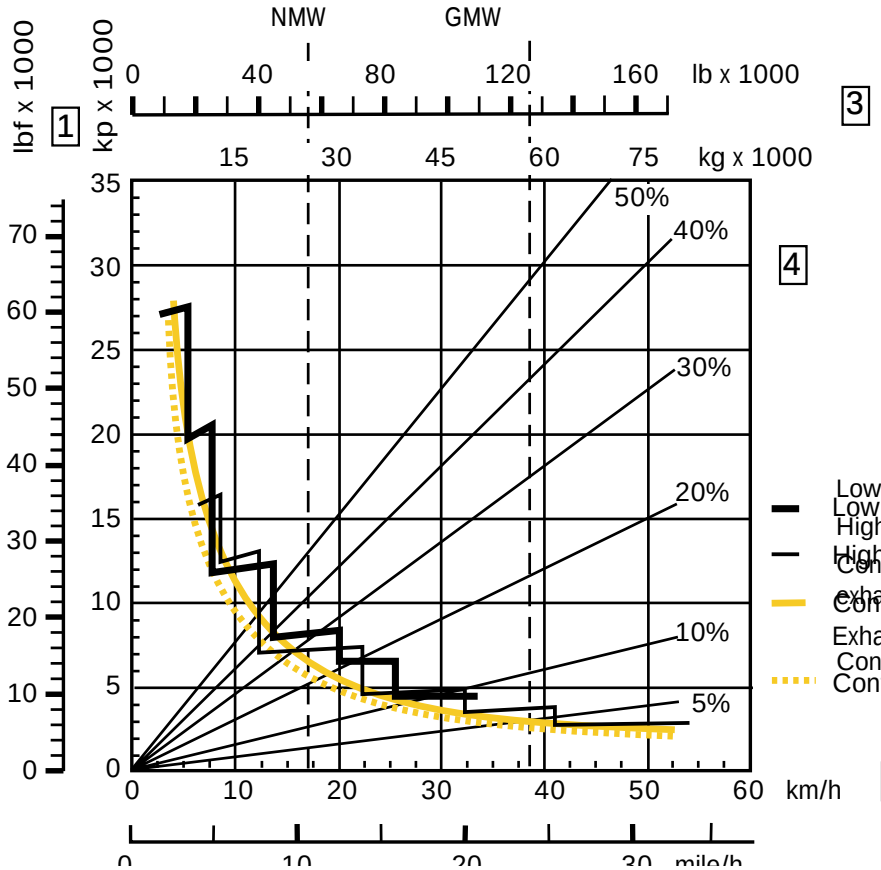
At 15% sinkage of unloaded radius and specified weights.

Unloaded	
Front	113 kPa (16.4 psi)
Rear	62 kPa (9 psi)
Loaded	
Front	140 kPa (20.3 psi)
Rear	183 kPa (26.5 psi)



RIMPULL

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



RETARDATION PERFORMANCE
(Exhaust brake + retarder)

1 Braking effort in kp (lbf)
2 Speed in km/h (mile/h)
3 Machine weight in 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.

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 %.

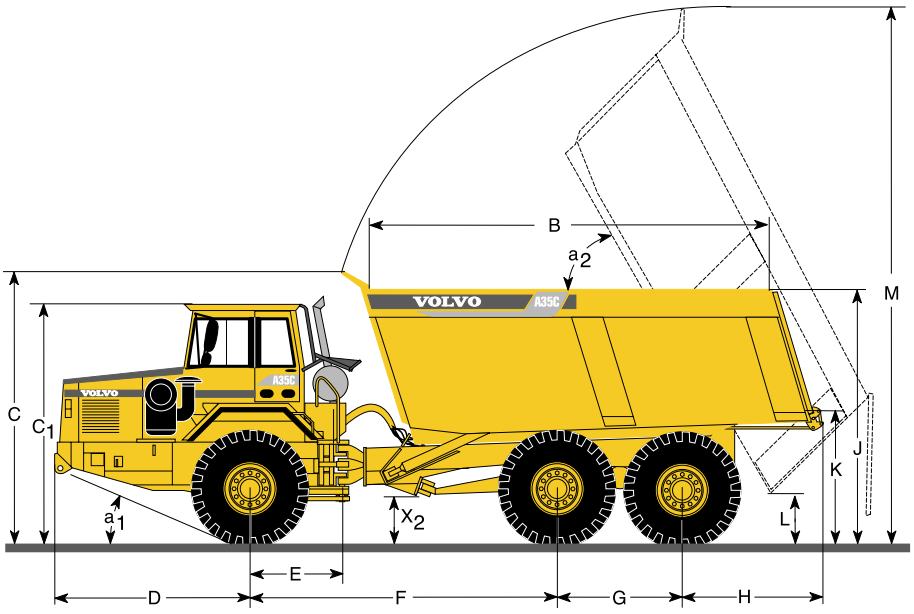
A. Find the diagonal line with the appropriate total resistance on the right-hand edge of the chart.

B. Follow the diagonal line downward until it intersects the actual machine weight line, NMW or GMW.

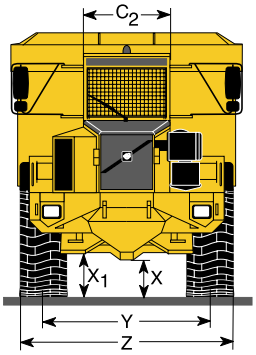
C. Draw a new line horizontally to the left from the point of intersection until the new line intersects the rimpull or retardation curve.

