



Volvo BM A25 B

6×6

Volvo BM A25B

Trendsetter in the 25 ton class

Volvo BM A25B

Featuring all the benefits and advantages of the well known Volvo BM concept

Volvo BM A25B

Improved and designed to meet greater demands

- **Engine output:**
SAE J1349 Net 177 kW
(240 hp)
- **Body volume:**
13,5 m³ /17,7 yd³)
- **Load capacity**
22,5 t (25 sh ton)



VOLVO BM

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 consuming power only when needed.

Max. power at	r/s	(r/min)	40	(2400)
SAE J1349 Gross	kW	(hp)	180	(244)
Flywheel power at	r/s	(r/min)	40	(2400)
SAE J1349 Net	kW	(hp)	177	(240)
DIN 6271*	kW	(hp)	177	(240)
Max. torque at	r/s	(r/min)	27	(1600)
SAE J1349 Gross	Nm	(lbf ft)	815	(601)
SAE J1349 Net	Nm	(lbf ft)	800	(590)
DIN 6271**	Nm	(lbf ft)	800	(590)
Displacement, total	l	(in ³)	6,73	(411)
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

DRIVETRAIN



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

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

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

Axles, 6 wheel drive: All axles are of Volvo BM design, AH 54. The axles have fully floating axle shafts with planetary gear type hub reduction.

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

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

Speeds with tires 23.5 R 25:

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) **	6,5	(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)
with tires 20.5R25:	*		29	(18,0)
	**		6,5	(4,3)
	***		47	(29,2)
	****		10	(6,2)

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: Compressor driven by engine transmission

Exhaust brake retarder: Standard.

Retarder: Hydraulic retarder integrated in transmission as optional equipment.

SUSPENSION



VOLVO BM SUSPENSION SYSTEM

Front axle: Two rubber springs with bottoming absorption on each side. Stabilizer. Shock-absorbers, two on each side.

Bogie: Volvo BM unique terrain bogie with independent axle suspension.

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 instructor, optional.

FOPS: Optional equipment.

Number of exits (includes door)	2
Internal noise level	dB (A) 80

BODY



Body: Body made of hardened-and-tempered steel with particularly high impact strength.

Cylinder: Two dual-acting single stage 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	mm (in)	14 (0,55)
chute	mm (in)	14 (0,55)
Yield strength	N/mm ² (psi)	883 (128000)
Tensile strength	N/mm ² (psi)	1226 (178000)
Hardness min.	HB	360-440

LOAD CAPACITY



Body volumes according to SAE 2:1

Load capacity	kg (sh tons)	22500	(25)
Body, struck	m ³ (yd ³)	10,6	(13,9)
heaped	m ³ (yd ³)	13,5	(17,7)

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: 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)	34 (2050)
Working pressure	MPa (psi)	19,5* (2828*)
	MPa (psi)	19,5** (2828**)

* = pump 1, 2, 3

** = ground-dependent hydraulic pump

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: ± 45°

ELECTRICAL SYSTEM



Voltage	V	24
Battery capacity	Ah	2 x 135
Alternator rating	kW	1,68
Starter motor power	kW (hp)	5 (6,8)

WEIGHTS



Service weight includes body, oil, fuel and water.

Service weight (with 23,5-25 tires)

Front	kg (lb)	8800 (19400)
Rear	kg (lb)	8600 (18960)
Total	kg (lb)	17400 (38360)
Payload	kg (lb)	22500 (49610)
Total weight		
Front	kg (lb)	11300 (24910)
Rear	kg (lb)	28600 (63060)
Total	kg (lb)	39900 (87980)

A25B 6x6 equipped with 20.5-25 tires, subtract 200 kg per axle.

GROUND PRESSURE



At 15% sinkage of unloaded diameter and specified weights.

