

VOLVO BM

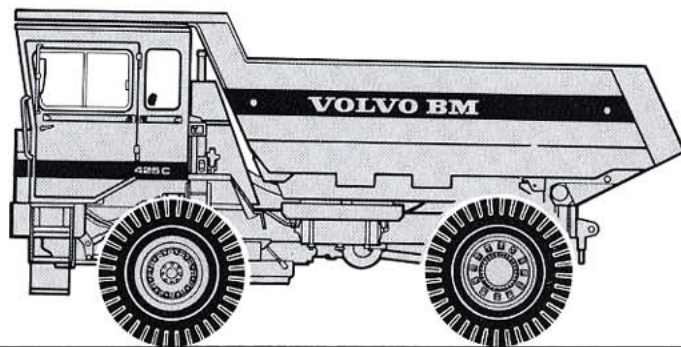
425 C



425 C, A FAST, POWERFUL AND AGILE HAULAGE MACHINE

The new 425 C is the smallest of Volvo BM's rigid dumptrucks and is built for high work-pace applications. This tough, powerful little workhorse is capable of high average speeds. This, together with its compact design and high manoeuvrability makes the 425 C a particularly effective hauler for mines, tunnels and open-cast workings. Because production efficiency in a haul system can be greatly affected by the attitude and enthusiasm of drivers, their work environment deserves special consideration.

The driver of 425 C operates in a well equipped, superbly comfortable cab which is both safe and snug. The machine's simple, rugged, reliable design is the result of the very latest engineering technology which also contributes to low maintenance demands. All these factors add up to higher machine availability, optimum production capability and lower operating costs.



Advantages - 425 C

- Low load profile - easy to load.
- Small turning radius - manoeuvrable.
- Rock body as standard - low maintenance requirement.
- Easy to care for - more time for useful work.
- Powerful - quick on the upgrade.
- Comfortable cab - safe and easy to drive.

POWER - THE BASIS OF HIGH PRODUCTIVITY

The powerful Volvo TD 121 G diesel, with its 213 kW (290 hp) SAE, gives the 425 C ample speed and lugging resources. This is particularly important in tunneling, where much of the fully laden haulwork is on long uphill grades. The secret of the 425 C's light weight and strength is a combination of clever fabrication design, high strength materials and high quality workmanship. This enables the 425 C to carry larger payloads because it's not lugging around unnecessary machine weight. Power is transmitted from the engine via a torque converter with "lock-up" (direct drive), or through a fully automatic gearbox leaving the driver free to concentrate on driving, without having to think about gear changing.



EASY - TO - LOAD ROCK BODY

The new body takes 15 m³ (19,6 yd³), heaped as per ISO. Minimum tare weight was our prime objective, achieved through the use of high grade steel and the sparing use of metal in the new design concept. The result - a strong, lightweight standard body with a low profile for easy loading. A good dump angle gives fast discharge and exhaust gas heating prevents difficult materials from sticking.



EXEMPLARY WORKING ENVIRONMENT

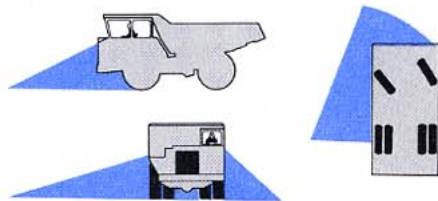
The driver has excellent visibility from his driving position, with a clear view across the full width of the truck.

Roomy and easy to work in

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

Eminently driveable

The 425 C is easy to drive. It is agile and efficient both on poor surfaces and on steep gradients. It is also fast – 58 km/h – on a level road.





ENGINE

Volvo TD 121 G, a 6-cylinder, inline, direct-injected turbocharged 4-stroke diesel engine with wet, replaceable cylinder linings.

Air filter: Cyclone cleaner, main filter of paper type and catch-all safety filter.

Cold starter boosts fuel injection and incorporates starting element to preheat intake air.

