VOLVO BM

4600

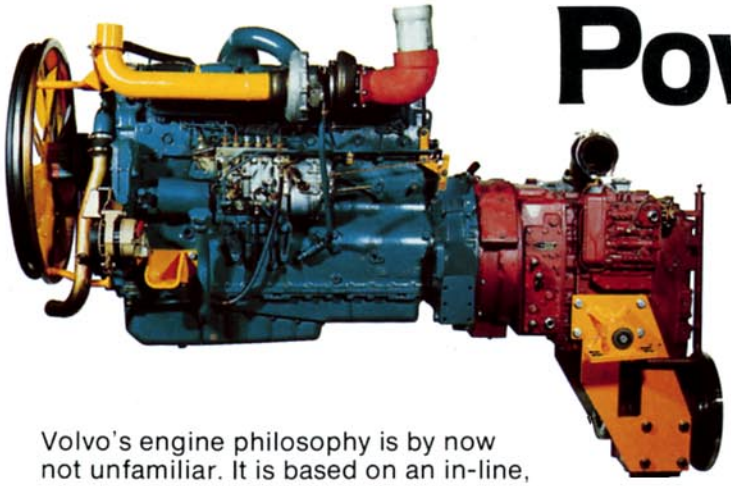
Big loads at high spee

Large bucket volumes, heavy material, high speed – the Volvo BM 4600 has been sized for economical heavy materials handling. This is the largest machine that Volvo BM has introduced so far in its new series of loaders – a 20-tonner with bucket volumes from 3.8 m³ and up.

The 4600 incorporates Volvo BM's new side-arm lifting system – a system which leaves the competition behind and which provides power for handling in situations where other machines run into immense difficulties. The power package consists of components which have been precisely adapted to one another and which in concert generate ample power and yet function economically. The engine is Volvo's renowned turbocharged TD100 G rated at 185 kW/252 hp DIN, which has been combined with a quick-acting torque converter and a power shift transmission.

But work capacity is not the only important feature in the 4600 – its safety features have received equal attention.

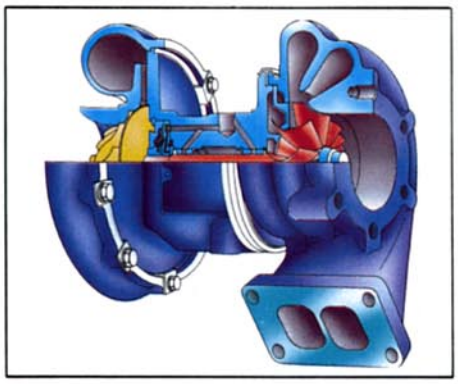
Power package

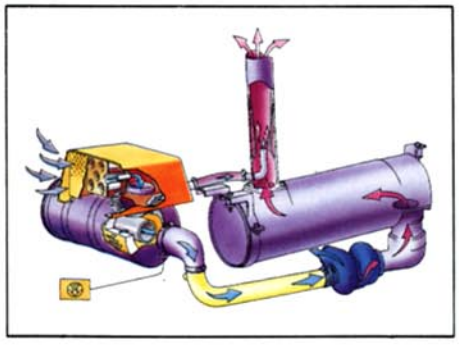


Volvo's engine philosophy is by now not unfamiliar. It is based on an in-line, direct injection, six-cylinder engine – the most reliable and thrifty engine available in this output class. And the turbo then helps to achieve high output and torque levels from modest cylinder volume.
The TD100 engine has already proven its quality and reliability time and time again. You'll find it serving in all capacities from shipping and industrial generators to trucks and construction machines. With its separate heads for each cylinder and its rugged block, it is ideal for the 4600. The economy of the modern Volvo diesel engines is enhanced by the fact that high torque is generated even at low speed. A rigid torque converter enables the machine to react quickly when the gas pedal is depressed. And the power shift gearbox permits rapid and smooth gear changes.
The well-balanced power package is one of the reasons why the 4600 works so quickly and efficiently.

Efficient power transmission

From the engine, power is transferred via a torque converter, which increases torque up to 2.59 times. Then it travels through a power shift planetary gearbox. This permits the operator to change between forward and reverse gears without stopping the machine. The power is then distributed to the drive shafts via a drop box.
The entire power package has been isolated from the frame by means of rubber bushings to prevent vibrations and stresses from being propagated between the various components of the machine.





Economical turbo

By supercharging with the turbo more energy is derived from the fuel. Thus the turbo generates more power at a lower specific fuel consumption rate. And a turbo-charged engine retains its power even at high altitudes, where conventional engines are adversely affected by the lack of oxygen. Finally, and maybe most importantly, the exhaust gases emitted by a turbo engine are much cleaner.

