

# VOLVO BM 4300



## *Specification Volvo BM 4300 Loader*

### **Productive**

The new, powerful turbodiesel engine is well-matched to the machine's transmission and the working hydraulics. This makes the 4300 quick and nimble. The wide range of attachments, together with Volvo BM's superior loader unit, further contribute to the machine's high productivity.

### **Reliable**

Maximum reliability is ensured by standard components developed through exacting laboratory tests and practical trials under demanding realistic conditions. Moreover, service and maintenance points are easily accessible and lubrication intervals are long.

### **Comfort and Economy**

The cab has a low sound level and is roomy and well-ventilated. High quality in every detail and low fuel consumption give the 4300 good operating economy.





## ENGINE

Volvo BM TD 45, 4 cylinder, in-line direct-injected, turbocharged, 4 stroke diesel engine with wet replaceable cylinder lining.

Flywheel rating	77 kW at 36.7 rps DIN 70020 (105 hp at 2200 rpm DIN)
Gross rating	82.5 kW at 36.7 rps SAE J 270 (112 hp at 2200 rpm SAE)
Max torque	415 Nm at 23.3 rps DIN 70020 (306 lb ft at 1400 rpm DIN) 425 Nm at 23.3 rps SAE J 270 (313 lbf ft at 1400 rpm SAE)
No. of cylinders	4
Bore	105.57 mm (4.2 in)
Stroke	128 mm (5.0 in)
Displacement	4.48 litres (273 in <sup>3</sup> )
Air cleaning in three stages	1. Cyclone precleaner with automatic ejection through the exhaust 2. Paper filter 3. Catch-all safety filter



## ELECTRICAL SYSTEM

Battery	2 x 12 V (connected in series)
Voltage	24 V
Battery capacity	105 Ah
Alternator	1260 W (45 A)
Starter motor	3 kW (4 hp)
Central warning lamp for the following functions:	<b>(For certain markets only)</b> Engine oil pressure, brake pressure, parking brake, engine temperature, transmission temperature.



## TORQUE CONVERTER

Type	Single-stage, single-phase
Torque multiplication ratio	3.3:1



## TRANSMISSION

Type	Power-shift
Designation	Volvo BM HT 100
Numbers of gears forward/reverse	4/4

Speeds: (tyres 17.5–25)	1. 0–7 km/h (0–4.3 mph) 2. 0–11 km/h (0–6.8 mph) 3. 0–26 km/h (0–16.2 mph) 4. 0–37 km/h (0–23.0 mph)
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## AXLES

Volvo BM Heavy-duty design with planetary hub reduction.

Front axle:	Designation	Volvo BM AH 44 D
	Differential lock	100 % lock-up (dog clutch)
Rear axle:	Designation	Volvo BM AH 44 E
	Oscillation	± 13° (400 mm)



## BRAKES

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

Parking brake	Mechanically operated on output shaft
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## TYRES

17.5–25/12



## STEERING

Load sensing hydrostatic steering. Centre point frame articulation. Two double-acting hydraulic cylinders.

Steering angle	± 40°
Turning radius	5 m (16 ft 5 in)
Steering cylinder, bore/stroke	75/412 mm (3/16.2 in)
Oil pump, type	Variable flow axial piston pump
Output at 10 MPa (1450 psi) and 2200 rpm (36.7 rps)	97 l/min (21.3 imp gal/min)
Relief pressure	10.5 MPa (1523 psi)



## HYDRAULIC SYSTEM

Pump, type: Vane pump

Output at 10 MPa (1450 psi) and 2200 rpm (36.7 rps)	190 l/min (41.8 imp gal/min)
Relief pressure	14 MPa (2030 psi)
Oil filter:	Full-flow filtration through 10 µm filter cartridge with magnetic core

Cylinders:	
Lift — bore/stroke	110/950 mm (4.3/37.4 in)
Tilt — bore/stroke	100/745 mm (3.8/29.3 in)

