

VOLVO BM 1641



Specification Volvo BM 1641

PRODUCTIVE

A long wheelbase in combination with large wheels makes the 1641 very stable, a clear advantage in load-haul-dump work. The turbo-charged Volvo diesel engine and the power-shift gearbox with torque converter form a well-balanced power pack which supplies the ample capacity resources that characterize the 1641.

RELIABLE

The 1641 underwent a series of development stages before it was introduced on the market. Its design features and performance have been progressively improved. The 1641 is a tried-and-tested machine that proves its reliability daily in tough jobs all over the world.

COMFORT AND SAFETY

The spacious safety cab gives the operator an efficient and comfortable workplace, also contributing to the high productivity of the machine.





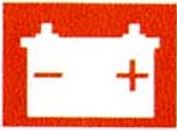
ENGINE

Volvo TD 100

Flywheel rating	151 kW at 36.5 rps DIN 70020 (205 hp at 2 200 rpm DIN)
Gross rating	176 kW at 36.5 rps SAE J 270 (240 hp at 220 rpm DIN)
Max. torque	774 Nm at 23.5 rps DIN 70020 (570 lbf ft at 1 400 rpm DIN) 860 Nm at 23.5 rps SAE J 270 (634 lbf ft at 1 400 rpm SAE)
Cylinder diameter	120.65 mm (4.75 in)
Stroke	140 mm (5.5 in)
Number of cylinders	6
Displacement	9.6 dm ³ (586 in ³)

The TD 100 is a direct-injected turbobcharged diesel engine with replaceable wet cylinder linings and pistons made of light metal alloy. The intake air is cleaned in two stages:

1. Multicyclone precleaner with automatic exhaust ejector
2. Fine paper cleaner



ELECTRICAL SYSTEM

Voltage	24 V
Alternator	45 A (1 250 W)
Batteries	2 x 12 V, 135 Ah
Starter motor	4.4 kW (6 hp)

The alternator guarantees sufficient charging even at low engine speed. The powerful starter motor facilitates starts at low temperatures as well. Driving and working lights are extra powerful, permitting safe and efficient work in the dark. The fuses are well protected and easily accessible inside the cab.



TORQUE CONVERTER

Type	Single-stage
Torque conversion ratio	2.86:1



GEARBOX

Power-shift

Number of gears forward/reverse	3/3 (4/4 export)
Speeds	1. 0—6 km/h 0—3.7 mph
Forward/reverse	2. 0—14 km/h 0—8.7 mph
	3. 0—30 km/h 0—18.6 mph
	4. 0—45 km/h 0—28 mph export



AXLES

Heavy duty axles. Planetary hub reductions. Fully floating shafts. The long wheelbase, the large wheels and rear axle oscillation $\pm 17^\circ$ (0.7 m) contribute towards the 1641's outstanding stability and forward mobility.



BRAKES

Pneumatic-mechanical, dual-circuit drum brakes on all wheels. Double brake pedals; the left-hand pedal actuates the transmission's disengagement valve.

Brake area: Front	1 650 cm ² /wheel (256 in ² /wheel)
Rear	1 225 cm ² /wheel (190 in ² /wheel)

Parking brake: Hand-operated mechanical disc brake on output shaft to front axle.



TYRES

Alternatives

23.5—25 Radial
23.5—25 Bias-ply L2 or L3
26.5—25 Radial
26.5—25 L2 or L3



STEERING SYSTEM

Hydraulic articulated steering

Steering angle	$\pm 37.5^\circ$
Outer turning radius	6 600 mm (260 in) (a ₂)
Pump, tyre	Gear pump
Capacity	150 dm ³ /min. (40 US gal/min, 33 Imp. gal/min) at 100 bar and 2 200 rpm
Working pressure	100 bar



HYDRAULIC SYSTEM

Pump, type	Gear pump
Capacity	370 dm ³ /min (98 US gal/min, 81 Imp. gal/min) at 100 bar and 2 200 rpm
Working pressure	140 bar

Hydraulic cylinders	
Lift cylinders, diam./stroke	180/895 mm (7.1/35 in)
Tilt cylinders, diam./stroke	150/845 mm (5.9/33 in)
Lifting time	7.8 s
Lowering time	4.2 s
Forward tilt	4.8 s

Loader unit

Type: Servo-operated control valve.

Control: Single-lever control of side-arm movement and tilt movement. With third hydraulic function, there is an additional control lever to the right of the single-lever control.



