

Volvo BM A25C

6x6



- **Engine output:**
SAE J1349 Net
187 kW (251 hp)
- **Body volume:**
13.5 m³ (17.7 yd³)
- **Load capacity:**
22.5 t (25 sh tn)
- *Direct-injected, turbo-charged, intercooled Volvo low emission diesel engine.*
- *Fully automatic power-shift transmission. High and low gear ranges.*
- *Hydraulic retarder as standard.*
- *One longitudinal and three transverse diff-locks. All with 100% lock-up.*
- *Front axle with three-point suspension and effective shock absorption.*
- *Volvo BM terrain bogie, individually oscillating axles and high ground clearance.*
- *Low interior noise level*
- *Adjustable steering wheel*

VOLVO BM

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 88/77/EEC and California off-road regulation 1996.

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

Make	Volvo			
Model	TD 73 KCE			
Max power at	r/s	(r/min)	40	(2400)
SAE J1349 Gross	kW	(hp)	190	(255)
Flywheel power at	r/s	(r/min)	40	(2400)
SAE J1349 Net	kW	(hp)	187	(251)
DIN 6271*	kW	(hp)	187	(251)
Max torque at	r/s	(r/min)	20	(1200)
SAE J1349 Gross	Nm	(lbf ft)	1090	(804)
SAE J1349 Net	Nm	(lbf ft)	1080	(796)
DIN 6271**	Nm	(lbf ft)	1080	(796)
Displacement total	l	(in ³)	6.73	(411)
Bore	mm	(in)	104.77	(4.125)
Stroke	mm	(in)	130	(5.12)
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, which corresponds to DIN 70020.

ELECTRICAL SYSTEM



Voltage	V	24
Battery capacity	Ah	2x135
Alternator	kW	1,68
Starter motor	kW	(hp) 5 (6.7)

SERVICE REFILL CAPACITIES



Crankcase	l (US gal)	24 (6.3)
Fuel tank	l (US gal)	280 (74.0)
Cooling system	l (US gal)	37 (9.8)
Transmission total	l (US gal)	16 (4.2)
Dropbox	l (US gal)	6 (1.6)
Hub	l (US gal)	2.5 (0.7)
Front axle	l (US gal)	29 (7.7)
First bogie axle	l (US gal)	29 (7.7)
Second bogie axle	l (US gal)	29 (7.7)
Brake hydraulics	l (US gal)	4 (1.1)
Hydraulic system	l (US gal)	160 (42.3)
Hydraulic tank	l (US gal)	145 (38.3)

DRIVETRAIN



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

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

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

Axles: Volvo BM. 6-wheel drive. All axles have transversal 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		2,4:1
Transmission		ZF 5 HP 500
Dropbox	Volvo BM	FL 652
Axles	Volvo BM	AH 54

Speeds with tyres 23.5R25

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

with tyres 20.5R25:

*	32 (19.9)
**	48 (29.8)
***	6 (3.7)
****	10 (6.2)

SUSPENSION



VOLVO BM SUSPENSION SYSTEM

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, which results in oscillating needed in rough terrain.

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

BRAKE SYSTEM



Dual circuit system with air-hydraulic disc brakes. Comply with ISO 3450 and SAE J1473 at total machine weight.

Circuit divisions: 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.

Exhaust brake: Standard.

Retarder: Hydraulic, infinitely variable, integrated in transmission.

For retarding capability incl. retarder, exhaust brake and engine, see graph on page 4.

HYDRAULIC SYSTEM



Pumps: Three engine-dependent, variable piston pumps mounted on flywheel power take-offs. One unused power take-off available.

Ground-dependent hydraulic 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	r/s	(r/min)	34	(2040)
engine dependent	l/min	(US gal/min)	100	(26.4)
ground dependent	l/min	(US gal/min)	118	(31.2)
Working pressure	MPa	(psi)	19.5	(2830)

CAB



Volvo BM cab, tested and approved according to ROPS standard ISO/3471 and SAE J1040/APR88. Mounted on rubber pads which effectively reduces vibrations. Adjustable steering wheel. Radio/Contronic console in ceiling.

