

VOLVO BM

LOADERS: L50, L70, L90, L120, L160



WITH RESOURCES AND EXPERIENCE, THE LOADERS OF THE FUTURE ARE BUILT

VOLVO BM LOADERS HAVE SPEARHEADED LOADER DEVELOPMENT FOR MORE THAN 30 YEARS

Volvo BM loaders have been well established on the market for more than 30 years. They have been pioneers in the development of new working methods and have continuously advanced the positions of loaders in new markets. Continuous feedback from applications gives information on what different markets demand. As a result, the Volvo BM range includes everything from small utility machines up to efficient high-production loaders. The basic designs are identical throughout the product range. It is these fun-

damental design principles that make Volvo BM loaders such high performers. The superiority of these machines has been proven in tests and practical work on markets all over the world. We also have the product development and production resources that enable us to manufacture the most important components in the machine ourselves. This guarantees that the machines have a well-balanced construction and are of high and uniform quality.



DESIGNED FOR PRACTICAL, CONVENIENT SERVICE ACCESSIBILITY

VOLVO BM LOADERS ARE EASY TO SERVICE AND MAINT.

Volvo BM machines have many years of experience from working in different countries and under diverse conditions. The service technicians and development engineers keep their ears open to the demands of the market as well as feedback from the field. This results in constant improvements for added efficiency and operator satisfaction.

The photos at the right show . . .

- Conveniently located handholds and footsteps make it easy to enter and leave the cab.
- Easily accessible and well-protected battery box with hinged cover.

- The electrical distribution box is logically arranged and conveniently located inside the cab.
- Large access panels and platforms permit easy and safe inspections.
- Ground-level fueling.
- All oil checks are easy to perform from ground level.
- The radiator grille and the radiator can easily be swung out for cleaning.

Large access panels for convenient inspection and topping-up

Easy fueling

Battery disconnect switch

Lockable battery boxes

Visual level checks provided for brake fluid and hydraulic fluid

Transmission dipstick, level check

Safe and convenient footsteps and handholds



AIN IN EVERY DETAIL

*Protected
location of
lights and
direction
indicators*

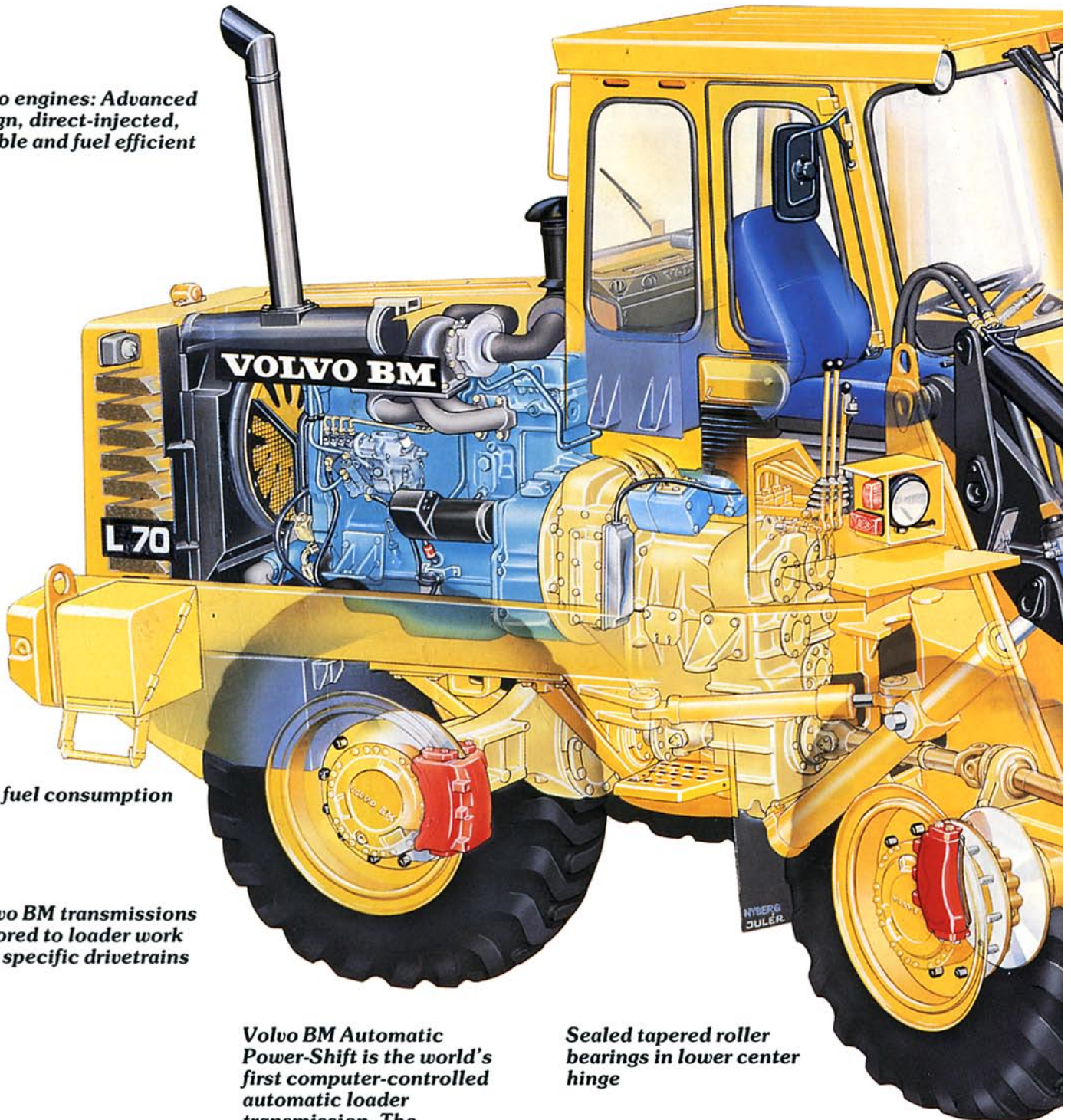


Turbocharged for better combustion, lower fuel consumption and cleaner exhaust emissions

Air cleaning in three stages ensures reliable engine performance and long life

Comfortable and safe cab tested and approved according to ROPS and FOPS standards