**Control valve:**  
3-section valve, with built-in relief valve, lifting function has hold for lift and float position.

Raise	4.8 s
Lower	2.9 s
Dump high/low speed	2.0/3.3 s



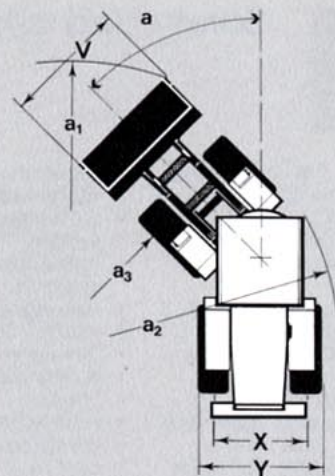
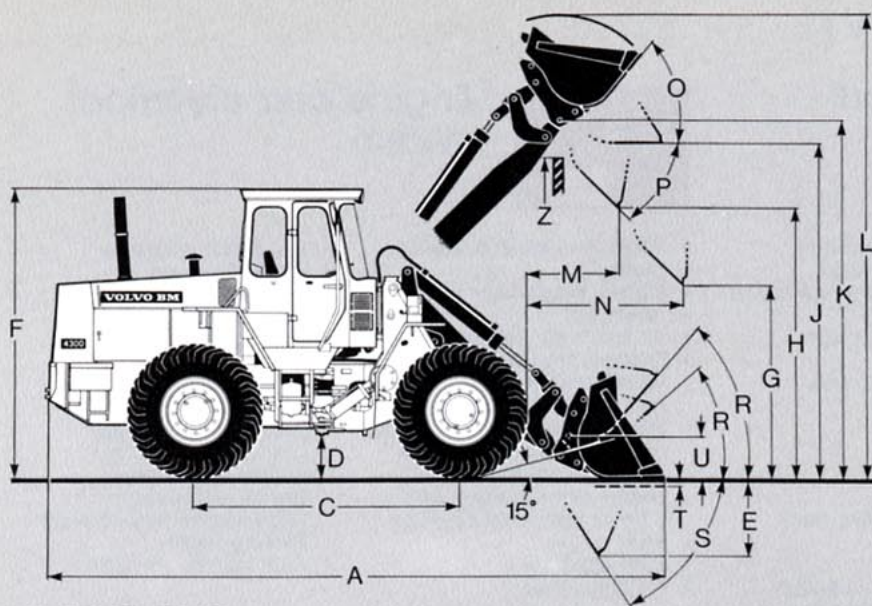
## SERVICE REFILL

Capacities	Litres	Imp gal	Us gal
Crankcase	10	2.2	2.64
Fuel tank	195	42.9	51.5
Cooling system	23	5.05	6.07
Hydraulic system, total	140	30.8	37
Hydraulic tank	80	17.6	21.1
Transmission and torque converter, total	27	5.93	7.13
Front axle differential and hubs	26	5.71	6.86
Rear axle differential and hubs	26	5.71	6.86
Dropbox	4.6	1.01	1.21



## CAB

The all-welded ROPS safety has two lockable doors and a roof hatch. The operator's stations 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	J = 3565 mm (11'8")	R = 41°	Y = 2300 mm (7'7")
C = 2700 mm (8'10")	K = 3720 mm (12'2")	R <sub>1</sub> = 50° Carry position	Z = 3300 mm (10'10") bucket
D = 400 mm (1'4")	L = Listed below	S = 58°	
E = 680 mm (2'3")	M = Listed below	T = 90 mm (3.5")	
F = 2970 mm (9'9")	N = Listed below	U = 460 mm (18")	α <sub>1</sub> = Listed below
G = 2000 mm (6'6")	O = 52°	V = Listed below	α <sub>2</sub> = 5000 mm (16'5")
H = Listed below	P = 45°	X = 1860 mm (6'1")	α <sub>3</sub> = 2700 mm (8'10")
			α <sub>4</sub> = ±40°

