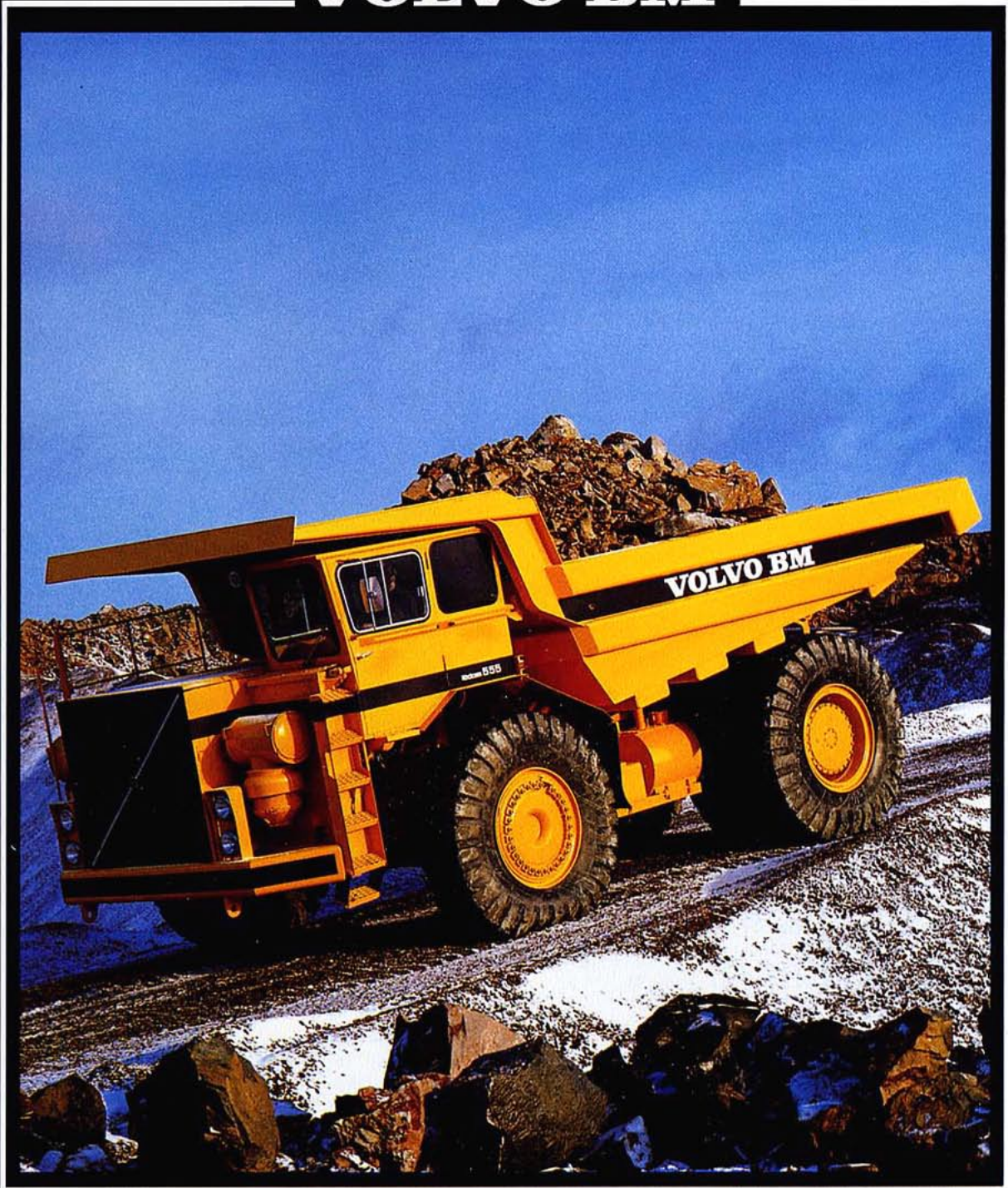


**Kockum 555**



**VOLVO BM**



# POWERFUL AND LIGHT FOR HIGH-CAPACITY

The Volvo BM Kockum 555 is a mighty workhorse, a true high capacity haulage vehicle. It offers the driver very high standards of comfort and is safe to drive. Because of its light weight in relation to payload capacity, the 555 gives you the highest levels of operating economy. How? Because it's carrying more weight when loaded and less weight when empty. That means less fuel and maintenance.