Volvo engines: Advanced design, direct-injected, reliable and fuel efficient



Low fuel consumption

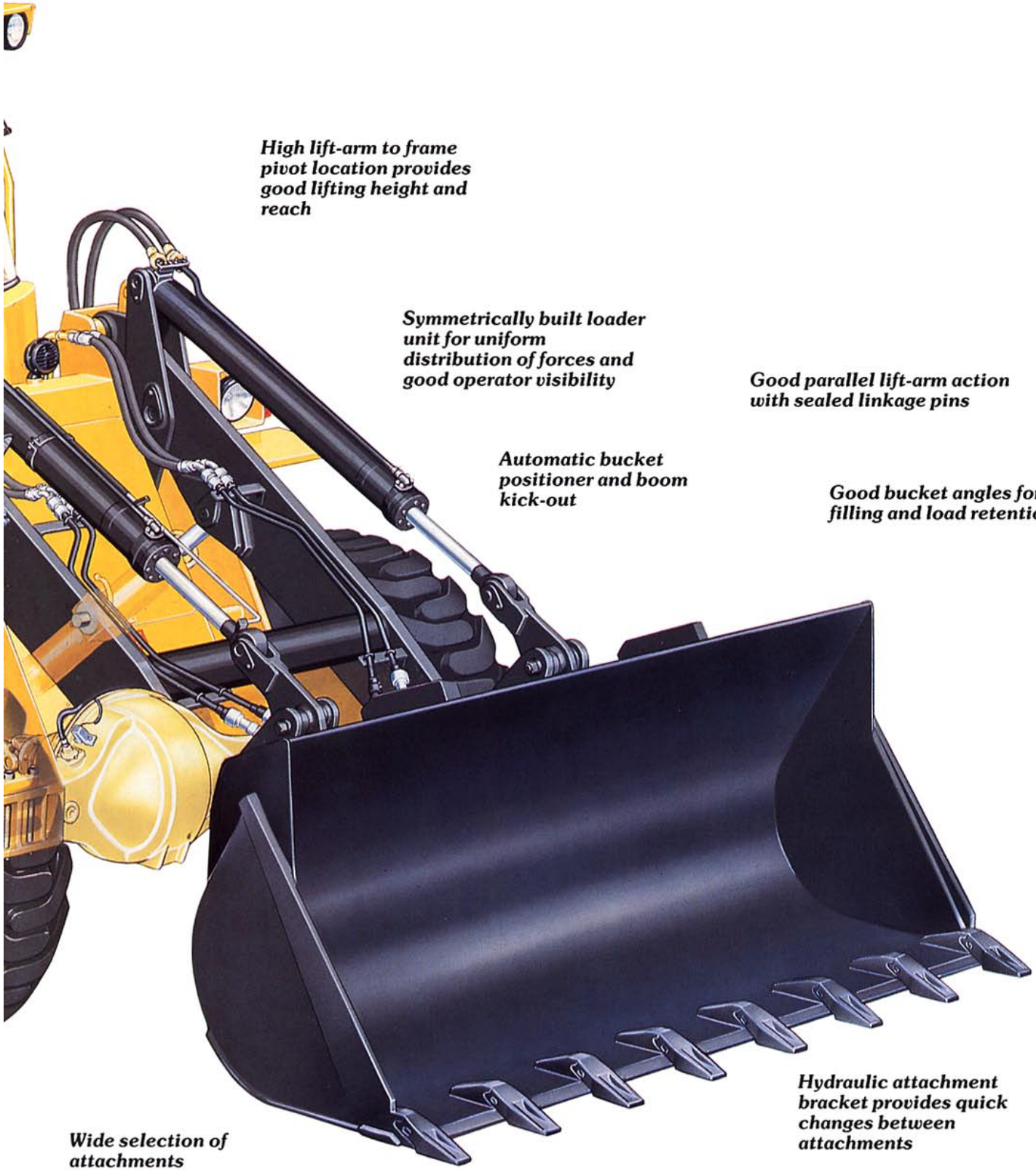
Volvo BM transmissions tailored to loader work and specific drivetrains

Volvo BM Automatic Power-Shift is the world's first computer-controlled automatic loader transmission. The machine always works in the optimum gear.

Sealed tapered roller bearings in lower center hinge

Volvo BM planetary axles of standard designs for long life

"ALLROUND" PRODUCTION-BOOSTING FEATURES MAKE THE VOLVO BM LOADER THE RIGHT ECONOMIC CHOICE



High lift-arm to frame pivot location provides good lifting height and reach

Symmetrically built loader unit for uniform distribution of forces and good operator visibility

Good parallel lift-arm action with sealed linkage pins

Automatic bucket positioner and boom kick-out

Good bucket angles for filling and load retention

Wide selection of attachments

Hydraulic attachment bracket provides quick changes between attachments

VOLVO BM QUALITY GIVES HIGH AVAILABILITY AND ECONOMY

MODERN PRODUCTION TECHNOLOGY COMBINED WITH

Own-manufactured base components

Volvo BM quality means that every loader will give you a whole package of positive features that enable you to perform demanding jobs with few interruptions and good economy over a long period of time. The basis of this quality is that we manufacture our own base components such as engines, transmissions and axles.

This gives us complete control over technical design, size compatibility and the manufacturing process so that we can build loaders for optimum performance and long life. Servicing and maintenance aspects are also an important factor of design quality. These are taken into consideration along with performance requirements right from the drawing board stage.

Volvo BM Technical Center

Practical experience from around the world is gathered and studied at Volvo BM's Technical Center. This information, together with many years of accumulated know-how, ultra-modern design equipment and laboratory testing facilities, plays an important part in Volvo BM's drive for excellence.

The end result is a product that is easy to maintain, has high capacity, long life and is economical to operate. Modern manufacturing technology and meticulous quality control are prerequisites for high, consistent quality. State-of-the-art technology is used in the development work. Computer technology is

also employed in order to simulate reality as closely as possible in loader tests.

Stresses on different parts are measured electronically on loaders at work and recorded on magnetic tapes. Realistic conditions are then simulated in the laboratory and the computer processes the results. This, combined with hard tests in the field, ensures that Volvo BM owners will get the desired economic yield from their machines.

Built-in serviceability

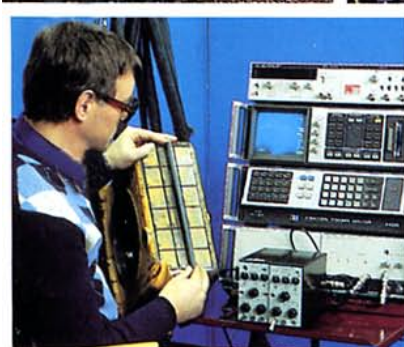
There is only one way to make a machine easy to service: The product must be designed with serviceability in mind right from the start. Volvo BM service specialists are involved throughout the development phase. Their job is to see that the design leads to simplified service and maintenance.



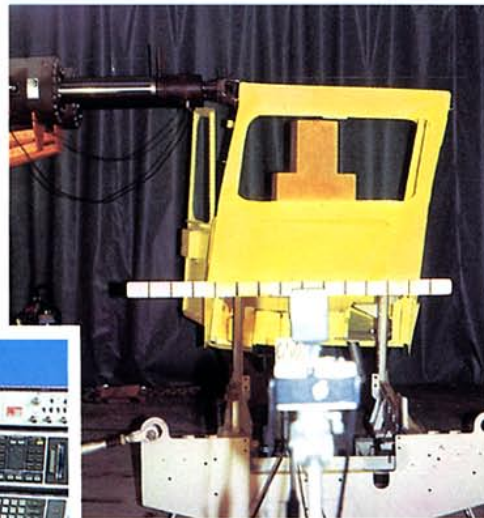
H METICULOUS QUALITY CONTROL



Volvo BM loaders roll over and over down a rocky slope – and pass the test with flying colors.



