THE BOLINDER-MUNKTELL
MOTOR GRADER

VHK 85

A new
Motor Grader
of
up-to-date
design
Now a successor to the well-known line of Bolinder-Munktell graders has arrived: the VH8 85. A large, heavy machine, completely redesigned and incorporating all the new features, the VH8 85 is proving its efficiency in both new-road construction and in maintenance work.

The generously powered new grader has tandem drive, large steering and driving wheels, and an appropriate wheelbase. The weight is balanced to provide correct blade pressure under all operating conditions. The blade lift, centre shift, and blade settings are designed to meet every requirement of new-road construction.

The mechanical power controls are simple, dependable and constructed for long life. Carefully chosen gear ratios make the controls easy to operate. The roomy cab provides comfort for the driver and a clear view of the blade. Thorough sound-proofing and an adjustable seat are additional features drivers will like.

The rugged construction of the VH8 85 promises that it will live up to the reputation for long life established by other Bolinder-Munktell road machines.

### Main Specification

- **Weight:**
  - **Weight without driver, fuel, scarifier, and window eliminator:** approx. 21,150 lb. (9600 kg.)
- **Engine:** Volvo Model D67A, 6-cylinder diesel with direct injection. Swept volume 6.73 litres, developed h.p. at 1600 r.p.m. 85 b.h.p.
- **Wheelbase:** 15' (4550 mm.)
- **Tire size:** front and rear wheels (13.02 — 24, 12-ply)
- **Tread:** front and rear wheels (6.11' (1550 mm.)
- **Turning radius:** 32'6" (9950 mm.)
- **Blade length:** 10' (3050 mm.)
- **Blade height:** 2' (600 mm.)
- **Blade lift above ground:** 1'8" (500 mm.)
- **Front wheels adjustable for lean:**
- **Tandem axle drive at rear wheels:**

- **Hydraulic foot brake with Hydrovac servo unit:** Mechanical power control for blade settings, front wheel lean, and scarifier (when the latter is included in the equipment.)

