

VOLVO BM 3400



Specification Volvo BM 3400 Motor Grader

PRODUCTIVE

The Volvo BM 3400 Motor Grader's extremely long reach on both sides, and its deep grader blade, mean that the really tough jobs, such as sloping and ditching, can be finished quickly and efficiently.

The 3400's high horsepower-to-weight ratio enables it to work effectively under the most difficult conditions.

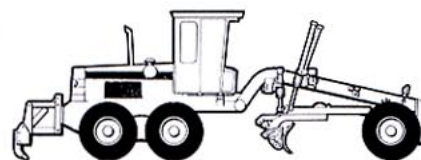
ECONOMICAL

The 3400 is built from time-tested components, guaranteeing a long service life and high machine availability.

The Volvo engine, combined with Volvo transmission, provides a unique range of speeds and tractive powers coupled with very low fuel consumption.

The safety clutch controlling the blade's rotation and simple to replace components, keep servicing and downtime costs due to wear-and-tear, to a minimum.

The time required for daily maintenance is also reduced since the machine has a small number of easily accessible service points.





ENGINE

Volvo TD 70. A turbocharged 4-stroke diesel engine has six in-line cylinders with direct-injection, overhead valves and replaceable wet cylinder linings.

Flywheel rating: 138 kW at 38.5 rps DIN 70020 (187 hp at 2300 rpm DIN)

Engine rating: 147 kW at 38.5 rps SAE J 270 (200 hp at 2300 rpm SAE)

Torque: 627 Nm at 26.5 rps DIN 70020 (462 ft/lb at 1600 rpm DIN)
692 Nm at 26.5 rps SAE J 270 (511 ft/lb at 1600 rpm SAE)

Number of cylinders: 6

Cylinder diameter: 104.77 mm (4.12 in)

Stroke: 130 mm (5 in)

Displacement: 6.73 litres (411 in³)

Aircleaning: The cyclone action air cleaner with highly efficient paper filter is fitted with a pressure drop indicator and pilot lamp.



ELECTRICAL SYSTEM

Voltage: 24 V
Alternator: 1080 W (45 A)
Batteries: 2 x 12 V, 135 Ah
Starter Motor: 4.4 kW (6 hp)

The electrical system is designed for reliability. The alternator guarantees ample charging, even at low engine revolutions, and the powerful starter motor gives easy starts, even at low temperatures. Driving and working lights are big and powerful for efficient night-working. Fuses are conveniently located inside the cab.



TORQUE CONVERTER

Single-stage with freewheel stator and lock-up clutch

Torque conversion ratio: 2.2:1

Operation: Alt. 1. Automatic engagement of direct clutch (1700 rpm)
Alt. 2. Continuous torque conversion



CLUTCH

Double-disc dry plate clutch

Diameter/friction surface: 15"/2650 cm²

Operation: Electro-pneumatic via button on gear lever and fully-pneumatic via pedal with smooth start function.



GEARBOX

Fully-synchronized forward gears. Single-lever-operated. Clutch brake for reverse gears.

Number of gears forward/reverse: 8/2

Gear

Forward Speed

1 4.5 km/h (2.8 mph)
2 6.4 km/h (4.0 mph)
3 9.2 km/h (5.0 mph)
4 12.1 km/h (7.5 mph)
5 17.7 km/h (11.0 mph)
6 25.3 km/h (15.7 mph)
7 36.0 km/h (22.4 mph)
8 47.7 km/h (30.0 mph)

Reverse

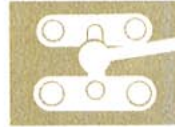
1 4.9 km/h (3.0 mph)
2 19.3 km/h (12.0 mph)



DROP-BOX

Make: Volvo BM
Ratio: 34/35

Can be equipped with wheel-dependent power take-off and emergency steering.



REAR AXLE & TANDEM

Make: Volvo BM
Fully floating with differential, equipped with air-operated differential lock.

Tandem housing
Dimensions: height x width: 576 x 128 mm (22.7 x 5.0 in)
Tandem drive: Gear transmission



FRONT AXLE

Ground clearance: 580 mm (22.8 in)
Oscillation: ± 15°
Wheel lean: ± 18°

V-shaped box construction. Designed for heavy front attachments.



STEERING SYSTEM

Type: Hydrostatic, wheel operated
Pump, type: Gear pump
Capacity: 17 l/min (4.5 US gal/min) (3.7 Imp.gal/min)

Working pressure: 9 MPa (1305 psi)
Steering angle: ± 48°
Steering wheel: Fully adjustable
Turning radius: 9.3 m



BRAKES

Service
Air-mechanical drum brakes acting on the front bogie wheels.