Attachment		Bucket pin on	Bucket hook on	Bucket pin on	Bucket hook on	Bucket pin on	Bucket hook on
Capacity		1.3 m <sup>3</sup> (1.7 cu yd)	1.3 m <sup>3</sup> (1.7 cu yd)	1.45 m <sup>3</sup> (1.9 cu yd)	1.45 m <sup>3</sup> (1.9 cu yd)	1.6 m <sup>3</sup> (2.1 cu yd)	1.6 m <sup>3</sup> (2.1 cu yd)
(H) Dump clearance at full lift and 45° discharge	mm (ft in)	2975 (9'9")	2920 (9'7")	2975 (9'9")	2920 (9'7")	2900 (9'6")	2835 (9'4")
(M) Reach at full lift and 45° discharge	mm (ft in)	880 (2'11")	940 (3'1")	880 (2'11")	940 (3'1")	955 (3'2")	1020 (3'4")
(N) Reach at 45° discharge and 7 ft high	mm (ft in)	1525 (5')	1560 (5'1")	1525 (5')	1560 (5'1")	1570 (5'2")	1610 (5'3")
(A) Overall length	mm (ft in)	6285 (20'7")	6360 (20'10")	6285 (20'7")	6360 (20'10")	6390 (20'7")	6480 (21'3")
(L) Overall height with attachment	mm (ft in)	4715 (15'5")	4765 (15'8")	4815 (15'9")	4865 (16')	4850 (15'11")	4900 (16'1")
(a <sub>1</sub> ) Clearance circle (over bucket)	mm (ft in)	10800 (35'4")	10800 (35'4")	10800 (35'4")	10800 (35'4")	10960 (35'10")	10960 (35'10")
(V) Width (over bucket)	mm (ft in)	2350 (7'9")	2350 (7'9")	2350 (7'9")	2350 (7'9")	2350 (7'9")	2350 (7'9")
Breakout force	kgf (lbf)	8100 (17860)	7400 (16315)	8100 (17860)	7400 (16315)	7150 (15760)	6450 (14220)
Static tipping load, straight	kg (lb)	5600 (12350)	5400 (11900)	5600 (12350)	5400 (11900)	5500 (12125)	5200 (11464)
Static tipping load, 35° turn	kg (lb)	4900 (10800)	4700 (10360)	4900 (10800)	4700 (10360)	4800 (10580)	4500 (9920)
Static tipping load, at full turn	kg (lb)	4800 (10580)	4600 (10140)	4800 (10580)	4600 (10140)	4700 (10360)	4400 (9700)
Operating load at full turn	kg (lb)	2400 (5290)	2300 (5070)	2400 (5290)	2300 (5070)	2350 (5180)	2200 (4850)
Hydraulic lifting force at ground level	kgf (lbf)	9750 (21494)	9750 (21494)	9750 (21494)	9750 (21494)	9750 (21494)	9750 (21494)
Hydraulic lifting force at max height	kgf (lbf)	3550 (7826)	3400 (7495)	3550 (7826)	3400 (7495)	3500 (7716)	3350 (7385)
Operating weight	kg (lb)	8575 (18900)	8700 (19180)	8595 (18948)	8720 (19223)	8650 (19070)	8775 (19345)
Weights distribution front	kg (lb)	3955 (8719)	4150 (9149)	3970 (8752)	4165 (9182)	4080 (8994)	4270 (9413)
Weights distribution rear	kg (lb)	4620 (10185)	4550 (10030)	4625 (10196)	4555 (10041)	4570 (10075)	4505 (9932)

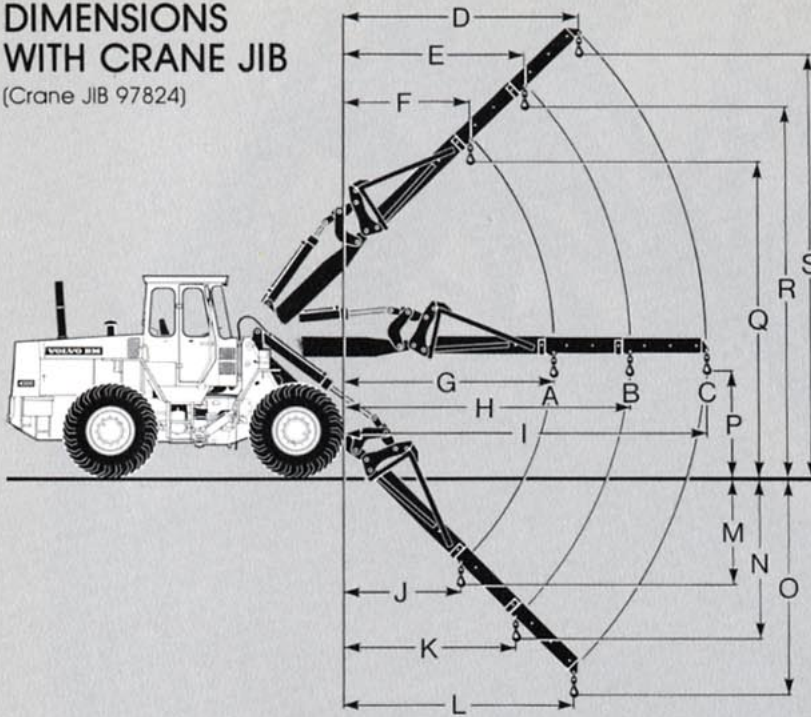
Specifications are based on a machine equipped with all standard equipment, 17.5—25/12 L2 diagonal tyres and straight bucket without teeth, as indicated. Wherever applicable specifications are in accordance with SAE Standard J 732 c and J 818 a.

Ca Cl<sub>2</sub> in rear tyres is only recommended for stabilising purposes in timber and pallet fork handling on hard and even ground.

