

VOLVO BM 4400 U



Specification Volvo BM 4400 U Loader with Intercooler

Capacity

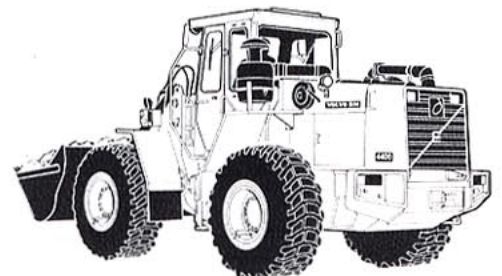
The Volvo BM 4400 is an effective underground loader — nimble and strong. The engine and the transmission are well matched to the easy-to-operate loader unit, which, with its modern design, combines good breakout forces, reach and lifting height.

Low-emission engine

The 6-cylinder Volvo BM turbodiesel engine with charge air cooling provides efficient combustion. This, together with water cooling of the exhaust gases, results in low emission values.

Safe and comfortable

The cab is safe and comfortable. The machine is easy to operate and affords good visibility all around. Easily accessible service and maintenance points, plus long lubrication intervals, save time and work.





ENGINE

Volvo TD 60B: Low emission engine: 6-cylinder, in-line, direct-injected. Charge air cooled, turbocharged 4-stroke diesel engine with overhead valves and wet, replaceable cylinder linings.

Flywheel rating	94 kW at 35 rps DIN 70020 (128 hp at 2100 rpm DIN)
Gross rating	105 kW at 35 rps SAE J 270 (143 hp at 2100 rpm SAE)
Max. torque	464 Nm at 26.7 rps DIN 70020 (342 lbf ft at 1600 rpm DIN) 510 Nm at 26.7 rps SAE J 270 (376 lbf ft at 1600 rpm SAE)
No. of cylinders	6
Bore	98.43 mm (3.88 in)
Stroke	120 mm (4.72 in)
Displacement	5.48 litres (334 in ³)
Compression ratio	16:1
Charge air cooler	yes
Air cleaning in 3 stages	1. Oil bath cleaner 2. Paper filter with indicator in cab 3. Replaceable catch-all safety filter
Exhaust gas cooling	yes
Max. exhaust gas temp. after cooling	80°C (176°F)



ELECTRICAL SYSTEM

Batteries: 2 x 12 V (connected in series)
Voltage 24 V
Battery capacity 96 Ah
Alternator 1260 W (45 A)
Starter motor 4.5 kW (6 hp)

Central warning lamp (for certain markets only) for the following functions:
Engine oil pressure, brake pressure, parking brake, engine temperature, transmission temperature



TORQUE CONVERTER

Type Single-stage
Torque multiplication ratio 2.86:1



TRANSMISSION

Type: Power-shift
Designation: Volvo BM HT 100

Number of gears forward/reverse 4/4

Speeds: (tyres 20.5–25)

- 0–7 km/h (0–4.3 mph)
- 0–13 km/h (0–8.0 mph)
- 0–28 km/h (0–17.4 mph)
- 0–39 km/h (0–24.2 mph)



AXLES

Fully floating half shafts with planetary hub reduction.

Front axle: Designation Volvo BM AH 50B
Differential lock 100% lock-up (dog clutch)

Rear axle: Designation Volvo BM AH 44E
Oscillation ±8° (280 mm)



BRAKES

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

Parking brake Mechanically operated drum brake on output shaft to front axle



TYRES

20.5–25/16–L3



STEERING

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

Steering angle	±40°
No. of wheel turns, lock-to-lock	5.25
Steering possible with engine dead	yes
Steering cylinder, bore/stroke	75/410 mm (3/16.1 in)
Piston rod diameter	36 mm (1.4 in)
Oil pump, type	vane pump
Output at 10 MPa (1450 psi) and 2100 rpm (35 rps)	74 l/min (16.3 Imp gal/min)
Relief pressure	14 MPa (2030 psi)



HYDRAULIC SYSTEM

Pump, type (working hydraulics):
Vane pump

Output at 10 MPa (1450 psi) and 2100 rpm (35 rps)	210 l/min (46.2 Imp gal/min.)
Relief pressure	15 MPa (2175 psi)
Oil filter:	Full-flow filtration through 10 µm filter cartridge with magnetic core

Cylinders:

Lift — bore/stroke	125/980 mm (4.9/38.6 in)
Piston rod diameter	60 mm (2.4 in)
Tilt — bore/stroke	110/830 mm (4.3/32.7 in)
Piston rod diameter	60 mm (2.4 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.

