

VOLVO BM

4600 B

SPECIFICATION VOLVO BM 4600 B HIGH-LIFT



Efficient loader with High-Lift grapple

The 4600B High-Lift is a stable and agile loader for handling pulpwood and timber at sawmills, timber terminals, pulp mills and processing plants.

Manoeuvrability and capacity

The easy to operate and very powerful lift-arm system, combined with rotating grapple and articulated steering permit fast cycle times on high stacking tasks, particularly in cramped and difficult operating conditions.

Economy

Well proven robust construction with a reliable and powerful turbo-charged Volvo engine.





ENGINE

Volvo TD 101G, a 6-cylinder, in-line, direct-injected, turbo-charged, 4-stroke diesel engine with wet replaceable cylinder linings.

Flywheel rating

185 kW at 36.7 rps DIN 70020
(252 hp at 2200 rpm DIN)

Gross rating

194 kW at 36.7 rps SAE J 1349
(264 hp at 2200 rpm SAE)

Max. torque

962 Nm at 23.3 rps DIN 70020
(709 lb ft at 1400 rpm DIN)
962 Nm at 23.3 rps SAE J 1349
(709 lb ft at 1400 rpm SAE)

No. of cylinders

6

Bore

120.65 mm (4.75 in)

Stroke

140 mm (5.5 in)

Displacement

9.6 litres (586 in³)

Compression ratio

15:1

Air cleaning in three stages

1. Multicyclone precleaner with exhaust ejector
2. Paper filter
3. Catch-all safety filter



ELECTRICAL SYSTEM

Batteries

2 x 12 V (connected in series)

Voltage

24 V

Battery capacity

135 Ah

Alternator

1540 W (55 A)

Starter motor

6.6 kW (9 hp)

Central warning lamp for following functions:

(For certain markets only)

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



TORQUE CONVERTER

Type	Single-stage
Torque multiplication ratio	2.69:1



TRANSMISSION

Type	Power-shift
Designation	Volvo BM HT200
No. of gears forward/reverse	4/4

Speeds:
(tyres 26.5—25)

1. 0—7 km/h (0—4.4 mph)
2. 0—14 km/h (0—8.7 mph)
3. 0—27.5 km/h (0—17 mph)
4. 0—40 km/h (0—24.8 mph)



AXLES

Fully-floating axle shafts with planetary hub reductions.

Front axle:	Designation	Volvo BM AH 70A
	Differential lock	100 % lock-up (dog clutch)
Rear axle:	Designation	Volvo BM AH 70 D
	Oscillation	± 15° (500 mm)



BRAKES

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

Brake area: Front	792 cm ² (123 in ²)/wheel
Rear	792 cm ² (123 in ²)/wheel
Air reservoir volume	2 x 20 litres (2 x 4.4 UK gal) + 1 x 10 litres (1 x 2.2 UK gal)
Parking brake	Enclosed wet multiple-disc brake incorporated in transmission
Parking brake, brake area:	1547 cm ² (240 in ²)



TYRES

26.5—25



STEERING

Orbitrol steering with flow amplification

Steering angle	± 37°
Lock-to-lock turns of wheel	4.3
Steering cylinder, bore/stroke	110/423 mm (4.3/16.7 in)
Piston rod diam.	50 mm (2 in)
Oil pump, type	Vane pump
Output at 10 MPa (1450 psi) and 36.7 rps (2200 rpm)	190 l/min (41.8 UK gal/min)
Relief pressure	15 MPa (2175 psi)



HYDRAULIC SYSTEM

Pump, type (working hydraulics):
Twin vane pump (for operation of lift, tilt and grip).

