

VOLVO BM 4600 U



Specification for the Volvo BM 4600 U Loader with Intercooler

Capacity

The Volvo BM 4600 U offers the perfect match of engine power, transmission and loader unit for optimum performance at every stage of the work cycle, whatever the conditions. The long wheelbase improves stability allowing high average speeds to be maintained.

Low-emission engine

With charge air cooling, the 6-cylinder Volvo turbodiesel has a highly efficient combustion resulting in low exhaust emission levels.

Safe and Comfortable

The operator enjoys the best in safety and comfort. The machine is easy to operate and affords good all-round visibility. Easily accessible service and maintenance points, plus wide lubrication intervals, save time and money.





ENGINE

Volvo TD 100A low-emission engine: 6-cylinder, in-line, direct-injection charge-air-cooled, turbocharged 4-stroke diesel engine with overhead valves and 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 270 (264 hp at 2200 rpm SAE)
Max. torque	915 Nm at 23.3 rps DIN 70020 (674 lbf ft at 1400 rpm DIN)
No. of cylinders	6
Bore	120.65 mm (4.75 in)
Stroke	140 mm (5.5 in)
Displacement	9.6 litres (586 in ³)
Compression ratio	15:1
Intercooler	yes
Air cleaning in three stages	1. Oil bath cleaner 2. Paper filter with indicator in cab 3. Catch-all safety filter
Exhaust gas cooling	Optional



ELECTRICAL SYSTEM

Batteries	2 x 12V (connected in series)
Voltage	24V
Battery capacity	135 Ah
Alternator	1260 W (45A)
Starter motor	4.5 kW (6 hp)
Central warning lamp for the following functions:	(For certain markets only) <i>Engine oil pressure, brake pressure, parking brake, engine temperature, transmission temperature, transmission oil</i>



TORQUE CONVERTOR

Type	Single-stage
Torque multiplication ratio	2.59:1



TRANSMISSION

Type: Power-shift
Designation: HT 170
Number of gears forward/reverse 4/4

Speeds:	1. 0—6.7 km/h 0—1.9 m/s 0—4.2 mph
(tyres 26.5—25)	2. 0—14.3 km/h 0—4.0 m/s 0—8.9 mph
	3. 0—30 km/h 0—8.3 m/s 0—18.6 mph
	4. 0—50 km/h 0—13.9 m/s 0—31.1 mph



AXLES

Fully floating half shafts with planetary hub reduction.

Front axle:	Designation	Volvo BM AH70
	Differential lock	100% lock-up (dog clutch)
Rear axle:	Designation	Volvo BM AH62
	Oscillation	±15° (500 mm)



BRAKES

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

Parking brake:	Mechanically operated disc brake on output shaft to front axle
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TYRES

26.5—25/20-L3



STEERING

Flow-amplified orbitrol steering

Steering angle	±37°
No. of wheel turns, lock-to-lock	3.5—4
Steering cylinder, bore/stroke	110/423 mm (4.3/16.7 in)
Piston rod diameter	50 mm (2.0 in)
Oil 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)



HYDRAULIC SYSTEM

Pump, type (working hydraulics): Vane pump

Output at 10 MPa (1450 psi) and 2200 rpm (36.7 rps)	380 l/min (83.6 Imp gal/min)
Relief pressure	17 MPa (2465 psi)
Oil filter: full-flow filtration through filter cartridge with magnetic core.	

Cylinders:	
Lift-bore/stroke	170/1107 mm (6.7/43.6 in)
Piston rod diameter	80 mm (3.15 in)
Tilt-bore/stroke	140/983 mm (5.3/38.7 in)
Piston rod diameter	70 mm (2.75 in)

Loader unit:
Control valve: Double-acting 3-section valve, lifting function has hold for lift and float position. Standard automatic bucket positioner and boom kickout can be disengaged. The control valve is servo-assisted.

Raise, with SAE load	7.8 s
Lower, without load	3 s
Dump	4 s



SERVICE REFILL

Capacities	Litres	Imp gal	US gal
Crankcase	31	6.82	8.19
Fuel tank	360	79.2	95.1
Cooling system	50	11	13.2
Hydraulic system, total	300	66	79.25
Hydraulic tank	210	46.2	55.5
Transmission and torque convertor, total	40	8.8	10.56
Front axle differential and hubs	31	6.82	8.19
Rear axle differential and hubs	31	6.82	8.19
Dropbox	7	1.53	1.85