Unloaded with tires **20.5-25**

Front	kPa (psi)	107	(15,5)
Rear	kPa (psi)	51	(7,4)
Loaded			
Front	kPa (psi)	139	(20,2)
Rear	kPa (psi)	176	(25,5)

Unloaded with tires **23.5-25**

Front	kPa (psi)	89	(12,9)
Rear	kPa (psi)	43	(6,2)
Loaded			
Front	kPa (psi)	115	(16,6)
Rear	kPa (psi)	145	(21)

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	l (US gal)	16 (4,2)
Dropbox	l (US gal)	6 (1,6)
Front axle	l (US gal)	35 (9,2)
First bogie axle	l (US gal)	33 (8,7)
Second bogie axle	l (US gal)	35 (9,2)
Hydraulic system	l (US gal)	160 (4,2)
Hydraulic tank	l (US gal)	145 (38,3)

STANDARD EQUIPMENT

Safety and comfort

ROPS cab
 Cab heater with filtered fresh air and defroster
 Ergonomically designed and adjustable operator's seat
 Speedometer
 Ground-dependent secondary steering pump
 Windshield wipers
 Windshield washers
 Rear-view mirrors
 Sun visor
 Seat belt
 Cigarette lighter
 Ashtray
 Horn
 Tyre inflation (unit)
 Protective grille for rear window
 Hazard flashers
 Tinted glass
 Lights:
 headlights
 main/dipped
 parking lights
 rear lights
 direction indicators
 brake lights
 back-up lights

cab lighting
 instrument lighting
 Tool box under seat
 Steering joint locking assembly
 Supplementary steering

Engine & electrical system

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

Warning lamps for:
 low hydraulic oil level
 ground dependent secondary steering pump
 engine-dependent pumps
 battery charging
 brake hydraulics
 low brake pressure
 parking brake
 engine oil pressure
 transmission temperature
 air filter
 engine overspeed
 Central warning:
 hydraulic oil level
 steering function
 brake hydraulics
 brake pressure
 engine temperature
 engine oil pressure
 engine overspeed
 airfilter
 battery charging
 transmission temperature

Drivetrain

Torque converter
 Automatic transmission with an automatic lock-up
 Dropbox with high/low gear
 Longitudinal differential lock
 Differential lock, front axle
 Differential locks on bogie axles

Body

Body with exhaust gas ducts

Tires

23.5 R 25

OPTIONAL EQUIPMENT

Service and maintenance

Tool kit

Engine

Extra fuel filter
 Oil-bath air cleaner
 Low emission engine

Electrical equipment

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

Drivetrain

Hydraulic retarder

Cab equipment

Instructor's seat
 Heated operator's seat
 Tachograph (Europe)
 Air conditioning
 Radio panel*
 Speedometer miles
 Airsuspended electrically heated operator's seat

External equipment

Fender step with protection plate
 Mudguard wideners, front, 2,7 m
 Rear mudflaps, 2,7 m
 Towing hitch*