Parking
Mechanically acting drumbrakes on front pair of bogie wheels. Spring engaged, air disengaged.



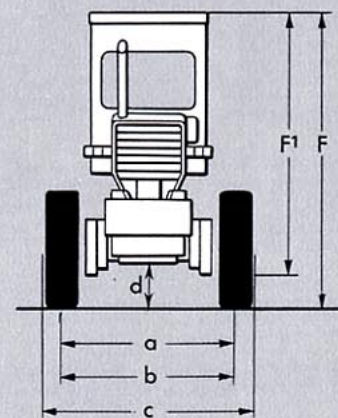
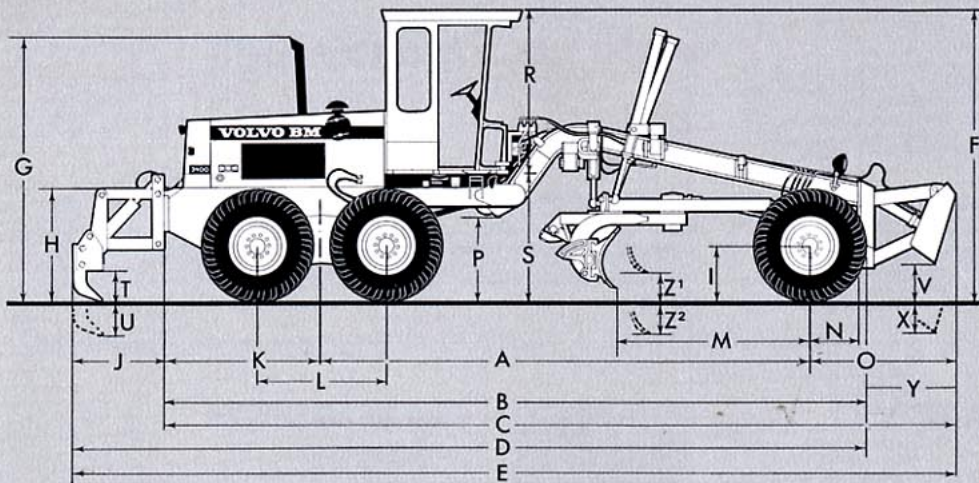
VOLUMES

	Litres	US gal	Imp gal
Engine, including filter	17	4.5	3.7
Gearbox	12.5	3.25	2.7
Hydraulic system	160	42.3	35
Hydraulic tank	90	23.8	19.8
Fuel tank	224	59	49
Cooling system	38	10	8.4
Rear axle casing —			
centre gear	25	6.6	5.5
Bogie box, each	15	4.0	3.3
Drop-box	5.0	1.3	1.1
Worm gear — rotation			
circle	1.5	0.4	0.3
Safety clutch	1.5	0.4	0.3



TYRES

Standard: 14.00—24/12 SGG
16.00—24/12 SGG
Alternative: 20.5 —25/12 SGG



DIMENSIONS

A	5800 mm (228 in)	H	2105 mm (83 in)	O	1900 mm (75 in)	Y	1235 mm (49 in)
B	8330 mm (328 in)	I	600 mm (24 in) (min.)	P	940 mm (37 in)	Z ₁	530/550 mm (21/22 in) max. (flat/dished steel)
C	9565 mm (377 in)	J	1200 mm (46 in)	R	1810 mm (71 in) (int. in cab)	Z ₂	270/270 mm (11/11 in) min. (flat/dished steel)
D	9530 mm (375 in)	J ₁	2040 mm (80 in) (with windrow eliminator)	S	1510 mm (59 in)	a	1990 mm (78 in) (front wheels)
D ₁	10370 mm (408 in) (with windrow eliminator)	K	1865 mm (73 in)	T	470 mm (18 in) (with extended teeth, 820 mm — 32 in)	b	2030 mm (80 in) (rear wheel)
E	10765 mm (424 in)	L	1530 mm (60 in)	U	350 mm (14 in)	c	2450 mm (96 in)
F	3400 mm (134 in)	M	2215–2650 mm (87–104 in) (flat steel)	V	555 mm (22 in)	d	400 mm (16 in) (min.)
F ₁	3090 mm (122 in) (without wheels)	N	600 mm (24 in)	X	260 mm (10 in)		
G	3380 mm (133 in)						



HYDRAULIC SYSTEM

Gear pump

Capacity: 2 × 97.8 l/min (2 × 25.8 US gal/min)
(2 × 21.5 Imp.gal/min) at 2300 rpm
Working pressure: 14 MPa (2030 psi)
Dual circuit system, with independent control of functions on left-hand and right-hand sides of machine.
Hydraulic lock for lift cylinders.