Gross rating	r/s (r/min)	35 (2100)
SAE J 1349 Brutto	kW (hk)	213 (290)
Flywheel rating	r/s (r/min)	35 (2100)
DIN 70020 / 6271	kW (hk)	200 (272)
Max. torque	r/s (r/min)	20 (1200)
SAE J 1349 Brutto	Nm (lbf ft)	1130 (833)
DIN 70020 / 6271	Nm (lbf ft)	1060 (782)
No. of cylinders		6
Displacement	dm ³ l (in ³)	12,0 (732)
Bore	mm (in)	130 (5,12)
Slaglängd	mm (in)	150 (5,91)
Compression ratio		14,2:1



ELECTRICAL SYSTEM

The electrical system, based on printed circuit boards, is concentrated at one point in the cab.

This means fewer contact points, easy fault-tracing and greater reliability.

Batteries	No.	2
Voltage	V	24
Battery capacity	Ah	160
Generator rating	W/A	1260 / 55
Starter motor power	kW (hp)	4,8 (6,5)



DRIVETRAIN

Transmission: Automatic planetary-type gearbox with built-in retarder.

Drive axle: Fully floating drive axle with planetary hub reduction.

Torque converter		Allison
		TC 490
Torque multiplication		2,46:1
Transmission		Allison
		CLBT 754
Speed		
Gear	1	km/h (mile/h)
	2	11,2 (6,9)
	3	18,2 (11,3)
	4	28,7 (17,7)
	5	42 (26,0)
Reverse		58 (35,9)
Reduction		12,3 (7,6)
Gear	1	5,18:1
	2	3,19:1
	3	2,02:1
	4	1,38:1
	5	1,00:1
Reverse		4,72:1
Reduction, total		9,78:1



WHEELS

Rims
Tyres

11.25-25
16.00-25/28 E3



FRAME

All-welded frame of fully extruded channel beams with cross ties.



SUSPENSION

Front axle: Leaf springs and hydraulic shock absorbers.



BRAKE SYSTEM

Retarder: incorporated in transmission and air-operated drum brakes in wheels.

Service brake 1: Retarder incorporated in gearbox

Service brake 2: 2-circuit air-operated drum brakes

Circuit division: Circuit 1 supplies the front brakes.
Circuit 2 supplies the rear brakes

Parking brake: Spring application of drum brakes on rear wheels

Compressor, capacity	dm ³ /s (l/min)	508
	(US gal/min)	
at	r/s (r/min)	35 (2100)
Pressure regulator		
Cut-in	bar (lbf/in ²)	6,6 (94)
Cut-out	bar (lbf/in ²)	7,6 (108)

Brake friction area/wheel		
front	cm ² (in ²)	1770 (275)
rear	cm ² (in ²)	1995 (309)
Reservoir	No.	2
Total volume	dm ³ (l) (ft ³)	120 (4,24)
Park. brake frict. area	cm ² (in ²)	3990 (618)
Retarder		
braking effect	kW (hk)	265 (360)
at	r/s (r/min)	35 (2100)



STEERING SYSTEM

Hydraulic ZF-power steering with mechanical return.

Lock-to-lock turns: 6. Steering cylinder: 1 double-acting.

Hydraulic pump: Direct-driven gear pump mounted on gearbox.

Steering cylinder		
Diameter	mm (in)	58 (2,28)
Travel	mm (in)	300 (11,81)
Piston rod diam.	mm (in)	22 (0,87)
Working pressure	MPa (lbf/in ²)	10 (1450)



CAB

Steel cab, mounted on rubber pads. Heat and sound insulated. Heating and defroster system.

Seat adjustable to driver's weight with armrests and lap belt.

Noise level in cab, max.	dB(A)	80
Driving seat		ISRI 5000
Emergency exits		2



HOIST AND BODY

Tipping cylinder: One 3-stage telescopic cylinder, 2 stages are double-acting. Tipping stop: Rubber buffers.

Hydraulic system: Hydraulic pump, converter-dependent, driven directly from gearbox. Common oil flow with steering system.

Dumper body: Material: Hardened and tempered abrasion-resistant steel plate. Exhaust heating.

Optional equipment:

Overhung tailboard: Machines both with and without elevated body can be fitted with an overhung tailboard. This extra tailboard is kept closed under its own weight and opens when the load is dumped. The design of the overhung tailboard does not permit stones and boulders to be carried. For such materials, the tailboard should be removed. The overhung tailboard increases the weight of the body by 250 kg (550 lb).