Protection equipment

Collision guard front
 Overhead guard, FOPS

Body equipment

Body heating

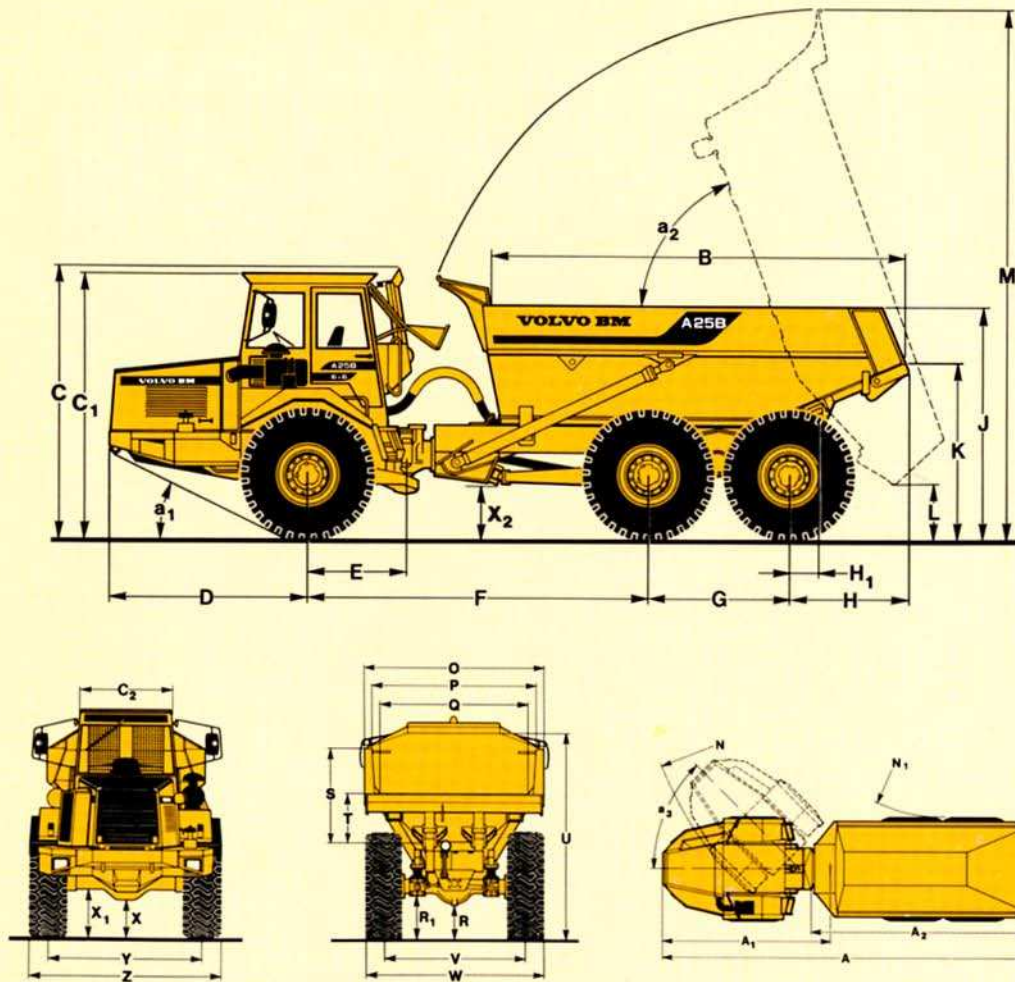
Other equipment

Exhaust gas cleaning

Tires

20.5 R 25

* Only delivered as kit through VME Parts Sweden AB



OPERATING DATA VOLVO BM A25B 6x6 (Tires 23.5R25)

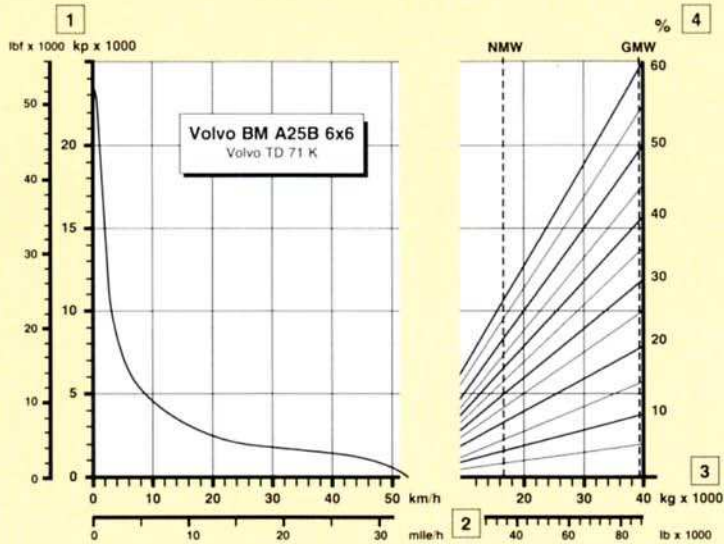
A	mm (ft in)	9675 (31'9")	F	mm (ft in)	4165 (13'8")	N ₁	mm (ft in)	4250(13'11")	V	mm (ft in)	2150 (7'6")
A ₁	mm (ft in)	4495 (14'9")	G	mm (ft in)	1670 (5'6")	O	mm (ft in)	2500 (8'2")	W	mm (ft in)	2795 (9'2")
A ₂	mm (ft in)	5710 (18'3")	H	mm (ft in)	1425 (4'8")	P	mm (ft in)	2300 (7'6")	X	mm (ft in)	465 (1'6")
B	mm (ft in)	5000 (16'5")	H ₁	mm (ft in)	385 (1'3")	Q	mm (ft in)	2100 (6'10")	X*	mm (ft in)	480 (1'6")
C	mm (ft in)	3200 (10'6")	J	mm (ft in)	2725 (8'11")	R	mm (ft in)	465 (1'6")	X ₁	mm (fr in)	590 (1'11")
C*	mm (ft in)	3240 (10'8")	J*	mm (ft in)	2780 (9'1")	R*	mm (ft in)	525 (1'9")	X ₁ *	mm (ft in)	605 (1'12")
C ₁	mm (ft in)	3110 (10'2")	K	mm (ft in)	2095 (6'10")	R ₁	mm (ft in)	570 (1'10")	X ₂	mm (ft in)	590 (1'11")
C ₁ *	mm (ft in)	3150 (10'4")	K*	mm (ft in)	2150 (7'6")	R ₁ *	mm (ft in)	630 (2'8")	Y	mm (ft in)	2150 (7'6")
C ₂	mm (ft in)	1320 (4'4")	L	mm (ft in)	610 (2')	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)	2940 (9'8")	a ₂	°	70
					U*	mm (ft in)	2995 (9'10")	a ₃	°	45	