The low weight has been achieved by means of ingenious but simple fabrication design in conjunction with high grade materials. Also, this Volvo BM Kockum dumptruck is manufactured with the same high precision for which Volvo BM is renowned.

*The Volvo BM Kockum 555 gives you:*

- High payload in relation to tare weight — economy and capacity.
- High quality materials. Rock body as standard — reliability and long-life.
- Comfort and safety — improved driver efficiency.
- Easy access for servicing — more time on the job.
- Low load profile, small turning radius, rapid work cycles. Easy to load and drive.



# **LIGHTWEIGHT 555 HY HAULAGE**



# **MANOEUVRABLE, RELIABLE HIGH-CAPACITY MACHINE**

In the Kockum 555, we have combined very low tare weight with high payload capacity. The high load factor — 1.35 — means that the drumprtruck takes a payload of 1.35 tonnes per tonne of tare weight. The major contributors to this low tare weight are the newly designed frame and rock body. Using advanced computer-aided-design techniques we have determined all the static and dynamic stresses: we have tested, modified, retested and finally achieved the current low weight, high strength design.



## **ROCK BODY AS STANDARD**

This new lightweight rock body is built from a special high quality steel plate which fully meets the material requirements for wear resistance. (HB 360) and strength (yield strength 110 kg/mm<sup>2</sup>). Stress concentrations are eliminated and therefore also the risk of cracking.

### **Low load profile**

The body has a very well-balanced geometry that produces a compact high volume unit with a low loading height and a low centre of gravity.



# ADVANCED DRIVER'S STATION

The driver has excellent visibility from his driving position with a clear view across the full width of the truck. The cab is light and airy with large tinted windows.

## Roomy and easy to work in

The cab is roomy with well-planned detail. The seat is fully adjustable according to the driver's weight and height. It is hydraulically sprung, damped and fitted with armrests. The cab is snug, with linings of soft, cushioning material.

## Eminently driveable

The 555 is easy to drive and highly manoeuvrable thanks to a small turning radius and its sure-footed performance on both poor surfaces and steep grades. It is fast — 60.4 km/h — on a level road.

## Engine

An excellent power-to-weight ratio is achieved by the 496 kW (674 hp SAE) engine. A powershift gearbox with torque converter and lock-up, ensures that the power is used most effectively.

## Braking

This consists of a dual-circuit brake system with a retarder installed between the torque converter and the gearbox. Safe, proven and effective.

## Steering

The steering system is hydromechanical, i.e. full power steering in combination with mechanical coupling between the steering wheel and the road wheels. This system provides a good "feel" for the surface and sure manoeuvring.



Suspension unit  
Hydropneumatic suspension units all around.

# EASY TO SERVICE



### Easily accessible engine

Both engine and gearbox are easily accessible through large side panels and bonnet. Extensive standardisation means that very few tools are required for maintenance.

### Simple maintenance of the suspension units

The four hydropneumatic suspension units are identical. Their design is simple with removable end covers. No welded joints whatsoever.

### Tightly grouped electrical system

The electrical system is based on printed circuit boards, which are grouped at one easily accessible point in the cab. This means fewer contact points, easier fault tracing and greater reliability.



## ENGINE

Standard

Detroit diesel 16V 71 TV 70, 2-stroke direct-injected turbocharged diesel engine.

Gross rating	496 kW at 35 rps SAE J 270 (674 hp at 2100 rpm SAE)
Flywheel rating	460 kW at 35 rps DIN 70020 (625 hp at 2100 rpm DIN)
Max. torque	2492 Nm at 27 rps SAE J 270 (1839 lbf ft at 1600 rpm SAE) 2363 Nm at 20 rps DIN 70020 (1744 lbf ft at 1200 rpm DIN)
No. of cylinders	16
Bore	108 mm (4.25 in)
Stroke	127 mm (5 in)
Displacement	18.6 litres (1135 in <sup>3</sup> )
Compression ratio	17:1
Automatic cold starter	Automatic ether injection
Air filter	Cyclone cleaner, primary and secondary filter of paper type
Radiator fan	Suction fan mounted on engine

## ENGINE

Option 1

Cummins VTA 1710-C 675, 4-stroke direct-injected turbocharged diesel.