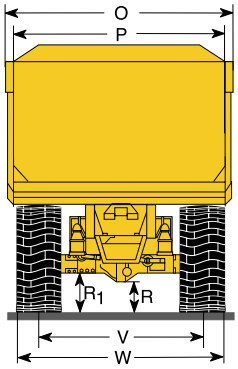
D. Read down for vehicle speed.

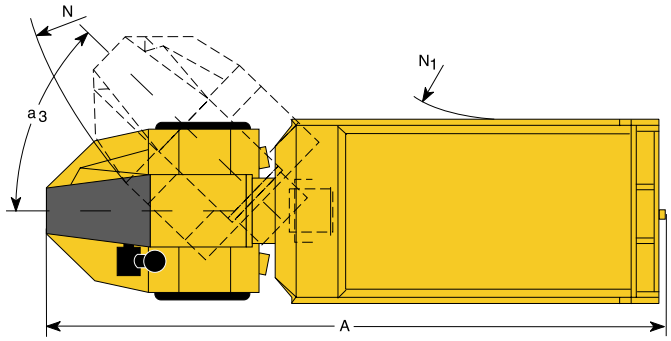
DIMENSIONS Volvo A35C Coal Hauler (Unloaded)



B	5554 mm (18'3")
C	4070 mm (13'4")
C_1	3510 mm (11'6")
D	2959 mm (9'8")
E	1270 mm (4'2")
F	4495 mm (14'9")
G	1820 mm (6')
H	2105 mm (6'11")
J	3870 mm (12'8")
K	2110 mm (6'11")
L	745 mm (2'5")
M	8070 mm (26'6")
X_2	696 mm (2'3")
a_1	25°
a_2	60°







C_2	1330 mm (4'4")
X	519 mm (1'8")
X_1	559 mm (1'10")
Y	2522 mm (8'3")
Z	3200 mm (10'6")

O	3380 mm (11'1")
P	3200 mm (10'6")
R	570 mm (1'10")
R_1	670 mm (2'2")
V	2522 mm (8'3")
W	3200 mm (10'6")

A	11380 mm (37'4")
N	8694 mm (28'6")
N_1	4300 mm (14'1")
a_3	45°

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

Load capacity	32000 kg (35 sh tn)
Body, struck	14,8 m^3 (19 yd^3)
heaped	19 m^3 (25 yd^3)

With overhung tailgate (optional)

Body, struck	15,2 m^3 (20 yd^3)
heaped	19,8 m^3 (26 yd^3)

STANDARD EQUIPMENT

Safety
ROPS cab
Anti-slip material on fenders and hood
Ergonomically designed and adjustable operator´s seat with retractable seat belt
Extra seat for trainer with back rest and seat belt
Hazard flashers
Horn
Protective grille for rear window
Rear-view mirrors
Secondary steering
Speedometer
Steering joint locking assembly
Windshield wipers with interval
Windshield washers

Comfort
Adjustable steering wheel
Ashtray
Cab heater with filtered fresh air and defroster
Cigarette lighter
Cup holder
Radio/Contronic console in ceiling
Sun visor
Tinted glass

Engine
Intercooler
Low emission engine
Oil drainage hose
Preheating
Turbocharger

Electric system
Alternator
Battery disconnect switch
Electrical outlet

Lights:
- Headlights, main/dipped
- Parking lights
- Direction indicators
- Rear lights
- Back-up lights
- Brake lights
- Cab lighting
- Instrument lighting
- Control panel lighting

Gauges for:
- Air pressure
- Engine temperature
- Engine revs
- Fuel
- Hours
- Transmission oil temperature

Pilot lamps for:
- Direction indicators
- Bogie axles diff-lock
- Front axle diff-lock
- Longitudinal diff-lock
- Lights
- Main beam
- Preheating
- High-low gear

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 temperature

Central warning:
- Battery charging
- Brake pressure
- Brake oil level
- Body up
- Engine oil pressure
- Engine overspeed
- Steering function
- Transmission/ drop box malfunction

Drivetrain
Torque converter with automatic lock-up
Automatic transmission
Hydraulic, variable retarder
Drop box with high/low gear
Longitudinal diff-lock
Differential lock front axle
Differential lock first bogie axle
Differential lock second bogie axle
Brake guard

Brakes
Fully hydraulic disc brakes
Two circuits
Brake shields
Parking brake on all wheels
Retarder activation in brake pedal
Load and dump brake

Body
Body with exhaust ducts

Tires
26.5R25

OPTIONAL EQUIPMENT

Service and maintenance
Tool kit with tyre inflation unit
Tool box
Central lubrication

Engine
Oil-bath air cleaner
Coolant filter
Exhaust brake

Electrical
Work lights, roof-mounted
Rotating beacon
Headlights for left hand traffic
Head light protection

Cab
Airsuspended, electrically heated operator´s seat
Air conditioning
Contronic display
Electrically heated rear-view mirrors
Kit for radio installation
Radio

Protection
Overhead guards FOPS
Fire-extinguisher and first aid cushion

External
Rear mudflaps

Body
Extra front spillguard
Body heating
Overhung tailgate, wire
Wear plates, kit delivery
Upper side extensions, 200 mm

Other
Synthetic hydraulic oil (biologically degradeable)

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

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