



# 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 m<sup>3</sup> / 17,7 yd<sup>3</sup> )
- **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 <sup>3</sup> )	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)
<b>with tires 20.5R25:</b>	*		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 <sup>2</sup> (psi)	883 (128000)
Tensile strength	N/mm <sup>2</sup> (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 <sup>3</sup> (yd <sup>3</sup> )	10,6	(13,9)
heaped	m <sup>3</sup> (yd <sup>3</sup> )	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

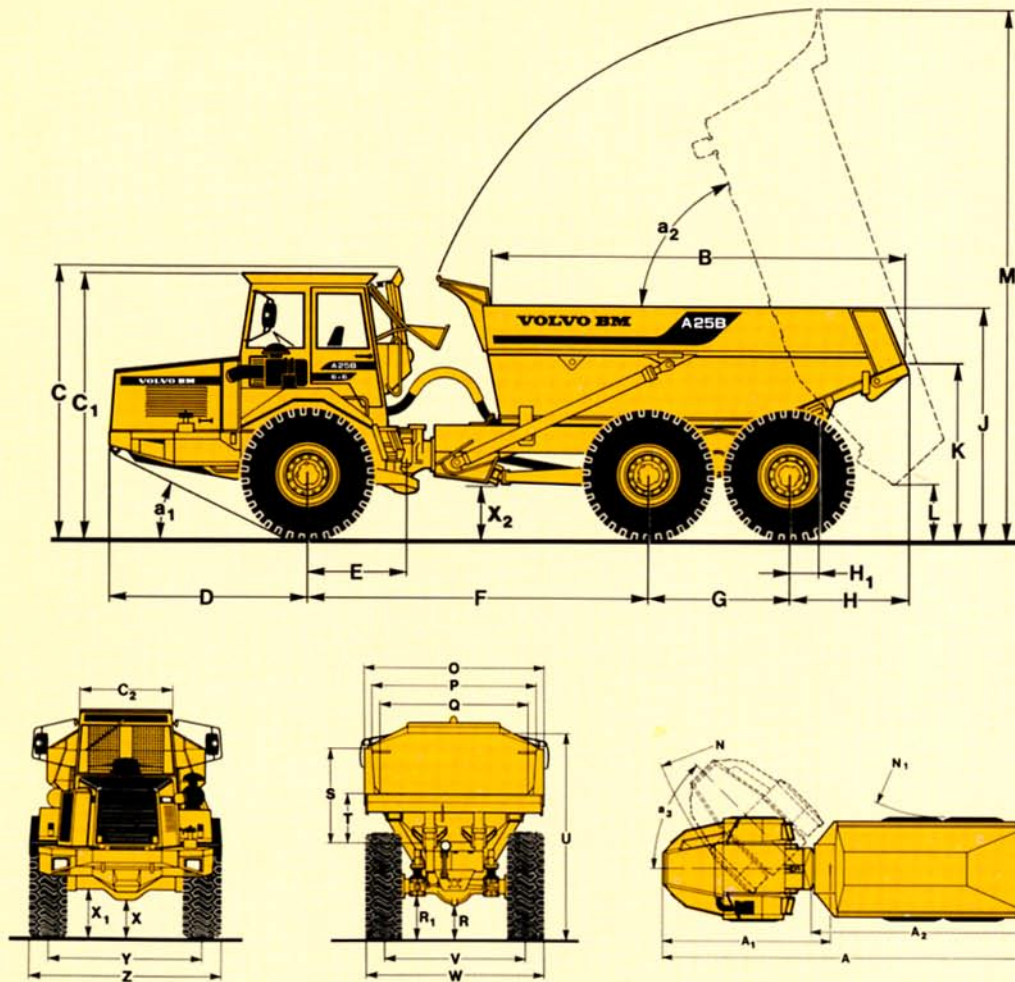
### Other equipment

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)