### THE VH8 85 BOLINDER-MUNKTELL MOTOR GRADER

#### Technical data

<table>
<thead>
<tr>
<th><strong>Weight</strong></th>
<th><strong>Engine</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>— without driver, fuel, scarifier, and window eliminator</strong></td>
<td><strong>Volvo Model D67A diesel with direct injection</strong></td>
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<tr>
<td>Total weight approx. 21,150 lb. (9600 kg.)</td>
<td>Number of cylinders ................. 6</td>
</tr>
<tr>
<td>Weight on front wheels 6,170 lb. (2800 kg.)</td>
<td>Bore and stroke — 4½&quot; x 5½&quot; (104.77 x 130 mm.)</td>
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<tr>
<td>Weight on rear wheels 14,980 lb. (6800 kg.)</td>
<td>Swept volume .............. 411 cu.in. (6.73 l.)</td>
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<tr>
<td>Blade load with 1,100 lb. (500 kg.) on front wheels</td>
<td>Compression ratio .................. 17:1</td>
</tr>
<tr>
<td>8,930 lb. (4050 kg.)</td>
<td>Developed h.p. at 1600 r.p.m. 85 b.h.p.</td>
</tr>
<tr>
<td>Percentage blade load with 1,100 lb. (500 kg.) on front wheels</td>
<td>Max. torque — 289 lb.-ft. (40 kgs.) at 1200 r.p.m.</td>
</tr>
<tr>
<td>.42 % of total wt.</td>
<td>Engine speed under centrifugal governor control from idling to 1600 r.p.m.</td>
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<tr>
<td>Unit pressure on 10-ft. blade (3050 mm.) with 1,100 lb. (500 kg.) on front wheels</td>
<td>Cylinder head: Overhead push-rod-operated valves, replaceable valve seats. Exhaust valve seats stellite-faced.</td>
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<tr>
<td>.75 lb./in. (13.25 kg/cm.)</td>
<td>Cylinder and pistons: Replaceable wet cylinder liners. Double gaskets between water jackets and crankcase. Aluminum-alloy pistons with three compression rings and two oil scraper rings. Top ring chromium-plated.</td>
</tr>
<tr>
<td>Blade load with front axle lifted</td>
<td>Crankshafts: A generously designed alloy-steel unit, hardened and tempered, dynamically balanced. Seven steel-backed lead-bronze main bearings. All journals induction-hardened.</td>
</tr>
<tr>
<td>10,820 lb. (4890 kg.)</td>
<td>Lubrication: Pressure lubrication to all crankshaft bearings, piston pins, valve mechanism, and timing gears. Self-cleaning section filter for lubricating oil.</td>
</tr>
<tr>
<td>Rear wheel load with 8,930 lb. (4050 kg.) on the blade</td>
<td>Hour recorder: Counts number of operating hours.</td>
</tr>
<tr>
<td>.11,130 lb. (5050 kg.)</td>
<td><strong>Transmission</strong></td>
</tr>
<tr>
<td><strong>Dimensions</strong></td>
<td><strong>—</strong></td>
</tr>
<tr>
<td>Overall length ........... 24'8&quot; (7520 mm.)</td>
<td><strong>Forward: Gear</strong> 1st 2nd 3rd 4th</td>
</tr>
<tr>
<td>Overall width .............. 7'4&quot; (2230 mm.)</td>
<td><strong>Speeds (m.p.h.)</strong> 2.2 3.2 4.4</td>
</tr>
<tr>
<td>Overall height including cab, 9'8&quot; (2950 mm.)</td>
<td>(km/h.) 3.5 5.2 7.1 9.0</td>
</tr>
<tr>
<td>Wheelbase between centre of transmission rear wheel shafts to front wheel centre —</td>
<td>Gear 5th 6th 7th 8th</td>
</tr>
<tr>
<td>18' (5500 mm.)</td>
<td><strong>Speeds (m.p.h.)</strong> 6.7 8.7 11.7 17.7</td>
</tr>
<tr>
<td>Tread, front and rear wheels, 6'1&quot; (1850 mm.)</td>
<td>(km/h.) 10.8 14.0 18.8 28.5</td>
</tr>
<tr>
<td>Tandem axle spacing, centre-to-centre —</td>
<td><strong>Reverse: Gear</strong> Low High</td>
</tr>
<tr>
<td>4'9&quot; (1450 mm.)</td>
<td><strong>Speeds (m.p.h.)</strong> 2.8 4.2</td>
</tr>
<tr>
<td>Min. turning radius (measured to outside of front tires, wheels vertical) —</td>
<td>(km/h.) 4.5 6.8</td>
</tr>
<tr>
<td>32'6&quot; (9900 mm.)</td>
<td><strong>Lower speeds available by throttle control.</strong></td>
</tr>
<tr>
<td>Blade to front axle .... 7'9&quot; (2360 mm.)</td>
<td><strong>Differential and differential lock</strong> The differential can be locked when necessary.</td>
</tr>
<tr>
<td>Ground clearance at middle of front axle —</td>
<td><strong>Wheels</strong></td>
</tr>
<tr>
<td>2' (615 mm.)</td>
<td><strong>Tire sizes, front and rear wheels —</strong></td>
</tr>
<tr>
<td><strong>Clutch</strong></td>
<td>3.00 — 24, 12-ply</td>
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<tr>
<td>14-inch heavy-duty double-plate type with clutch brake.</td>
<td>Front tires can be leaned; max. lean 25°. The tandem axles are chain-driven from the transmission rear wheel shafts. The axle housings are welded box sections.</td>
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</tbody>
</table>
| **Brakes** | **Hydraulic foot brake with Hydrovac servo unit:** 17" x 4" brake drums on rear wheels. Mechanical hand brake acting on same drums as foot brake.
Steering
Twin-and-twin-lever movement with roller-bearing-mounted studs provides exceptionally easy steering.