Gross rating	497 kW at 35 rps SAE J 270 (675 hp at 2100 rpm SAE)
Max. torque	2754 Nm vid 25 rps SAE J 270 (2033 lbf ft at 1500 rpm SAE)
Displacement	28 litres (1708 in <sup>3</sup> )



## ELECTRICAL SYSTEM

Voltage	24 V
Battery capacity	150 Ah
Alternator	1560 W
Starter motor	9.6 kW (13 hp)



## TRANSMISSION

Torque converter, type	Allison TC 680 with lock-up
Torque multiplication ratio	max 2.24:1
Gearbox	Allison CLBT 6061 with electric shift and built-in retarder: braking effort 600 hp at 2100 rpm

Top speed

Gear	km/h	mph	Ratio
1st	10.1	6.3	4.000:1
2nd	15.1	9.4	2.684:1
3rd	20.1	12.5	2.013:1
4th	30.0	18.6	1.351:1
5th	40.5	25.2	1.000:1
6th	60.4	37.5	0.671:1
Reverse	7.9	4.9	5.120:1



## BRAKE SYSTEM

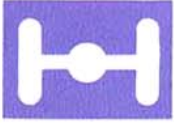
Retarder incorporated in transmission and air-hydraulic operated brakes  
Front: disk brakes  
Rear: drum brakes

Service brake 1	Hydrodynamic retarder incorporated in gearbox
Service brake 2	2-circuit air-hydraulic operated wheel brakes
Circuit division	Circuit 1 supplies the front brakes Circuit 2 supplies the rear brakes
Parking brake	Spring-actuated, mounted on propeller shaft



## WHEELS

Rims 15.00 x 35  
Tyres 21.00 x 35



## AXLES

Fully floating drive axle with planetary hub reduction

Front axle

Welded box beam carried in hydro-pneumatic suspension units

Rear axle

Welded axle bridge carried in hydro-pneumatic suspension units

Reduction ratio, total in rear axle

17.48:1



## STEERING SYSTEM

Hydraulic power steering with mechanical return

Make

ZF

Lock-to-lock turns

3.5

Steering cylinder, type

2 double-acting

Hydraulic pumps

Gear pump, driven by SAE 8 power take-off from gearbox

Filter

1 paper filter with magnetic core

### Manoeuvring data

Minimum turning radius

8920 mm (29 ft 3 in)

Minimum sweep radius

9960 mm (32 ft 8 in)

left turn

right turn

10100 mm (33 ft 2 in)



## HYDRAULIC SYSTEM

Hydraulic pumps, engine-dependent

Type

Gear pump, drive by SAE 8 power-take-off from gearbox

Number

1

Capacity

5.08 l/s (1.1 UK gal/s, 1.3 US gal/s) at 43 rps = 305 l/min (67 UK gal/min, 81 US gal/min) at 2570 rpm

Working pressure

21 MPa (3045 psi)

### Drive system

Type

Gearbox-mounted power take-off

Make

Type SAE 8

Number of pump take-offs

2 (2 are utilized)

Filter

1 paper filter with magnetic core



## TIPPING MECHANISM

Tipping cylinder

Two 3-stage telescopic cylinders. The last two stages are double-acting.

Tipping time with load

15 s

Lowering time

15 s

Tipping angle

55°

Tipping stop

Incorporated in tipping cylinders



## PNEUMATIC SYSTEM

Compressor: Capacity

9.5 l/s (2.1 UK gal/s, 2.5 US gal/s) at 35 rps = 570 l/min (125 UK gal/min, 150 US gal/min) at 2100 rpm

Drive

Driven directly from engine

Automatic frost protection pump

Pressure regulator: Relief pressure

Actuate 6.6 bar (96 psi) Relief 7.6 bar (110 psi)

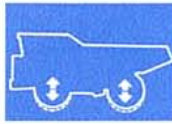
Compressed air reservoir: Volume

60 + 60 + 20 = 140 litres (31 UK gal, 37 US gal)



## FRAME

Kockum's unique frame construction is based on welded box beams which run from front bumper to rear axle with no intermediate joints



## SUSPENSION

### Front and rear axles

Hydropneumatic suspension units. Same suspension units on front and rear axles.