Output at 10 MPa (1450 psi) and 36.7 rps (2200 rpm)	330 l/min (72.6 UK gal/min)
Relief pressure	17 MPa (2465 psi)
Oil filters	2, connected in parallel
Pump type (working hydraulics)	Double gear pump (for operation of luff, rotation and servo hydraulics)

Output at 10 MPa (1450 psi) and 36.7 rps (2200 rpm)	52 l/min (11.5 UK gal/min)
Relief pressure	14 MPa (2030 psi)
Servo-operated actuating valves	2
Valve 1 serves	Lift, tilt and grip cylinders
Valve 2 serves	Rotator and luffing cylinder

Hydraulic cylinders:

Lift — bore/stroke	125/2070 mm (5/81.4 in)
Piston rod diam.	90 mm (3.5 in)
Tilt — bore/stroke	140/600 mm (5.5/23.6 in)
Piston rod diam.	70 mm (2.8 in)
Luff — bore/stroke	100/640 mm (3.9/25.2 in)
Piston rod diam.	50 mm (2.0 in)
Grip — bore/stroke	125/410 mm (5/16.1 in)
Piston rod diam.	60 mm (2.4 in)

Lifting time without load	8 s
Lowering time without load	5 s
Forward tilt	2.5 s
Backward tilt	3.5 s

Grip:	
Close	2.2 s
Open	2.4 s



SERVICE REFILL CAPACITIES

	litres	UK gal	US gal
Crankcase	31	6.8	8.2
Fuel tank	360	79.2	95.1
Cooling system	50	11.0	13.2
Hydraulic system, total	300	66.0	79.2
Hydraulic tank	230	50.6	60.8
Transmission and torque converter, total	45	9.9	11.9
Front axle differential and hubs	45	9.9	11.9
Rear axle differential and hubs	56	12.3	14.8



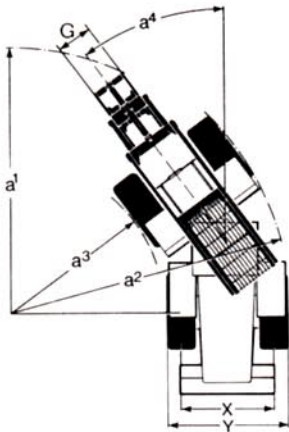
CAB

Tested and approved as a safety cab in accordance with Article 3 Section 8 of the Swedish Environment Protection Act and meets ISO 3471-1980, ROPS (SS783), ISO 3449-1980

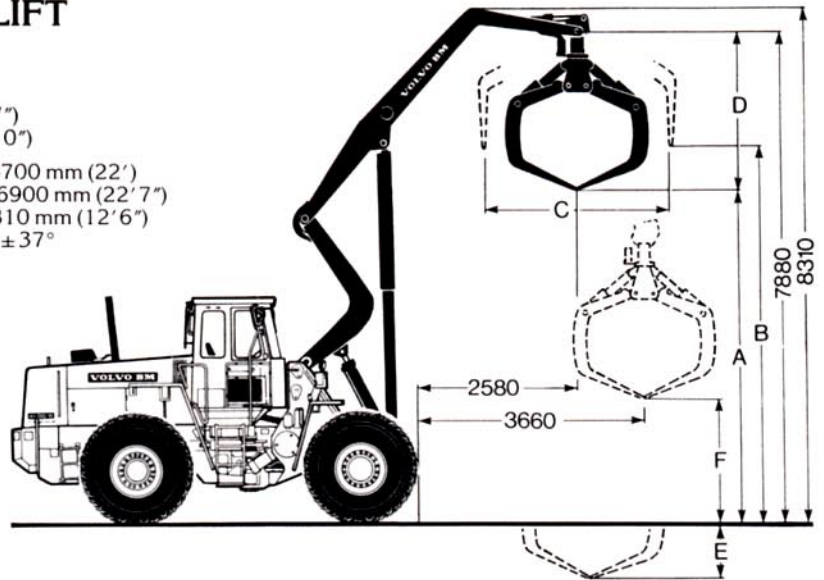
FOPS (SS782) and SS/ISO 6055 "Overhead guards for lift-truck" standards. The cab is mounted on four rubber pads and is well insulated and weathertight. All windows have bronze-tinted glass. The windshield is of laminated safety glass, other windows have tempered glass. Heater and defroster: Heating element with filtered fresh air and 3-speed fan plus defroster for front, rear and side windows.