Clean air

The reliability and service life of an engine are completely dependent upon the fact that it receives effectively filtered air. The 4600 filters the air in three stages.
A cyclone filter separates the heavier particles which are then sucked out through the exhaust pipe. In practice, about 85% of all dust particles disappear at this stage. This cuts down the load on the main filter so that it need not be changed very often. A warning lamp in the cab indicates when the main filter should be cleaned or replaced. A block filter is located after the main filter which is activated if the main filter fails.

Rugged axles

The weight of the machine is transferred to the wheels via the axle casings, so that the drive axles are fully floating. The final reduction takes place in the gears in the wheel hubs; which also reduces stress on the drive axles to a minimum.
The front axle incorporates a differential lock of Dog clutch type. The lock is controlled by means of compressed air. A pilot lamp on the instrument panel indicates the position of the lock.
All wheels are fitted with disk brakes and the brake pads are easy to replace. The system incorporates a separate circuit for each axle – should one circuit fail, the brakes will always remain functioning on two wheels.


VOLVO BM
4600

Side-arm lifting syste

With this new series of loaders, Volvo BM introduces a side-arm system which outperforms other loaders on the market. With the aid of computers, Volvo BM has succeeded in finding an arm configuration which generates extremely high breakout moment in the top position while retaining power in all other positions. The design of the side-arm system also affords the operator excellent forward visibility. The side-arm system is manufactured with high precision and has been designed for ease of service partially through the incorporation of well sealed bearings. For example, the pins in the upper attachment point are lubricated along their length to prevent them from sticking, and holes for a puller are included in the standard version.

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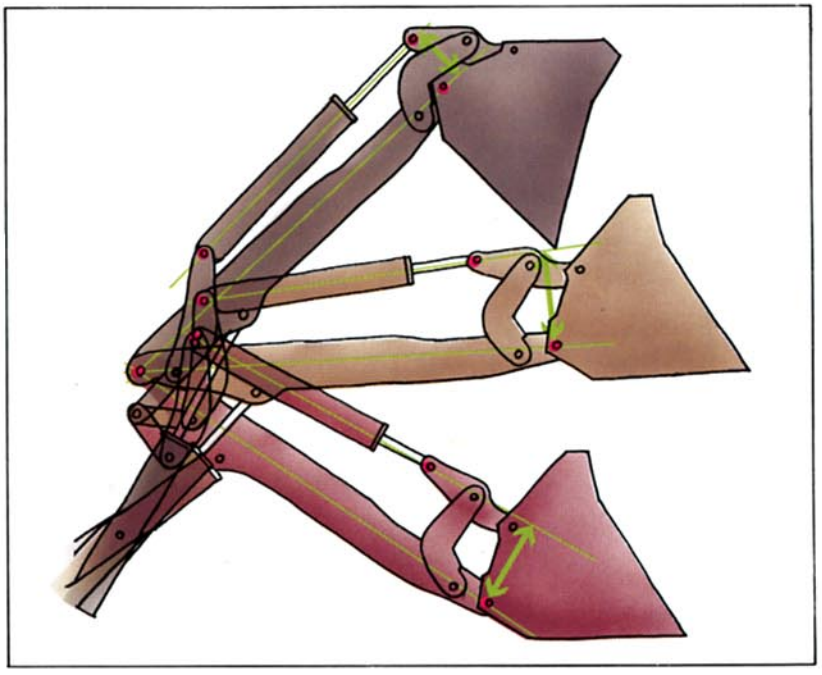
The side-arm system possesses an adjustable automatic stop at the upper and lower positions of the arms and in the straight bucket position.

The operator has perfect control over the attachment throughout the entire lifting movement. A full bucket or log grapple can be stopped in any position. The 4600 can break into tough material at extreme heights or unload a high pile of timber thanks to the uniquely high breakout moment in the top position.
For carrying, the 4600 has a 44° backward tilt which enables the operator to drive with a full bucket without spilling it. Accelerated backward tilting with a mechanical stop helps to load the material properly in the bucket.