Heater and defroster: Filtered air and pressurized cab.

Operator's seat: Flameproof upholstery. Extra seat for trainer as option.

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

STEERING SYSTEM



Hydromechanical articulated steering. 3.4 lock-to-lock turns.

Cylinder: Two double-acting steering cylinders.

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

Steering angle: $\pm 45^\circ$

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	s	15
Lowering time	s	12
Body, plate thickness		
Front	mm (in)	8 (0.31)
Sides	mm (in)	12 (0.47)
Bottom/chute	mm (in)	14 (0.55)
Yield strength	N/mm ² (psi)	1000 (145000)
Tensile strength	N/mm ² (psi)	1250 (181000)
Hardness min.	HB	360-440

WEIGHTS



Operating weight includes all fluids and operator.

Operating weight with 23.5R25 tyres:

Front	kg (lb)	9040 (19930)
Rear	kg (lb)	8730 (19246)
Total	kg (lb)	17770 (39176)
Payload	kg (lb)	22500 (49603)
Total weight		
Front	kg (lb)	11500 (25353)
Rear	kg (lb)	28770 (63426)
Total	kg (lb)	40270 (88779)

A25C equipped with 20.5R25 tyres, subtract 200 kg (440 lb) per axle.

GROUND PRESSURE



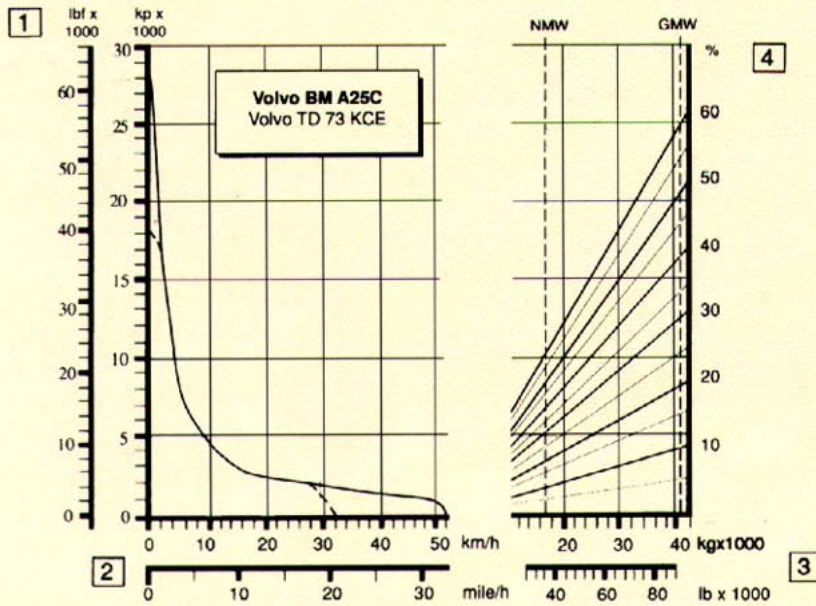
At 15% sinkage of unloaded radius and specified weights.

With 20.5R25 tyres:

Unloaded			
Front	kPa (psi)	110	(15.9)
Rear	kPa (psi)	52	(7.5)
Loaded			
Front	kPa (psi)	141	(20.4)
Rear	kPa (psi)	177	(25.7)

