

VOLVO BM 4500



Specification Volvo BM loader 4500

PRODUCTIVE

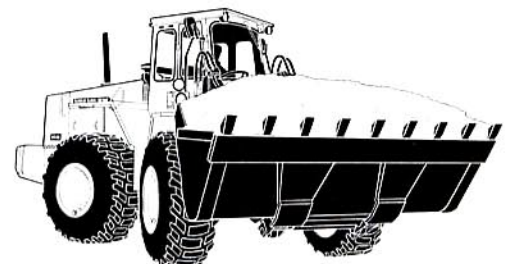
The unique side-arm system, which provides good breakout forces throughout the entire lifting range, combined with the well-matched engine/transmission combination make the 4500 a highly productive loader. Thanks to its long wheelbase and large wheels, the 4500 is extremely stable — a clear advantage in load-haul-dump operations.

COMFORT & SAFETY

The cab is of very high class throughout and provides a safe and pleasant workplace. It meets the safety requirements of the ROPS Standards with ample margin. The cab's high standard of comfort contributes towards the efficiency of the operator-machine combination.

RELIABILITY & ECONOMY

The 4500 has a basic construction with well-adapted and duty-proven Volvo BM components. Service and maintenance points are easily accessible and lubrication intervals are long. Many years of experience in practical work, tough tests in laboratories and continuous improvements have resulted in an extremely reliable loader with good economy.





ENGINE

Volvo TD 70 H: 6-cylinder, in-line, direct-injected, turbo charged, 4-stroke diesel engine with wet replaceable cylinder lining.

Flywheel rating

131 kW at 36.7 rps DIN 70020
(178 hp at 2200 rpm DIN)

Gross rating

137 kW at 36.7 rps SAE J 270
(186 hp at 2200 rpm SAE)

Max. torque

637 Nm at 26.7 rps DIN 70020
(64.9 kpm at 1600 rpm DIN)

No. of cylinders

6

Bore

104.77 mm (4.125 in)

Stroke

130 mm (5.1 in)

Displacement

6.73 litres (411 in³)

Compression ratio

14.5:1

Air cleaning in three stages

1. Cyclone precleaner with automatic ejection through the exhaust
2. Paper filter with cab-mounted indicator
3. Replaceable catch-all safety filter



ELECTRICAL SYSTEM

Battery

2 x 12 V (connected in series)

Voltage

24 V

Battery capacity

125 Ah

Alternator

1260 W (45 A)

Starter motor

4.5 kW (6 hp)

Central warning lamp for the following functions:

Engine oil pressure, brake pressure, parking brake pressure, engine temperature, transmission temperature.

Halogen head lights



TORQUE CONVERTER

Type Single-stage, single-phase

Torque multiplication ratio 2.76:1



TRANSMISSION

Volvo BM Full power-shift transmission, countershaft type.

Designation HT 120

Number of gears forward/reverse

4/4

Speeds:

(tyres 23.5–25)

1. 7.5 km/h (4.7 mph)
2. 14 km/h (8.7 mph)
3. 29 km/h (18.3 mph)
4. 39 km/h (24.2 mph)



AXLES

Volvo BM Heavy-duty design with planetary hub reductions.

Front axle: Designation AH 60 B

Differential lock 100 % lock-up (dog clutch)

Rear axle: Designation AH 53

Oscillation ± 13° (450 mm)



BRAKES

Service brakes: Air over hydraulic operated disc brake, dual system.

Parking brake

Mechanically operated disc brake on output shaft



TYRES

23.5–25/16



STEERING

Centre point frame articulation. Two double-acting hydraulic cylinders.

Steering angle

± 40°

Turning radius

5.5 m (18')

Steering cylinder, bore/stroke

85/402 mm (3.3/15.8 in)

Oil pump, type

Vane pump

Output at 10 MPa (1450 psi) and 2100 rpm

(35 rps)

105 l/m in (23.1 Imp gal)

Relief pressure

14 MPa (2030 psi)



HYDRAULIC SYSTEM

Pump, type: Vane pump.