Optional tyre equipment	Change in basic data		Change in operating in weight (kg/lb)	Change in static tipping load at	
	width over tires	Ground clearance		full turn (kg/lb)	
17.5—25/12 — L3 Radial	±0	±0	+100 (220)	+50 (110)	

## DIMENSIONS WITH CRANE JIB

(Crane JIB 97824)

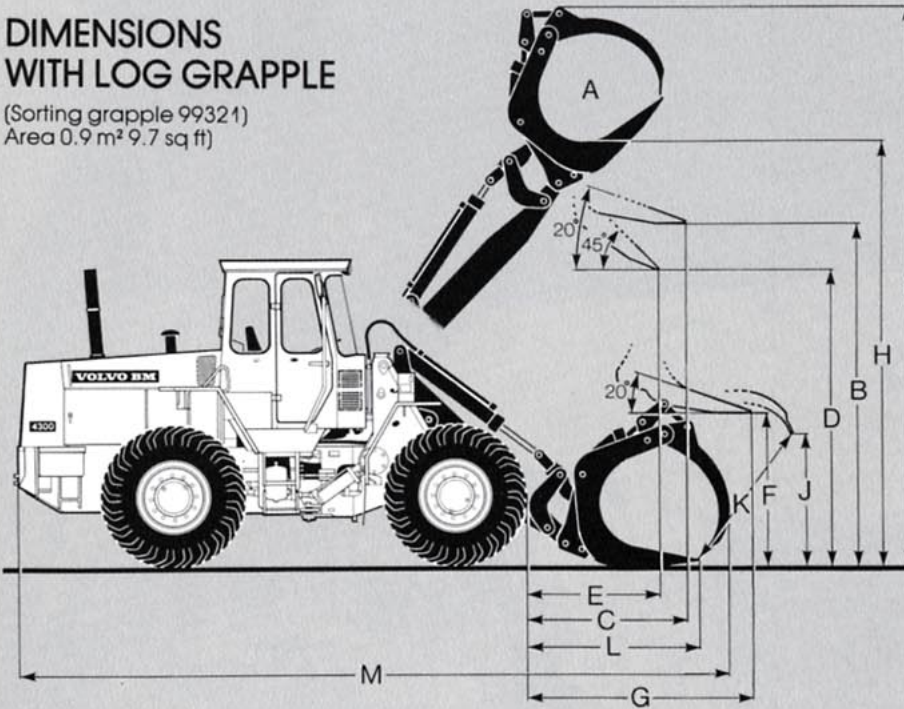


- A = 1275 kg (2800 lb)
- B = 975 kg (2145 lb)
- C = 825 kg (1815 lb)
- D = 2795 mm (9'2")
- E = 2160 mm (7'1")
- F = 1560 mm (5'1")
- G = 3190 mm (10'6")
- H = 4255 mm (14')
- I = 5385 mm (17'8")
- J = 1500 mm (4'11")
- K = 2145 mm (7')
- L = 2830 mm (9'3")
- M = 1885 mm (6'2")
- N = 2730 mm (8'11")
- O = 3630 mm (11'11")
- P = 1600 mm (5'3")
- Q = 5140 mm (16'10")
- R = 6020 mm (19'9")
- S = 6950 mm (21'8")

Machine weight  
8585 kg (18926 lb)

## DIMENSIONS WITH LOG GRAPPLE

(Sorting grapple 99321)  
Area 0.9 m<sup>2</sup> 9.7 sq ft)