Tipping mechanism		
Tipping time with load	s	11
Lowering time	s	11
Hydraulic system		
Flow rate	dm ³ , l / min (US gal /min)	167 37
and speed	r/s (r/min)	35 (2100)
Working pressure	MPa (lbf/in ²)	20 (2900)
Dumper body		
yield point	kgf/mm ²	110
breaking point	kgf/mm ²	130
hardness, HB		360-440
Plate thickness		
front and sides	mm (in)	10 (0,375)
bottom	mm (in)	20 (0,75)



LOAD CAPACITY

Volumes below 10 m³ are given to one decimal place. Volumes of 10 m³ or more are rounded off to the

nearest 0.5 m³.

$$\text{Load factor} = \frac{\text{Payload}}{\text{Unladen weight}} = \frac{22500}{17100} = 1.32$$

Load capacity	kg (sh tons)	22500 (25)
Load volume		
Load volume, SAE struck	m ³ (yd ³)	11,5 (15,0)
heaped, 2:1	m ³ (yd ³)	15,0 (19,6)



WEIGHTS

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

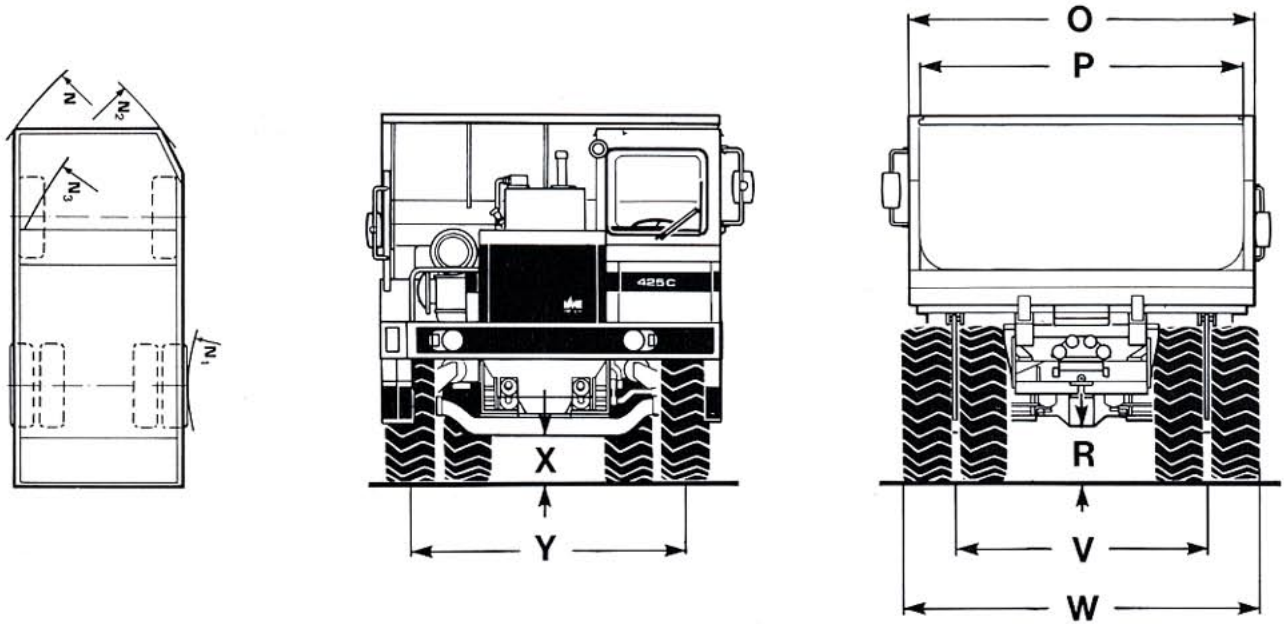
Dumper body weight	kg (lb)	5300 (11690)
Service weight		
front axle	kg (lb)	8900 (19600)
rear axle	kg (lb)	8200 (18100)
total	kg (lb)	17100 (37700)
Payload		
front axle	kg (lb)	5100 (11250)
rear axle	kg (lb)	17400 (38350)
total	kg (lb)	22500 (49600)
Gross weight		
front axle	kg (lb)	14000 (30850)
rear axle	kg (lb)	25600 (56450)
total	kg (lb)	39600 (87300)



