

VOLVO BM

A 25

4x4



- **Engine output:**
SAE J1349 Net 177 kW (240 hp)
- **Operating weight:**
15,3 t (32 510 lb)
- **Load capacity:**
22,5 t (25 sh tons)

- Direct-injected, turbocharged Volvo diesel with intercooler
- Electronically controlled automatic shift. High and low gear ranges
- One longitudinal and two transverse diff locks. All with 100% lock-up.
- Front axle with 3-point suspension and effective shock absorption
- Optional turnaround system for effective haulage in confined spaces

ENGINE



Volvo TD 71 K Intercooler: 6-cylinder-in-line direct-injected turbocharged aftercooled 4-cycle diesel with overhead valves and wet replaceable cylinder linings.

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

Max. power at	r/s	(r/min)	40	(2400)
SAE J 1349 Gross	kW	(hp)	180	(244)
Flywheel power at	r/s	(r/min)	40	(2400)
SAE J 1349 Net	kW	(hp)	177	(240)
DIN 6271*	kW	(hp)	177	(240)
Max. torque at	r/s	(r/min)	27	(1600)
SAE J 1349 Gross	Nm	(lbf ft)	815	(601)
SAE J 1349 Net	Nm	(lbf ft)	800	(590)
DIN 6271**	Nm	(lbf ft)	6,73	(411)
Displacement, total	l	(in ³)	800	(590)
Bore	mm	(in)	104,77	(4,125)
Stroke	mm	(in)	130	(5,12)
Compression ratio			15,5:1	

* with fan at normal 20 r/s (1200 r/min). With fan operating at 40 r/s (2400 r/min) the flywheel power is 160 kW (218 hp) which corresponds to DIN 70020.

** with fan at normal 20 r/s (1200 r/min). With fan operating at 40 r/s (2400 r/min) the maximum torque is 710 Nm which corresponds to DIN 70020

ELECTRICAL SYSTEM



Voltage	V	24
Battery capacity	Ah / V	135 / 2x12
Generator rating	W / A	1260 / 45
Starter motor power	kW (hp)	5 (6,8)

SERVICE REFILL CAPACITIES



Crankcase	l (US gal)	24 (6,3)
Fuel tank	l (US gal)	280 (74)
Cooling system	l (US gal)	30 (7,9)
Transmission total	l (US gal)	16 (4,2)
Dropbox	l (US gal)	6 (1,6)
Front axle	l (US gal)	35 (9,2)
Rear axle	l (US gal)	51 (13,5)
Hydraulic system	l (US gal)	160 (4,2)
Hydraulic tank	l (US gal)	145 (38,3)

DRIVETRAIN



Torque converter: single stage with free-wheeling stator and automatic lock-up.

Transmission: Planetary transmission, electronically controlled fully automatic gear-shifting.

Dropbox: Volvo BM dropbox with 2-stage design, power take-off and differential.

Differential locks: One longitudinal and two transversal differential locks. All with 100% lock-up.

Axles: All axles are of Volvo BM design. The driving axles have fully floating axle shafts with planetary gear type hub reduction.

Torque converter	2,4 :1
Transmission	ZF 5 HP 500
Dropbox	FL 652

Speeds				
Low gear, forward	1	km/h(mile/h)	6,0	(3,7)
	2	km/h(mile/h)	9	(5,6)
	3	km/h(mile/h)	15	(9,3)
	4	km/h(mile/h)	22	(13,7)
	5	km/h(mile/h)	31	(19,3)
Low gear, reverse	1	km/h(mile/h)	7	(4,3)
High gear, forward	1	km/h(mile/h)	9	(5,6)
	2	km/h(mile/h)	15	(9,3)
	3	km/h(mile/h)	25	(15,5)
	4	km/h(mile/h)	36	(22,4)
	5	km/h(mile/h)	51	(31,2)
High gear, reverse	1	km/h(mile/h)	11	(6,8)

Front axle	AH 54
Rear axle	AH 71

Tires	23.5 R 25
	29.5 R 25

BRAKE SYSTEM



Dual-circuit system with air-hydraulic disc-brakes, designed to comply with ISO 3450 and SAE J1473 at total machine weight.

Circuit division: one circuit for front axle and one for bogie.

