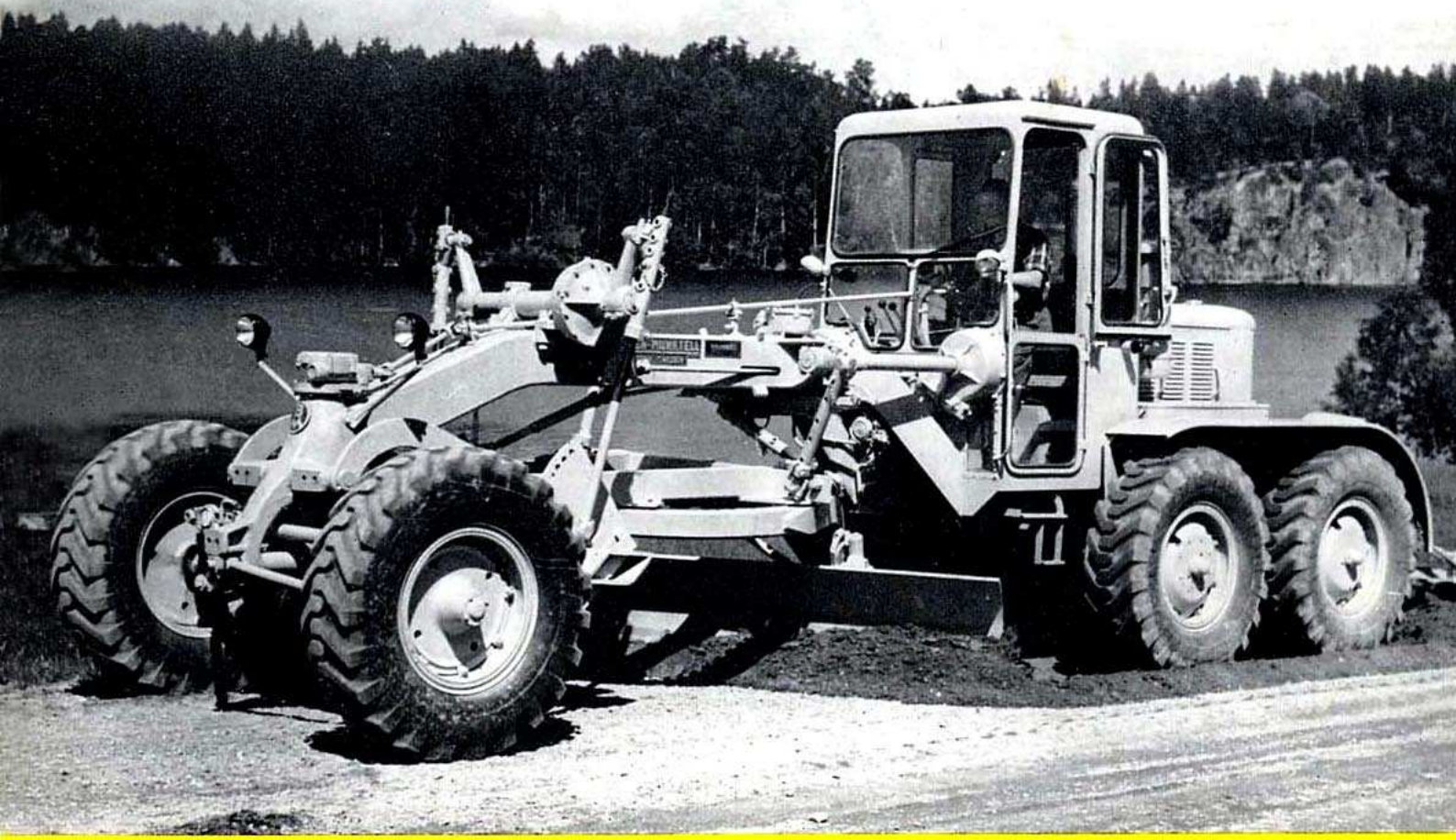
Bolinder-Munktell's road grader



The Bolinder-Munktell VHK 100 is a grader built for hard work on all kinds of jobs. Every component has been designed to take the heaviest stresses. Correct weight distribution allows full use of the lugging capacity of the powerful diesel engine, so that the VHK 100 has the pull you need on heavy construction projects.

