

VOLVO BM

A 25

6x6



- **Engine output:**
SAE J1349 Net 177 kW (240 hp)
- **Body volume:**
12 m³ (15,7 yd³)
- **Load capacity:**
22,5 t (25 sh ton)
- *Direct-injected, turbocharged Volvo diesel with intercooler*
- *Electronically controlled automatic shift. High and low gear ranges*
- *One longitudinal and three transverse diff locks. All with 100% lock-up*
- *Front axle with 3-point suspension and effective shock absorption*
- *Volvo BM terrain bogie, individually oscillating axles and high ground clearance*

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 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

ELECTRICAL SYSTEM



Voltage	V	24
Battery capacity	Ah	2 x 135
Generator rating	W	1260
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)
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)

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 three 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 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)

Front axle	AH 54
First bogie axle	AH 54
Second bogie axle	AH 54

Tires	20.5 R 25
	23.5 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: ± 45°

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)	80

BODY



Cylinder: One single-acting, 6-stage-hoist cylinder with automatic tipping stop.

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

Tipping angle	°	63
Tipping time with load	s	12
Lowering time	s	16
Body plate thickness		
front	mm (in)	6 (0,24)
sides	mm (in)	6 (0,24)
bottom	mm (in)	10 (0,39)
chute	mm (in)	10 (0,39)
Wear plates	mm (in)	8 (0,31)
Yield strength	N/mm ² (psi)	883 (128000)
Tensile strength	N/mm ² (psi)	1226 (178000)
Hardness min.	HB	360-440

WEIGHTS



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

A25 6x6 equipped with 20.5-25 tires, subtract 200 kg per axle.

Service weight		
Front	kg (lb)	8700 (19180)
Rear	kg (lb)	8200 (18080)
Total	kg (lb)	16900 (37260)
Payload	kg (lb)	22500 (49610)
Total weight		
Front	kg (lb)	11200 (24700)
Rear	kg (lb)	28200 (62180)
Total	kg (lb)	39400 (86880)

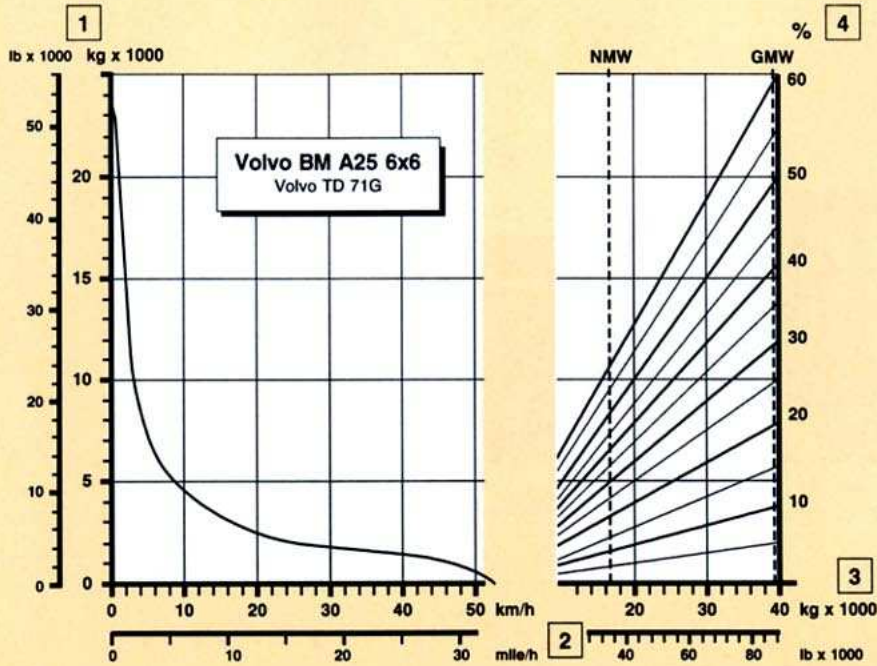
GROUND PRESSURE



At 15% slump of unloaded diameter and specified weights.

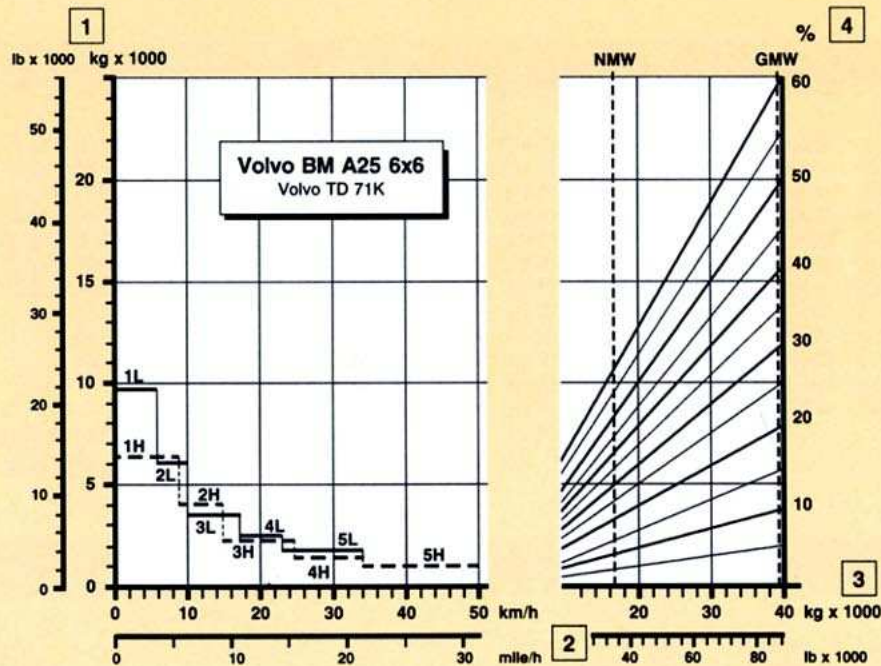
Cone penetrometer value at depth of 250 mm (9,8 in).

