BM VOLVO

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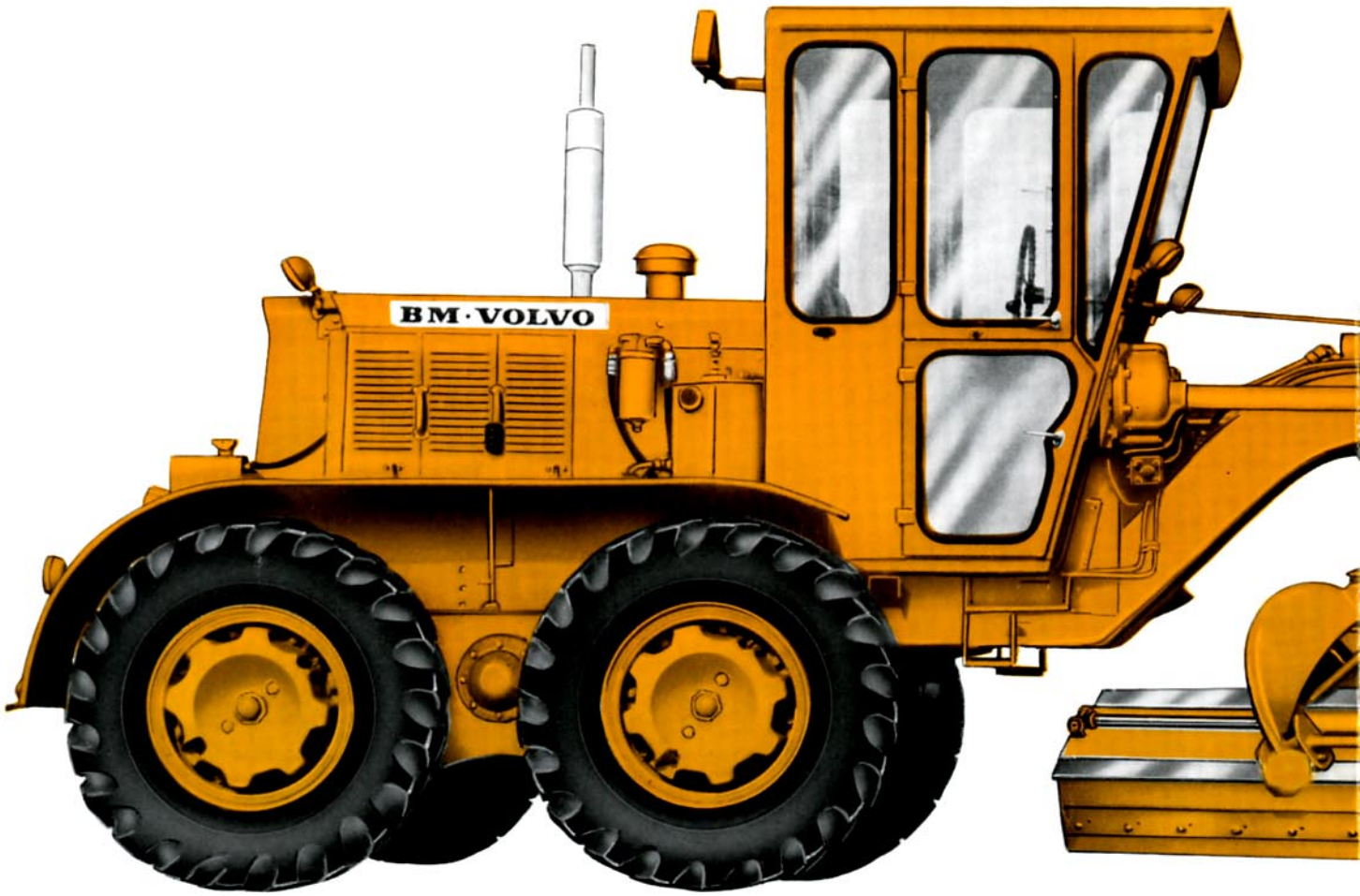
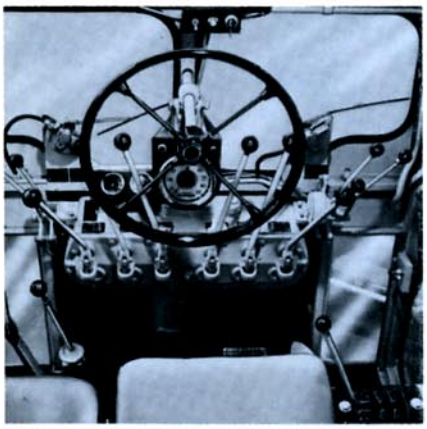
BM·VOLVO GRADER VHK 310



