



Volvo BM A20

6×6



- *Direct-injected, turbo-charged Volvo diesel.*
- *Fully automatic powershift transmission.*
- *One longitudinal and three transverse diff-locks. All with 100 % lock-up.*
- *Volvo BM terrain bogie, individually oscillating axles and high ground clearance*
- **Engine output:**
SAE J1349 Net
186 hp (137 kW)
- **Operating weight:**
33 950 lb(15,4 t)
- **Load capacity:**
20 sh ton(18,5 t)

VOLVO BM

ENGINE



6-cylinder-in-line, direct injected turbocharged 4-cycle diesel engine with overhead valves and wet replaceable cylinder linings.

Make	Volvo			
Model	TD 71 G			
Max power at	r/s (r/min)	36	(2200)	
SAE J1349 Gross	hp (kW)	201	(148)	
Flywheel power at	r/s (r/min)	36	(2200)	
SAE J1349 Net	hp (kW)	186	(137)	
DIN 70020/6271	hp (kW)	186	(137)	
Max torque at	r/s (r/min)	28	(1700)	
SAE J1349 Gross	lbf ft (Nm)	501	(680)	
SAE J1349 Net	lbf ft (Nm)	472	(640)	
DIN 70020/6271	lbf ft (Nm)	472	(640)	
Displacement, total	in ³ (l)	411	(6.73)	
Bore	in (mm)	4.125	(104.77)	
Stroke	in (mm)	5.12	(130)	
Compression ratio		15.5:1		

ELECTRICAL SYSTEM



Voltage	V	24		
Battery capacity	Ah	2x140		
Generator rating	W	1540		
Starter motor	hp (kW)	7.3	(5.4)	

SERVICE REFILL CAPACITIES



Crankcase	US gal (l)	6.3	(24)
Fuel tank	US gal (l)	80	(295)
Cooling system	US gal (l)	6.3	(24)
Transmission total	US gal (l)	5.5	(21)
Front axle with dropbox	US gal (l)	11	(42)
First bogie axle	US gal (l)	8.5	(32)
Second bogie axle	US gal (l)	9.2	(35)
Hydraulic system	US gal (l)	44.9	(170)
Hydraulic tank	US gal (l)	38.3	(145)

DRIVETRAIN



Torque converter: Single stage

Transmission: Volvo BM automatic powershift transmission with 4 gears forward and 3 reverse.

Dropbox: Volvo BM. Single-stage dropbox with power take-off for ground dependent steering pump, and a 100% longitudinal differential lock.

Axles: Volvo BM AH54. Fully floating axle shafts and planetary type hub reductions.

Differential locks: Longitudinal lock in dropbox, transverse lock in each axle. All have 100% lock-up ability.

Torque converter	2.19:1
Transmission	Volvo BM HT132

Speeds

Forward	1	mile/h (km/h)	3.7	(6)
	2	mile/h (km/h)	7.5	(12)
	3	mile/h (km/h)	15.0	(24)
	4	mile/h (km/h)	21.2	(34)
Reverse	1	mile/h (km/h)	4.0	(6.5)
	2	mile/h (km/h)	8.4	(13.5)
	3	mile/h (km/h)	16.8	(27)

Tires

front	18.00 R 25*
	18.00-25/16
rear	20.5 R 25*
	20.5-25/16

BRAKE SYSTEM



Air-hydraulic disc brakes with separate front and rear circuits. Comply with ISO 3450 at total weight.

Parking brake: Driveline mounted, spring actuated brake, designed to hold a loaded machine on a grade up to 18%.

Exhaust retarder: Standard.

Compressor: Engine mounted, gear driven compressor.

STEERING SYSTEM



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

Cylinders: Two double-acting steering cylinders.

Supplementary steering: Ground dependent. Meets ISO 5010 standard at total machine weight.

Steering angle: $\pm 45^\circ$

HYDRAULIC SYSTEM



Pump: Vane pump for steering and tipping mounted on flywheel power take-offs.