Parking brake: The parking brake is a spring actuated brake on the propeller shaft, designed to hold a loaded machine on a grade up to 18%.

Compressor: The pneumatic system is driven by a gear driven compressor

Exhaust brake retarder: standard.

Retarder: as optional equipment.

STEERING SYSTEM



Hydromechanical articulated steering. 3,4 lock-to-lock turns.

Supplementary steering: Supplementary steering function as standard.

Complies with ISO 5010 at total machine weight .

Cylinders: Two double-acting cylinders.

Steering angle: $\pm 45^\circ$

HYDRAULIC SYSTEM



Pump: Engine-dependent variable piston pumps mounted on flywheel power take-offs. Three of four take-offs are used.

One ground-dependent piston pump for supplementary steering mounted on the dropbox.

Filtration: Filtration of oil through 2 paper and magnet filters.

Pump capacity	l/min	100* / 118**
	(US gal/min)	(26,4* / 31,2**)
at	r/s (r/min)	40 (2400)
Working pressure	MPa (psi)	18,5* (2680*)
	MPa (psi)	18,5** (2680**)

* = pump 1, 2, 3

** = ground-dependent hydraulic pump

SUSPENSION



VOLVO BM SUSPENSION SYSTEM

Front axle: Two rubber springs with bottoming absorption on either side. Stabilizer. Two shock-absorbers on either side.

CAB



Volvo BM cab, tested and approved in accordance with ROPS standard ISO 3471/SAE J1040C.

The cab is mounted on rubber pads, which reduces vibrations at operator's station.

Heater and defroster: Filtered air and pressurized cab.

Operator's seat: Operator's seat with flameproof upholstery. Extra seat for trainer.

Number of exits (includes door)		3
Internal noise level	dB (A)	77

BODY



Cylinder: One 3-stage hoist cylinder with the top stage double-acting. Hydraulic tipping stop built into the tipping cylinder.

Body: Body made of hardened-and-tempered steel with particularly high impact strength and with wear plates as standard.

Tipping angle	°	65
Tipping time with load	s	12
Lowering time	s	13
Body plate thickness		
front	mm (in)	10 (0,39)
sides	mm (in)	12 (0,47)
bottom	mm (in)	12 (0,47)
chute	mm (in)	16 (0,62)
Wear plates	mm (in)	8 (0,31)
Yield strength	kp/mm ² (psi)	90 (128000)
Tensile strength	kp/mm ² (psi)	125 (178000)
Hardness min.	HB	360-440

WEIGHTS



Service weight includes body with wear plates, oil, fuel and water.

Service weight			
Front	kg	(lb)	8850 (19510)
Rear	kg	(lb)	6450 (14220)
Total	kg	(lb)	15300 (32510)
Payload	kg	(lb)	22500 (49610)
Total weight			
Front	kg	(lb)	12250 (27010)
Rear	kg	(lb)	25550 (56340)
Total	kg	(lb)	37800 (82120)

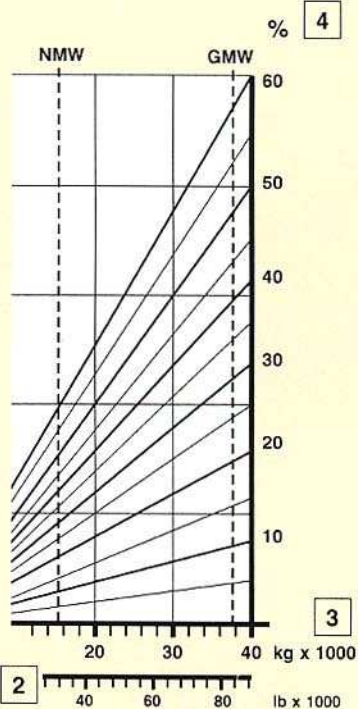
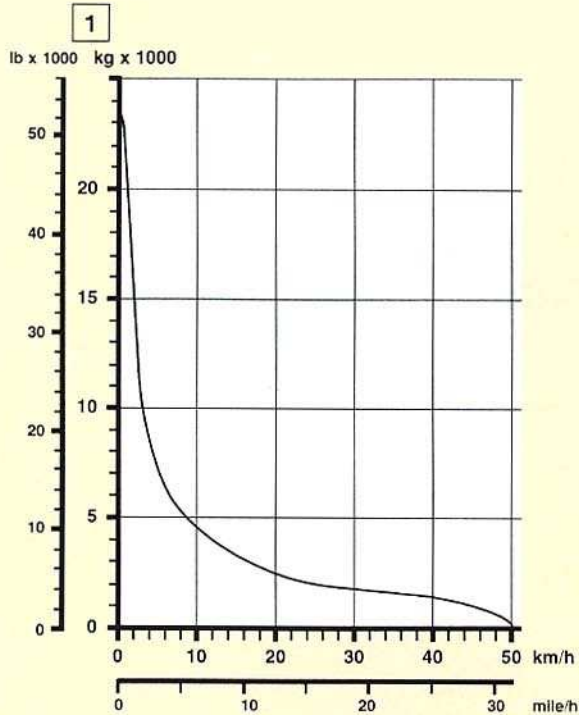
GROUND PRESSURE