The short wheel base and differential give the VHK 100 its characteristic small turning radius and manœuvrability. It "squeezes through" narrow, crowded streets and other tight spots—a big advantage in maintenance work.

All operating devices subject to heavy loads are mechanically operated. The grader blade, dozer blade, and scarifier won't "give" when they hit hard ground. You can do a perfect job even when working conditions vary.

More than 40 years of experience in the manufacture of road machines are built into the VHK 100. Bolinder-Munktell has designed and constructed this grader to the highest standards. That's the best guarantee of economical, reliable service and easy operation on all kinds of assignments.

VHK 100

Built for the needs of today and tomorrow

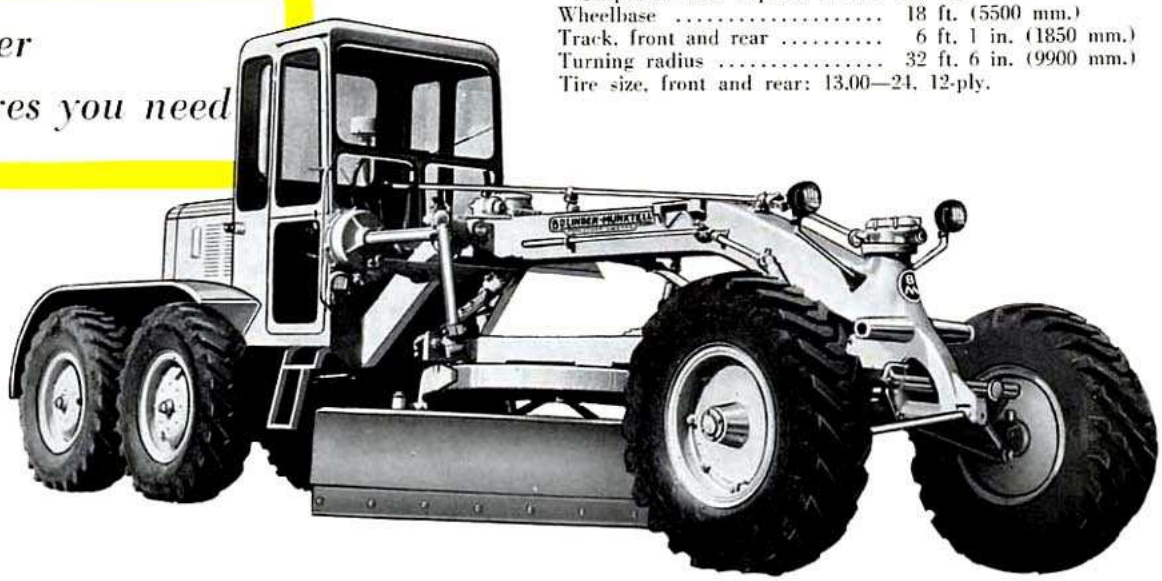
VHK 100

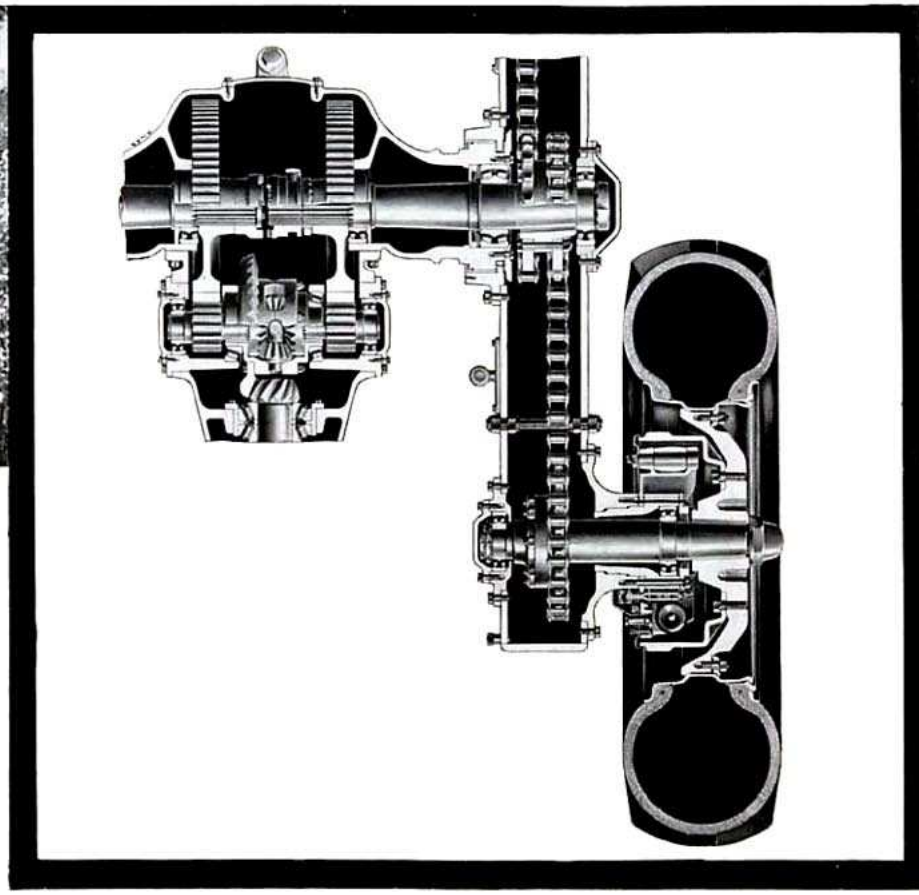
The road grader with the features you need

Principal Data

Weight, including scarifier and dozer blade approx. 24,800 lb. (11,250 kg.)

Weight with standard equipment approx.	22.000 lb. (9.800 kg.)
Engine: 6-cyl. Volvo direct-injection diesel. Model D67A. Output at 1900 r. p. m.	100 HP
Wheelbase	18 ft. (5500 mm.)
Track, front and rear	6 ft. 1 in. (1850 mm.)
Turning radius	32 ft. 6 in. (9900 mm.)
Tire size, front and rear: 13.00—24, 12-ply.	





Extra blade reach

The frame and circle construction and the arrangement of the controls give exceptional blade reach. The quick-acting control box saves valuable seconds in changing blade settings. It can operate the grader blade, scarifier, dozer blade, and wheel lean controls all at once, and still give you instant response. The tool-operating arms have replaceable bushings throughout and reliable Hardy Spicer joints.

