

BM-VOLVO

VHK 510

**HEAVY (16.6 - 20 TONS) BUILDING AND SNOW-
PLOUGHING ROAD GRADER**



**A HEAVY ROAD GRADER WITH
A HIGH TRACTIVE EFFORT
— YET EASY TO OPERATE**

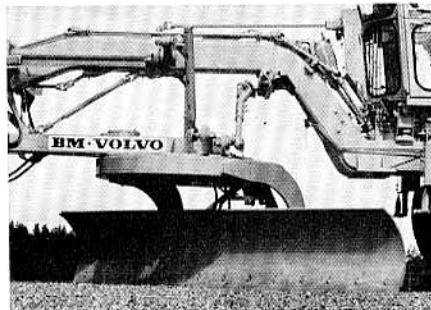
BM-VOLVO VHK 510

The BM-VOLVO VHK 510 is a heavy and robust road grader, designed and tested for truly tough duties. Its high capacity on demanding new construction work and road maintenance is combined with manoeuvrability, due to the small turning radius. The driver's cab has a very high standard of comfort. Sensibly arranged controls render the grader easy to operate. The sound level in the cab is below the ISO N 85 curve, thus helping to improve the job satisfaction and work capacity of the driver.

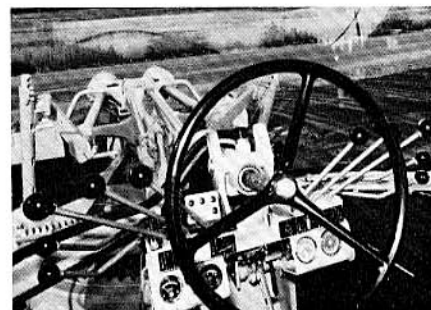
Excavation and high-speed snow-ploughing sometimes induce dynamic loads which cannot be calculated beforehand. As all other BM-VOLVO graders, the VHK 510 has replaceable ball studs and safety coupling for the swinging function of the grader blade, to reduce to a minimum the repair and idle time costs due to breakages and wear.



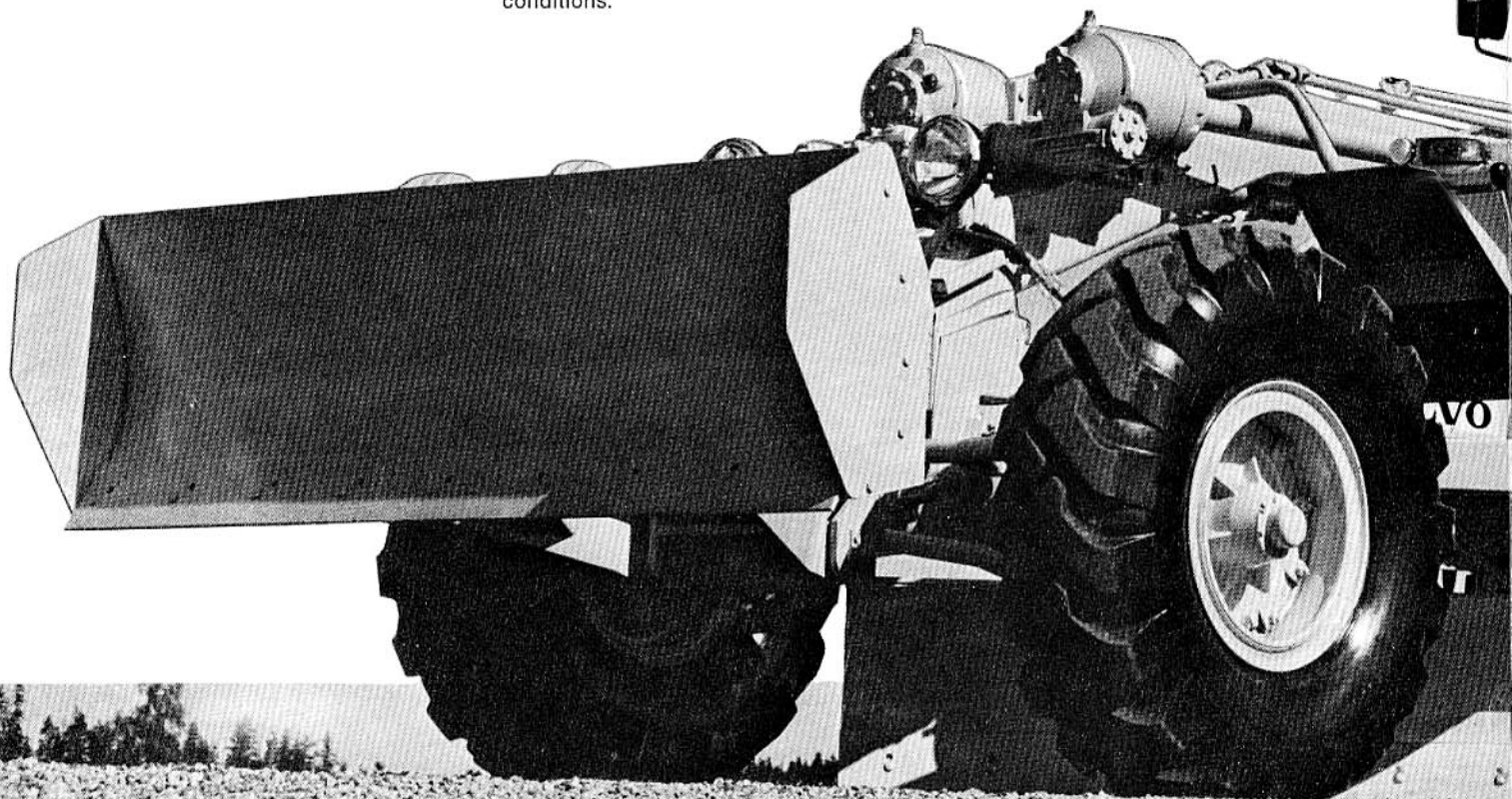
ROBUST FRONT END OF THE FRAME
The front end of the VHK 510 frame is specially designed throughout to cater for the heavy front implements that it often has to carry. The steering gear is mechanical with hydraulic servo assistance, to provide optimum safety in traffic. The front wheels can be inclined 18° in relation to the vertical plane and actuation is fully hydraulic.