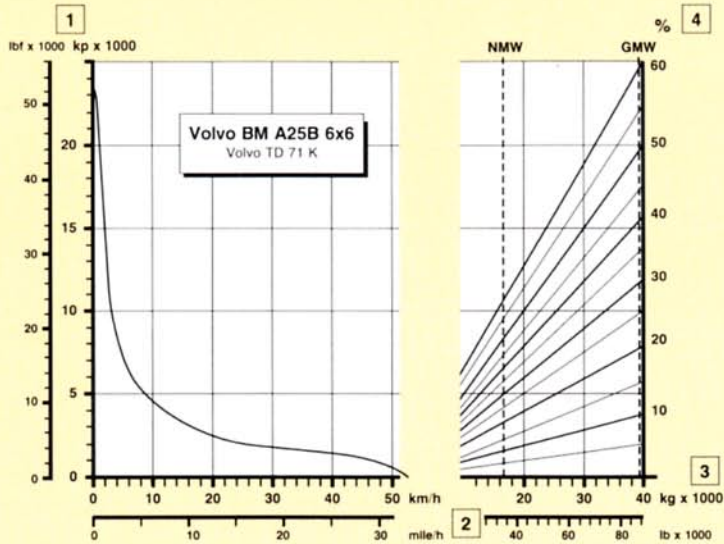
A	mm (ft in)	9675 (31'9")	F	mm (ft in)	4165 (13'8")	N <sub>1</sub>	mm (ft in)	4250(13'11")	V	mm (ft in)	2150 (7'6")
A <sub>1</sub>	mm (ft in)	4495 (14'9")	G	mm (ft in)	1670 (5'6")	O	mm (ft in)	2500 (8'2")	W	mm (ft in)	2795 (9'2")
A <sub>2</sub>	mm (ft in)	5710 (18'3")	H	mm (ft in)	1425 (4'8")	P	mm (ft in)	2300 (7'6")	X	mm (ft in)	465 (1'6")
B	mm (ft in)	5000 (16'5")	H <sub>1</sub>	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 <sub>1</sub>	mm (ft 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 <sub>1</sub> *	mm (ft in)	605 (1'12")
C <sub>1</sub>	mm (ft in)	3110 (10'2")	K	mm (ft in)	2095 (6'10")	R <sub>1</sub>	mm (ft in)	570 (1'10")	X <sub>2</sub>	mm (ft in)	590 (1'11")
C <sub>1</sub> *	mm (ft in)	3150 (10'4")	K*	mm (ft in)	2150 (7'6")	R <sub>1</sub> *	mm (ft in)	630 (2'8")	Y	mm (ft in)	2150 (7'6")
C <sub>2</sub>	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 <sub>1</sub>	°	26
E	mm (ft in)	1200 (3'11")	N	mm (ft in)	7850 (25'9")	U	mm (ft in)	2940 (9'8")	a <sub>2</sub>	°	70
					U*	mm (ft in)	2995 (9'10")	a <sub>3</sub>	°	45	

\* = unloaded machine

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

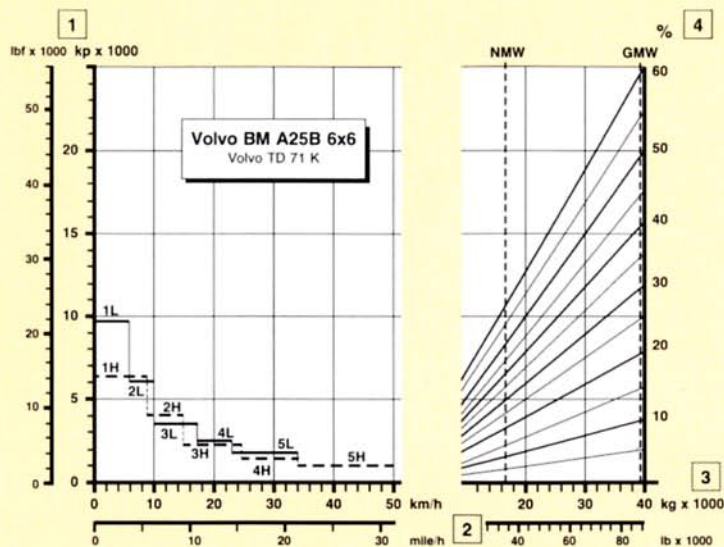
A	mm (ft in)	9675 (31'9")	F	mm (ft in)	4165 (13'8")	N <sub>1</sub>	mm (ft in)	4250(13'11")	V	mm (ft in)	1930 (6'4")
A <sub>1</sub>	mm (ft in)	4495 (14'9")	G	mm (ft in)	1670 (5'6")	O	mm (ft in)	2500 (8'2")	W	mm (ft in)	2490 (8'2")
A <sub>2</sub>	mm (ft in)	5710 (18'3")	H	mm (ft in)	1425 (4'8")	P	mm (ft in)	2300 (7'6")	X	mm (ft in)	410 (1'6")
B	mm (ft in)	5000 (16'5")	H <sub>1</sub>	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 <sub>1</sub>	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 <sub>1</sub> *	mm (ft in)	550 (1'9")
C <sub>1</sub>	mm (ft in)	3060 (10')	K	mm (ft in)	2050 (6'9")	R <sub>1</sub>	mm (ft in)	520 (1'9")	X <sub>2</sub>	mm (ft in)	535 (1'9")
C <sub>1</sub> *	mm (ft in)	3095 (10'2")	K*	mm (ft in)	2100 (6'11")	R <sub>1</sub> *	mm (ft in)	570 (1'10")	Y	mm (ft in)	1930 (6'4")
C <sub>2</sub>	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 <sub>1</sub>	°	24,5
E	mm (ft in)	1200 (3'11")	N	mm (ft in)	7850 (25'9")	U	mm (ft in)	2895 (9'6")	a <sub>2</sub>	°	70
					U*	mm (ft in)	2945 (9'8")	a <sub>3</sub>	°	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