* = unloaded machine

OPERATING DATA VOLVO BM A25B 6x6 (Tires 20.5R25)

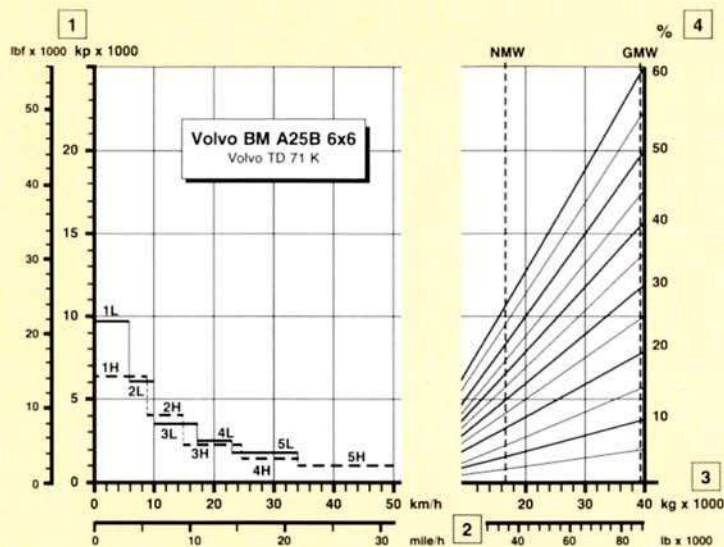
A	mm (ft in)	9675 (31'9")	F	mm (ft in)	4165 (13'8")	N ₁	mm (ft in)	4250(13'11")	V	mm (ft in)	1930 (6'4")
A ₁	mm (ft in)	4495 (14'9")	G	mm (ft in)	1670 (5'6")	O	mm (ft in)	2500 (8'2")	W	mm (ft in)	2490 (8'2")
A ₂	mm (ft in)	5710 (18'3")	H	mm (ft in)	1425 (4'8")	P	mm (ft in)	2300 (7'6")	X	mm (ft in)	410 (1'6")
B	mm (ft in)	5000 (16'5")	H ₁	mm (ft in)	385 (1'3")	Q	mm (ft in)	2100 (6'10")	X*	mm (ft in)	425 (1'6")
C	mm (ft in)	3150 (10'4")	J	mm (ft in)	2680 (8'9")	R	mm (ft in)	410 (1'4")	X ₁	mm (ft in)	535 (1'9")
C*	mm (ft in)	3185 (10'5")	J*	mm (ft in)	2730 (8'11")	R*	mm (ft in)	460 (1'6")	X ₁ *	mm (ft in)	550 (1'9")
C ₁	mm (ft in)	3060 (10')	K	mm (ft in)	2050 (6'9")	R ₁	mm (ft in)	520 (1'9")	X ₂	mm (ft in)	535 (1'9")
C ₁ *	mm (ft in)	3095 (10'2")	K*	mm (ft in)	2100 (6'11")	R ₁ *	mm (ft in)	570 (1'10")	Y	mm (ft in)	1930 (6'4")
C ₂	mm (ft in)	1320 (4'4")	L	mm (ft in)	560 (1'10")	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)	2895 (9'6")	a ₂	°	70
					U*	mm (ft in)	2945 (9'8")	a ₃	°	45	

* = unloaded machine



RIMPULL

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



RETARDATION PERFORMANCE (Exhaust brake)

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

--- High range
 ——— Low range

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 NMW or GMW weight line.
- C. From intersection, read horizontally left to intersect the performance or retarder curve.
- D. Read down for machine speed.

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
 S-35183 VÄXJÖ SWEDEN