Unloaded with tires		20.5-25
Front	kPa (psi)	114 (16,5)
Rear	kPa (psi)	47 (6,8)
Loaded		
Front	kPa (psi)	147 (21,3)
Rear	kPa (psi)	177 (25,7)
Cone penetrometer value		77
Unloaded with tires		23.5-25
Front	kPa (psi)	96 (13,9)
Rear	kPa (psi)	44 (6,4)
Loaded		
Front	kPa (psi)	124 (19,2)
Rear	kPa (psi)	151 (23,4)
Cone penetrometer value		66



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

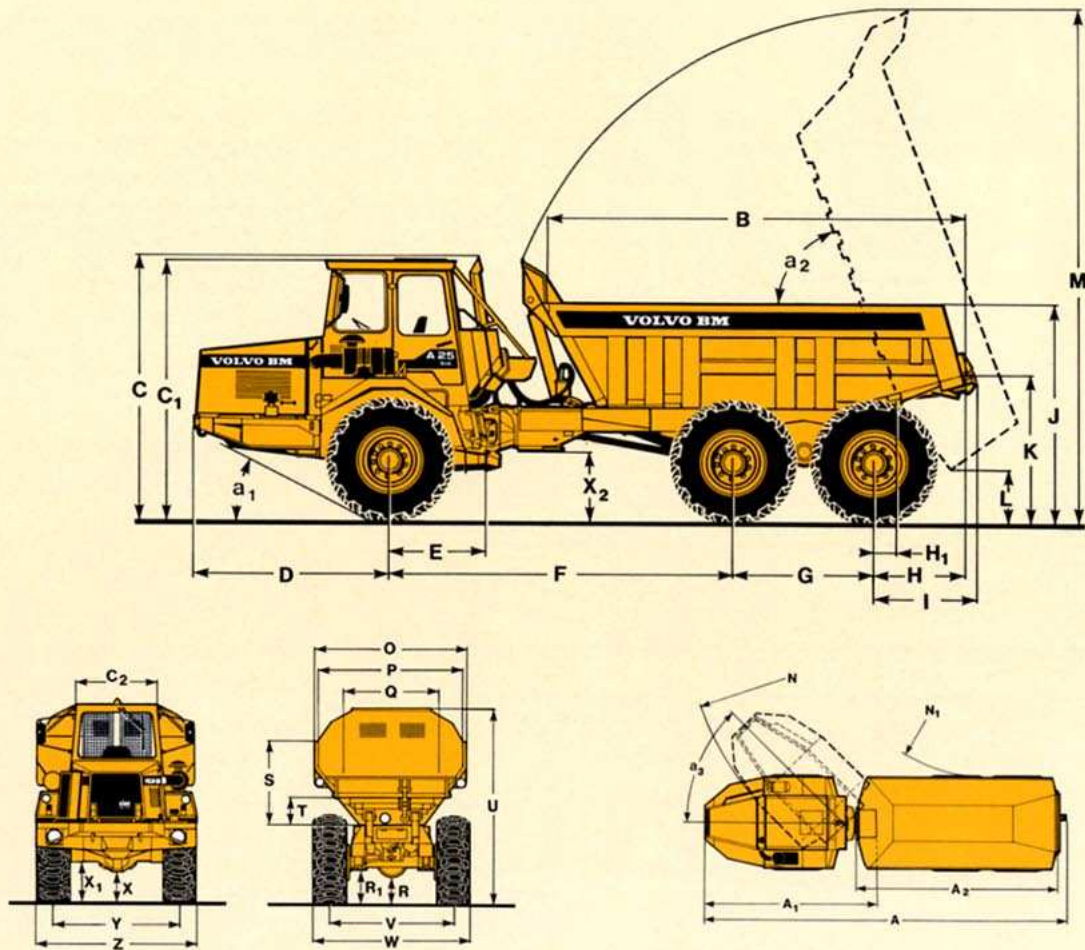
- 1 Rimpull in kg (lb)
- 2 Speed in km/h (mile/h)
- 3 Hauler weight in kg (lb)
- 4 Rolling resistance - grade resistance in %