An optional hydraulic side-shift saves time and trouble on jobs which require frequent blade shifting. The blade slides straight out to the side without any re-setting of the circle. The hydraulic side-shift gives you maximum use of the blade length, because the angle of the blade in relation to the frame does not change.

Differential makes driving easier, cuts tire wear

Tandem drive puts the full power of the engine to work. The bogie-mounted driving wheels follow all the "ups and downs" in the terrain. The chain drive, which runs in oil, is quieter, more efficient, and more durable than other types of drive.

The differential of the VHK 100 is an important reason for its small turning radius, effortless handling, and long tire life. The VHK 100 differential drives each wheel at its natural speed in the turns and does not chew up asphalt softened by warm weather.

On slippery ground, the driver locks the differential with a control in the cab. This makes the rear axles a rigid unit and distributes power evenly to all four driving wheels.

A speed for every job

The gearbox has a range of 8 well-spaced forward speeds and two speeds in reverse. All the forward speeds are constant-mesh, and a synchronizing clutch also facilitates shifting. At normal engine speed, the grader has a speed range from 2½ to 21 m.p.h. (4.1 to 33.8 km/h).

000 r.p.m., the lowest grader speed is about 1.2 m.p.h. (2 km/h.).

The rugged, long-wearing 14-inch double-plate clutch is self-adjusting.

Diesel engine with power to spare

The direct-injection 6-cylinder diesel engine is powerful, yet uses little fuel. It starts on diesel oil without any auxiliary devices.

