Volvo BM A25 B
4×4

Volvo BM A25B 4x4

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

Volvo BM A25B 4x4

Improved and designed to meet greater demands.

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Fast and agile in confined spaces, such as mines, quarries and gravel pits. Special turnaround system for tunnels as optional equipment.

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 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)	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: All axles are of Volvo BM design, AH54 and AH71. The driving axles have fully floating axle shafts with planetary gear type hub reduction.

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

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)

BRAKE SYSTEM

Dual-circuit system with air-hydraulic disc-brakes, designed to comply with IS0 3450 and SAE J1473 at total machine weight.

Circuit division: one circuit for the front axle and one for the rear axle.

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.

Rear axle: No 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 as option.

FOPS: Optional equipment

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

BODY

Cylinder: Two single stage double acting hoist cylinders.

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

Tipping angle	°		70	
Tipping time with load	s		12	
Lowering time	s		10	
Body plate thickness				
front	mm	(in)	10 + 8	(0,70)
sides	mm	(in)	12 + 8	(0,79)
bottom	mm	(in)	12 + 8	(0,79)
chute	mm	(in)	16 + 8	(0,94)
Yield strength	N/mm^2	(psi)	900	(128000)
Tensile strength	N/mm^2	(psi)	1250	(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)	10,1	(13,2)
heaped	m^3	(yd^3)	13,0	(17,0)

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)	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 / V		2 x 135
Generator rating	kW		1,68
Starter motor power	kW	(hp)	5 (6,8)

WEIGHTS

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

Service weight			
Front	kg	(lb)	8900 (19625)
Rear	kg	(lb)	6500 (14333)
Total	kg	(lb)	15400 (33957)
Payload	kg	(lb)	22500 (49610)
Total weight			
Front	kg	(lb)	12300 (27116)
Rear	kg	(lb)	25600 (56437)
Total	kg	(lb)	37900 (83554)

GROUND PRESSURE

At 15% sinkage of unloaded diameter and specified weigths.

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)

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)

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 glas
Lights:
- headlights
- main/dipped/asym.
- parking lights
- rear lights
- direction indicators
- brake lights
- back-up lights
- cab lighting
- instrument lighting

Tool box under seat
Steering joint locking assembly

Engine & electrical system
Turbocharger
Intercooler
Alternator
Preheating engine
Battery disconnect switch
Electrical outlet
Indicator for aircleaner
Gauges for:
- speedometer
- brake pressure
- fuel
- engine temperature
- 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 pump
- 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 lock, rear axle

Body
Body with exhaust gas ducts and wear plates

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
Low emission engine

Electrical equipment
Rotating beacon with collapsible mount
Headlights for left-hand traffic
Working lights*
Electrically heated rear-view mirrors

Drivetrain
Hydraulic retarder

Cab equipment
Instructor's seat
Heated operator's seat
Speedometer miles
Air conditioning
Radio panel*

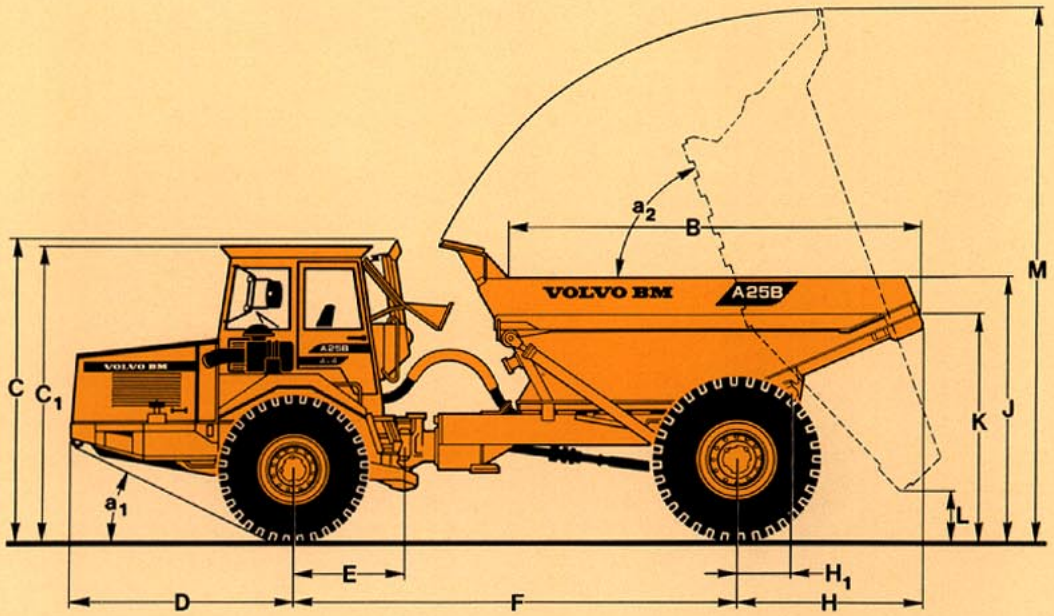
External equipment
Fender step with work platform
Mudguard wideners, front, 2,7 m
Rear mudflaps
Towing hitch*