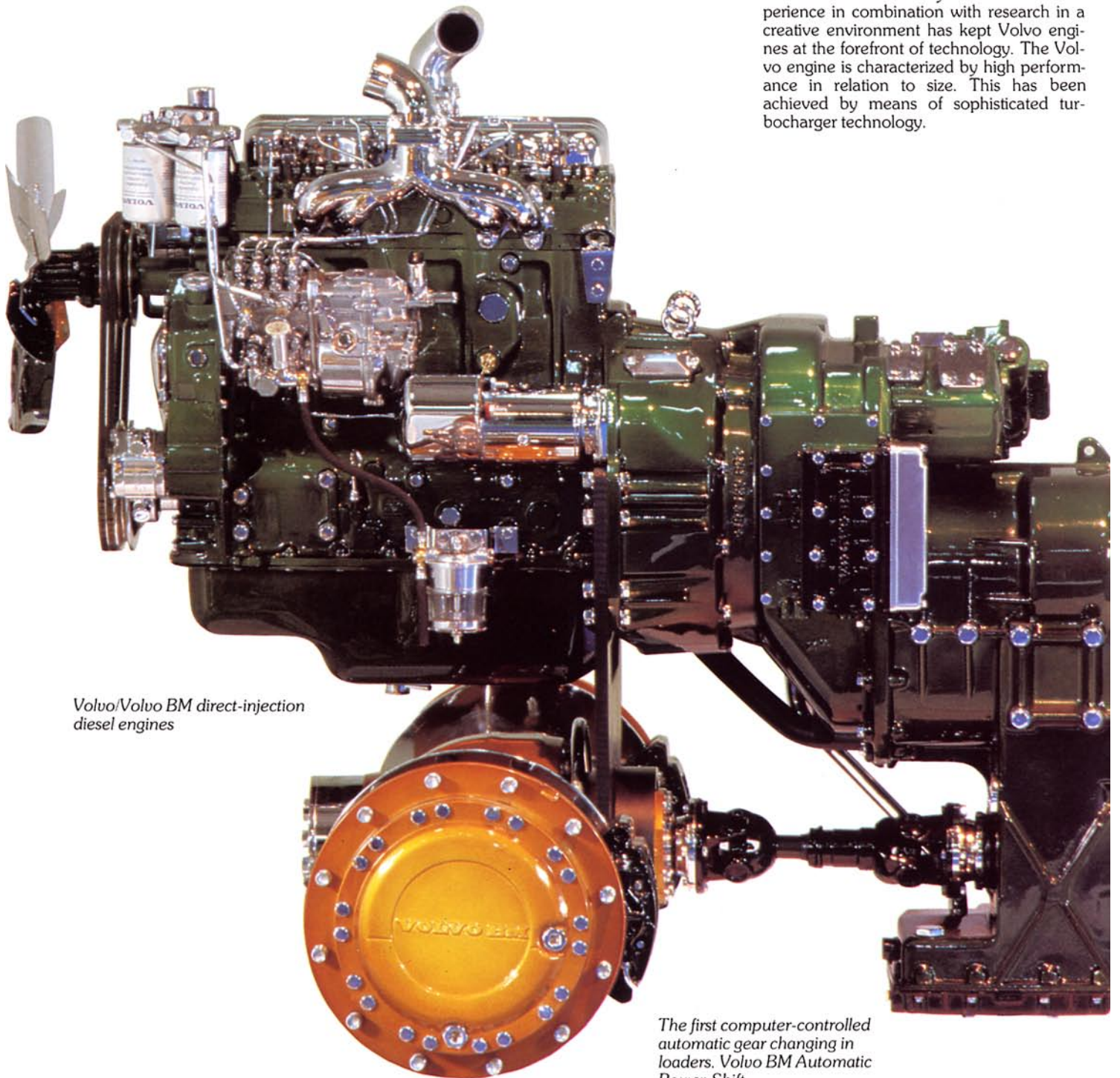
Sophisticated laboratory tests are combined with rigorous field testing. In one test, machines have been forced to roll down slopes, with only superficial damage. These tests complement the approved ROPS and FOPS tests.



VOLVO ENGINES – SECOND TO NONE

VOLVO OCCUPIES A LEADING POSITION IN THE DEVELOPMENT

Advanced diesel engine technology has always been one of the secrets of Volvo's success within the heavy vehicle sector. Experience in combination with research in a creative environment has kept Volvo engines at the forefront of technology. The Volvo engine is characterized by high performance in relation to size. This has been achieved by means of sophisticated turbocharger technology.

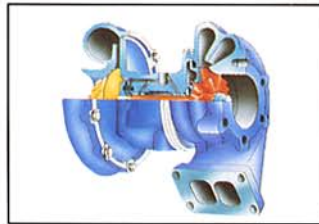


Volvo/Volvo BM direct-injection diesel engines

The first computer-controlled automatic gear changing in loaders. Volvo BM Automatic Power-Shift.

DEVELOPMENT OF HEAVY DUTY "STATE-OF-THE-ART" POWERTRAINS

Fuel economy is also very good, since the engines feature very efficient combustion with low heat and friction losses. Volvo engines are renowned all over the world for their reliability. And this is no accident – a great deal of effort has been devoted to making designs as simple as possible, and in this endeavour the in-line, direct-injected engine has proven to be the right alternative.



Turbocharging makes combustion more efficient. Higher power is achieved with a lower specific fuel consumption. Standard on models L70, L90, L120 and L160.

The new generation of Volvo BM transmissions is based on long experience and sophisticated engineering.



The Volvo BM Automatic Power-Shift Transmission is the leader in technology

The modern transmissions with electromagnetic actuation have made possible the development of microcomputer-controlled automatic gear changing. Automatic shifting makes sure that the loader always works in the right gear. This results in optimum efficiency and economy, reducing wear and tear on components and contributing to lower fuel consumption. The automatic shift provides safer, more convenient machine operation and therefore more effective operator performance.

All Volvo BM loaders are equipped with Automatic Power-Shift as standard and are the first loaders in the world to have computer-controlled APS transmission.