Output at 10 MPa (1450 psi) and

220 rpm:

265 l/min (58.3 Imp gal)

Relief pressure

16 MPa (2285 psi)

Oil filter:

Full-flow filtration through filter cartridge with magnetic core

Cylinders:

Lift — bore/stroke

140/980 mm (5.5/38.6 in)

Tilt — bore/stroke

125/830 mm (5/32.5 in)

Control valve:

3-section valve, with built-in relief valve, lifting function has hold for lift and float positions. Bucket positioner and boom kick out.

Raise

6.5 s

Lower

4.5 s

Dump, high/low speed

2.1/4.2 s



SERVICE REFILL

Capacities

Litres

Imp gal

Crankcase

19

4.2

Fuel tank

230

48.4

Cooling system

37

8.1

Hydraulic system, total

265

58.3

Hydraulic tank

190

41.8

Transmission and torque converter, total

30

6.6

Transmission and torque converter

24

5.3

Front axle differential and hubs

37

9.1

Rear axle differential and hubs

34.6

7.7

Dropbox

4.7

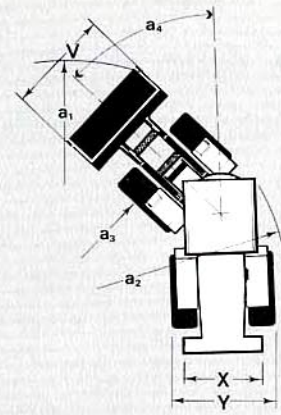
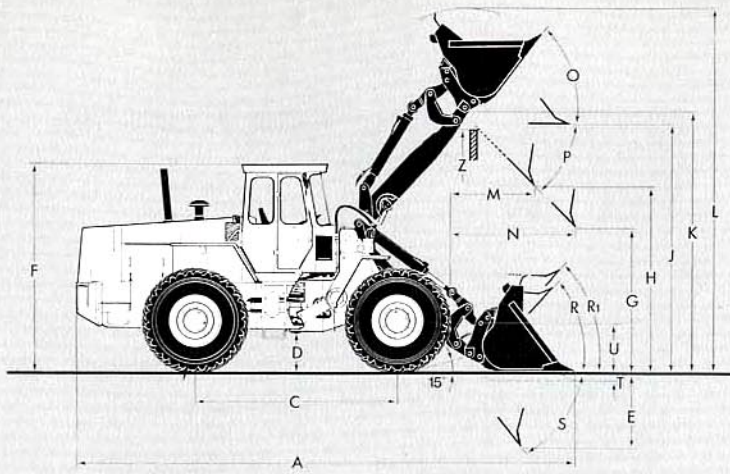
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CAB

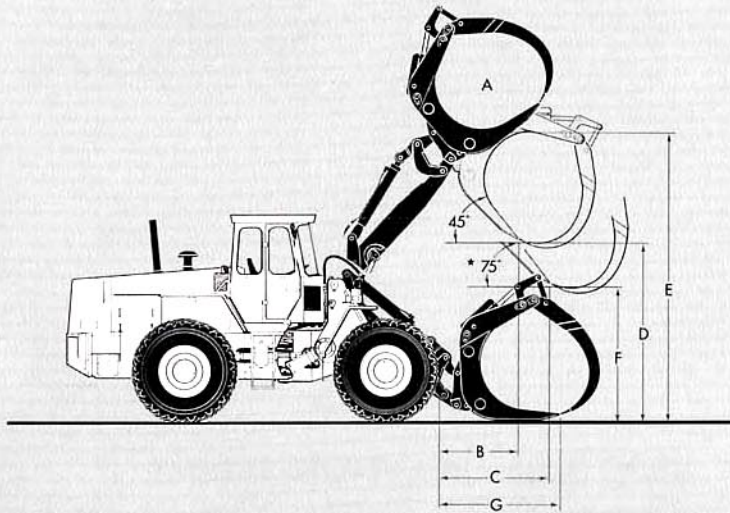
The all-welded ROPS safety cab has two lockable doors and a roof hatch. The operator's station is ergonomically designed, with all controls and pedals located and designed for quick and easy operation. The operator's seat is fully adjustable.