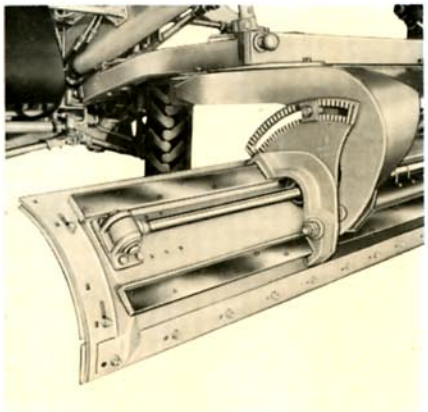
BM·VOLVO VHK 310

The BM·VOLVO VHK 310 is built for hard, fast work under widely varying conditions. The VHK 310 features hydraulic transmission and gear selection: no clutch pedal, better efficiency. The exclusive differential and a short wheelbase result in a tight turning circle and nimble handling. The carefully adjusted weight distribution helps utilise power resources to the full on difficult jobs. Mechanical controls for all implements subject to high stresses mean perfect performance in every situation. "Sogginess" is eliminated from the control systems, which are robustly and dependably constructed. The cab is isolated from chassis and engine by rubber cushions; in combination with careful insulation and good ventilation facilities this arrangement ensures driver comfort and maximum efficiency.

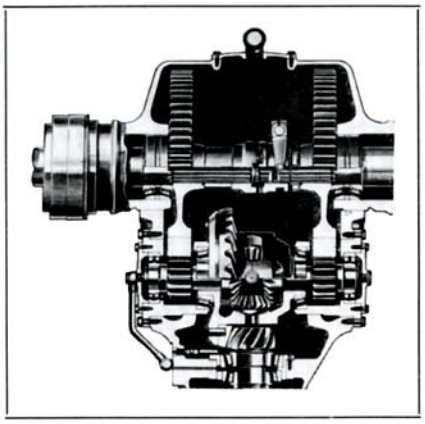


Controls are handily placed. From his comfortable adjustable seat the driver has good visibility in all directions.

Hydraulic-assisted steering retains mechanical "feel". The mechanical steering system works independently of the hydraulic servo system.