THE VOLVO BM TRANSMISSION – EASY TO OPERATE, UNCOMPLICATED AND RELIABLE

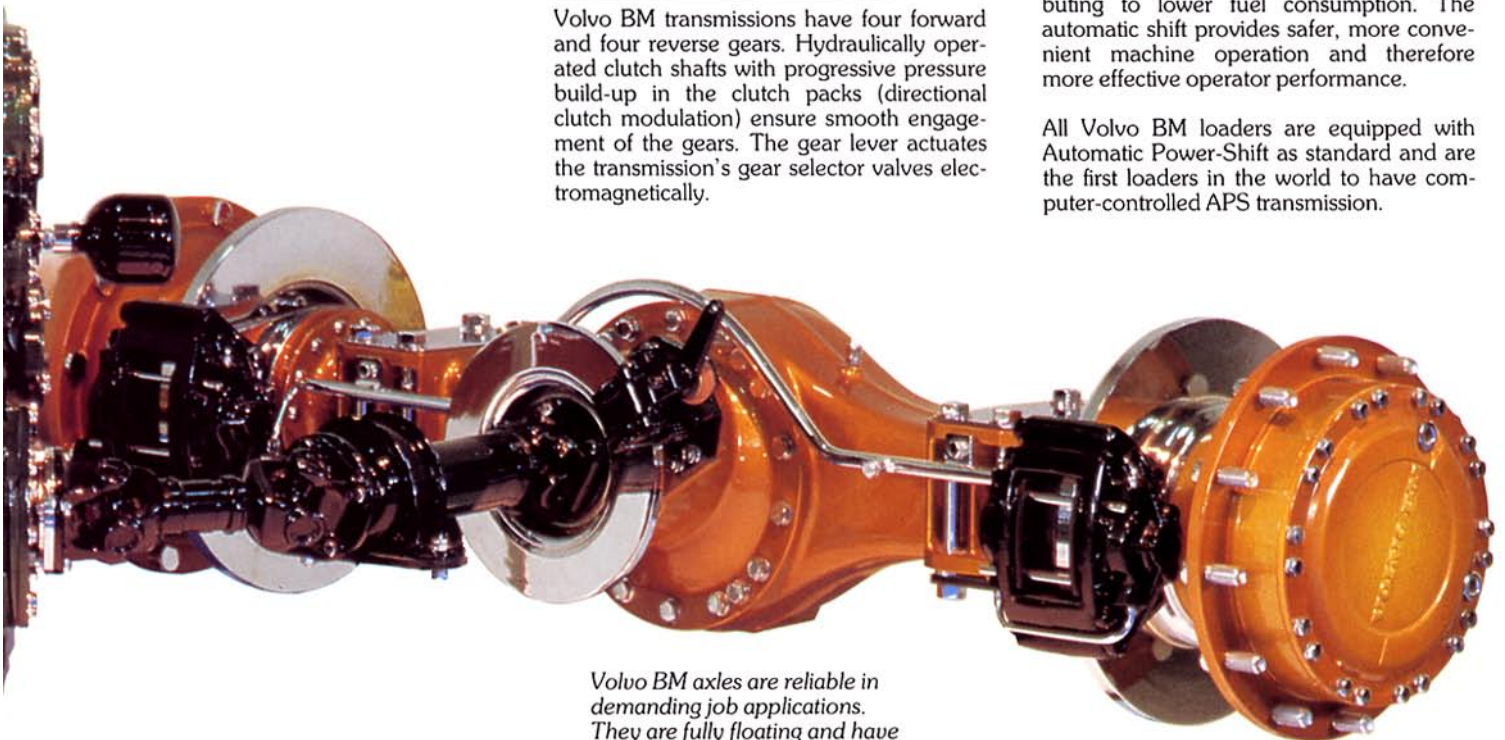
The first generation of countershaft type transmission came along in the early 1960s. Since then a great deal of experience has been gathered from the field and used in the laboratory to make progressive improvements.

As a result of this accumulated know-how and vast development resources, Volvo BM has today a new generation of transmissions with outstanding characteristics.

Directional clutch modulation

Volvo BM transmissions have four forward and four reverse gears. Hydraulically operated clutch shafts with progressive pressure build-up in the clutch packs (directional clutch modulation) ensure smooth engagement of the gears. The gear lever actuates the transmission's gear selector valves electromagnetically.

Volvo BM axles are reliable in demanding job applications. They are fully floating and have planetary hub reductions.



COMFORT - A TRADITIONAL STRONG POINT WITH VOLVO BM

THE IMPORTANT WORK DONE BY THE OPERATOR DESER

An operator requires a very special working environment to perform at his best. In a Volvo BM loader he operates his machine from a cab with exceptional qualities. Volvo BM cabs are very safe, extremely comfortable, well insulated and equipped with an effective heating and ventilation system.

This keeps the operator fresh and alert during long hours at the wheel.

Our ergonomic experts have conducted exhaustive studies and prepared strict guidelines for the design and location of all controls and instrumentation. Fine tuning of the completed design is then carried out during practical trials by professional operators.

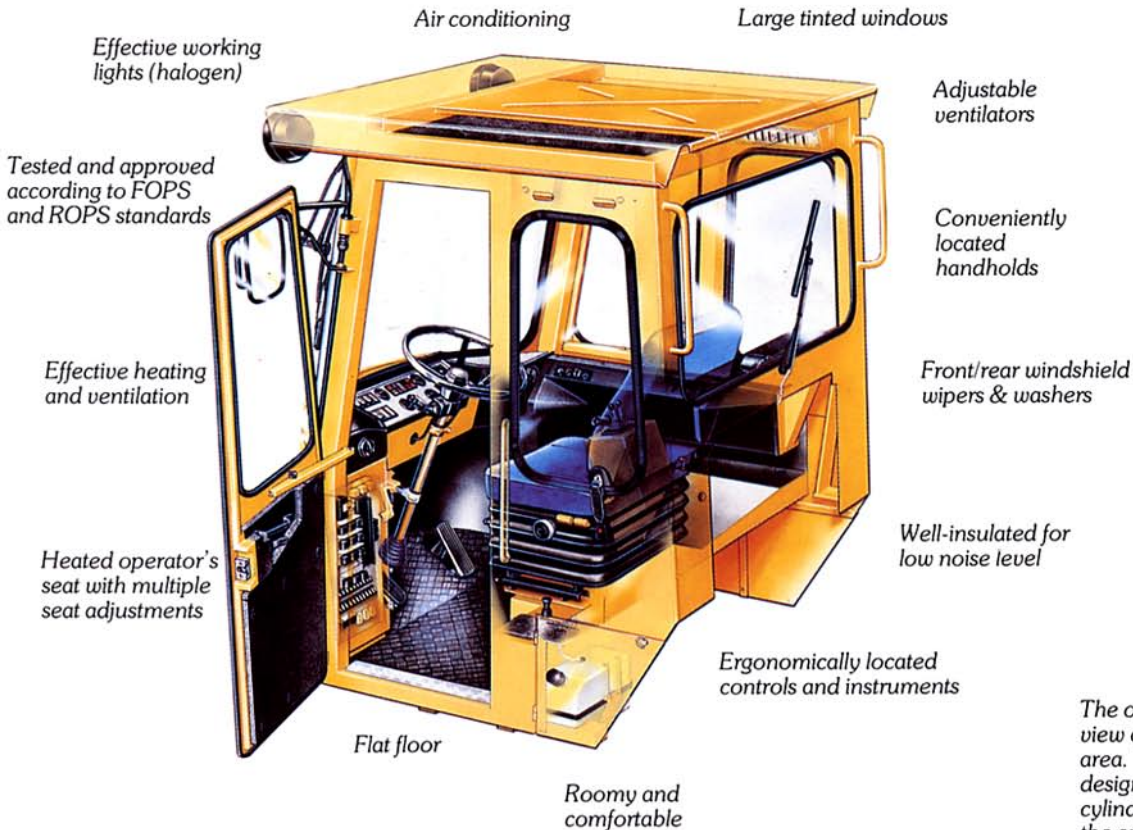
Right Climate

A pleasant "indoor climate" can be maintained in Volvo BM loaders regardless of the weather outside. Fresh air is cleaned in replaceable filters before being drawn into the cab. No fewer than 15 nozzles distribute large volumes of air evenly without creating draughts.