STABLE GRADER BLADE
The machine can be equipped with a grader blade for flat or dished cutting blades. The guides and mountings for side displacements are provided with readily replaceable wear parts. The length of the blade is 13 ft. Hydraulic setting of the angle of attack is standard and provides scope for quick alteration of the angle to suit different operating conditions.

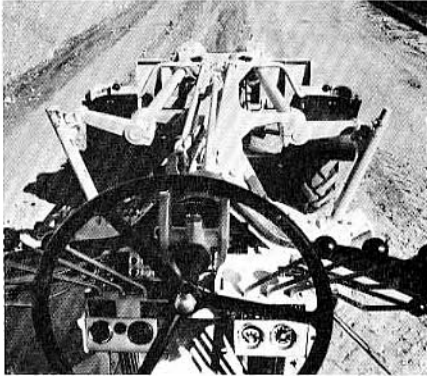


**WELL-ARRANGED CONTROLS
EASY TO OPERATE**
The machine is provided with fingertip controls for all functions. The hydraulic actuation of the implements is designed throughout to satisfy the requirements for the best possible reach, manoeuvrability, strength and accuracy. And at the same time, to make the job as easy as possible for the driver.



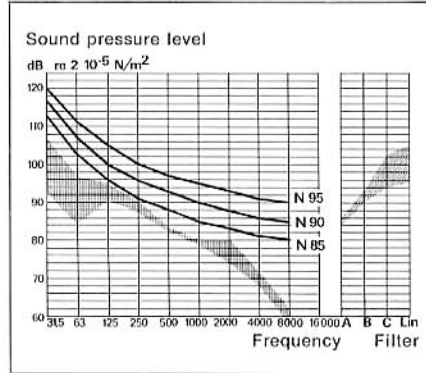
GOOD DRIVER COMFORT

The location of the driver in relation to the implements is such that he has the clearest possible view of the cutting blades of the dozer and grader blades. Owing to the excellent visibility, the driver can carry out all working operations while seated. The driver's cab in its entirety is extremely well planned.