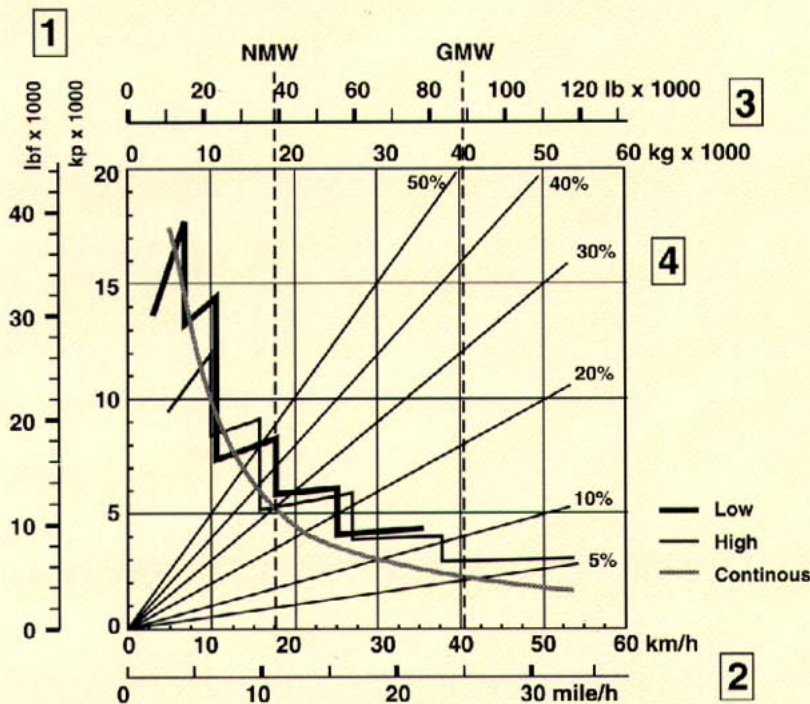
With 23,5R25 tyres:

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



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 %.



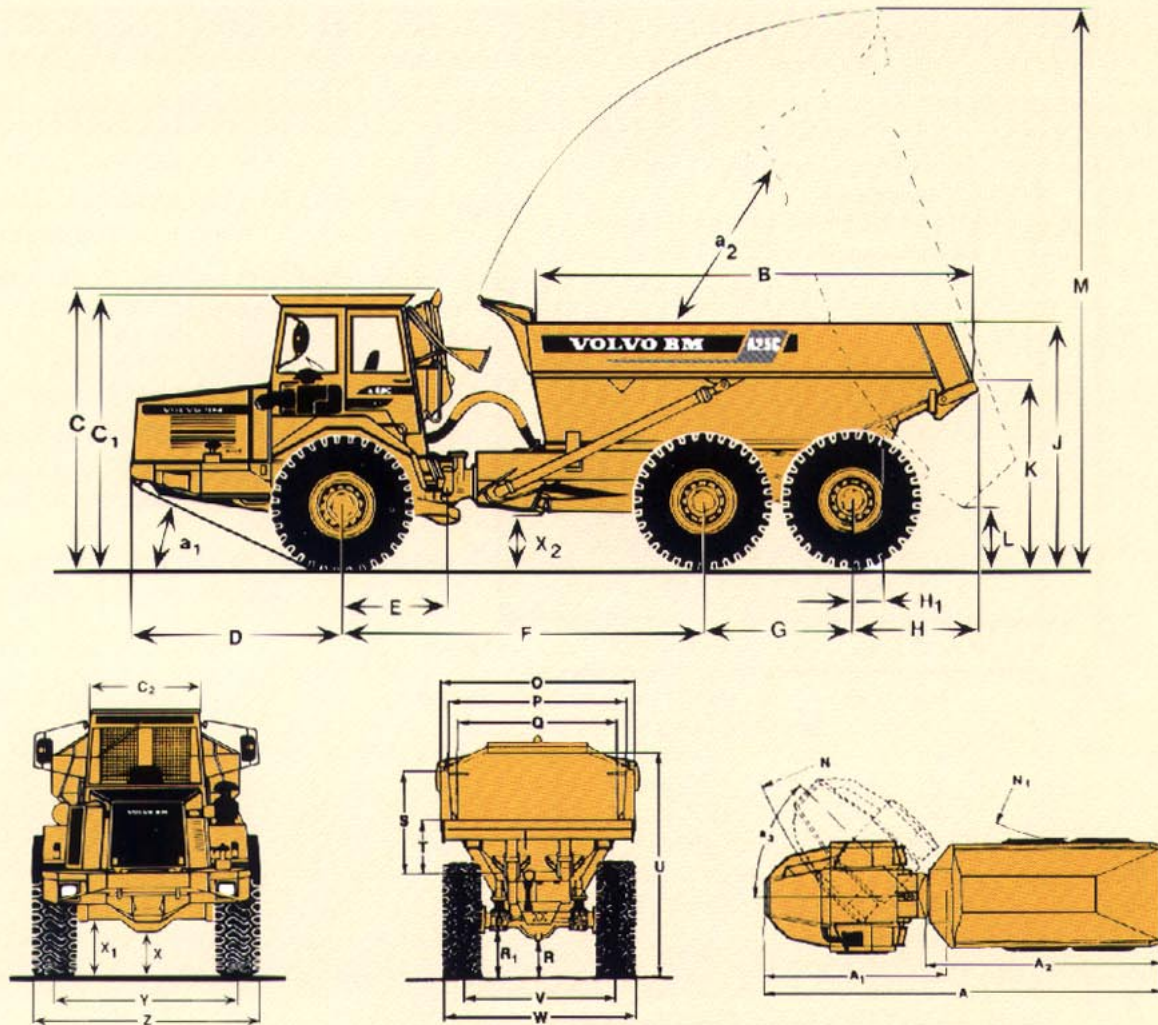
RETARDATION PERFORMANCE (Exhaust brake + retarder)