At 15% slump of unloaded diameter and specified weights.

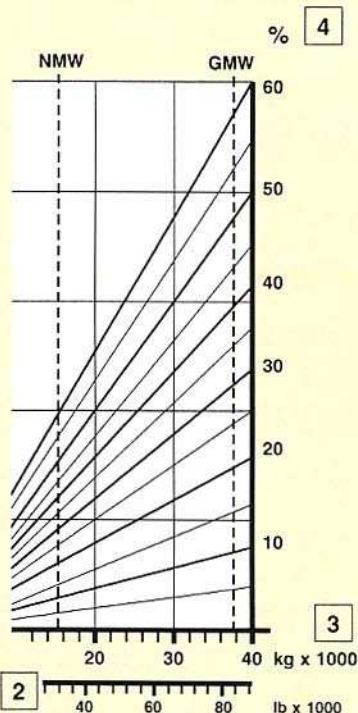
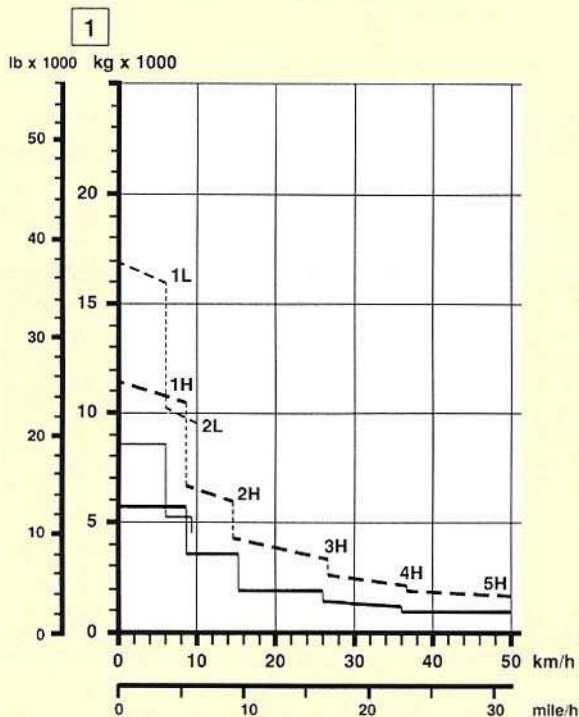
Cone penetrometer value at depth of 250 mm (9,8 in).

Unloaded			
Front	kPa (psi)	92	(13,4)
Rear	kPa (psi)	46	(6,7)
Loaded			
Front	kPa (psi)	128	(18,6)
Rear	kPa (psi)	182	(26,4)
Cone penetrometer value		79	



RIMPULL

- 1 Rimpull in kg (lb)
- 2 Speed in km/h (mile/h)
- 3 Hauler weight in kg (lb)
- 4 Rolling resistance + grade resistance in %