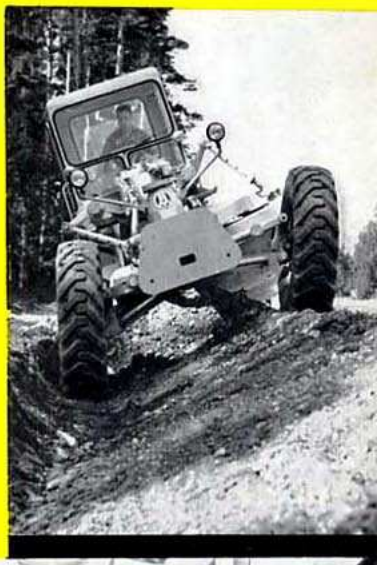
The sensitive centrifugal governor reacts quickly to changes on load. The exceptional lugging power of the engine allows pulling down to a low speed without shifting gears.

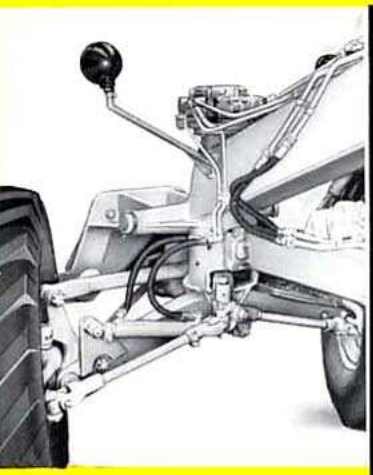
The fuel passes through four filters before it reaches the injectors.

Materials selected for durability are used in all engine parts, and the engine is generously dimensioned wherever this will contribute to long service life.

Same track front and rear

The VHK 100 has the same track and the same tires front and rear. In ditching and bank cutting, the three wheels riding the bottom of the cut brace against the wall, preventing side-sway and skids. Having only one tire size makes servicing easier, too.