In its standard version, the cab is equipped with an efficient heating and ventilation system, with front and side window defrosters. The cab is mounted on the chassis via rubber pads, thereby minimizing the noise level inside the cab.



DIMENSIONS

A = Listed below	R = 40°
B = 6230 mm (20'4")	R ₁ = 45° carry position
without attachment	S = 58°
C = 3000 mm (9'8")	T = 30 mm (1.2")
D = 450 mm (1'5")	U = 330 mm (1'1")
E = 950 mm (3'1")	V = Listed below
F = 3150 mm (10'3")	X = 2065 mm (6'8")
G = 2000 mm (6'5")	Y = 2680 mm (8'8")
H = Listed below	Z = 3690 mm (12') bucket
J = 3760 mm (12'3")	Z = 3750 mm (12'3") log grapple
K = 3980 mm (13')	
L = Listed below	
M = Listed below	a ₁ = sweep radius, listed below
N = Listed below	a ₂ = turning radius 5520 mm (18'1")
O = 50°	a ₃ = inner radius 2790 mm (9'11")
P = 45°	a ₄ = steering angle 40°



DIMENSIONS WITH LOG GRAPPLE (bracket-mounted)

a = 45°	D = 2800 mm (9'2")
A = 1.7 m ² (18.3 ft ²)	E = 4460 mm (14'6")
B = 1290 mm (4'2")	F = 2000 mm (6'5")
C = 1840 mm (2'7")	G = 1760 mm (5'7")

Operating load at full turn 4200 kg (9260 lb)

OPERATING SPECIFICATIONS

Attachment		Bucket pin on	Bucket hook on	Bucket pin on	Bucket hook on
Capacity		2.4 m ³ (3.1 cu yd)	2.4 m ³ (3.1 cu yd)	2.9 m ³ (3.8 cu yd)	2.9 m ³ (3.8 cu yd)
Dump clearance at full lift and 45° discharge (H)	mm (ft in)	2985 (9'8")	2915 (9'5")	2875 (9'4")	2805 (9'2")
Reach at full lift and 45° discharge (M)	mm (ft in)	1000 (3'3")	1070 (3'5")	1105 (3'6")	1175 (3'8")
Reach at 45° discharge and 7 ft high (N)	mm (ft in)	1640 (5'4")	1675 (5'5")	1695 (5'5")	1730 (5'7")
Overall length (A)	mm (ft in)	7210 (23'6")	7310 (24')	7360 (24'2")	7460 (24'4")
Overall height with attachment (L)	mm (ft in)	5240 (17'2")	5290 (17'3")	5385 (17'6")	5440 (17'8")
Clearance circle (over bucket) (a ₁)	mm (ft in)	11920 (39')	11980 (39'7")	12000 (39'3")	12060 (39'5")
Width (over bucket) (V)	mm (ft in)	2700 (8'8")	2700 (8'8")	2700 (8'8")	2700 (8'8")
Breakout force	kg (lb)	11000 (24250)	10000 (22046)	9700 (21385)	8900 (19621)
Static tipping load, straight	kg (lb)	10260 (22620)	9770 (21539)	10090 (22245)	9600 (21164)
Static tipping load, 35° turn	kg (lb)	9330 (20569)	8890 (19599)	9170 (20216)	8740 (19268)
Static tipping load, at full turn, 40°	kg (lb)	9060 (19974)	8630 (19026)	8900 (19621)	8490 (18717)
Operating load at full turn	kg (lb)	4500 (9921)	4300 (9480)	4450 (9810)	4240 (9348)
Hydraulic lifting force at ground level	kp (lbf)	15000 (33069)	14600 (32187)	14800 (32628)	14400 (31746)
Hydraulic lifting force at max height	kp (lbf)	6300 (13448)	6100 (13448)	6200 (13669)	6000 (13228)
Operating weight	kg (lb)	13920 (30688)	14120 (31129)	13990 (30843)	14190 (31283)
Weight distribution front	kg (lb)	6080 (13404)	6400 (14109)	6200 (13668)	6525 (14385)
Weight distribution rear	kg (lb)	7840 (17284)	7720 (17030)	7790 (17174)	7665 (16898)