Raise, with SAE load	6.4 s
Lower, without load	3.8 s
Dump high/low speed	2.0 s/4.0 s



SERVICE REFILL

Capacities	Litres	Imp gal	US gal
Crankcase	15	3.3	4.0
Oil bath cleaner	6	1.3	1.6
Fuel tank	195	42.9	51.5
Cooling system	29	6.4	7.7
Water tank (for exhaust gas cooling)	200	44	53
Hydraulic system, total	150	33	40
Hydraulic tank	105	23.1	27.7
Transmission and torque converter tot.	27	5.93	7.13
Front axle differential and hubs	32.6	7.17	8.61
Rear axle differential and hubs	26.4	5.81	6.97
Dropbox	4.3	0.9	1.1



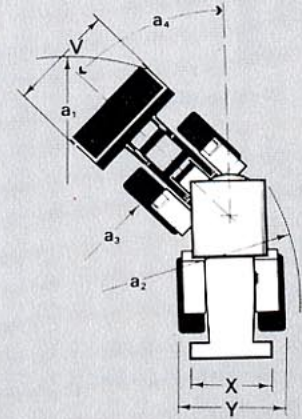
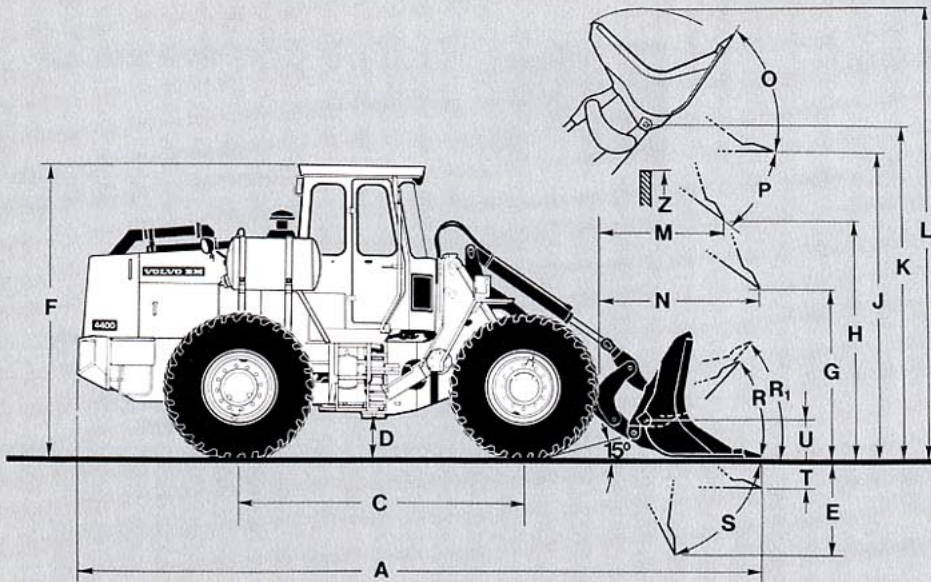
CAB

The cab conforms to §8 of the Swedish Environment Protection Act, as well as ROPS, ISO 3471 and SS 783 standards. The cab is mounted on four rubber vibration isolators

and is well insulated and weathertight. All windows have bronzed-tinted glass. The front window is of laminated safety glass and the other windows have tempered glass.

Heating and defroster: Fresh-air heater with 3 speed fan.
Defroster for front and side windows.

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



DIMENSIONS Bolted-on (98030) truncated Vee lip bucket with teeth

A = Listed below	K = 3825 mm (12' 6")	S = 59°	Clearance circle a_1 = Listed below
C = 2860 mm (9' 4")	L = Listed below	T = 75 mm (0' 3")	Turning radius a_2 = 5200 mm (17' 1")
D = 430 mm (1' 5")	M = Listed below	U = 370 mm (1' 3")	Inner radius a_3 = 2680 mm (8' 9")
E = 519 mm (2' 5")	N = Listed below	V = Listed below	Steering angle a_4 = ± 40°
F = 3015 mm (10')	O = 53°	X = 1960 mm (6' 5")	
G = 2000 mm (6' 6")	P = 45°	Y = 2490 mm (8' 2")	
H = Listed below	R = 40°	Z = 3580 mm (11' 9")	
J = 3580 mm (11' 9")	R_1 = 46° carry position		