VOLUMES

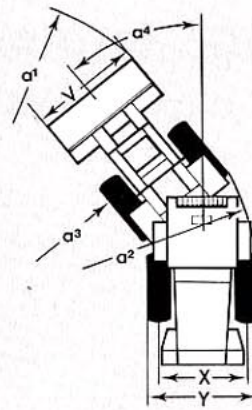
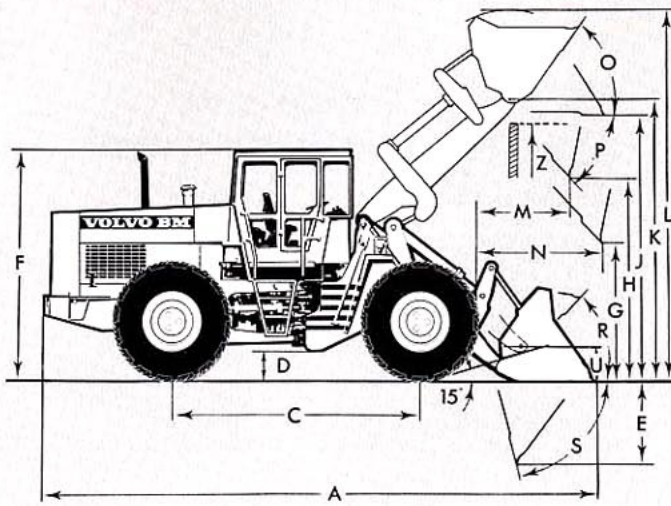
Cooling system	60 dm ³ (15.8 US gal, 13.2 Imp. gal)
Engine oil at change	29 dm ³ (7.7 US gal, 6.4 Imp. gal)
Hydraulic transmission and torque converter oil volume at change	34 dm ³ (9.0 US gal, 7.5 Imp. gal)
Front axle, total	35 dm ³ (9.2 US gal, 7.7 Imp. gal)
Rear axle, total	31 dm ³ (8.2 US gal, 6.8 Imp. gal)
Hydraulic system	320 dm ³ (84.5 US gal, 70.3 Imp. gal)
Hydraulic reservoir	230 dm ³ (60.7 US gal, 50.6 Imp. gal)
Fuel tank	245 dm ³ (64.1 US gal, 53.8 Imp. gal)



CAB

The all-welded ROPS-tested cab, which not only meets the requirements of ISO 3471 but also the more stringent requirements of SS 783, has two lockable doors and a sun-

roof. The cab is approved in accordance with the standards of the Swedish Board of Occupational Safety and Health. The operator's station is ergonomically designed. All controls and pedals are located and designed for convenient and quick operation. Fully adjustable operator's seat as standard. The cab is equipped with an efficient heating and ventilation system with defroster. The cab is mounted on the chassis via rubber pads, which contribute towards the low noise level inside the cab.

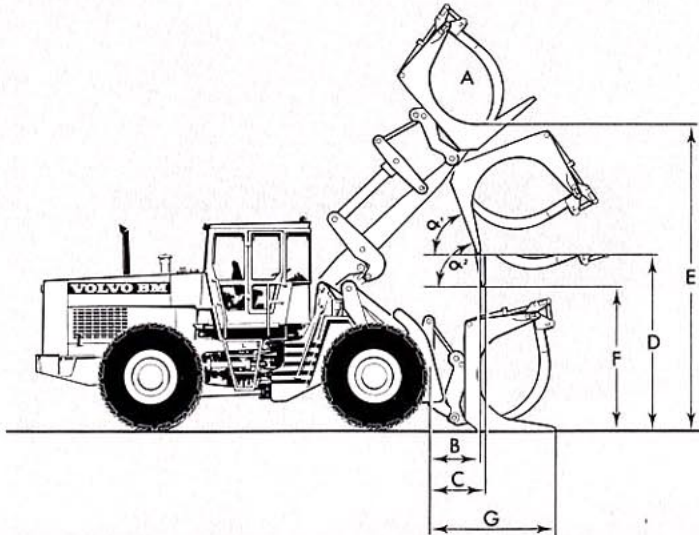


DIMENSIONS STRAIGHT BUCKET WITH TEETH

A = See table below	R = 38°
A = 6 570 mm (263 in) without attachment	R ₁ = 45° Carrying position
C = 3 470 mm (137 in)	S = 73°
D = 400 mm (16 in)	T = 110 mm (4 in)
E = 1 190 mm (47 in)	U = 480 mm (19 in)
F = 3 240 mm (128 in)	V = See table below
G = 2 000 mm (79 in)	X = 2 340 mm (91 in)
H = See table below	Y = 2 910 mm (115 in)
J = 3 760 mm (148 in)	Z = 3 710 mm (146 in) Bucket
K = 4 000 mm (157 in)	
L = See table below	alpha ₁ = See table below
M = See table below	alpha ₂ = 6 600 mm (260 in)
N = See table below	alpha ₃ = 3 700 mm (146 in)
O = 55°	alpha ₄ = ±37.5°
P = 45° (max. 52°)	

DIMENSIONS WITH LOG GRAPPLE

A = 2 m ² (22 ft ²)	D = 2 680 mm (106 in)
alpha ¹ = 55°	E = 4 520 mm (178 in)
alpha ² = 45°	F = 2 000 mm (79 in)
B = 1 405 mm (55 in)	G = 2 100 mm (83 in)
C = 2 185 mm (86 in)	