Specifications are based on a machine equipped with all standard equipment, 23.5—25 L2 radial tyres and straight bucket without teeth, as indicated. Wherever applicable specifications are in accordance with SAE Standards J 732 c and J 742 b.

¹⁾ Ca Cl₂ in rear tyres is only recommended for stabilising purposes in timber and pallet fork handling on hard and even ground.

Optional tyres	Change in operating weight	Change in static tipping load at full turn
75 % Ca Cl ₂ in rear tyres ¹⁾ , 23.5—25/16	+1244 kg (+2743 lb)	+1230 kg (+2712 lb)

STANDARD EQUIPMENT



Safety and comfort

- ROPS safety cab according to SS 783 and ISO 3471
- Heating and ventilation system with defroster and filtered intake air
- Comfort seat
- Rear-view mirrors, external, 2
- Rear-view mirror, interior, 1
- Lights:
 - Headlight high/low beam
 - Parking lights
 - Working lights forward (2) halogen
 - Working lights rear (2) halogen
 - Side marker lights
 - Brake lights
 - Tail lights
 - Cab lighting
 - Instrument lighting
- Mounting for seat belt
- Utility basket in cab
- Pressure gauge for air brake system
- Instrument panel with symbols
- Turn signal indicators
- Hazard flashers
- Sun visor
- Safety start
- Fenders
- Roof hatch
- Tool kit
- Windshield wipers, front and rear
- Horn
- Tyre inflation connection
- Ashtray
- Cigarette lighter



Engine and electrical system

- Inspection lamp outlet 24 V
- Muffler
- Battery disconnect switch
- Alternator
- Air filter with ejector
- Gauges and indicators:
 - Working lights, front and rear
 - Battery charging
 - Head lights
 - Turn signal indicator
 - Engine oil pressure
 - Transmission oil pressure
 - Engine temperature
 - Transmission temperature
 - Fuel tank
- Differential lock
- Parking brake
- Low brake pressure
- Hazard flashers
- Cold starter, preheater
- Air filter
- High speed, tilting
- Hour meter
- Central warning light:
 - Low brake pressure
 - Engine temperature
 - Engine oil-pressure
 - Transmission temperature
 - Parking brake



Power transmission

- Power-shift transmission
- Differential lock on front axle
- Transmission cut-out valve
- Single lever control
- Tyres 23.5—25/16



Hydraulic system

- Control valve (3 sections), Servo-operated
- 2 alternative forward tilting speeds
- Bucket position indicator
- Bucket positioner and boom kick out
- Vane pumps

OPTIONAL EQUIPMENT

- 24 V inspection lamp
- Rotating beacon
- Working lights for attachment
- Front working lights
- Rear working lights
- Protective grilles for front lights
- Protective grilles for rear lights
- Seat belt
- Heated operator's seat
- Guard for roof hatch
- Washers for front and rear windows
- Air conditioner
- 3rd hydraulic control
- 3rd and 4th hydraulic controls
- Extra fuel filter
- Electric engine block heater
- Towing hitch
- Tyre inflation kit
- Lifting eyes
- Tools

VOLVO BM

VOLVO BM AB ESKILSTUNA SWEDEN

Under our policy of continuous 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.

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ENGELSKA

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