Filtration: Suction line: Strainer.

Return line: Replaceable paper filter with magnetic core.

Refill: Paper filter.

Pump capacity /pump	US gal/min (l/min)	145	(37)
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at shaft speed	r/s (r/min)	41,7	(2500)
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Working pressure		17	(2465)
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CAB



Volvo BM cab: Tested and approved in accordance with ROPS standard ISO 3471/SAE J1040 C. The cab is mounted on rubber pads, which reduces vibrations at operators station.

Heater and defroster: Filtered air and pressurized cab.

Operator's seat: Suspension seat with flameproof upholstery. Extra seat for trainer.

Number of exits incl. door		2
Internal sound level	dB (A)	80

BODY



Body: Hardened and tempered steel with high impact strength. Rock liner as standard.

Tipping cylinder: One single-acting 5-stage hoist cylinder with automatic tipping stop.

Tipping angle	°	63
Tipping time with load	s	16
Lowering time	s	12
Body		
plate thickness		
front	in (mm)	0.39 (10)
sides	in (mm)	0.31 (8)
bottom	in (mm)	0.39 (10)
chute	in (mm)	0.39 (10)
rock liner	in (mm)	0.31/0.24 (8/6)
Body		
Yield strength	psi (N/mm ²)	92960 (640)
Tensile strength	psi (N/mm ²)	96800-130700 (680-900)
Rock liner		
Yield strength	psi (N/mm ²)	128000 (880)
Tensile strength	psi (N/mm ²)	178000 (1225)

WEIGHTS



Operating weight includes all fluids and operator.

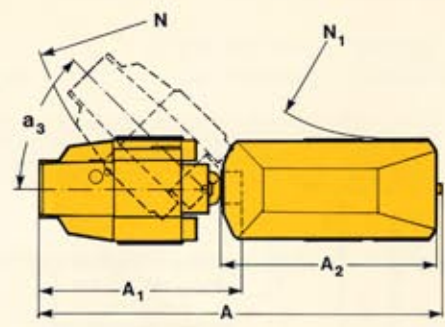
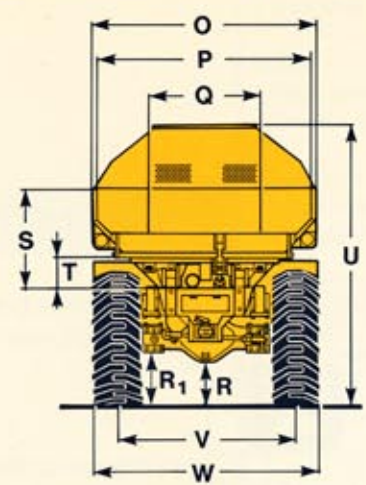
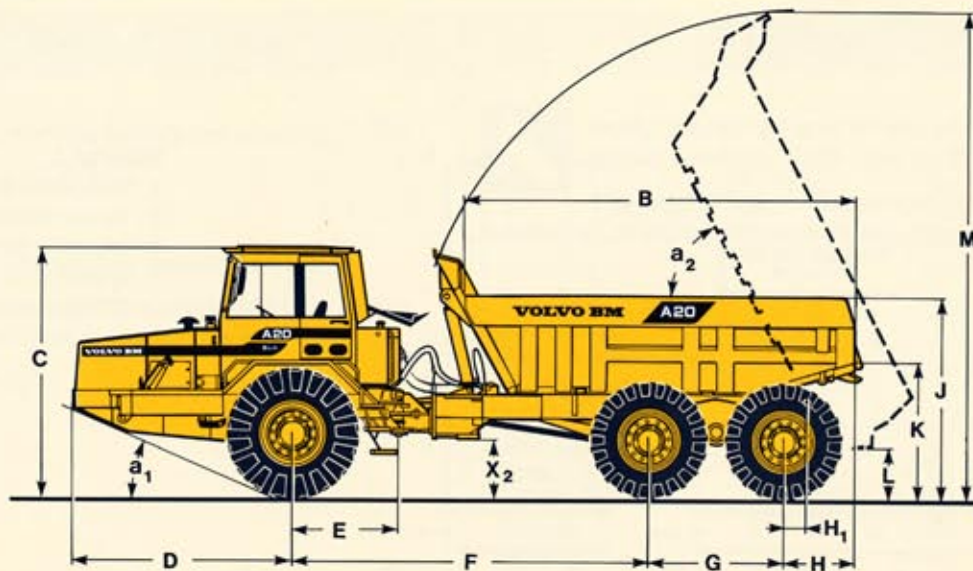
Operating weight			
front	lb (kg)	17200 (7800)	
rear	lb (kg)	16870 (7650)	
total	lb (kg)	34070 (15450)	
Payload			
total	lb (kg)	40790 (18500)	
Total weight			
front	lb (kg)	23150 (10500)	
rear	lb (kg)	51710 (23450)	
total	lb (kg)	74860 (33950)	