## SERVICE REFILL CAPACITY

Engine oil, incl. filter,

Litres

UK gal

US gal

total

75

16.5

19.8

at change

75

16.5

19.8

Cooling system

142

31.2

37.5

Fuel tank

1100

242

291

Gearbox

80

17.6

21.1

at change

45

10

12

Drive axle

75

16.5

19.8

Hydraulic system

250

55

66

Brake fluid tank

2.5

0.6

0.7



## CAB

Steel cab, mounted on rubber pads.  
Heat and sound insulated. Heating and defroster system. Adjustable driver's seat with armrests and lap belt.

Number of exits	One door and emergency exit via window
Driver's seat	Seat adjustable to driver's weight with armrests and lap belt
Extra seat	Seat for passenger
Internal sound level	Approx. 80 dB (A)



## WEIGHTS

Working weight (driver, oils, coolant, full fuel tank and rock body)

		Front axle	Rear axle	Total
Unladen machine,	kg (lb)	19200 (42329)	17800 (39242)	37000 (81571)
Payload	kg (lb)	9800 (21605)	40200 (88626)	50000 (110231)
	sh. tons		55.0	
Total weight, kg (lb)		29000 (63934)	58000 (127868)	87000 (191802)

$$\text{Load factor} = \frac{\text{Payload}}{\text{Unladen weight}} = \frac{50000}{37000} = 1.35$$



## DUMPER BODY

Basic body

Body volumes (SAE 2:1\*)

Volume struck, m <sup>3</sup> (cu. yd)	22.5 (29.4)
Volume heaped, m <sup>3</sup> (cu. yd)	33.5 (43.8)

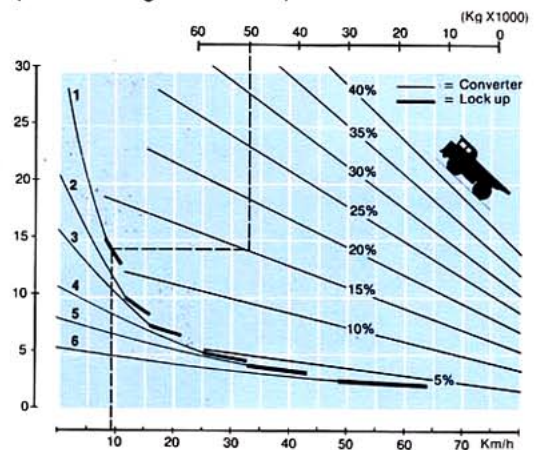
### Material

Hardened and tempered abrasion-resistant steel plate with yield strength of 110 kg/mm<sup>2</sup>.  
Hardness min 360 HB

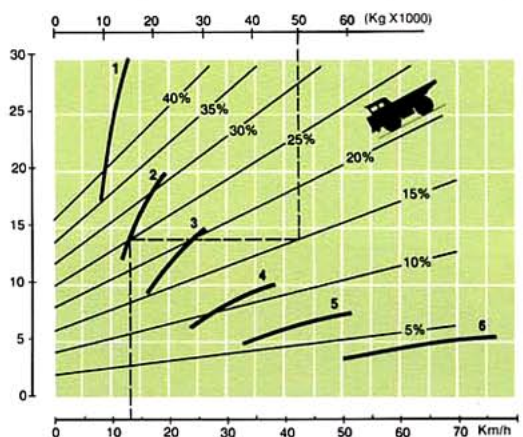
Plate thickness	in bottom	20 mm (0.8 in)
	in sides	10 mm (0.4 in)
	in front	10 mm (0.4 in)
Weight		9300 kg (20503 lb)

\*) Volumes below 10 m<sup>3</sup> are given to one decimal place.  
Volumes of 10 m<sup>3</sup> or more are rounded off to the nearest 0.5 m<sup>3</sup>.