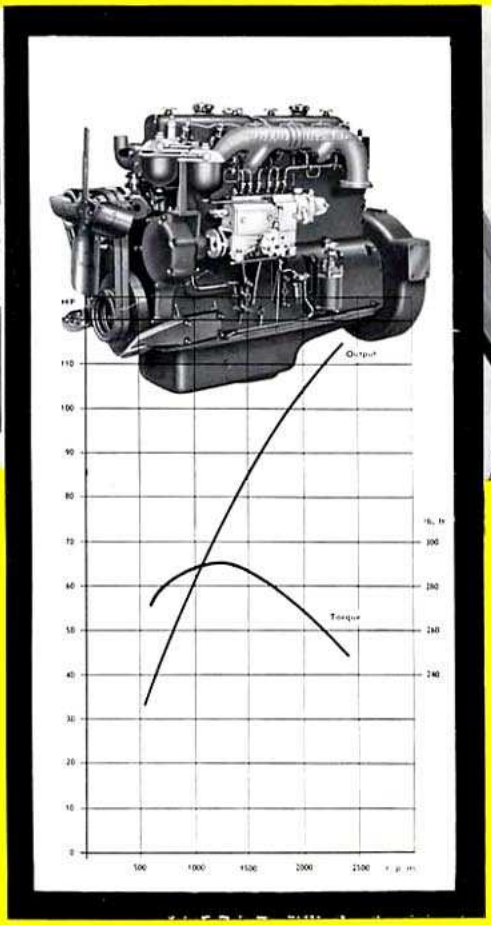




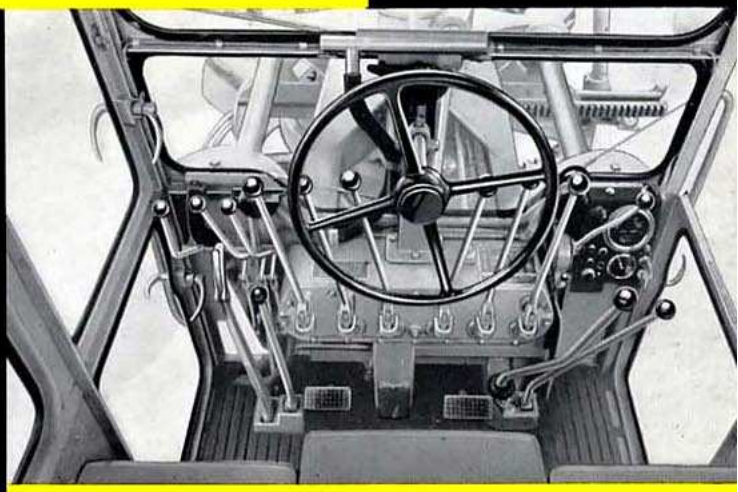
Easy steering

The cam-and-twin-lever steering gear has roller-bearing studs. The number of joints in the age has been kept to the minimum. These two features are important for easy-responsive steering. The gear is non-reversing; road shocks cannot be transmitted from the front wheels to the steering wheel.

Hydraulic servo-steering is optional on the VHK 100. In heavy dozing and other work which puts a severe load on the steering, the servo-steering combines the "feel" of positive mechanical linkage with the power of hydraulic control.



The torque is highest at 1200 r.p.m., varies only slightly at higher and lower speeds. This explains the excellent lugging performance of the engine.



Cab with closed-car comfort

The cab is carefully designed for the comfort of the driver. It is made of sheet steel, with inside walls of perforated sheet. Spun rock wool insulation keeps out cold and noise. Large windows of tempered glass provide excellent vision in all directions. The two-panel doors can be opened at top or bottom, and an adjustable ventilator is also provided. The seat can be shifted up, down, forwards and backwards, and the back rest is also adjustable. There is sitting room for three. The control levers are conveniently grouped and easy to reach in both the sitting and the standing positions.

The instrument panel has a vacuum gauge, ammeter, oil pressure gauge, water temperature gauge, and fuel gauge.

ECONOMICAL • RELIABLE • VERSATILE • EASY TO DRIVE

TECHNICAL DATA

Weight

Total weight including scarifier and dozer blade	**24,800 lb. (11,250 kg.)**
Total weight, standard	21,600 lb. (9800 kg.)
Weight on front wheels	6,280 lb. (2850 kg.)
Weight on rear wheels	15,300 lb. (6950 kg.)
Blade load with 1,100 lb. (500 kg.) on front wheels	9,250 lb. (4200 kg.)
Percentage blade load with 1,100 lb. (500 kg.) on front wheels	43 % of total weight
Unit pressure on 10-ft. blade (3050 mm.) with 1,100 lb. (500 kg.) on front wheels	77 lb/in. (13.75 kg/cm.)
Blade load with front axle lifted	11,250 lb. (5100 kg.)
Rear wheel load with 9,250 lb. (4200 kg.) on the blade	11,250 lb. (5100 kg.)

Dimensions

Overall length	24'8"	(7520 mm.)
Overall width	7'4"	(2230 mm.)
Overall height including cab	9'8"	(2950 mm.)
Wheelbase from centre between transmission rear wheel shafts to front wheel centre	18'	(5500 mm.)
Track, front and rear wheels	6'1"	(1850 mm.)
Tandem axle spacing, centre-to-centre	4'9"	(1450 mm.)
Turning radius (measured to outside of front tires, wheels vertical)	32'6"	(9900 mm.)
Blade to front axle	7'11"	(2420 mm.)
Ground clearance at middle of front axle	2'	(615 mm.)

Engine

Volvo, Model D67A diesel with direct injection.

Output at 1900 r.p.m.	100 HP
Output at 1600 r.p.m.	87 HP
Number of cylinders	6
Swept volume	411 cu.in. (6.73 l.)
Specific fuel consumption .... approx. 0.39 lb/b.h.p.h. (175 g/b.h.p.h.)	
Fuel tank capacity	33 gal. (150 l.)

Speeds (at 1900 r. p. m.)