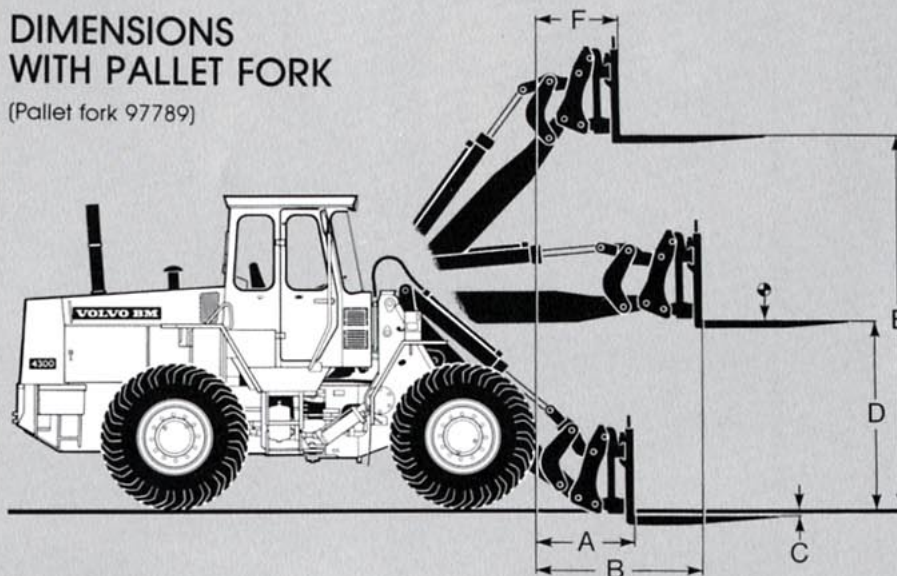


- A = 0.9 m<sup>2</sup> (9.7 sq ft)
- B = 3460 mm (11'4")
- C = 1260 mm (4'1")
- D = 2990 mm (9'10")
- E = 1030 mm (3'5")
- F = 1650 mm (5'5")
- G = 2305 mm (7'7")
- H = 4110 mm (13'6")
- I = 5450 mm (17'11")
- J = 2000 mm (6'7")
- K = 2000 mm (6'7")
- L = 1550 mm (5'1")
- M = 6730 mm (22')

Working load  
2300 kg (5070 lb)  
Machine weight  
9000 kg (19841 lb)

## DIMENSIONS WITH PALLET FORK

(Pallet fork 97789)



- Length, pallet fork 97789  
1225 mm (48.2 in)
- Width, fork carriage 97792  
1500 mm (59.1 in)
- A = 700 mm (2'3")
- B = 1530 mm (5')
- C = 20 mm (1")
- D = 1810 mm (6')
- E = 3630 mm (11'11")
- F = 750 mm (2'5")

Safe working load 3400 kg  
(7500 lb) and center of gravity 600 mm elbow  
Machine weight  
8580 kg (18915 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: Headlights 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
- Ashtray
- Cigarette lighter
- 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
- Windshield wipers, front and rear
- Horn
- Tyre inflation connection
- Lifting eyes for shipping
- Lockable tool box



## 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
  - Air filter
  - Hour meter
  - High speed tilting
- For certain markets only**
- **Central warning light:** Low brake pressure, Engine temperature, Engine oil-pressure, Transmission temperature, Parking brake
  - **Cold starter, preheater**



## Power transmission

- Power-shift transmission
- Differential lock on front axle
- Transmission cut-out valve
- Single lever control
- Tyres 17.5–25/12



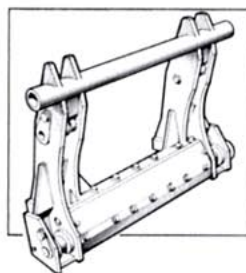
## Hydraulic system

- Control valve (3 sections)
- Bucket positions indicator
- 2 alternative forward tilting speeds
- Vane pumps
- 3rd hydraulic control

# OPTIONAL EQUIPMENT

(Standard equipment on certain markets)

- 24 V inspection lamp
  - Rotating beacon
  - Working lights for attachment (halogen)
  - Front working lights (halogen)
  - Rear working lights (halogen)
  - Protective grilles for front lights
  - Protective grilles for rear lights
  - Seat belt
  - Guard for roof hatch
  - Washers for front and rear windows
  - Air conditioner
  - Untinted windscreen and windows
  - 4th hydraulic controls
  - Extra fuel filter
  - Electric engine block heater
  - Towing hitch
  - Tyre inflation kit
  - Tools
  - Attachment bracket with quickchange coupling mechanical or hydraulic locking
  - Dual brake pedals
  - Automatic lubrication system
  - Singel acting lifting function
  - Speedometer/Odometer
  - (ENR) External Noise Reduction Equipment
  - Fully covering mudguards
  - Automatic bucket position indicator
  - Automatic boom kickout indicator
  - Automatic bucket positioner and boom kick out
  - FOPS canopy
  - Thermostatically regulated fan
  - Openable vent
  - Reversing warner
- For certain markets only**
- **Heated operator's seat**
  - **Automatic Power-Shift**



## "Quick-change" Coupling System

The Volvo BM 4300 may be delivered with quick-change coupling for either hydraulic or mechanical locking as optional equipment to fully utilize the wide range of attachments available.

**VOLVO BM**  
VOLVO BM AB ESKILSTUNA SWEDEN

The manufacturers reserve the right to change specification or design without prior notice. Illustrations do not necessarily show the machine in its standard version.

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**ENGELSKA**

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