SERVICE REFILL CAPACITIES

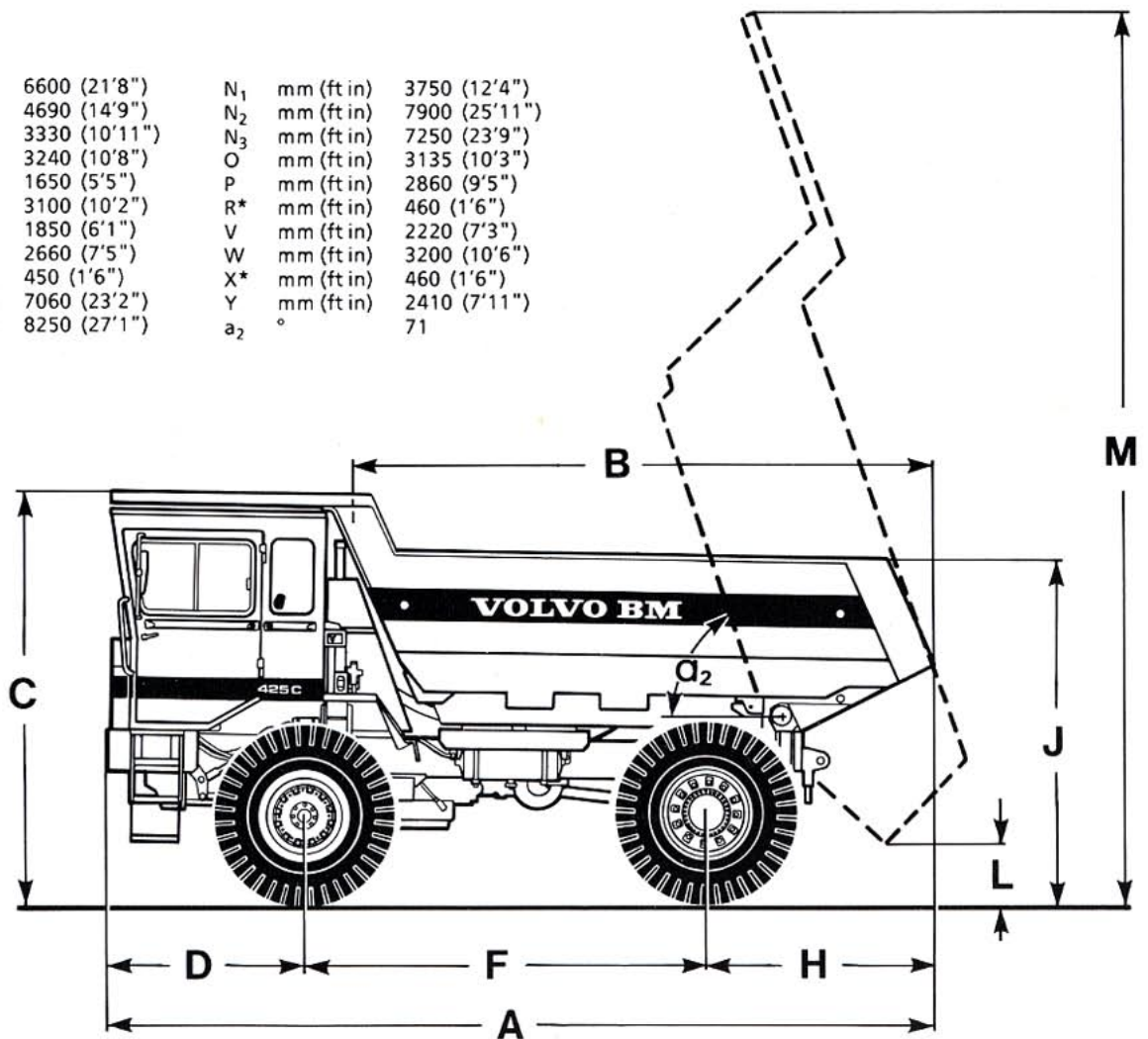
Engine oil incl. filter, total at change	dm ³ l (USgal)	32,5 (8,6)
Fuel tank	dm ³ l (USgal)	28 (7,4)
Cooling system	dm ³ l (USgal)	61 (16,1)
Gear box	dm ³ l (USgal)	250 (66,1)
total at change	dm ³ l (USgal)	42 (11,1)
Drive axle	dm ³ l (USgal)	30 (7,9)
Hydraulic system	dm ³ l (USgal)	28 (7,4)
		105 (27,7)