Ventilation	5 air changes/min
Operator's seat	ISRI GI 6000/575
Seat belt	Standard

DIMENSIONS 4600 B HIGH-LIFT

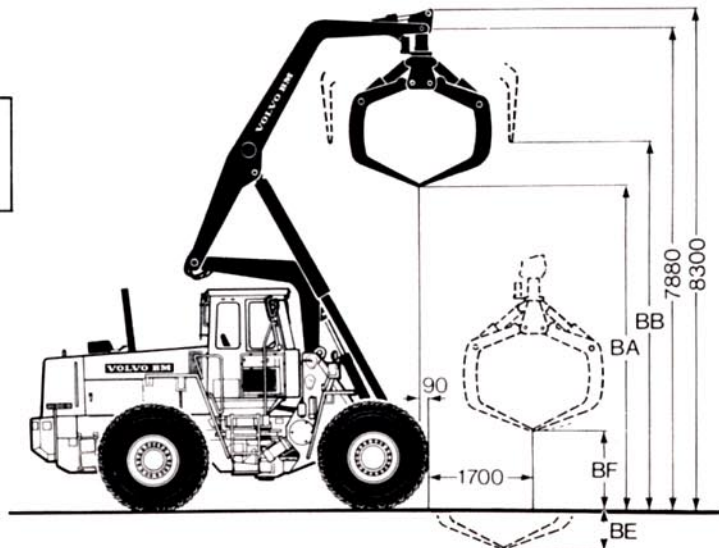


$X = 2310 \text{ mm (7'7")}$
 $Y = 3000 \text{ mm (9'10")}$
 $a_1 = \text{sweep radius } 6700 \text{ mm (22')}$
 $a_2 = \text{turning radius } 6900 \text{ mm (22'7")}$
 $a_3 = \text{inner radius } 3810 \text{ mm (12'6")}$
 $a_4 = \text{steering angle } \pm 37^\circ$



Grip area	m ² (ft ²)	3.9 (42)	3.25 (35)	2.25 (24)	0.2—2.25 (2.2—24)	0.2—2.8 (2.2—30.1)
Log length	m (ft in)	2 (6'7")	3 (9'10")	4.5—4.8 (14'9"—15'9")	—15 (50)	—10 (33)
Density	kg/m ³ (lb/yd ³)	560 (950)	560 (950)	550 (930)	500 (850)	500 (850)
A	mm (in)	4700 (185)	5020 (197)	5320 (209)	5320 (209)	5250 (207)
B	mm (in)	5680 (223)	5860 (231)	6020 (237)	6020 (237)	5950 (234)
C	mm (in)	4100 (161)	3500 (138)	3050 (120)	3050 (120)	3450 (136)
D	mm (in)	3180 (125)	2860 (113)	2560 (101)	2560 (101)	2630 (104)
E	mm (in)	1480 (58)	1150 (45)	850 (33)	850 (33)	920 (36)
F	mm (in)	1530 (60)	1850 (73)	2150 (85)	2150 (85)	2080 (82)
G	mm (in)	900 (35)	900 (35)	900 (35)	1150 (45)	1150 (45)
BA	mm (in)	4700 (185)	5020 (198)	5320 (209)	5320 (209)	5250 (207)
BB	mm (in)	5680 (224)	5860 (231)	6020 (237)	6020 (237)	5950 (234)
BE	mm (in)	1290 (51)	960 (38)	660 (26)	660 (26)	730 (29)
BF	mm (in)	715 (28)	1050 (41)	1340 (53)	1340 (53)	1270 (50)

Specifications and dimensions apply to a machine equipped with 75 % CaCl₂ in the rear tyres 1530 kg (3373 lb) and 740 kg (1631 lb) extra counterweight.



WEIGHTS

Grip area	m ² (ft ²)	3.9 (42)	3.25 (35)	2.25 (24)	0.2—2.25 (2.2—24)	0.2—2.8 (2.2—30.1)
Machine weight	kg (lb)	23410 (51610)	23360 (51500)	23190 (51125)	23440 (51675)	23500 (51810)
*) Static tipping load, straight	kg (lb)	8900 (19620)	8950 (19730)	9100 (20060)	8850 (19510)	8800 (19400)
*) Static tipping load, full turn	kg (lb)	8010 (17660)	8060 (17770)	8230 (18145)	7980 (17590)	7900 (17415)
Working load	kg (lb)	5450 (12015)	5500 (12125)	5650 (12455)	5400 (11900)	5300 (11685)