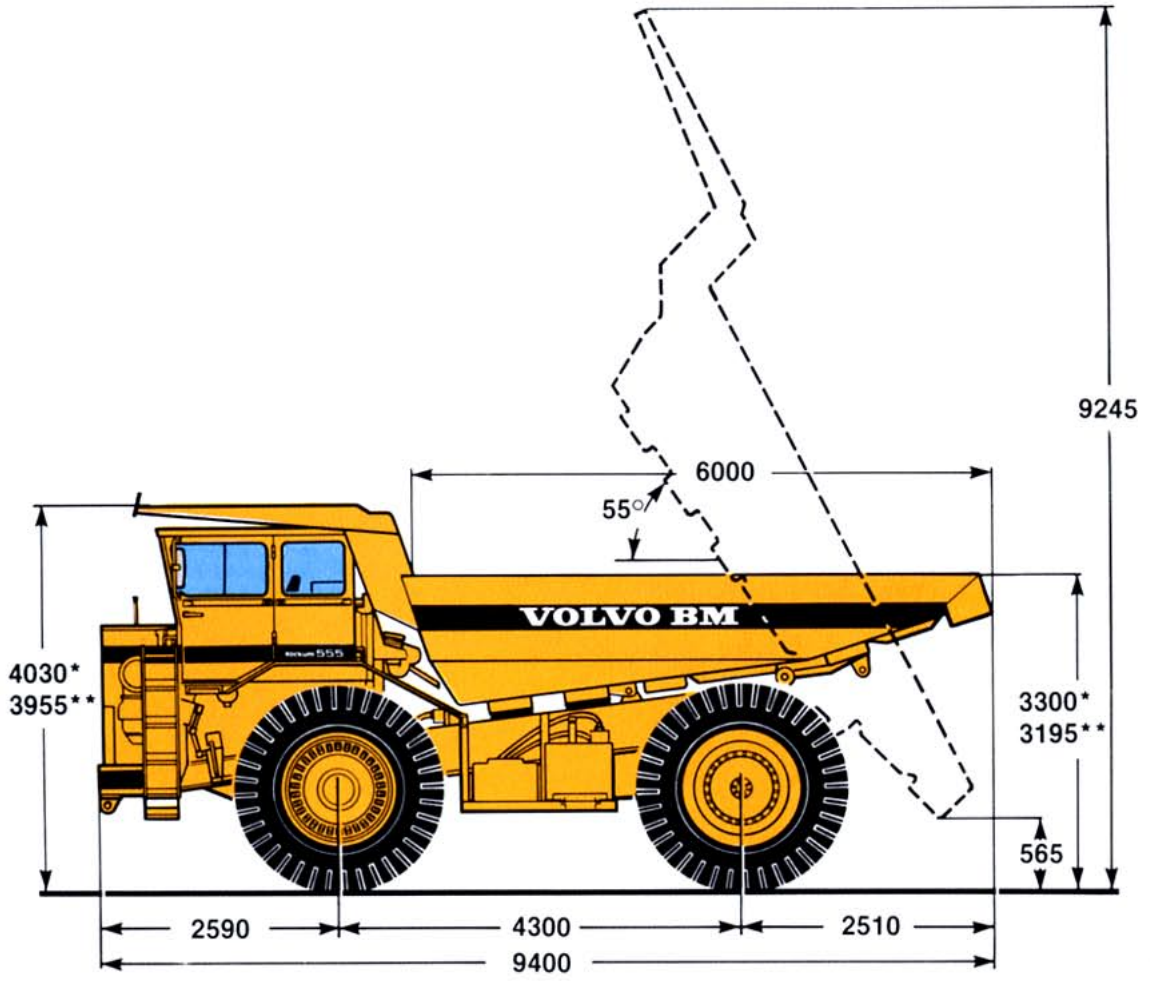
## Tractive force graph (excl. rolling resistance)



