

Volvo BM A35

6×6

- **Engine output:**
SAE J1349 Net
240 kW (322 hp)
- **Body volume:**
19 m³ (25 yd³)
- **Load capacity:**
32 t (35 sh tn)
- Direct-injected, turbo-charged Volvo diesel engine.
- Fully automatic powershift 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, direct-injected turbocharged 4-cycle diesel engine with overhead valves and wet replaceable cylinder linings.

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

Make Model			Volvo TD 122 GA	
Max power at	r/s	(r/min)	34	(2050)
SAE J1349 Gross	kW	(hp)	243	(326)
Flywheel power at	r/s	(r/min)	34	(2050)
SAE J1349 Net	kW	(hp)	240	(322)
DIN 6271*	kW	(hp)	240	(322)
Max torque at	r/s	(r/min)	21.7	(1300)
SAE J1349 Gross	Nm	(lbf ft)	1300	(958)
SAE J1349 Net	Nm	(lbf ft)	1280	(943)
DIN 6271**	Nm	(lbf ft)	1280	(943)
Displacement total	l	(in ³)	12	(732)
Bore	mm	(in)	130	(5.13)
Stroke	mm	(in)	150	(5.9)
Compression ratio			15:1	

*) with fan at normal speed. With fan operating at full speed, the flywheel power is 223 kW (299 hp) which corresponds to DIN 70020.

**) with fan at normal speed. With fan operating at full speed, the maximum torque is 1150 Nm (848 lbf ft), which corresponds to DIN 70020.

DRIVETRAIN



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

Transmission: Fully automatic planetary transmission with 6 gears forward and 2 reverse.

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

Axes: 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	2.36:1	
Transmission	Volvo	PT 1662
Dropbox	Volvo BM	FL 752
Axes	Volvo BM	AH 63

Speeds with tyres 26,5 R 25

Low gear, forward	1	km/h	(mile/h)	5.8	(3.5)
	2	km/h	(mile/h)	8.2	(5.1)
	3	km/h	(mile/h)	14.4	(8.9)
	4	km/h	(mile/h)	20.4	(12.6)
	5	km/h	(mile/h)	25.6	(15.9)
	6	km/h	(mile/h)	32.9	(20.4)
High gear, forward	1	km/h	(mile/h)	9.3	(5.8)
	2	km/h	(mile/h)	13.3	(8.3)
	3	km/h	(mile/h)	23.4	(14.5)
	4	km/h	(mile/h)	33.0	(20.5)
	5	km/h	(mile/h)	41.5	(25.8)
	6	km/h	(mile/h)	53.3	(33.1)
Low gear, reverse	1	km/h	(mile/h)	8.5	(5.3)
High gear, reverse	1	km/h	(mile/h)	8.0	(5.0)
	2	km/h	(mile/h)	13.7	(8.5)

ELECTRICAL SYSTEM



Voltage	V	24
Battery capacity	Ah	2x170
Alternator	W	1680
Starter motor	kW (hp)	6.6 (8.8)

SERVICE REFILL CAPACITIES



Crankcase	l	(US gal)	33	(8.7)
Fuel tank	l	(US gal)	360	(95.0)
Cooling system	l	(US gal)	88	(23.0)
Transmission total	l	(US gal)	38	(10.0)
Dropbox	l	(US gal)	7	(1.8)
Hub	l	(US gal)	4	(1.1)
Front axle	l	(US gal)	39	(10.3)
First bogie axle	l	(US gal)	43	(11.4)
Second bogie axle	l	(US gal)	39	(10.3)
Brake hydraulics	l	(US gal)	16	(4.2)
Brake oil tank	l	(US gal)	11	(2.9)
Hydraulic system	l	(US gal)	194	(51.2)
Hydraulic tank	l	(US gal)	175	(46.2)

SUSPENSION



VOLVO BM SUSPENSION SYSTEM

Front axle: One rubber spring 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 fully hydraulic disc brakes. Comply with ISO 3450 and SAE J1473 at total machine weight.

Circuit division: 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 grades up to 18%. When the parking brake is applied, the longitudinal differential is locked.

Compressor: Gear-driven by engine transmission.

Retarder: Hydraulic, infinitely variable, integrated in transmission.

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

HYDRAULIC SYSTEM



Pumps: Four engine-dependent variable piston pumps mounted on flywheel power take-offs. One ground-dependent piston pump for supplementary steering mounted on the dropbox.

Filtration: Filtration of oil through two paper filters with magnetic cores.