- 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 %).
Chart based on 0% rolling resistance, standard tyres and gearing, unless otherwise stated.

- 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 BM A25C 6x6 (unloaded with 23.5R25 tyres)

A	mm (ft in)	9675 (31'9")	F	mm (ft in)	4165 (13'8")	N'	mm (ft in)	4250 (13'11")	V	mm (ft in)	2150 (7'6")
A ¹	mm (ft in)	4495 (14'9")	G	mm (ft in)	1670 (5'6")	O	mm (ft in)	2500 (8'2")	W	mm (ft in)	2795 (9'2")
A ²	mm (ft in)	5710 (18'3")	H	mm (ft in)	1425 (4'8")	P	mm (ft in)	2300 (7'6")	X	mm (ft in)	480 (1'7")
B	mm (ft in)	5000 (16'5")	H'	mm (ft in)	385 (1'3")	Q	mm (ft in)	2100 (6'10")	X ¹	mm (ft in)	610 (2')
C	mm (ft in)	3285 (10'9")	J	mm (ft in)	2780 (9'1")	R	mm (ft in)	520 (1'8")	X ²	mm (ft in)	660 (2'2")
C ¹	mm (ft in)	3210 (10'6")	K	mm (ft in)	2150 (7'1")	R'	mm (ft in)	620 (2')	Y	mm (ft in)	2150 (7'6")
C ²	mm (ft in)	1320 (4'4")	L	mm (ft in)	640 (2'1")	S	mm (ft in)	1340 (4'5")	Z	mm (ft in)	2795 (9'2")
D	mm (ft in)	2415 (7'11")	M	mm (ft in)	6400 (21')	T	mm (ft in)	710 (2'4")	a ¹	°	26
E	mm (ft in)	1200 (3'11")	N	mm (ft in)	7850 (25'9")	U	mm (ft in)	2995 (9'10")	a ²	°	70
									a ³	°	45

DIMENSIONS VOLVO BM A25C 6x6 (unloaded with 20.5R25 tyres)

A	mm (ft in)	9675 (31'9")	F	mm (ft in)	4165 (13'8")	N'	mm (ft in)	4250 (13'11")	V	mm (ft in)	1930 (6'4")
A ¹	mm (ft in)	4495 (14'9")	G	mm (ft in)	1670 (5'6")	O	mm (ft in)	2500 (8'2")	W	mm (ft in)	2490 (8'2")
A ²	mm (ft in)	5710 (18'3")	H	mm (ft in)	1425 (4'8")	P	mm (ft in)	2300 (7'6")	X	mm (ft in)	420 (1'5")
B	mm (ft in)	5000 (16'5")	H'	mm (ft in)	385 (1'3")	Q	mm (ft in)	2100 (6'10")	X ¹	mm (ft in)	550 (1'10")
C	mm (ft in)	3225 (10'7")	J	mm (ft in)	2720 (8'11")	R	mm (ft in)	460 (1'6")	X ²	mm (ft in)	600 (2')
C ¹	mm (ft in)	3150 (10'4")	K	mm (ft in)	2090 (6'10")	R'	mm (ft in)	560 (1'10")	Y	mm (ft in)	1930 (6'4")
C ²	mm (ft in)	1320 (4'4")	L	mm (ft in)	580 (1'11")	S	mm (ft in)	1340 (4'5")	Z	mm (ft in)	2490 (8'2")
D	mm (ft in)	2415 (7'11")	M	mm (ft in)	6350 (20'10")	T	mm (ft in)	710 (2'4")	a ¹	°	24.5
E	mm (ft in)	1200 (3'11")	N	mm (ft in)	7850 (25'9")	U	mm (ft in)	2945 (9'8")	a ²	°	70
									a ³	°	45