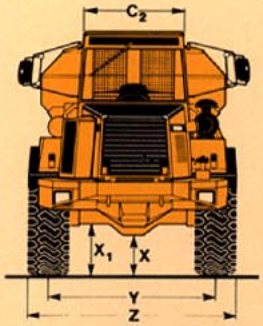
Protection equipment
Collision guard
Overhead guard, FOPS

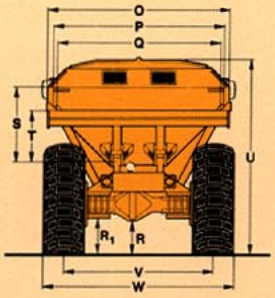
Body equipment
Body heating

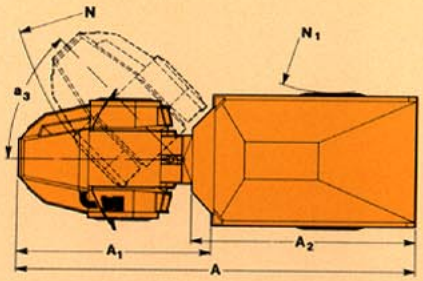
Other equipment
Turnaround system
Exhaust gas cleaning
TBG-equipment
Rear-view mirrors (EEC)

* Only delivered as kit through VME Parts Sweden AB





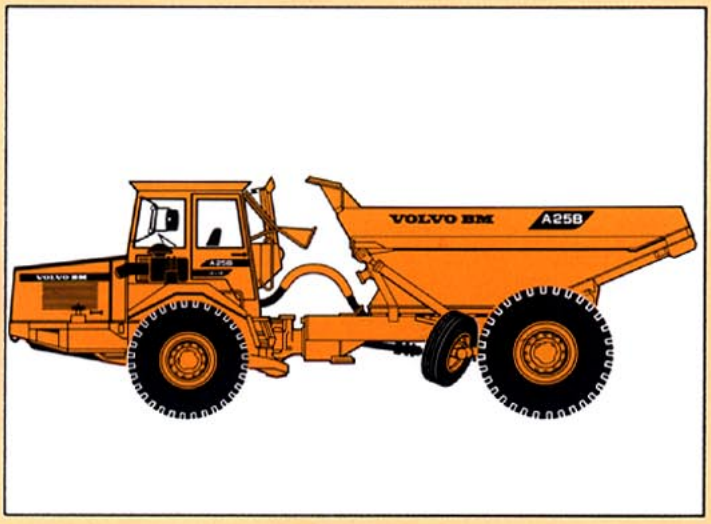


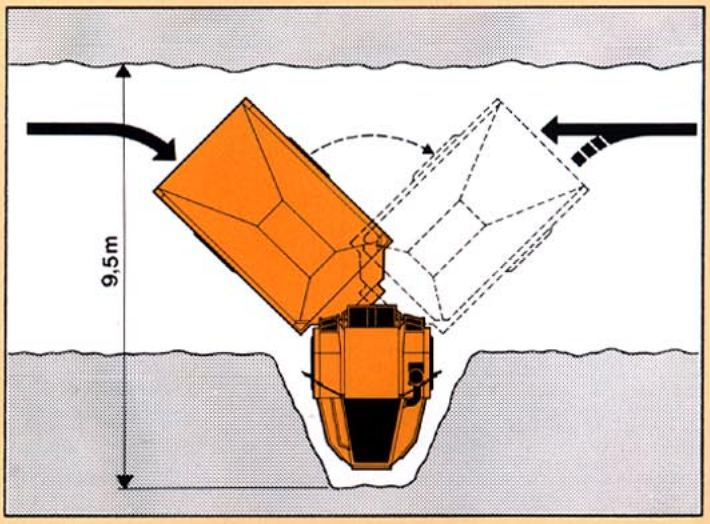


OPERATING DATA VOLVO BM A25B 4x4

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)	3110	(10'4")	L*	mm (ft in)	650	(2'4")	S	mm (ft in)	1405	(4'7")	a_1	°	26	
C_1*	mm (ft in)	3150	(10'6")	M*	mm (ft in)	5700	(18'5")	T	mm (ft in)	1030	(3'5")	a_2	°	70	
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")				