OPERATING SPECIFICATION

Attachment		Truncated Vee lip bucket with teeth	Straight lip bucket with teeth
Capacity		1.9 m ³ (2.5 cu yd)	1.9 m ³ (2.5 cu yd)
Density	kg/m ³ (lb/cu yd)	1800–2000 (3000–3500)	1800–2000 (3000–3500)
(H) Dump clearance at full lift and 45° discharge	mm (ft in)	2590 (8' 6")	2745 (9')
(M) Reach at full lift and 45° discharge	mm (ft in)	1270 (4' 2")	1115 (3' 8")
Same from centre of front wheel	mm (ft in)	2020 (6' 8")	1865 (6' 1")
(N) Reach at 45° discharge and 7 ft high	mm (ft in)	1705 (5' 7")	1625 (5' 2")
Same from centre of front wheel	mm (ft in)	2455 (8' 1")	2375 (7' 10")
(A) Overall length	mm (ft in)	6990 (22' 11")	6850 (22' 6")
(L) Overall height with attachment	mm (ft in)	5200 (17' 1")	5045 (16' 6")
(a ₁) Clearance circle (over bucket)	mm (ft in)	5620 (18' 5")	5670 (18' 7")
(V) Width over attachment	mm (ft in)	2500 (8' 2")	2500 (8' 2")
Tipping angle, longitudinal	°	13.3	13.3
Same, sideways	°	14.2	14.2
Breakout force	kgf (lbf)	7300 (16093)	9000 (19841)
Static tipping load, straight	kg (lb)	8600 (18960)	8600 (18960)
Static tipping load, 35° turn	kg (lb)	7800 (17196)	7800 (17196)
Static tipping load, at full turn	kg (lb)	7600 (16755)	7600 (16755)
Operating load at full turn	kg (lb)	3800 (8378)	3800 (8378)
Hydraulic lifting force at ground level	kgf (lbf)	12700 (28000)	12700 (28000)
Same at max. height	kgf (lbf)	4950 (10913)	4950 (10913)
Operating weight	kg (lb)	11850 (26125)	11850 (26125)
Weight distribution front	kg (lb)	5550 (12236)	5550 (12236)
Weight distribution rear	kg (lb)	6300 (13890)	6300 (13890)

EXHAUST EMISSION VALUES WITHOUT WATER INJECTION

	Idling speed	Stalling speed
Engine speed rpm	650	2200
CO ppm	340	225
NOx ppm	420	690
Hc ppm	350	200
Smoke Bosch	0.6	1.0

Specifications are based on a machine equipped with bolted-on bucket with teeth, as indicated, and 20.5–25/16–L3 tyres. 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 forward (2) halogen, Working lights rear (4) 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
- Turn signal indicators
- Pressure gauge for air brake system
- Tyre inflation connection
- Horn
- Sun visor
- Safety start
- Fenders
- Roof hatch (FOPS)
- 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, Battery charging, High beam, Turn signal indicators, Engine oil pressure, Parking brake, Air brakes, Hazard flashers, cold starter (preheater), Air cleaner, High speed tilt, Transmission oil pressure,
 - Differential lock, Transmission temperature, Engine temperature, Fuel tank
 - Hour meter
 - Alternator
 - Low-emission engine
- For certain markets only**
- **Central warning light:**
 - Low brake pressure
 - Engine oil pressure
 - Parking brake
 - Transmission temperature
 - Engine temperature



Power transmission

- Full Power-Shift transmission
- Differential lock on front axle
- Transmission cut-out valve
- Single lever control
- Tyres 20.5—25



Hydraulic system

- Two alternative forward tilting speeds
- Control valve (3 sections) plus tubing for 3rd hydraulic function to mid-joint
- Automatic bucket positioner and boom kickout
- Vane pump

OPTIONAL EQUIPMENT

- Extra fuel filter
 - Electrical equipment, Norway
 - 24 V inspection lamp
 - Speedometer/odometer
 - Tyres
 - Front working lights (2) halogen
 - 3rd and 4th hydraulic functions
 - Tyre inflation kit
 - Automatic lubrication system
 - Protective grilles for lights, front and rear
 - Seat belt
 - Air conditioner
 - Towing hitch
 - Reverse alarm
 - Lever lock
 - Single-acting lifting function
 - Road-dependent safety steering
 - Air-operated parking brake
 - Rotating beacon
 - Electric engine block heater, 1500 W
 - Openable vent
- For certain markets only**
- **Heated operator's seat**

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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