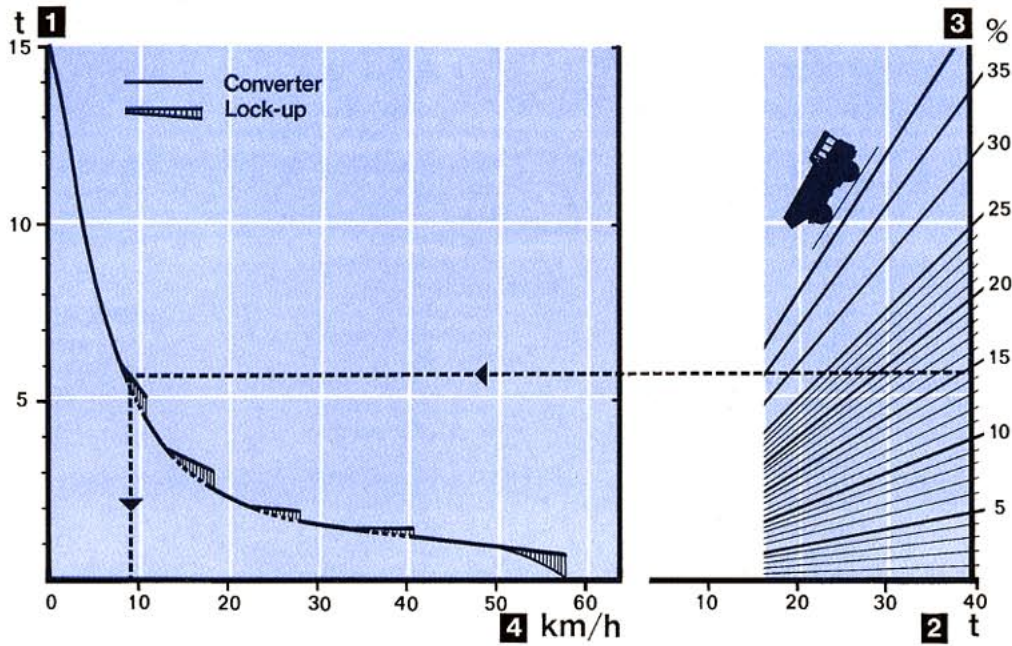
DIMENSIONS Volvo BM 425 C



* unladen
** laden

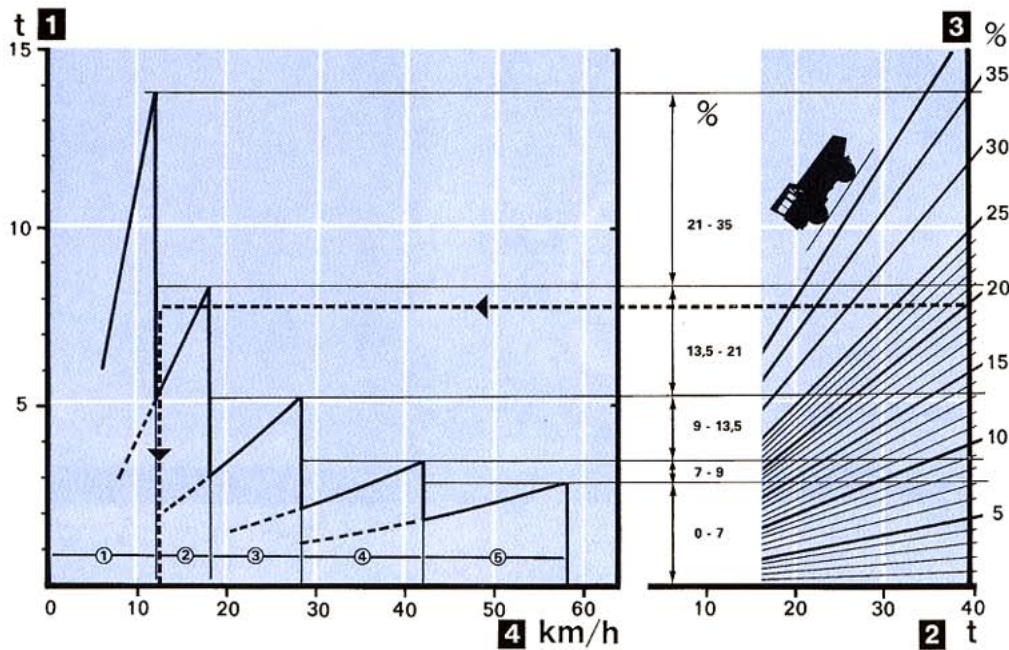
A	mm (ft in)	6600 (21'8")	N ₁	mm (ft in)	3750 (12'4")
B	mm (ft in)	4690 (14'9")	N ₂	mm (ft in)	7900 (25'11")
C*	mm (ft in)	3330 (10'11")	N ₃	mm (ft in)	7250 (23'9")
C**	mm (ft in)	3240 (10'8")	O	mm (ft in)	3135 (10'3")
D	mm (ft in)	1650 (5'5")	P	mm (ft in)	2860 (9'5")
F	mm (ft in)	3100 (10'2")	R*	mm (ft in)	460 (1'6")
H	mm (ft in)	1850 (6'1")	V	mm (ft in)	2220 (7'3")
J*	mm (ft in)	2660 (7'5")	W	mm (ft in)	3200 (10'6")
L	mm (ft in)	450 (1'6")	X*	mm (ft in)	460 (1'6")
M	mm (ft in)	7060 (23'2")	Y	mm (ft in)	2410 (7'11")
N	mm (ft in)	8250 (27'1")	a ₂	°	71





PULLING POWER GRAPH

1. Pulling power in tonnes.
 2. Vehicle weight incl., payload in tonnes.
 3. Inclination resistance + rolling resistance in %.
 4. Running speed in km/h.
- Broken line shows max. load.



BRAKING FORCE GRAPH

- (retarder and engine brake)
1. Braking force in tonnes.
 2. Vehicle weight incl. payload in tonnes.
 3. Inclination resistance - rolling resistance in %.
 4. Running speed in km/h.
- Broken line shows max. load.

STANDARD EQUIPMENT

Safety & Comfort

Cab heating with filtered fresh air intake and defroster
Ergonomically designed, adjustable driver's seat
Windshield wipers
Windshield washers
Rear-view mirrors
Sun visor
Lab belt
Cigarette lighter and ashtray
Tinted glass
Horn
Lights:
headlights,
bright/dim/asymmetric
parking lights
reversing lights

direction indicators
brake lights
tail lights
cab lights
instrument lighting