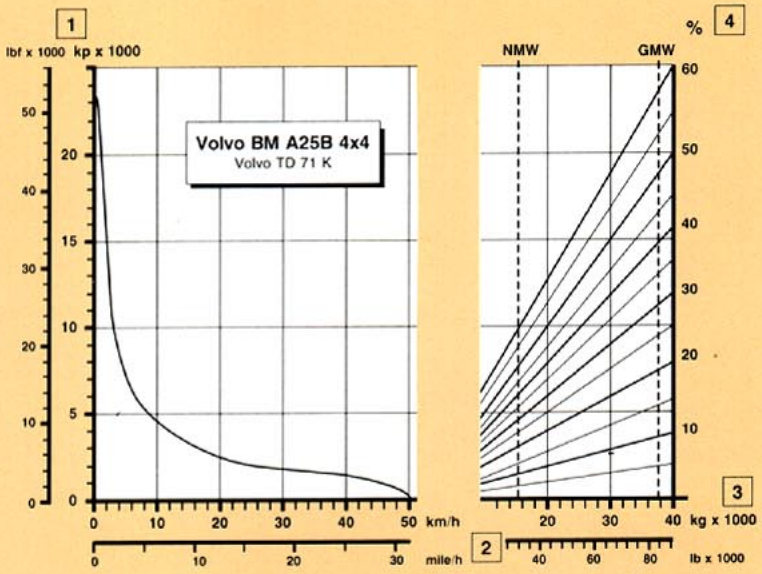
* = unloaded machine





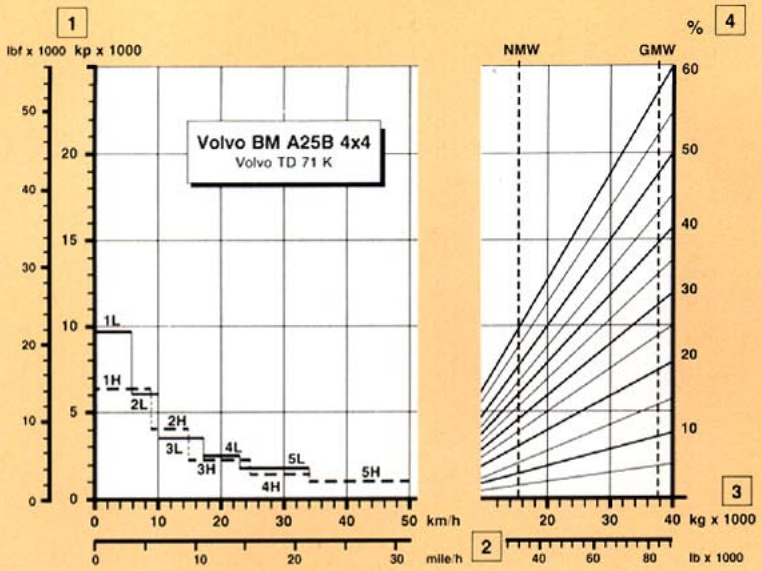
Turnaround system (optional)
The turnaround system is hydraulically operated from the cab and makes the A25B 4x4 highly effective in confined spaces.

The turnaround system enables the A25B 4x4 to turn 180° easily in a width of only 9,5 m (31 ft).



RIMPULL

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



RETARDATION

1 *Braking effort in kp (lbf)*
2 *Speed in km/h (mile/h)*
3 *Hauler weight in kg (lb)*
4 *Grade resistance in % – rolling resistance*

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.

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Ref. No. 21 1 669 4005 ENGELSKA
Printed in Sweden 91. 04