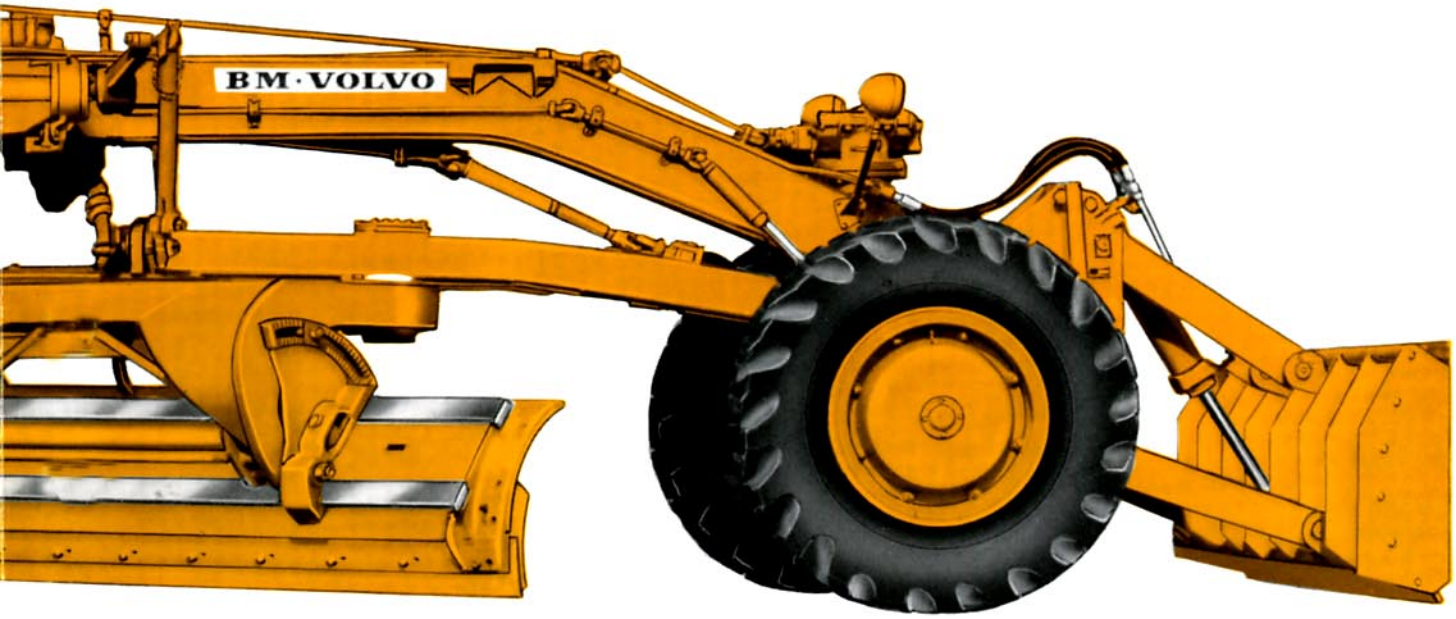


Mechanical implement controls mean precision. The grader blade edge and wear rails of the lateral adjustment guides are replaceable.