Indicator for air cleaner
Completely tyre inflation kit
Speedometer
Tachometer
Anti-theft lock
Hazard flashers
Rock ejectors
Compressed air outlet
Buzzer for pneumatic system
Hand throttle
Silencer
Tool-kit

Engine & Electrical System

Alternator
Pilot lamps for:
parking brake
bright lights
flashers
charging
engine oil pressure
body up
lock-up
engine pre-heater
LED lights, switches
Fuel gauge
Instruments:
hour counter
air pressure gauge (two circuits)
engine oil pressure gauge
coolant temperature gauge
gearbox oil pressure gauge
gearbox oil
temperature gauge
tachometer
speedometer
engine pre-heater
LED lights, switches

Transmission

Torque converter
Automatic gearbox
Automatic lock-up

Body equipment

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

OPTIONAL EQUIPMENT (Standard equipment on certain markets)

Engine

Electric engine preheater

Electrical equipment

Back-up alarm

Transmission

Gearbox heater

Cab

Tachograph
Air conditioning

Passenger compartment heater

Heated driver's seat
Radio/tape player

External equipment

Heated rearview mirrors

Protective equipment

Collision guards around tanks
Emergency steering
Air cleaner intake, raised
Guards around fuel and air tanks

Body

Rubberlined body
Overhauled tailgate,
std body
elevation 250 mm
Body elevation 250 mm

Other equipment

TBG equipment, West Germany
Alternative rear axle reduction ratio
Spare rim
Spare wheel
Exhaust gas system without body heating

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

Volvo BM Company

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