CONTROLS

There are six valves. The controls are tightly grouped and very easy to operate. To make the operator's work even simpler, each lever has a distinctively different knob for easy recognition. Lever movements are logical; if the blade is to be shifted to the right, the lever is moved to the right and vice versa. Another special feature, double command, enables both sides of the blade to be raised or lowered using only the right hand, leaving the left hand free for other functions.



ROTATION CIRCLE

Welded box section, diameter 1486 mm (59 in), hardened steering and wear surfaces, with six adjustable points of attachment to drawbar. Hydraulically driven, with self-inhibiting worm gear and overload protection (safety clutch). 360° rotation.



GRADER BLADE

	(12' Int. std.)	(13' Int. std.)
Blade length:	3657 mm (144 in)	3690 mm (156 in)
Blade height with cutting edge:	638 mm (25.1 in)	638 mm (25.1 in)
Solid section, L × W × t:	3340 × 100 × 30 mm (131 × 39 × 1.2 in)	3563 × 100 × 30 mm (140 × 39 × 1.2 in)
Blade thickness:	22 mm (0.9 in)	22 mm (0.9 in)
Cutting edge, H × t × L:	200 × 10 × 1219 mm (79 × 0.4 × 48 in)	6" × 5/8" × 6' 6" × 5/8" × 7'
	3 Sections	
Hydraulic side shift:	1320 mm (52.0 in)	1320 mm (52.0 in)
Maximum reach beyond wheels:	2850 mm (112 in)	3050 mm (120 in)
Replaceable side shift guides:	4	4



DRAWBAR

Solid A-shape beam with six adjustable guide shoes to fix the rotation circle in the right position. Section dimensions: 220 × 35 (8.7 × 1.4 in).



FRAME

Front sec:	Welded box-section construction from front plate to rear frame members. Top and bottom plates width × gauge = 240 × 30 mm (9.4 × 1.2 in). Side plates, height × gauge = 205 × 20 mm (8.0 × 0.8 in). Weight of section = 184 kg/m (124 lb/ft). Measurement of section 280 × 255 (11.0 × 10.0 in).
Rear sec:	Rear frame made of two solid members. Height × gauge = 220 × 80 mm (8.7 × 3.1 in) Weight of section = 2 × 138 kg/m (2 × 92 lb/ft)



WEIGHTS

Working weight, including oils, coolant, full fuel tank, operator, 13' hydraulic side shift blades, blade tilt and 14.00-24/12 tyres.

Weight on front axle	3800 kg (8400 lb)
Weight on rear axle	9400 kg (20700 lb)
Total weight	13200 kg (29100 lb)
Max. blade cutting pressure	7000 kg (15430 lb)



ATTACHMENTS

Windrow eliminator	Weight	500 kg (1100 lb)
Rear-mounted ripper		1000 kg (2200 lb)
Hydraulically operated dozer, blade, 8 ft		900 kg (1985 lb)
Hydraulically operated dozer, blade, 9 ft		1040 kg (2290 lb)
Scarifier		500 kg (1100 lb)

STANDARD EQUIPMENT



ENGINE AND ELECTRICAL SYSTEM

Fuel gauge	pressure, parking brake, air brakes
Master switch	Central warning
Indicator for air cleaner filter	Thermometer, engine
Pilot lights for charging, high beam, direction indicators, transmission oil pressure, transmission temperature, engine oil	Hour counter
	Alternator
	Thermometer, converter oil



TRANSMISSION

Differential lock
Pilot lights for: transmission oil pressure, transmission temperature

Torque converter with lock-up clutch
8 forward gears: 2 reverse gears



HYDRAULIC SYSTEM

Control valve (6 sections, including one with floating position)

Dual-circuit hydraulic system: separate circuit for control of functions on each side of the machine.

EXTRA EQUIPMENT

- 3 extra hydraulic valves (1 with floating position)
- Tube for rear attachment
- Emergency steering pump
- Tube for front attachment
- Tyres
- Fenders
- Boarding steps
- Seat belt
- Cigarette lighter and ashtray
- Rotating warning beacon
- Trailer socket
- Rear hitch
- Tyres inflation kit
- Special tyres
- Internal rear-view mirror
- Adjustable armrests on operator's seat
- Quick-mounting device for grader blade cutting edge
- End bits



1. Rear mounted ripper. Standard arrangement includes 5 heavy-duty shanks.



2. Above. Hydraulically operated front blade.
3. Below. V-type scarifier, mounted in front of the mould-board.

VOLVO BM

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