The heating system will keep the operator warm in the coldest of winters and the air-conditioning (optional) will keep him cool in blistering heat.



The cab is ergonomically designed to enable the operator to achieve high performance with low fatigue. Controls and instruments are ideally located.



The operator has a perfect view of the entire working area. The lift-arm system is designed with lift-arms and cylinders in line to enable the operator to see through the loader unit.

IVES A GOOD WORKING ENVIRONMENT



STRONG AND WELL BUILT

ADVANCED MANUFACTURING IN MODERN PLANTS ENS



The life of a loader is largely dependent on the ability of welded joints, bearings and frame elements to withstand severe continuous service. Volvo BM loader frames are of very rugged construction. The strong, rigid rear frame is made of box sections, all welded and thoroughly quality tested. The front frame is made up of four vertical steel plates between which the lift cylinders are mounted. The cylinders are well protected, and torsional stresses in bearings are eliminated.



The frame center hinge joint is designed to withstand high loads. The hinge assemblies are widely spaced. The lower hinge assembly consists of two tapered roller bearings, which provide for both long life and long lubrication intervals.



JRES QUALITY



The frame has machined surfaces at all points where components are attached. A precision fit at the point of attachment increases the strength of the joint, while exactly fixing the position of the components. This is a quality detail that results in both better function and higher reliability.

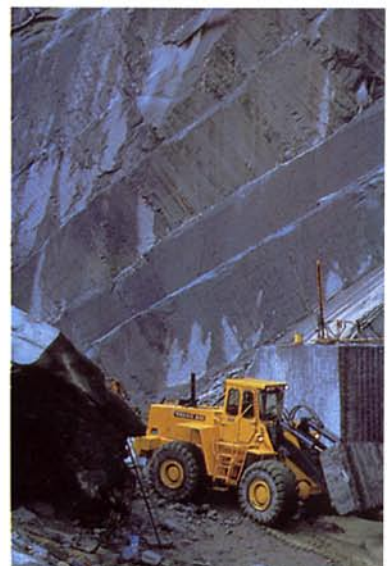


YOU'LL FIND VOLVO BM LOADERS WHEREVER TOTAL ECONOMY IS THE PRIME CONSIDERATION

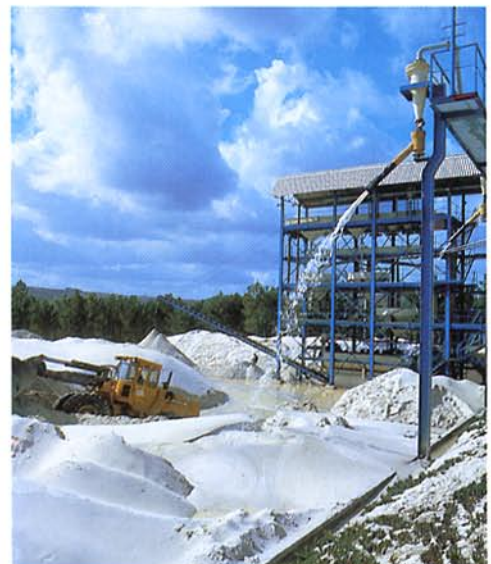
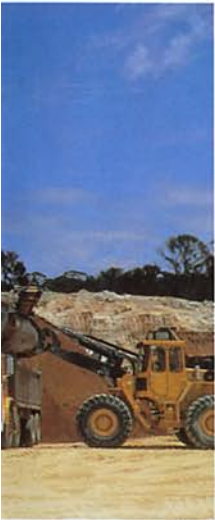
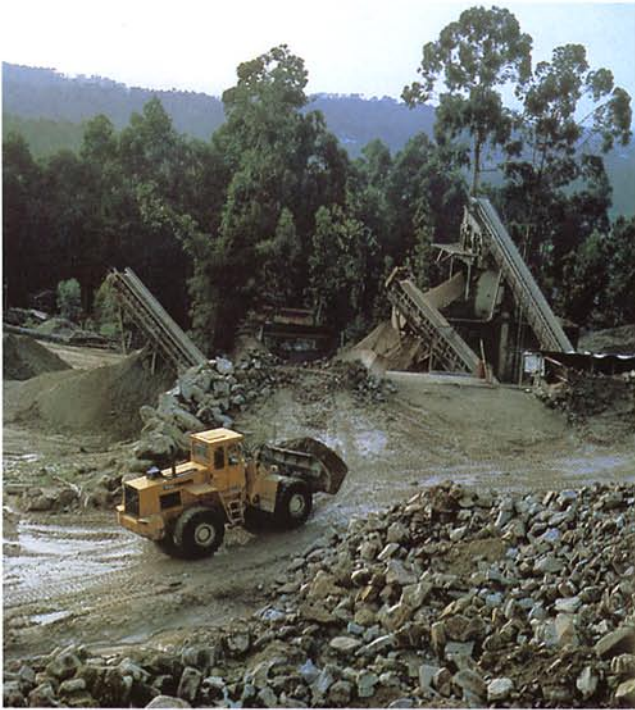
VOLVO BM LOADERS ARE POWERFUL, PRODUCTIVE, VERS

You can find Volvo BM loaders almost anywhere in the world. Their economy and versatility have made these machines highly sought-after in different industries and applications.

All Volvo BM loaders have the same exclusive features; choice of model is determined by capacity requirement. Volvo BM also gives you access to the resources offered by one of the world's leading loader manufacturers: Service, technical development and security of invested capital.