GROUND PRESSURE



At 15% sinkage of unloaded diameter and specified weights.

Unloaded			
front	psi (kPa)	14.0 (97)	
rear	psi (kPa)	6.8 (47)	
Loaded			
front	psi (kPa)	18.8 (130)	
rear	psi (kPa)	22.2 (153)	



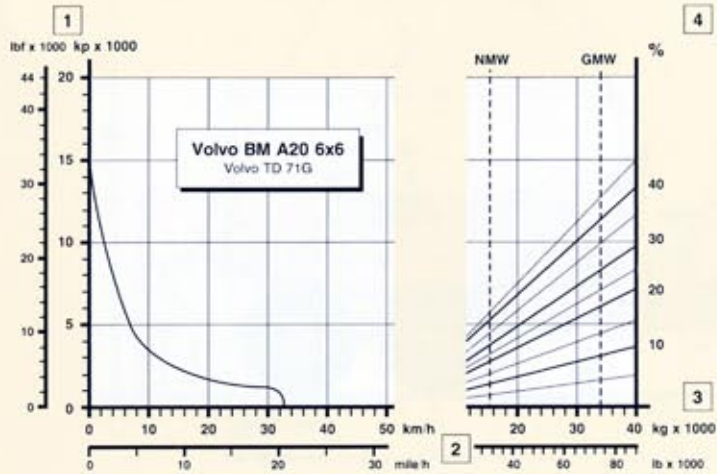
DIMENSIONS VOLVO BM A20 6x6

A	ft in (mm)	32'11"	(10044)	H	ft in (mm)	3'8"	(1126)	O	ft in (mm)	8'1"	(2480)	W	ft in (mm)	8'2"	(2490)
A ₁	ft in (mm)	16'7"	(5066)	H ₁	ft in (mm)	1'5"	(425)	P	ft in (mm)	7'7"	(2320)	X	ft in (mm)	1'7"	(475)
A ₂	ft in (mm)	18'2"	(5537)	I	ft in (mm)	4'2"	(1265)	Q	ft in (mm)	4'11"	(1500)	X*	ft in (mm)	1'8"	(500)
B	ft in (mm)	16'3"	(4955)	J	ft in (mm)	7'10"	(2394)	R	ft in (mm)	1'3"	(397)	X ₁	ft in (mm)	2'1"	(627)
C	ft in (mm)	10'2"	(3098)	J*	ft in (mm)	8'1"	(2450)	R*	ft in (mm)	1'5"	(447)	X ₂	ft in (mm)	2'1"	(645)
C'	ft in (mm)	10'3"	(3123)	K	ft in (mm)	5'3"	(1620)	R ₁	ft in (mm)	1'10"	(567)	Y	ft in (mm)	6'4"	(1954)
C ₂	ft in (mm)	4'11"	(1500)	K*	ft in (mm)	5'5"	(1676)	S	ft in (mm)	3'9"	(1155)	Z	ft in (mm)	8'2"	(2492)
D	ft in (mm)	9'2"	(2809)	L	ft in (mm)	1'11"	(600)	T	ft in (mm)	1'3"	(396)	a ₁	°	21	
E	ft in (mm)	4'2"	(1280)	M	ft in (mm)	20'10"	(6350)	U	ft in (mm)	10'	(3059)	a ₂	°	63	
F	ft in (mm)	14'2"	(4322)	N	ft in (mm)	24'7"	(7500)	U*	ft in (mm)	10'2"	(3115)	a ₃	°	45	
G	ft in (mm)	5'4"	(1650)	N ₁	ft in (mm)	13'5"	(4100)	V	ft in (mm)	6'4"	(1928)				