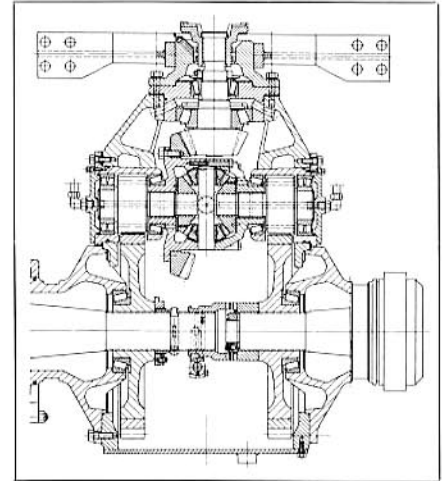
LOW NOISE LEVEL

The cab is designed and sound-insulated in accordance with the most recent experience concerning sound-absorbent materials, and is mounted on rubber elements. Measurements and frequency analyses of the noise in the cab of a VHK 510 show that the level is below the ISO N 85 curve.



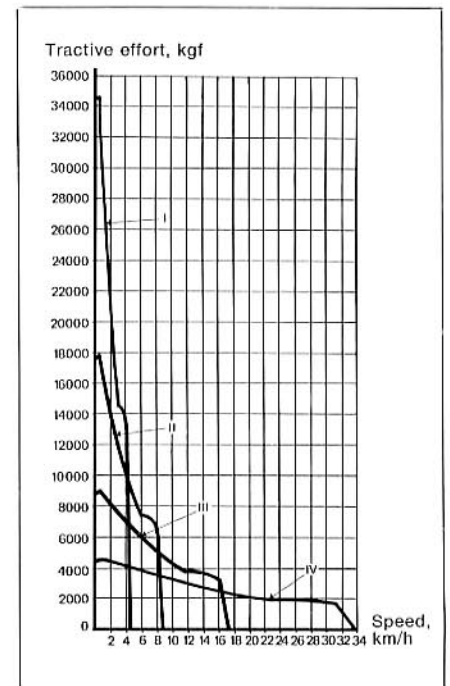
ROBUST DIFFERENTIAL AND DIFFERENTIAL LOCKS

The VHK 510 has a robust differential and substantial final reduction units. Owing to the provision of the differential, the turning radius is small (31 ft or 9.5 m), tyre wear is reduced, the loads on the axles and bearings are moderate and the rutting on hot tarmac is reduced to a minimum. The differential can be rendered inoperative by engaging the differential lock which improves the off-road performance of the machine.



HIGH POWER — HIGH TRACTIVE EFFORT

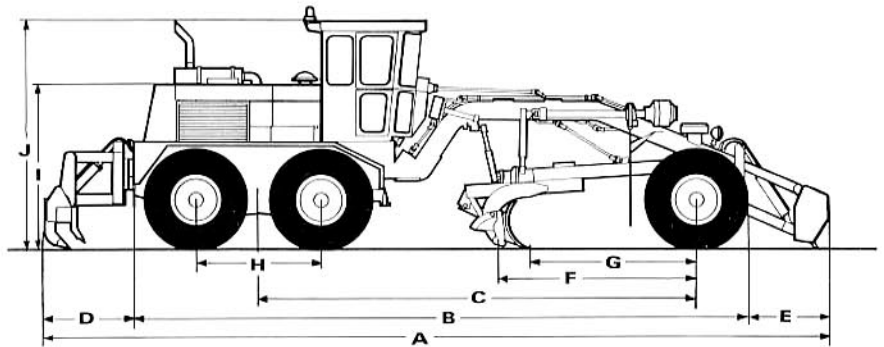
The VHK 510 has a high specific engine output per ton of machine weight. The TD 100 engine develops 13.2—16 hp/ton, depending on the equipment. In addition, the converter has a "lock-up" which is automatically engaged in each gear and allows the full output of the engine to be utilized and converted to a high grader capacity. The "lock-up" coupling is especially valuable during heavy-duty operation and during transport. As an example, the curve illustrates that, owing to the "lock-up" feature, the tractive effort in third gear decreases by only about 500 kgf between 11.5 and 16 km/h.