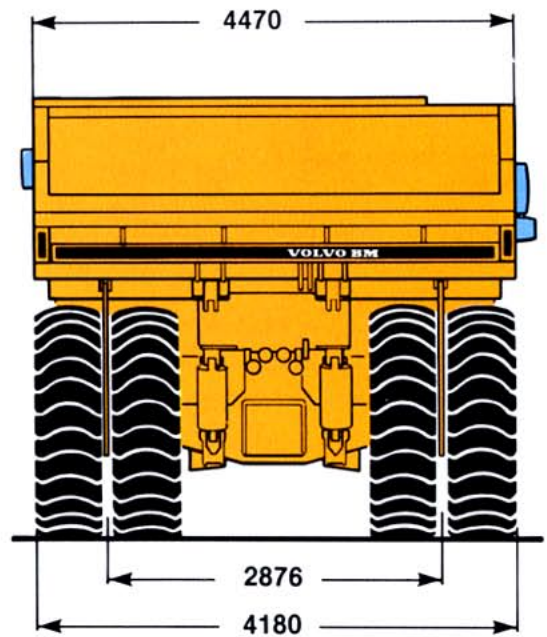
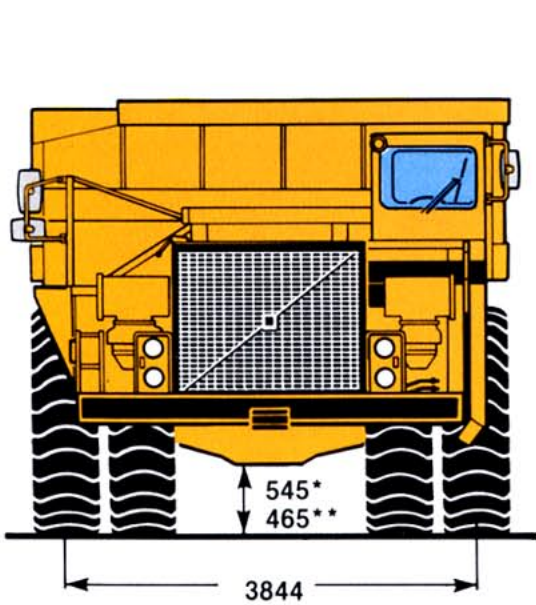
## Braking effort graph (excl. rolling resistance, incl. engine brake)







\* Utan last  
 \*\* Med last



# STANDARD EQUIPMENT



## SAFETY & COMFORT

- Cab heating with filtered fresh air intake and defroster
- Ergonomically designed and adjustable driver's seat
- Windshield wipers
- Windshield washers
- Rear-view mirrors
- Sun visor
- Lap belt
- Cigarette lighter and ashtray
- Tinted glass
- Horn
- Lights: headlights, bright/dim/asymmetric curve and fog lights
- parking lights
- reversing lights
- direction indicators
- reverse beams
- brake lights
- tail lights
- cab lighting
- instrument lighting
- Indicator for air cleaner
- Tyre inflation kit
- Speedometer
- Tachometer
- Anti-theft lock
- Passenger seat
- Hazard flashers
- Rock ejectors



## ENGINE & ELECTRICAL SYSTEM

- Alternator
- Pilot lamps for: parking brake bright lights hazard flashers charging engine oil pressure lock-up lap belt
- Instruments: hour counter air pressure gauge (2 circuits) engine oil pressure gauge coolant temperature gauge gearbox oil pressure gauge gearbox oil temperature gauge tachometer speedometer



## BODY EQUIPMENT

- Body heating (exhaust gas)
- Rock body
- Lock in tipped position



## TRANSMISSION

- Torque converter
- Power-shift gearbox
- Automatic lock-up

## EXTRA EQUIPMENT

(Standard equipment on certain markets)

- Heated rear-view mirrors
- Heated driver's seat
- Air conditioning
- Tachograph
- Fenders
- Electric engine preheater
- Radio
- Elevated body
- Rubber-lined body
- Emergency steering
- Spare wheel
- Silencer
- Reversing alarm

# VOLVO BM

VOLVO BM AB ESKILSTUNA SWEDEN

*Under our policy of continual product improvement, we reserve the right to change specifications and design without notice. The illustrations do not necessarily show the standard version of the machine*

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