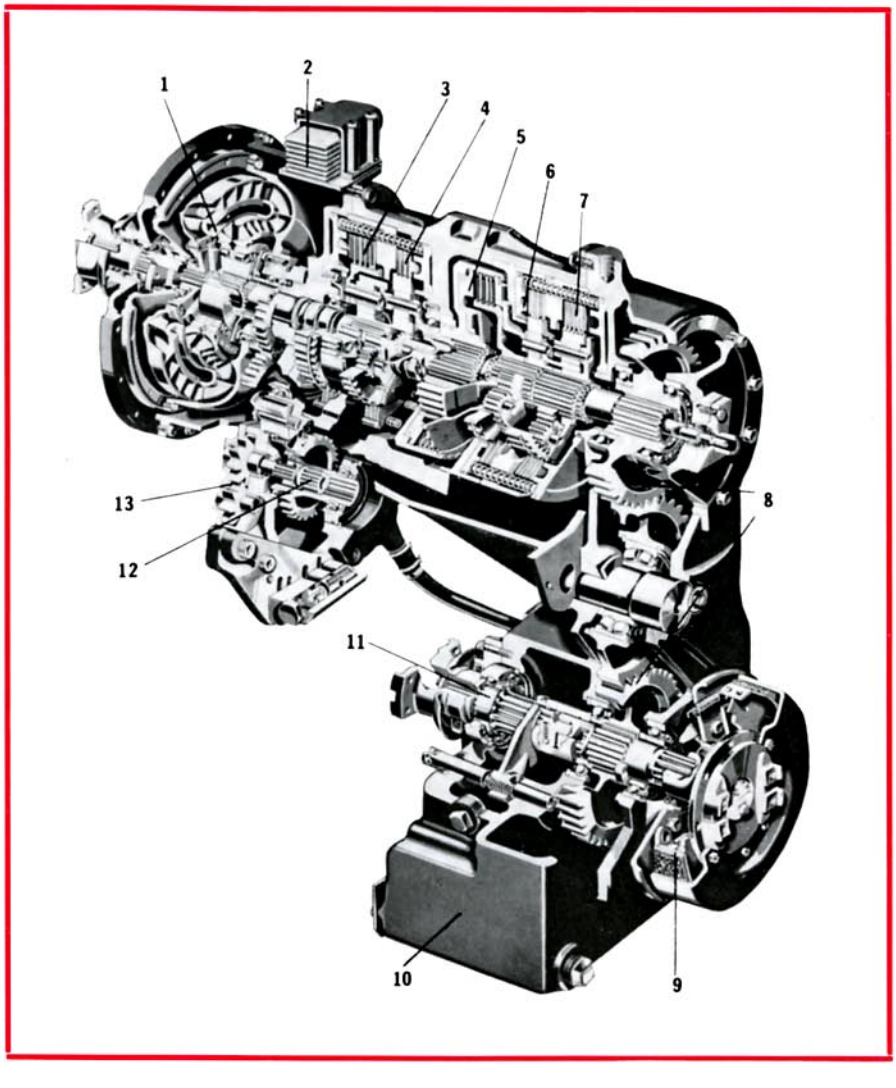


The differential reduces transmission stresses, turning circle and tyre wear.

a grader with differential and hydraulic transmission; fast, powerful and easy to operate



The hydraulic transmission is a compact assembly comprising a converter and a hydraulically-operated planetary gearbox. The converter is of multi-stage type, with a maximum torque conversion factor of 2.5. As input and output speeds approach the same r.p.m. the converter proceeds automatically to serve as a hydraulic coupling, with the considerably better efficiency resulting therefrom. The gearbox is of planetary type with hydraulically operated multi-plate clutches for each speed ratio. Gear shifting is possible while the grader is moving and with full torque load. The hydraulic transmission considerably simplifies the driver's job, provides gentle starting and eliminates shock loads.

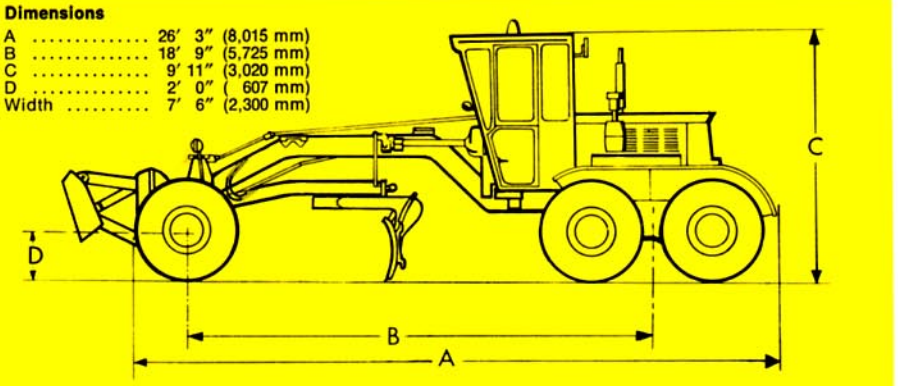


1. Hydraulic torque converter
2. Oil cooler
3. Reverse assy.
4. Forward assy.
5. Intermediate gear
6. High gear
7. Low gear
8. Power divider assy.
9. Parking brake
10. Oil sump
11. Output shaft
12. Drive for oil pump and optional equipment
13. Oil pump for converter

BM·VOLVO
VHK 310

Dimensions

A	26′ 3″	(8,015 mm)
B	18′ 9″	(5,725 mm)
C	9′ 11″	(3,020 mm)
D	2′ 0″	(607 mm)
Width	7′ 6″	(2,300 mm)



SPECIFICATION

Weights

Service weight without scarifier or dozer blade	lb. (kg) 26,135 (11,885)
Rear wheels	lb. (kg) 18,430 (8,360)
Front wheels	lb. (kg) 7,705 (3,495)
Service weight with scarifier	lb. (kg) 27,710 (12,570)
Service weight with scarifier and dozer blade	lb. (kg) 29,575 (13,415)

Engine

Volvo diesel, direct injection	Type D 70 A
Output at 2,400 r.p.m. SMMT/SAE/DIN, h.p.	137, 157, 141

Gearbox

Planetary type, with "Power-shift" hydraulically operated multi-plate clutches, make ..... Allison

Power transmission

Torque converter, make	Allison
Conversion factor	2.5

Speeds (full power)

	Forward m.p.h.	Forward km.p.h.	Reverse m.p.h.	Reverse km.p.h.
Gear 1	.3– 2.3	.5– 3.7	.3– 2.4	.5– 3.8
2	1.2– 6.2	2 –10	1.2– 6.4	2 –10.4
3	4.4–18.0	7 –29	4.4–18.6	7 –30

Speed range (idling to max. r.p.m.)