Pump capacity per pump	l/min	(US gal/min)	100	(26.4)
at shaft speed	r/s	(r/min)	34	(2050)
Working pressure	MPa	(psi)	19	(2710)

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.

Number of exits		2
Internal sound level acc. to ISO 6394 and at max. speed	dB (A)	76

STEERING SYSTEM



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

Cylinders: Two double-acting steering cylinders.

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

Steering angle: $\pm 45^\circ$

BODY



Body: Hardened and tempered steel body with high impact strength.

Cylinders: Two 3-stage cylinders, of which one stage is double acting.

Tipping angle	°	73
Tipping time with load	s	15
Lowering time	s	18
Body, plate thickness		
Side	mm (in)	12 (0.47)
Bottom/Chute	mm (in)	16 (0.63)
Front	mm (in)	8 (0.31)
Beams	mm (in)	8 (0.31)
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.

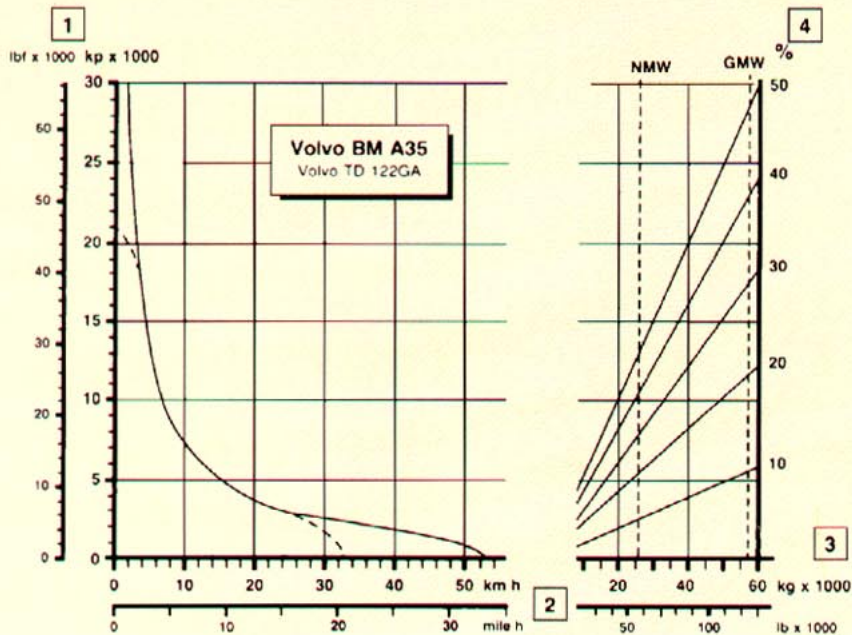
Operating weight				
Front	kg	(lb)	13120	(28920)
Rear	kg	(lb)	12180	(26850)
Total	kg	(lb)	25300	(55770)
Payload	kg	(lb)	32000	(70550)
Total weight				
Front	kg	(lb)	16260	(35850)
Rear	kg	(lb)	41040	(90470)
Total	kg	(lb)	57300	(126320)

GROUND PRESSURE



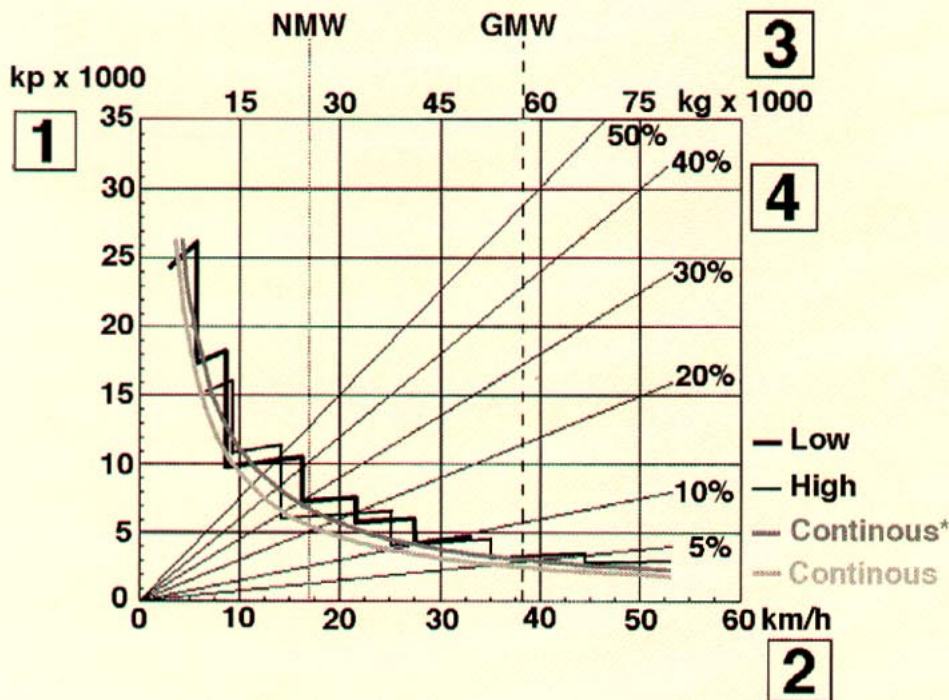
At 15% sinkage of unloaded radius and specified weights.