VERSATILE AND RELIABLE



A LOADER UNIT BUILT TO GIVE YOU HIGH CAPACITY IN ALL SITUATIONS

A COMBINATION OF GOOD BREAKOUT FORCE, GOOD

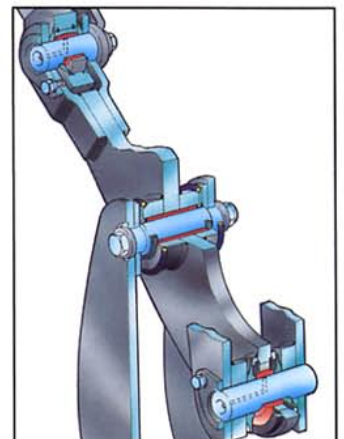
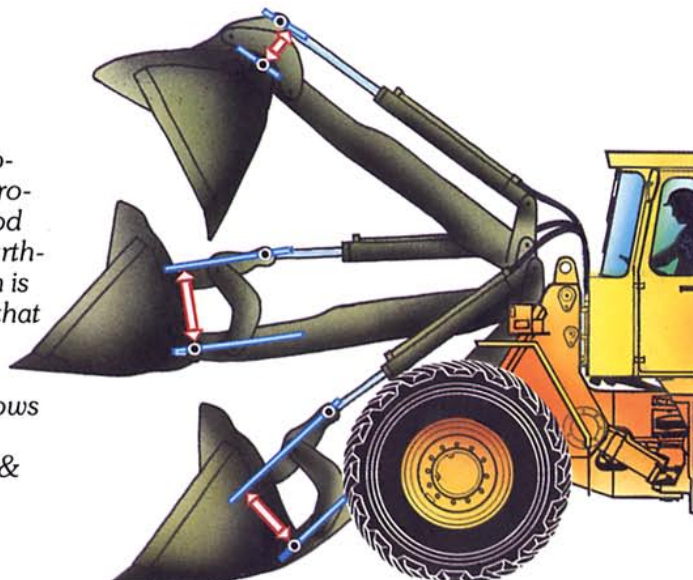
The most distinguishing characteristic of our lift-arm system is the combination of high tilt & rollback forces, good bucket angles and parallel lift-arm action throughout the lift-arm movement.

The lift-arm system is a simple, effective design with high quality of manufacturer throughout. The bearings have through pins, supported on both sides, and all bearing journals have replaceable bushings. Naturally, all bearings also have effective seals that protect against dirt and retain the lubricant. Wherever there is a risk of edge stresses, self-aligning link bearings are used: In both of the tilt cylinder mounts, in the tilt links' lower bearings and in the upper bucket hinge pin. Other bearings in the lift-arm system have pins and bushings with large bearing surfaces and low specific surface pressure.

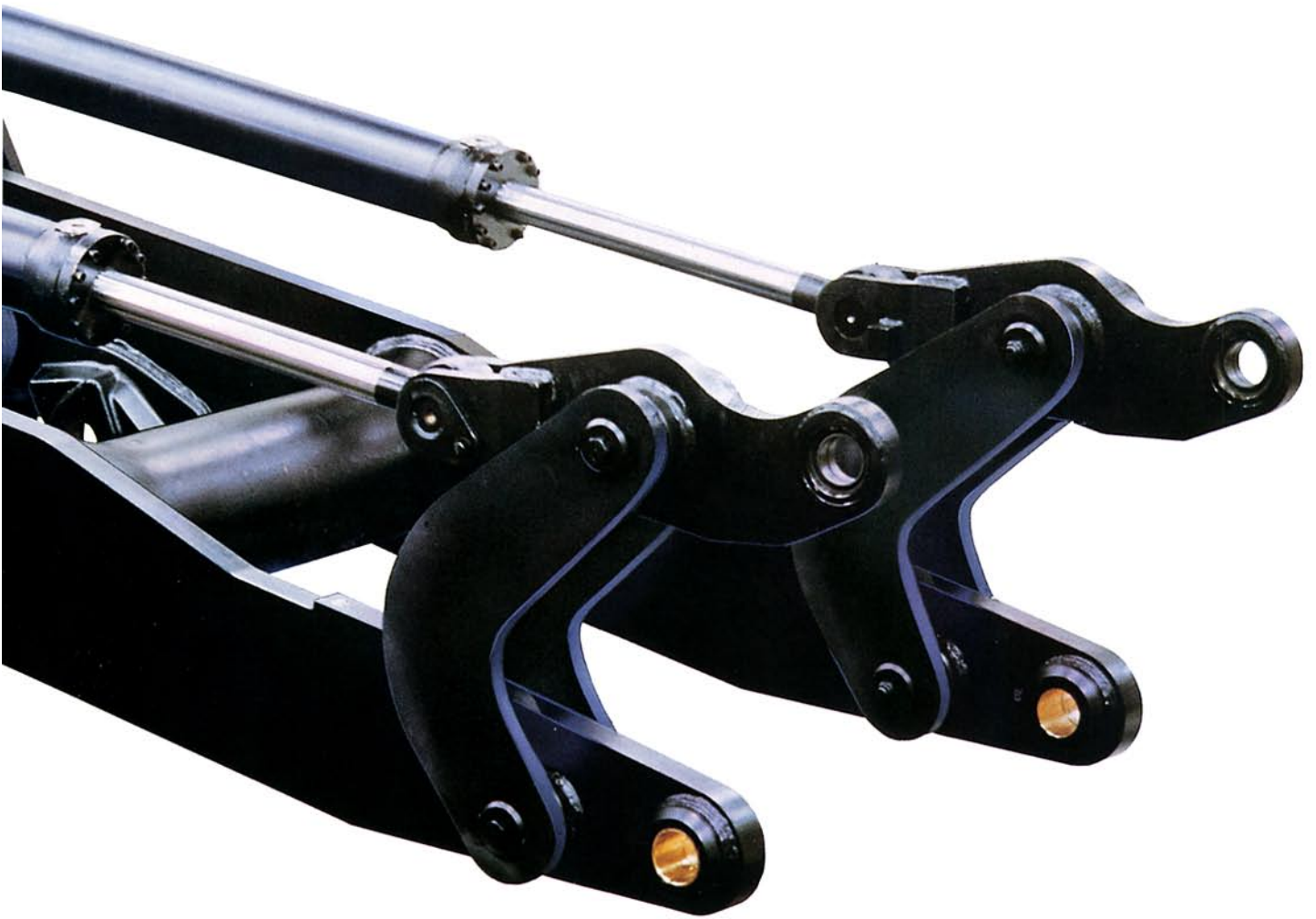
The Volvo BM loader unit possesses the combination of characteristics necessary for effective high capacity operation in every situation.



The loader unit is characterized by a high lift-arm-to-frame pivot location that provides a combination of good lifting height and reach. Furthermore, the lift-arm system is designed so that the lever that carries out the tilt movement is always long. (Distance between the arrows in the schematic drawing.) This means good rollback & tilt forces.



BUCKET ANGLES AND GOOD PARALLEL LIFT-ARM ACTION



The bearings are well-sealed against dirt. This contributes to long life and long lubrication intervals.

Self-aligning bearings are provided at high-stress points.

THE HYDRAULIC SYSTEM IS EASY TO OPERATE AND IDEALLY MATCHED TO THE MACHINE'S PERFORMANCE

THE EFFICIENT HYDRAULIC SYSTEM IS BUILT FOR HIGH RE

The hydraulic system is easy to operate and works with sure precision. Pressure equalization to the tank takes place through an air filtered breather. The oil is cleaned by a magnetic core filter. This thorough cleaning makes the hydraulic system highly reliable. Another reliability detail is that we have installed the vane pumps directly beneath the tank. A short suction line eliminates cavitation.