Forward	m.p.h. 0–18 (km.p.h. 0–29)
Reverse	m.p.h. 0–18.6 (km.p.h. 0–30)

Steering

Mechanical, with independent hydraulic servo
Turning radius ..... 29′ 6″ (9 m)

Tyres

Standard, front and rear wheels	1300×24/12
Optional, front and rear wheels	1400×24/12

Brakes

Foot-operated: Hydraulic with vacuum servo, Hydrovac, type, acting on 17″×4″ brake drums on the leading rear wheels.
Handbrake: Mechanical, acting on pinion shaft.

Frame

Type: Welded box section with internal Stiffening

Clearance from ground to frame underside:	5′ 0″ (1,525 mm)

Circle

Diameter	4′ ½″ (1,486 mm)
Mechanical rotation	360°

Teeth: Case-hardened steel

Grader blade

Length	12 ft. (3,650 mm)
Height with cutting edge, chordal dimension	22 in. (560 mm)
Cutting edge dimension, 2	6 in.×⅝ in.×6 ft.

Box-section reinforcement with guides on back of blade

Grader blade settings

Max. lift above ground w. standard tyres	21″ (550 mm)
Lateral shift of circle	3′ 3″ (1,000 mm)
Lateral shift of blade, hydraulic	4′ 4″ (1,320 mm)
Max. reach outside rear wheels	7′ 11″ (2,425 mm)
Attack-angle setting range	~~33–100°~~ 38–103°
Max. slope angle	90°

Driver's cab

Flat floor area	4′ 4″×2′ 3″ (1,320×680 mm)
Height of floor above ground	3′ 8″ (1,120 mm)
Inside height, floor to roof	6′ 3″ (1,900 mm)

Liquid capacities

Fuel tank	Imp.gal. (lit.) 48.4 (220)
Cooling system	Imp.gal. (lit.) 7.7 (35)
Crankcase	Ihp.gal. (lit.) 2.7 (12.5)
Gearbox	Imp.gal. (lit.) 11+6.2 (50+28.5)
Tandem transmission, ea	Imp.gal. (lit.) 5.5 (25)
Hydraulic system	Imp.gal. (lit.) (9.9 (45)

Electrical system

Voltage	24 V
Generator	600 W

Windscreen wipers

Vacuum powered

No.	3

OPTIONAL EQUIPMENT

Scarifier

Weight	lb. (kg.) 1,025 (465)
Shape	Vee
Effective width	4′ 1″ (1,235 mm)
No. of teeth	11
Tooth dim.	3″×1″ (75×25 mm)
Tooth pitch	4′ 7″ (120 mm)
Distance from scarifier to front axle	2′ 5″ (735 mm)
Max. cutting depth	8.5″ (215 mm)
Max. scarifier pressure	lb. (kg.) 8,820 (4,000)

Dozer blade

Weight incg. fixing plate	lb. (kg.) 1,875 (850)
Width	8′ 0″ (2,440 mm)
Height	2′ 8″ (810 mm)
Thickness	0.47″ (12 mm)
Max. lift above ground	2′ 7″ (790 mm)
Max. cutting depth	6.3″ (160 mm)

Dozer blade (hydraulic control)

Weight incg. fixing plate	lb. (kg.) 2,270 (1,030)
Width	8′ 0″ (2,440 mm)
Height	2′ 8″ (810 mm)
thickness	0.47″ (12 mm)
Max. lift above ground	18.5″ (470 mm)
Max. cutting depth	7.5″ (190 mm)

Windrow eliminator

Weight	lb. (kg.) 1,145 (520)
Effective width, max.	8′ 8″ (2,654 mm)
Distance from outside of tyre to outer edge of wing	22″–25″ (560–630 mm)
Roading width: Eliminator blade can be retracted entirely within overall width of grader	
Lift height	18″–19″ (450–485 mm)
Draught below ground level	6.5″–7.9″ (165–200 mm)
Attack angle of cutting edge	90–110°
Diagonal setting of edge relative to grader	25– 30°

The manufacturers reserve the right to change specifications without notice.

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