Main frame
Welded box-section unit with internal reinforcements. Frame flexure, measured by approved Swedish method, 1/8" (6 mm). The measurement is taken by stretching from the front axle to the rear axle housing a cord equal in length to the wheelbase. On a cord hanging plumb in the middle of the frame, the point of intersection with the horizontal cord is marked. The front end of the grader is then lifted by blade pressure, and the frame flexure is measured. Weight of frame per metre — approx. 330 lb. (150 kg.)
round-to-frame clearance — 4"/8" (1435 mm.)

Blade support circle
"Diameter — 10"/8" (1486 mm.)
circle centre to front axle centreline — 7"/1/2" (2173 mm.)
Rotatability in both directions — 360°
Construction: Welded box-section.
Induction-hardened pinion.
Circle setting in drawbar:
1. Circle thickness vertically adjustable up to 1/4" (6 mm.) with shims.
2. Circle centering horizontally adjusted with set screws.

Drawbar
Two welded box-section beams.

Blade dimensions
Length — 10" (3050 mm.)
Height — 2" (600 mm.)
Blade is reinforced with a welded box section on back.

Blade settings
Max. lift over ground at 30° cutting angle 1 1/8" (500 mm.)
Side shift, each side, in relation to circle 2 1/4" (840 mm.)
Max. cutting angle obtainable with toothed arm settings — 110°
Min. cutting angle obtainable with toothed arm settings — 60°
Max. side shift without resetting side shift rod and without resetting blade in relation to circle — 3 3/4" (1000 mm.)
Max. blade reach, measured from outside of wheels to blade tip, after resetting side shift rod and setting max. blade shift in relation to circle — 5 1/4" (1800 mm.)
Max. elevation, both sides — 90°
For bank cutting, the blade can be set at a 45° angle to the direction of travel, and can also be tilted 45°. The lower end of the blade is then on or outside a line connecting the outer edges of the front and rear wheels.

Controls
Mechanical power control through worm-and-gear lift driven by power control box.
Lifting speed per sec. — 3" (80 mm.)
Hardened steel worm, bronze gear.
Self-adjusting bronze life-arm shaft bearings.
Trim adjustment for play in ball-and-socket joint.

Universal joints
Needle-bearing type throughout, supplied by a leading maker.

Cab
The cab is standard equipment. Heater and defroster are available as extras.
Cab is of steel, has effective sound insulation and ventilator. The doors, which extend down to the floor, allow good visibility and make cab cleaning easy. All panes are safety glass.
The seat, which is adjustable up, down, and sidewise, accommodates three persons.
The blade and all controls are clearly visible from the seat. Control levers are readily accessible from both sitting and standing positions.
Floor area — 4 1/4"×2 1/2" (1270×750 mm.)
Height, ground to floor — 3 1/4" (1050 mm.)

Electrical equipment
Battery: 133 amp-hr. at 10-hr. discharge rate; voltage — 24
Cab lighting.
Front headlights — 2
Working headlights — 2
Rear headlights — 1
Red tail lights — 2
Car's-eye reflectors, front, white — 2
Car's-eye reflectors, rear, red — 2
Direction signals (blinker type) — 2
Horn — 1
Windshield wipers
Operated by vacuum tank and vacuum pump — 3

Tools
In tool compartment under driver's seat.

Extra Equipment
Scraper
For mechanical power control. Power control box has take-off for scraper, and scraper mountings are provided on grader frame.

Windrow eliminator
For hydraulic control.

Snow plough and other attachments
For mechanical or hydraulic control. Mounting plate provided at front end.

Hydraulic control system
For windrow eliminator, snow plough, and other attachments.

Cab heater and defroster

We reserve the right to change above specifications without previous notice.
The BOLINDER-MUNKTELL
Motor Grader for road con-
struction and maintenance

AB BOLINDER-MUNKTELL ESKILSTUNA SWEDEN