BM-VOLVO VHK 510

Dimensions

A in (mm)	424 (10 780)
B in (mm)	336 (8 530)
C in (mm)	235 (5 980)
D in (mm)	41.5 (1 050)
E in (mm)	40.5 (1 030)
F in (mm)	106 (2 690)
G in (mm)	91.5 (2 320)
H in (mm)	67 (1 700)
I in (mm)	87 (2 210)
J in (mm)	122 (3 100)



TECHNICAL DATA

Weights

Service weight without scarifier and dozer blade	lb (kg)	36 600 (16 600)
Rear wheels	lb (kg)	26 000 (11 800)
Front wheels	lb (kg)	10 600 (4 800)
Service weight with scarifier and dozer blade	lb (kg)	40 800 (18 500)
Rear wheels	lb (kg)	28 900 (13 100)
Front wheels	lb (kg)	11 900 (5 400)

Engine

Volvo direct-injection diesel engine	TD 100
Rating at 2 800 rev/min	
SMMT, SAE, DIN	250, 265, 230 hp

Gearbox

Hydraulically actuated multi-plate clutches power-shift

Power transmission

Converter	
Torque ratio	2.6:1
"Lock-up" with automatic engagement	

Speeds

Gears	Forward and reverse
1	0—2.7 miles/h (0—4.3 km/h)
2	0—5.3 " (0—8.5 ")
3	0—10.6 " (0—17.0 ")
4	0—20.5 " (0—33 ")
Speed range (idling to max. engine speed)	
forward/reverse	0—20.5 miles/h (0—33 km/h)

Steering

Mechanical steering with independent hydraulic assistance	
Turning radius	ft (m) 31.2 (9.5)

Tyres

Tyre sizes for front and rear wheels	
Standard	1 600×24

Brakes

Foot brake: Pneumatic servo
Brake drums on all tandem wheels
Handbrake: Mechanical

Frame

Design: Welded box-section construction
Ground clearance to underside of frame .. in (mm) 69.9 (1 775)

Circle

Diameter .. in (mm) 63 (1 600)
Mechanical rotation 360°
Teeth: case-hardened steel.

Grader blade (international standard)

Blade length .. in (mm) 156 (3 960)
Blade height .. in (mm) 24.5 (620)
Blade thickness .. in (mm) 0.87 (22)
Cutting blades .. 1—6"×⁵/₈"×6'
1—6"×⁵/₈"×7'

Lift above ground at 40° blade angle .. in (mm) 25 (635)
Max. reach outside rear wheels .. in (mm) 106 (2 690)
Lateral shift of circle .. in (mm) 40.5 (1 030)
Hydraulic lateral shift of blade .. in (mm) 56.5 (1 440)
Max. slope angle .. 90°

Grader blade (Swedish standard)

Blade length .. in (mm) 156 (3 960)
Blade height .. in (mm) 25.4 (645)
Blade thickness .. in (mm) 0.71 (18)
Cutting blades .. 2—200×8×1 200 mm (8×0.3×47)
1—200×8×1 500 mm (8×0.3×59)

Max. reach outside the wheels .. in (mm) 106.5 (2 710)

Liquid capacities

Fuel tank	Imp.gal. (l)	70.4 (320)
Cooling system	Imp.gal. (l)	7.7 (35)
Crankcase	Imp.gal. (l)	4.8 (22)
Gearbox	pt (l)	70 (40)
Tandem transmissions, each	pt (l)	62 (35)
Hydraulic system	pt (l)	102 (58)

Electrical system

Voltage	24 V
Alternator	800 W

Windscreen wipers

Electrically powered	3 wipers
Pneumatically powered	1 wiper

Driver's cab

Height of floor above ground	in (mm)	61 (1 550)
Thickness of curved windscreen of laminated glass	in (mm)	0.26 (6.5)
Thickness of other windows of toughened glass	in (mm)	0.18 (4.5)

OPTIONAL EQUIPMENT

Dozer blade

(hydraulically controlled)		
Weight	lb (kg)	1 980 (900)
Width	lb (mm)	96 (2 440)
Height	in (mm)	32 (810)
Plate thickness	in (mm)	0.47 (12)
Max. lift above ground	in (mm)	23 (585)
Cutting depth	in (mm)	9 (230)

Rear-mounted ripper

Actuation	2 hydraulic cylinders
Lifting rate	in/s (mm/s) 4.41 (112) at 2 000 rev/min
Cutting depth	in (mm) 14 (350)
Lift above ground	in (mm) 13 (330) with the teeth in working position
	in (mm) 26.5 (675) with the teeth raised
Effective width	in (mm) 83 (2 100)
Number of teeth	5
	5×2 in (125×50 mm)
Tips of teeth	Replaceable
Mountings provided for additional 11 smaller scarifier teeth	
Weight	lb (kg) 2 200 (1 000)

The specifications and the design are subject to alteration without prior notice.



BOLINDER-MUNKTELL

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