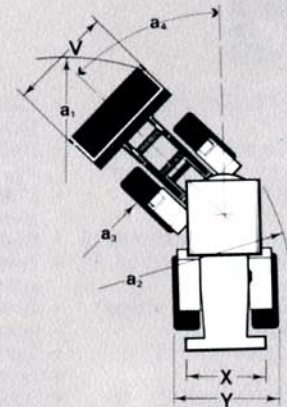
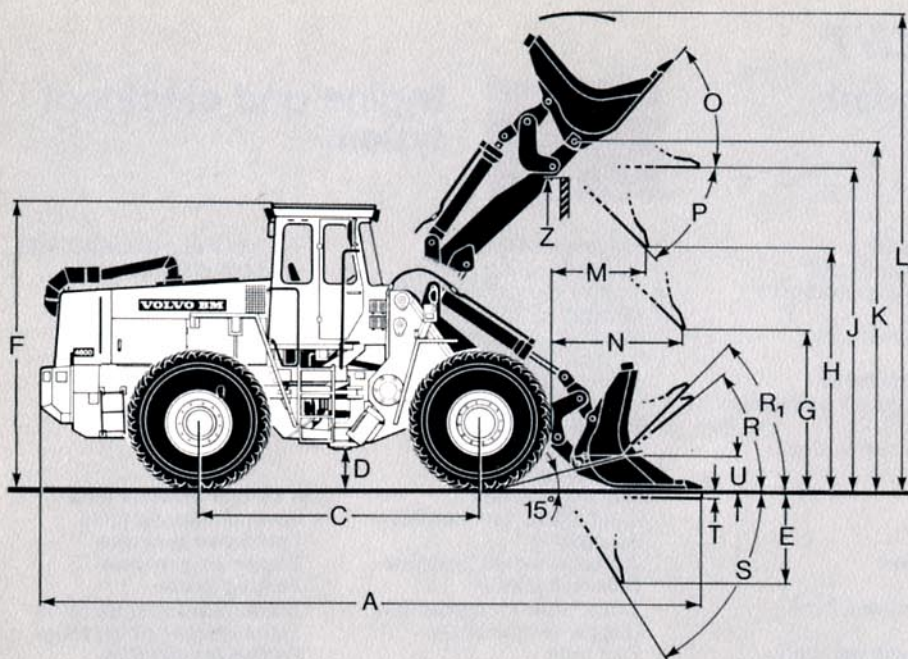
CAB

The cab conforms to § 8 of the Swedish Environment Protection Act, as well as ROPS, ISO 3471 and SAE J 394 c standards.

The cab is mounted on four rubber vibration isolators and is well insulated and weathertight. All windows have bronze-tinted glass. The front window is of laminated safety glass and the other windows have toughened glass.

Heating and defroster: Fresh-air heater with three-speed fan. Defroster for front and side windows.

Ventilation	2 air changes per minute
Operator's seat	ISRI GI 5000/385
Mountings for seatbelt	Yes



DIMENSIONS Bolted-on (98934) truncated V-lip bucket with teeth

A = Listed below	K = 4405 mm (14' 5")	S = 66°
C = 3550 mm (11' 8")	L = Listed below	T = 90 mm (4")
D = 470 mm (1' 7")	M = Listed below	U = 415 mm (1' 2")
E = 1440 mm (4' 9")	N = Listed below	V = See table below
F = 3500 mm (11' 6")	O = 55°	X = 2310 mm (7' 7")
G = 2000 mm (6' 7")	P = 45°	Y = 3000 mm (9' 10")
H = Listed below	R = 38°	Z = 4000 mm (13' 2")
J = 4120 mm (13' 6")	R ₁ = 44° Carry position	

Clearance circle	a ₁ = Listed below
Turning radius	a ₂ = 6900 mm (22' 7")
Inner radius	a ₃ = 3810 mm (12' 6")
Steering angle	a ₄ = ±37°