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

Load capacity	kg (sh tn)	22 500 (25)			
Body, struck	m ³ (yd ³)	10.6 (13.9)			
heaped	m ³ (yd ³)	13.5 (17.7)			
With underhung tailgate (optional)			With under- and overhung tailgate (optional)		
Body, struck	m ³ (yd ³)	11.1 (14.5)		m ³ (yd ³)	11.2 (14.6)
heaped	m ³ (yd ³)	13.8 (18.0)		m ³ (yd ³)	14.1 (18.4)

STANDARD EQUIPMENT

Safety and comfort

ROPS cab
 Cab heater with filtered fresh air and defroster
 Ergonomically designed and adjustable operator's seat
 Windshield wipers with interval
 Windshield washers
 Rear view mirrors
 Sun-visor
 Seat belt
 Anti-slip material on hood and fenders
 Cigarette lighter
 Ashtray
 Horn
 Protective grille for rear window
 Hazard flashers
 Tinted glass
 Lights:
 headlights, main/dipped
 parking lights
 rear lights
 direction indicators
 back-up lights
 brake lights
 cab lighting
 instrument lighting

Adjustable steering wheel
 Steering joint locking assembly
 Radio/Contronic console in ceiling
 Speedometer
 Secondary steering

Engine and electrical system

Low emission engine
 Turbocharger
 Intercooler
 Exhaust brake
 Oil drainage hose
 Alternator
 Preheating
 Battery disconnect switch
 Electrical outlet
 Gauges for:
 air pressure
 engine temperature
 engine revs
 fuel
 hours
 transmission oil temperature

Pilot lamps for:
 direction indicators
 exhaust brake
 front axle diff-lock
 longitudinal diff-lock
 lights
 main beam
 preheating
 high/low gear
 Warning lamps for:
 air filter
 battery charging
 body up
 brake pressure
 brake fluid level
 engine oil pressure
 engine overspeed
 engine-dependent steering pump
 ground-dependent steering pump
 hydraulic oil level
 parking brake
 transmission temperature
 Central warning:
 air pressure
 battery charging
 brake fluid level
 engine oil pressure

engine overspeed
 engine temperature
 hydraulic oil level
 steering function
 transmission temperature

Drivetrain

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

Body

Body with exhaust ducts

Tyres

23.5R25

OPTIONAL EQUIPMENT

Service and Maintenance

Tool kit with tyre inflation unit

Engine

Extra fuel filter
 Oil-bath air cleaner

Electrical

Work lights
 Rotating beacon with collapsible mount
 Side direction indicators
 Headlights for left-hand traffic

Cab

Electrically heated rear-view mirrors
 Air conditioning
 Extra seat for trainer
 Airsuspended electrically heated operator's seat
 Tachograph (Europe)
 Speedometer, miles
 Contronic display

Protection

Overhead guard, FOPS
 Brake protection, front axle

External

Mudguard wideners, front, 2,7 m
 Rear mudflaps, 2,7 m
 Towing hitch

Body

Body heating
 Overhung tailgate
 Underhung tailgate
 Wear plates, separate delivery
 Upper side extensions, 200 mm

Tyres

20.5R25

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.

VME Articulated Haulers AB

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