Forward: Gear	1st	2nd	3rd	4th
Speeds (m.p.h.)	2.5	3.8	5.2	6.8
» (km/h.)	4.1	6.2	8.4	10.9
Forward: Gear	5th	6th	7th	8th
Speeds (m.p.h.)	8.0	10.5	13.8	21.0
» (km/h.)	12.8	16.8	22.2	33.8
Reverse: Gear	Low	High		
Speeds (m.p.h.)	3.2	5.0		
» (km/h.)	5.2	8.0		

Wheels

Tire sizes, front and rear wheels 13.00—24, 12-ply. Front wheels can be leaned: max. lean 23°.

Brakes

Hydraulic foot brake with Hydrovac servo unit: 17"×4" brake drums on rear wheels. Mechanical hand brake acting on same drums as foot brake.

Main frame

Welded box-section unit with internal reinforcements. Weight of frame per metre approx. ..... 330 lb. (150 kg.)
Ground-to-frame clearance .. 4'9" (1450 mm.)

Blade support circle

Diameter	4'10½"	(1486 mm.)
Circle centre to front axle centreline	7'½"	(2145 mm.)
Rotability in both directions	360°	

Blade dimensions

Length	10'	(3050 mm.)
Height	2'½"	(610 mm.)

Blade is reinforced with a welded box section on back.

Blade settings

Max. lift over ground at 35° cutting angle	1'7"	(470 mm.)
Side shift, each side, in relation to circle	2'9"	(840 mm.)
Max. cutting angle obtainable with toothed arm settings	95°	
Min. cutting angle obtainable with toothed arm settings	35°	
Max. side shift without resetting side shift rod and without resetting blade in relation to circle	3'3½"	(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	5'11"	(1800 mm.)
Max. elevation, both sides approx.	90°	

Controls

Mechanical power control through worm-and-gear lift driven by power control box.
Lifting speed per sec. ..... 3" (80 mm.)

Cab

Floor area .. 4'2"×2'5½" (1270×750 mm.)
Height, ground to floor 3'5½" (1050 mm.)

Electrical equipment

Battery: 133 amp.-hr. at 10-hr. discharge rate: voltage	24
Front headlights	2
Working headlights	2
Rear headlight	1
Red tail lights	2
Direction signals (blinker type)	2
Horn	1

Cab lighting

Windshield wipers

Operated by vacuum tank and vacuum pump 3

Tools

In tool compartment under driver's seat.

We reserve the right to change above specification without previous notice.

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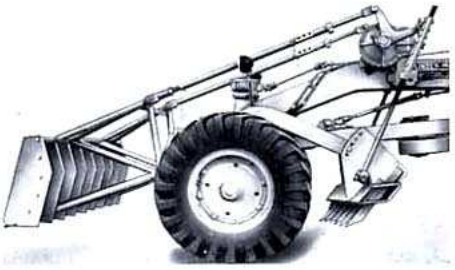
OTHER EQUIPMENT AVAILABLE

Scarifier

The vee-shaped scarifier has 11 sturdy teeth with wedge fasteners, which can quickly be replaced. The scarifier is operated by the same worm-gear control which operates the dozer blade, so that the two can be used alternately.

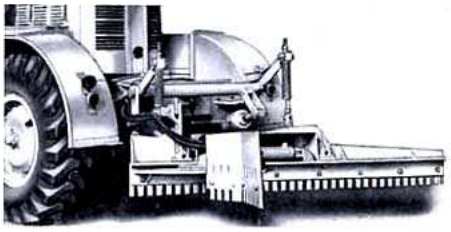


Dozer blade

Heavy steel construction, with reinforcing ribs on the back. Eight feet long, 33 inches high (2440×840 mm.). Dished bowl with removable side plates is an efficient earthmo

Windrow eliminator

Available in one-piece of swing-aside model, right-hand or left-hand. Hydraulic operation from cab. The swing-aside model can also be fitted with hydraulic swing control—a big time-saver on narrow roads and in heavy traffic.



Mounting plate

For front-end attachments.

Hydraulic control

For blade side-shift, windrow eliminator snowplough, etc.

Hydraulic auxiliary steering

Cab heater and defroster

Snowploughs

Engine heater

Rear power take-off

Hot-cupboard

For driver's lunch.

Trip meter

Blade extension

12-foot blade

Marking lamps

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