OPERATING SPECIFICATION

Attachment		Bolted-on truncated V-lip bucket with teeth	Bolted-on straight lip bucket with teeth
Capacity	m ³ (cu yd)	3.8 (5.0)	3.8 (5.0)
Density	kg/m ³ (lb/cu yd)	1800 (3000)	1800 (3000)
(H) Dump clearance at full lift and 45° discharge	mm (ft in)	2980 (9' 9")	3200 (10' 6")
(M) Reach at full lift and 45° discharge	mm (ft in)	1370 (4' 6")	1150 (3' 9")
Same from centre of front wheel	mm (ft in)	2190 (7' 2")	1970 (6' 6")
(N) Reach at 45° discharge and 7 ft high	mm (ft in)	2100 (6' 11")	1880 (6' 2")
Same from centre of front wheel	mm (ft in)	2920 (9' 7")	2700 (8' 10")
(A) Overall length	mm (ft in)	8510 (27' 11")	8200 (26' 11")
(L) Overall height with attachment	mm (ft in)	5860 (19' 3")	5860 (19' 3")
(a ₁) Clearance circle (over bucket)	mm (ft in)	7450 (24' 5")	7450 (24' 5")
(V) Width over attachment	mm (ft in)	3200 (10' 6")	3200 (10' 6")
Breakout force	kgf (lbf)	14475 (31912)	15800 (34832)
Static tipping load, straight	kgf (lb)	15180 (33466)	15300 (33730)
Static tipping load, 35° turn	kg (lb)	13850 (30534)	13970 (30798)
Static tipping load, at full turn	kg (lb)	13680 (30159)	13800 (30423)
Operating load at full turn	kg (lb)	6840 (15080)	6900 (15212)
Operating weight	kg (lb)	21220 (46782)	21100 (46517)
Weight distribution front	kg (lb)	9730 (21451)	9600 (21164)
Weight distribution rear	kg (lb)	11490 (25331)	11500 (25353)

EXHAUST EMISSION VALUES FOR LOW-EMISSION ENGINE AND UNDERGROUND VERSION—

	Idling speed	Stalling speed
Engine speed rpm	625	2200
CO ppm	250	400
NOx ppm	335	700
Hc ppm	200	200
Smoke Bosch	0.3	1.7

Specifications are based on the machine equipped with bolted-on truncated V-lip bucket with teeth, as indicated, and 26.5—25/20-L3 tires. Wherever applicable, specifications are in accordance with SAE standards J 732 C and J 818 a.

STANDARD EQUIPMENT



Safety and comfort

- Cab with FOPS protective roof
- Heating and ventilation system with defroster and filtered intake air
- Ashtray
- Rear-view mirrors, external, 2
- Rear-view mirror, internal, 1
- Lights:
 - Headlights, high/low beam
 - Parking lights
 - Working lights front (2) halogen
 - Working lights rear (2) halogen
 - Attachment (1) halogen
 - Side marker lights
 - Brake lights
 - Tail lights
 - Cab lighting
 - Instrument lighting
- Cigarette lighter
- Mounting for seat belt
- Utility basket and compartment in cab
- Instrument panel with symbols
- Directional indicators
- Pressure gauge for air brake system
- Tyre inflation connection
- Horn
- Sun visor
- Safety start
- Fenders
- Hazard flashers
- Tool kit
- Windshield wipers, front and rear
- Windshield washers, front and rear



Engine and electrical system

- Electrical outlet 24 V
 - Spark-arresting muffler
 - Battery disconnect switch
 - Gauges and indicators:
 - Working lights, front and rear
 - Ignition warning light
 - High beam
 - Turn signal indicators
 - Engine oil pressure
 - Parking brake
 - Air brakes
 - Hazard flashers
 - Cold starter (preheater)
 - Air cleaner
 - Transmission oil pressure
 - Differential lock
 - Transmission temperature
 - Engine temperature
 - Fuel tank
 - Air cleaner combined with oil bath cleaner
 - Hour meter
 - Alternator
 - Low-emission engine
- For certain markets only**
- *Central warning light:*
 - Low brake pressure
 - Engine oil pressure
 - Parking brake
 - Transmission temperature
 - Transmission oil pressure
 - Engine temperature



Power transmission

- Full Power-shift transmission
- Differential lock on front axle
- Transmission cut-out valve
- Single-lever gear control
- Tires 26.5–25/20



Hydraulic system

- Control valve (3 sections). Servo-operated
- Bucket position indicator
- Bucket positioner and boom kickout
- Vane pumps

OPTIONAL EQUIPMENT

- Extra fuel filter
 - 24V inspection lamp
 - Tyres
 - 3rd hydraulic control
 - 4th and 5th hydraulic controls
 - Tyre inflation kit
 - Front working lights (2) halogen
 - Rear working lights (2) halogen
 - Protective grilles for front and rear lights
 - Seat belt
 - Road-dependent safety steering
 - Air conditioner
 - Towing hitch
 - Water tanks with connections
 - Opening side vent
 - Protective roof (extra heavy-duty)
 - Dual brake pedals
 - Air-operated parking brake
 - Rotating beacon
 - Reverse alarm
 - Electric engine heater, 1500 W
- For certain markets only:**
- *Heated operator's seat*

VOLVO BM

VOLVO 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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