All Volvo BM loaders are equipped with a three-spool valve. The smaller models are provided with piping on the lift-arms for the quick coupler attachment bracket. The hydraulic system is easy to supplement with a 4th function control.

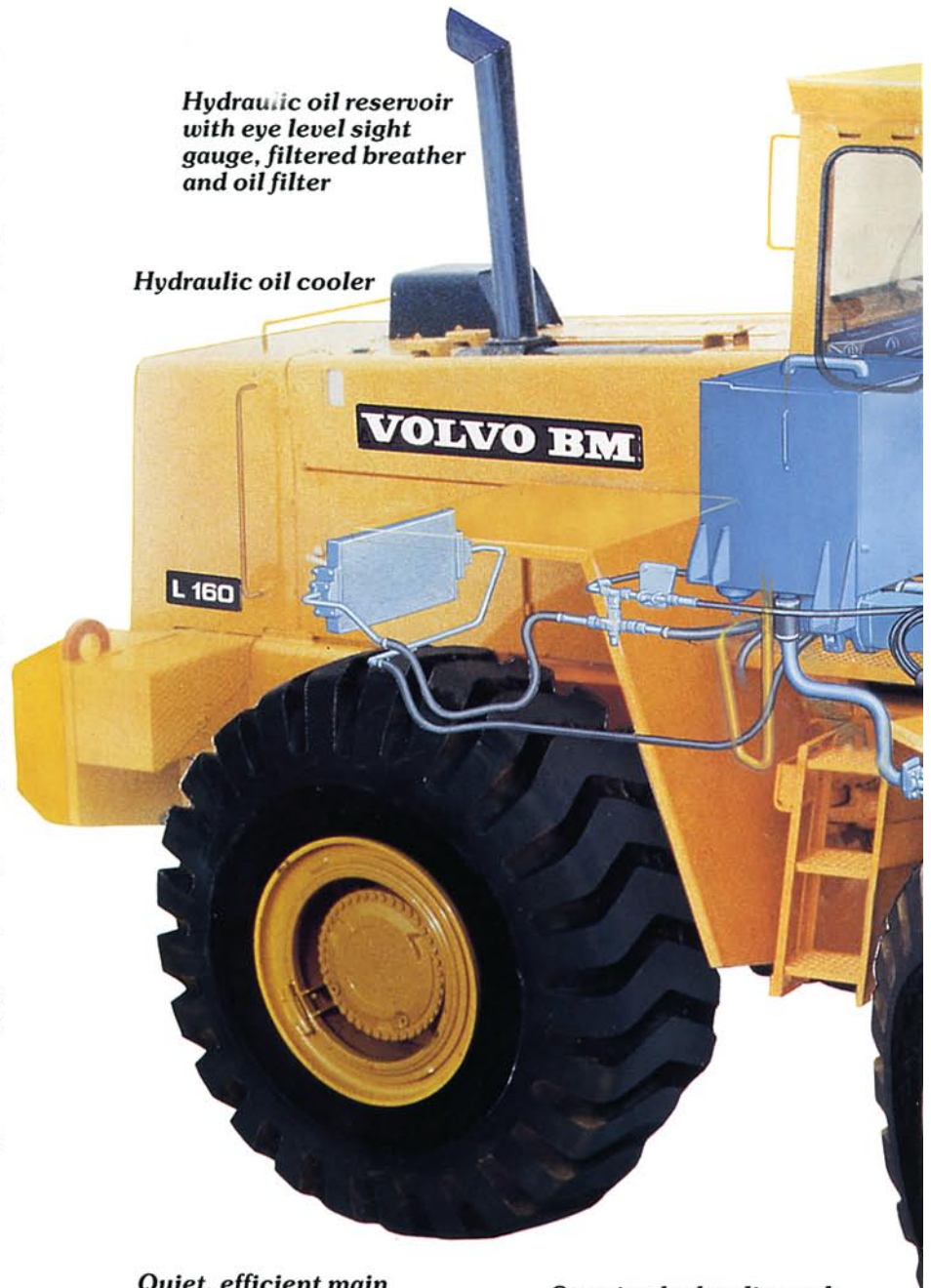
Steering System

The steering system on Volvo BM loaders features precision response and is easy to operate. The hydraulic oil is delivered by a piston pump with variable flow. Flow and pressure are regulated automatically according to need.

Our steering system has the following advantages:

- *Quick and easy steering in uneven terrain.*
- *Lower fuel consumption, since the pump only draws power as needed.*
- *The system works quietly.*

The L160 loader has a hydrostatic steering system with flow amplifier.



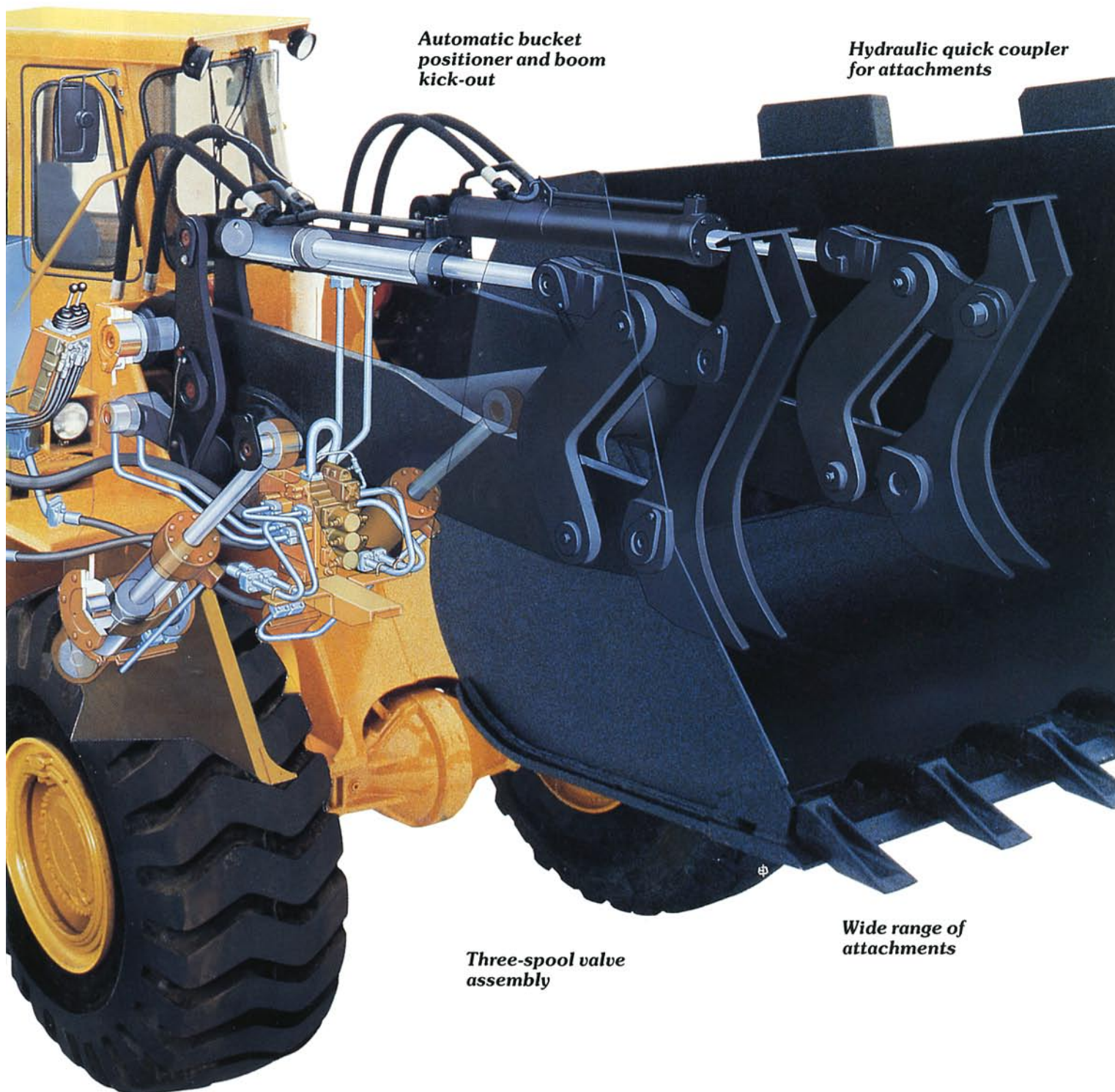
Hydraulic oil reservoir with eye level sight gauge, filtered breather and oil filter