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 NMW or GMW 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 6x6 (Tires 20.5 R 25)

A mm (ft in)	9505 (31'2")	G mm (ft in)	1650 (5'5")	O mm (ft in)	2480 (8'2")	X mm (ft in)	420 (1'5")
A ₁ mm (ft in)	4495 (14'9")	H mm (ft in)	1115 (3'8")	P mm (ft in)	2320 (7'7")	X* mm (ft in)	435 (1'5")
A ₂ mm (ft in)	5535 (18'7")	H ₁ mm (ft in)	425 (1'5")	Q mm (ft in)	1490 (4'11")	X ₁ mm (ft in)	555 (1'10")
B mm (ft in)	4955 (16'3")	I mm (ft in)	1290 (4'3")	R mm (ft in)	400 (1'4")	X ₂ mm (ft in)	740 (2'5")
C mm (ft in)	3150 (10'4")	J mm (ft in)	2485 (8'2")	R* mm (ft in)	450 (1'6")	Y mm (ft in)	1930 (6'4")
C* mm (ft in)	3185 (10'5")	J* mm (ft in)	2540 (8'4")	R ₁ mm (ft in)	567 (1'10")	Z mm (ft in)	2490 (8'2")
C ₁ mm (ft in)	3100 (10'2")	K mm (ft in)	1620 (5'4")	S mm (ft in)	1265 (4'2")	Z* mm (ft in)	2795 (9'2")
C ₁ * mm (ft in)	3135 (10'3")	K* mm (ft in)	1675 (5'6")	T mm (ft in)	380 (1'3")	a ₁ °	24,5
C ₂ mm (ft in)	1320 (4'4")	L mm (ft in)	600 (2')	U mm (ft in)	3110 (10'2")	a ₂ °	63
D mm (ft in)	2415 (7'11")	M mm (ft in)	6040 (19'10")	U* mm (ft in)	3145 (10'4")	a ₃ °	45
E mm (ft in)	1200 (3'11")	N mm (ft in)	7850 (25'9")	V mm (ft in)	1930 (6'4")		
F mm (ft in)	4175 (13'8")	N ₁ mm (ft in)	4250 (13'11")	W mm (ft in)	2490 (8'2")		
				W* mm (ft in)	2795 (9'2")		

* = unloaded machine

** = tires 23.5 R 25

LOAD CAPACITY Body volumes according to SAE 2:1

Load capacity	kg (sh tons)	22500	(25)
Body, struck	m ³ (yd ³)	9,4	(12,3)
heaped	m ³ (yd ³)	12,0	(15,7)
weight increase	kg (lb)	855	(1885)
Extended			
struck	m ³ (yd ³)	10,4	(13,6)
heaped	m ³ (yd ³)	13,0	(17,0)
weight increase	kg (lb)	1080	(2381)
With underhung tailgate			
body, struck	m ³ (yd ³)	9,6	(12,6)
heaped	m ³ (yd ³)	12,5	(16,4)
With underhung and overhung tailgate			
body, struck	m ³ (yd ³)	9,9	(12,9)
heaped	m ³ (yd ³)	13,0	(17,0)

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
 Tyre inflation (unit)
 Protective grille for rear window
 Hazard flashers
 Cab roof hatch
 Tinted glas
 Lights:
 headlights
 main/dipped
 parking lights
 reverse lights
 direction indicators
 side marker lights
 brake lights
 back-up lights

cab lighting
 instrument lighting
 Tool box
 Steering joint locking assembly

Engine & electrical system

Turbocharger
 Intercooler
 Alternator
 Preheating motor
 Ground-dependent secondary steering pump
 Battery disconnect switch
 Electrical outlet
 Indicator for aircleaner
 Gauges for:
 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 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
 engine temperature
 engine oil pressure
 engine overspeed
 airfilter
 battery charging
 transmission temperature

Drivetrain

Torque converter
 Automatic gear box
 Automatic lock-up
 Dropbox with high/low gear
 Longitudinal differential lock
 Differential lock, front axle
 Differential lock, first bogie axle
 Differential lock, second bogie axle

Body

Body with wear plates and exhaust gas ducts

Tires

20.5 R 25
 23.5 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
 Working lights*
 Electrically heated rear-view mirrors

Drivetrain

Retarder

Cab equipment

Seat belt
 Passenger seat
 Heated operator's seat
 Speedometer
 Tachograph (Swedish)
 Tachograph (Europe)
 Air conditioning
 Radio panel

External equipment

Fender step with work platform
 Wheel chocks
 Mudguard wideners, front, 2,7 m
 Rear mudguards, 2,5 m
 Rear mudflaps, 2,7 m
 Towing schackle*

Protection equipment

Collision guard front
 Overhead guard, FOPS

Body alternative

Extended body with wear plates and exhaust gas ducts

Body equipment

Body heating
 Overhung tailgate
 Underhung tailgate

Other equipment

Exhaust gas cleaning
 TBG-equipment
 Air horns*

* Only delivered as kit through VME Parts

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



VOLVO BM
MICHIGAN
EUCLID