*) With grapple in position for max. reach

STANDARD EQUIPMENT



Safety & Comfort

- ROPS cab
- Cab heating with filtered fresh air intake and defroster
- Seat belt
- Safety glass in all windows
- Tinted glass
- Ergonomically designed and adjustable operator's seat
- Rear-view mirrors, external, 2
- Rear-view mirror, internal, 1
- Lights:
 - Headlights, high/low/asym. halogen
 - Parking lights
 - Working lights forward (2) halogen
 - Working lights rear (4) halogen
 - Side marker lights
 - Brake lights
 - Tail lights
 - Cab lighting
 - Instrument lighting
- Utility box in cab
- Pressure gauge for air brake system
- Instrument panel with symbols
- Direction indicators
- Sun visor
- Safety start
- Mudguards
- Hazard flashers
- Tool box
- Wipers, front and rear windows
- Horn
- Tyre inflation connection
- Ashtray
- Cigarette lighter

- Lifting lugs
- Automatic lubrication system
- Extra counterweight
- Protective grilles for front and rear windows as well as roof

Alternative items of equipment

- Rotator
- Cross-beam
- Cross-beam with 350 mm (13.8 in) lowered grapple mount
- Grapple arms with clinch chain, 3.9 m² (42 ft²)
- Grapple arms for forest waste, sugar cane and bamboo, 3.9 m² (42 ft²)
- Grapple arms with clinch chain 3.25 m² (35 ft²)
- Grapple arms with clinch chain, 2.8 m² (30 ft²)
- Grapple arms with hydraulic holding arms 2.8 m² (30 ft²)
- Grapple arms with clinch chain, 2.25 m² (24 ft²)
- Grapple arms with hydraulic holding arms, 0.2—2.25 m² (2.2—24 ft²)
- Guards for piston rods

Alternative tyres

- Michelin XRDNA 26.5—25*
- Bridgestone R-lug 26.5—25/20
- Firestone SRG 26.5—25/20
- Goodyear SHRL L-3 26.5—25/20



Power transmission

- Full Power-Shift transmission
- Differential lock (front axle)
- Transmission cut-out valve
- Single-lever gear control
- Tyres 26.5—25/20



Engine & electrical system

- Fuel gauge
- Temperature gauge, engine
- Temperature gauge, hydraulic transmission
- Hour counter
- Electrical outlet 24 V
- Battery disconnect switch
- Alternator
- Air cleaner with ejector
- Pilot lamps for:
 - working lights front and rear,
 - battery charging, high beam, direction indicators, engine oil pressure, hydraulic transmission oil pressure, differential lock, parking brake, air brakes, hazard flashers, air cleaner
- Buzzer warning for applied parking brake
 - Preheating coil
 - (For certain markets only)*
- Central warning: Brake pressure, engine oil pressure, engine temperature, transmission temperature, parking brake



Hydraulic system

- Twin pump — Vane pumps for working hydraulics and steering system
- Hydraulic oil cooler

OPTIONAL EQUIPMENT

(Standard equipment on certain markets)

- 24 V hand lamp
- Working-light-dependent parking lights
- Protective grilles for front lights
- Protective grilles for rear lights
- Speedometer
- Extra fuel filter
- Tyre inflation kit
- Reverse alarm
- Intermittent wipers
- Oil-bath precleaner
- Extraction fan
- Windscreen, Lexan glass
- Road-dependent safety steering
- Radio console without radio
- Tropical version
- Low-emission version
- High-altitude version
- Working lights for attachment (halogen)
- Front working lights (halogen)
- Air conditioning
- Heated operator's seat
- Rotating beacon with collapsible mount
- Washers for front and rear windows
- Industrial hitch
- Dual brake pedals
- SMV emblem
- Tool kit
- Wheel nut wrench kit
- Automatic Power-Shift (APS)
- Engine block heater 1500 W
- Rain guard for exhaust pipe

VOLVO BM

VOLVO BM AB ESKILSTUNA SWEDEN

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.

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ENGELSKA

Production group for basic printed matter Volvo BM
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