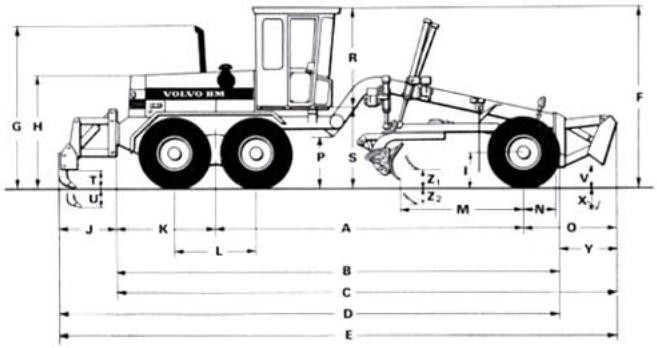
VOLVO BM

3500 ROAD GRADER

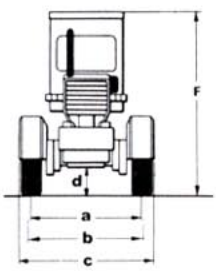
Individual adjustment of the rotation circle and blade give the 3500 very wide reach to both sides.

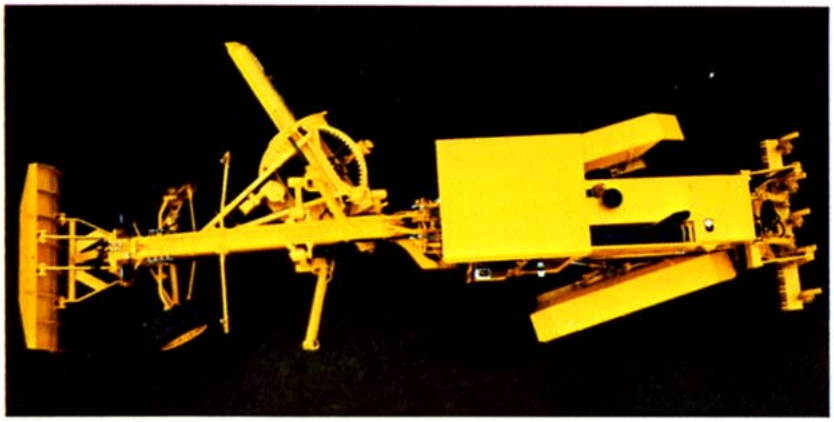
- **Ample tractive effort and speed range**
- **Hydraulic operation of all blade and steering functions**
- **High operator comfort**
- **Large blade range – wide reaches**
- **Volvo 185 hp DIN engine**
- **Bogie steering – good turnability and manœuvrability**



Dimensions

A	5800 mm (228 in)	S	1510 mm (59 in)
B	8330 mm (328 in)	T	325 mm (13 in)
C	9565 mm (376 in)	U	350 mm (14 in)
D	9530 mm (375 in)	V	585 mm (23 in)
E	10695 mm (432 in)	X	230 mm (9 in)
F	3400 mm (134 in)	Y	1300 mm (51 in)
G	3380 mm (133 in)	Z_1	550 mm max. (22 in max.)
H	2105 mm (83 in)	Z_2	270 mm min. (11 in min.)
I	600 mm (24 in)	a	1990 mm (78 in) (front wheels)
J	1200 mm (47 in)	b	2030 mm (80 in) (rear wheels)
K	1865 mm (73 in)	c	2450 mm (97 in)
L	1530 mm (60 in)	d	40 mm (16 in)
M	2215–2650 mm (87–104 in)		
N	600 mm (24 in)		
O	1900 mm (75 in)		
P	940 mm (37 in)		
R	1810 mm (71 in)		





The Volvo BM 3500 is designed from the ground up with the operator in mind. It is therefore unusually easy to operate completely hydraulically. Bogie steering provides a wide working range and makes the machine easy to steer. Seated in the well-insulated cab, the operator has excellent visibility for safe and efficient work.

SPECIFICATION VOLVO BM 3500

Engine
Volvo TD 70 E, six-cylinder direct-injected turbocharged diesel engine.

Output at 2300 rev/min
185 hp DIN
(136 kW)

Transmission
Volvo-made fully-synchronized transmission in combination with torque converter with automatic lock-up clutch for direct drive.
The lock-up clutch can be disengaged by means of a switch.
The transmission is single-lever-operated with 8 forward speeds and 2 reverse.

Torque conversion ratio
2.3:1

Speeds		Speed, km/h (mph) Alt. I	Alt. II
Gear			
Forward	1	3.7 (2.3)	4.6 (2.9)
	2	5.4 (3.4)	6.6 (4.1)
	3	7.6 (4.7)	9.3 (5.8)
	4	10.1 (6.3)	12.4 (7.7)
	5	14.7 (9.1)	18.8 (11.7)
	6	21.1 (13.1)	25.9 (16.1)
	7	30.0 (18.6)	36.9 (23)
	8	39.7 (34.7)*	48.8 (30.3)
Reverse	1	4.5 (2.8)	4.8 (3.0)
	2	17.7 (11)	21.1 (13.1)

* Can be blocked at 30 km/h (18.6 mph)

Blade control
Hydraulic operation of all blade functions as standard. Both left-hand and right-hand lifting cylinders can be operated wih the right hand, leaving the left hand free for other functions.