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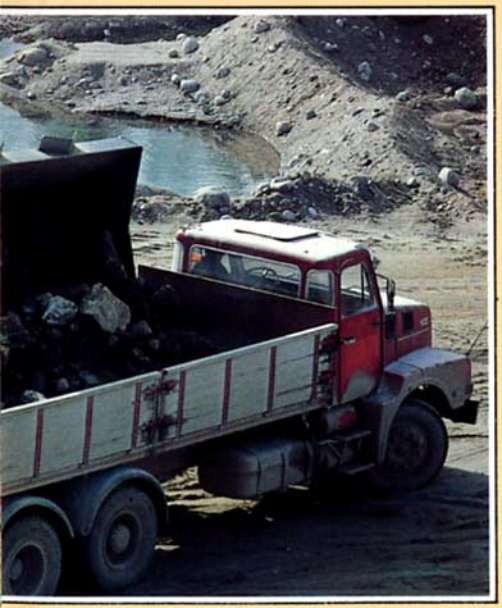


VOLVO BM
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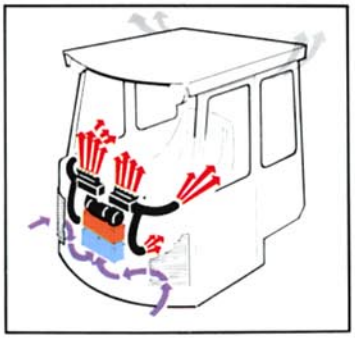
THE OPERATOR

The Volvo BM 4600 has been designed with two factors in mind: The work and the operator. We have concentrated wholeheartedly on providing the operator with a good and effective place to work. The fundamental is – as it always is at Volvo BM – safety and comfort.

One of the advantages of the new Volvo BM advanced side-arm system is the outstanding forward visibility it gives over the work area. And the matt black of the arms permits the use of powerful halogen lamps as floodlights without the problem of glare.

The 4600 cab is ROPS tested and approved. On the next spread we show you how we also test our cabs through repeated rollovers. There are four safety exits – the doors plus the rear window and the roof hatch.
On the job the doors provide convenient entry – large, well-designed footsteps, spacious door openings and properly located handles.

The seat is sprung, shock absorbed and adjustable in several positions. The forward-backward positions, height and angle can all be adjusted to conform to the natural seating posture of the operator. Additionally, the springing can be adjusted according to body weight.



A complete heating and air conditioning system has been designed as an integral part of the machine from the start. Effective heating and ventilation are included as standard while the cooling unit is an optional accessory and is simple to install afterwards.
The air conditioning system is used not only to cool the cab in the heat of summer – it can also be employed to supply drier air in humid weather.
All outside air passes through the large replaceable filters on the way into the cab.

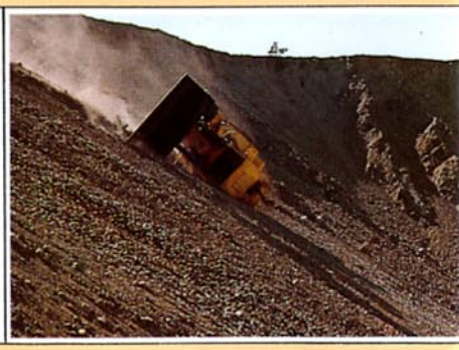
It's only natural that in a Volvo BM machine the controls are located within easy reach and the instruments for quick at-a-glance monitoring. Everything is well-appointed and the pilot lamps are marked with easily comprehensible international symbols.
To make the operator's job easier the 4600 incorporates a large central warning light which monitors several functions.
The control levers as well as the steering are servo-assisted. The operator does not need to fight against the working pressure in the hydraulic pump. All he does is regulate a smaller control flow of hydraulic oil which in turn regulates the oil flow to the working cylinders.

Quality test

At Volvo BM we stay in close touch with reality. The designers are fully aware of how tough conditions can get on a work site. That's why the Volvo BM 4600 is a down-to-earth product based on real conditions. But ordinary testing is not enough. We demand that our machines be punished far more than they would be every day on the job. This way we can be doubly certain of their durability and reliability. The pictures on this spread depict one of a series of rollover tests where we let our loaders roll down a steep embankment turning over repeatedly. The machines remained intact, all the parts stayed in place and most important of all – the cab withstood this violent treatment and provided the operator with the protection that should be demanded of a modern safety cab.

Certainly we could sell Volvo BM machines without going to such extremes in testing. But by going one step further than is usual we give our machines qualities that distinguish them from the rest. That extend service life, reliability and that make them even safer workplaces. Qualities that in the long run have a substantial effect on overall economy.



Time and time again the Volvo BM machine turns over down a stone-covered embankment – and passes the test with flying colours. Other models have been tested similarly. The pictures show a 4500.

The Volvo BM 4600 is a highly efficient capacity loader from Volvo BM. It is strong, fast and comfortable for the operator. It is efficient not only in the loading of stone and gravel but also in log handling.

VOLVO BM

VOLVO BM AB ESKILSTUNA SWEDEN

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

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