RETARDATION

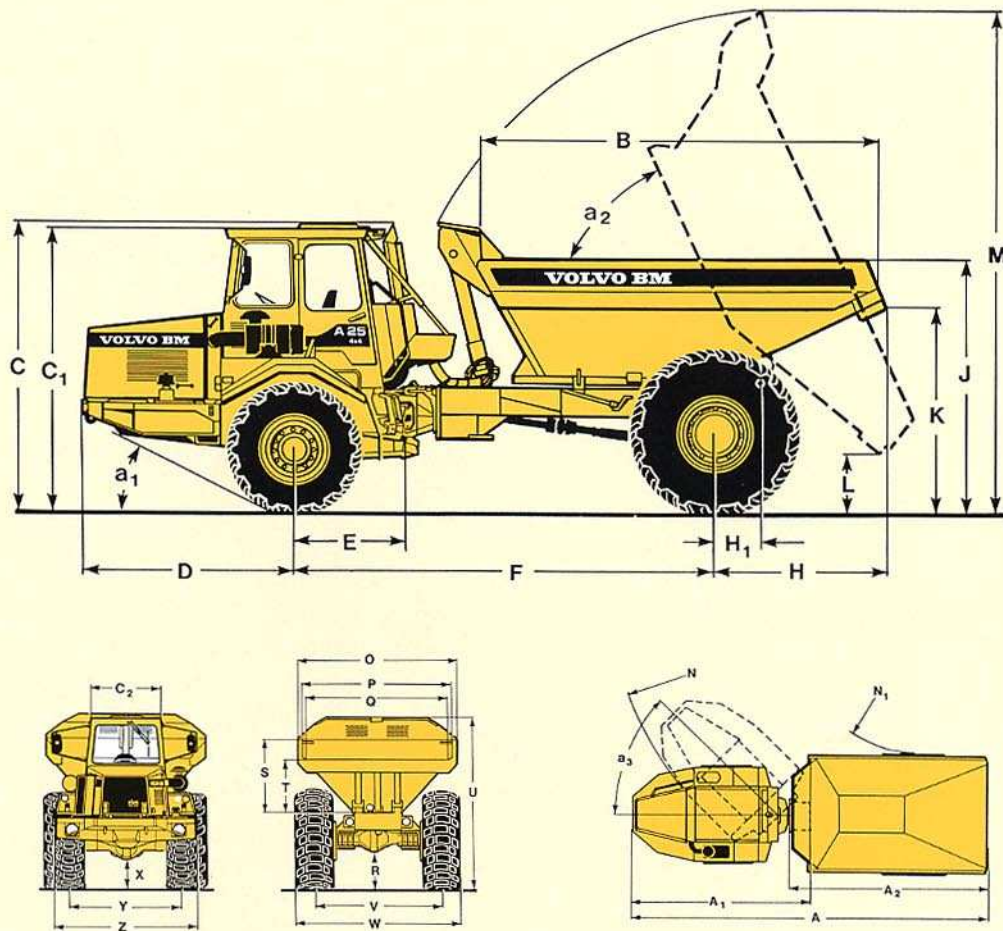
- 1 Rimpull in kg (lb)
- 2 Speed in km/h (mile/h)
- 3 Hauler weight in kg (lb)
- 4 Rolling resistance - grade resistance in %

Dotted line = maximal retardation (with optional retarder)

INSTRUCTIONS

Diagonal lines represent total resistance (Grade % plus rolling resistance %). Charts based on 0% rolling resistance, standard tires and gearing unless otherwise stated.

- A. Find the total resistance on diagonal lines on righthand border of performance or retarder chart.
- B. Follow the diagonal line downward and intersect the NVW or GVW weight line.
- C. From intersection, read horizontally left to intersect the performance or retarder curve.
- D. Read down for machine speed.