Hydraulic oil cooler

Quiet, efficient main hydraulic system with durable vane pump

Steering hydraulics only draw power as needed

LIABILITY



Automatic bucket positioner and boom kick-out

Hydraulic quick coupler for attachments

Three-spool valve assembly

Wide range of attachments

Symmetrical lift-arm system:

The lift cylinders are located directly below the lift-arms and the tilt cylinders directly above the lift-arms. The symmetrical attachment of the cylinders minimizes the risk of skewed forces, which gives the loader unit very good reliability. The symmetrical design also allows the operator excellent visibility.

High lift-arm-to-frame pivot location:

This gives the machine high lifting height in combination with good reach. You can load high-sided vehicles, fill high loading bins from the access ramps found in some sorting and batching plants and reduce cycle times when loading and unloading wide vehicles by working from one side only. You can reach in over truck beds and railway cars without scraping them with the underside of the lift-arms, which is a common problem on many other makes.

Features that combine to give you good bucket loads:

Good bucket angles result in good bucket load retention & load factors. Thanks to accelerated rollback, when the bucket hits the mechanical stop, the material is thrown back against the rear of the bucket. This means that the centre of gravity of the material is shifted to the most favourable position in the bucket.

Mechanical dump stop:

A mechanical stop at the maximum dump angle enables you to shake the material from the bucket effectively.

Good parallel lift-arm action:

The Volvo BM loader unit geometry provides excellent parallel lift-arm action. This gives you greater machine utilization for a wide variety of jobs, such as handling large unit-loads or palletized goods.

High tilt & rollback forces:

The loader unit link-arms are specially designed to ensure that there is always a long lever throughout the tilt-movement. This produces

excellent tilt and rollback forces over the full lift-arm radius and good control in the top position.

This feature is essential for safe handling and precise control when unloading timber trucks and placing heavy loads onto haulage vehicles, feed tables and into hoppers.

Attachment bracket with quick coupler:

As manufacturers of wheel loaders, we realized from the start the importance of flexibility and adaptability of the machines to different jobs. The attachment bracket with quick coupler has led to the development of a wide range of attachments and a loader unit with effective characteristics for various tasks. This development has progressed to today's hydraulically operated attachment bracket that permits virtually instantaneous, trouble-free attachment changes.

Automatic bucket positioner and boom kick-out:

Automatic bucket positioner and boom kick-out are controlled by reliable inductive transmitters. The impulse is transmitted electrically all the way up to the lever mechanism. By means of switches on the instrument panel, the operator can switch on automatic stop for the bucket and lift-arms.

There are three automatic stop functions that can be switched in as needed:

Rollback (Bucket Positioner), Raising (Boom Kick-out) and Lowering (Ground Positioner).

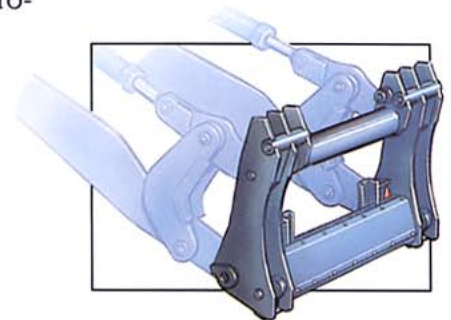
The equipment varies between different models. Information is provided in special data brochures.



The symmetrical attachment of the cylinders gives very good reliability and extra good visibility through the loading unit.



High tilt and rollback forces throughout the lift-arm movement permit effective, controlled unloading of timber trucks.



Changing attachments is simple. With the Volvo BM hydraulic attachment bracket, you never hesitate to switch to the right attachment.



L50 1,15 – 3,0 m³ (1.5 – 3.9 yd³)

The loader designed to provide good solid performance for the small contractor and municipal authority. Offered with the standard quick attachment bracket it provides the capability of changing from one fronted attachment to another in a matter of seconds.



L70 1,5 – 4,3 m³ (2.0 – 5.6 yd³)

A step larger in size and performance, this loader will meet the needs of contractors and local government departments that require more production capacity. The L70 is also equipped with the standard quick attachment bracket to give the versatility needed in the many types of jobs encountered.



L90 2,1 – 6,5 m³ (2.75 – 8.5 yd³)

This size machine is available for contractors who need a dedicated loader for material handling, truck loading in sand and gravel pits and general contracting requirements, with the added versatility of the optional quick attachment bracket for forks, grapples, and a wide range of other attachments.



L120 2,8 – 10,0 m³ (3.7 – 13.1 yd³)

Larger prime production capability in sand, gravel and crushed stone operations, for feeding hoppers, loading trucks and other similar applications. The option of a quick attachment bracket, combined with high tilt and rollback forces, provide exceptional log grapple performance for loading and unloading of log trucks, picking and sorting, decking, and loading feed tables at the mill. Also permits quick conversion to a high volume wood chip bucket or to forks for handling sawn timber.



L160 3,4 – 13,0 m³ (4.4 – 17.0 yd³)

The L160 is an exceptional, prime production loader ready to perform against any competitive machine of comparable size. Adding the optional quick attachment bracket offers a variety of bucket capacities for handling materials of varying types and weights, plus forks, and log grapples.





The Volvo BM L30–L160 loaders have been designed and developed to meet your needs for versatility and capacity – from small materials handlers to effective production machines. With the choice of six machines and over 100 different attachments, you can always find the right combination for maximum productivity.

VME Industries Sweden AB

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