Unloaded				
Front	kPa	(psi)	111	(16.1)
Rear	kPa	(psi)	52	(7.5)
Loaded				
Front	kPa	(psi)	138	(20.0)
Rear	kPa	(psi)	174	(25.2)



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

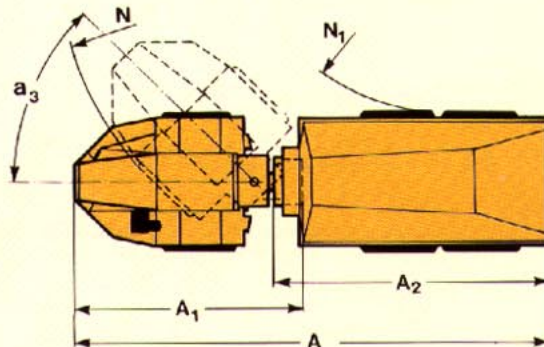
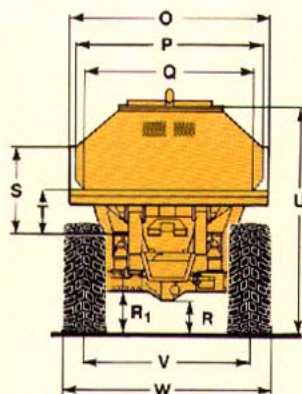
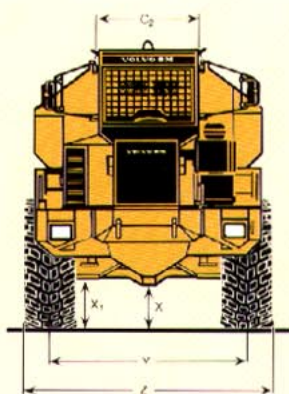
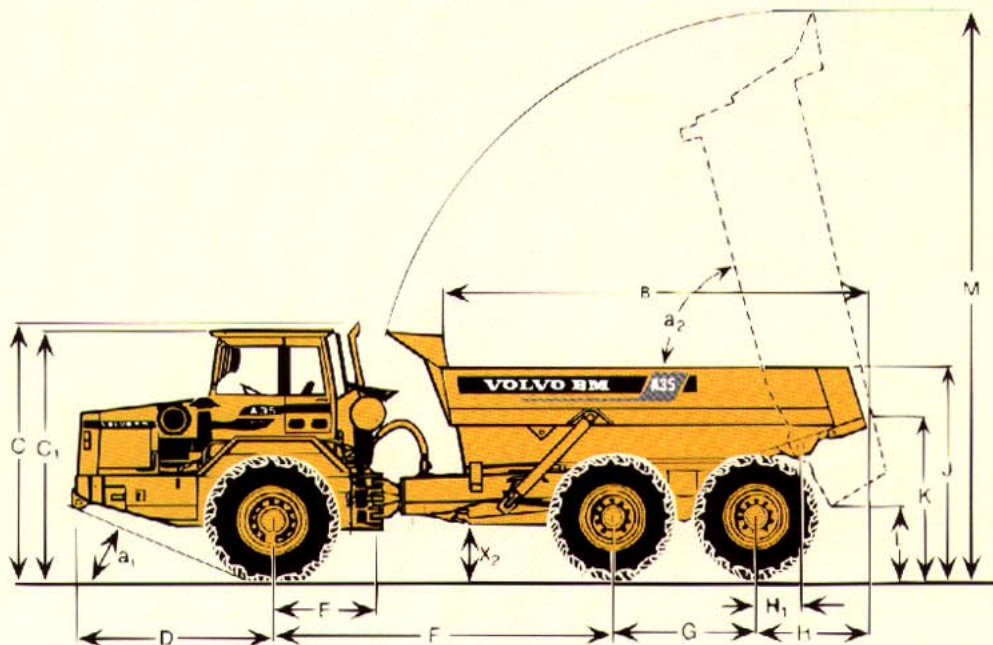
- 1 Braking effort in kp (lbf)
- 2 Speed in km/h (mile/h)
- 3 Machine weight in kg (lb)
- 4 Grade in % - rolling resistance in %.