OPERATING DATA VOLVO BM A25 4x4

A mm (ft in)	8955 (29'5")	H mm (ft in)	1890 (6'2")	O mm (ft in)	2980 (9'9")	X mm (ft in)	450 (1'6")
A ₁ mm (ft in)	4495 (14'9")	H ₁ mm (ft in)	590 (2'1")	P mm (ft in)	2800 (9'2")	X* mm (ft in)	465 (1'6")
A ₂ mm (ft in)	4985 (16'4")	J mm (ft in)	2730 (8'11")	Q mm (ft in)	2680 (8'10")	X ₁ mm (ft in)	585 (1'11")
B mm (ft in)	4500 (14'9")	J* mm (ft in)	2810 (9'3")	R mm (ft in)	555 (1'10")	X ₂ mm (ft in)	770 (2'7")
C mm (ft in)	3200 (10'6")	K mm (ft in)	2335 (7'11")	R* mm (ft in)	635 (2'1")	Y mm (ft in)	2150 (7'1")
C* mm (ft in)	3240 (10'8")	K* mm (ft in)	2435 (8')	R ₁ mm (ft in)	695 (2'3")	Z mm (ft in)	2795 (9'2")
C ₁ mm (ft in)	3150 (10'4")	L* mm (ft in)	705 (2'4")	S mm (ft in)	1405 (4'7")	a ₁ °	26
C ₁ * mm (ft in)	3190 (10'6")	M* mm (ft in)	5610 (18'5")	T mm (ft in)	1030 (3'5")	a ₂ °	65
C ₂ mm (ft in)	1320 (4'4")	N mm (ft in)	7500 (24'7")	U mm (ft in)	3165 (10'5")	a ₃ °	45
D mm (ft in)	2415 (7'11")	N ₁ mm (ft in)	3550 (11'8")	U* mm (ft in)	3245 (10'8")		
E mm (ft in)	1200 (3'11")			V mm (ft in)	2370 (7'9")		
F mm (ft in)	4650 (15'3")			W mm (ft in)	3180 (10'5")		

* = unloaded machine

LOAD CAPACITY

Load capacity	kg (sh tons)	22500	(25)
Body, struck	m ³ (yd ³)	10,1	(14,4)
heaped	m ³ (yd ³)	13,0	(17,0)

Body volumes according to SAE 2:1. In the case of bodies with struck volumes of less than 10 m³ (13 yd³), heaped volume is given to the nearest half m³.

In the case of bodies with struck volumes of 10 m³ (13 yd³) or more, heaped volume is given to the nearest whole m³.

Struck volume is given in m³ (yd³) to one decimal place.

STANDARD EQUIPMENT

Safety and comfort

ROPS cab
Cab heater with filtered fresh air and defroster
Ergonomically designed and adjustable operator's seat
Windshield wipers
Windshield washers
Rear-view mirrors
Sun visor
Attachment points for seat belt
Cigarette lighter
Ashtray
Horn
Complete tyre inflation unit
Protective grille for rear window
Hazard flashers
Cab roof hatch
Tinted glass
Lights:
 headlights
 main/dipped/asym.
 parking lights
 reverse lights
 direction indicators
 side marker lights
 brake lights

cab lighting
instrument lighting
Tool box
Steering joint locking assembly

Engine & electrical system

Turbocharger
Intercooler
Alternator
Preheating
Ground-dependent secondary steering pump
Battery disconnect switch
Electrical outlet
Indicator for aircleaner
Gauges for:
 brake pressure
 fuel
 engine temperature
 revolutions and hours
Pilot lamps for:
 battery charging
 main beam
 direction indicators

Warning lamps for:
 low hydraulic oil level
 steering function
 engine-dependent pump
 brake fluid level
 low brake pressure
 parking brake
 engine oil pressure
 transmission temperature
 air filter
 engine overspeed
Central warning:
 hydraulic oil level
 steering function
 brake fluid level
 brake pressure
 radiator coolant level
 engine oil pressure
 engine overspeed
 airfilter
 battery charging
 transmission temperature

Drivetrain

Torque converter
Automatic gear-shifting
Dropbox with high/low gear
Automatic lock-up
Longitudinal differential lock
Differential lock, front axle
Differential lock, rear axle

Body

Body with wear plates and exhaust gas ducts

Tires

Front: 23.5 R 25**
Rear: 29.5 R 25*

OPTIONAL EQUIPMENT

Service and maintenance

Tool kit

Engine

Extra fuel filter
Oil-bath air cleaner

Electrical equipment

Rotating beacon with collapsible mount
Side direction indicators
Side marker lights
Headlights for left-hand traffic
Working lights
Electrically heated rear-view mirrors
Automatic cut-outs

Drivetrain

Retarder (by delivery)

Cab equipment

Seat belt
Passenger seat
Heated operator's seat
Speedometer
Air conditioning

External equipment

Fender step with work platform
Wheel chocks
Mudguard wideners, front, 2,7 m

Protection equipment

Collision guard
Overhead guard, FOPS

Other equipment

Turnaround system
Exhaust gas cleaning
TBG-equipment
SMV-symbol
Air horns
Rear-view mirrors (EEC)

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 BM Company

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