Rotation circle
Rotation gear, welded box section with hardened wear surfaces and teeth. Hydraulically-driven worm gear provides full 360° rotation. Safety clutch prevents breakage of blade, worm gear, rotating gear and drawbar.

Circle diameter
1486 mm (39 in)

Positioning of grader blade
Alt. I, 12' (Swedish standard)
Hydraulic side shift 1320 mm (52 in)
Max. reach beyond wheels
2850 mm (112 in)

Alt. II, 13' (Int. Standard)
Hydraulic side shift 1440 mm (57 in)
Max. reach beyond wheels
3050 mm (120 in)

Grader blade	Alt. I (12' Sw. std.)	Alt. II (13' int. std.)
Blade length	3650 mm (144 in)	2960 mm (156 in)
Blade height with cutting edge	645 mm (25.4 in)	638 mm (25.1 in)
Replaceable side shift guides	2	2
Solid section, LxWxt	3340x100x30 mm (131x39x12 in) – solid steel	3562x100x30 mm (140x39x12 in) – solid steel
Blade thickness	18 mm (0.7 in)	22 mm (0.9 in)
Cutting edge, HxtxL	200x10x1219 mm (79x0.4x48 in) 3 pc.	6"x5/8"x6' 1 pc.
		6"x5/8"x7' 1 pc.

Hydraulic cutting angle adjustment
Min. 40°
Max. 105°
Max. outer slope angle 90°
Max. cutting depth under machine
570 mm (22 in)
Lifting height above ground at 40° cutting angle 530 mm (21 in)

Axles
Front axle
Heavy-duty curved front axle
Max. ground clearance 580 mm (23 in)
Oscillation ±15°

Drive axle
Drive axle – completely "floating" between differential and center tandem gear drive.

Drawbar
Solid beam of A-shape with six adjustable guide shoes which fix the rotation frame in the right position.
The front ball as well as the other ball studs are easy to replace without welding.
Sectional dimensions
150x70 mm (6 x 2.8 in)
Ball diameter 150 mm (5.9 in)

Frame
Frame section
Welded box-section construction from front plate to rear frame members.
Top and bottom plates – width x thickness 240x30 mm (9.4x1.2 in)
Side plates – height x thickness
205x20 mm (80x0.8 in)
Weight of section 184 kg (405 lb)

Rear section
Rear frame – two solid members
Height x thickness
220x80 mm (8.7x3.1 in)
Weight of section 2x138 kg (304 lb)/m

Tandem
Gear transmission
Height x width
576x128 mm (22.7x5.0 in)
Side plates, thickness
20 mm (0.8 in)

Steering
Front wheel steering:
Hydraulic steering with optional wheel-dependent emergency steering pump.
Steering angle, L and R 48°

Bogie steering
Bogie steering is based on a ball bearing race between the rear axle casing and the rear frame members. Turning is effected by means of two double-acting steering cylinders.
Steering angle, L and R 15°
Min. turning radius (outside of front wheels) with front wheels inclined, bogie steering and differential = 7.5 m (24.5 ft)

Tyres

Standard tyres SGGR	14.00–24/12
Alternative tyres	13.00–24
	16.00–24
	20.5–25

Brakes
Driving brakes
Four pneumatically operated drum brakes in dual-circuit system
L + R front bogie wheels
L + R rear bogie wheels
Working pressure – 6 bar

Parking brakes
Mech. wheel brake. Application force via spring.
Release force – compressed air

Hydraulic system
Dual circuits for control functions on L and R side of machine. Pilot-controlled hydraulic locks prevent unintentional movements.
Large range of movement tanks to long cylinder strokes and individually adjustable cylinder arms.
The circuits can be connected in parallel to obtain full power for operating certain functions by depressing a foot pedal while operating the lever. This provides double the flow.

Max. flow at 2300 rev/min	2x98 l/min
Max. working pressure	140 bar
Max. number of control valves	12

Two control valves have floating positions as standard

Volumes, liters (UK gal)

Fuel tank	224 (49)
Hydraulic system	160 (35)
Gear box	12.5 (2.7)
Drop box	5.6 (12.1)
Tandem box, each	12.5 (2.8)
Rear axle casing – centre gear drive	28.5 (6.3)
Worm gear- blade rotation	1.5 (0.3)
Engine-oil sump	17 (3.7)
Cooling system	36 (7.9)

Working weight
Including oils, coolant, full fuel tank, operator, 3960 mm (13 ft) blade with hydraulic side shift, wings (fenders) and 14.00–24/12 tyres.

Weight on front axle	4.1 tons
Weight on bogie	10.2 tons
Total weight	14.3 tons
Max. blade cutting pressure	7.0 tons

Implements

Hydraulic front blade	900 kg (1980 lb)
Windrow eliminator	500 kg (1100 lb)
Ripper	1000 kg (2200 lb)

Cab
Rubber-mounted safety cab with large glazed surfaces providing excellent visibility through tinted glass. Very low sound level.

Specifications, design and construction subject to alteration without notice.

VOLVO BM
VOLVO BM AB ESKILSTUNA, SWEDEN

Ref. No. 21 1 669 1266
ENGELSKA

5.4.77. Falkenbergs Tryckeri AB 77 606. Printed in Sweden.