* incl. exhaust brake

INSTRUCTIONS

Diagonal lines represent total resistance (grade % plus rolling resistance%).
 Charts 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 the intersection until the new line intersects the rimpull or retardation curve.
- D. Read down for vehicle speed.



DIMENSIONS Volvo BM A35 6x6 (unloaded)

A	mm (ft in)	10764 (35'4")	F	mm (ft in)	4480 (14'8")	N ₁	mm (ft in)	4300 (14'1")	V	mm (ft in)	2522 (8'3")
A ₁	mm (ft in)	5130 (16'10")	G	mm (ft in)	1820 (6')	O	mm (ft in)	2990 (9'10")	W	mm (ft in)	3200 (10'6")
A ₂	mm (ft in)	6332 (20'9")	H	mm (ft in)	1590 (5'3")	P	mm (ft in)	2770 (9'1")	X	mm (ft in)	514 (1'8")
B	mm (ft in)	5632 (18'6")	H ₁	mm (ft in)	725 (2'5")	Q	mm (ft in)	2510 (8'3")	X ₁	mm (ft in)	554 (1'10")
C	mm (ft in)	3603 (11'10")	J	mm (ft in)	2870 (9'5")	R	mm (ft in)	568 (1'10")	X ₂	mm (ft in)	710 (2'4")
C ₁	mm (ft in)	3460 (11'4")	K	mm (ft in)	2189 (7'2")	R ₁	mm (ft in)	668 (2'2")	Y	mm (ft in)	2522 (8'3")
C ₂	mm (ft in)	1331 (4'4")	L	mm (ft in)	1025 (3'4")	S	mm (ft in)	1276 (4'2")	Z	mm (ft in)	3200 (10'6")
D	mm (ft in)	2875 (9'5")	M	mm (ft in)	7495 (24'7")	T	mm (ft in)	630 (2'1")	a ₁	°	27
E	mm (ft in)	1255 (4'1")	N	mm (ft in)	8680 (28'6")	U	mm (ft in)	3470 (11'5")	a ₂	°	73
									a ₃	°	45

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

Load capacity	kg	(sh tn)	32 000	(35)
Body, struck	m ³	(yd ³)	14.4	(19)
heaped	m ³	(yd ³)	19	(25)
With overhung tailgate (optional)				
Body, struck	m ³	(yd ³)	14.9	(19.5)
heaped	m ³	(yd ³)	19.5	(25.5)

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
 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
 direction indicators
 rear lights
 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

Turbocharger
 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:
 bogie axles diff-lock
 direction indicators
 front axle diff-lock
 longitudinal diff-lock
 lights
 main beam
 preheating

Warning lamps for:
 air filter
 battery charging
 body up
 brake fluid level
 brake pressure
 coolant level
 engine oil pressure
 engine temperature
 engine-dependent steering pump
 ground-dependent steering pump
 parking brake
 transmission temperature
 Central warning:
 air pressure
 battery charging
 brake fluid level
 engine oil pressure
 engine overspeed
 engine temperature
 steering function
 transmission temperature

Cab

Extra seat for trainer

Drivetrain

Torque converter
 Automatic transmission
 Dropbox
 with high/low gear
 Hydraulic variable retarder
 Longitudinal diff-lock
 Differential lock front axle
 Differential lock first bogie axle
 Differential lock second bogie axle
 Brake guard

Body

Body with exhaust ducts

Tyres

Front: 26,5 R 25
 Rear: 26,5 R 25

OPTIONAL EQUIPMENT

Service and maintenance

Tool kit with tyre inflation unit

Engine

Exhaust brake

Electrical

Work lights roof mounted
 Rotating beacon

Cab

Electrically heated rear-view mirrors
 Air conditioning
 Airsuspended electrically heated operator's seat
 Contronic display

Protection

Overhead guard, FOPS
 Mudguards in front of bogie

Body

Bodyheating
 Overhung tailgate, wire
 Wear plates, separate delivery
 Upper side extensions,
 200 mm

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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