* = unloaded machine

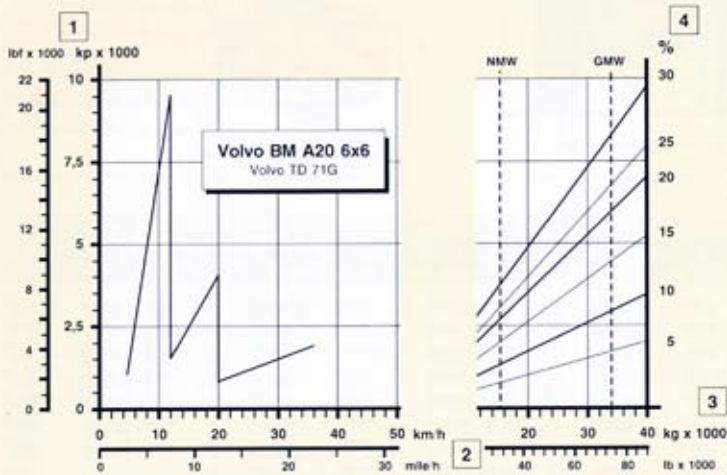
LOAD CAPACITY (Body volumes according to SAE 2:1)

US body load capacity	sh ton	(kg)	20	(18500)
Body, struck	yd ³	(m ³)	12.0	(9.2)
heaped	yd ³	(m ³)	15.7	(12.0)



RIMPULL

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



RETARDATION with retarder

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

INSTRUCTIONS

Diagonal lines represent the total resistance (grade % plus rolling resistance %). Charts based on 0% rolling resistance, standard tires 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 machine weight line, NMW or GMW.
- C. Draw a new line horizontally to the left from the point of intersection until the new line intersects the rimpull or retardation curve.
- D. Read down for vehicle speed.

STANDARD EQUIPMENT

<p>Safety and comfort ROPS / FOPS 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 Cigarette lighter Ashtray Horn Protective grille for rear window Hazard flashers Tinted glass Lights: headlights high/low beams. parking lights rear lights turn signals</p>	<p>back-up lights brake lights cab lighting instrument lighting Anti slip material Mudguards in front of rear axles Tool box Steering joint locking assembly Supplementary steering</p> <p>Engine and electrical system Turbocharger Alternator Preheating Battery disconnect switch Gauges: brake pressure fuel engine temperature tachometer hourmeter Pilot lamps for: high beam turn signals</p>	<p>Warning lamps for: engine temperature battery charging brake pressure parking brake engine oil pressure transmission temperature air filter</p> <p>Central warning: brake pressure engine oil pressure transmission temperature brake hydraulics</p>	<p>Drivetrain Torque converter Automatic transmission Exhaust retarder Longitudinal differential lock Differential lock front axle Differential lock first bogie axle Differential lock second bogie axle</p> <p>Body Body with rock liner and exhaust ducts</p> <p>Tires Front: 18.00 x 25 Rear: 20.5 x 25</p>
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OPTIONAL EQUIPMENT

<p>Engine Low emission version Oil bath air cleaner Exhaust gas cooling with water Oil drainage hose High exhaust outlet</p> <p>Electrical system Working lights Rotating amber beacon</p>	<p>Cab Radio panel Air condition Airsuspended electrically heated operator's seat</p>	<p>External Collision guard, hood</p>	<p>Body Body heating</p>
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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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