CAPACITY

Attachment		Direct-mounted bucket	Attachment bracket bucket	Direct-mounted bucket	Attachment bracket bucket	Log grapple*
Capacity		3.2 m ³	3.2 m ³	4 m ³	4 m ³	2 m ³
Max. dump height under 45° forward-tilted bucket (H)	mm	2 910	2 880	2 795	2 760	2 680
Reach at max. dump height under 45° forward-tilted bucket (M)	mm	1 200	1 180	1 300	1 300	1 405
Reach at 2.0 m dump height under 45° forward-tilted bucket (N)	mm	1 760	1 750	1 820	1 810	2 185
Overall length (A)	mm	7 890	7 910	8 040	8 080	8 205
Max. height (L)	mm	5 320	5 320	5 540	5 520	6 520**
Swept radius (alpha ₁)	mm	7 120	7 130	7 160	7 170	
Width over attachment (V)	mm	3 100	3 100	3 100	3 100	1 730
Breakout force	N (kp)	125 000 (12 500)	124 000 (12 400)	111 000 (11 100)	109 000 (10 900)	—
Tipping load, straight machine	kg	11 700	11 400	11 650	11 350	—
Tipping load, 35° articulated machine	kg	10 850	10 550	10 800	10 500	—
Tipping load, fully articulated machine	kg	10 700	10 400	10 650	10 350	—
Working load, fully articulated machine	kg	5 350	5 200	5 325	5 175	5 800
Machine weight	kg	17 000	17 500	17 100	17 600	17 250

Where applicable, specifications and dimensions conform to SAE standards J 732 C and J 818. The data refer to a machine equipped with a 3.2 m³ (4.2 y³) direct-mounted bucket without teeth and tyres 23.5—25/16 Bias-ply.

*) Filling the rear tyres with liquid is only recommended where extra stability is required for log and pellet handling on hard and level surfaces.

* S 96421 ** Closed grip

Alternative tyres	Adjustment of basic data Machine weight	Adjustment of tipping load, fully articulated machine
23.5—25 XRA	+ 180 kg	+ 125 kg
23.5—25/20 Rock tyres	+ 110 kg	+ 80 kg
26.5—25/16 Bias-ply	+ 340 kg	+ 240 kg
26.5—25 XRA	+ 640 kg	+ 450 kg
23.5—25 with 75% liquid in rear tyres ¹⁾	+1 100 kg	+1 550 kg
26.5—25 with 75% liquid in rear tyres ¹⁾	+1 500 kg	+2 100 kg

STANDARD EQUIPMENT



Safety and comfort

- Cab — impact-tested (OECD) safety cab (ROPS)
- Cab heater and ventilation system with defroster
- Ergonomically designed and adjustable operator's seat
- Rear-view mirrors, outside, two
- Lighting:
 - Headlights, bright/dim
 - Parking lights
 - Working lights, front (two)
 - Working lights, rear (two)
 - Sidelights
 - Brakelights
 - Taillights
 - Cab lighting
 - Instrument lighting
- Attachment for seatbelt
- Utility box and glove compartment in cab
- Pressure gauge, brake system — compressed air
- Instrument panel with symbol markings
- Direction indicators
- Fenders
- Sunroof
- Tool kit
- Windshield wipers, front and rear
- Horn
- Tyre pumping equipment (crane take-off)
- Ashtray
- Cigarette lighter



Transmission

- Power-shift transmission with torque converter
- Valve for disengaging transmission during braking



Engine and electrical system

- Fuel gauge
- Temperature gauge, engine
- Oil pressure gauge, engine
- Temperature gauge, hydraulic transmission
- Oil pressure gauge, hydraulic transmission
- Hour counter
- Spark-arresting muffler
- Master switch, electrical system
- Alternator
- Air cleaner with ejector
- Pilot lamps for:
 - Charging
 - Bright lights
 - Blinkers
 - Oil pressure, engine
 - Parking brake
 - Air brakes
 - Air cleaner



Hydraulic system

- Control valve (3 sections)
- Bucket position indicator
- Automatic bucket and lifting position control

EXTRA EQUIPMENT

- Working lights (beyond standard)
- Exhaust gas cleaning
- Automatic lubrication
- Fuel filter (beyond standard)
- Shock valve for 3rd hydraulic function
- Electrical equipment for 4th — 5th hydraulic function on attachment
- Return line from shock valve for 3rd hydraulic function
- Tube assembly for 3rd hydraulic function
- Air conditioner
- Electric engine heater
- Warning beacon
- Bracket for warning beacon
- Extra cab heater
- ENR equipment
- Mining version, different items of equipment
- Tyres
- Green-tinted cab glass
- Compactor version
- Cooling water filter, engine
- Air cleaner, HD
- Lifting eyes for shipping
- Emergency steering
- Attachment bracket, hydraulic lock
- Sunvisor
- Seatbelt
- Safety glass, front window, hardened with visibility zone
- Safety lock
- Turbocharging for altitudes > 2 000 metres above sea level
- Tools

VOLVO BM

VOLVO BM AB ESKILSTUNA SWEDEN

Under our policy of continual product improvement, we reserve the right to alter specifications and design without notice. The illustrations do not necessarily show the standard version of the machine.

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ENGELSKA

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